

INTERNATIONAL WATCH



Martin Braun Tracks the Heavens

- Rolex Conquers Mt. Everest
- Peter Fonda: A True Watch Connoisseur
- Celestial Splendor from Patek Philippe



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■ EDITOR'S LETTER

Quite a few of our readers have been inquiring as to the progress being made by Steven Phillips on his patented Eternal Winding System (world premiere in *iW* #46) for powering a mechanical wristwatch using minute temperature change. Having honored his and his family's request for discretion I simply offered, "It's being further developed." Sadly the truth is now public and Mr. Phillips was in actuality fighting a battle with an aggressive and debilitating form of cancer, a battle that he finally lost on February 27 (see page 14 for a full memoriam). I will personally miss my watch education sessions with Mr. Phillips at his shop. His occasionally gruff manner and constant billows of smoke made it seem like class was in session. He needed an apprentice and got a watch magazine editor instead. He always made time for me and I learned quite a bit in his shop.

Steven Phillips was a true creator. Not satisfied with simply remaking what already existed, he was always in his own shop challenging standard horological dogma. He raised quite a few eyebrows among the Swiss and German watchmakers as it seemed most were loath to respect an American watchmaker's talents, capabilities and ingenuity. In spite of his political and physical obstacles, he was actually admitted as a candidate member of the AHCI, an almost exclusively European group with little interest in those outside the European Union. He stood side by side with the likes of Philippe Dufour, Svend Anderson and others, and he showed his handmade watches to the world at last year's Basel fair. Sadly, his first Basel fair was also his last.



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Martin Braun's World Positioning System

ACCORDING TO watch designer and

BY ROBERTA NAAS

master watchmaker extraordinaire Martin Braun, “The most important aspect of owning a watch is the experience and enjoyment of time.”

Indeed, for the simple pleasure of time and mechanics, this energetic soul builds some of the most complex, advanced timepieces on the market. Stunningly beautiful both inside and out, Martin Braun watches embody the legacy and perfection of true German watchmaking prowess.

Since his childhood, Braun worked with his father creating watches, cases and restoring antique movements. An astute watchmaker himself, he regularly lectured throughout Germany. Then, in 1995, he began work on his own very special timepiece—one that has earned him a leadership reputation—the EOS, which took ten years to complete.

A sneak peak at one of the hand-guilloched dials that will emerge on the new Bigdate watch with GMT.



Braun spent a full year just conducting and completing all the mathematical calculations of the sunrise and sunset times and writing suitable computer programs to record them. He housed the astronomical masterpiece in an elegantly classic case with a bold and sophisticated dial, unveiling it in 2000. A year later, he exhibited at the Basel Fair, where he was immediately sought after by the world's finest watch collectors who could appreciate Braun's genius, as well as his sense of style and design.

The EOS put Martin Braun squarely on the map in the world of watchmaking. The complication of the local times of sunrise and sunset on the dial via eccentric cross-hands is made possible by a forty-eight-piece module that Braun has added to the base ETA 2892-A2 movement. Not only is this timepiece an incredible accomplishment of watchmaking thanks to its complicated multifunction movement, but it is also exceptionally beautiful to look at with its crossed hands and re-



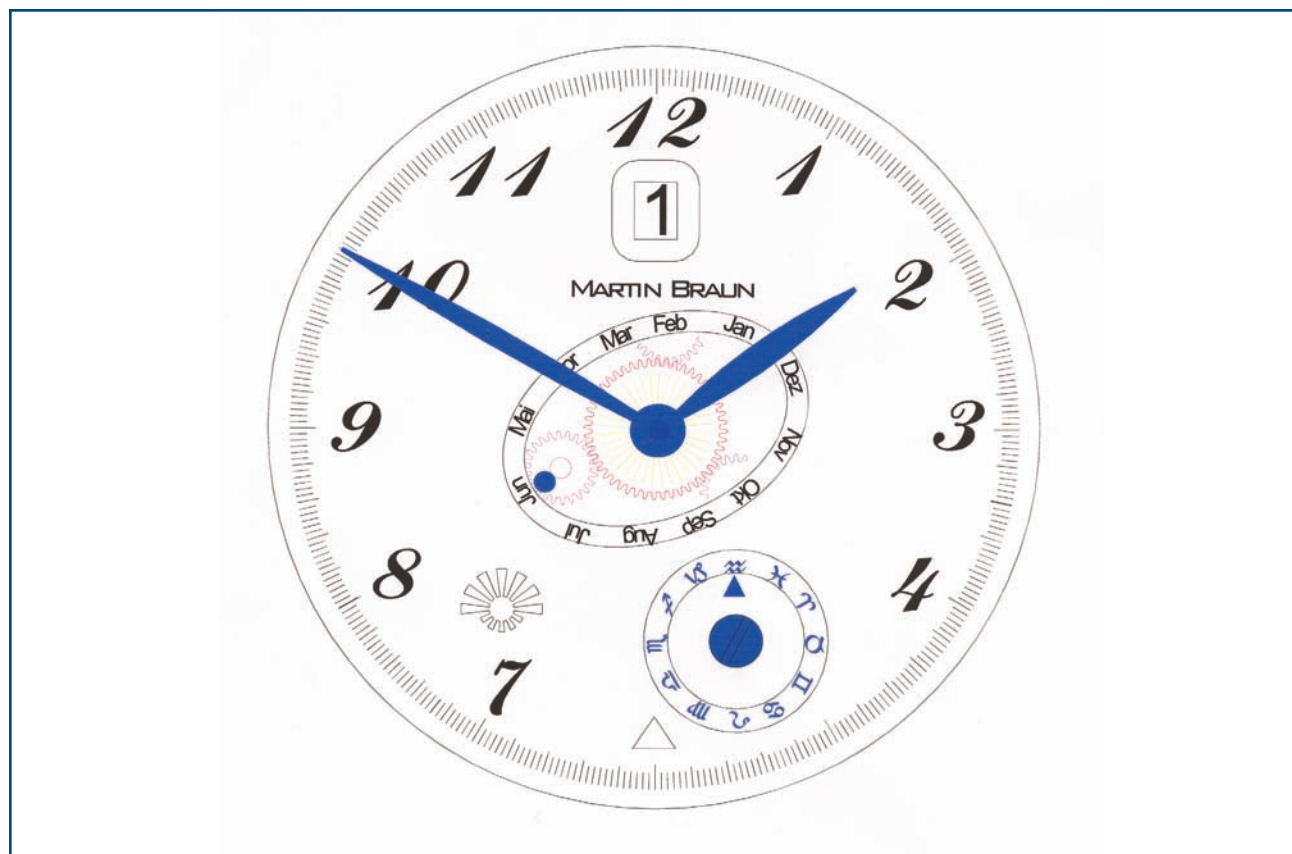
The EOS Royal Rose Gold watch features a stunning hand-guilloché dial and a bezel set with diamonds.

Left: The company reached an even wider audience in the summer of 2003 when Jim Carrey wore a Martin Braun in the movie *Bruce Almighty*.

vealed workings. Adding power and distinction, Braun creates the watch in a multitude of stunning colors that deem it fashionable and alluring.

It is Braun's love of nature and natural science that have led him

to embody the astronomical and sun timing in his watches. By 2002, Martin Braun had unveiled the Boreas, an extension of the EOS, with two astronomical complications including an equation of time—



Martin Braun's new WPS watch offers a world positioning system of the earth as it orbits the sun. Only a diagram of the dial was available at press time, but it is scheduled to debut at BASELWORLD 2004.

indicator. The EOS and the Boreas are definitely the highlights of the Martin Braun collection to date. Both are made possible thanks to astronomical complications designed by Braun and deftly incorporated into the platinum, 18-karat rose gold or steel watches.

Additionally, throughout the past two years, Braun has awed collectors with his Korona and Koronamatik, as well as his Grande watch, which features an offset subseconds dial that is equipped with a trivois regulator for greater accuracy. Other timepieces include the Grande Chrono, the unique skeletonized La Belle, La Sonnerie II, the Classic Collection and a host

of other intriguing watches.

In each of the complications Martin Braun regularly produces, creativity and uniqueness reign. Says Braun, "I have enough ideas and conviction to introduce a new complication year after year, so I am positioning the brand as a *manufacture* of outstanding, exclusive complexities."

Indeed, it is the newest timepieces that will have collectors clamoring this year. In 2004, this genius unveils a bold yet elegant Bigdate with GMT (as Martin Braun will never forsake its sophisticated, classic timepiece collections), and its fourth incredible watchmaking feat, the WPS (World Positioning System).

The concept of the World Positioning System watch is to indicate to the wearer—and his astute colleagues—the positioning of the Earth at the current time and date as it relates to the sun. The challenge herein was to create a mechanism capable of depicting the elliptical orbit of the Earth around the sun without making it too simple.

Braun's solution was to build a "planet gear" via a combination of wheels. With a specified number of teeth and the right number of rotations, the planet gear will replicate the oval shape of the Earth's orbit. To accomplish the planet gear, Braun built one wheel in the center to symbolize the sun (with a gold sun



Martin Braun loves to introduce color to the mix, as with this EOS with a Prussian blue dial and the EOS with canary yellow dial, below left.

depicted on it), and then added a plate with three small planet wheels. On one of the wheels a blue sapphire cabochon has been added to symbolize the Earth. The inner wheel turns once a year and the plate with the three small wheels turns once a year to achieve an accurate oval cycloid curve. The watch is further enhanced with a small disk and a zodiac indicator.

The dial of this exquisite watch is as sophisticated as the movement. In the center is the elliptically shaped month indicator, the center of which is crafted of transparent sapphire crystal to view the sun and planet gears.

The Koronamatik watch is nicknamed "the glowing one" by Martin Braun, as it features a two-tiered dial, with LumiNova treatments on both.



At 5 o'clock on the dial, Martin Braun has positioned a circular zodiac indicator, whose disk and arrow pointer make their way monthly around the zodiac—for one complete turn annually. The zodiac indications can be modified in appearance to suit different hemispheres but must follow a periodical twelve-month process. Easy adjustment of the zodiac sign is accomplished using the corrector pusher at 4 o'clock. The impressive watch is a marvel to look at and is properly embellished with a coin-edged 42mm case.

In a more classical venue, Martin Braun also unveils the new Bigdate watch with GMT time. Both the GMT time and the date can be easily set via the crown. The launch of this watch ushers in three different dial variations, including a white enamel dial with blued steel indexes and hands. This dial is available in vintage enamel style and therefore took many steps to complete.

Says Braun of this dial, "I was inspired by the style of old dials and how they reflect and play with the light. I added the blued indexes to create a totally different look—comparing the historic with the new."

In addition to the white enameled dial, Martin Braun offers specially developed and designed hand-guilloched dials. A challenge to create, the guilloche dial designs, details and colors were still under wrap at press time. There is also a hand-guilloched silver dial that has been treated in a special chemical process that makes it a satin black. The indexes are rose gold, offering lustrous, rich appeal.



Above: The La Belle Rose Gold watch houses a 17-jeweled manual-wind mechanical movement that has been finely etched and engraved for intricate skeleton design.

Below: The EOS Square Stainless Steel watch is an evolution of the EOS that features a 42-hour power reserve and offers a register that displays the local times of sunrise and sunset (indicated by the striking crossed hands at the bottom of the dial).

The Bigdate with GMT watch models all feature a 39mm 18-karat rose-gold case and a double-sided antireflective sapphire crystal so glare does not interfere with the beauty of the dials. The caseback is fitted with a sapphire crystal for viewing of the movement. Gold screws and the coin-edged case on a genuine alligator strap with a gold buckle complete the look.

All Martin Braun's extraordinary timepieces are created in Straubenhardt, in Germany's Black Forest, according to Braun's very stringent controls and guidelines. ☺



EVEREST

A PINNACLE OF ACHIEVEMENT FOR ROLEX



BY JOHN E. BROZEK

Man has always had a fascination with conquering the unknown, from the murky waters of the abyss, to the vastness of space. Then, in 1852, the ultimate new frontier was discovered, when Peak XV was declared the highest point on Earth, by the Great Trigonometrical Survey of India. In 1865, the peak was officially renamed in honor of Sir George Everest, while in Nepal it is known as Sagarmatha, and in Tibet they call it Chomolungma.

The first attempt to reach the summit was made in 1921, subsequently followed by eleven more failed attempts over the next three decades. Success was finally achieved on May 29, 1953: At 11:30 a.m., Edmund Hillary and Sherpa Tenzing Norgay, two members of the British Himalayas expedition, led by Col. John Hunt, reached the summit, at 29,035 feet. In doing so, they secured their place in history as the first to reach the “top of the world”—a feat some believed might never be accomplished.

While at the summit, Tenzing assumed a now-famous victory pose



PEOPLE DO NOT DECIDE TO BECOME EXTRAORDINARY.
THEY DECIDE TO ACCOMPLISH
EXTRAORDINARY THINGS.

On May 29, 1953 at 11:30 a.m., Sir Edmund Hillary and Sherpa Tenzing Norgay became the first men to stand on the summit of Mt. Everest. But the top of the mountain was just the beginning of Sir Edmund's journey. Fifty years later, his perpetual pursuit of things once imagined has resulted in the construction of 27 schools, two hospitals, medical clinics, bridges and freshwater pipelines for the people of Nepal. He may have left his footprint on a mountain, but he put his indelible imprint on the world. Proving once again that some people are just destined to rise to the top.




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with his ice axe held high, bearing the flags of Nepal, Great Britain, the United Nations and India, as Hillary took the series of historic photos. Then, after taking a few moments to let the enormity of their accomplishment sink in, the two brave climbers headed back down the mountain, via the South Col route—a feat that took decades to achieve was over, literally, in a matter of minutes. While making their descent, they were met by fellow climber George Lowe where Hillary simply stated, “Well, George, we knocked the bastard off!”

Now, over fifty years later, some 1,200 climbers have reached the summit, many of who did so in their very footsteps—literally. A treacherous 12-meter chimney on the Southwest Face—some 259 feet from the summit—is actually named the *Hillary Step* after Edmund chopped each step from the ice upon their final ascent. Thus, they had, in deed, left their mark on the mountain.

George Mallory, a member of the 1921 expedition, lost his life on the mountain in 1924. His body was discovered seventy-five years later, reminding us of how lethal this mountain can really be. When Mallory was asked why he wanted to climb Everest, he replied, “Because it’s there.” Many brave climbers after him have shared his philosophy and enthusiasm, but unfortunately some of them also shared a similar fate.

Reinhold Messner, the first man to reach the summit without oxygen (1978), and two years later, the first to complete a solo summit, said it best: “Mountains are not fair or unfair, they are just dangerous.” Truer words have rarely been spo-

Reinhold Messner and his Rolex enjoying the fresh air at 8,125 metres.

Ask any climber his nomination for the greatest living mountaineer in the world, and almost inevitably he will answer “Reinhold Messner”.

Not simply because he is the only climber ever to have conquered six mountains of 8,000 m or more, but also because of his methods.

Messner feels that the ever increasing sophistication of climbing equipment has reduced previously difficult and challenging climbs to mere technical exercises. He sums up his attitude in three words:

“By fair means” he says “I want to solve a mountaineering problem in the mountains, not in the sporting goods store”.

And his achievements have left the mountaineering fraternity shaking their heads in disbelief.

In 1970, Messner participated in the expedition to climb Nanga Parbat (8,125 m). It was his first mountain over 8,000 m.

In 1975, Messner and the Austrian Peter Habeler conquer Hidden Peak (8,063 m). The



smallest expedition ever to climb successfully to this height in the Himalayas.

In 1978 the “impossible” ascent of Everest (8,848 m). “Impossible” because, as on all Messner’s climbs, he and Habeler reach the summit without the aid of oxygen.

Three months later, Messner returns to Nanga Parbat (8,125 m) alone, and successfully climbs to the summit, again without the use of oxygen.

But some pieces of equipment even Reinhold Messner cannot do without. And one of them is his Rolex Oysterquartz.

“To be on the mountain without an accurate completely reliable watch would be madness” says Messner “and while some would tell you that that is what I am...” he smiles “I can assure you I would not dream of climbing without my Rolex. It’s the best there is”.

Which proves that at 8,125 m, at 40 degrees below zero, and even without oxygen Reinhold Messner and his Rolex both function perfectly.


ROLEX
of Geneva



The Rolex Oysterquartz Datejust. Available in combination gold and stainless steel, or stainless steel, with matching bracelet.

ken. Mountains like Everest demand your respect, and with anything over 7,600 meters considered the Death Zone, there are countless dangers facing a climber at any moment. Thus, these brave explorers bet

their very lives on the performance and accuracy of their climbing gear. One such piece of equipment was the Rolex Oyster Perpetual Chronometer used by many of the expedition members to synchronize

their ascent and to measure oxygen use—a fact celebrated in numerous Rolex advertisements.

However, this has also been a source of controversy over the years, with many asking the question, “Which Rolex did they wear?” While it was originally believed that Rolex equipped the expedition with prototypes of the soon to be released Explorer, it is more likely that Rolex simply named its “new” creation in honor of these brave men.

In fact, the Rolex worn by Tenzing to the summit wasn’t an Explorer at all, but rather a stainless steel Bubbleback on a simple leather strap given to him by his longtime friend and fellow climber Raymond Lambert and currently on display in Geneva at Rolex headquarters.

Hillary, on the other hand (no pun intended), apparently wore a watch from the English company Smiths (A.409 15 jewels 28mm), which he endorsed in a series of brief advertisements, as follows: “I carried your watch to the summit. It worked perfectly.” It is important to note that Hillary also wrote endorsements for Rolex after the 1952 expedition, including the following: “Its accuracy is all one could desire and it has run continuously without winding ever since I put it on some nine months ago. ... I count your watch amongst my most treasured possessions.”

It’s worth mentioning that some members of the 1953 expedition were pictured wearing two watches—one on each wrist. With that being said, it is possible that

come to look upon Rolex Oysters as an important part of high climbing equipment.”

While Rolex continues to celebrate the Explorer with the conquering of Mt. Everest, it appears that many seasoned climbers (including Reinhold Messner) have come to prefer the Oysterquartz—a watch that has recently been omitted from the Rolex catalog.

To celebrate the fiftieth anniversary, their sons Peter Hillary and Jamling Norgay returned to Everest. Norgay supported the expedition from base camp (at 17,600 feet), vowing not to return to the summit after his ascent in 1996, while Peter made the tribute climb to the summit where he made an emotional phone call to his father.

Hillary also wore a Rolex on the expedition, but wore the Smiths during the summit leg of the climb. Others believe he may have worn both to the summit or that he possibly wore a Rolex while he simply “carried” the Smiths in his pocket. Whatever the case, it has remained a mystery to this day, and it is not likely that we will ever know for certain.

Other endorsements after the expedition included the following by Col. John Hunt: “They performed splendidly, and we have indeed

Since 1953, Rolex has perpetually maintained its commitment to the Everest expeditions, including the “Geneva—Everest 1952–2002” expedition, for which Rolex was the principal sponsor, and again equipped expedition members with Rolex Chronometers. In a world of uncertainty, there’s one thing you can count on: As long as man is willing to brave the unknown, a Rolex will likely be right there on his wrist. ☺

John E. Brozek, collector, appraiser and authenticator of Rolex watches, is the author of The Rolex Report, An Unauthorized Reference Book for the Rolex Enthusiast. He resides in St. Petersburg, Florida, where he lectures watch clubs and organizations on the identification of authentic and counterfeit Rolex watches and parts. Visit his web site, at www.infoquest-publishing.com.

EVEREST * 1953

Below: A selection of the fine range of Smiths de Luxe 15-jewel Lever Watches. Smiths A.409, as found at base in the watch on which the British Everest Expedition relied. Other models from £7.10.0.

On top of the world!

"I carried your watch to the summit. It worked perfectly!"
SIR EDMUND HILLARY

"We are more than pleased with the performance of our watches!"
COLONEL SIR JOHN HUNT

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A.343
17 jewels. Full half Leprosia. Arabic figures. Centre seconds hand. £11.0.0.

A.409
15 jewels. 28mm. dial. Laminated glass. £10.0.0.

Anyone can own one of the dependable Smiths de Luxe 15-jewel lever watches which were the official selection of the gallant Everest team. Obtainable from high class Jewellers everywhere. All Smiths de Luxe watches are unconditionally guaranteed for 12 months.

EASY TIMER

International Watch gets up close and personal with watch connoisseur Peter Fonda

BY MEGAN LIVOLSI



He's been known to wear three watches simultaneously and has even gone head to head with the IRS over his horological passion. *International Watch* recently had a chance to sit down and chat with Mr. Fonda about his love for watches and what it's like to be on the board of The Swatch Group.

You are one of today's most passionate celebrity watch collectors. How did you become interested in watches?

When I was very young, I spent a lot of time in my father's dressing rooms. He had all different kinds of watches and clocks, but there was one particular Ulysse Nardin wristwatch that really piqued my interest. It had moon phase, day, date and month indicators with hidden pushers and its sides were totally smooth. My

father bought the watch in November of 1947, the same year it was built.

When I look back, I realize that this one Ulysse Nardin watch really sparked my passion for fine timepieces. I still have the watch today.

What, in particular, is it about watches that intrigues you?

As a young boy, I became fascinated with the internal mechanisms of the large Cartier clocks that were in my house. Over the years, I've really gotten into the inner mechanics of a watch. In the end, that's how I grade it. To me, it's all got to do with how well the mechanisms work.

I'm mostly interested in mechanical watches. The expert craftsmanship, the meticulous attention to detail and the fact that they are machined so well ... that's what

really intrigues me.

The best mechanical watches are machined with the utmost precision—they will always end up with the minute hand striking the 12 spot at the same time the second hand reaches the 60-second mark.

Speaking of precision brings to mind a very funny story. Back in the '70s, I got a call from my business manager telling me to come down to Los Angeles right away for an important meeting we had to have with the IRS. I went down there and when I walked in, my manager and three top attorneys were sitting on the couch giving me very stern looks.

"This is a very serious matter," my manager said. "We have a lot of explaining to do. The IRS is very concerned with your patterns of behavior. Apparently, you are making

some very strange phone calls to one particular phone number. You call in clumps for days at a time and then you go for weeks without making any calls.”

The IRS actually thought I was dealing drugs using some kind of code!

So I told them to put the phone on speaker and dial the number. After a few rings, a recording picked up on the other end: “click, click, click ... at the tone, the time will be ...”.

You see, at the end of each month I call the phone number for the Atomic Clock in Utah in order to get the most accurate, down-to-the-second time possible. That is how I ensure that my watches always have the precise time. You should never hack one watch off another because there may be variances.

How many watches do you own?

Watches are one of the few things men can wear as jewelry so I have fun with them. How many watches do I own? Let’s just say I own a few.

I have everything from an \$85 Golden Jelly Ski ‘n’ Swatch (which I absolutely adore) to a \$69,000 mechanical masterpiece. Among my collection, I have Rolex, Omega, Ulysse Nardin (my favorite of which is the Galileo Galilei Astrolabium), Montana Watch Company, Swatch, Chronoswiss and Casio.

You have appeared in ads for the Montana Watch Company. How did you discover them?

In 1998, Jeff Nashan and Craig Berghold of the Montana Watch Company invited me up to the unveiling of their first watch, the 1915.

They presented me with one of their vintage-styled mechanical watches and I immediately became a big fan. Today, I have a number of Montana timepieces.

You’ve starred in a number of films over the years. Have watches played a role in your movie career?

I took a watch off and threw it away in a scene in *Easy Rider*, and in *Ulee’s Gold* I wore a military-style Timex watch. If one of my characters has to wear a watch, I try to find one that is just right for that character.

What is it like to be a board member of The Swatch Group, one of the powerhouses of the horological industry?

At The Swatch Group, we do much more than build watches. Nick Sr.’s mind is so fast—he has this uncanny ability to multitask very quickly. This man is a true genius. I mean he literally saved the entire Swiss watch industry with a plastic watch.

The whole Hayek family and I are friends and have been for many years. When Nick Sr. and I are going to meet, we have a little friendly competition. We both put on as many watches as we can—I guess it has become a matter of showmanship.

Swatch was the Official Timekeeper of the 1996 Summer Olympics in Atlanta. My wife and I came as guests of the Hayek family. She wore a dress with a belt that had Swatches all the way around it—so she beat us both! ☺

Peter Fonda (center) with Jeff Nashan (left) and David Berghold of the Montana Watch Company.



GIRARD-PERREGAUX

GRADUATES TO NEW HEIGHTS

The new Laureato Evo³

BY MEGAN LIVOLSI

Throughout its illustrious 200-year history, Girard-Perregaux has unveiled a number of innovative timepieces that have earned the *manufacture* a truly distinguished position among the watchmaking industry's most elite brands. Many of these classic creations have characterized the company's technical and design expertise, from the famed Tourbillon with Three Gold Bridges and the Opera One minute repeater to the Vintage 1945 models and the GP pour Ferrari collection. Girard-Perregaux's historic Laureato takes a special place among these creations.

The Beginning of a Legend

In the early 1970s when quartz technology was at its peak, Girard-Perregaux introduced a revolutionary quartz movement with a frequency of 32,768 bph, which soon became the international standard for all quartz movement manufacturers around the world.

To house this remarkable technological achievement, the company designed a sporty stainless steel case with an integrated satin-finished bracelet that contrasted



elegantly with the raised polished octagonal bezel. Unveiled in 1975, the Laureato was an immediate success. (The name Laureato, which means “the graduate” in Italian, was inspired by Mike Nichols’ famous film *The Graduate* (1967), starring Dustin Hoffman, Anne Bancroft and Katharine Ross.)

In 1984, the popular Laureato experienced its first transformation,

when a polished inlay was added to the metal bracelet to match the bezel. At the same time, the Laureato line was enhanced with Girard-Perregaux’s famous complicated equation movements with astronomical indications.

The Laureato’s second change was made in 1995. While its basic features were preserved, the watch was completely rebuilt and fitted





with an automatic GP 3000 mechanical movement. Its dimensions were enlarged, the bezel widened and the bracelet links took on an *H* shape.

In 1996, the Laureato chronograph version was chosen for the company's famous Olimpico Collection. Two years later the same Laureato model was equipped with the celebrated and highly complicated tourbillon movement.

A Worthy Successor

Adding yet another chapter to the history of the Laureato legend, Girard-Perregaux recently introduced the latest Laureato edition. A worthy successor to its distinguished predecessors, the new Laureato Evo³ blends technical superiority with sporty design. The sleek 44-mm stainless steel case retains the classic theme of an octagonal bezel and perfectly integrated bracelet, although the lines have been noticeably softened.

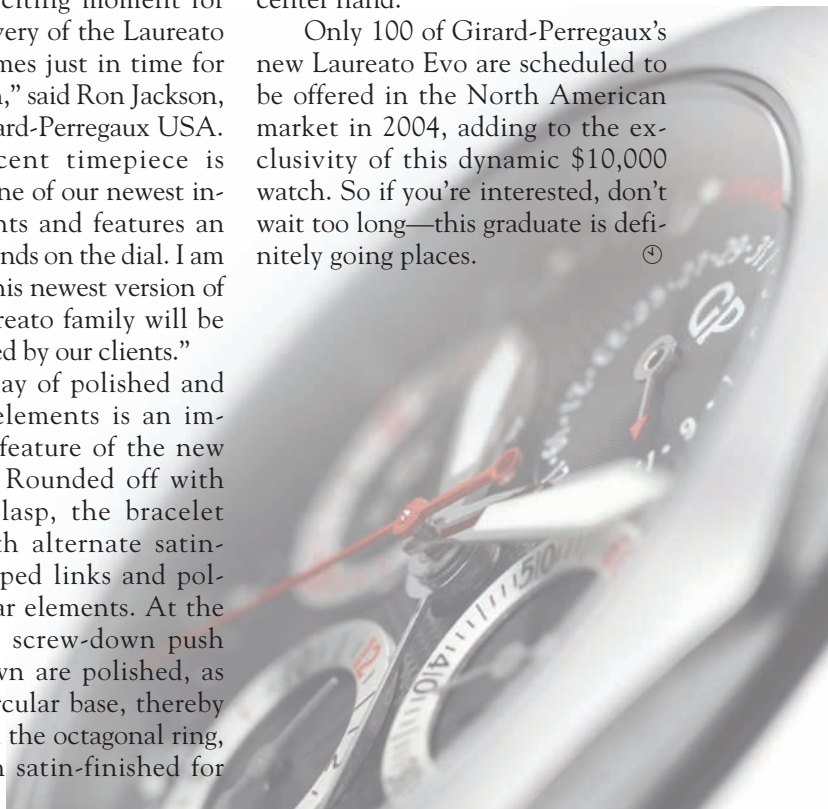
"It is an exciting moment for us to begin delivery of the Laureato Evo³, which comes just in time for the spring season," said Ron Jackson, president of Girard-Perregaux USA. "This magnificent timepiece is equipped with one of our newest in-house movements and features an amazing eight hands on the dial. I am confident that this newest version of our famous Laureato family will be very well-received by our clients."

The interplay of polished and satin-finished elements is an important design feature of the new Laureato Evo³. Rounded off with a new safety clasp, the bracelet is designed with alternate satin-finished, *H*-shaped links and polished rectangular elements. At the same time, the screw-down push pieces and crown are polished, as is the bezel's circular base, thereby contrasting with the octagonal ring, which has been satin-finished for the first time.

Visible through the screw-down exhibition caseback is the finely decorated, 52-jewel GP 033C0-A0VAA automatic chronograph movement, which boasts a frequency of 28,800 bph and a 46-hour power reserve.

An antireflective sapphire crystal protects the easy-to-read black dial, which features luminous hands and indexes for high legibility in low-light situations. An analog date indicator appears at 12 o'clock while a running seconds subdial is placed at 3, a 12-hour counter is at 6 and a 24-hour counter finds its home at 9 o'clock. The minutes for the chronograph are indicated by a white, red-tipped center hand and the chronograph seconds by a red center hand.

Only 100 of Girard-Perregaux's new Laureato Evo are scheduled to be offered in the North American market in 2004, adding to the exclusivity of this dynamic \$10,000 watch. So if you're interested, don't wait too long—this graduate is definitely going places. ☺



RICHARD MILLE'S NEWEST CREATIONS FOR 2004

BY THEODORE DIEHL

Richard Mille seems to be constantly in motion. Every time one meets him, a discussion immediately ensues about the current projects being finished, and in the same breath a discussion thread starts about several forthcoming projects. This intense energy and vision about his creations is tangible and infectious for all those around him and seems to stem from the enjoyment he experiences doing what he passionately loves.

After many years working within the watch and jewelry industry, with brands from all levels and market segments, he has spent the last few years doing exactly what he wants: That is to say, realizing his dream of what he thinks a wristwatch should represent.

Doing such a thing requires vision, creativity, business savvy and stubbornness second to none. Available in limited quantities and only from a few key distribution points, he has

already collected a diehard following around the world, comprising the most discerning collectors and enthusiasts imaginable. This is perhaps because of the high-end technology he applies to all his watches, as well as their no-nonsense “what you see is what you get” aesthetics. You either love his creations or you don't. But if you love them, they become your absolute obsession.

Another key to his success is his desire to connect with other companies that share and understand his vision and ideals; those that are willing to take chances and equally share in the glory as well. Mille works together with Montre Valgine, which is responsible for the entire finished product, and is connected with Audemars Piguet (Renaud & Papi) in Le Locle. As a result, the design and manufacture of the Richard Mille movements is a public affair. In fact, Audemars Piguet is more than pleased to work with him, giving him the unofficial title of “ice-breaker,” creating a pathway through the tough, frozen and conventional Swiss watchmaking territory that others can follow, after the pioneering is done. This dovetails exactly into the goals of Audemars Piguet, a group of very young, talented engineers and developers whose greatest



desire is to be positioned at the vanguard of the watch industry, whether it be in design or the machining of parts. The accuracy and tolerances of Audemars Piguet's equipment are the highest existing in all of watchmaking Switzerland and are applied to timekeeping in every possible way.

RM 006

This watch is a typical example of the point mentioned above. Richard's concept for the RM 006 was to create a highly limited wrist-watch for his clientele while at the same time gaining deeper insights into possible new materials and how to work with them. Formula 1 racing, with its use and application of technology, new materials and forms, has always been an inspiration for Richard Mille's creations. So it is no wonder that the search for inspiration started there and led to the associated aerospace industry. In this case the choice fell on ultra-light yet high strength carbon fiber for use as watch parts. This tough material is also used in the brake linings of automobiles, airplanes and other high-speed machines. Since so much existing and detailed information was already available about its properties, it was surprising that the first results were disappointing, as even this exceptional material was not up to the rigorous standards necessary for fine watchmaking.

Extended research through specialized material property databases and search engines finally led the gents at Audemars Piguet to high-density carbon fiber imported from the United States and originally



developed for all kinds of aerospace applications: solid enough to cut and mill and extremely stable in regards to expansion and contraction under the stress of thermal variation. This is an important issue for car and airplane brakes but, strangely enough, also for wristwatches. Imagine that in a wristwatch having very high and fine tolerances—expansion, contraction or a lack of rigidity in certain areas could easily prevent teeth from engaging with one another, timekeeping problems and a dozen other irresolvable situations.

To put this material to the supreme test, the choice was made to make the platine, the part of the watch everything is mounted on and therefore where stability is most critical, out of this material. Therefore, this baseplate, the very basis of the watch's movement, must be incredibly stable. As if this weren't enough of a test, the plan was made to build a tourbillon on this carbon baseplate, adding to the project the difficulties inherent in the high tolerances and finishing requirements thereof. It all looks so simple, but what we have here is a real tour de force experiment where fine Swiss watchmaking meets the space age.

The high-density carbon used differs from the standard type in that it is composed of nanofiber threads compressed together with a special polymer under a temperature of 2,400 degrees Celsius and 750 bars, ensuring a light, tight and rigid molecular structure. Nonetheless, cutting and drilling a material made up of "threads" is no easy task. On the one hand, traditional tools can be used for basic roughing out, but

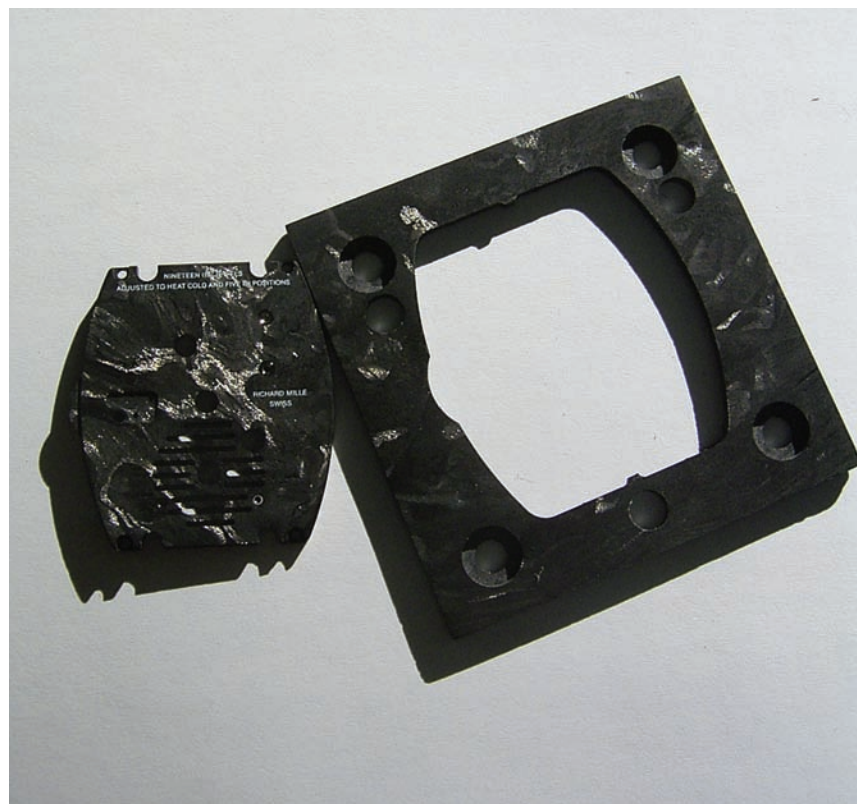
smaller holes, drilling and machining on the different levels of the baseplate requires special cutting bits able to slice the nanofibers cleanly. Not to mention creating perfect interior threads for microscopic metal screws in a material composed of nanothreads.

As was to be expected, all twenty pieces were sold-out even before they left the drawing board. Much higher priced than the regular RM 002 tourbillon, it costs more per gram of watch than any other in the world; the titanium cased RM 006 watch, excluding strap, weighs in at an unbelievable 42 grams!

RM 005

After all this heady news, the announcement of the RM 005 might be anticlimactic, but for the rest of us mortals who live in the thicker air lower down the mountain, Richard's first "non-tourbillon" has been long awaited.

As with all Richard Mille wristwatches, great attention to every detail is ensured, in this case starting with the winding rotor with variable geometry, which is unusual to say the least. The arms of the rotor are in grade 2 titanium with adjustable ribs made of 18-karat white gold; the weight segment along the outer edge



The platine, or baseplate, is made of high-density carbon.

is a special tungsten/cobalt alloy. The rotor's ball bearings are from a special, highly durable ceramic material and the rotor moves counter-clockwise in one direction.

The abovementioned white gold V-shaped ribs can be adjusted to each wearer's situation before leaving the workshop. This sounds a bit strange at first, but in essence is really quite logical and well thought-out. Those sports people who regularly wear mechanical wristwatches often damage the movement by excessively overwinding it, which can damage the spring as well as the interior of the winding barrel. In the RM 005, setting the white gold "wings" to their innermost position nearest the rotor's axis will

displace weight from the outer edge toward the middle, making the rotor turn less aggressively during swinging motions of the arm or torso. Conversely, setting them outward will increase weight distribution toward the rotor's outer edge, making the rotor spin more easily in reaction to even the slightest movement. For people who sit much of the day for their work or lead rather sedentary lifestyles (some automatics never get wound up to the proper limits of reserve power for accurate time-keeping), this is a neat technical solution to that predicament as well as for the other, sporty extreme. The winding spring and winding barrel have also been optimized to offer a healthy 55-hour power reserve.



The PVD-treated titanium base-plate, with the combined bridges and balance cock also of titanium, ensure excellent rigidity and accurate surface flatness. A casing ring is no longer necessary; the movement is seated in the tripartite case on chassis mounting rubbers (ISO SW) fixed with four titanium screws, thereby ensuring additional isolation from external shock and vibration. Special attention to the elimination of problems caused by external shock is accentuated by the balance wheel possessing Incabloc protection on both dial and movement side. In its entirety, this 31-jewel movement, beating at 4 Hz, was specially manufactured to Richard's exacting standards by Vaucher and is exceptionally finished in every way, offering superior timekeeping properties as well as being a pleasure to behold. ☺



**"Traveling is the fuel of creativity."
— Kuhnle brothers' motto**



Scalfaro Comes to America

The young luxury brand opens a U.S. subsidiary

BY MEGAN LIVOLSI

Born from a vision of creating timepieces that “embody the true essence of contemporary luxury,” the Scalfaro brand has gained a distinguished reputation across the globe for its line of high-quality, Swiss-made timepieces. Available through an elite distribution network of exclusive retailers and fine jewelry stores to guarantee uncompromising customer service and satisfaction, the Scalfaro collection has achieved remarkable success since its launch just two years ago. In response to this overwhelming success, Scalfaro recently expanded its horizons across the Atlantic with the establishment of Scalfaro USA, the brand’s exclusive North American distributor, earlier this year.

“In just a short period of time, the Scalfaro collection has done remarkably well on the North American market,” said Bob Balekian of Scalfaro USA. “The watches are big, they’re heavy and they’re ultra-masculine. It’s no wonder every man loves them.”



Dominik and Alexander Kuhnle, founders of Scalfaro.

A Personal Touch

Scalfaro (which means “rising light-house” in Italian) was founded in 2002 by brothers Alexander and Dominik Kuhnle, avid watch collectors who brought with them a longstanding family tradition of designing and manufacturing fine jewelry. Together the dynamic duo

monitor every aspect of production, from the very first design sketches to creation, distribution and even after-sales service, thus ensuring a product of exceptional quality. “We take care of every detail, no matter how small,” the brothers explain, “from the first sketches, the movements and the case construction to

the surface finishing, the dials, the special screws and the shape of the watch hands.”

In recent years, Alexander and Dominik have traveled all over the world to find inspiration for their truly original, limited-edition timepieces, which blend meticulous attention to detail with outstanding quality and sophisticated design.

“Traveling is the fuel of creativity” is the Kuhnle brothers’ motto. As a result, their timepieces reflect the refined tastes and lifestyles of today’s world.

The Mediterranean Riviera and the world of performance water sports serve as a constant source of inspiration for the development of Scalfaro timepieces. In fact, the distinctive shape of Scalfaro watches originates from the state-of-the-art design of modern catamarans, which feature an innovative multihull construction.

Combining unconventional design with technical complexity and ultimate functionality, all Scalfaro timepieces represent a successful marriage of traditional Swiss craftsmanship and the latest high-tech manufacturing techniques.

Every Scalfaro watch is distinguished by its original multifaceted case construction, a harmonious blend of design, material, weight and wearer comfort. Meticulously crafted from alternating polished and satin-finished stainless steel and equipped with antireflective sapphire crystals front and back, the bold, oversized case is water-resistant to 100 meters, thanks to the company’s exclusive Scalfascrews on the bezel and caseback as well as the screw-down



crown. “We at Scalfaro put special attention on the creation and development of our highly complex watch cases,” explain Alexander and Dominik.

True to the philosophy of time-honored mechanical watchmaking, Scalfaro’s master watchmakers use only high-quality Swiss ETA-based mechanical movements to power the brand’s masterpieces. In fact, all Scalfaro movements are finely decorated by hand with Côtes de Genève and circular-graining.

“We fit only the finest quality Swiss automatic movements into our timepieces,” the brothers explain. “True to our philosophy of mechanical timekeeping, the Scalfaro lines offer unconventional complications and exclusive mechanisms.”

To provide a number of options for all styles and tastes, Scalfaro offers a variety of bracelet options for its timepieces, ranging from crocodile

skin and smooth calfskin to black rubber, cordovan leather and stainless steel.

Scalfaro’s elegant guilloché dials are offered in either black, silver or two-tone and feature luminous hands and indexes for easy readability at a glance.

Cap Ferrat

The elegant yachts and powerboats of the Mediterranean were the inspiration for Scalfaro’s Cap Ferrat collection, housed in a sporty stainless steel cushion-shaped case.

Designed for the most demanding lifestyles, the stylish Cap Ferrat Small Second is equipped with the 30-jewel ADK 147 automatic movement with a frequency of 28,800 bph and a 44-hour power reserve. In addition to the hours and minutes, the easy-to-read dial displays a small seconds hand and a date window at 6 o’clock.

Powered by the 21-jewel ADK 148 automatic movement with a frequency of 28,800 bph and a 46-hour power reserve, the Cap Ferrat Second Time Zone features a date window at 6 o'clock while a curved aperture at 12 o'clock reveals the rotating 24-hour disc for the second time zone.

The last but not least model of the Cap Ferrat collection is the sporty Cap Ferrat Chronograph Tricompax, which houses a 28-jewel ADK 150 automatic movement with a frequency of 28,800 bph and a 45-hour power reserve. Three chronograph counters are positioned around the dial and a date window appears at 6 o'clock.

Cap Ferrat Grand Tour

Representing the perfect harmony between sport and luxury, the cushion-shaped Cap Ferrat Grand Tour collection is distinguished by a domed sapphire crystal that protects the bidirectionally rotating bezel operated by a crown at 10 o'clock.

Equipped with the ADK 147 automatic movement, the Cap Ferrat Grand Tour Small Second displays



a small seconds hand and date window at 6 o'clock in addition to the hours and minutes.

The ultra-functional Cap Ferrat Grand Tour Chronograph Bicompa features a 30-minute counter at 3 o'clock, a running seconds hand at 9 o'clock and a date window at 6 o'clock. The bold stainless steel case houses the 28-jewel ADK 149 automatic movement with a frequency of 28,800 bph and a 45-hour power reserve.

Powered by the ADK 150 automatic movement, the Cap Ferrat Grand Tour Chronograph Tricompa boasts three chronograph counters and a date window at 6 o'clock.

Finally, the Cap Ferrat Grand Tour Chronograph Big Date Flyback incorporates the complication of a big date for added functionality. Inside the stainless steel case you'll find the 28-jewel ADK 151 automatic movement with a frequency of 28,800 bph and a 45-hour power reserve. The dial displays three chronograph counters and an over-



sized date displayed in two windows at 12 o'clock.

Porto Cervo

One of the elite international traveler's legendary destinations of choice, Italy's Porto Cervo, was the inspiration behind the creation of Scalfaro's Porto Cervo collection, which blends discriminating taste

with technical mastery.

Like the Cap Ferrat Grand Tour, the stylish Porto Cervo is available in a variety of models, including the Small Second, the Second Time Zone, the Chronograph Bicompa, the Chronograph Tricompa and the Chronograph Big Date Flyback.

A Brand with a Vision

Scalfaro is only at the beginning of what promises to be an interesting and extremely successful journey. In just two short years, this young brand has achieved an enviable position on the international watch circuit, thanks in large part to the tireless efforts of its determined founders.

With an impressive collection of limited-edition, Swiss-made timepieces, an ever-expanding presence on the international market and an unyielding commitment to customer satisfaction, one thing is clear, the Scalfaro brand is here to stay.



AUDEMARS PIGUET

MAKES MOVES IN WOMEN'S WATCHES

BY ROBERTA NAAS

Long known for its creativity and ingenuity, the venerable *manufacture* of Audemars Piguet has been designing and building masterpieces for nearly 130 years. It has

complicated watches in the world and having worked with some of the most advanced high-tech materials, Audemars Piguet now devotes even greater attention to creating jeweled

ultimate statement of sophistication and beauty.

At once classic yet modern, the Ladies' Millenary line of time-only watches and chronographs is sure to scintillate the senses with its horizontal oval shape and colorful dials and straps. Truly precious accessories, Millenary watches deftly combine elegance and determination, beauty and bold function. The oval watchcase, inspired by Rome's famous Coliseum, with its ergonomic and harmonious shape is appealing in and of itself. However, combined with diamonds on the outside and magnificent mechanics on the inside, the Millenary is a dream come true for female watch connoisseurs.

The Millenary timepiece houses a self-winding Caliber 2225 with a 43-hour power reserve and a frequency of 28,800 bph. The oscillating weight is crafted of 21-karat gold and all parts are decorated by hand, with Côtes de Genève engraving on the bars and bridges. It is offered in eight variations in steel, including a version with a light-gray mirror-effect dial with bright blue numerals and cabochon-sapphire crown, and

works of art for women. While the brand has made jeweled watches since its inception and has offered such successful and coveted women's collections as the Promesse, Charleston and Carnegie, the newest focus offers chronograph watches that are superb mechanical movements.

Indeed, Audemars Piguet pulls out all the stops and offers beguiling, captivating timepieces for women.

Among the key women's timepieces are the creative and alluring Millenary and the luminous and romantic Jules Audemars Chronograph, each bedecked in different degrees of diamonds for the

consistently set standards of high horology in the industry and is respected for its visionary technical and design abilities.

Having created some of the most



Millenary



Millenary Chronograph



Millenary Chronograph with Millenary Time/Date model

a black-lacquered dial model with bright pink numerals and a pink sapphire crown.

Additionally, there is the Millenary Chronograph version, which

houses the self-winding Caliber 2226/2840 movement. With a 42-hour power reserve, this watch offers hours and minutes, small seconds and date display, as well as chrono-

graph functions. It is available with or without a diamond-set bezel that features 62 brilliant-cut diamonds weighing 1.18 carats. Prices for the Millenary watches range from \$5,800 to \$15,700 for the diamond-set chronographs.

Equally stunning is the ladies' Jules Audemars Chronograph. Characterized by its voluptuous round case and satin-brushed case sides, the timepiece is a statement of worldly beauty. The dial, offered in an array of feminine colors, including pink and white, features a globe design that exudes elegance and originality.

Named for Jules-Louis Audemars, one of the cofounders of the *manufacture* and the creator of many of its most complex movements, the ladies' Jules Audemars Chronograph embodies haute horlogerie at its finest. The distinctive chronograph is driven by the self-winding caliber 2226/2841 movement with a 42-hour power reserve. Its oscillating weight is crafted of 21-karat gold and boasts a frequency of 28,800 bph. The technically advanced movement offers two subdials. The watch is crafted in either 18-karat white or yellow gold and is adorned with varying degrees of diamonds on the case and bezel.

The Jules Audemar Chronograph's diamond-set bezel boasts 56 brilliant-cut diamonds weighing 1.22 carats. The diamond-set case and bezel model features 300 brilliants weighing 3.65 carats and shimmering with gusto. Each watch is offered with a color-coordinated crocodile strap. The 18-karat white gold watch features

a pink globe dial and pink strap, while the 18-karat yellow gold watch is bedecked with a white dial and strap. Both watches feature applied gold numerals, four diamond hour markers and an elegant

18-karat gold deployment clasp. Suggested retail prices range from \$22,400 to \$35,400.

Both the ladies' Jules Audemars Chronograph watches and the Millenary watches are sold with a

precious stones certificate. As with all the *manufacture's* timepieces, these astonishing beauties are hand-crafted and finished in Audemars Piguet's workshops to exacting standards of excellence. Ⓢ

Jules Audemars Chronograph





A Return to High Watchmaking

Jaeger-LeCoultre opens its august gates and freely exhibits the *manufacture* and its new products to a select few

BY ELIZABETH DOERR

Since its founding in 1833, Jaeger-LeCoultre has always been one of the most competent and technically innovative companies in the watch industry. Beginning with company founder Antoine LeCoultre, who established his own workshop, wisely registering the first patents for some of his movements and gear wheels when patenting became available in Switzerland in 1888. His son, Elie, soon brought all the crafts needed to complete a watch under one roof. These were trades previously practiced by lone craftsmen in their homes or barns (a true cottage industry). LeCoultre's company united them and formed a cohesive unit that was the base for the massive factory building that can be seen in Le Sentier today.

In those days, Switzerland was still measuring its micro technology

in lignes, but Antoine LeCoultre had a very exacting nature. He recognized rather early—and parallel to another great of the industry, Ferdinand Adolph Lange—that the metric system was far more precise. To this end, he developed his own instrument for measurement, the micrometer gauge, capable of measuring a micron, or one millionth of a meter, in 1844. The metric system soon asserted itself throughout the Helvetic manufacturing countryside, with LeCoultre's invention certainly aiding the cause.

Fathering the company's pioneering spirit, LeCoultre created the first crown-winding system in 1847, making key winding obsolete. Foreshadowing the company's love of flat movements, LeCoultre & Co., now under the tutelage of Antoine's three sons, created the world's flattest movement—a mere 1.38mm

high—in 1903, a world record that still stands. This achievement was only overshadowed by the one introduced by LeCoultre & Cie in 1929: Caliber 101, the world's smallest mechanical movement. Currently experiencing a renaissance in 2003's Riviera, this movement was also used in a Cartier timepiece worn by Queen Elizabeth at her inauguration. This hand-wound movement weighing only one scarce gram comprises 98 components!

Very important and technically demanding inventions included the Atmos clock in 1928 and the Reverso wristwatch model in 1931. These two introductions illustrate the marvelous staying power and lasting popularity of the models that Jaeger-LeCoultre presents to the market year after year. When Günter Blümlein took over the management



The Autotractor debuts in the new Master Hometime.

Page 76: The difference in building design between the original factory and its annexes is visible. This *manufacture* houses some 900 employees.

of the company in the late 1980s, one of the first tasks he embarked upon was to reduce the collection down to its best models, including those just mentioned, which have now been in continuous production for close to seventy five years!

All told, Jaeger-LeCoultre has amassed about 200 patents over the years, with two or three being added to that each year. This company doesn't rest on its laurels; it continues to innovate in the timeless tradition of its grandfathers, quietly, unostentatiously and in its own dignified way.

Even after the great success of the modern era, this company maintains its perch on the cutting edge, rededicating itself to presenting high watchmaking that is certainly different and, for some, a tick better than the rest. In order to achieve the tasks the company has set for

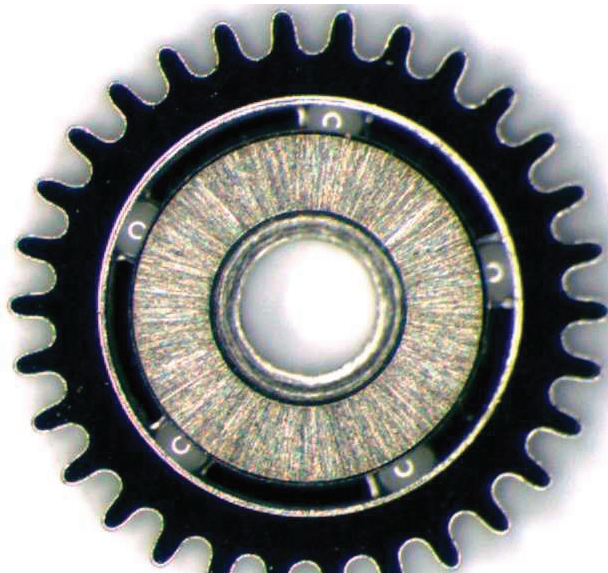
itself, Jaeger-LeCoultre has had to improve its already phenomenal depth in manufacturing, which is purported to hover around 90 percent. Employing about 900 people in Switzerland, the factory building, which has been annexed several times since the first stone was laid to provide room for the increasing amount of people and machines over the years, has recently been upgraded to accommodate the latest innovations.

Jaeger-LeCoultre is still one of the industry's best-kept secrets, even though it forms the pinnacle of Swiss watchmaking along with a handful of others. But unlike some of them, Jaeger-LeCoultre goes about its business quietly, unobtrusively and certainly not in a manic marketing-oriented manner. This company creates its masterpieces as it sees fit, not according to mar-

ket research but in the traditional manner Swiss masterpieces have always been constructed, with a great deal of talent and horological creativity. This becomes evident both in the rather secretive, though sprawling, factory building as well as in one of the season's new introductions, caliber 975, dubbed the Autotractor, truly a *manufacture* product of the finest sort.

Resulting from the teamwork so obvious within the *manufacture*, the Autotractor is the outcome of eight years of research and development. Extra reliable, precise and easy to repair, Caliber 975 kicks off a brand new family of movements at Jaeger-LeCoultre.

The reason for eight full years of research and development, Jean-Claude Meylan, in charge of movement development at the company, relates that each function was tested separately before finally being



This is a complete bearing from the Autotractor, including the ceramic balls that need no lubrication.



Constructeur Richard Rapin, designer of the Autotractor movement.

assembled into a full-blown movement. “Creating complications like perpetual calendars, tourbillons, minute repeaters and alarm functions is one thing. It’s much more difficult to make a simple movement that is really good.” The Autotractor was designed as a new base movement for generations to come, and many technical improvements were made in comparison to the company’s other base calibers, such as the automatic winding system.

Entrenched in tradition, Jaeger-LeCoultre has always incorporated bilaterally winding automatic systems into its self-winding movements. The long research period showed, however, that unilateral systems are factually more effective. So, for this reason, the Autotractor debuts Jaeger-LeCoultre’s first one-sided automatic winding device.

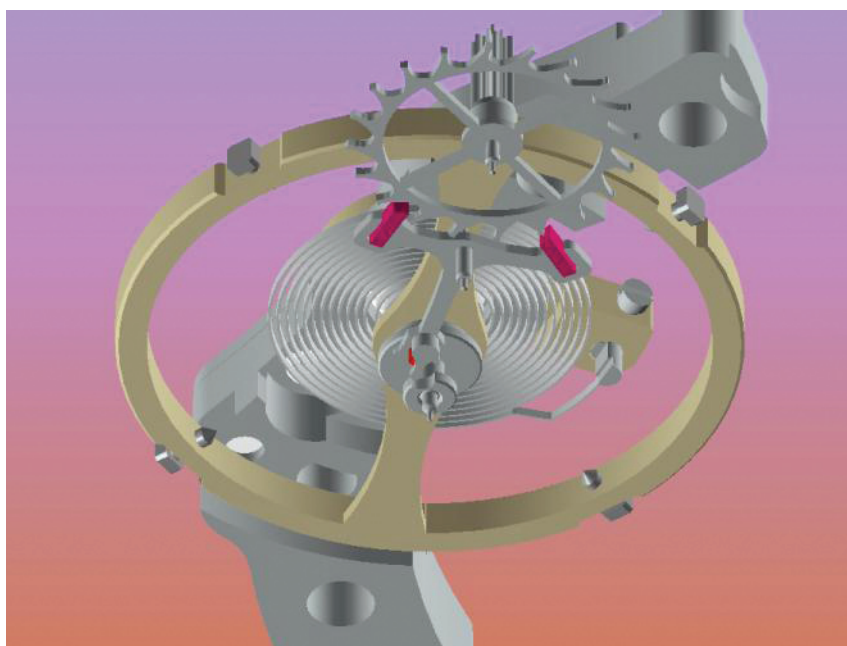
Singularly impressive on the Autotractor is its brand-new balance. A popular maxim in watchmaking containing more than a hint of truth states, “the bigger the balance, the better the stability.” The Autotractor’s creators literally took this to heart, coming up with a new balance to fit the larger overall dimensions of the movement. This concept was also extended to the more robust balance spring (produced jointly with fellow Richemont company A. Lange & Söhne) and larger mainspring. The balance is solid 14-karat gold and sandblasted for a warm finish visible through the transparent caseback. The balance is not regulated by a previously used system, although it is based on the premise of a screw balance.

The Autotractor’s “grand taille” balance contains four minuscule gold screws at each of the main compass points. They regulate the movement by being screwed or unscrewed, depending on whether the rate is fast or slow, but this is not done in a conventional trial-and-error way. The toolmakers at JLC have come up with a new system that could revolutionize the way mechanical watches are regulated: A special machine measures how much each screw needs to be turned to reach the optimal rate.

Watchmakers at the main factory use a video microscope system to make it easier on their eyes. For regulation outside the factory, the clever toolmakers have developed an extremely simple device, making the Autotractor certainly one of the world’s easiest watches to regulate

and time for watchmakers—anywhere in the world.

To top things off, Jaeger-LeCoultre’s innovative team has also come up with a way to weld the balance spring to its collet and stud using laser, creating another type of shock protection in the process. Accidental alterations to the regulation, perhaps coming from violent impact, are thus avoided. More stability within the oscillation system was also created with the advent of a brand-new component: the catcher. Catchers placed on each side of the cock hold the balance spring in place and give it an extra dose of shock protection. This does not take the place of a Kif shock protector, which is also placed in the movement but serves as an additional safeguard.



This illustration shows Caliber 975’s escapement with its “catchers,” designed to give it more stability.

In the hurried competition to be the first to come up with watch components that do not need lubrication, Jaeger-LeCoultre has gone a decisive step further. Working on this development with its supplier for many years already, it has now been deemed ready for use in the Autotractor: Caliber 975's ball bearings have been replaced by ceramic ball bearings in the coupling lever and rotor that do not need to be lubricated. Made of zirconium oxide, the premise of these minuscule balls is similar to that of synthetic rubies.

As if all these new elements were not enough, there is one more innovation evident here that should become standard in the industry: the SPYR shape of the gear train teeth. Called SPYR because of the combination of high-end companies that have collaborated on it, it optimizes torque transmission and reduces friction because less surface of each tooth engages another. The SPYR tooth shape—more rounded than cornered—has until now been used in quartz technology. Jaeger-LeCoultre is the first company to utilize this innovative improvement in a mechanical watch movement.

The Autotractor is a base movement for double-time zone watches and is debuting simultaneously in two new models, extending both the Master and the Master Compressor lines. The double hour wheel makes it possible for the movement to possess two integrated time zones. Another innovative detail is that the date can be changed in both directions, needing no added energy as it is connected to the

hour wheel, rotated by a Maltese cross on a pinion. The date might change somewhat slower than on other watches—it needs almost two hours as compared with the ninety minutes of more traditional systems—but taking the international dateline into consideration certainly compensates for this.

The Autotractor (30mm in diameter and 5.7mm in height) is premiering in both the Master Hometime and the Master Compressor Dualtime. A larger mainspring and spring barrel lend these new automatic dual time zone watches fifty full hours of power reserve. While the Master Hometime is more classical in its approach—the line's original 1950s appearance reinterpreted by head designer Janek Deleskiewicz in 1992—the Master Compressor Dualtime bears the distinctly fresh stamp of Deleskiewicz's colleague, 28-year-old Magali Métrailler. Even though the functions of both watches are nearly identical, these two timepieces are distinctly unique from one another, the choice of one over the other certainly only a matter of taste.

Using the integrated second time zone, the Master Hometime possesses both a second reference hand and a day/night indicator. The Compressor version also has two reference hands for hours, but its creators decided to give it a rather unusual 24-hour indication instead of the more conservative day/night display. The semi-circular window slit to the upper left corner displays military time, its continuing extension at 5 o'clock representing a design aspect, giving the dial a more technical feel.



Magali Métrailler, JLC's talented 28-year-old designer, is responsible for the outward appearance of Gyrotourbillon I and the Master Compressor line.

Caliber 975 is simultaneously premiering in the Master Compressor Dualmatic.



Jaeger-LeCoultre remains true to its phenomenal form by re-introducing the art of high watchmaking. During an economic era when the research and development of such pieces is questionable as compared with possible returns, this venerable *manufacture* has pulled out all the stops. Master watchmaker Eric Coudray, one of the genius horologists employed in the *manufacture*,

let his imagination run wild, and it spewed forth the Gyrotourbillon I. A mere two and a half years in the making, this is the flagship piece that will kick off the new collection of grande complications.

The 500 components of Caliber 177, as the Gyrotourbillon I is known by day, contain a number of innovative and patented elements that have never before been seen:

Eric Coudray, master watchmaker, is the genius behind Gyrotourbillon I.



a spherical dual axis tourbillon, an equation of time that runs alongside the mean time (no more calculating), 150 hours of manually wound power reserve, two large serial spring barrels made of sapphire crystal and about 100 jewels. The entire tourbillon mechanism, comprising some ninety components, weighs a mere 0.35 grams. The 14-karat gold balance wheel, larger than normal, takes up roughly one-third of this weight. The outer cage, which rotates in the traditional one-minute rhythm, is most innovatively made of aluminum. The inner cage, making 2.5 rotations per minute, is made of both titanium and aluminum to ensure that the center of gravity remains where it should. Fine adjustments are made by three gold screws.

Pushed somewhat to the background by the visionary tourbillon, though no less important, are the annual calendar (a different construction than that found in the Reverso Quantième Perpetuel), the equation of time that runs along with the mean time, and the new date with double retrograde and flyback pointers (one for 1 to 16 and one for 16 to 31). A total of seventy-five pieces will be made, to be completed over a number of years. Because there is so little experience with a timepiece of this sort, Jaeger-LeCoultre is hard pressed to know how much time will be needed to assemble and properly test it. Right now, new watchmakers are being trained to handle this excellent product of Swiss teamwork at its best. Time is, of course, something that this extraordinary *manufacture* has plenty of.



Gyrotourbillon I is the flagship model kicking off Jaeger-LeCoultre's new high watchmaking collection

Celestial Splendor

FROM PATEK PHILIPPE

BY ROBERTA NAAS

Since its inception in 1839, Patek Philippe has been creating timepieces of incredible stature—watches by which all others in the industry have set their standards. Decade after decade, this legendary brand has unveiled world firsts and secured numerous patents for its ingenuity.

A true leader that never ceases to amaze, Patek Philippe once again brings together art, technology and incredible craftsmanship in its Celestial watch. While the world has always been fascinated with the

heavenly bodies—the sun, moon and stars—it has been difficult, at best, to translate this affinity to a wristwatch of precision. While Patek Philippe and others have depicted the sun and moon’s movement on pocket watches and table clocks, none has brought so many trackings and depictions together in one wristwatch until now.

With its extraordinary Celestial wristwatch, Ref. 5102, Patek Philippe has reached even

new heights for itself. Based on the achievements of two extraordinary watch predecessors (including the Star Caliber and the Sky Moon), the dial of this astronomical wonder depicts the exact configuration of the night sky, complete with movement of the stars, the position of the moon and the moon phases within the lunar cycle.

Drawing on more than eight years of research and development for the previous watches, the Celestial nonetheless took a full two years to create. The 45-jewel Celestial



Ref. 5102 wristwatch houses a complex astronomical self-winding mechanical movement comprising 301 components. It incorporates some of the most technical aspects accomplished by Patek Philippe for its Star Caliber 2000 pocket watch (which was eight years in the development stages) and for the Sky Moon Tourbillon (which was also made possible using technology employed for the Star Caliber 2000).

To replicate the movement of the heavenly bodies on the surface of the dial, Patek Philippe developed a highly sophisticated system of layered disks, each of which turns at a different speed to create the necessary precision while offering a sense of depth and reality.

The disk system, for which Patek Philippe garnered yet another patent, relies on three separate stacked sapphire crystal disks. One crystal represents the orbit of the moon and drives a subsidiary crystal that illustrates the waxing and waning of the moon. Another sapphire disk bears the sky chart on one side, and an image of the Milky Way galaxy on the other—both visible through the transparent sapphire and both in perfect alignment. (Would one expect anything less from this great house?) The disk system is so complete that it offers the constellations Antares, Aquarius, Arcturus, Sirius, Cassiopeia, Castor and Pollex, Orion, Pegasus, Polaris, Ursa Minor and Ursa Major.

The entire disk system is protected by an outer sapphire crystal that has an ellipse painted on it, encircling the portion of the night sky visible above Geneva, the watch-



making capital of the world and home to Patek Philippe.

As if this incredible rendition along with the timekeeping functions weren't enough, Patek Philippe added a host of other functions and readouts to this stunning 48-hour power-reserve timepiece. Among them are the moon's orbit and phases in relation to star placements, mean

solar time, time of meridian passage of Sirius and time of meridian passage of the moon.

In true Patek Philippe style, the Celestial is crafted in 18-karat white gold and engraved with the Geneva Hallmark. Only twenty pieces will be produced per year and each will retail for approximately \$137,500 each. ☺

COMMEMORATIVE



BY MEGAN LIVOLSI



EBERHARD & Co.

PAYS TRIBUTE TO A TRUE RACING LEGEND

The Tazio Nuvolari Vanderbilt Cup

On October 12, 1936, forty-six drivers lined up to compete for the famous Vanderbilt Cup at New York's Roosevelt Field. By the time the race was finished, Tazio Nuvolari, a racing legend from Mantua, Italy, had taken first place in his Alfa Romeo type C 36 Number 8, with a lead of almost twelve minutes ahead of the second driver.

Known for his daring exploits and incredible will to succeed, Nuvolari won almost 200 major races and came in second place just seventeen times throughout his career. Always conscious of his image, he raced with a particular uniform: blue trousers, a yellow jersey with his logo on the right (composed of a T and an N crossed) and, pinned to his jersey, his lucky charm, a small gold turtle. Famous Italian poet Gabriele D'Annunzio presented Nuvolari with the turtle in 1932, declaring, "To the fastest man, the slowest animal." (D'Annunzio also coined Nuvolari's famous nickname, "the flying Mantuan.")



Over the years, Eberhard & Co. has chosen to honor Tazio Nuvolari with a number of commemorative timepieces that pay tribute to his distinguished accomplishments. Inspired by the Italian racing legend's spectacular Vanderbilt Cup victory of 1936, the company's latest Tazio Nuvolari model, like all Eberhard & Co. timepieces, blends technical superiority with elegant style.

Housed in a 42-mm stainless steel or 18-karat rose gold case,

the new Tazio Nuvolari Vanderbilt Cup single-button chronograph is equipped with a finely decorated automatic movement that features blued steel screws, a frequency of 28,800 bph and a Glucydur balance wheel. Through the screw-down sapphire crystal exhibition caseback, which bears Tazio Nuvolari's signature, one can view the elegant circular graining and Côtes de Genève decoration on the bars, bridges and oscillating weight.

“Our technicians conceived this exclusive chronograph with a special reference to the Eberhard & Co. single-button chronographs that were produced in the 1920s and 1930s,” explains Norm Kushner of RABCO, the exclusive U.S. distributor for Eberhard & Co. “A similar crown with coaxial control was used on these chronographs which, today, is applied on the new Tazio Nuvolari but based on modern design criteria.”

The half hunter case of the Tazio Nuvolari Vanderbilt Cup features a hinged cover with snap closing—a vertical sliding push piece at 4 o’clock makes it extremely easy to open. The outside back cover depicts the legendary Vanderbilt Cup won by Nuvolari while the inside cover is engraved with Nuvolari’s signature, a miniature reproduction of the legendary turtle in gold and a scroll that provides space for personal engravings and dedications.

Inspired by the design of the flying Mantuan’s dashboard instruments, the easy-to-read dial is available in two versions: white with blue Arabic numerals painted in relief and large blue leaf-shaped hands; and white with luminous Arabic numerals and luminous baton-shaped hands. Protected by an antireflective sapphire crystal, the dial features three oversized chronograph counters and a tachometer scale around the outer flange.

Water-resistant to 30 meters, the Tazio Nuvolari Vanderbilt Cup is presented on a brown leather strap with yellow stitching (to commemorate Nuvolari’s signature yellow jersey) with

a choice of a personalized Eberhard & Co. buckle or a special patent-pending deployment clasp. The watch is also available on a matching metal brace-

let. Suggested retail price for the stainless steel model is approximately \$5,500. (The cost of the 18-karat gold model was not yet determined at press time.)

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Good Things Come in Small Packages

The new Avenue of Americas Mini from Gevriil

BY MEGAN LIVOLSI

Over the years, the Gevriil name has always carried with it a reputation for fine Swiss quality, expert craftsmanship and elegant design. Acquired by Samuel Friedmann in 2001, the brand is headquartered in the hills of New York, although every timepiece is meticulously handcrafted in the company's factory in Tramelan, Switzerland. Fashioned in 18-karat gold or 316L stainless steel, all Gevriil watches are powered by Swiss ETA-based movements. Only the highest-quality materials are used, from the Top Wesselton diamonds calibrated by CNC machines to the mother-of-pearl dials and the genuine Louisiana crocodile-skin straps.

Last year, Gevriil unveiled the bold Avenue of Americas collection to rave reviews. Comprising four distinct designs, this elegantly oversized line of automatic rectangular timepieces curves gently around the

wrist. Retro yet updated, the case features a curved sapphire crystal, caseback and dial. "I envisioned the need to utilize not only a curved sapphire crystal and back but a curved dial as well," explains Friedmann. "Although I knew that the time to produce this feature and its expense would be great, I also knew that it must be done."

Most recently, Gevriil introduced an Avenue of Americas model exclusively for women. An ultra-feminine extension of the popular men's collection, the new stainless steel Avenue of Americas Mini collection boasts a variety of colorful models to suit every taste and style.

Offered in four different mother-of-pearl options, the easy-to-read dial features raised numerals and hands in either stainless steel or rose gold and a date window at 6 o'clock. Available in a number of sparkling diamond-set models, the quartz-

powered Mini is complemented by a colorful crocodile-skin strap or a matching stainless steel bracelet.

"If you look at women's timepieces today, there is little to distinguish one watch from another," says Friedmann who believes that the Mini fills an important niche in the women's luxury timepiece arena. "The Mini offers women a timepiece that is both beautifully unique and technically advanced; it possesses the rich history of Gevriil's past with the style of today's modern woman."

Like its masculine counterpart, the Avenue of Americas Mini features a curved sapphire crystal, dial and caseback to ensure maximum wearer comfort. Produced in a limited edition of just 500 pieces, the Mini ranges from \$2,995 for the stainless steel models without diamonds, to \$15,745 for the diamond-set bracelet versions. Ⓢ



LOUIS VUITTON

Marches to the Beat of Its Own Drum

The new Tambour Monogram Tourbillon

BY MEGAN LIVOLSI

A premier leather goods and trunk manufacturer since 1854, Louis Vuitton made its first foray into the watchmaking industry in 2002 with the creation of the stylish Tambour (French for drum) collection of timepieces. Blending ultimate functionality with understated elegance, the Tambour line includes a wide variety of models, from a simple quartz-powered time and date model, to automatic

chronograph and GMT versions to a colorful, jeweled limited-edition piece created exclusively for women.

With its latest horological creation, Louis Vuitton has boldly crossed over into the realm of grande complications ... and the result is truly a sight to behold. An exclusive work of art where both the technical and esthetic aspects overlap with effortless precision, the new Tambour Monogram Tourbillon is setting a new hour for Louis Vuitton.

“Louis Vuitton first entered the watch industry with a very serious, professional and long-term view,” explains Albert Bensoussan, director of Louis Vuitton Watches. “In fact, we now have our own assembling facility in Switzerland. We definitely want to prove that we can conceive, develop, manufacture, assemble, service and sell the most sophisticated timepieces. The tourbillon complication watches by nature belong to a group of very sophisticated watches that only a few brands that master

the know-how and savoir faire in watchmaking can dare to produce.”

Offered in 18-karat white, yellow or rose gold, the 41-mm case of the Tambour Monogram Tourbillon features antireflective sapphire crystals front and back, ensured water resistance to 100 meters and an 18-karat gold crown that can be set with a choice of precious stones.

In place of the traditional dial design are transparent sapphire plates that reveal the inner mechanism's beating heart and shine light on hundreds of minute details. The hollowed 18-karat gold hour and minute hands display the time from the center while the lacquered yellow (the same as the Louis Vuitton stitching on its luggage) seconds hand revolves from the center of the tourbillon mechanism.

Completely visible through both sides of the watch is the Caliber LV 103 manual-wind movement, which was manufactured in the firm's own facility in Switzerland and features an impressive 90-hour power reserve. Most of the movement's 103 components are in 18-karat gold to match the case; the remaining parts







Look closely and the Louis Vuitton famous monogram flower is visible.

are in satin-brushed metal in order to ensure greater durability and resistance.

Within the design of the Tambour Monogram Tourbillon, Louis Vuitton has incorporated its famous monogram flower, whose rounded, four-pointed petals have decorated thousands of trunks all around the world. Look closely and you'll see the monogram flower in the shape of the tourbillon cage and the design of seven of the wheels.

As an added design touch, the sapphire plate has been engraved with a monogram flower as well.

The third wheel bridge—a functional piece of the movement—can be designed to feature the client's initials or symbol and can be paved with a choice of precious stones.

"All Louis Vuitton trunks were and are made according to the exact specifications requested by owners [colors and materials for the outside and inside linings, as well as

additional personalized features]," says Bensoussan. "The craftsmanship and know-how mastered by Louis Vuitton allow the house to respond in a very specific manner to all the desires expressed by our customers. In keeping with this approach, we decided to find a 'Tambour opportunity,' by which a very exclusive version would feature in an extreme, innovative and unexpected way the personality of the owner."

The Tambour Monogram Tourbillon comes on a galuchat, or stingray, strap, which is available in thirty different colors. (Straps are also available in any other material Louis Vuitton manufactures.)

Presented in a personalized trunk that is handmade in Asnieres, France, the \$200,000 watch comes with a leaflet, cleaning cloth, travel case and key holders. Although the Tambour Monogram Tourbillon is a permanent line, production is limited in the sense that it takes six to eight months to produce each piece from start to finish.

When asked whether the creation of the Tambour Monogram Tourbillon signals a permanent shift toward more complicated pieces for Louis Vuitton, Bensoussan explains: "As this is our first major step into complicated timepieces, we want at this stage to make our statement and give our exquisite Tambour Tourbillon the needed time to meet its market. We will obviously continue to bring out exceptional, surprisingly unexpected pieces in the future, not only in complication watches but also in other areas. We will have more to come in the next few months." Ⓢ

SPORT LUXURY BY BVLGARI

BY ROBERTA NAAS



Bulgari answers its discerning clientele's call for worldly watches with the new Diagono Professional GMT Flyback.

Long known for its haute couture Italian styling and classic high watchmaking, the house of Bulgari once again confirms its expertise with several new sporty chic watches for 2004. Indeed, with performance and precision as the guiding factors, Bulgari deftly combines technical sophistication and distinctive styling in the new Diagono Professional timepieces.

Catering to its worldly clientele, this grand house unveils the Diagono Professional GMT Flyback, which utilizes a three-time-zone GMT movement with the coveted flyback function developed exclusively for Bulgari by Dubois-Depraz. The special movement—an ETA 2892-A2 with Dubois-Depraz module—is fitted inside a 40-mm steel case that features a bidirectional rotating bezel with 24-hour scale. The watch is further equipped with a screw-down crown and three screw-down push pieces for the chronograph functions and GMT correction.

Demonstrating drama and distinction, the Diagono Professional GMT Flyback features a white painted dial, with a blue night indicator on the upper sphere and a red day indicator on the lower sphere. SuperLuminova on the hands and markers guarantees easy readability.

Featuring a date counter and a rubber-and-steel bracelet, this watch is water resistant to 100 meters. In typical Bulgari style, the Diagono Professional GMT Flyback watch is a COSC-certified chronometer.

Also incorporating professional instrument capabilities, the Diagono Professional Regatta watch represents the ultimate timepiece for yachting and sailing enthusiasts. Much like the Diagono Professional GMT, the prestigious Regatta timepiece is also a 40-mm stainless steel watch with screw-down crown and screw-down chronograph push pieces. It features a rubber bracelet with stainless steel links and a deployment buckle for rugged durability and ease of use.

This watch also houses the flyback Dubois-Depraz automatic movement, ETA 2892-A2; however, it is further enhanced with a highly precise mechanism that allows for rapid visualization of the elapsed time. Embodying additional sports functions, the Diagono Professional Regatta watch offers a compass-marked bidirectional rotating bezel and dial indicators for reliable tactical navigational support. In fact, the white painted dial features regatta indications and a special five-hole minute amplification display at 12 o'clock—all offering bold and enticing appeal. Swiss-made, the watch is water-resistant to 300 meters for ultimate wearability on the high seas, and SuperLuminova on the dial and hands for ultimate readability.

These newest watches, like all Bulgari products, are reflections of the brand's contemporary style and



belief in harmony and performance. All Bulgari watches are made according to the strictest quality criteria and only top-quality movements and materials are used. Both of the Diagono Professional timepieces will be available in Bulgari stores and at a select network of retailers starting this summer.

The Diagono Professional Regatta features a highly precise mechanism that allows for rapid visualization of the elapsed time. It offers a compass-marked bidirectional rotating bezel and regatta indications on the dial via a five-hole amplification display at 12 o'clock.

A Family Tradition Since 1874

The uncompromising craftsmanship of Clerc

BY MEGAN LIVOLSI



For more than 130 years, the time-honored tradition of fine Swiss watchmaking has been perpetuated by the Clerc family, famous Geneva-based watchmakers and jewelers with a talent for creating unique timepieces that have come to be known for their superior

quality and avant-garde design.

“The essence of Clerc is a unique style, real passion and uncompromising craftsmanship,” says Gerald Clerc, current president of the company, who has developed an innovative collection of wristwatches that blend sporty style with understated

elegance. “We pride ourselves on creating authentic timepieces that are also beautifully crafted.”

Over the years, Clerc has introduced a number of pioneering aesthetic and technical innovations, including its popular Red, White & Blue, the first steel watch line set



CXX Scuba 250 Limited-Edition Automatic Chronograph

with natural color gemstones.

The latest creations designed by Gerald Clerc represent the guiding principles the Clerc brand has been cultivating since its founding in 1874, namely the pursuit of elegance and uncompromising standards of Swiss craftsmanship. Crafted in Switzerland, each Clerc watch is individually numbered and comes with a three-year international warranty.

Distinctive Designs

A perfect blend of modern style and expert workmanship, Clerc's C-One collection includes a variety of models for both men and women. Crafted from solid stainless steel, the bold octagonal case is offered in a number of sizes to fit comfortably on any wrist. Powered by a precision Swiss quartz movement, the C-One is available in a wide range of color



CXX Diamonds

combinations and can be set with natural-colored gemstones for an added touch of sparkle. The easy-to-read dial features oversized Arabic numerals and a date window at 4:30. Presented on a Teju lizard strap with a stainless steel folding clasp, the C-One ranges from \$950 to \$2,990.

Part wristwatch, part jewel, the striking C125 ladies' collection is a fashion statement for the wrist. With an integrated stainless steel bracelet, this elegant cuff watch curves gently around the wrist. Available in a number of different diamond-set models, the C125 is equipped with a Swiss quartz movement. Offered in a choice of colors, the rectangular dial is a statement of minimalism, with petite hour and minute hands and diamond indexes at 12 o'clock and 6 o'clock.

Last year, Clerc unveiled the CXX Scuba Chronograph, which was created in close cooperation with an expert team of professionals well acquainted with the demanding requirements of the underwater world. Designed for extreme conditions and professional use, this ultra-sporty stainless steel diver's watch is powered by a Swiss quartz chronograph movement. Like any first-rate diver's watch, the CXX is equipped with a unidirectional rotating bezel, screw-down crown, push pieces and caseback that ensures water resistance to 200 meters.

Featuring luminous hands and indexes for easy readability in low-light situations, the black or blue dial displays three chronograph counters and a date window at 4 o'clock. Presented on a rubber strap or a matching stainless steel brace-



C-One



let, the CXX is also available in a stunning diamond-set model. Retail prices begin at \$1,200.

Building on the success of the original CXX Scuba Chronograph, Clerc recently introduced a new mechanical version of the popular timepiece. Produced in a limited edition of just 250 pieces, the new CXX Scuba 250 Limited-Edition Automatic Chronograph blends state-of-the-art technology with the noblest watchmaking traditions.

Within the polished stainless steel case you'll find the tried-and-true 25-jewel Valjoux 7750 automatic movement, which boasts, a frequency of 28,800 bph and a 44-hour power reserve. Featuring

“The essence of Clerc is a unique style, real passion and uncompromising craftsmanship. We pride ourselves on creating authentic timepieces that are also beautifully crafted.”

—Gerald Clerc

luminous hands and indexes, three chronograph counters and a date window at 4 o'clock, the chrome, white or black dial is nicely complemented by a black rubber strap or a matching stainless steel brace-

let. Although the price of the CXX Scuba 250 Limited-Edition Automatic Chronograph is yet to be determined, it will be aggressively priced, according to Gerald Clerc, at around \$2,600.



C-125

HANDMADE

Kees Engelbarts

New timepieces in mokume gane

BY ELIZABETH DOERR

Does a watch need to be masterminded by a watchmaker for it to be unique, special and sought after by collectors? Kees Engelbarts doesn't think so, and it is exactly this thinking outside of the box that represents such a special present in itself to the world of watches. A young Dutch engraver of exceptional talent living in Geneva, Engelbarts has embarked upon an adventure that few engravers enconced in the watch industry have ever attempted: making and selling wristwatches under his own name.

Engelbarts' trademark design element is of course the mokume gane that he creates himself and engraves. Mokume gane is Japanese for "wood-eye metal," a descriptive term that reflects the metal's appearance of grained wood. The invention of the technique is generally attributed to Denbei Shoami, a seventeenth-century master metalsmith hailing from the Akita Prefecture of Northwest Japan who used the technique to strengthen and beautify samurai swords. By bonding two nonferrous metals with compatible properties of ductility and malleability, many different combinations are within the realm of possibility. The metals are fusion-layered (not soldered) and laminated, creating a new molecular between the layers and making them into one homogenous mass.





The pieces of mokume gane are soldered to the 18-karat gold cases in a special oven. It is important to control the temperature precisely to get a homogenous weld.



The wires on this case guarantee that the mokume gane does not move during the welding process.



Each piece of the mokume gane made from yellow, rose and white gold is unique, making every timepiece in the series peerless.



The patterns that appear like wood graining are topographical and cannot be predicted, although a certain desired pattern can be created by drilling holes into the metal before laminating. Ideally ten to twenty layers are used to produce a sheet of

mokume, laminated down to 0.8mm or less in thickness. The metal thus created is exceptionally labor intensive and each piece is inimitable.

Until now Engelbarts has made his exceptional pieces one at a time. Embarking upon something new,

he has recently created an original ten-piece series designated to be sold in two high-end retail shops in Tokyo: L'Ange Noir and L'Ange Rouge. The cases of 18-karat gold are handmade by Engelbarts and Jean-Pierre Scherrer on a lathe and



a milling machine. They are coated with mokume gane, consisting of yellow, rose and white gold, generated by Engelbarts. After laminating and decorating the sheets of mokume gane, Engelbarts cuts circles from them, which are then pressed between two brass plates to give them the same shape and angle as the case itself. The circular mokume gane plates are then soldered onto the case in a vacuum oven to avoid the unwanted effects of oxidation. The oven's heat must be controlled very precisely to achieve a homogeneous weld. After the mokume

gane is soldered onto the cases, they are retouched on the lathe, giving them their final dimensions. Once worked to its final state, the case is glass-blasted. This is a process that is quite similar to the common practice of sandblasting but is done with tiny balls of glass instead of sand. This lends the different gold colors within the mokume gane stronger contrasting hues.

Although the movements are not the special focus of Engelbarts' watches, they are never treated like poor stepsisters. In general, the talented Dutchman prefers to work

with Piguet mechanisms since they lend themselves especially well to the arts of skeletonizing and engraving. These particular movements are manually wound Piguet 21 calibers. They have been skeletonized, handengraved and finished with gold- and rhodium-plating by Kees Engelbarts himself. Engelbarts' brother, a watchmaker firmly ensconced in the Genevan horological scene, did the mechanical work on the series' prototype as well as the dragon timepieces *iW* previously reported upon (please see issue 74). The watchmaker duties for this ten-piece series were taken over by Kees Engelbarts' good friend Peter Speake-Marin, a fact that "speakes" volumes for the quality of the mechanics in addition to the extraordinary aesthetics of the timepieces.

An incredible amount of work goes into creating such a work of art by hand. Engelbarts began work on the ten-piece series in June 2003. He is scheduled to finish the last piece this April. He reports of the process: "Sketching and making the cases as well as discovering how to weld the mokume gane onto them was absolutely the hardest part. As usual, I did not count the hours needed to work on them, but I could easily say that one of these watches takes several weeks to make."

These extraordinary timepieces will be on sale at L'Ange Noir and L'Ange Rouge in Tokyo after Engelbarts completes the series and will retail for the equivalent of approximately 30,000 Swiss francs (about \$23,600). Parties interested in Engelbarts' work are invited to contact him personally to set up a visit to his workshop in Geneva. He can be contacted through his website at www.kees.ch. ☺



Ventura's new v-matic II line includes chronographs in 42-mm case size.

VENTURA

A CIRCLE FOR A SQUARE

BY ELIZABETH DOERR

Pierre Nobs and his forward-looking company, Ventura, have always been known for taking some risks. Moving within an industry that focuses on staid classicism, Nobs has, right from the start, concentrated on doing his own thing—in a post-modern, futuristic

digital, design-oriented way. Carving out his own niche was certainly not easy, but he has been successful at it, as his continued presence in the market will attest, and his courage in trying new designs is continually being rewarded with more than sustainable sales figures. Recently Nobs

introduced his new designs for the coming season, thereby underscoring his continued commitment to both post-modern design and the continuation of his high-quality quartz *manufacture*.

Ventura's first analogue shaped watch needed to be something very

special, so Nobs went looking for just the right designer, finding him in Hubert Verstraeten, a young Belgian jewelry artist. Verstraeten had already created a series of geometric rings, one of which in particular had caught Nobs's eye: his *La Quadrature du Cercle*, or Square the Circle.

These rings are spectacular in that they pass from a circle on one side to a square on the other without any perceptible transition. They can be worn either shape up, and the smooth sides are formed so remarkably that it is impossible to tell from them whether the shape is supposed to be a square footing a circle or vice versa. Nobs was convinced that this could also be transmitted to a watch case, so he hired Verstraeten to do the job. "Somehow all of our previous projects have managed to slide into something trendy," he says of Ventura's earlier four-cornered

models. "This just does not fit in with our philosophy. With his geometry, Hubert showed us a highly original and characteristic shape that convinced me right away." Although Hannes Wettstein, Ventura's regular designer, was not involved in the project as such, Verstraeten's interpretation was kept entirely in line with the spirit of Wettstein's original EGO models.

It was decided that the new Ventura watch should be added to the v-matic EGO collection, since the dial would adapt well to the new case form. And, indeed, the new timepieces are true beauties, destined to survive the test of time with their not quite so post-modern, simple elegance.

The 37x37mm cases are made of Durinox, a hardened stainless steel that Ventura exclusively uses for its products. These cases are so scratch-proof that Nobs freely offers a go



Famed psychic Uri Geller is also a Ventura fan (here with Roberto Bernasconi of Ventura).

at scratching any of his brand-new watches with a sharp instrument. Durinox can be handled and polished just like regular stainless steel, and the color variation is hardly noticeable. Nobs stated that in the future he will use only Durinox and Titanox (the titanium alloy counterpart) for Ventura's cases.

This remarkable watch is available as a rather flat three-hand chronometer with date powered by a Ventura-updated ETA 2892 or an elegant chronograph also based on ETA. When it comes to the motors running inside Nobs's creations, he does not experiment. "Our ETA movements are off the rack. We do not want to utilize exotic movements; we want reliability. All our mechanical movements are beautifully finished here at Ventura and are COSC-certified." The dials are available in either black or white and are protected by a sapphire crystal front and back. The v-matic EGO square is water-resistant to 30 meters and is available either on a black leather strap or a Durinox link bracelet.



The shaped case of the new v-matic EGO square was designed by Hubert Verstraeten.

Not Only For Hard Core Fans
Nobs' enthusiasm for shape, form, and design is also evident in the v-tec series. Introduced in 2003, the v-tec Alpha has since become Ventura's bestselling watch. A digital watch for a future that is as yet undetermined, its movement was completely designed and built by Nobs and his team in Switzerland. Although digital watches generally leave somewhat of a sour after-taste in the mouth of mechanical

watch fans, the v-tec line should make anyone interested in technology for the wrist want to take a bite. The patented EasySkroll system and futuristic yet elegant design of the case combine well with the integrated microelectronics to create a demanding new digital watch of *manufacture* quality.

Hannes Wettstein and his design team have now taken the v-tec Alpha a step further and created the v-tec Gamma. Although the price

of this watch will make it Ventura's entry-level model, it is anything but inferior. Hannes Wettstein has reworked the case, giving it a somewhat different appearance, thereby making it more accessible to a younger target group. The case comprises a steely nucleus, fittingly named "HardCore" by Wettstein, that is completely coated by a urethane material vulcanized to the Durinox core, effectively protecting it from scratching and undue wear like a car's bumper. Wettstein compares it to a chestnut: The soft shell protects the hard but vulnerable core of the nut when it falls from the tree.

Though it might look easier, this case is far more difficult to manufacture than a conventional steel case and far more expensive to produce than the v-matic case. But as is so often the case with Ventura, it is exactly the brand's complexity that makes everything look so easy and gives the products their innate value.

Veering once again from the conservative path of other luxury brands, the v-tec Gamma retains the patented EasySkroll system, albeit in the lower left-hand corner instead of the upper right-hand corner as on the Alpha model. Wettstein and his associate Simon Husslein relate that this change was made to improve ergonomics. This interface alternative automatically makes the model sportier: As on early mechanical chronographs, the functions are activated by reaching over with the thumb.

The new v-tec Gamma has a "HardCore" that is coated in rubber.





The quartz movement VEN 04 has a number of displays on hand in addition to the time, including date, alarm, countdown, chronograph and light-up display, all of which are activated and set using the EasySkrroll. Retailing at around \$1,000, the v-tec Gamma will hit stores in June.

A Watch for the Now and Later

It has been exactly eight years since the v-matic model was first introduced, a watch said by many to be more a visitor from the future than a contemporary mechanical timepiece as it was known and loved in those days. The company's courage paid off, however, and the v-matic and other models from Ventura's collection

kicked off a new trend toward clear design language. Hannes Wettstein's sober design remained fresh for many years, proving that contemporary watches can also become classics. Pierre Nobs was, however, of the opinion that it was time to rework the v-matic and bring it into the new millennium. It needed an update, and the language of the watch needed to be replaced to bring it up to speed for modern times. Nobs is obviously very pleased with the result, stating, "These watches once again look contemporary."

Wettstein is the first to admit that "Ventura's watches live off the times they are created in. These are not watches for eternity, but watches for now. And time does not stand still."

Wettstein's first task was to redesign the v-matic case, which he went about in a very complex manner, concentrating on the lugs, making them part of a whole—both in regard to the case and to the bracelet, creating a bridge between the two elements. Diving into the science of geometry, Wettstein was able to transmit it to the new case. "Reaching any simple solution is actually a complicated process," he relates in regard to the case's new shape.

The new models of the v-matic line are made of Titanox, an especially durable, scratch-resistant and

hardened titanium alloy. To meet current trends, the case diameter of the regular chronograph model has been increased to 42mm. The jumbo format of the v-matic SUB II at 46.8mm in no way seems as monstrous as it sounds, for the geometrically perfect shape of the case keeps it subtle. This chronograph-chronometer is powered by a Valjoux 7750, the most reliable chrono movement on the market and has been COSC-certified. Sapphire crystals on each side of the case allow a view not only of the modern dial design but also of the endlessly turning rotor crowning the automatic movement. These models will also be available in June. ☺

The new models are just as striking with white dials as with black.



HAVING A BALL

THE LATEST CREATIONS FROM BALL WATCH



BY MEGAN LIVOLSI

Although the histories of trains and watches might not seem to have much in common, their tracks crossed on April 19, 1891, when two mail trains collided in Ohio, killing both drivers and nine passengers.

The saying goes that from tragedy, some good must come. And the tragedy of 1891 is no exception. In fact, it led to the creation of one of America's great watchmaking houses.

Ball Watch was founded in 1891 by watchmaker Webster Clay Ball of Cleveland, Ohio, who was enlisted by the rail company as chief inspector after the crash. Investigations of the accident even-

tually led to one simple cause: a timekeeping error caused by a defective timepiece. (The watch of one of the train's engineers had, unbeknownst to him, stopped for four minutes. He continued on, thinking he had seven minutes to

his destination where his train would have plenty of time to give way to another locomotive. Unfortunately, he was just moments away from death.)

Determined to prevent similar accidents in the future, the rail companies entrusted

Ball with the important responsibility of timekeeping. He boldly stepped up to the task, immediately

putting in place regularly scheduled inspections on the watches worn by all railroad workers, which were carried out only by approved watchmakers. Ball set strict standards, prohibiting variations of more than thirty seconds among the watches.

It was Ball's system of timekeeping that eventually established railroad time, making railroad watches one of the standards for precision timekeeping. Ball's numerous accomplishments garnered international acclaim not only for his civic contributions but also for his role in the history of horology.

Today, Ball Watch has come to be considered one of the most respected watch houses in the United States. Over the years, to keep pace with shifting consumer needs, the





which uphold the stringent ideals of its pioneering founder. Among Ball's latest creations is the automatic Conductor-Classic, housed in a cambered square-shaped stainless steel case. Powered by the automatic

crystal exhibition caseback, this handsome watch features an easy-to-read black dial that boasts luminous hands and indexes and a date window at 3 o'clock. Water-resistant to 50 meters, the Conductor-Classic is fitted with a genuine calfskin strap and retails for \$1,150.



company has successfully updated its collection of classic timepieces. And although the watches' aesthetics have undergone significant changes, their innate functionality has never been compromised.

For example, all Ball watches contain a groundbreaking light source manufactured using innovative Swiss laser technology. The self-powered micro gas light is 100 times brighter than the conventional tritium paint markings and does not require an external light source to "charge" the paint on the dial or hands for it to glow.

In addition, all Ball timepieces are specially equipped with an inner antimagnetic soft iron jacket consisting of a back plate and a ring surrounding both the movement and the dial. This special alloy, reinforced by the shape of the inner case, prevents magnetic fields from penetrating as far as the movement, thus preventing any adverse effect on its accuracy.

Ball Watch recently unveiled a number of new timepieces, all of





TrainMaster Pulse Meter



Inspector II

Also new from Ball is the TrainMaster Pulse Meter. Billed as the world's first illuminating automatic chronograph, the Pulse Meter measures both human respiration

and pulse rate. The wearer can very simply take his pulse or observe a certain number of respirations by reading off the correct number of respirations or pulses per minute.

The 41-mm stainless steel case is equipped with a screwed-down crown and advanced seals around the chronograph push pieces enabling them to function under water. Protected by a scratch-resistant sapphire crystal, the luminous white dial boasts ultimate night reading capability. In addition to the three chronograph counters, the dial displays a day-of-the-week indicator at 3 o'clock, a date window at 4:30 and a pulse meter around the outer flange.

Easily viewed through the sapphire crystal exhibition caseback is the 25-jewel automatic Ball caliber 2007 (based on the ETA 7750), which features a frequency of 28,800 bph and a 42-hour power reserve.

Offered on either a smooth calfskin strap or a matching metal bracelet, the TrainMaster Pulse Meter is water-resistant to 50 meters and retails for \$1,400.

Ball Watch has pushed the creative envelop yet again with the creation of the Inspector II, featuring the world's first illuminating calendar, dubbed "MoonGlow," which enables the wearer to clearly see not only the time but also the date in complete darkness.

Housed in a modern-looking stainless steel case that measures 38.5x46.5mm and is water-resistant to an impressive 200 meters, the Inspector II is powered by the automatic caliber ETA 2824-2. Beneath the scratch-resistant sapphire crystal, the luminous black dial displays the hours, minutes and seconds in addition to a magnified date indicator at 9 o'clock. Presented on a stainless steel bracelet with folding buckle, the Inspector II retails for \$1,075. ☺

LIMES

MODERNE-IZES ITS 112 LINE

BY JORDAN A. ROTHACKER

Though it is only since the 1990s that Limes has been a private watchmaking label, the company has a significant history of experience leading up to where it is now. This history is a natural outgrowth of the historic watch industry in Pforzheim, Germany, an industry that began in 1767 when the Grand Duke Karl Friedrich of Baden had the ingenious idea of bringing the trade of watchmaking to the children of a local orphanage. This philanthropic act gave parentless children a trade while founding an industry for the region. For this the Duke was revered, yet at the time one could not have imagined what a beneficial act it really was.

Within this soil grew the seeds of a center for Germany's watch industry that has sprouted and blossomed in the twentieth century. A great name in the region is that of Ickler, for it was in 1924 that Karl Ickler founded his own watch case company and the Ickler family name has been in the watch industry ever since.



At the end of the century after decades of crafting fine hand-polished watch cases to house the watches of other brands, Ickler sought to create its own timepiece to fit within its own cases. Thus the Limes brand came to be, and in its short years it has been catching the eye of discriminating consumers.

Its catalog is significant and the output of watch lines has been consistently adventuresome, exploring such avenues of design as chronograph movements, tonneau shapes and skeletal views.

For a wristwatch manufacturer of this size, each new model is an event to be celebrated and announced to the public. Even adding a new design to an already established and well-received line is an opportunity for consumers to take notice, especially if that line is the 112.

Until now, the 112 line has included variations referring to either aesthetic movements of the past or aesthetic notions that capture a sense of the past. The two previous versions, Bauhaus and Romaine,



were both referential in their own rights to either the Bauhaus School of Art or a variation on that simplistic design made more classical by the employment of Roman numerals. These differences are solely cosmetic and apply only to the appearance of the dials. The overall structure is the same for all of the 112s, regardless of the dial. At 7.2mm thick, the case size is as subtle as its visual concept. Within this ultra-thin stainless steel frame sits the source of its power: a decorated ETA 2892-A2 Swiss automatic movement. All of the 112s are available on either a leather strap or a stainless steel bracelet, depending on the preference and comfort, and are water-resistant to 50 meters.

The newest addition to the 112 line is the Moderne, which provides another design variation for adorning the essentials of this fine wristwatch concept. In an attempt to capture the modern or “mod” aesthetic of the 1960s the composition is one of economy

and precision. The case shape is a perfect 36.7mm circle established by a smooth, rounded bezel. Hours are indicated with slim rectangles corresponding to the stainless steel or gold of the case as do the sword-shaped hands. A contemporary sense of sophisticated simplicity is found in the Moderne 112 along with clean lines and a highly defined clarity of form.

The sapphire crystal caseback allows visibility of the highly decorated movement, while also keeping that movement water-resistant to 50 meters. The Moderne 112 from Limes runs from \$895 to \$1,395 based on strap options and 18-karat gold casing.

The 1960s was fraught with minimalism in all mediums of art and in this new concept from Limes, the designers are very conscious of that legacy. Powerful statements were made by saying a lot with a little, and the orchestration of those basic components of shape and form exposed the true craft of the artist. With the Moderne 112, Limes reclaims its place in the wristwatch industry.





AUDEMARS PIGUET 3120

BY SUITBERT WALTER

One of the leading houses in the Swiss watchmaking industry, Audemars Piguet is frequently referred to as one of the “Big Three.” The *manufacture* not only has a glorious past but also a healthy present and a promising future. With a wide range of movements that have stood the test of time, the bar is set very high for any new movement from Audemars Piguet. One’s expectation is simply to see something exceptional, and keeping the range of AP’s current models in mind, it’s even more difficult to imagine which of the two possible primary priorities it would emphasize: a very thin and elegant movement or something slightly larger and more rugged.

The ideal solution for use in all AP models may be a combination of both, and the relatively large watches of today provide an opportunity for AP’s engineers to synthesize these two goals. With this in mind, it was naturally an exciting opportunity to introduce a pre-series example of the brand new, 40-jewel

automatic AP caliber 3120. (In fact, the caliber 3120 possesses forty-five jewels, but because the jewels under the date wheel, by industry protocol, are not included in the final published jewel count, the official jewel count is “only” forty.)

It should be noted at this time that the piece being considered is a “pre-series” specimen. As with all pre-series movements, there is only an impression of the end result, that is, the finish is not a consideration; it is the design and manufacturing processes that are, and it’s these elements that are being finalized during this stage. Once this rigorous exercise is complete, the first-run production will commence, which will then exhibit the usual high-quality AP finish. Bearing this in mind, it would be premature to analyze the quality of the 3120’s finishing, so any such references to “finish” are made in passing or are directed to items that fall outside the pre-series construct, such as the wheels and pinions, which are provided finished from an outside supplier.

Sculpted Rotors

My first impressions of this new AP creation are dominated by the wonderfully “sculpted” rotor **1**, which is entirely made of 22-karat gold—a first for Audemars Piguet. The shape of the rotor is unusual, forming an arc of about 110 degrees, whereas the usual shape is closer to 180 degrees. While quite beautiful, the shape of the 3120’s rotor is predicated on physics, not art. The weight of the rotor is double that of the caliber 2120’s rotor and coupled with its smaller circumference (one-third compared with the 2120’s half) most of its mass and, correspondingly, its center of gravity are further from the point of rotation, which should produce extremely efficient winding.

The inner part of most rotors are relatively thin and necessitates a riveted or screw-mounted weight on the outer diameter. In contrast, AP’s rotor is crafted of a single solid piece with a comparatively thick inner part. The thickness of the rotor increases toward the outer edge in two steps, following the shape of the bridges. The clearance between the oscillating weight and the bridges is remarkably small. This, together with the decoration representing the Audemars and Piguet family crests



in relief, leaves an impression that may be best described as massive.

This impression is consistent throughout the entire movement. Even though the 3120 is smaller than the 2120, any part of the main structure (such as the bridges and plates) seems to be made of a solid block rather than from a thin sheet. Additionally, the 3120 is a more efficient design, sporting a larger balance and barrel within a smaller area, which are performance-improving features. In view of this, and bearing in mind that the movement height of 4.25mm isn’t very flat, it is perhaps one of the most elegant and well-proportioned movements I’ve ever seen.

Removing the rotor that is mounted to the going train bridge with two screws and positioned with two steady pins, reveals a pleasingly clear, well-divided layout: the beautifully shaped balance bridge with adjustable screw-fixed stud carrier, the going train bridge, the barrel bridge, and the automatic winding train bridge. The only visible part of the auto-winding mechanism is the reduction wheel that connects the rotor and the automatic winding train.

An immediately apparent special feature is the click, which is engaged by the crown wheel instead of the ratchet wheel—a very sophisticated solution, which, together with an additional driving wheel carried in ball bearings (underneath the bridge), allows the use of a small ratchet wheel and a good, accessible albeit robust click (the small ratchet wheel provides clearance for the outer part of the rotor and allows for a larger/taller barrel).



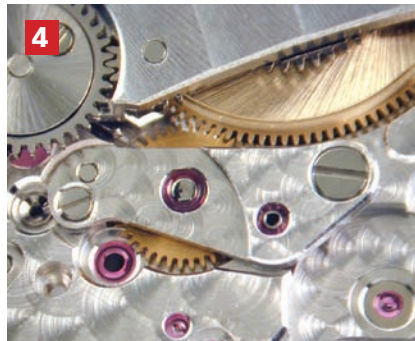
The Going Train

I usually like to take a deep step inside to the heart of any mechanical movement: the power supply. Hidden under barrel bridge and ratchet wheel, the mainspring/barrel assembly is one of the most mechanically stressed components of an automatic movement. A well-constructed and -engineered barrel and mainspring is essential for a high-end movement and the indispensable foundation of a reliable and precise going train **5**.

The Barrel

Externally the barrel has a nicely spiral-brushed finish with classical moulurage (the polished ring between the hub and rim) **2**; the more important inner surfaces are mirror polished **3**. While the smoothness of these inner surfaces serves a secondary mechanical purpose, i.e., reducing friction if the mainspring comes into contact with them, this lavish treatment is more than what is required, but it is a level of refinement one expects from AP.

As with many modern directly driven sweep second movements, the 3120 employs an offset center wheel. But the going train of the



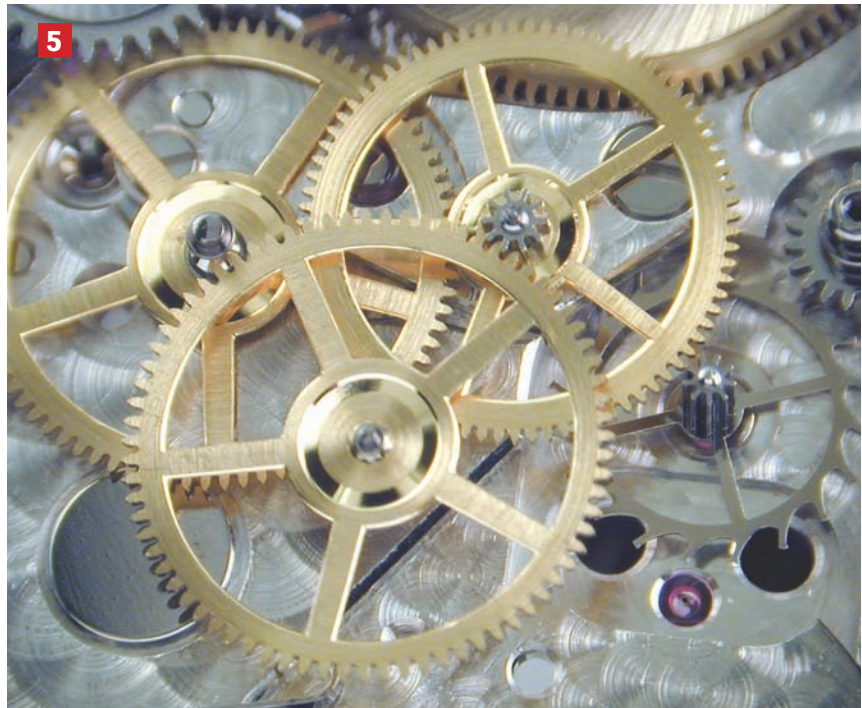
AP 3120 also reveals a remarkable solution: In contrast to many other movements, the center wheel is driven by an intermediate wheel that is mounted under a sub-bridge [4] together with the indirectly driven minutes pinion.

Sub-bridge and Intermediate Wheel

This intermediate wheel drives a pinion that carries the cannon pinion and minute hand at the same time, making them not directly in the power flow. This solution appears to be very sophisticated and well engineered as it is a very elegant way to avoid common problems with under-dial trains of movements sporting offset center wheels.

Looking at the complete going train, the compact and aesthetically pleasing layout is obvious 5. The wheels are finished with a circular brushing and a very nice, highly polished moulurage. The original intention in applying this polish close to the center of the wheels was to prevent the oil, which tended to run out of the bearings, from continuing on its way down the edge of the wheel to the teeth. For a contemporary movement, such a decorative element is more likely intended to add a final touch, which represents superior quality.

The tooth profile of the twenty-tooth escape wheel appears to



be quite traditional compared with most other modern movements. It is equipped with removable cap jewels (Kif-type). The teeth, pinion and pivots are highly polished to a degree to be expected in a high-grade movement.

The ring-shaped pallet bridge 6 surrounding the balance wheel center provides the benefit of solid banking walls. The pallet fork itself 7 is polished and nicely chamfered. This is as pleasant a surprise as it is unusual, because chamfering tiny steel parts like a pallet fork is a lot of work, despite any additional aesthetic benefit being hardly visible even if the watch comes with a crystal back.

Escapement and Pallet

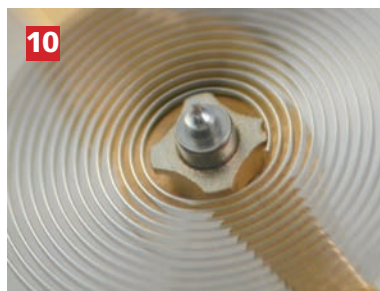
The balance is a free-sprung, adjustable mass type with eight Gyromax-style weights. The weights and the outer portion of the balance wheel are polished and the arms are matte/





sandblasted finished. While the top view may lead to an impression of a very massive part, the lateral view reveals the rim to be extremely delicate.

At first sight, the bottom side appears to be roughly and irregularly finished. But a close look reveals the reason: It is ground by hand in an irregular circular motion. This usually is applied to take away the burrs that are left by machining without changing the thickness in an asymmetrical way. Grinding in a straight, regular motion would leave a straight “brushed” finish, but in fact the danger of rounding the edges or changing the symmetry would be much greater.



Balance and Collet

The hairspring is laser welded to the collet and glued to the stud—this is by no means a traditional method; but if one is looking for the best technical solution, the use of glue is probably state-of-the-art today, albeit somewhat unexpected in a very high-grade movement. The Geneva-type stud carrier is adjustable in order to correct beat error and is fixed with two screws. This assembly should be a joy for any watchmaker who will have to service this movement **10**. If I were allowed to voice my wishes for an ideal regulating organ, they would be nearly fulfilled by the caliber 3120, while a Breguet overcoil would be welcome. I have to admit that it probably would not be better, just a bit nicer.



Winston Churchill...1943

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Looking at the beautiful balance bridge **8** and **9**, it is hard to imagine a more logical or “better” layout. The use of a bridge instead of the much more common balance cock allows greater precision in critical tolerances, especially endshake of the balance arbor. In terms of long-term accuracy, stability and reliability, this is truly a superior solution. And once again, it is amazing that even the tiniest parts, like the stud carrier or the balance bridge, are very “three-dimensional”.

The Automatic Winding Train

Automatic winding of the new AP caliber 3120 is bidirectional. The outer part of the rotor ball bearing (which is pressed and riveted into the oscillating weight) is the first gear of the automatic train, followed by a reduction wheel that is screwed onto the pinion with a square-shaped end part. The two-piece construction of this reduction wheel is as elaborate as it is uncommon, even in very high-grade automatic movements.

The rest of the automatic train is completely integrated under the bridge. First comes the switching rocker that is responsible for the change of rotation and bidirectional winding. The principle of a rocker is well known, but there are many different ways to implement it. The AP switching rocker is very compact and sturdy at the same time.

The rocker wheel arbors (which stick out of one of the two cover plates to the mainplate, inclined in two holes in the mainplate) act as a sort of limiter or banking for the rocker action in order to control the depth into the driving wheel. The riveted rocker is impossible to

disassemble, therefore it is extremely difficult to observe that the switching wheels are jeweled as well. A nice detail, but servicing them could be very tricky.

The function of the switching rocker is revealed by the pictures above. In picture **12**, the rotor turns

counterclockwise (including the rotor pinion—four wheels until the driving wheel). In picture **13**, the rotor turns clockwise (including the rotor pinion—one wheel less; only three until the driving wheel). As a result, the rotation of the driving wheel always remains counterclockwise—all of this is achieved by a slight turn of the rocker.

The winding wheel (the one driven by the rocker wheels) **11** has an asymmetric tooth profile with sharp tips—this allows the rocker wheels a smooth engagement while changing position. In addition, the driving wheel works as a ratchet wheel with a click, which is nicely mounted with two pivots between mainplate and automatic train bridge. And it is even fully jeweled, on both pivots.

Next to the winding wheel is a further reduction wheel that drives the decoupling/click wheel. This click wheel is necessary to disengage the automatic train while handwinding (otherwise handwinding the movement would turn the oscillating weight as well).

While automatically winding, the four tiny claws are inclined into the grooves and transfer the rotation. Handwinding the movement causes the claws to slide out of the grooves and to disconnect the automatic train. This creates a smooth, silky “click-sound”. Finally the torque is transmitted to the barrel through an intermediate driving wheel (similar to the driving wheel between crown and ratchet wheel, both use ball bearings and are press fitted onto the underside of the barrel bridge.) The gear ratio of the complete automatic train is approximately 150 : 1 (rotor : barrel arbor).





Keyless Works and Dial Train

The dial train (picture 14 shows keyless works with dial train) is a classic layout with cannon pinion, minute wheel and hour wheel. The second of the three handsetting wheels is rocker mounted and used for the quick-set function as well. Like almost all steel parts in the caliber 3120, the rocker is nicely finished, chamfered and straight grained. It has two functions: It is a coupling rocker for the setting wheel train, carrying the second handsetting wheel; and this second handsetting wheel acts as a quickset wheel with its upper part (three claw-shaped teeth). Disassembling the rocker reveals a very elaborate detail: The rocker with setting/ quickset wheel is supported by a ruby shim, which is pressed into the mainplate.

Rocker Jewel

Any watchmaker who has ever seen the mainplate worn down by the small setting wheels after

years of use will understand how useful this detail is. Besides, this ruby shim guarantees a smooth and soft rocker action. All three setting wheels and the rocker are separately held in place by screws, the third of the setting wheels is carried by a pressed-in steel pillar.

The winding stem is a three-position type—winding, date quickset and handsetting (with stop [hack] function). Winding feels very smooth, accompanied by a slight “click” sound. The quickset is activated in the second stem position and works crown-clockwise only (ascending date). It requires only very slight force without feeling loose or spongy.

In setting position, the stop lever is activated, and turning the crown clockwise results in a counterclockwise rotation of the hands (because of three setting wheels and the classic under dial train). Setting the hands shows relatively little play in the setting train, which is a sign of tight

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In 2003, a ROAMER watch is attracting attention once again: the ROAMER Competence Original. The story began a year ago when a prototype from the 1940s was discovered in the company archive and restyled by the famous watch designer Rodolphe Cattin (registered design).

The outstanding styling of this eye catcher reflects the quality of the movement and workmanship. The ROAMER Competence Original limited edition, which was successfully launched in 2003, now has a successor in the shape of the Competence Original made in an unlimited edition.

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tolerances. But pushing back the stem reveals an uncontrolled slight movement of the minute hand. This is possibly a side effect of the rocker layout as this tends to apply a slight rotational impulse to the setting wheel when engaged or disengaged. The setting lever, setting lever spring and yoke are nicely finished (chamfered and matte-brush finish); in particular, the yoke with its guide groove for the setting lever pin is beautifully engineered.

The date mechanism features an instant jump-date switch that is achieved by two wheels only. The reduction wheel is driven by the hour wheel and is pivoted as well as fully jeweled (a beautiful detail; so much attention to this wheel is rarely seen). The date wheel is of a complex kind: The basic brass wheel is fitted with an inner steel cage, which houses a pivoted pawl and spring to build up the power for the instant date jump **16**.

Date Wheel

Approximately three and a half hours before the date change the inner steel cage of the date wheel is blocked by a release spring (detent), which is mounted on the mainplate beneath the driving wheel and catches in a small groove—the outer brass wheel continues rotation and winds the small inner spring.



At the time of the date change, the instant date spring **17** is pushed aside by a small steel pin, which is pressed into the brass wheel underside. This leads to the release of the inner steel cage with the pawl and the date star rotating for one increment. The complete mechanism is very sophisticated and in my opinion, should prove to be very reliable. The date star disc is fixed on the mainplate by three beautifully finished retaining screws with specially formed heads **18**.

A 90-degree turn of these screws releases the date ring—a great detail that facilitates servicing (in fact, these “screws” are unthreaded friction fit pins). The date star is **19** supported by five convex rubies that are pressed into the mainplate (similar to the setting wheel rocker bar, which is flat, however), resulting in less friction and wear, which helps to minimize the necessary torque for date change.

Some points may be of interest for the future owners of a watch with this movement: It should be impossible to damage or do any harm to the date mechanism whenever or however the date quickset is used. If hand-set, it will work clockwise, while counterclockwise nothing hap-





pens. If the quickset is used between 8:30 p.m. and midnight, the usual date switch is missed, but it is impossible to damage anything by setting/quick-setting at the wrong time window.

General Comments

Any of the few additional fractions of a millimeter in height was a great investment when AP had the chance to determine the final thickness of the new movement. Even though the general appearance of the movement is most elegant and well proportioned, I did not find a section or part that caused even the slightest doubts in terms of its reliability, stability and structural strength. Apparently, reliability was among the top aims during the development of caliber 3120. I really admire the way they achieved this and I'm sure it will be a new benchmark for quality among contemporary automatic movements.

For sure some may regard some of the elaborate details to be familiar and well known from other manufacturers, but the combination of so many engineering solutions in a single movement, which is so well proportioned, is a really great success.



There are only very few elements of the design that raise questions, such as the press-fit ratchet driving wheels **15** or the riveted rocker. However, I must admit these reservations are more based on my own, probably more than slightly nostalgic, view of the best approach to mechanical solutions.

If I had to express my thoughts in one short comment, I'd say: "This is, at the same time a rugged, reliable sports watch movement, and a classic, beautiful dress watch movement." Only time will tell if my personal assessment of reliability is correct. But I didn't find any hint of an Achilles' heel.

Only time and many samples in the field will tell, but based upon this pre-series specimen, I think this new caliber has the potential to prove itself worthy to join the pantheon of "the greatest automatic movements ever made." ⌚

Suibert Walter has many years of bench and machine tool experience and is particularly fascinated by complex mechanical designs. He is also technical advisor at large on ThePuristS.com.

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SHOWSTOPPERS

German Watch Companies Show at



inhorgenta europe 2004

BY ELIZABETH DOERR



The Klassik Chronograph by Chronoswiss has experienced a warming face-lift.

The thirty-first Inhorgenta took place on a cold Mardi Gras weekend in Munich, Germany. The festive spirit prevalent within the historic downtown area of the Bavarian capital city was, however, nowhere to be found at Munich's fairgrounds, home to Inhorgenta 2004. Although the fair's halls look more decorative and inviting with each passing year, some of the high-end companies that decided not to participate after years of representation there, notably The Swatch Group and Maurice Lacroix, were sorely missed. With the jewelry sector strong, the fair boasted a total of 1,215 exhibitors from thirty-eight countries. Once again, as in past years, the most interesting products in the watch segment were shown by German-based companies. Although expectations by manufacturers were low, central Europe's recession of the past few years might finally be on the upswing with the 27,000 trade-only visitors ordering more than expected. *International Watch* brings you an exclusive look at the new products in the fine watches category that were presented at Inhorgenta 2004.

Chronoswiss

Luckily for the industry, there seems to be a new movement afoot toward a general return to the classic luxury of gold. After years of understated steel and platinum, warm gold tones seem to be making their way back to the wrists of watch fans, especially on watches that could well be deemed classic in every other sense of the word. Originally debuting in 1989, Chronoswiss' automatic Klassik Chronograph model has



This Cora model is set with fifty-six Top Wesselton diamonds, totaling 1.18 carats.

since represented the archetype of this term. Not only is the case with its teardrop lugs reminiscent of the 1950s, it has also been manufactured using original tools from the period.

A mark of a company that will last for more than a current generation is that it can update its collection without changing that which made it remarkable in the first place. The Klassik Chronograph is now fifteen years old, and it was time for some subtle changes: The year 2004 presents us with an updated version of this timekeeper, going with the times yet remaining fully classic. Until now, the Klassik Chronograph was available in either stainless steel or rose gold. Now the case is available in a classy combination of the two: stainless steel case with solid 18-karat rose gold lugs, buttons and crown. This harmonious appearance of the housing surrounding Chronoswiss' version of the Valjoux 7750 (Caliber C.741) is made even

more profound by the fact that it is now water-resistant. This was finally achieved by creating a new design for the pusher mechanism and the internal sealing system.

Last but not least this timepiece's "face" has also been upgraded to appeal not only to men—as the silver and black dials have until now—but also to style-conscious women connoisseurs of classic timepieces. The new rose gold-plated dial lends the entire timepiece a certain glow that harmoniously matches the rose gold elements on the case.

Temptation

The smallest chronograph in the world—the Cora by Temption—was heralded in 2003 by sketches and drawings. Now this minuscule time writer is being introduced to watch fans in the "flesh" in various versions. The case, a mere 9.6mm in height and water-resistant to 100 meters, is available in stainless steel, 18-karat rose gold and satin-finished 18-karat white gold. The dial variations range from mother-of-pearl with blued hands and markers, to black with white or golden hands and markers. The top model in this collection and the new introduction at Inhorgenta 2004 is the diamond-set model in stainless steel. Fifty-six Top Wesselton diamonds adorn the bezel and lugs, turning hard steel into a fitting setting for 1.18 carats of the sparklers and the petite timepiece into a real jewel that's not only for women.

The Cora is driven by Caliber T22.1, based on the reliable ETA 2094 movement and features fine adjustment and Incabloc shock

protection. The diminutive automatic movement has a diameter of 23.9mm and a height of 5.5mm, and its 28,800 bph power the watch for forty hours. The fine finishing of the movement, including blued screws and Côtes de Genève, can be admired through the chronograph's sapphire crystal caseback. The crown and buttons are garnished by integrated onyx cabochons, a step performed directly by Temption in Herrenberg, Germany.

Mühle Glashütte

One-hundred and thirty-five years ago, Robert Mühle founded the company Robert Mühle & Son in remote Glashütte. Its history included the production of measuring instruments for watch manufacturers—very important as F.A. Lange had introduced the metric system to the world of watches—as well as clocks for automobile dashboards and tachometers. In the year 1869, World War II and its effects were still a long way off, but this bleak period in history did finally come, and Mühle's company shared the same fate as the rest of the workshops in Glashütte: expropriation. It wasn't until 1994 that Hans-Jürgen Mühle, a great-grandson of the original founder, was able to reinstate his family's heritage by founding Mühle Glashütte GmbH Nautische Instrumente & Feinmechanik. In addition to building timekeepers for boats and ships, this company also successfully manufactures higher-quality wristwatches.

Thus, the year 2004 represents a double anniversary for Mühle, celebrated by the introduction of a limited set of watches by the name of *Homage to Robert Mühle*. This edition comprises five models that are



presented in a beautiful wood box. Although the retailer must buy the set as such, it is up to him or her to sell them individually or in the set to the client. The set contains two classic three-hand watches, one for men and one for women, a three-hand watch with large date, a timepiece featuring a second time zone, and a chronograph. Each watch in the 500-piece limited-edition sets comes in highly polished stainless steel cases on crocodile skin straps.

The ETA base movements found in each of the watches have been specially finished in Glashütte and fitted with Mühle's very own take on the swan-neck adjustment, dubbed by Hans-Jürgen Mühle the "woodpecker" fine adjustment. This new device continues in Glashütte's tradition of quality: One of the special characteristics of Glashütte watches has always been its fine regulation, usually completed by a combination of an index and a spring that is bent so as to resemble a swan's neck—hence the name.



Left: The chronograph from the *Homage to Robert Mühle* set is like the others, limited to 500 pieces.

Above: A Mühle timepiece being adjusted by its "woodpecker."

Mühle, however, was not interested in just copying the regulation device used by the old masters, so the precision engineer created his own, and now it replaces the original regulation adjusted by an eccentric screw in the movements. The components necessary to the woodpecker fine adjustment—spring, index and balance cock—are now being manufactured in the company's own workshops. In order to achieve this, Mühle purchased a second, highly modern CNC work center and has hired additional watchmakers. Mühle's new fine-adjustment device will be added to each of the company's complicated watches in the future, a sure sign of its commitment to continually improving quality.

Sothis

Sothis, the creative little watch company hailing from Germany's

Bielefeld, showed two colorful new watches based on automatic technology previously developed for other watches within its line, each limited to 500 pieces worldwide.

The Triga model is powered by an ETA Valjoux 7753, and its gold-plated rotor is engraved; the entire movement is finely decorated. Although the time and chronograph functions are set and activated by using the crown and buttons respectively, the date is adjusted by a corrector on the side of the case, allowing for the special arrangement of displays. The 39-mm case is made of 316 L surgical stainless steel protected by sapphire crystals front and back, and the dial is available in a choice of white or black. The Triga comes on a leather strap with deployment clasp or stainless steel bracelet.

The second model, Janus, takes its name from the Roman god who also lent it to the month of January. This god has the extraordinary power of looking both backward and forward in time. Although this automatic chronograph powered by an ETA Valjoux 7750 does not have this ability, it can, however, stop time intervals with the best of them. The stainless steel, 42.5-mm case features a dial in either black or white that is adorned by silver appliqués. Both the lance hands and the applied elements are inlaid with



Sothis's new Triga and Janus models.



SuperLuminova. Like the Triga, the Janus model can be purchased with a leather strap and deployment clasp or a stainless steel bracelet.

Union

Little sister to German great Glashütte Original, Union made its first trip to the spotlight in an exhibition held parallel to Inhorgenta 2004. This year marks the 111th anniversary of the founding of Union by Johannes Dürrstein in Glashütte. Such a lucky number was bound to be celebrated in some form, and parent company Glashütter Uhrenbetrieb has now brought out a limited-edition set of three timepieces to do just that. Limited to 111 pieces, the set comprises an automatic model with subsidiary seconds, an automatic date and an automatic chronograph. All three timekeepers are powered by Union's Caliber 26 in slightly modified forms.

The beautiful finish of the stainless steel cases is set off by the sober aesthetics of the black dials with white markers and hands and the red subsidiary hands, lending the dials a rather sporty yet elegant look, fighting the absolute austerity of the otherwise completely black-and-

white dial. The high-quality calfskin strap displays a brand-new element at Union: highlighted stitching available in either serious white or sporty red to go along with the elements presented on the dial.

Extending the exclusive Julius Bergter edition, Union presented its Bergter manually wound Power Reserve and Small Seconds models in 18-karat rose gold, displaying an especially warm tone that contains approximately 1N more than most rose golds. Although Union is not especially known for searching out the highest end of the luxury market by keeping its models in steel cases and with low-key aesthetics, the recent demand for classic gold models won out, resulting in these luxuriously simple timepieces limited to 200 each. Both movements are based on Union's own Caliber 30, which proudly features such characteristic traits of traditional Glashütte watchmaking as a screw balance, including eighteen weighted gold screws and a swan-neck fine adjustment for the most precise regulation. And, of course, let's not forget the ruby bearings embedded in decorative gold chatons—a Saxon specialty.

Jacques Etoile

Specialty manufacturer Jacques Etoile had a host of new products to present to interested onlookers. Master watchmaker Klaus Jakob, the mastermind behind Jacques Etoile, the name of which is a play on the first names of Jakob and his wife Yildiz (Turkish for “star”) in French, is an expert at digging up old Swiss calibers and using them exclusively in his finely made timepieces. Other series, such as the company’s chronographs, have until now utilized ETA movements for lack of another suitable mechanism to power them. With the advent of the company STT, which has picked up the remains of Progress, Jakob has now begun the process of switching from ETA to STT, regardless of the fact that these movements are just about four times as expensive; he finds

Between February 20 and 23, 2004, 1,215 exhibitors from thirty-eight countries presented their latest ranges, innovations and trend products to a trade audience of around 27,000 trade visitors. Once again the proportion of international visitors, (from outside Germany), was around 30 percent, with increases noticeable in particular from the Netherlands (+22 percent from 2003), Poland (+17 percent), Spain (+11 percent), Great Britain (+6 percent) and Greece (+5 percent).



Jacques Etoile’s entry-level Maximat has a classic look with a faux-enameled dial.

them just as reliable as the previously utilized ETA movements.

Extending the Metropolis family, Jakob has now created the Indianapolis model in a brand-new watch housing manufactured by high-end Glashütte casemaker SUG, including a seldom seen screw bezel. True to the brand’s new policy, the Indianapolis is powered by STT Caliber 11.50.

Perhaps the most stunning new model introduced by Jakob is the world’s least expensive tourbillon: Retailing for somewhere around \$20,000, this STT-powered “whirlwind” completes the Monte Carlo trio that usually runs on an exclusive old-stock Venus movement.

In addition to new versions of Estes Parc (with a black dial), Jakob also introduced a new entry-level Jacques Etoile timepiece retailing for under \$1,000 called the Maximat. “The name is taken from maxi design and automat,” explains

Klaus Jakob. So far, it is powered by a trustworthy ETA 2824.

The most stunning addition to Jacques Etoile’s collection is perhaps the Atlantis model, a professional diver’s watch. Inspired by Jakob’s own love of the sport and enthusiastically tested by him in the depths of the Caribbean, the Atlantis is water-resistant to a full 500 meters. The unusual case is not only striking in design, it also performs a true function in that it protects the movement from the damaging effects of magnetic fields by using a soft iron core and dial, a highly practical technology made famous by Germanic brands IWC and Sinn. The Atlantis’ rotating bezel is patented to protect the diver from accidentally lengthening the time submerged, and the black or orange dial is especially legible. An added bonus is the unique knurling of the case sides and crown, which are especially easy to grip even with gloves on. Ⓢ

How to Become A Watchmaker

Part I of an ongoing series

BY ROB OTTO

When the March 2003 issue of *International Wristwatch* (now *International Watch*) arrived at my Florida home, there was an unexpected surprise in the form of a very informative article about watchmaking schools in the United States (“So, You Want to Go to Watchmaking School?” by Mike Thompson). One item that struck me was that it was possible one could be taught this old-world skill by means of traditional Swiss methods and that a few of these schools were actually in North America. I’m referring to WOSTEP (Watchmakers of Switzerland Training and Education Program). This was worth looking into for me, and by the next month I would attend an advisory board’s meeting at Oklahoma State University (OSU) at Okmulgee to learn more. Here’s an idea of what it might take to get you on your way to working for the best watch brand names in the world.

Acceptance Process

Prospective watchmaking students go through the interview process with a board of advisors from the

Swiss watch industry and OSU staff. Representatives from many prestigious brands were there. An advisor from The Swatch Group and one from Rolex conducted my personal interview. Having never opened a timepiece in my life, I wasn’t sure how I would go about impressing upon these gentlemen I was a suitable candidate. Turns out, previous experience is not required for consideration of entrance to the course. They tactfully drew out my personal reasons for being there, and when it was over I realized they had additional intentions of not only finding out if I was right for the course, but also if I was sure it was right for me. In addition to the interview and routine college assessments, my group was evaluated for mechanical aptitude and hand dexterity.

Off to School

A month later, I was accepted to take a seat at one of the twelve benches offered for 2004. That was the day I went from a fairly well-established entertainment production technician (concert rigging and pyrotechnics) with more than



twenty years in the business, to aspiring college student. One advantage of choosing OSU is that they combine an associate’s degree in Watchmaking and Microtechnology with WOSTEP certification and compress the 3,000-hour, three-year

degree into just two years of intensive full-time study. I decided to come out one semester early to complete a better part of some of the general education requirements I would need to graduate and to lighten the load a bit throughout my primary training.

Getting Right to Work

Technical drawing and how to use various measuring devices filled the first week of class. Armed with these new skills, we were given a few watch parts and tasked with depicting them on graph paper with the corresponding dimensions, as if we were going to fabricate the pieces ourselves or submit them to our instructors for design approval. For the remainder of our first month we practiced hand fabricating along with filing and sawing techniques on hardwoods and then applied these lessons to metals.

We patiently furthered our confidence with Swiss-made files by making gemlike brass cubes from raw round stock. This inconspicuous project evolved into our first experiences with controlling precise size tolerance, symmetry and quality of finish. Sound familiar? We are currently doing the same exercises with steel along with polishing techniques. I admit I had surprising and, yes, even frustrating difficulties in achieving the desired results. These projects may sound a bit simple to most, but keep in mind we can't break out the electric pad sander or motor-driven jigsaw—only a handful of files for now. And, by learning to accomplish great results with these proven Swiss techniques, it

will help us to one day be able to confidently go about servicing your prized possessions.

I look forward to sharing more highlights of this remarkable course of study in upcoming issues. And,

should your interest in horology go beyond that of a collector, I encourage you to do the research, make the calls and possibly enroll in a watch-making program that works for you. Go ahead, follow your bliss. ☺



Photography by Byron Sims