

—Magazine—

THE ROLEX

ISSUE #00

A WATCH
LIKE ME
BY JAMES
CAMERON

SYLVIA EARLE
AN OCEAN
OF HOPE

MATERIALS
THE STEEL
OF ROLEX
WATCHES



The Rolex Magazine



THE FIRST SUBMARINER
from 1953 in steel, 38mm,
waterproof up to 100m.

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—The Rolex Magazine—
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Pelle Bergström

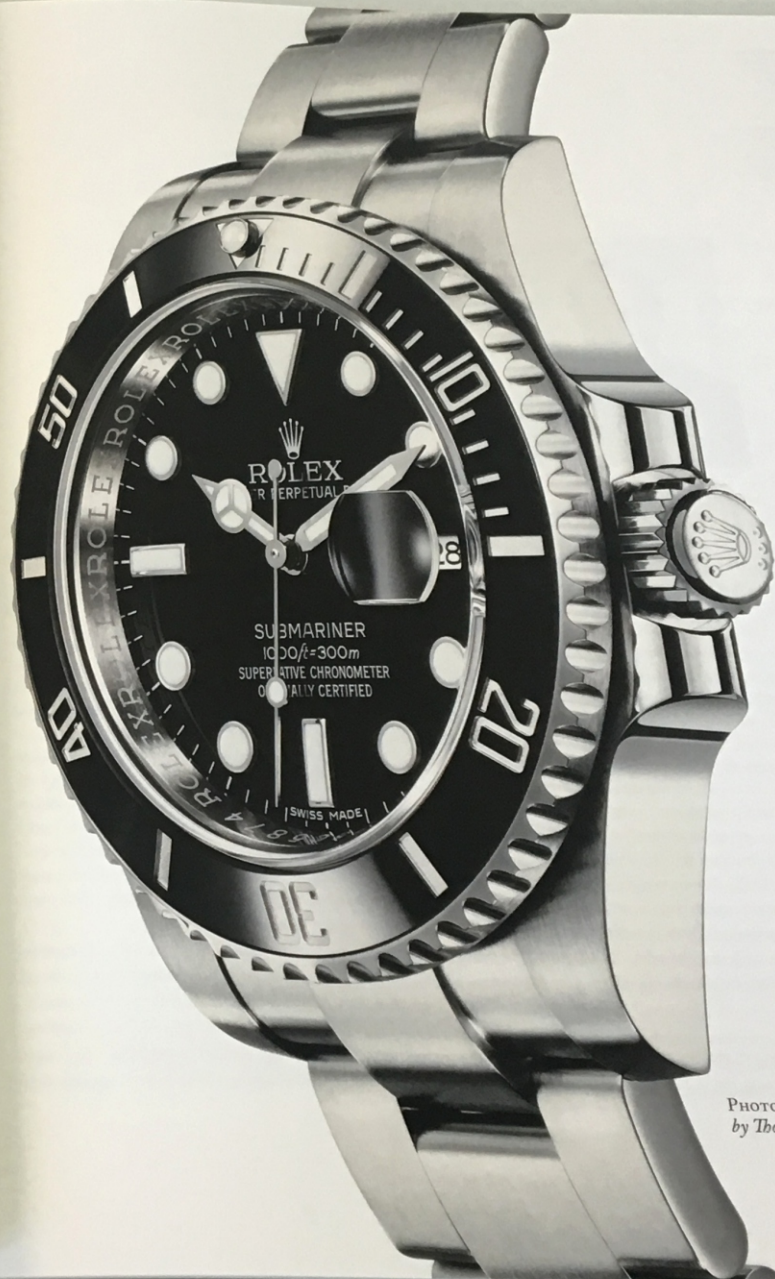
CARTE BLANCHE



Dial readability is essential on a divers' watch. Simple shapes — triangles, circles, rectangles — as well as the logical layout of the hour markers enable instant and reliable reading. So do the broad hour and minute hands, clearly differentiated in size and shape to prevent any risk of confusion underwater.

PORTRAIT SUBMARINER

James Cameron tells the story of the passion for diving that turned the legendary watch into his inseparable companion. He shares extraordinary adventures few have ever seen — from exploring the deepest ocean to conquering the heights of Hollywood.

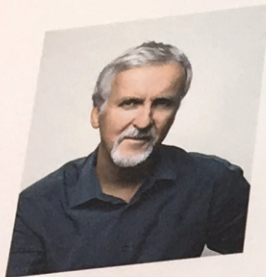


A WATCH LIKE ME
by JAMES CAMERON

PHOTOGRAPHS
by Thomas Hensinger

**OYSTER PERPETUAL
SUBMARINER DATE**
in 904L stainless steel
with a green dial and
green Cerachrom
bezel insert in ceramic
(p. 14)

**OYSTER PERPETUAL
SUBMARINER DATE**
in 904L stainless steel
with a black dial and black
Cerachrom bezel insert in
ceramic (previous page)



FILM-MAKER, EXPLORER
AND ROLEX TESTIMONEE
JAMES CAMERON HAS BEEN
THE PROUD OWNER OF
AN OYSTER PERPETUAL
SUBMARINER FOR DECADES.

The Submariner is far from just a timepiece. It's a totem of identity, deeply connected to how I think of myself, the values I consider important, and the journey my life has been. A Rolex watch stands for those values – precision in thought and action.

The Submariner has been my constant companion throughout all of my work as a deep ocean explorer, and my film career. This watch represents the things I aspire to be – strong and dependable over the long haul, striving for excellence but understated, classy but not glitzy or gauche, never ostentatious but never anonymous. And it loves the ocean – it loves the water and is not afraid of pressure. Like me.

When I was in my twenties, without any money, I was a passionate scuba diver and free diver. I wasn't looking for 'A' diving watch, I was looking for 'THE' diving watch, the one that the divers I knew and respected were wearing. Before I bought my Submariner, I knew it as the watch the dive community considered the best. When you had one, it signified that you'd arrived – that you were a diver to

be reckoned with. That for you, diving wasn't a hobby, it was a mission. And that your relationship with the ocean was deep and lifelong.

It was a kind of wedding ring, a symbol of your marriage to the sea.

From the earliest days of diving, a dive watch has been the most important instrument for keeping yourself alive in a realm that's inherently hostile to humans – there's NO AIR. As much as the underwater world may seduce you with its wonders, you can only spend limited time there. At some point you have to go back. And you rely on your dive watch to tell you precisely when.

I learned to dive in 1970, before there were dive computers. We learned to use the US Navy tables, to know how long we could stay on the bottom, before we'd absorbed too much nitrogen and had to come back up. In those days you dove with three instruments: a watch, a depth gauge, and a pressure gauge on your tank that told you how much air was left. And if you were fancy, a compass.

Divers literally live or die by their watch. Even now, in the age of diving computers, I always set my bezel as a backup. Computers can fail, but my Rolex won't.

When I put it on in the morning, the day of a dive, it is part of the ritual of mental preparation. And part of the thrill of knowing I'm about to go to a place that

not only have I never been to before, but that possibly no one has ever been to before.

When I finished *Aliens* in 1986, it was the first break I had in three years of work establishing myself as a film-maker. So, I went on a year-long dive safari, to apologize to the ocean for being away for so long. I had a little money, so I could afford the Rolex Submariner I'd always wanted. And, with my Submariner, I joined the ranks of the master divers I'd admired.

The rest is history. I wore that watch at all times, except while sleeping, for the next 26 years and I never needed another watch after that. I've been given a number of fine watches as presents over the years, but they collect dust on my dresser. I finally told my good friends, if you're thinking of getting me a watch for my birthday, don't, because I've got my watch.

When I made my next film, *The Abyss* (1989), I met people from all over the ocean community – from the deep ocean explorers who became advisors to the film, to the marine roboticists who supplied our remotely operated vehicles, to research submersible pilots, to the seasoned divers of our underwater photography team. And it was no surprise that most of them wore a Submariner. We all shared a deep commitment to the ocean and diving. The Submariner was a symbol of that club.

“WHEN I PUT IT ON IN THE MORNING, THE DAY OF A DIVE, IT IS PART OF THE RITUAL OF MENTAL PREPARATION. AND PART OF THE THRILL OF KNOWING I'M ABOUT TO GO TO A PLACE THAT NOT ONLY HAVE I NEVER BEEN TO BEFORE, BUT THAT POSSIBLY NO ONE HAS EVER BEEN TO BEFORE.”

I'm not a person who's ever spent a moment's thought on brand loyalty. I'm not loyal to sodas, shoes, or any particular make of car. I don't think of brands as defining my identity. It's just not how I view the world. I'm a bit surprised to look back over my life and realize how much the Rolex brand has meant to me.

To say that I am loyal to these watches is an understatement. They've always been loyal to me, and kept perfect time in harsh conditions – from the South Pole, to the Titanic wreck, to the sets of some of the most challenging motion pictures ever made, to the bottom of the Challenger Deep itself. I return that loyalty; giving a Submariner to a friend, whether that person is a diver or not, is the highest compliment I can pay.

I have always been pulled in two directions – toward the arts and storytelling in one direction, and toward engineering and physics in the other. I have reconciled these two passions by becoming a film-maker, an artist

“IT WAS A KIND OF WEDDING RING, A SYMBOL OF YOUR MARRIAGE TO THE SEA.”

OYSTER PERPETUAL
SUBMARINER DATE
in 18ct yellow gold with
a black dial and black
Cerachrom bezel insert
in ceramic.



OYSTER PERPETUAL
SUBMARINER DATE
in yellow Rolesor (904L
stainless steel and 18ct
yellow gold) with a blue
dial and blue Cerachrom
bezel insert in ceramic.

“MY ROLEX IS A CONSTANT COMPANION REMINDING ME OF THOSE PRINCIPLES — ELEGANCE OF DESIGN, PRECISION CRAFTSMANSHIP, TOUGHNESS DESIGNED TO WITHSTAND ALL THE FORCES THAT MIGHT ACT UPON IT.”

who relies on advanced technology for my art. To tell a story, I may use some of the most advanced computing technologies in existence. Even setting aside visual effects, basic film-making has always involved precision machines — cameras that use the finest optics and movements human engineering could provide.

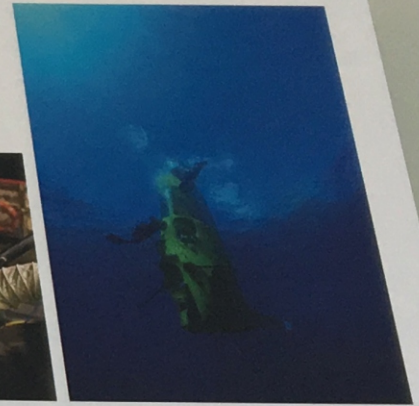
The engineering side of my brain loves finely made machines, from a turbocharged racing engine to the rotor system of a helicopter, to the rocket engine of a spacecraft. I am endlessly drawn to the idea that our minds can create these precision machines that then can take us places our bodies couldn't otherwise — across the sky, under the ocean, even to other worlds. As an explorer, I rely on machines to keep me alive in the harshest realm imaginable, in the deep ocean where the extreme pressure tests the strongest metals to their limits. I know that I'll survive only by trusting the principles of engineering, and the precision fabrication that went into my diving machine.

My Rolex is a constant companion reminding me of those principles — elegance of design, precision craftsmanship, toughness designed to withstand all the forces that might act upon it. It's the diving machine I wear.

Real elegance is a kind of Zen simplicity. In a dive watch, where you may be hundreds of feet down, in darkness, with your vision impaired by a mask or helmet, by the distorting effect of water, by bad visibility, even by the mind-numbing effects of nitrogen narcosis, I want a simple, clear display. And I want reliability. I want a tough watch that can take on the harshest elements. In darkness, low visibility and strong currents, I've never had difficulty reading my Submariner. The bezel is chunky and easy to turn, with a positive detent I can trust. The band is reliable — I know that watch will never come off my wrist — and yet it's extremely easy to unsnap and quickly resize to fit over my wetsuit.

Despite its ruggedness and clear sense of purpose, I'm comfortable wearing my Submariner to the most upscale function, whether it be a black tie dinner or a red carpet event. One should be able to code-shift across all social strata without losing one's sense of self. My Rolex dive watch keeps me grounded.

I wore the same Submariner in the *Mir* submersibles, on my 33 dives to the *Titanic* wreck, that I wore on stage when I won the Oscars for *Titanic*. Just as I'm at home



in both worlds, my watch is the right choice — the only choice — for both the deepest and remotest places on the planet and the glitziest red carpet event. I don't believe there's another watch in the world that wouldn't look out of place in one or the other of those settings.

I feel connected to the Rolex legacy through my own actions as an explorer, artist and innovator. Through my work, I'm earning a place among the other wearers of this watch, who have done so many remarkable things, in the arts, in sports, in exploration and the sciences. It is a brotherhood — and sisterhood — of accomplishment.

And speaking of sisterhood, I love how the watch looks on a woman's wrist. It tells me something about that woman — that she's not afraid to say she is equal to any task, any environment, any challenge. Seeing this watch looking so at home on the wrist of a strong, capable woman, makes me realize that the watch doesn't represent values that are necessarily masculine, but values that are human: strength, integrity, reliability, elegance, clarity of purpose.

My tour of the Rolex facilities in Geneva a few years ago left me with a much deeper appreciation of the science and technology that goes into every Rolex watch. Seeing the fabrication process, with its insanely high standards for materials, precise tolerances, and layers of quality control was illuminating. But what really impressed me were the people. What we think

of as a dispassionate process actually turned out to be the expression of the will, the purpose and the passion of the people who stand behind these watches. Their pride and dedication are what make these watches so dependable when we take them out into the world, into the craziest and most remote places possible.

The commemorative Rolex Deepsea with a D-blue dial that is now my constant companion is a reminder, no matter where I am or what I'm doing, of a very special moment in my life, when my tiny team of innovators built and operated our *DEEPSEA CHALLENGER* submersible and accomplished our dream of diving to the deepest place on the planet, the Challenger Deep. The watch connects me to the legacy of all the other explorers who've carried their Rolexes to the most distant corners of the Earth, including my friend Don Walsh who took one to the Challenger Deep in 1960.

Rolex has stood for accomplishment and exploration for almost a century. I'm proud to be a small part of this great tradition. 🙏

JAMES CAMERON (left), alongside the hatch of the *DEEPSEA CHALLENGER* submersible.

DEEPSEA CHALLENGER, seen here at the surface of the Pacific Ocean, was designed and built by a team led by Cameron to explore the deepest ocean.

“I WORE THE SAME SUBMARINER IN THE *MIR* SUBMERSIBLES, ON MY 33 DIVES TO THE *TITANIC* WRECK, THAT I WORE ON STAGE WHEN I WON THE OSCARS FOR *TITANIC*.”

“THE SUBMARINER IS FAR FROM JUST A TIMEPIECE. IT’S A TOTEM OF IDENTITY, DEEPLY CONNECTED TO HOW I THINK OF MYSELF, THE VALUES I CONSIDER IMPORTANT, AND THE JOURNEY MY LIFE HAS BEEN. A ROLEX WATCH STANDS FOR THOSE VALUES — PRECISION IN THOUGHT AND ACTION.”

JAMES CAMERON

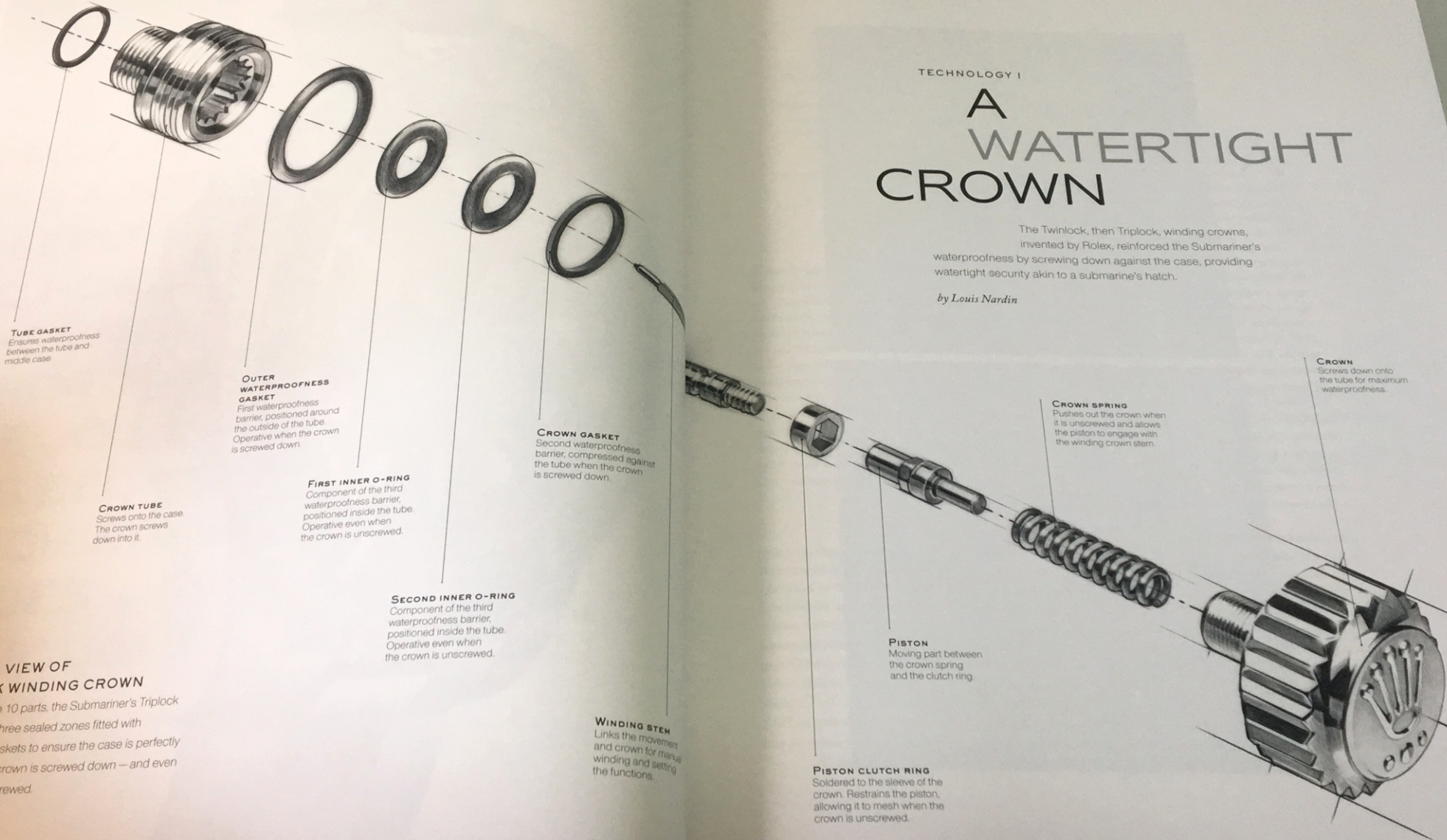


OYSTER PERPETUAL
SUBMARINER DATE
in 18ct white gold with
a blue dial and blue
Cerachrom bezel insert
in ceramic.

TECHNOLOGY I
**A
WATERTIGHT
CROWN**

The Twinlock, then Triplock, winding crowns, invented by Rolex, reinforced the Submariner's waterproofness by screwing down against the case, providing watertight security akin to a submarine's hatch.

by Louis Nardin



**EXPLODED VIEW OF
A TRIPLOCK WINDING CROWN**

Composed of some 10 parts, the Submariner's Triplock winding crown has three sealed zones fitted with high-performance gaskets to ensure the case is perfectly waterproof when the crown is screwed down — and even if accidentally left unscrewed.

As the winding crown is gently pressed in and turned, the thread engages. After just another few turns, the system locks, and the case is now perfectly waterproof and dustproof. Sealed tightly by the Triplock winding crown, the Submariner is ready to descend to depths of up to 300 metres (1,000 feet).

Offering a point of entry to the movement inside the case, the winding crown has always posed a challenge for waterproofness in watches. The Triplock winding crown equipping the Submariner today is the most up-to-date and highly developed version of the original screw-down winding crown, invented by Rolex in 1926 to make the Oyster waterproof. The Oyster was the first watch in the world to be wholly protected from the elements. A miniature masterpiece of engineering, the Triplock is made up of some ten different components manufactured from the most resistant materials and includes three waterproofness systems. Its design is so efficient that, more than 40 years after its initial development, the crown could be used, as is, for the Rolex Deepsea, Rolex's latest-generation divers' watch, waterproof to the extreme depth of 3,900 metres (12,800 feet).

SCREW-DOWN SYSTEM AND O-RING GASKETS

The first waterproof crown patented by Rolex in 1926 established the basic principle: the crown, fitted with a gasket – made of metal at the time – screwed onto a tube which was part of the watch case. When the crown was screwed down, the gasket was compressed against the tube, creating a perfectly waterproof barrier. The wearer had only to unscrew and release the crown in order to adjust the functions of the watch and wind the movement. The sole weak point was that the case could only be waterproof so long as the crown was screwed down. Rolex improved

TWINLOCK OR TRIPLOCK?

An indication on the winding crown distinguishes the Twinlock from the Triplock. The former is identified by a line, or either one or two dots, below the Rolex emblem, depending on the metal of the case, while the Triplock winding crown bears three dots of varying sizes according to the material.

the mechanism in 1953 by developing the Twinlock winding crown, with a double waterproofness system which it introduced on its first divers' watch: the Submariner. The metal gasket at the base of the crown was replaced by two O-rings in a synthetic material. The first, inside the crown, presses against the top of the tube, as previously, to lock the case when the crown is screwed down. The second is positioned inside the tube, around the winding stem, to offer protection even when the crown is unscrewed. It offers another advantage in that it stabilizes and provides secure support for the stem when it is moved. The Twinlock crown is fitted today on most Rolex watches and guarantees their waterproofness to a depth of 100 metres.

WATERTIGHT LOCK

The third-generation waterproof winding crown, named Triplock, is fitted with a triple waterproofness system. It was introduced in 1970 to equip the Sea-Dweller, the model designed for professional deep-sea divers. To further reinforce the waterproofness, even if the crown should remain unscrewed under water, Rolex engineers added a second O-ring inside the tube. This acts as a kind of airlock, safely keeping out even the minutest particles. The Triplock system was fitted in the Submariner starting in 1977. Today, it equips all the brand's divers' watches as well as a number of other Professional models. 🤿



A TINY SPRING
ENSURES THAT THE CROWN
IS RELEASED
WHEN IT IS UNSCREWED.

CROWN SCREWED DOWN,
the watch is hermetically
sealed and guaranteed
waterproof to 300 metres
(1,000 feet).

CROWN UNSCREWED
to set the time or to manually
wind the watch.

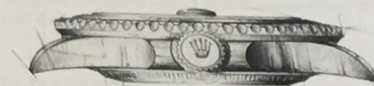
TECHNOLOGY II



The Submariner's rotatable bezel plays an essential role in diver safety by providing a reliable means of recording the time spent under water. A composite of technical know-how, the bezel is additionally a distinctive feature of this most emblematic of divers' watches.

by Louis Nardin

THE WATCH
Submariner



The importance of the Submariner's bezel goes beyond its purely functional purpose. The distinctive bezel is not only indispensable for divers, to track immersion time and decompression stages, it has forged the identity of Rolex's first and most emblematic divers' watch. Visually, the rotatable bezel frames the dial and marks a natural boundary between the heart of the watch and the case. Thanks to its sophisticated construction, it turns smoothly, precisely and reliably. The various enhancements introduced since it was first launched reflect the constant innovation process implemented at Rolex.

MEASURING TOOL

The rotatable bezel serves first and foremost as a measuring tool for divers to keep track of their dive time. Before entering the water, a diver turns the bezel so that the triangular zero marker points to the minute hand. This will allow them to reliably monitor, in the course of the dive, exactly how much time they have spent underwater, by reading the bezel itself rather than the dial. Depending on the depth of the dive, on the way back to the surface a diver must stop once or several times to decompress. At each stop, the triangular marker can be repositioned opposite the minute hand to start measuring a new

length of time, which can be read precisely using the first 15-minute graduation on the bezel marked in one-minute subdivisions.

ZERO TRIANGLE AND LUMINOUS MARKER

The Submariner is immediately recognizable thanks to its rotatable bezel. On the first version launched in 1953, the 60-minute graduated black insert was made of anodized aluminium, and the bezel turned with the help of a circular flat spring, which held it in the chosen position. The whole system operated independently of the heart of the case; in this way, the waterproofness of the case remained intact. The vertical fluting around the edge offered a good grip for turning the bezel.

This first version laid the foundations for a strong design, which would gradually evolve. The first evolution concerned the triangle, the starting point for all timing. For visibility in dark conditions, a dot of luminescent material was added, later replaced by a luminescent capsule. The bezel was graduated at five-minute intervals with numbers from 10 to 50 and intermediate markers; the triangle served as the 60-minute marker. From the very outset, a strong contrast was achieved by the grey-white colour of the natural aluminium graduations against the bezel's black background.

120 NOTCHES

Modifications introduced in the late 1950s initially altered the bezel graduations. For more accurate timing of decompression stages, the first 15 minutes were marked off in individual minutes. The morphology of the bezel was also rethought, now with deeper cut, bevelled knurling. Rolex also introduced a "press and turn" locking system, so that the bezel needed to be pushed down before it could be turned. In 1979, this was replaced by a uni-directional serration, whose construction would again evolve. Today it is comprised of four vertical spring-mounted elements: a click that pushes up into tothing under the bezel to create a form of ratchet system and fulfil the anti-reverse function, and three small steel ball bearings, which supply the rotation torque.

SENSORY EXPERIENCE

At Rolex, quality is also synonymous with emotion. Rolex watches reveal their perfection not only in their functioning, but also through the wearer's sensory perception of the timepiece in use. When the Submariner's bezel is turned, the feel and the sound give the clear impression of an object designed and manufactured with the greatest care and attention. The rotatable bezel feels good in the hand. A masterpiece of fluidity and precision, it is also easy to grip. It rotates notch by notch, accompanied by characteristic crisp clicks that convey a sense of quality and reliable functioning. To ensure this unique experience for those who wear its watches, Rolex is equipped with a sensory analysis laboratory, which is entirely dedicated to maximizing the visual, tactile and acoustic perception of its products.

One complete turn comprises 120 positions, or one per 30 seconds. This new construction results in an even more secure feel and enhanced fluidity when the bezel is turned. It has since been extended to all the brand's divers' watches.

HIGHLY RESISTANT CERAMIC

The ultimate refinements to the Submariner's bezel affected the colours and the materials from which it is made. In 1969, the bezel made its first appearance in gold – like the watch – with clear graduations on a blue anodized aluminium insert. In 2003, to celebrate the model's 50th anniversary, a steel version with a green bezel was launched. But the most recent, major evolution came in 2008 when the aluminium was superseded by the Cerachrom insert, an exclusive bezel component developed by Rolex. Manufactured from a particularly hard, corrosion-resistant ceramic, the Cerachrom bezel is virtually impervious to scratches and its colour is unaffected by the sun's ultraviolet rays. It also offers excellent polishability ensuring an exceptional, long-lasting lustre.

Each disc is injection moulded, with inset numerals and graduations, and then coloured via a PVD (Physical Vapour Deposition) surface treatment that covers the whole of the insert with a thin layer of either gold or platinum. This layer of precious metal (approximately one micron thick) also coats the inset numerals and graduations. Polishing removes the gold or platinum from the rest of the bezel's surface and achieves a smooth and lustrous finish. The metal in the numerals and graduations remains, making them clearly visible and extremely durable.

Green or blue versions of the Cerachrom bezel are available for specific models, enhancing both the technical and aesthetic performance of the Submariner's bezel, while maintaining the identity and heritage of a divers' watch that is recognizable everywhere at a glance. 🍷

SOPHISTICATED DESIGN ENHANCES
FLUIDITY WHEN THE ROTATABLE BEZEL
IS TURNED AND ENSURES PRECISION
AND RELIABILITY.

CERACHROM BEZEL INSERT
In virtually scratchproof ceramic, it is friction fitted into the rotatable bezel.

BEZEL INSERT RING
Supports the Cerachrom insert inside the rotatable bezel.

ROTATABLE BEZEL
Equipped with tothing on the underside for the ratchet system and anti-reverse function (in interaction with the bezel click).

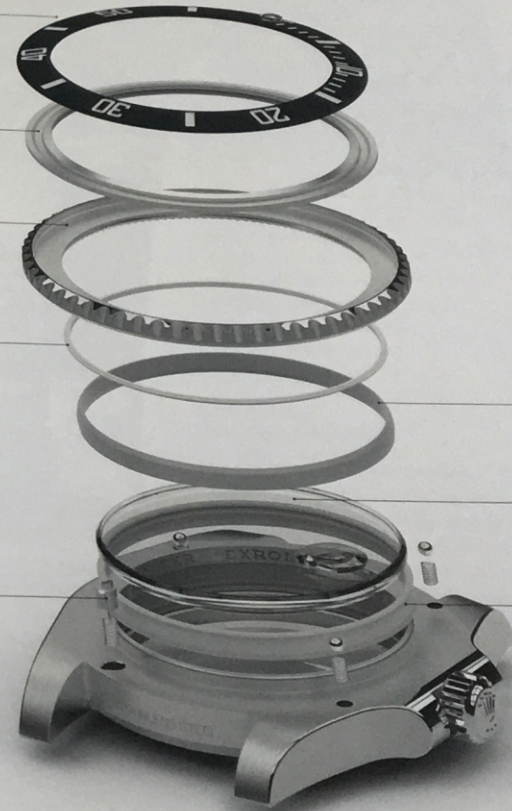
BEZEL FASTENING RING
Slots into a groove in the bezel and holds it around the crystal by gripping the crystal securing ring.

BEZEL CLICK
The spring-mounted, bevelled click pushes up into the tothing under the bezel for the ratchet system and anti-reverse function.

CRYSTAL SECURING RING IN TITANIUM
Secures the synthetic crystal gasket tight onto the watch case.

SAPPHIRE CRYSTAL
Virtually scratchproof, it is seated in a synthetic gasket.

SYNTHETIC CRYSTAL GASKET
Holds the sapphire crystal against the case and ensures a waterproof seal.

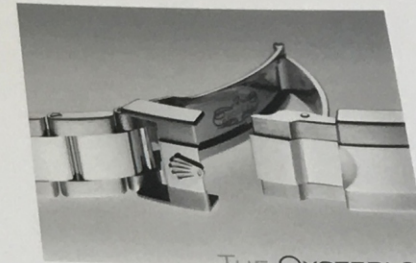


TECHNOLOGY III

DIVING IN COMFORT MODE

Designed, developed
and patented by Rolex,
the **Rolex Glidelock** is
an ingenious bracelet
extension system that allows
the Submariner to be worn
over a 3 mm diving suit.

PHOTOGRAPHS by
Christophe Lauffenburger



THE OYSTERLOCK CLASP
PROVIDES FIRST-RATE
SECURITY, GUARDING AGAINST
THE RISK OF ACCIDENTAL
OPENING AND
ENSURING PEACE OF MIND
DURING DIVES.

Simple yet efficient, the Rolex Glidelock fitted on the Submariner and Submariner Date can be adjusted without the need for tools. A diver has the possibility of lengthening the bracelet in increments of 2 mm, up to a total of approximately 20 mm, to be able to wear the watch over a 3 mm-thick diving suit.

SMOOTH ADJUSTMENT

The bracelet is quickly adjusted by releasing the link from the toothed panel under the clasp cover and then sliding the carriage to the desired length. The smooth, fluid movement is followed by a clean “click” as the tooth of the link locks back into the panel.

As a result, the Rolex Glidelock offers optimal comfort to the wearer. The Oysterlock clasp fitted to the Submariner models provides first-rate security, with a very secure fastening that guards against the risk of accidental opening and ensures peace of mind during dives.

Simple in principle, the mechanism of the Rolex Glidelock is, nonetheless, covered by two patents on its design. Complex technology underlies its production, in order to conform to Rolex standards of reliability, comfort and aesthetics. For example, the cover with the toothed panel and runners, in which the shoes of the carriage slide, is stamped in one piece and requires tooling specially developed for the purpose.

THE ROLEX GLIDELOCK clasp extends the bracelet up to 20mm in 2 mm increments. Thanks to complex technology it meets Rolex standards of reliability, comfort and aesthetics.

The Rolex Glidelock is fitted on the entire range of Submariner and Submariner Date models, in all versions – 18 ct gold, Rolesor and 904L steel – as well as on the other Rolex divers’ watches, the Sea-Dweller 4000 and the Rolex Deepsea. 🐠

MATERIALS

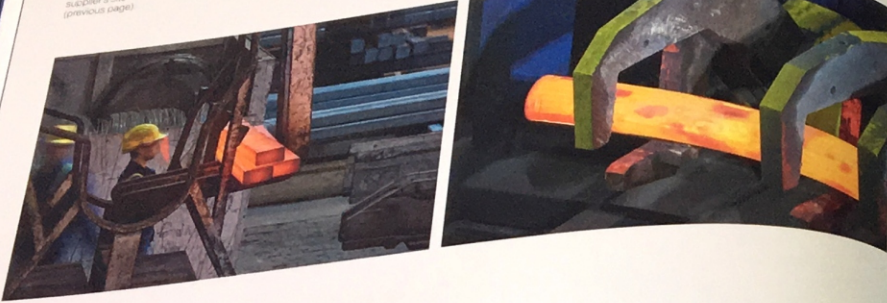
THE STEEL OF ROLEX WATCHES

The Submariner was the first Rolex watch to be made from 904L steel: a high-performance steel whose resistance to corrosion is comparable to that of precious metals and whose high purity ensures peerless polishability. This special alloy, used today for all Rolex steel models, makes for an exceptionally durable watch with an outstanding sheen.

PHOTOGRAPHS *by Cédric Widmer*

THE WATCH Submariner

A HOT-ROLLED
steel bar at a Rolex
supplier's site
(previous page)



RED HOT BARS
of steel after rolling.
Handling the hot steel
during the forging
process requires
special equipment

THE CAST MATERIAL
is pre-rolled in the
blooming mill (right)

To ensure reliability and an exquisite finish for its steel watches, Rolex is highly selective about the alloy from which they are manufactured. Rather than opting for the standard steel (316L) used in watchmaking, the brand resorts exclusively to an alloy with unique qualities that withstands the harshest conditions: 904L steel. The corrosion resistance of this alloy is comparable to that of precious metals. In addition, its purity and high polishability offer a final finish with an exceptional sheen.

In 1985, Rolex became the first watch brand to adopt this particular steel in choosing it for the Submariner. Today, as 904L is so hard to work, Rolex remains the only watchmaker to use it, across the board, for all its steel watches.

HIGH-PERFORMANCE STEEL

904L steel is generally reserved for use in more aggressive environments, such as the chemical industry for acid production, the petrochemical industry, and in high-tech medicine for surgical implants. As a stainless steel, it is unaffected by galvanic corrosion (an electrochemical reaction that occurs when two dissimilar metals come into contact). These characteristics make it the ideal steel to combine with precious metals, as in the case of the brand's Rolesor (steel and gold) and Rolesium (steel

and platinum) watches. Its qualities also ensure the durability of the watch case and bracelet in punishing conditions, such as in seawater.

The composition of this high-performance steel accounts for its extreme resistance to corrosion. It contains 21 per cent chrome, whereas the other stainless steels commonly used in watchmaking contain only 18 per cent. The chrome on the surface of the metal oxidizes instantaneously in contact with the oxygen in the air and forms a thin anti-corrosion layer. In the event of a scratch, this protective layer immediately reforms.

Furthermore, Rolex requires a much purer steel than that usually found on the market: a material containing minimum inclusions to ensure better polishability. 904L steel, when polished, produces a whiter, brighter radiance than that of other stainless steels.

DRACONIAN MANUFACTURING CRITERIA

The greatest rigour is required in the manufacturing of components in high-performance steel, from casting the alloy through to surface finishing. Each stage of the process must be approved by Rolex, including the casting and work carried out by the raw material suppliers.

The bars of steel must conform to Rolex specifications, which detail their chemical composition, mechanical properties and the final polishability.





EACH STAGE OF
THE PROCESS MUST BE
APPROVED BY ROLEX.

THE ROTARY
forging machine,
the largest and
most powerful of
its kind worldwide.



HOT-ROLLING
904L steel billets.
OXY-FUEL
cutting (right).

Only perfect mastery of every single operation can guarantee a stable production process for manufactured components that meet Rolex's high standards. After a first casting, the alloy is remelted in a vacuum to purify it and eliminate as many inclusions as possible, which otherwise would diminish its corrosion resistance and reveal imperfections at the polishing stage. The resulting ingots are hot-rolled, then cold-rolled to form bars and slabs. These then undergo a surface grinding process to remove the crust containing unwanted material generated during rolling.

In its laboratories, Rolex carries out strict sampling inspections on the quality of the castings delivered, using a scanning electron microscope that is capable

of detecting even the slightest structural or surface defect. Only the deliveries of steel that meet the brand's own exacting specifications are accepted and used to manufacture the watches.

SPECIAL TOOLING

Rolex masters in-house the entire manufacturing process for the steel components of its watches. High-performance steel's physical characteristics make it very difficult to machine. As a result, whether for cutting the slabs, stamping them or machining components, special tooling and work methods had to be developed.

In spite of these challenges, Rolex manufactures its case and bracelet components from the raw steel, a process which is essential for achieving impeccable aesthetics on the finished surfaces.

Thermal treatments ease the shaping of the material. Very hard tools, some made of tungsten carbide with an anti-wear coating, were developed for stamping and machining the steel. The last manufacturing step is the polishing that gives each component a final mirror polish or satin finish, beyond compare. 🏆

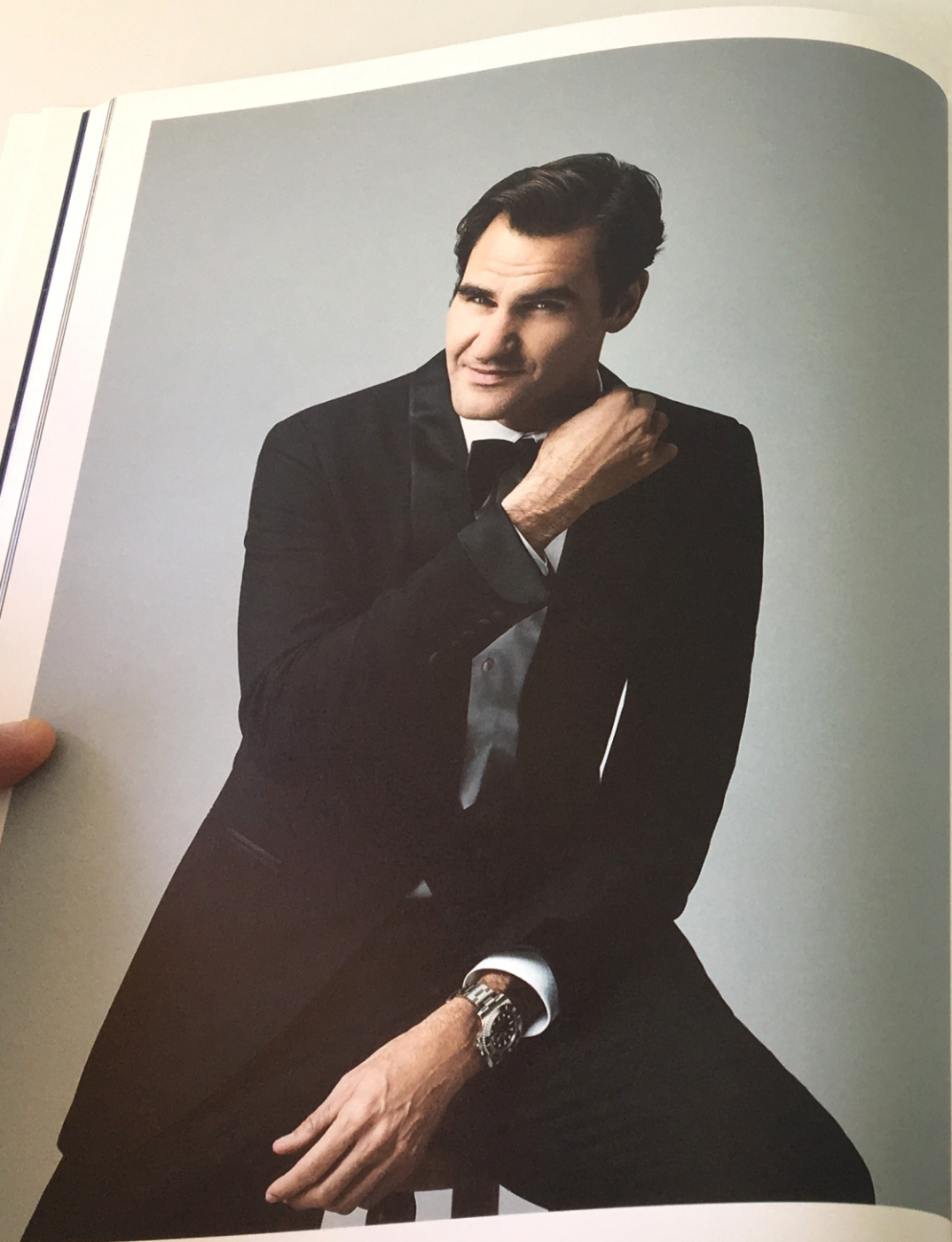




ICONS

— *The Oyster
Perpetual
Submariner
Date with...*

PHOTOGRAPHS by *Thomas Laisné*



THE WATCH
Submariner

ROGER FEDERER

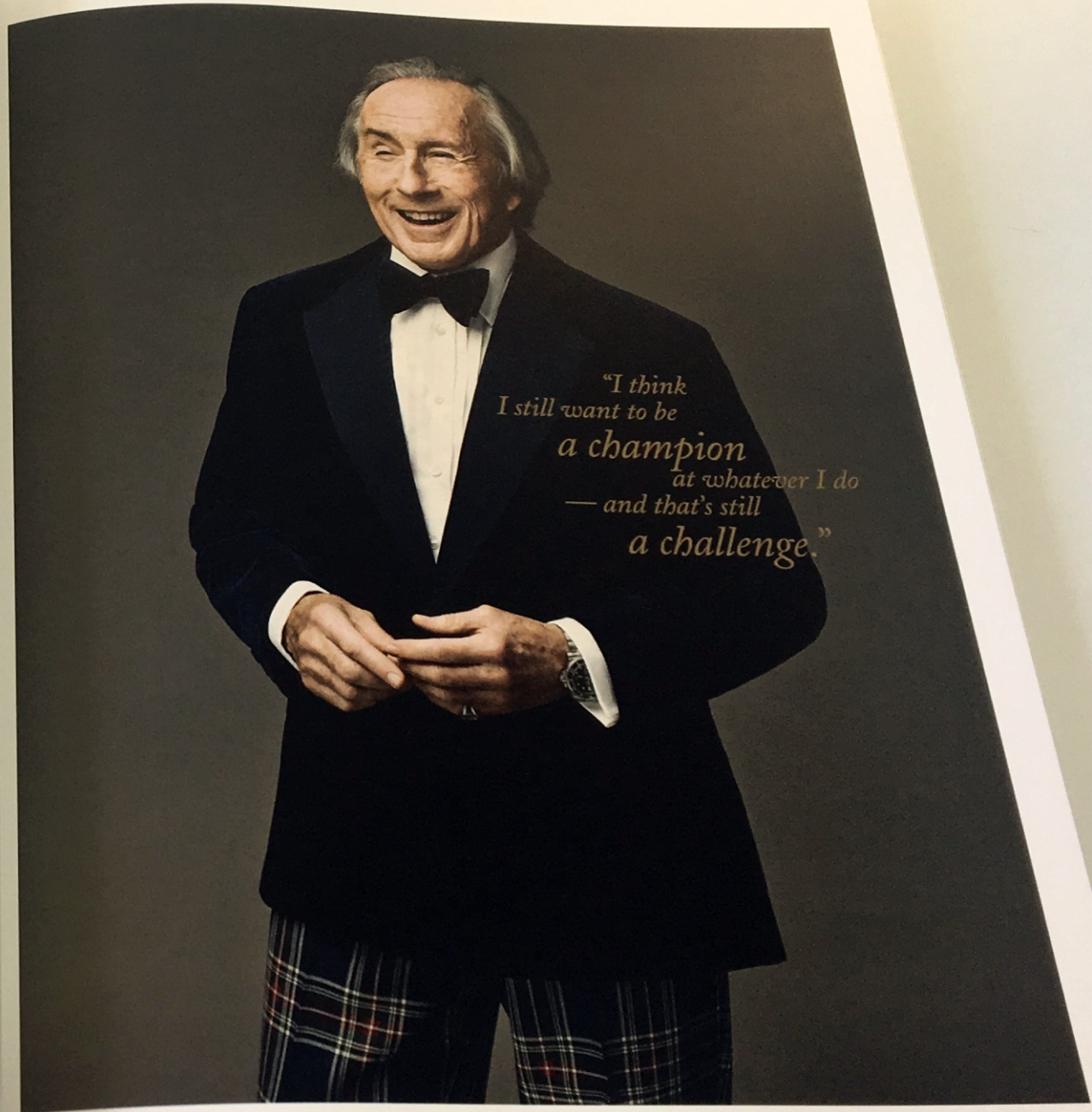
*Swiss professional tennis player.
Winner of an unsurpassed 17 Grand Slam® singles titles.*

Rolex Testimonee since 2001.

"I needed to learn the lessons the hard way, feel the big disappointments after losing another match because of uncontrolled emotions. So the moment when I finally got it right, it felt so good and so nice that I never changed."

SIR JACKIE STEWART
*A three-time Formula 1® racing champion from Scotland,
known as the 'Flying Scot'.*

Rolex Testimonee since 1968.



*“I think
I still want to be
a champion
at whatever I do
— and that’s still
a challenge.”*

THE WATCH
Submariner

STEVE GUERDAT

Swiss equestrian, one of the world's champion show jumpers.

Rolex Testimonee since 2012.

*"The connection between a rider and a horse
is basically a love story, it's not something that happens overnight,
it is something that you try to create, day after day."*

THE WATCH
Submariner

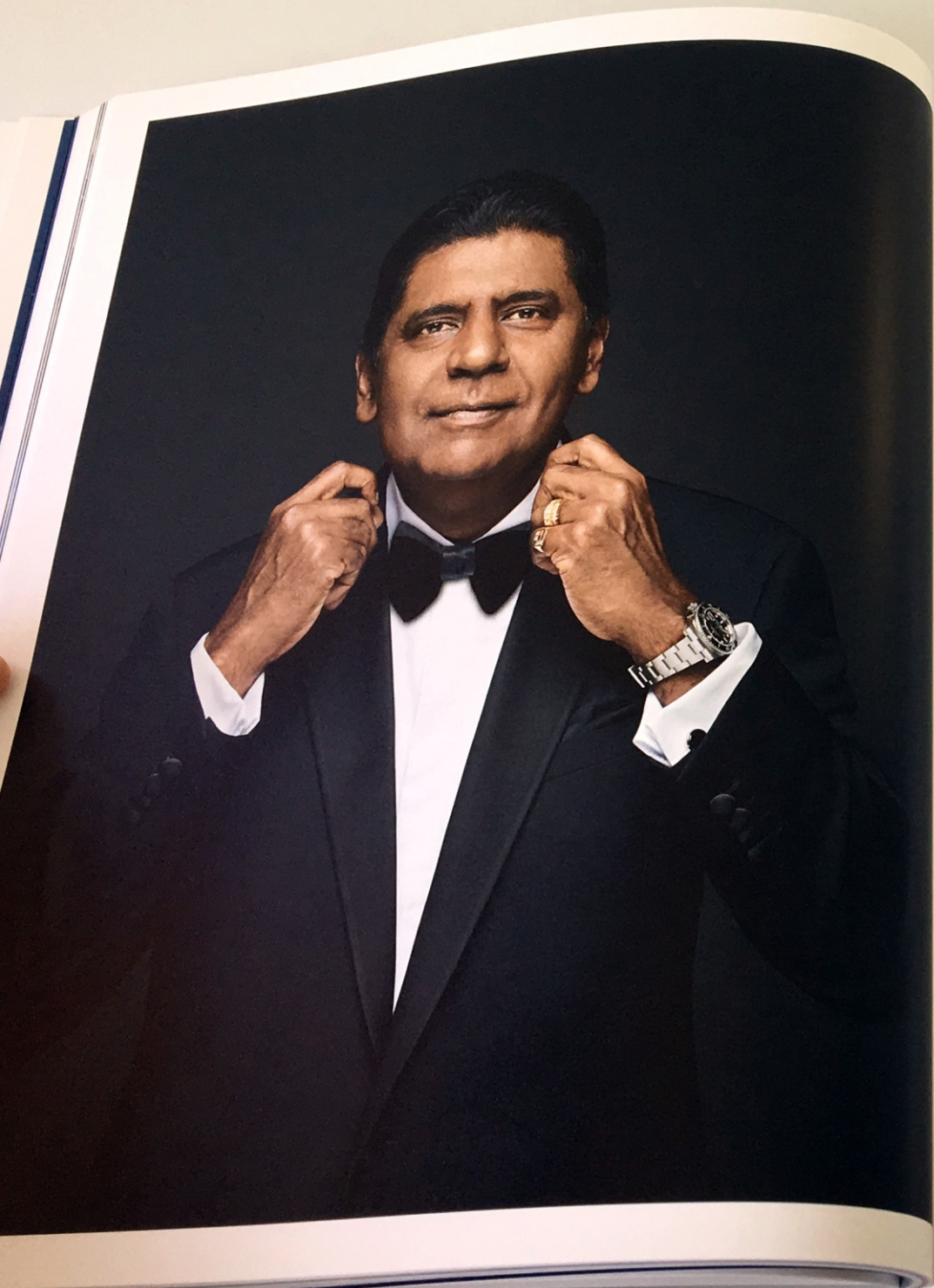
LINDSEY VONN

*US World Cup alpine ski racer,
known as the most successful female ski racer in the world.*

Rolex Testimonee since 2010.

*"I think that I was put on this earth
to be a ski racer
and once I have accomplished everything
I can in my sport, I will move on to trying
to help other girls
accomplish their
dreams as well."*





THE WATCH
Submariner

*"Tennis was easily my greatest education.
It taught me more about not just the world,
but about myself and what you're able to achieve outside of the sport."*

VIJAY AMRITRAJ

*Former tennis player from India, UN Messenger of Peace, TV personality and founder of the Vijay Amritraj Foundation.
MI6 agent Vijay in the 1983 James Bond film Octopussy.*

Rolex Testimonee since 2005.

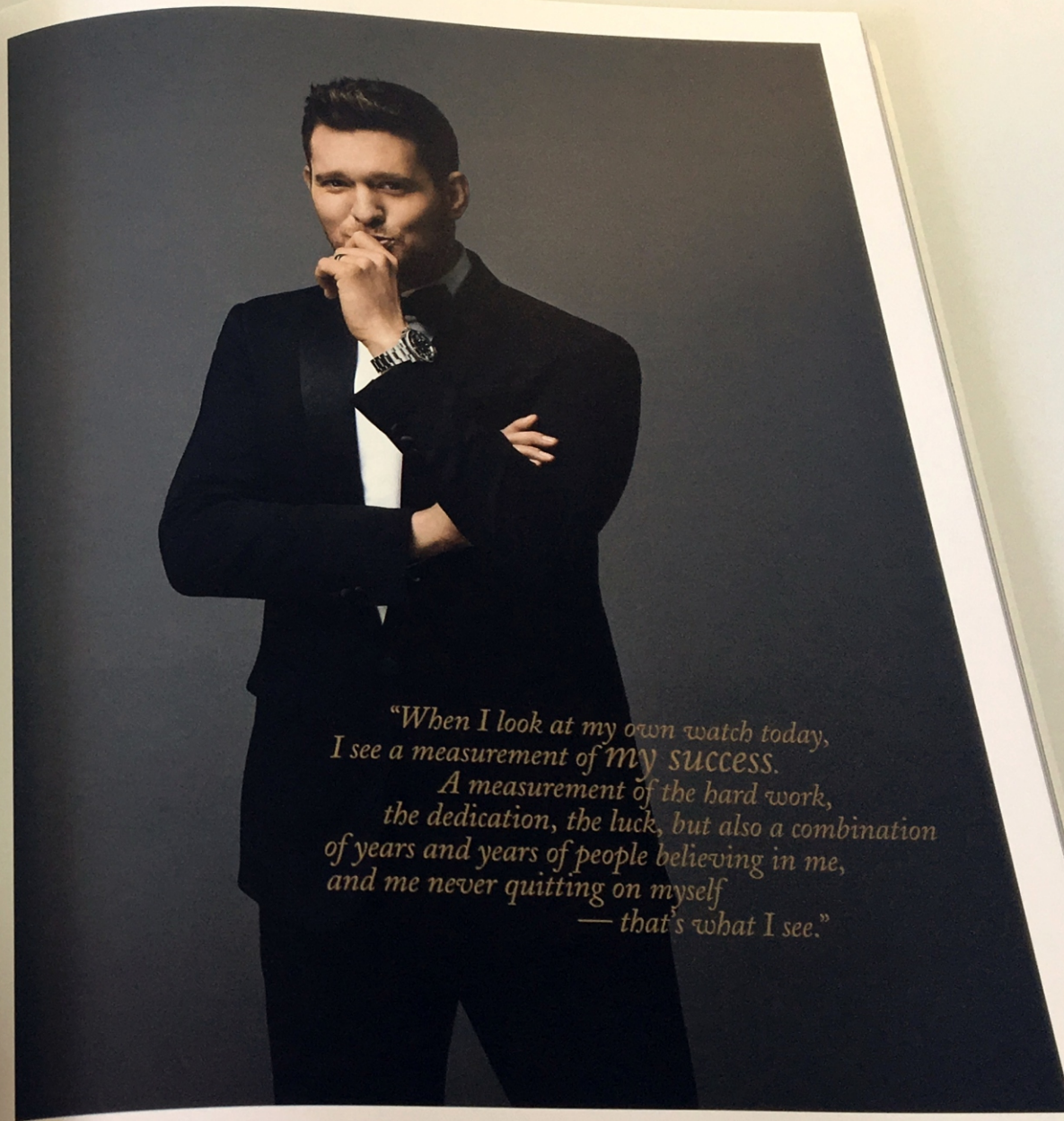
THE WATCH
Submariner

MICHAEL BUBLÉ

Canadian Grammy Award-winning jazz singer, songwriter and actor.

Rolex Testimonee since 2006.

— page 54 —



*“When I look at my own watch today,
I see a measurement of my success.
A measurement of the hard work,
the dedication, the luck, but also a combination
of years and years of people believing in me,
and me never quitting on myself
— that’s what I see.”*



THE WATCH
Submariner

TIGER WOODS

*American professional golfer whose achievements
to date rank him among the most successful golfers of all time.*

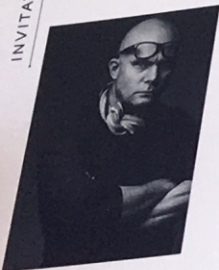
Rolex Testimonee since 2012.

*"My ultimate achievement in golf was winning
the four Majors in a row. No one else in the world
has ownership of all four trophies,
so to be the first person ever to do that
in the modern era was very special to me."*

CARTE BLANCHE

PELLE BERGSTRÖM

INVITATION



One of Sweden's leading still-life photographers, Pelle Bergström has a powerful, minimalistic expression, which is digitally mastered and caters for both luxury brands and editorial works. In this Carte Blanche entitled *Analog by the Sea*, he interprets his vision of the Oyster Perpetual Submariner with a quintessential Nordic touch.

PHOTOGRAPHER

> 1956

Born in Malmö, Sweden.

> 1981

Graduates from the University College of Graphic Design, Stockholm, Sweden.

> 1983

Graduates from the University College of Arts & Photography, Stockholm, Sweden.

Exhibitions

> 1984

Dalarnas Museum, Falun, Sweden.

> 1986

Gauss Gallery, Stockholm, Sweden.

> 1994

Arbetets Museum, Norrköping, Sweden.

> 1995

Index Gallery, Stockholm, Sweden.

> 2007

Ingerstedt Gallery, Paris, France.

> 2008

Double Elvis Gallery, Stockholm, Sweden.

> 2014

Nordic Light, The Thiel Gallery, Stockholm, Sweden.

Books

> 2016

Publishes his eighth book, *PA&Co 30 years*.





—The Rolex Magazine—
ISSUE #06

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Sylvia Earle
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OF HOPE

100

Rolex Awards Laureate
Brad Norman
STARS OF
THE SEA

We invented the Submariner to work perfectly
660 feet under the sea.
It seems to work pretty well at any level.



The Rolex Submariner is a salty watch. It's the official watch for divers of the Royal Navy. That beefed-up Oyster case resists pressures down to 660 feet. You'll find it in the cockpits of most ocean racers as hard-driving skippers beat down to Bermuda, Hobart and the Fastnet Rock. How come it's seen so much where the wettest thing around is a dry Martini? Who knows. Maybe it's because the black dial goes so well with a black tie. Ask her. Maybe she knows. 

ROLEX

When a man has a world in his hands, you expect to find a Rolex on his wrist

THE ROLEX WATCH COMPANY LIMITED (founder: H. Wilsdorf), GENEVA, SWITZERLAND and in LONDON at 1 GREEN STREET, W.1

THE UNIVERSE
Submariner

HISTORY

THE MAKING OF A LEGEND

In 1953, Rolex created the Submariner, perfecting the waterproof wristwatch it had invented 27 years earlier with the Oyster. In those early days of diving, the first watch waterproof to a depth of 100 metres (330 feet) certainly made waves and continues to do so today. Swiftly proving to be equally at home out of the water, the Submariner became the emblematic all-round watch. From prototypes tested under real conditions to models worn with a dinner jacket, we dive into the history of this legendary timepiece.

ADVERTISEMENT FROM 1966

The launch of the Submariner in 1953 was a significant landmark in the history of Rolex and the entire watchmaking industry. The first watch to be waterproof to a depth of 100 metres (330 feet) represented a major breakthrough for the conquest of the deep that had invented the first waterproof wristwatch, the Oyster, 27 years earlier in 1926.

When it first came out of the Rolex workshops in prototype form, the company's newest creation was an immediate success with many pioneering deep-sea professionals who were asked to test it for the brand. One of those trailblazers was Dimitri Rebikoff, a French engineer specialized in underwater research, for whom the watch quickly became indispensable.

Rebikoff was one of the fathers of modern civilian diving and was among the first specialists to have used the Submariner in real-life conditions. Along with several other underwater explorers, he experienced at first hand the full measure of this often fatal environment, at a time when divers were paying with their lives the discovery of nitrogen narcosis and stage decompression.

AUSPICIOUS BEGINNINGS

In his report in 1953, Rebikoff wrote that the Submariner had performed outstandingly well in trials: "We are able to confirm that this watch has not only given entire satisfaction in diving conditions which were extremely tough and particularly murderous for the

material used, but that it has proved an indispensable accessory for all diving with independent equipment". At the time, self-contained, compressed-air breathing equipment did not allow divers to descend deeper than 60 metres (200 feet). After 132 historic dives in five months to a maximum depth of 60 metres and a trial consisting of being lowered to 120 metres (400 feet) on a lifeline, the Submariner had successfully completed its maiden dives and earned its place in history.

Rebikoff also hailed the Submariner's brand new rotatable bezel, reporting that it "proved absolutely indispensable for controlling the individual diving time of each diver. This device increased the safety of diving considerably by enabling the diver to avoid overstaying the safety limits formulated for every respective depth." "We are therefore thinking of making it a duty for every leader of a diving team to be equipped with a watch of this type. This safety instrument represents a considerable progress in deep-sea diving equipment," he added.

With its protective case reinforced by a "Twinlock" screw-down winding crown offering a double waterproofness system, its "tropic" crystal of unbreakable Plexiglas, and its rotatable bezel, the Submariner was a revolution. In 1953, it represented a major step forward in diving and diver safety.

The Submariner was designed by Rolex to be a perfectly robust and reliable tool. As an underwater survival accessory, it had some essential properties: legibility

Frogman's friend

—the Rolex Submariner 660 is waterproof down to 660 feet!

When, who operates in prevailing adverse time under any circumstances, here is a wonderful watch called the Submariner—especially for deep divers and all those engaged in underwater activities. The Rolex Submariner 660 has a special Oyster case—constantly guaranteed to resist the fantastic pressure at 660 feet under water. There is also the Rolex Submariner 132 similarly guaranteed for 330 feet underwater.

The Submariner has a revolutionary "Time-Recorder" rim round the dial, calibrated from zero to 60. By turning this rim round the zero mark points to the minute hand before he starts, the diver can read off the time elapsed. The dial and all three hands are extra-luminous.

The "Time-Recorder" rim solves the problem of decompression stages, the diver knows precisely when to continue upwards to the surface.

Most, too, for everyday wear, with its Perpetual "rotor" self-winding mechanism and the perfect protection given by its special Oyster case.

ROLEX
A landmark in the history of Time measurement

ROLEX OF GENEVA are also the manufacturers of the well-known TUDOR watches

1957

Conquering the dangers of the depths

Since diving has its hazards, in the strange and unexplored depths of the ocean a close watch over time is essential. The watch must be legible even when the diver is in the dark, and must be able to withstand the pressure of the water without danger. Where seconds can mean a matter of life, the accuracy of a waterproof watch is crucial to the safety of an underwater explorer.

The Rolex Submariner is guaranteed waterproof to a depth of 660 feet. Its Oyster case, made especially in Geneva, is fitted with the double safety "Twinlock" system, which is protected by a screw-down crown.

Which are an integral part of the case. The rotating bezel can be set to show decompression time, or a glass. The precision Rolex movement is self-winding.

In January 1953, a standard Rolex movement in a special case, fitted to the exterior of the Submariner, was presented by Rolex to the International French and American Association of Underwater Divers. This watch, which is guaranteed waterproof to a depth of 660 feet, is fitted with the double safety "Twinlock" system, which is protected by a screw-down crown.

ROLEX
A landmark in the history of Time measurement

THE ROLEX WATCH CORPORATION (INCORPORATED IN SWITZERLAND), GENEVA, SWITZERLAND

ROLEX SALES AND SERVICE: 200 W. 57th Street, New York, N.Y. 10019

ROLEX SALES AND SERVICE: 100, Rue de la Paix, Paris, France

ROLEX SALES AND SERVICE: 100, Rue de la Paix, Paris, France

ROLEX SALES AND SERVICE: 100, Rue de la Paix, Paris, France

1965

If you were looking for lost empires here tomorrow

you'd wear a Rolex

When a man is the depths of the ocean, the Oyster case is carried out of a solid block of transparent sapphire glass or quartz. And the watch is protected by a special crystal. Because of the work of Rolex by hand it takes no more than a year to build a Rolex. The man, who has been saving their lives, diving for archaeological treasure in the Yucatan Peninsula, wears a Rolex.

The Rolex they wear is the Submariner, which is guaranteed to a depth of 660 feet, provided case, crown and crystal are intact. \$275.00 with matching bracelet.

ROLEX
A landmark in the history of Time measurement

AMERICAN ROLEX WATCH CORPORATION, 200 W. 57th Street, New York, N.Y. 10019

First introduced in Canada, Rolex is now available in all major cities.

1968

THE MANY VERSIONS OF THE SUBMARINER PRODUCED DURING THE 1950s REFLECT THE CLOSE INTERACTION BETWEEN THE BRAND AND THE PROFESSIONALS OF THE ERA IN THE QUEST FOR THE PERFECT PRODUCT.

in the dark ocean depths thanks to the luminescent materials used on its hands and dial; constant proof that the watch was functioning thanks to a luminous disc on the seconds hand; and a graduated, rotatable bezel to accurately monitor diving time and decompression stops.

The watch's design was therefore entirely dictated by divers' practical needs, the technical possibilities of the time and the innovations Rolex had developed in the field. The archetype of the divers' watch, the Submariner was endowed with technical features that would later set the standards defining this type of watch.

FORM FOLLOWED FUNCTION

Rolex continued to fine-tune the design of the Submariner to make the watch ever more functional. A luminescent marker was added to the bezel to make it easier to use. The hour and minute hands were differentiated to prevent any risk of misreading. Individual minute graduations were added to the bezel over the first quarter hour to allow more accurate monitoring of decompression stages. Finally, the luminous disc on the seconds hand was enlarged and moved closer to the centre of the dial to improve legibility.

The many versions of the Submariner produced during the 1950s reflect the close interaction between the brand and the professionals of the era in the quest for the

perfect product. Some details were improved following observations during experimental dives; for example, Rolex changed the colour of the triangle on the bezel at 12 o'clock from red to white, for improved visibility under water.

NAVY DIVING

The Submariner also conquered the world of military diving. In 1956, the French Navy's Undersea Research Group, GERS (Groupe d'étude et de recherches sous-marines), concluded in a test report that "the waterproofness, tested in the caisson and in the sea during the exercises, is perfect". Combat swimmer units from navies across the world chose the Submariner, as demonstrated in advertisements of the era. Rolex even issued a special model for the British Royal Navy, featuring sword-shaped hands and a bezel with specific graduations.

ACTION!

The year of the Submariner's birth, 1953, also saw the publication of the first novel depicting the adventures and exploits of a certain Bond, James Bond. In his books, British author Ian Fleming deliberately equipped his secret agent with a Rolex watch. It was, in fact, Fleming's own chosen watch. And when Bond first appeared on screen in 1962, played by



1953
— FIRST SUBMARINER
— DIAMETER 38MM
— WATERPROOF TO 100M (330 FT)



1954
— WATERPROOF TO 200M (660 FT)
— LARGER WINDING CROWN
— CLEARLY DISTINGUISHABLE HOUR HAND

MILESTONES IN THE EVOLUTION OF THE SUBMARINER

Since its creation in 1953, the Submariner has constantly evolved, enhancing its waterproofness, robustness, functionality and legibility. From the outset, technical reasons such as resistance to sea water and robustness meant that the watch was made from stainless steel and equipped with

a metal bracelet. Its black dial with simple, luminescent hour markers ensured optimal readability both above and below the surface. The Submariner's graduated rotatable bezel enabled divers to monitor their immersion time. Between 1953 and 1958, several versions of the Submariner were produced. Models



1959
 — DIAMETER 40MM
 — CROWN GUARD
 — GRADUATION MARKED BY THE MINUTE OVER THE FIRST QUARTER HOUR
 — MORE PRONOUNCED BEZEL KNURLING



1969
 — VERSION WITH DATE



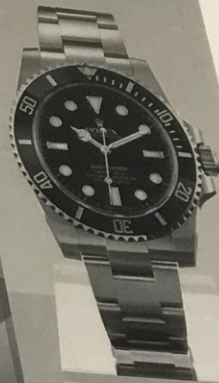
1973
 — ORIGINAL WATCH WORN BY JAMES BOND IN LIVE AND LET DIE
 — ITS BEZEL BECAME A CIRCULAR SAW



1984
 — APPLIQUES HOUR MARKERS
 — WATERPROOF TO 300M (1979)
 — SAPPHIRE CRYSTAL (1979)
 — TRIPLOCK CROWN (1977)



2003
 — 50TH ANNIVERSARY VERSION
 — GREEN BEZEL
 — 904L STEEL (1985)



2012
 — REDESIGNED CASE
 — CERACHROM BEZEL IN CERAMIC
 — CHROMALIGHT DISPLAY, LONG-LASTING LUMINESCENCE

waterproof to 100 metres (330 feet) and then later to 200 metres (660 feet) were available concurrently, the main difference between them being the size of the Twinlock winding crown. The hands were redesigned to clearly distinguish hours from minutes; the luminous disc on the seconds hand was enlarged

and moved closer towards the centre of the dial to make it more visible. In 1959, the Submariner adopted features that continue to define its appearance today. The case was enlarged from 38 to 40mm and equipped with a crown guard (a Rolex innovation). On the bezel, graduations were added to

mark each minute over the first quarter hour. The bezel itself was given a more pronounced knurling to ensure a better grip with diving gloves. Waterproofness increased to 200 metres (660 feet) on all models. In 1969, the Submariner was launched in gold and in a version with date. In 1979,

it was fitted with a sapphire crystal and became waterproof to 300 metres (1,000 feet). Since 1985, it has been made from 904L steel, an alloy offering greater corrosion resistance (see p. 34). In 2008, the Submariner Date was equipped with a Cerachrom bezel in ceramic.

The watch featured an updated design and a Chromalight display (with a luminescent material that emits a long-lasting blue glow), as well as the Rolex Gildelock extension system (see p. 32), which allows the bracelet to be adjusted to be worn over a diving suit.

1995

If it's good enough
for a submarine,

This is the
Triplex winding
crown of a Rolex
Submariner. It screws
down on the solid
Oyster case to
close as securely
as the hatch of
a submarine,
employing three
separate seals in



the process.
The result is a
watch that is
watertight to 1000
feet. A depth that
very few divers
— and, for that
matter, few
submarines —
are ever likely
to encounter.


it's good enough
for a Submariner.



1999



THE UNDERWATER WORLD IS FULL OF SURPRISES.
RUNNING OUT OF AIR SHOULD BE ONE OF THEM.

○ Framing the face of a Rolex Submariner, you'll find a timeless feature: professional divers the world over have relied on it to time their dives. Underwater photographers, marine archaeologists, oceanographers — all have entrusted their Submariner with ensuring that they never overstay their welcome beneath the surface. But even if you never don a wetsuit in your life, and the most hazardous place that you might risk overstaying your time is a parking meter or a business meeting, who knows? You might still find that the Submariner's handy little  bezel could save your skin.



1970

He'll let in water before his Rolex does.

This scuba diver could never reach the depth at which a Rolex Oyster Submariner would let in water.
In order to test the infallibility of the Oyster technique, Professor Jacques Piccard strapped a special experimental Rolex Oyster onto the outside of his bathyscaaph "Trieste".
He then submerged to a depth of nearly seven miles beneath the Pacific, where the Rolex was subjected to a pressure of over six tons per square inch.
Both the Rolex and Professor Piccard were working perfectly when the "Trieste" surfaced again.
But Professor Piccard wouldn't have been if he'd been on the outside, not the inside, of the "Trieste".
One of the Rolex inventions which help to make each of our watches so waterproof, is the Rolex-patented Twinlock Winding Crown.
We perform 38 separate operations on this Winding Crown alone. These are necessary because the Crown works exactly like a submarine hatch, actually screwing down onto the Oyster case.
The Oyster case itself is a Rolex invention.
It has to be carried out of one solid block of surgical stainless steel, or 18 ct. gold, so that it contains no seams which could let in water under pressure.
The crystal on our watches is an exclusive feature, too.



The movement these three safety features guard is called the Perpetual.
It's a hand-tuned, rotor self-winding movement.
And we pay for each chronometer movement to be tested by one of the Official Swiss Institutes for Chronometer Tests.
Here they subject it to 15 days and nights in ovens, in refrigerators, in various wrist positions, checking its accuracy to the nth degree at each stage, before awarding it their carefully-guarded title of "chronometer".
Each Rolex bracelet is also made almost entirely by hand.
On its clasp, you'll recognise the Rolex Crown. So will other people.
They'll also recognise the distinctive shape of the Oyster case itself.
Maybe now you understand why it takes us over a year to make each Rolex.
And why it is that a man like Sir Francis Chichester was able to rely on one during his solo voyage around the world.
And why Rolex is the official watch worn by the pilots of Pan American Airways, and the divers of many of the world's navies.

Because Rolex cases and crystals are tooled to such a fine degree of accuracy that each crystal clasps onto the tip of each case, making it actually grip tighter under pressure.
Each Rolex earns the recognition it enjoys. You know the feeling.



ROLEX

Pictured: The Rolex Submariner 4 Date in 18 ct. gold or stainless steel with matching bracelet.



RECOGNIZABLE AMONG THOUSANDS, THE SUBMARINER REMAINS THE INFALLIBLE TOOL THAT IT WAS DESIGNED TO BE FROM THE START, AND A WATCH WITH SUCH CHARISMA THAT ITS APPEAL EXTENDS BEYOND THE MARINE WORLD.

Sean Connery, he sported a Rolex in the film, true to the character in the book. A Submariner model which, from film to film, would become as closely associated with 007 as his famous English sports car.

Her Majesty's most eminent spy became the standard bearer of a new trend that brought the Submariner out of its natural milieu to be worn on all occasions. A truly universal timepiece, the Submariner thus became the only divers' watch to be seen with black tie. The succession of Bond films that followed confirmed the Submariner's emblematic status: for example, in *Live and Let Die* (1973), Roger Moore wore a customized version whose distinctive knurled bezel turned into a circular saw to cut Bond free of his ties.

But the iconic timepiece had already appeared on movie sets before this. In 1958, it appeared on the wrist of actor Laurence Harvey, who played a diving hero in the film *The Silent Enemy*. Acting on the expert advice of former Royal Navy divers called in as technical consultants, who themselves wore the Submariner, the production team chose the Submariner for the movie.

fight sequences without any damage at all, it was often subjected to a very high pressure below the surface and even survived quite close explosions from depth charges and other explosives."

Recognizable among thousands, the Submariner remains the infallible tool that it was designed to be from the start, and a watch with such charisma that its appeal extends beyond the marine world. It is a perfect composite of all the technical prowess of Rolex, in an iconic design that stems directly from its function.

From tool watch to dress watch, the Submariner has moved effortlessly from ocean depths to evening dinners on terra firma. It is certainly the only watch which, 1,000 feet down or next to a glass of champagne, is always in its element. 🍷

NOTHING BUT PRAISE

The actor marvelled at the qualities of the watch he was wearing. At the end of 12 weeks of filming, during which his Submariner endured some particularly gruelling conditions, Harvey wrote Rolex a spontaneous letter of thanks. "I have nothing but praise for this watch," he said. "It kept perfect time all the time, it suffered a great deal from knocks during the underwater

DAVID DOUBILET

“FLYING THROUGH ART”

Rolex Testimonee and Rolex Awards Jury member **David Doubilet** is a highly acclaimed underwater photographer whose goal is to “redefine photographic boundaries” every time he enters the sea. Since taking his first underwater picture at the age of 12, he has photographed and authored over 70 stories for *National Geographic* magazine and published numerous books about the sea.

by Robin Pogrebin
PHOTOGRAPHS by Bart Michiels

DAVID DOUBILET
in Rome, in Italy
New York, wearing
his Oyster Perpetual
Submariner





A PHOTOGRAPH, on the wall of Doubilet's studio, of a juvenile Galapagos sea lion chasing a group of silver sailfin. The fish create a circle of confusion.

DOUBILET'S MOST PRECIOUS OBJECT since he was 17, a Rolleiflex F3.5 made by the German company Franke & Heidecke. Housed in one of the most famous underwater camera cases, a Rolleimarin, designed by Hans Hass.

It is snowing hard on Route 81 in upstate New York. David Doubilet switches on the hazard lights as he manoeuvres his four-wheel drive vehicle – with a licence plate that reads “Sturgeon” – towards his home. Doubilet is proceeding with caution through the white-out.

Caution? This is the guy who swims with great white sharks; who dives with leopard seals in Antarctic ice; who dodges 15-foot crocodiles in the Okavango Delta in Botswana. He has built his reputation as perhaps the most prominent underwater photographer by taking chances. In fact, most people would go to great lengths to avoid the challenging situations Doubilet faces on a regular basis. He may be cautious on icy roads but he is intrepid in the often-perilous ocean, having photographed and authored more than 70 articles for *National Geographic* since 1971.

Doubilet is not just comfortable under water, he feels joy there. “You’re weightless,” he says. “You’re in a world that is totally alien, where the bizarre is a given and the surreal is a constant. You’re flying through art.”

And although he will turn 70 in November 2016, Doubilet says he has no intention of slowing down. If anything, his work has intensified as he expands his

purview from the Pacific Coral Triangle to the polar worlds of the Arctic and Antarctic. “You’re supposed to slow down and your vision is supposed to start repeating itself,” he says, “but I feel I am pushing personal and photographic boundaries, out there taking pictures that make a difference at a critical time for our oceans”.

Doubilet’s fervour has partly been fuelled by advances in technology. Contrary to what one might expect of old-school philosophy, Doubilet does not feel nostalgic for the days of film – not only because he no longer has to lug 500 rolls around the world but because digital cameras have expanded the scope of what he can do. “All of a sudden, I can make pictures that I never dreamed about making,” he says. “I used to run out of film before I ran out of air. It’s a new world order, now I can shoot hundreds of frames on one dive and instantly see what I am shooting. A decade plus ago, I would spend 60 days in the field, shoot hundreds of rolls and see it for the first time three months later in Washington.”

That is not to say Doubilet now travels light. He and his wife, Jennifer Hayes – a marine biologist who works closely with him – typically transport nine

to ten bags of gear per trip, each of which weighs about 25 kilograms. “When you travel across the world and the plane has a bellyful of equipment to make a picture of a shrimp, shark or shipwreck,” he jokes, “it’s strange and wonderful”.

Perhaps more importantly for Doubilet, his long and intimate view of the sea has become not just a career but a cause. “I want my daughter Emily to know the wonder of this extraordinary world that I experienced,” he explains. Doubilet worries deeply about the oceans, having witnessed their decline first hand over the years. He wants to do his part to conserve it – using the power of photography as a universal language to illuminate, celebrate and educate. “I want to share the reality of devastation; to protect something you have to love it. The oceans are the Earth’s engines – as the oceans go so do we.” And he adds: “The biggest story on Earth, is Earth itself.”

Doubilet has seen his work make an impact. After a story about being able to swim with stingrays on a Cayman Islands sandbar, for example, people started flocking there to see for themselves. “Stingray City has become one of the most popular dive spots in the world and the stingrays are now ambassadors for the sea,” he says of the visitors. “The economics of thousands of tourists a day translates into protection.” A story about great white sharks with Peter Benchley inspired people to dive with and explore the world of the white shark, ultimately leading to the species’ conservation.

The photographer himself has become an ambassador for the sea, through his images, manuscripts, lectures and his books, including *Light in the Sea*, *Water Light Time*, *The Kingdom of Coral: Australia’s Great Barrier Reef*, *Pacific* and *Fish Face*. Doubilet has been called a master of light and is considered a pioneer of the split image, combining the surface with

a world hidden below. His work continues to influence generations of photographers.

Spend just a few minutes with him, and you can quickly see how eager he is to convey the excitement of the underwater universe. He describes how garden eels wave in Eilat’s alluvial sand “like wheat in a windstorm” or how nudibranchs – snails without shells – signal their toxicity with colours brighter “than Amazon parrots or tie-dye tee-shirts in the 1960s”.

Hayes and her husband met working with sharks underwater and they now share a byline. She says they see the sea “through two different sets of glasses,” hers tinted by science, his by art. “We’ll take the same photograph side by side – he’ll caress the light in a certain way,” she says. “It’s like listening to music for him while I’m calculating the settings in my head.”

A Rolex Testimonee since 1994, Doubilet has relied on Rolex watches since he first started diving. “I set the bezel and know exactly where I am timewise in a universe where time is critical – that’s what I ultimately need to know under water.”

Doubilet was 15 when he purchased his first Rolex, an Oyster Perpetual Submariner. With his first paycheck and money borrowed from his parents, he could only afford the watch, so the store offered him a rubber strap. Eventually he was able to save enough to buy a proper bracelet. He then bought a Sea-Dweller when that model came out and subsequently a Rolex Deepsea.

While digital computers monitor time, depth and decompression, they are battery operated and sometimes fail. “The watch does not fail,” Doubilet says. “It is our ultimate parachute.” Nevertheless, he has had his share of close calls, like the time he was bitten on the hand by a moray eel; caught in a vicious down current in Raja Ampat (Indonesia); or faced great white sharks

“MY FAVOURITE
PLACE
IS THE PLACE
I HAVEN’T BEEN
TO YET, THE PICTURE
I HAVEN’T
YET TAKEN.”

outside of the cage; or when he found himself between six tiger sharks feeding on the oily remnants of a sperm whale on Australia’s Great Barrier Reef. “Never, ever get between tiger sharks and their meal,” he says.

Doubilet’s path in life was clear from an early age. He grew up in New York City – with a family weekend house by the sea in Elberon, New Jersey. At age 8, a summer camp counsellor gave him a mask and sent him under a dock to clear branches. “Everything changed,” he says “it was like someone turned on a switch. The light and shadows moving through the water were hypnotic”. As a self-proclaimed underachiever, who failed eighth-grade mathematics, Doubilet focused on the ocean at the expense of academics. He spent weekdays after school at the Metropolitan Museum of Art, in New York, exploring Winslow Homer’s painting *Gulf Stream* and at the Museum of Modern Art studying the landscape photograph *Moonrise*, by Ansel Adams. When he was 12, he and his father, a professor of surgery at New York University, used a rubber anaesthetologist bag to build an underwater housing for his Brownie Hawkeye camera. He jokingly describes his first images as “beyond abstract”.

Doubilet graduated with a degree in film and broadcasting from Boston University, and a minor in photojournalism. He shot his first *National Geographic* assignment before he graduated. His father never got to see his son’s success; he died when Doubilet was 17.

It seems there is no place in the sea Doubilet hasn’t been to; no creatures he hasn’t captured on

camera. Yet there is at least one that continues to elude him. “We’ve been trying to photograph a Greenland shark now for two and a half years,” he says. “We wanted it for a story but, no luck.”

Doubilet has two homes, a retreat on the Indian Ocean in South Africa and

a home overlooking the Thousand Islands Region of the St Lawrence where the couple carves out time for vintage cars and old wooden boats. The rambling St Lawrence studio has racks of drysuits, wetsuits and diving gear organized by temperature from tropical to polar; a library of ocean research books and *National Geographic* publications; a camera room and computer lab. On a row of glass cabinets containing Doubilet’s slide archive is a calendar that attests to a life on the move; the past year found the pair working in 29 countries on speaking tours, assignments, exhibitions and expeditions. They rarely get assigned a story but instead research, develop and produce most of the stories themselves. Recent assignments have led them from beneath the Antarctic ice to the Philippines to document a corner of the Coral Triangle. By now, it’s fair to say Doubilet has dived in most of the world’s major bodies of water, but he has by no means exhausted the mysterious deep.

“My favourite place is the place I haven’t been to yet,” Doubilet says. “The picture I haven’t yet taken.” 🐾

Robin Pogrebin is a reporter on the Culture Desk of *The New York Times*, where she covers art, auctions and architecture. Pogrebin is also a frequent moderator, radio guest and speaker.

**SEACAM
UNDERWATER
HOUSINGS,**
precision made in
Austria to fit a range
of Doubilet’s Nikon
cameras, tested
and ready for the
next assignment
in Antarctica.

An angry looking
jawfish photographed
in Cuba glares over
his work bench, a stern
reminder to check
and recheck the gear.





PORTFOLIO

DAVID DOUBILET

ICEBERG GARDENS
from a retreating glacier at Red Island in Scoresbyund Fjord, Greenland. Photographed on the Eysum Artists for the Arctic Expedition, a unique collaboration of photographers, film-makers, writers, artists, poets, musicians and scientists to explore and document the changing Arctic (previous page).



A CRABEATER SEAL
Rests on a small piece of ice near Anvers Island, Antarctica. These seals are the most abundant and have specialized dentition to eat a shrimp-like creature called krill.



A HARP SEAL, JUST DAYS OLD,
learns how to swim in the icy waters in the Gulf of St Lawrence, Quebec, Canada.



A RARE ENCOUNTER WITH
a curious giant petrel who came to greet Doublet in Ocean Harbour, South Georgia.

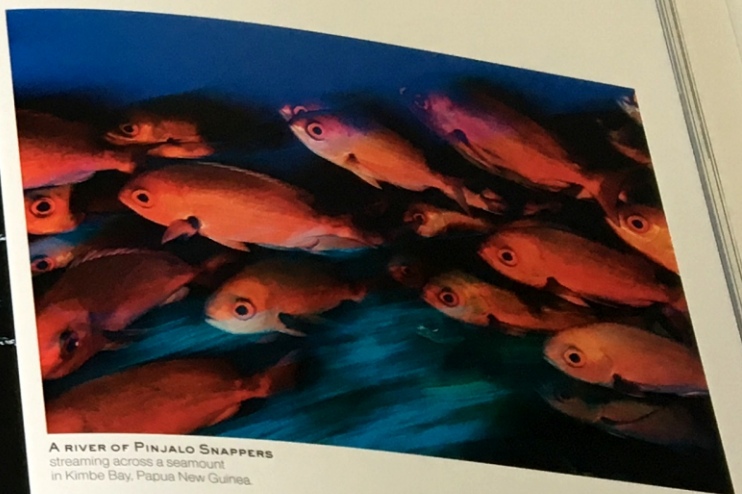


SOUTHERN STINDRAYS
in North Sound, Grand Cayman Island
have become ambassadors of the sea
through one-on-one encounters that raise
awareness for ocean conservation
(previous page)



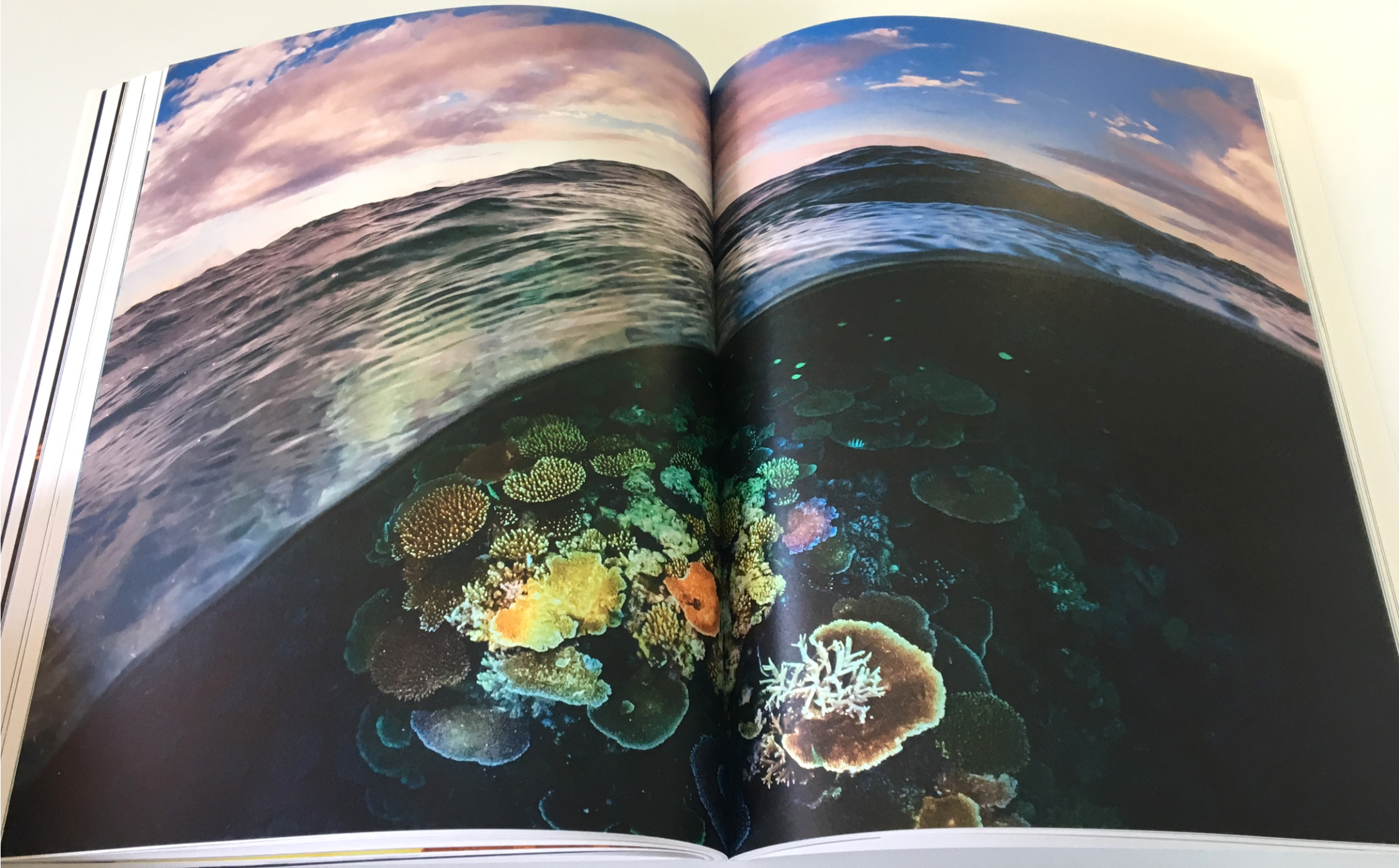
A SAND TIGER SHARK
blasts through a curtain of silvery baitfish
that covers the *USS Spar* shipwreck
in the Graveyard of the Atlantic.

THE UNIVERSE
Submariner



A RIVER OF PINJALO SNAPPERS
streaming across a seamount
in Kimbe Bay, Papua New Guinea.

A RISING WAVE
reveals Opal Reef on the
Great Barrier Reef near
Port Douglas, Queensland,
Australia (following page).





SYLVIA EARLE

AN *Ocean* OF HOPE

Marine biologist **Sylvia Earle**, a Rolex Testimonee since 1982, has been a pioneer of ocean exploration for more than four decades. Her mission has always been to explore, study and protect the planet's oceans. Now, with her initiative Mission Blue, she is igniting public support to safeguard marine Hope Spots.

by Liana Forrest

SYLVIA EARLE
BIOGRAPHY

> 1935
Born in Gibbstown,
New Jersey, USA.

> 1938
Knocked over by
a wave, the start of
her fascination with
the ocean.

> 1948
Moves to Florida,
becomes interested
in wildlife of the
Gulf coast.

> 1952
Attempts her first dive
using a diving helmet.

> 1955
Earns a Bachelor of
Science degree from
Florida State University,
where she first learned
to dive with scuba
gear in 1953.

> 1956
Graduates with an
MSc. in botany from
Duke University.

> 1964-1966
Joins a six-week
expedition in the Indian
Ocean and four other
expeditions in the
Atlantic and Pacific
Oceans funded by
the National Science
Foundation.

> 1966
Earns a PhD from
Duke University.

> 1967
Becomes a research
fellow at Harvard
University and a
research scholar
at the Radcliffe
Institute (USA).

> 1970
Awarded the U.S.
Department of Interior
Conservation Service
Award.

Named Woman of
the Year by the
Los Angeles Times.

Leads the all-female
crew of aquanauts for
the *Tektite II* project.

Receives her first Rolex
from Rolex Watch USA
for her role in *Tektite II*.

SYLVIA EARLE
walks untethered
on the sea floor in
a JIM suit. She first
donned this special
diving suit in 1976,
reaching a depth
of 380 metres
(previous page).



AQUANAUT
Sylvia Earle,
July 1970, in the
US Virgin Islands.

Sylvia Earle is an acclaimed American underwater explorer, marine biologist, aquanaut, lecturer, author and a National Geographic Society Explorer-in-Residence. For four decades, she has been a pioneer of deep ocean exploration and has remained at the forefront of the research as a marine explorer. As the founder of the marine technology company Deep Ocean Exploration and Research (DOER), she is also highly committed to developing the equipment that allows her and other scientists to make previously unexplored reaches of the ocean their laboratory.

In 1970, Earle led a team of aquanauts who lived for two weeks in an underwater laboratory as part of a US government research project, *Tektite II*, to study ocean life and the effects of living underwater on the human body. In 1979, she set the world untethered diving record, descending 381 metres (1,250 feet) beneath the surface of the Pacific Ocean in a pressure-resistant JIM diving suit.

In 2009, Earle won a TED Prize, awarded to an individual with bold vision to spark global change. With TED's support, she founded Mission Blue, which helps to establish protected areas named Hope Spots around the globe and to preserve the most critical parts of the ocean. The Emmy Award-winning Netflix documentary *Mission Blue* tells the story of Earle's career and her goal of protecting Hope Spots.

Why did you become an ocean explorer?

It was never a conscious decision. I think all children start out as explorers, and some of us never stop.

I became acquainted with the ocean when I was three years old and a wave knocked me over. The ocean got my attention.

What has held my attention all these years is the life in the ocean.

It is a great sensation to dive, to feel weightless and that joy of not knowing what you're going to see next, but it's also about knowing that you're going to see something wonderful every time you put your face in the water. It makes it irresistible. I can't imagine not being an ocean explorer.

If we were to join you on one of your favourite dives, what would we see?

Well, one of my favourite dives would have to be 50 years ago, because the ocean has changed so much since then, however there are still great places to go.

I was recently diving off Isla del Toro, a small island close to Majorca. It has been protected for some years. There actually were big fish and a big school of barracuda. It just looked like a healthy reef, but around the world we have lost about half the coral reefs, 90 per cent of the big fish and a lot of the little ones too.

When I think of a place I really want to go diving, I just want a time machine to go back to the way it was, or to go forward to the way I hope the world will be through the efforts that people are making to restore health to the ocean.

What kind of major damage have you witnessed that you didn't see in those early dives?

We've killed a lot of fish, really. Every year, close to 100 million tonnes of ocean wildlife are extracted,

and you also have to take into account the destruction of the habitats which they come from. A lot is captured and just thrown away.

We used to think the ocean was so big, so resilient that we could not harm it. In a few decades, we have disturbed basic planetary systems; they're interwoven and we are now realizing what their real value is. Many people still don't understand that protecting the ocean means that we're protecting ourselves.

What keeps you hopeful?

There is plenty of reason for hope. It starts with people understanding that we have impacts on the ocean and knowing why it matters. Armed with that insight, actions not only can follow but they are following.

For example, in Palau [an island country in the western Pacific Ocean]: 80 per cent of the entire exclusive economic zone is now a safe haven for wildlife and 20 per cent is managed so that the local population can draw on the ocean for their livelihood. The principal source of income is from tourism, which means not killing the fish, sharks or other creatures, but encouraging safe havens for them. That's much more beneficial, and sustainable.

You are one of the lucky few that have actually lived underwater, 10 times, and most recently in 2012. What did you learn from living underwater?

That fish are individuals, like cats, dogs, horses and people. I should have understood it before, but it was catalysed by spending day and night in one area getting to know individual fish. Every fish has its own

"I BECAME ACQUAINTED WITH THE OCEAN WHEN I WAS THREE YEARS-OLD AND A WAVE KNOCKED ME OVER. THE OCEAN GOT MY ATTENTION."

SYLVIA EARLE

face and own personality. It's one of the miracles of life: the enormous capacity for diversity.

Understanding that took living underwater day and night. We got to recognize individual barracuda. Some were more aggressive and some were more shy. You get to see their behaviour and identify them. Not "an angelfish" but "that angelfish" who hangs out there, comes to the window, looks in and you recognize its face. It was a breakthrough.

You sound as if you haven't lost what you once called your own childlike curiosity.

I hope not. Growing up is way overrated.

Is that childlike curiosity essential for a marine scientist?

That sense of curiosity is what makes us human. It leads to discoveries that we pass along from one generation to the next, wanting our children to have even better opportunities than we have had. Nowadays we are empowered with more insight, knowledge and understanding. Children grow up with a view of Earth from space; it wasn't there when I was a child.



EARLE, photographed by fellow Rolex Testimonee David Doublet, observing sponge and coral growth on the pilings of a town pier. These man-made structures become artificial reefs that provide increased habitat for marine organisms.

MISSION BLUE: SAVING THE BLUE HEART OF THE PLANET

Mission Blue aims to galvanize global support for marine protected areas that will cover 20 per cent of the world's oceans by 2020, through public outreach, scientific expeditions and partnerships with global corporations and governmental bodies.

The organization founded by Sylvia Earle is igniting public awareness for a growing network of Hope Spots around the globe that are regarded as vital to the oceans' health. Currently, less than 4 per cent of the seas are protected in any way and less than

2 per cent are safe from commercial fishing. Mission Blue's primary measure of success is the increasing amount of ocean formally protected from environmental damage and over-exploitation each year.

The initiative took shape in April 2010 after a five-day TED conference on board the *National Geographic Endeavour* in the Galapagos Islands, Ecuador, to draw public attention to ocean protection. More than US\$17 million was committed to seven ocean conservation initiatives. 2015 was a banner year for

increased public and political interest in conserving the ocean. Over one million square miles of highly protected ocean was announced, protecting more of the planet than ever before. Today, there are 59 Hope Spots worldwide and Mission Blue collaborates with over 150 international partners, including Rolex, National Geographic and the International Union for Conservation of Nature (IUCN), as well as small scientific teams.

SYLVIA EARLE, photographed by David Doublet during the Elysium Arctic expedition in 2015, where they collaborated with others to explore and document the Arctic (right).

EARLE in 2015 at a press conference in Majorca to announce the new Hope Spot in the Balearic Islands.

PHOTOGRAPHED by David Doublet alongside the Deep Rover submersible, which she piloted to a depth of 335 metres in Bahamian waters (below).



> 1972-1998
Saturates as scientist-
aquanaut nine times in
HydroLab, Edalhab and
Aquanus underwater
laboratories.

> 1976
Becomes a curator and
research biologist at
the California Academy
of Sciences.

> 1979
Un tethered walk on the
sea floor with a JIM suit.

> 1980
Receives The Explorers
Club Lowell Thomas
Award.

Serves on the National
Advisory Committee
on Oceans and
Atmosphere between
1980 and 1984.

> 1981
Awarded Order
of the Golden Ark
by the Prince of
the Netherlands.

> 1982
Co-founds the
companies Deep
Ocean Engineering
and Deep Ocean
Technology to design
and build deep-sea
submersibles, including
the submersible
Deep Rover, a vehicle
capable of reaching
depths up to
914 metres beneath
the surface of the
ocean.

> 1986
Matches the world
solo dive depth record
in a sub, going
1,000 metres in the
Deep Rover.

> 1990
Appointed Chief
Scientist NOAA,
and holds the
position until 1992.

Receives the
Society of Women
Geographers
gold medal.

> 1992
Founds Deep Ocean
Exploration and
Research (DOER
Marine) to further
advance marine
engineering.

> 1996
Receives Explorers
Club Medal.

Yet, we're just beginning to explore the ocean floor. The history of life on Earth is mostly an ocean history. When you pick up a bucketful of water from the ocean, you can see a cross section of life on Earth. The ocean is really where the action is.

Why do you think the oceans did not get the attention they deserve?

It is getting better, but it's also getting more urgent because we're seeing potentially irreversible changes. "Irreversible" means extinction of species. "Irreversible" means that you have passed a point of no return. We're certainly reaching tipping points with respect to what we're putting into the sky, into the water and what we're taking from the land.

Of course, we have to use nature – all creatures do – for our existence, but we have been so heavy-handed about it in the past, thinking that nature was infinite. We used the ocean as a dumpsite. Now, we've begun to develop not just rules, regulations or laws, but the ethic of caring for nature, which is more powerful than laws.

How is technology helping to make the ocean your laboratory?

We could not get to the moon if it weren't for technology. We can't go to the deepest part of the ocean and come back without mastering the systems that make it possible. But as wonderful as our technologies are, we haven't figured out how to make a tuna fish. We cannot even make a single frog, tree or flower.

The real missing link right now is being able to come up with a glass sphere that will enable us to send people to the full depth of the ocean in a submarine. We're right on the brink of making it happen.

How many people go 7 miles up into the sky in aeroplanes? We need people to be able to go 7 miles into the ocean to see what happens when deep-sea mining takes place. People need to see it to evaluate it.

In a life full of achievements, which is your most fulfilling?

It's out there somewhere around the corner or over the next hill. It's much more interesting to look forward than back.

What is your aim, specifically, with Mission Blue and the Hope Spots?

The idea for Mission Blue is for further exploration, so that we can know better. That requires technology, to explore and define the nature of what's there, to share the view as widely as possible, not just with scientists but with the public at large. And it requires inspiring people to take action and say, "this part of the ocean, I care about. I want to make it a Hope Spot and I am willing to make a pledge to those I can inspire with me to take care of the place."

That's a Hope Spot. It can be a place that is in good condition or one that has been damaged over time but, with care, can be restored.

Can you give us some examples within Mission Blue of areas that you are most concerned about?

The Galapagos is one example of a Hope Spot. This international treasure is in trouble, but with care, it can at least be improved.

Chesapeake Bay (USA): oh my goodness. Imagine the way it was 400 years ago, compared to what it is today. It's in Washington DC's backyard, and it has been trashed.



A ROLEX OYSTER PERPETUAL SUBMARINER DATE advertisement from 1988 featuring Sylvia Earle plotting the Deep Rover.



SYLVIA EARLE diving in 2016 at Costa Pulmo, Mexico. A Mission Blue Hope Spot.

"NO ONE PERSON CAN DO EVERYTHING, BUT EVERY PERSON CAN DO SOMETHING. TOGETHER, WE REALLY CAN MAKE A DIFFERENCE."
SYLVIA EARLE

SYLVIA EARLE AND ROLEX

Sylvia Earle's relationship with Rolex started in 1970, when she received her first Rolex. A Rolex Testimonee since 1982, she was also a Jury member for the Rolex Awards in 1981 and 2012.

I see you're wearing your Rolex watch.

Always. I just never take it off, whether it's in the shower, the submarine or in the ocean directly. I've had this one for about four years. The original one I acquired in 1970 – the old-timer – is in my eldest daughter's keeping for the most part.

My three children all have their respective Rolexes, as do my four grandsons. My mother and my father were given one, as well as my brother, sister-in-law and daughter-in-law. We are a family of Rolexes.

Do they all dive, by any chance?

Of course they do, I couldn't keep them out of the water. I share with them what I love.

How deep has your watch been?

This one has been inside a submarine to about 1,500 feet, which is deeper than I can hold my breath, and diving to about 150 feet.

Do you use it as an instrument when you dive?

Of course, I use it to keep track of time, it's an extension of me.

You have had a relationship with Rolex for over 40 years; what has made it last so long?

It is partly because of the phenomenon that Rolex is what it is. Rolex has a way of developing these enduring relationships with people. You become part of a family. I have been on the Jury for the

Rolex Awards for Enterprise twice and I'll do it again anytime. The ethic of investing in exploration, conservation, research, health and the things that humans care about, which are represented in the Awards, this is the heart and soul of what Rolex is about. It's what makes me tick as well. The relationship with Rolex has had many milestones along the way.

I was given a Rolex once as an award when I was involved with developing technologies for ocean exploration – a Submariner – that my son now has, with the engraving and all.

Now, Rolex has become a supporter of Mission Blue, helping us with expeditions and our outreach, which is another dimension of our relationship.

> 1998
Named Hero for the Planet by Time Magazine.
Named National Geographic Society Explorer-in-Residence.
Becomes a UN Global 500 Laureate.
National Wildlife Federation (USA) Conservationist of the Year.

> 2000
Honoured as a new member of the National Women's Hall of Fame (USA).

> 2002-2009
Chair of the Advisory Council for the Ocean in Google Earth.

> 2009
Wins the TED Prize, leading to the launch of Mission Blue.

> 2010
Named an Ocean Elder.

> 2011
Receives Royal Geographical Society Patron's Medal.

> 2012
Appointed IUCN Patron of Nature.

> 2013
Awarded the Hubbard Medal, the National Geographic Society's highest honour, "for distinction in exploration, discovery and research".

> 2014
Named Glamour Woman of the Year.
Receives a United Nations Environment Programme Champions of the Earth Award.
Is the subject of the Netflix original documentary, *Mission Blue*, which won an Emmy Award in 2015.

Cashes Ledge, a little place off the coast of Maine, has been protected now for about 15 years. No fishing has been allowed. It's one of the few places where you can find big cod because it's a safe haven.

Being called a Hope Spot doesn't mean that it's protected. In 2015, we finally got to the point where the United Nations did move towards implementing agreements so that protection for the high seas could actually take place. Up until now, it has been the Wild West.

For the general public, it can all seem very overwhelming and you can easily feel powerless when it comes to helping conserve the oceans. What is the best way for an individual to contribute?

Well, I sympathize because I'm just one person too and I struggle. I think it comes down to realizing that no one person can do everything, but every person can do something. Together, we really can make a difference. One of the greatest dangers for the future of the planet is inertia: people who have power and then fail to use it, or misuse it.

The answer is deceptively simple: all of us doing the right thing, little by little. One action times a thousand, times a billion and you've got change – or lack of change if everybody is so overwhelmed with the prospect of "I'm just one person," and you just do nothing. It's a choice.

What is the best piece of advice someone has given you?

I suppose it's the advice that I find myself giving to others. Find what you love. Never lose sight of keeping a strong passion in your life for something you really care about. For me, being a scientist is what I always

wanted to be, and it's what I am. I was blessed to be able to do that. Fortunately, my parents allowed me to do what I loved. That's what I encourage everyone to do.

I know for some it seems overwhelming, but I try to tell kids, "don't worry if you haven't found that special thing. Just give it some time. Maybe you're going to be a generalist and that's okay. That's your special thing. You like to do all kinds of things? Terrific. Go for it!"

Do you think citizen science (research conducted by amateur or non-professional scientists) can be harnessed to help Mission Blue?

Absolutely, it is being harnessed already. I could say an army, but it's more likely to be a navy; millions of divers around the world have come to see the ocean in ways that most people don't. Many have thrown away their spear guns and picked up cameras as they have come to value the living ocean as more than just a place to catch things.

We're working with the Professional Association of Diving Instructors (PADI), to instil the ethic of conservation and caring, and to build a case for why their beloved dive site should be protected as a Hope Spot.

That's a concrete example of energizing citizen science. Anyone can do what a scientist does. Kids can do this. Accountants can do it, teachers can do it, mums and dads can do it, and divers certainly can do it.

You don't have to be a formally trained scientist to accomplish meaningful science. I think everyone should embrace the love of exploration. Puppies do it, squids do it and elephants do it, but people, perhaps, do it best of all: explore, remember and pass information along. 🙌

"FIND WHAT YOU LOVE. NEVER LOSE SIGHT OF KEEPING A STRONG PASSION IN YOUR LIFE FOR SOMETHING YOU REALLY CARE ABOUT."

SYLVIA EARLE

AERIAL VIEW
of the Balearic Islands on the coast of Majorca, Spain. The islands form the first Hope Spot in the Mediterranean.



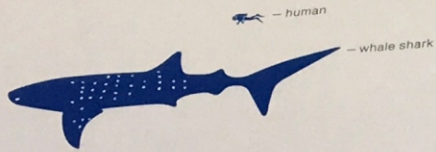
ROLEX AWARDS
LAUREATE
BRAD NORMAN

STARS OF THE SEA

The secret life of one of the ocean's most mysterious creatures, the whale shark, is being revealed through a worldwide team of nearly 5,000 citizen scientists and Australian diver and researcher, **Brad Norman**, who won a Rolex Award for Enterprise in 2006.

by Julian Cribb
PHOTOGRAPHS *by Kurt Amsler*

THE CHARISMATIC
whale shark is found in more than 100 places around the globe, including the Galapagos Islands, Australia and the Philippines (previous page).



THE WHALE SHARK is the world's biggest fish, and can reach 18 metres in length. The coat of stars that bespangles each whale shark is as unique as a human's fingerprint, or the flecks of an iris.

For more than 20 years, Brad Norman has pursued the cryptic whale shark, the mightiest of all fish in the sea, with fascination, love and a single-minded dedication to both science and conservation. In the process, he has drawn together what is believed to be the biggest team of marine research volunteers ever assembled, to help lift the veil on one of the enduring mysteries of the still largely-unfathomed oceans.

When Norman began his work in 1994, whale sharks were known from only 350 sightings recorded during the previous century and a half. Today that number has expanded to 32,000 documented sightings, encompassing the scientific identification of no fewer than 6,800 individual animals. The project, accorded a Rolex Award for Enterprise in 2006, has also revealed hitherto unknown gatherings of whale sharks at several locations around the world.

Norman proposes that these gatherings of the gentle giants of the high seas be known by a new collective name: a "constellation" of whale sharks, reflecting both the silvery star-like spots which adorn the creature's blue-grey hide and its emergent status as one of the world's great marine conservation stars. This helps to rivet human attention on the need to curb our destructive impact on the oceans.

"The whale shark is not only revealing itself to us; it is also teaching us much about how the oceans function, their state of health, the importance of their natural food cycles – and the inroads which 7.3 billion seafood-hungry humans are now making into those," Norman says.

UNIQUE MARKINGS

Prior to this project, only whale sharks with strikingly deformed fins or tails could be readily individually identified, such as the first animal in the database, A-001. He is fondly known as Stumpy to the dozens of scuba divers who have recognized him encounter with a boat propeller or a larger, predatory shark in his early days. Twenty years on, Stumpy has been spotted on 63 separate occasions. He is a fond favourite with the hundreds of marine ecotourists who flock to Ningaloo, Western Australia, home to one of the world's largest known constellations of whale sharks – numbering more than 1,100 individuals at the last count.

As Norman studied and swam with the sharks, he quickly realized – and set out to prove – that the coat of stars that bespangles each fish is as unique as the whorls of a human fingerprint, or the flecks of an iris. It was the perfect way to tell individual sharks apart and, with the rapid spread of digital photography, to record and monitor them non-invasively for scientific study. His colleague, NASA astrophysicist Zaven Arzoumanian, determined that each set of spots could be identified using a pattern-recognition algorithm, similar to that employed by Hubble Space Telescope scientists to recognize star formations. Meanwhile, information architect Jason Holmberg started, in 2003, to develop Norman's Ecocean whale shark database as an online resource, which has recently become known as the Wildbook for Whale Sharks.



NORMAN HAS JOINED FORCES with fellow Rolex Award Laureate Rory Wilson in a research project to track the behaviour of these gentle giants.



BRAD NORMAN
Australian marine conservationist.



BRAD NORMAN is assisting citizen scientists from 54 countries to assist with his database of photographs of individual whale sharks.

"THE WHALE SHARK IS NOT ONLY REVEALING ITSELF TO US; IT IS ALSO TEACHING US MUCH ABOUT HOW THE OCEANS FUNCTION, THEIR STATE OF HEALTH AND THE IMPORTANCE OF THEIR NATURAL FOOD CYCLES."

BRAD NORMAN

The combination has proved revolutionary, offering a new way to accurately identify and monitor wildlife using only its unique external markings. Furthermore, it has enabled thousands of divers – from expert marine scientists to whale shark enthusiasts, to eager tourists – to contribute verifiable evidence in the form of underwater photographs to an ever-growing global data set of whale sharks worldwide.

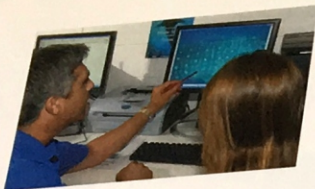
CITIZEN SCIENTISTS

By December 2015, the database had amassed some 53,000 images, contributed by 4,700 individuals from 54 countries. They reveal that the worldwide whale shark population – though small – is more secure than previously thought. While bird lovers have contributed mightily to scientific ornithology, nothing on this scale had previously been attempted for an ocean animal. This exceptional partnership of professional researchers and citizen scientists is gradually disclosing the secret life of one of the Earth's biggest and most enigmatic creatures, in one of the most difficult environments to observe.

"The project has confirmed that some whale sharks move between neighbouring countries, such as South Africa, Mozambique and Tanzania, and Honduras, Belize, Mexico and the USA," Norman explains. "This highlights that the ocean has no fences and these sharks move easily through various jurisdictions. It underlines the importance of developing worldwide conservation measures and cooperation, to keep the animals themselves and their food chain safe and intact."

Though most nations with whale shark populations now protect them, pirate fishing continues unabated in the waters off East Asia and still takes a dreadful toll on whale sharks, which are prized for the sheer size of their fins, Norman says.

The project's most important contributions have included the preparation of a Species Report for the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species. The IUCN had upgraded the whale shark's international conservation status from "Indeterminate – Data Deficient" to "Vulnerable to Extinction" in 2000, thus placing them firmly on the list of global conservation priorities.



THE DATABASE OF PHOTOGRAPHS is allowing Norman to find out more about this elusive species, which was first recorded in 1828.

MARINE AMBASSADOR

The placid whale shark ranks among the most charismatic of the ocean's denizens, and it now plays a larger, ambassadorial role in raising global awareness of the fragility of marine ecosystems and the need to look after them, Norman says. The once-mysterious giant has become something of an aquatic rock star, its adventures followed avidly by hundreds of schoolchildren who can observe the travels and behaviour of "their shark" online, thanks to the marvels of electronic tagging and satellite telemetry.

This breakthrough is the result of a fruitful partnership between Norman and another Rolex Laureate, English researcher Rory Wilson, developer of the "Daily Diary", a sophisticated miniature e-tag that keeps track of wild animals. The fauna's physical actions, environment and behaviour are recorded in unprecedented detail to shed new light on the unseen natural world.

Together, the two Laureates are deploying a range of technologies to reveal whale shark behaviour, including satellite tags, Daily Diaries and Sharkcams (by which sharks carry a camera and video their own activity). But the photographic library remains the keystone in building up a worldwide picture of whale shark populations and demography.

"Citizen science has played an absolutely indispensable role in revealing the whale shark," Norman says. "It has almost unlimited potential to help us

understand natural history phenomena that otherwise may never be revealed using only single or even many teams of trained scientists. It is showing us the oceans as we never knew them before.

"As a result of the generous contribution of images and data from thousands of individual divers and tourists, and the global awareness this has generated, we have been able to successfully press the case for increased protection of whale sharks in many countries. And the feeling that ordinary people can make a real contribution to both science and conservation is leading to even greater public participation in citizen science monitoring – not just of whale sharks but of many animals, birds and fish.

"WE HAVE BEEN ABLE TO SUCCESSFULLY PRESS THE CASE FOR INCREASED PROTECTION OF WHALE SHARKS IN MANY COUNTRIES."

BRAD NORMAN

"Among the benefits is a growing awareness among countries which have whale sharks in their waters that they are worth far more alive – as objects of eco-tourism – than dead, as fins in soup," Norman adds. "This Rolex-funded project has proven indispensable in amassing the evidence to persuade governments and conservation authorities that whale sharks return to the same location year after year and need protection. And that protection in turn involves caring for the whole marine environment in which they swim – and which, in succession, supports humanity and all life on Earth." 🐾

Julian Cribb is an Australian author and science writer. His work includes nine books and over 8,000 media articles.



THE WHALE SHARK is one of only three filter-feeders, using gill rakers to scoop up their prey.

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JOURNEYS IN DEEP TIME AND SPACE

ROLEX AWARDS LAUREATE FRANCESCO SAURO
by Julian Cribb

Dense forest blankets the remote table-top mountains of Amazonia, which are riddled with unexplored caves. For speleologist **Francesco Sauro**, a 2014 Rolex Awards for Enterprise Laureate, they are fertile territory for scientific discoveries that can shed light on the origins of life and its extra-terrestrial future.

FRANCESCO SAURO abseils into the Spiluga della Preta cave in Italy, one of the places he uses to train European astronauts in survival techniques



When Francesco Sauro ventures into the labyrinth of ancient caverns and galleries which honeycomb the tepuis in South America, he is embarking on a journey through time; back to the deep origins of life on Earth and forwards, towards its future, as humans seek to settle on other planets.

The caver, geologist and 2014 Rolex Laureate is well advanced in his plans to explore some of the remotest and possibly oldest caves on the planet, places where no human has set foot. In so doing, he hopes to gain insights into how life itself arose here long ago and, at the same time, pioneer essential methods for prolonged human settlement on the Moon or Mars.

During 2015, Sauro led his team on a danger-filled reconnaissance – by aircraft, shallow boat and on foot through jungle trails – of several of the most isolated Amazonian peaks, to map the caves and sinkholes.

The tepuis – celebrated as the setting for Conan Doyle’s adventure story *The Lost World* – are vast, upthrusting quartzite formations, forged out of the sundering of South America from Africa as the Atlantic basin opened up

BESIDES USING THE CAVERNS AS A TIME MACHINE TO EXPLORE THE DEEP PAST, SAURO IS ALSO DEVELOPING THEM AS A LABORATORY FOR THE FUTURE.

100 million years ago. Drenched by five metres of rain a year, often shrouded in dense cloud and mist, their surfaces blanketed by dense vegetation, they are a landscape like no other; inaccessible and still largely beyond our knowledge.

To the indigenous Pemon and Ye’kuana peoples who live in their shadow, these soaring plateaux are the “Home of the Gods”, the source of thunder and lightning. To Sauro, they are a speleologist’s dream, threaded by prehistoric caverns and subterranean rivers that run for kilometres.

Geologists theorize that these giant caves were carved by the interplay of microbial action,

geochemistry and water over tens of millions of years – a process known as arenization. Their quartzite rock is far harder than in the limestone caves which are familiar around the world, harder even than granite, and the hollowing of this inner realm calls for new interpretation.

In nine expeditions to the tepuis so far, Sauro has established that some of their unique life forms, such as the bacterial colonies that inhabit the deep caves, mobilize silica from the surrounding rock, making them radically different from much of life on Earth, which uses and consumes carbon, iron or sulphur. “It may be these bacterial colonies come from a very early time in the Earth’s history when there was little carbon about, because it was still the dawn of life. So they had to rely on silica to build mineral structures useful for their metabolism. If we can understand how they do this, we may open a window on some of the earliest lifeforms to inhabit our planet.”

Besides using the caverns as a time machine to explore the deep past, Sauro is also developing them as a laboratory for the future. An expert caver and geologist, he is employed as a leading instructor of



A LABYRINTH of caves lies beneath South America’s remote table-top mountains. WITH A TEAM from La Venta (Italy) and Thersopora (Venezuela), Sauro explores a quartzite cave in the Auyán Tepuis.



ANATOMY OF AN EXPLORER

Rolex Laureate Francesco Sauro is an Italian geologist, speleologist and author who acquired his fascination with the hidden subterranean world as a child, from climbing and caving with his father and uncle in the Italian Dolomites.

Explaining the force that drives him, he says: "When you explore, you create a new geography. Exploration is the first impetus — but exploration alone is not enough. You may find a new world — but if you cannot understand or share it with others, it makes no sense. The explorer is nothing without the scientist."

At the heart of Sauro's philosophy of exploration is the sharing of the expedition's discoveries with the indigenous people — the Pemon and Ye'kuana, who are the traditional owners of this remote wilderness — and also with the citizens and governments of Venezuela and Brazil. The knowledge that currently lies hidden in the *tepuis* belongs to them, he says, highlighting the privilege to be allowed to discover and share it.

astronauts by the European Space Agency (ESA). He uses caves in Italy to train future space travellers in the survival techniques required for exploration of other planets.

"We have come to realize that, in the next expeditions to the Moon or Mars, people will have to live off the planet for many months — and that caves provide a perfect, safe environment for that," he explains. Showered by deadly cosmic radiation, pelted by micro-meteorites, perature extremes, life on the lunar or Martian surfaces is all but intolerable — unless humans revert to ancient custom and take refuge in caves where they are shielded by rock. Consequently, an important strand of the latest space research by both ESA and NASA is dedicated to finding ways to locate caves and make them "liveable".

As one of the world's foremost speleo-geologists, Sauro is using his geological knowledge to help pinpoint promising regions on the Moon and Mars where Earth-like geology may have caused suitable caves to form. "Lava tubes, for example, are often level, stable and run for long distances. We know Mars has volcanoes, so it is quite possible lava tubes have formed there too, where we can build habitations and laboratories. If the caves contain it, one could melt water ice for drinking or food production, or even CO₂ ice to produce energy for living there.

"The practical reality is that astronauts cannot transport a lot of heavy shielding all the way to Mars. The best solution will be to rely on the local rock to protect them."

AS PART OF HIS WORK, Francesco Sauro is helping to pinpoint which regions of the Moon and Mars they have. Caves like Earth, where humans can live safely for months at a time.

THE ROLEX AWARDS FOR ENTERPRISE CELEBRATE 40 YEARS

In 2016, the Rolex Awards for Enterprise celebrate their 40th anniversary — four decades of supporting pioneers and innovators taking on the challenges facing humanity. In that time, 130 individuals and their groundbreaking projects have won Rolex's support. The benefits of the Rolex Awards have extended to all regions of the Earth, from the Arctic to the Antarctic. Established in 1976 to celebrate the 50th anniversary of the Rolex Oyster, the world's first waterproof watch, the Awards are designed to promote the "spirit of enterprise", making the Swiss brand a leader in both watchmaking and philanthropy.

RECENT EXPEDITIONS

In 2015, Sauro used funds from his Rolex Award to lead teams from the exploration societies of La Venta (Italy), Theraphosa (Venezuela) and Grupo Bambuí de Pesquisas Espeleológicas (Brazil) on a challenging survey mission in the remote Amazonian jungles of Venezuela and Brazil. "I am very grateful to Rolex for helping this work to go forward. Besides helping to fund the expeditions, the Award has opened many doors and raised awareness of my work worldwide. It has also challenged me to go further, to discover new worlds in the caves of the tepuis."

Owing to its isolation, their approach to the 1,700 metre Serra do Aracá in Brazil's Amazonia region involved a long trip by boat up the Rio Negro, by shallow canoe up waterways hemmed in by the encroaching rainforest. They continued on foot along trails hacked through the living jungle. Finally, they reached the summit using an old track made by tantalite miners long ago. "It was extremely hard

to cross the plateau. It is seamed with deep chasms and buried in dense vegetation — but we discovered a 300 metre-long cave with a river inside it. This had the classic quartzite morphology confirming our view the massif may contain many such entrances," Sauro recounts. "Our plan is to return and try to scale the cliffs on the north-eastern side, where more such caves may exist."

The team's second assault was on Marahuaca, a 2,900-metre massif towering above the Venezuelan rainforest, whose ramparts are hidden in roiling clouds and whose vertical flanks are veiled by cascades that plunge up to 1,000 metres. For this reconnaissance, they used two light aircraft. After two fruitless days of violent buffeting among the clouds that hug the cliffs, they finally found a gap that enabled them to obtain photographs of the inner plateau. Here, to their delight, they spotted several rivers which vanished underground, pointing to a potentially large subterranean network of caves and streams for future exploration.

Their third target was the eminence of Sarisariñama, which harbours two large sinkholes last explored by Venezuelan and

Polish teams in the 1970s. Here the flyover revealed no fewer than five new sinkholes in the quartzite rock formation, portals to a hidden underworld of caves, as well as a large river system that also vanished into the ground. However, to penetrate this rugged region, Sauro says his team will have to abseil from a hovering helicopter, as no other approach is feasible.

He foresees huge challenges not only in reaching these mountaintops, but in coping safely with the power of underground streams. "It is very exciting, to know for sure there are now so many lost worlds to explore. But we intend to be very careful, very responsible — and we also intend to leave much of this unique region untouched, as there must always be a balance maintained between exploration and conservation.

"These are some of the oldest caves on the planet and we must protect whatever is there. Yet they call to us, make us dream and encourage us to go forward."

Julian Cribb is an Australian author and science writer. His work includes nine books and over 8,000 media articles.





SEASONS
A FILM by Jacques Perrin
and Jacques Cluzaud

A PLEA FOR NATURE

The new film *Seasons*, directed by **Jacques Perrin** and **Jacques Cluzaud** (seen here from right to left), brings together three areas that Rolex has been committed to for several decades: the arts, exploration and environmental protection. As a result, it was a natural step for the brand to support this documentary, which explores unknown territories with the aim of encouraging the conservation of our planet.

INTERVIEW by *Nazanin Lankarani*

Seasons is French filmmaker and producer Jacques Perrin's third collaboration with Jacques Cluzaud. With the support of Rolex, this new-style documentary film continues to explore the magic and mysteries of nature that have been the duo's inspiration for many years. *Seasons* calls for action, compassion and respect for the wild and holds out hope that a new, harmonious union with nature is still possible.

What was behind the making of *Seasons*?

Jacques Perrin — Jacques Cluzaud and I had already made films about nature — *Winged Migration* and *Oceans*. In making them, we'd gone all over the globe, across all kinds of landscapes and across the seas. We experienced the immensity and rich tapestry of life and that's exactly what interested us. In *Seasons*, we wanted to come back to more familiar territory and look at Europe and its diverse nature. But that diversity has decreased considerably because the environment has been changed,

and wild animals displaced, hunted and exterminated.

The only way of handling the subject was to jump back 20,000 years and return to the time when Europe was as wild as some other continents can be even now. In those days there were bison, elk and all the large animals that you still find today on the fringes of Europe, in Poland, Romania or Norway. We compressed the timeline, synchronizing it with the cycle of the seasons to showcase the prodigious diversity of this ballet of wild animals.

What was your biggest challenge?

J.P. — The lack of large, wide open spaces. In Europe, only small portions of forests remain; the living spectacle nature offered us in the past has been reduced to practically zero. We had to search all over Europe to find the scenery we needed.

Where did you find places resembling the land which existed in Europe thousands of years ago?

Jacques Cluzaud — The film opens at the end of the last Ice Age, when the warming began. For icy

settings, we went northwards, to Greenland and Norway, where today's climate is like it once was in continental Europe.

Finding a primeval forest similar to European forests some 8,000 years ago was more challenging. We went to Poland's Białowieża Forest, a former hunting ground for the Russian tsars. It's been protected for centuries and its particular character, with tall trees and no undergrowth, has been preserved. It's easy to move around there, just like in tropical virgin forests.

This is not a documentary film. Can we call it storytelling?

J.P. — We wanted to tell a story about the charms and magnificence of the wild. Our films elicit the imagination of each person. Their intention is to force viewers to experience emotions, so they'll never forget the natural behaviour of the animals.

But, unlike a documentary, this film shows no scenes of actual predation. No animal was killed or harmed. Our objective was to look at wild animals from another standpoint, to show how close they

WOLVES HAVE two decisive advantages for survival: a developed social organization and endurance.

THE TOBRUK SCOOTER designed to follow the animals, in this case a herd of wild horses, moving at high-speed through a dense forest.

THE MAJESTIC cranes can be capricious actors.

A PACK OF WOLVES can hunt big game but they cannot cope with a herd of galloping horses.

THE ICE AGE still survives in the Arctic Circle, the reindeer have not disappeared.



"OUR FILMS... FORCE VIEWERS TO EXPERIENCE EMOTIONS, SO THEY'LL NEVER FORGET THE NATURAL BEHAVIOUR OF THE ANIMALS."

JACQUES PERRIN

TO SURVIVE
the harsh winter, bison
are often reduced
to nibbling bark.

are to us, their great numbers and how we coexist. The audience is simply confronted with the mysteries of nature. It's up to them to create their own storyline.

In fact, you let nature speak for itself, with very little commentary. Why did you choose this format?

J.P. — A wild animal is defined by its mysterious and enigmatic character. Too much narration detracts from the sense of wonder. Narration implies a clearly laid out story, whereas what we wanted in this film was to provide an escape into the imagery, that the scenes excite the imagination of the audience, and that what they are watching evokes their childhood, their memories, and their regrets.

You are constantly pushing the boundaries to allow us to discover new worlds. Are you explorers?

J.P. — We are like those 19th century explorers who set off in search of uncharted territories. At the outset, we mapped out what we thought we knew. That map allowed us to get to where we would start filming. But once we'd

got there, nature just blew us away and we had to lay our plans aside and proceed otherwise.

In relation to your scenario, how did you manage the challenges presented by the unexpected and by the animals' impulsive behaviour?

J.C. — Before we started filming, we worked a lot with scientists who were with us all the way and answered all our questions, even the most eccentric. The scientific advisors at our disposal included historian Eric Baratay, anthropologist Philippe Descola, archeozoologist Jean-Denis Vigne and land naturalist Gilbert Cochet. But we talked with many others, from all kinds of different fields because the film touches on a large range of subjects and particularly our very close relationship with nature, a relationship that has constantly evolved over these thousands of years. The storyboard created with Stéphane Durand, a scientist by training who speaks the same language as all specialists, served as a general framework, but we never stopped having to adjust





FOR GEOGRAPHICAL reasons, the European forest is home to one of the lowest levels of biodiversity in the world.

and adapt our ideas. You need to seize opportunities if you are going to surprise. When we explore the unknown, we're looking to create awe. Every step of the way, we had to rethink what we'd expected to do. The job metamorphosed constantly, from the scenario to the filming and the editing.

How do you work together when you are making a film?

J.P. — Jacques (Cluzaud) is always out on location while I divide my time between the outside and production. We complement each other perfectly. For *Seasons*, we spent almost two years shooting and ended up with more than 400 hours of raw footage. We had a team of some ten directors of photography out in the field with Eric Guichard — including Michel Benjamin, Laurent

Fleutot, Philippe Garguil, Laurent Charbonnier, Jérôme Bouvier, Christophe Pottier — all filming different things, each with their own sensibility. During the editing process the images came together harmoniously, because we were all working toward the same end. The film is a temple that we built together.

You tell the story through the eyes of the animals. How did you do that?

J.P. — Each time we invent special techniques to follow animals as they move from place to place. So we were able to soar for the first time alongside birds in *Winged Migration* and swim next to sea creatures at 40 km/h underwater in *Oceans*.

Seasons posed a different challenge because we had to keep up

with animals running through dense forests at high speeds. We had to invent a way of filming the chase smoothly and continuously without cuts. Working with our engineer, Alexandre Bügel, we built an electric scooter with four independent wheels that could absorb the bumps and knocks and stay stable. We rigged it with a Steadicam stabilizer for the camera. This allowed us to film at the animals' height and speed — a wolf pack chasing horses, or wild boar being hunted by wolves.

Rather than using animation techniques, you opted for imprinting. Can you explain?

J.C. — Imprinting allowed us to produce scenes that can no longer be observed today, either because you can't get close to animals in the wild — the lynx, for example — or because they no longer exist — you don't see wolf packs in Europe any more.

Thanks to imprinting, we filmed wild species that live in captivity and are raised from birth in contact with human beings. Therefore

they are not afraid of humans. They aren't animals raised "for entertainment" that have been taught to perform. They simply allow us to film them while they are moving about freely and behaving naturally. With this method, we were able to film real scenes of domination and reconciliation.

How has the production of *Seasons* changed your view of the wild?

J.P. — We never imagined for a moment that European wildlife could be so rich, so varied, so abundant... and in such proximity with Man only a few centuries ago. These animals' fierce desire to survive is a lesson for us all; our teams always returned filled with great admiration. No complaints, no regrets but, despite the hardships, a steadfast, obstinate will to live that commands our respect.

Can we envisage man living in greater harmony with nature?

J.C. — Animals are our companions on the planet. Earth belongs no more to us than to them.

Animals survive, but they also play, their young frolic. In everything they do they give their all, with unbounded energy. Their lives are very full, and lived in harmony with the environment. A predator never eliminates all its prey, otherwise it would eliminate itself. Without wild animals, human beings would have no boundaries.

J.P. — Today, at worst, we consider nature as a reserve for raw materials, at best simply as scenery, a pleasure garden. That's an extremely sad outlook on behalf of Man! Nature is worth more than that, Man too! To save Man, we need to save nature.

What message do you want to deliver through *Seasons*?

J.P. — We need to see wild animals living free in their own environment to understand our own innermost nature. The more we distance ourselves from wildlife, the more our capacity for imagination suffers. Modern Man seems to have gone too far; he seems totally irresponsible. Human genius knows no horizons

"A PREDATOR NEVER ELIMINATES ALL ITS PREY, OTHERWISE IT WOULD ELIMINATE ITSELF. WITHOUT WILD ANIMALS, HUMAN BEINGS WOULD HAVE NO BOUNDARIES."

JACQUES CLUZAUD

and is ungoverned. Yet, to a certain extent, nature is rebounding: in our mountains, rivers, forests and in the heart of our largest cities. Paradoxically, it is our countryside that is most threatened today, a very original environment patiently built up over the centuries by our ancestors. And we are destroying it. We're in a pivotal period. Can you imagine a world where there would only be humans left? 🌍

Nazanin Lankarani is a freelance journalist and a frequent contributor to *The New York Times*.

WEST SIDE STORY

revisited by
**CECILIA
BARTOLI**



A ROLEX PARTNERSHIP

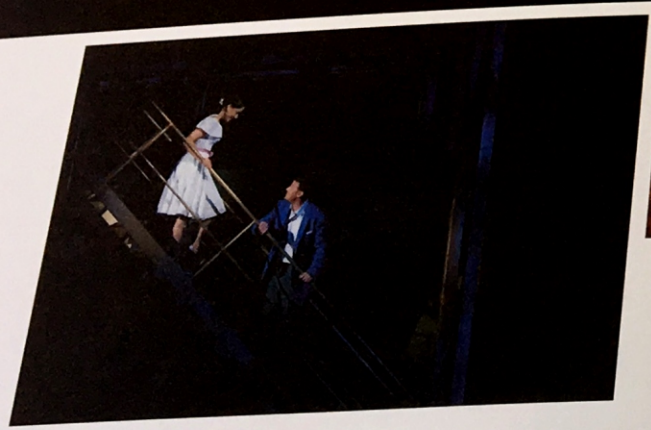
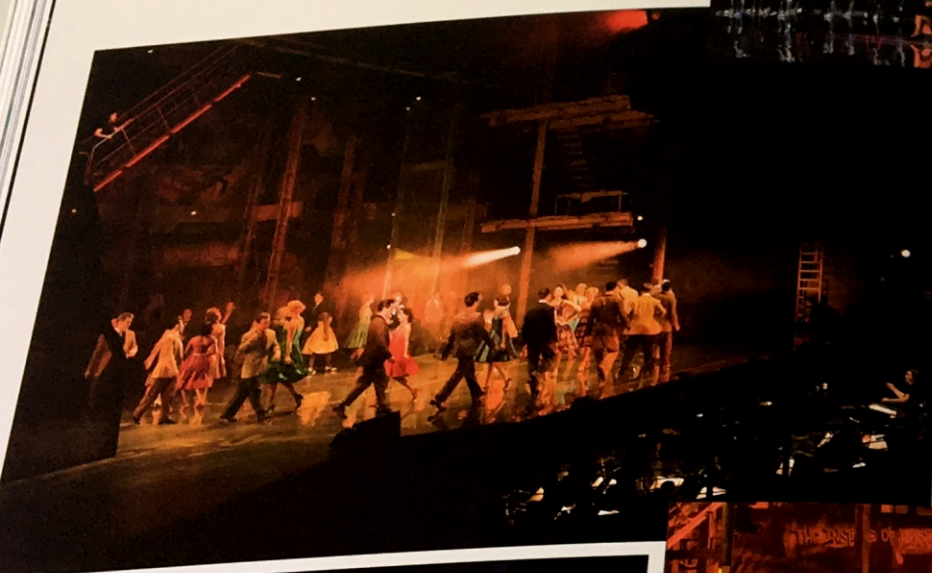
Inspired by artistic passion and a determination to explore new territories, the famous soprano and Rolex Testimonee **Cecilia Bartoli** has staged a new production of Leonard Bernstein's *West Side Story*, a work which has always been dear to her heart. **Gustavo Dudamel** is the conductor with his Simón Bolívar Symphony Orchestra. Through its commitment to the arts, and its long-standing partnership with the Salzburg Festival, Rolex has given its enthusiastic support to this project involving two Testimonees.

by *Luca Vitali*
PHOTOGRAPHS by *Ambroise Tézénas*

IN THIS SCENE, MARIA, played by Cecilia Bartoli, remembers her ill-fated night of love for Tony.

"I'VE ALWAYS BEEN FASCINATED BY WEST SIDE STORY, ITS MUSIC AND PLOT — IT'S THE 20TH CENTURY'S ROMEO AND JULIET!"

CECILIA BARTOLI



BEYOND
Submariner

THEIR EMPATHY GOES DEEPER THAN just music. "What unites us, Gustavo and I, is our temperament, this fire. And also a certain light heartedness, a vitality which helps us live."



THROUGH INVENTIVE STAGING, Maria relives the tragedy that made such an impression on her.

THE LOVERS ON THE BALCONY: with the talented Michelle Veintimilla, playing the young Maria, and Norman Reinhardt, who brings his velvety voice to the role of Tony.

THE "MAMBO" scene, a moment the audience in Salzburg will never forget.

During an interview granted to *The Rolex Magazine* in Salzburg, Cecilia Bartoli and renowned conductor and renowned pianist had once told her: "You are greatly teasing me — you possess an extraordinary instrument: your voice. However, you'll need to be very disciplined if you are going to succeed and, above all, you must want to discover new music and keep up with new composers." This was Daniel Barenboim, offering precious advice that she has followed to the letter.

In 2012, 25 years after this meeting, the famous Italian mezzo-soprano became the artistic director of the Salzburg Whitsun Festival. She has performed in the world's most prestigious concert halls and sold more than 10 million records and videos; in short, she has become

"La Bartoli", one of the best known personalities and voices, a passionate and curious artist, always on the lookout for old music lying forgotten on library shelves.

For the 2016 edition of the festival, this year devoted to Shakespeare, she has offered us the *Romeo and Juliet* of our era, *West Side Story*, the lyrical drama by Leonard Bernstein and Stephen Sondheim that premiered on Broadway in 1957. She is innovating and rediscovering, as the Argentine maestro had prompted her to do.

Leonard Bernstein had actually conceived the roles of Tony and Maria for lyric voices and, in the 1980s, had also directed and recorded the work with many great performers: José Carreras (Tony), Dame Kiri Te Kanawa (Maria), Tatiana Troyanos (Anita) and Marilyn Horne (singing *Somewhere*). That said, no one had ever thought

of presenting *West Side Story* at a temple of opera like Salzburg. Cecilia Bartoli has done so, inspired solely by her passion.

Of course, the general public has fond memories of the 1961 movie, with a charming and innocent Natalie Wood: this film version, with its social themes and many dance numbers, marked a turning point in American musical theatre. The film won 10 Oscars, out of its 11 nominations.

"It is a formidable challenge," admits Cecilia Bartoli, with the same sparkle in her eyes that had captivated the audience as soon as she first stepped on stage at Salzburg in the role of Despinina in *Così fan tutte*. "Maria has always fascinated me; first of all, musically the role is extraordinary, and then there is her personality!" At this point, Bartoli cannot resist starting to hum, ironically: "*I feel pretty, oh so pretty, I feel pretty and witty*

BEYOND
Submariner



LARGE-SCALE STAGE DESIGN MAKES the best of the huge Feisenreitschule, using its different levels to recreate an urban New York setting.

but also a convincing and moving actress, as in her debut in the role of Norma at Salzburg in 2013. But Maria in *West Side Story* is something else; even if the show follows Bernstein's music down to the last detail – “with much love and humility”, adds Bartoli – the public discovers a Maria much like Cecilia who, by her own admission, has not changed since her debut at the age of 19 as a young, promising talent on an Italian television show. Already then, her performance of *Una voce poco fa* [from Rossini's *Barber of Seville*] seduced the whole country. She is always the same: authentic, demanding, engaging as well as a dreamer.

and bright!” [reciting one of the songs from the musical]. “Maria is a witty girl, rather innocent for sure, but also passionate, a real Latin personality, which is not at all foreign to my Italian, indeed Roman, temperament!” she adds.

A Rolex Testimonee since 1994, Cecilia Bartoli has proven throughout her long career that she possesses the qualities of a complete artist: not only a rigorous musical performer sensitive to baroque, classical and bel canto repertoires,

Another “Latin” artist, as passionate as Cecilia Bartoli, was involved in the *West Side Story* project: the charismatic Gustavo Dudamel, a Rolex Testimonee since 2008. The much-loved Venezuelan conductor directs Bernstein's work from the podium with his Simón Bolívar Symphony Orchestra, one of the best ensembles in the world. “Maestro Dudamel is so extraordinary”, says Maria/Cecilia, with great delight. “Directing is a necessity for him,

A KALEIDOSCOPE of shapes and colours, the costumes, designed by Ann Hould-Ward, are one of the highlights of the show.



IN THE DRESSING ROOM, the actresses, dancers and singers prepare to perform on stage.

ROLEX AND THE SALZBURGER FESTSPIELE

The Salzburg Festival

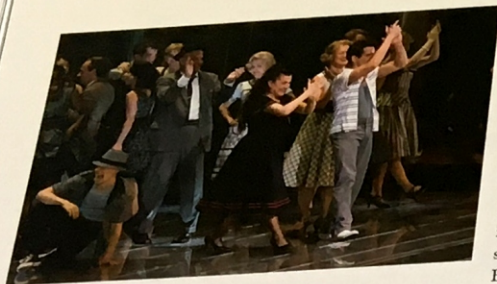
Attended by visitors from around the world, the Salzburg Festival has established itself as one of the most prestigious of its kind, showcasing artistic excellence and innovation through two major events. Inaugurated almost a century ago, on 22 August 1920, the Festival debuted with a performance of Hugo von Hofmannsthal's morality play, *Jedermann*, on the Domplatz, the square in front of the Salzburger Dom cathedral. Nowadays, over six weeks every European summer, the Salzburg Festival features more than 180 classical and contemporary performances, including operas, drama and concerts, and is also renowned for introducing new works onto the international music scene. The Vienna Philharmonic Orchestra, one of Rolex's distinguished partners, has been the principal orchestra of the Festival since 1922, and Rolex Testimonees such as renowned opera stars Plácido Domingo, Jonas Kaufmann and Juan Diego Flórez often perform at this

prestigious cultural event. Another highlight is the location, held in Salzburg's historic, baroque city centre, a UNESCO World Heritage Site and the birthplace of Wolfgang Amadeus Mozart. Rolex has been one of the Main Sponsors of the Salzburg Festival since 2012, forever encouraging appreciation for the arts on a global scale.

The Whitsun Festival

Established in 1998, Salzburg's Whitsun Festival precedes the summer Salzburg Festival and features an impressive repertoire of operas and concerts over Whitsun. Under the direction of Cecilia Bartoli, a long-standing Rolex Testimonee, the Festival always strives for new heights of excellence and prestige. Rolex has been Exclusive Sponsor of the Whitsun Festival since 2012.

A DREAM COME TRUE
for Cecilia Bartoli, who
brought this musical
to Salzburg



you can see it in his every look, his every move. It's a great opportunity for me to share this moment of music with him. In addition to this passion, what unites us is our temperament, this fire... and also a certain light-heartedness, a vitality which helps us live."

"MARIA IS A WITTY GIRL,
RATHER INNOCENT
FOR SURE, BUT
ALSO PASSIONATE,
A REAL LATIN
PERSONALITY, WHICH
IS NOT AT ALL FOREIGN
TO MY ITALIAN
TEMPERAMENT!"

CECILIA BARTOLI

BEYOND
Submariner

The music is full of vitality and energy, instilled by the conductor in his South American musicians, somewhere in-between opera and Broadway, an ideal combination. It gives the right tempo and rhythm to the movements of the Sharks, the Puerto Rican gang which, in the story, clashes dramatically with the Jets, the "white Americans".

But *West Side Story* is definitely not about the confrontation between rival gangs from different ethnic groups in an American megalopolis. The work is, above all, the story of ill-fated love between Maria and Tony, played in Salzburg by the American lyric tenor Norman Reinhardt. "What a voice, what technique, and an excellent timbre!" confides Cecilia. As in all proper versions of *Romeo and Juliet*, the audience will be deeply moved by the balcony scene, here set on a New York fire escape with the pair of lovers in premonition of the tragedy awaiting them.

For this new production, which was staged in Salzburg thanks to the determination of Cecilia Bartoli and Gustavo Dudamel, and with the support of Rolex, the artistic team includes the

very best specialists: from Patrick Woodroffe, for the lighting – who in the past has worked with Michael Jackson and the Rolling Stones – to George Tsy-pin for the set design – a regular at the most important opera houses in the world. Tsy-pin knew exactly how to make the best use of the magnificent Felsenreitschule, a riding arena cut from the rock that forms a breathtaking backdrop for this show.

Quality and excellence, keywords in Cecilia Bartoli's artistic approach, took precedence in the choice of the director: Philip William McKinley, known as King Midas of Broadway after the record success of *Spider-Man: Turn Off the Dark*. "I have known Phil for several years," says Bartoli, "he is a big fan of Bernstein's work, and when I proposed *West Side Story* he did not hesitate, he thought the project was fantastic!"

Passion would certainly seem to be contagious. 🙌

Luca Vitali is a journalist for the international television channel Euronews. Since 2010 he has been a reporter for the programme "Musica" sponsored by Rolex and devoted to classical music.



A HISTORIC BOND

Rolex and China have been closely connected for over a century. The quality, exclusivity and reputation of the brand sit well with the Chinese, who appreciate Rolex's heritage and the unique stories that the company has to tell. Today, Rolex continues to build a strong presence in a country that itself has a rich cultural heritage.

by Karen de Leschery

SHANGHAI,
China's most populous city and a major commercial hub, is one of the focal points for Rolex in the country.



THE ROLEX EXPERIENCE exhibition is located in the historic House of Roosevelt on Shanghai's prestigious Bund

“The Rolex Way – a way of doing things unlike any other” according to the recent advertising campaign – is far from being a mere slogan in China. For about 100 years, Rolex has been selling watches there and has forged a close relationship with the Chinese people, who have a natural empathy with the brand. One of the first international brands in the country, its watchmaking know-how and innovative technologies are highly valued. Rolex watches are symbols of success and the Chinese are proud to wear timepieces that are recognized worldwide as emblems of excellence and achievement.

This loyalty is reciprocated by Rolex, which has felt bound to China since the beginning. When the founder of Rolex, Hans Wilsdorf, registered the brand name in 1908, he sought trademark protection covering the British Empire, China and Japan. This was a mark of the

perceived importance of China in the development of Rolex.

The commercial licences the company perceptively acquired to establish a real presence in China, without relying solely on local agents, are indicative of the Rolex Way and a focus on quality. In 2002, as the country further opened to foreign enterprise, Rolex was the first Swiss watchmaker to obtain a licence for a wholly foreign-owned, service centre in Beijing. More then followed in Shanghai in east-central China and Guangzhou in Guangdong province, where the impressive service centre also serves as an information hub and beacon for the brand in the south, along with Hong Kong – home of the affiliate, Rolex (Hong Kong) Limited, since 1967.

Recent, exciting developments demonstrate continued investment and confidence in the country – which, despite changing economic conditions, remains the world’s largest consumer of luxury goods

with as much as 30 per cent of global luxury sales. Rolex has opened or expanded a number of facilities throughout China, providing the incomparable service that is a pillar of the brand. Such dedication ensures that, over the years, a Rolex timepiece still meets its original functional and aesthetic specifications.

A new office was recently opened in Shanghai’s IBP (International Business Park) and a major service centre, conveniently located for customers in the city’s bustling central business district, has undergone renovation. And a three-storey office and certified service centre in Beijing’s Prosper Centre also joined the worldwide Rolex network in January 2015.

In addition, the company is strengthening its retail base, through leading multi-brand stores and Rolex mono-brand boutiques run by major retailers in Beijing, Guangzhou and Shanghai along with, more recently, the east-central cities of Nanjing and

Hangzhou, two primary luxury goods markets in China. A new Rolex Boutique opened in December 2015 to great acclaim in one of China’s most upmarket retail destinations, Beijing SKP.

While nearly 120 million Chinese travelled abroad in 2015, a growing, affluent and discerning middle class is shopping at home and looking for exclusive products that, like Rolex watches, are, at once, reliable, practical, sporty, contemporary and elegant. Tastes are slowly evolving in China with sportier, professional models coming to the fore; one notable example is the Rolex Submariner, well-regarded due to its additional strong connection to the brand’s heritage with the sea.

THE ROLEX EXPERIENCE UPDATED

Now in its fifth year, *The Rolex Experience*, located on the prestigious Bund in Shanghai, continues to draw customers, guests and the media to the exhibition

that was created in response to the demand for information about the brand and its watches. Since 2011, thousands of Chinese and Asian visitors have enjoyed the state-of-the-art, interactive exhibits that bring the Rolex universe alive.

The exhibition reopened in autumn 2015 after a renovation and now boasts some exciting changes. A “Rolex Way” room brings the much-lauded advertising campaign to life. The permanent “Heart of Rolex” exhibit, which introduces visitors to the company and its heritage, has similarly been updated with new photos and films depicting the story of the brand, its visionary spirit and technological innovations. A renewed “Pulse of Rolex” area is dedicated to temporary exhibitions, presenting the year’s new models to guests and featuring Rolex partnerships worldwide through events such as “An Evening with the Salzburg Festival”.



ROLEX ICONS

Few things exemplify Rolex’s values and commitment more than the many partnerships – sponsored events, Testimonees and philanthropic endeavours – that Rolex supports in China. Prestigious associations include the Shanghai Rolex Masters and the China Open in tennis, the World Golf Championships-HSBC Champions and the China Golf Association, the FORMULA 1 PIRELLI CHINESE GRAND PRIX in motor sport and the

THE ROLEX BOUTIQUE in Beijing SKP, one of China’s most upmarket retail destinations.

A ROLEX SERVICE CENTRE was opened in one of the towers of the Prosper Centre in downtown Beijing



THE ROLEX RECEPTION at the office in Shanghai's International Business Park (IBP).

Rolex China Sea Race in yachting, which takes place every two years. In the cultural arena, Rolex has been Exclusive Timepiece of Beijing's National Centre for the Performing Arts (NCPA) since 2009.

In addition, a panoply of achievers from mainland China in the world of sports and culture have served as Rolex Testimonees, as well as mentors, protégés and advisors in the Rolex Mentor and Protégé Arts Initiative and Jury members in the Rolex Awards for Enterprise. These include such diverse luminaries as tennis player Li Na, the first Asian to win a Grand Slam® singles title; golfer Liang Wenchong; pianists Yuja Wang and Yundi; film director Zhang Yimou; visual artist Cai Guo-Qiang; theatre director Lin Zhaohua; architect Yang Zhao; and conservation biologist Professor Lu Zhi.

Three Rolex-supported events in China in the past year further

illustrate the power of partnerships in both manifesting the brand and attracting a younger audience by providing learning opportunities. The "Solti China Masterclasses" brought the finest in classical music to Beijing.

Hosted by the NCPA and the Georg Solti Accademia di Bel Canto, and underwritten by the Rolex Institute – Rolex's philanthropic arm – the programme welcomed nearly 500 students of opera and music lovers to the May 2016 session, during which eight Chinese singers were coached by renowned experts. Two of these students will attend the Solti summer school in Tuscany for immersion in singing Italian opera.

Also in the cultural arena, the Ullens Center for Contemporary Art (UCCA) in Beijing presented *William Kentridge: Notes Towards a Model Opera*. The retrospective marked the South African artist

and former Rolex mentor's largest exhibition in Asia to date, and attracted 190,000 visitors. In conjunction with this, Kentridge and his protégé, Colombian Mateo López, held an open discussion on creativity.

Most recently, in May 2016, tennis champion Li Na took part in the launch in Nanjing of the "Road to Wimbledon" programme with the All England Lawn Tennis Club, where 16 of the best 10 to 14 year-olds and their coaches benefited from instruction by Li and other tennis greats. The top two boys and girls have been invited to Wimbledon in 2016. This grassroots activity encourages young Chinese players to take up tennis and further links Rolex with performance and individual achievement.

These are just a few of the stories that personify the Rolex Way and help increase the appreciation of the brand by the Chinese people. 🙌



ROLEX HAS OPENED OR EXPANDED A NUMBER OF FACILITIES THROUGHOUT CHINA, PROVIDING INCOMPARABLE SERVICE.

A BRAND NEW building houses the Rolex office at the IBP in Shanghai.



Polishing is one of the most telling stages in the making of a Rolex watch, providing the metal surfaces with their perfect final lustre and smoothness. Despite the advent of automated technology, the process remains steeped in a highly skilled craft, combining a deft touch with calculated precision, organized steps, and the expressive movements of a performing art.

by Peter Capella
PHOTOGRAPHS by Cédric Widmer

ROLEX EXPERTISE:
POLISHING

THE *art* . AND *science* OF SHEEN





SURFACE FINISHING is carried out by hand to obtain an even, mirror-like polish, here on a steel middle case.

Concentration is absolute. The eye is focused. His posture is set, the grip on the middle case is firm. Steadiness and strength of hand are essential as the Oyster case is brought against the lathe's spinning buff wheel. The gestures are curt, sharp and precise, yet subtle, as the case glides and switches through different positions. In seconds, seemingly in a blur, the lightly matt surfaces have gained an even shine, completing one of the final stages of the finishing polish that create a high-quality sheen. The polisher's craft resembles a precision ballet of the hands and upper

body, a carefully choreographed and three-dimensional combination of sensitivity, strength and movement.

And it can be spectacular. In some instances 20 to 30 middle cases are threaded onto a sturdy wooden holder, allowing the polisher to shine their sides all at once. The technique demands greater strength, but the key elements of polishing are mastered to perfection: preparation, handling, applied pressure, speed of execution and lubrication.

YEARS OF DEDICATION

It takes several years for a polisher – nowadays known as a *termineur*, a finisher – to reach such a level of proficiency and assurance. A three-year apprenticeship to learn the trade, its principles, tools, materials, the well-defined techniques and processes in force at Rolex, and to gain the ability to implement them. Followed by approximately five years on the job, to master the multiple facets of polishing and acquire speed, consistency, as well as the well-founded confidence that underpins each individual's own

virtuosity. By then, most polishers have declared sheer love for their craft and insist that such sentiment is essential.


With the benefit of 27 years' experience, a departmental expert still casts an admiring glance over each polisher at work, from the recent apprentice to the old hand like himself. "Dexterity and a feel for the material can't be taught at school or in the workplace. These are things that each person masters at their own pace," he explains, "I'm still learning".

ESSENTIAL TOUCH

Too much time – sometimes a matter of seconds – or pressure, and the shape of the case could be ruined as polishing wheels and abrasive pastes remove too much metal. Too soft a touch, and minute scratches, grooves or pitting could mar the surface, potentially unseen to the average eye but easily detected by a skilled polisher's glance and fingertips. Each component, shape and surface requires a unique approach. And each metal has its own character, demanding a different but no less sensitive touch in each instance.



YEARS OF APPRENTICESHIP and experience are necessary to master the tools, techniques and materials of polishing. Here an 18 ct gold bezel is satin-finished by hand using an abrasive disc.



THE INNER SURFACE of an 18 ct gold case is satin-polished by machine.

BEYOND
Submariner

AT ROLEX,
THE LOVE OF A
WELL-CRAFTED
WATCH IS SUCH THAT
EVEN SURFACES
UNSEEN BY
THE WEARER ARE
POLISHED WITH THE
SAME CARE
AND SCIENCE.

Gold is softer and easier to shine, but an 18 ct component could be swiftly deformed if it were not worked with precision; platinum is malleable but easily scored or pitted through excess pressure or friction; and the steel used at Rolex, 904L stainless steel, is notoriously difficult, demanding more time and strength to achieve an even lustre. An experienced polisher takes one to three months to adapt to a new metal. Today, some even relish the challenge of satin-finishing tough steel over rendering gleaming nobility to precious 18 ct yellow gold.

POLISHING REVEALED

The watch polisher's trade has changed immeasurably over a quarter of a century. Polishing used to be based largely on empirical experience amassed by the most experienced hands, who passed down their know-how to successive generations. Over the years the profession has been demystified, gaining a stricter technical base at Rolex.

Polishing methods and criteria are now defined in the production specifications for each watch and component, from the types of machine tools and materials used, right the way down to the techniques and basic handling needed to achieve a specified finish. The materials – abrasive wheels, emery belts, soft discs and polishing pastes – are studied and tested in laboratories beforehand, and adapted to each metal or surface finish. Technological progress has also brought about the introduction of automation to supplement the human hand, effectively dividing the polishing process into two: surface preparation, mainly carried

DEXTERITY AND A FEEL FOR THE MATERIAL CAN'T BE TAUGHT AT SCHOOL OR IN THE WORKPLACE. THESE ARE THINGS THAT EACH PERSON MASTERS AT THEIR OWN PACE.



THE SATIN-FINISHING OF an Oyster bracelet (above) is carried out by hand, one link at a time.

THE KNURLED EDGES of a rotatable bezel (left) in gold are carefully buffed by hand.

THE POLISHER'S trained eye (right) is an essential part of the polishing process.



MACHINE PREPARATION

During automated surface preparation of the freshly machined case and bracelet components, skilled polishers always carry out visual checks of the parts. And the computer-controlled movements of the robot arms in the booths simulate the original human handling of manual polishing. A row of bracelet links is picked up from a rack and automatically switched through a series of precise positions against a polishing wheel for up to seven minutes, removing ridges, scratches and pitting on the raw, machined metal. A few hundredths of a millimetre of surface metal is removed to leave a slightly matt surface, ready for finishing. Hard steel components go through an additional, two-minute automated pre-polishing process, which has the added

benefit of avoiding strenuous and repetitive manual labour.

These preparatory machine operations are generally carried out with the help of cutting oil to reduce the heat caused by friction that can alter precious metals in particular. The abrasive wheels and emery belts are coarse, made of granulated materials including ceramic, corundum, silicon carbide, diamond, and sometimes ruby.

MIRROR AND SATIN FINISH

Surface finishing, however, is generally carried out by hand on polishing lathes fitted with softer discs. A more recent addition is a polymer pink brush wheel closely related to a kitchen scrubbing pad, used to obtain a satin finish. But many of the materials are natural – woven sisal, compressed merino wool, flannel or layers of cotton of varying density – augmented by polishing pastes with fine abrasives. The rest is down to each polisher's skill and finesse.

The brilliance of mirror-polished parts demands a smooth and delicate touch at the very final stage of brightening, to ensure that no more than two to five microns of material is removed from the case or bracelet.

A satin finish involves specific techniques at both stages, generally achieved by brushing to produce a surface texture that varies according to the depth and width of the brush marks. At Rolex it is characterized by the perfectly parallel, regularly spaced and homogeneous brush marks – when seen under a microscope. To the naked eye it offers an even, warm, satin sheen. Combined polished and satin finishes on bracelets are down to sheer dexterity and the use of masking tape to protect finished surfaces.

But polishing may also be used to influence shape, not only surface finish, especially on the bracelets. After the initial preparation of the links, bracelets are assembled and polished to achieve a uniform contour along their flanks. It is up to the polishers to eliminate the stepped sides formed by each individual outer link, refining them so that the bracelet elegantly links watch case and clasp with an even curve.

These are the visible sides of polishing. At Rolex, the love of a well-crafted watch is such that even surfaces unseen by the wearer, including inside the case, are polished with the same absolute care and science. 🏆

1926-2016

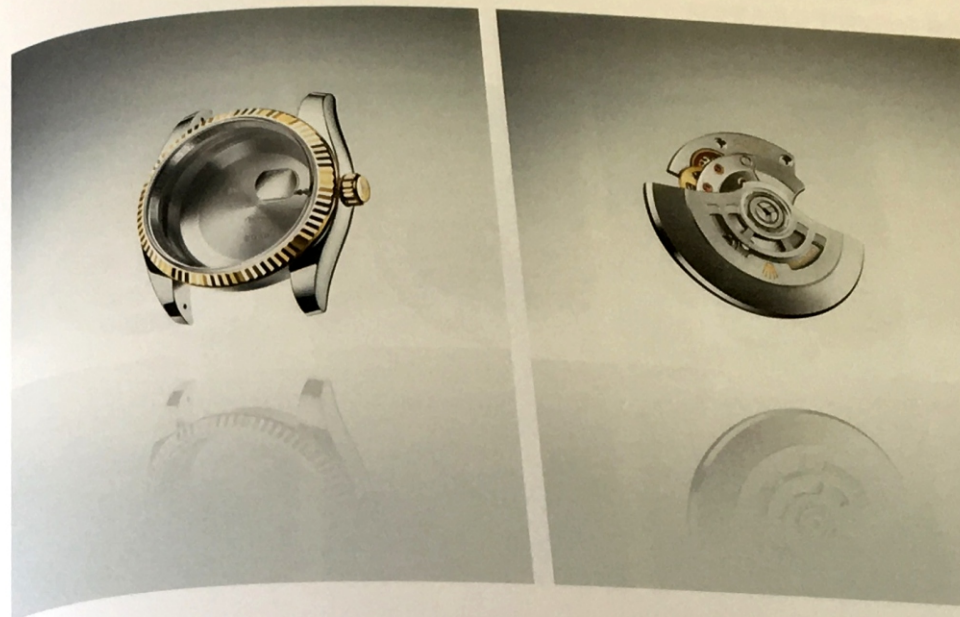
90 YEARS OF PERPETUAL INNOVATION

Rolex is celebrating, in 2016, 90 years of the Oyster, the first waterproof and dustproof wristwatch in the world. It was an innovation that transformed watch design forever. Today, Rolex has reinforced the performance criteria that qualify Oyster watches as Superlative Chronometers, with the introduction of its own, new and more rigorous certification. It establishes a benchmark that exceeds existing watchmaking standards and is applied to all of its watches.

PHOTOGRAPHS by Joël von Allmen

Created in 1926, the Rolex Oyster was a landmark in watchmaking that brought fundamental improvements to the reliability and precision of the wristwatch. The brand has always brought its unique expertise to bear on manufacturing watches of exceptional performance. Since it was founded, Rolex has registered more than 400 patents. Here are eight emblematic Oyster innovations developed and patented by Rolex over the last 90 years.

BEYOND
Submariner



OYSTER CASE

1926 WATERPROOFNESS
MASTERED

The Oyster case, entirely manufactured by Rolex, is waterproof to a minimum depth of 100 metres (330 feet). Its middle case is crafted from a solid block of metal. The fluted case back is hermetically screwed down with a special tool. The winding crown screws down securely against the case offering watertight security akin to a submarine's hatch and providing the high-precision movement with optimal protection from water, dust, pressure and shocks.

PERPETUAL ROTOR

1931 SELF-WINDING

In 1931, Rolex invented and patented a self-winding mechanism with a free rotor, called the Perpetual rotor, based on a principle that would later inspire the whole watchmaking industry. The Perpetual rotor helps to reinforce the Oyster's waterproofness in that it eliminates the need to regularly unscrew the crown, an operation which exposes the movement to dust and humidity.

THE BRAND
HAS NEVER CEASED
TO INNOVATE IN ORDER
TO MAKE WATCHES
OF EXCEPTIONAL
PERFORMANCE.



TWINLOCK WINDING CROWN
1953 ENHANCED
WATERPROOFNESS

The Twinlock system, introduced and patented by Rolex in 1953, ensures that the screw-down winding crown is perfectly water-resistant thanks to two sealed zones. The Twinlock crown is now used on a number of models to provide waterproofness down to a depth of 100 metres.

PARACHROM HAIRSPRING
2000 PRECISION IN ANY
CIRCUMSTANCE

In 2000, Rolex introduced a patented hairspring in an exclusive alloy: the Parachrom hairspring. This strategic component, entirely manufactured by Rolex, offers major benefits for precision timekeeping: it is insensitive to magnetic fields, provides great stability in the face of temperature variations and remains up to 10 times more accurate than a traditional hairspring in case of shocks.

**PARAFLEX SHOCK
ABSORBER**
2005 INCREASED RELIABILITY

In order to increase the resistance of its movements to shocks, Rolex developed and patented an exclusive shock absorber: Paraflex. Rolex engineers created a system that increases the shock absorber's efficiency by 50 per cent while preserving the chronometric properties of the balance wheel.



CERACHROM BEZEL INSERT
2005 EXTREME RESISTANCE

Manufactured by Rolex from a particularly hard, corrosion-resistant ceramic, the Cerachrom bezel is virtually impervious to scratches, and its colour is unaffected by ultraviolet rays. Its excellent polishability also ensures an exceptional, long-lasting lustre.

SYLOXI HAIRSPRING
2014 PRECISION
IN SMALLER WATCHES

The Syloxi hairspring is the optimal silicon hairspring according to Rolex. The fruit of several years of research and carrying five patents, this new and particularly innovative hairspring makes full use of the potential of silicon technology to bring an exceptional level of precision and reliability to the brand's women's watches.

CHRONERGY ESCAPEMENT
2015 OPTIMIZED ENERGY
EFFICIENCY

Rolex engineers devised and patented a new escapement that optimizes the efficiency of the Swiss lever escapement, the standard in Swiss watchmaking. Thanks to extensive research, the new escapement's geometry improves the efficiency of this key component by 15 per cent.

SUPERLATIVE CHRONOMETER CERTIFICATION

A NEW STANDARD OF EXCELLENCE

Ninety years after its creation, the Oyster remains at the forefront of watchmaking. The criteria that made Rolex watches "Superlative Chronometers" have now been reinforced to establish a new standard of excellence for mechanical watches.

To this end, Rolex has developed unparalleled testing methodologies and new high-technology equipment to certify each of its watches and award them the status of Superlative Chronometer. This exclusive designation attests that every Rolex watch has successfully undergone a series of special final controls conducted by the brand in its own laboratories, and according to its own criteria, which exceed watchmaking norms and standards and are the strictest in watchmaking. These tests complement the official COSC (Swiss Official Chronometer Testing Institute) certification of the movements.

The certification applies to the fully assembled watch, after casing the movement, guaranteeing superlative performance on the wrist in terms of precision, power reserve, waterproofness and self-winding.

The precision of a Rolex Superlative Chronometer is of the order of $-2/+2$ seconds per day, or more than twice that required of an official chronometer. This precision is tested by Rolex using an exclusive methodology that simulates the conditions in which a watch is actually worn and is much more representative of real-life experience.

Superlative Chronometer status is symbolized by the green seal that comes with every Rolex watch and is coupled with an international five-year guarantee. The brand is continuing to push back the limits for mechanical watches, and remains the benchmark of excellence in watchmaking. 🏆



"WE WORK
TO A GAUGE
THAT CANNOT BE MEASURED
BY ANY INSTRUMENTS
EXCEPTING OUR OWN."

HANS WILSDORF, FOUNDER OF ROLEX, 1927

—CREDITS

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