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## ENGINEERING COLORS

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In “Mojave Desert”, “Lake Tahoe”, and “Woodland”, IWC’s creative specialists have drawn on a ground-breaking color engineering process to develop a range of entirely new ceramic colors. The colors are meticulously matched to all the other components in the watches. Perfecting the monochromatic designs took countless trials and iterations.

State-of-the-art finishes, color schemes and reduced contrasts: these are the design features that have garnered a loyal following for the TOP GUN line in IWC’s Pilot’s Watch collection since 2007. “The key to the TOP GUN watches’ striking design lies in the use of high-tech materials such as ceramics, titanium and Ceratanium®,” explains Christian Knoop, Chief Design Officer at IWC Schaffhausen. Sand-colored ceramic entered the collection in 2019 with the Pilot’s Watch Chronograph TOP GUN Edition “Mojave Desert”. The “Lake Tahoe” edition in white ceramic and the “Woodland” in green ceramic are two additional new chronographs in color.

### THE COLORS OF THE NAVY

Colored ceramics go back a long way in IWC’s history. As early as the 1980s, white, green and even pink zirconium oxide featured in prototypes or small series of the Da Vinci Perpetual Calendar. For Knoop, the fact that TOP GUN is now opening up to this material is a logical step: “Colored ceramics allow us to create unusual designs with a pared-down – almost ‘subdued’ – look. Besides, along with performance and technology, color plays an important role in the TOP GUN universe.”

For example, colorful insignia have a long tradition, often being designed by the pilots themselves to underscore the unit’s history and solidarity. “As part of the IWC program, which gathers professional elite pilots, we’ve worked with various units to create special watches for them. Conversations with the pilots gave us in-depth insights into this world and the inspiration for our TOP GUN chronographs,” reminisces Knoop.

The sand-colored ceramic chosen for the Pilot’s Watch Chronograph TOP GUN Edition “Mojave Desert”, for example, references the earthy tone of a uniform. But it also reflects the barren desert landscape of China Lake in the Mojave Desert. White uniforms and the winter landscape around freshwater Lake Tahoe inspired the Pilot’s Watch Chronograph TOP GUN Edition “Lake Tahoe”. The eye-catching green of the TOP GUN pilots’ flight suits was the hallmark of the design of the Pilot’s Watch Chronograph TOP GUN Edition “Woodland”.

### COLORS BRING COMPLEXITY

Watch design is a complex and time-consuming process. From the first sketches to the finished product, developing a new timepiece takes around two to three years and involves several interdisciplinary teams. As well as the designers, they include specialists from factory development or case production, materials engineers, employees from the IWC test laboratory, industrialisation technicians, product managers, and representatives from Customer Service and Sourcing.

But developing the TOP GUN chronographs involved an additional, complex step: manufacturing colored ceramics. “It was an incredibly elaborate process. First, we had to create new ceramic colors and then carefully match them with all the other components in the watches. Color engineering with this level of consistency and attention to detail had never been seen at IWC before,” Knoop explains.

### FINDING THE RIGHT MIX

Manufacturing colored ceramics is a highly complex procedure and involves combining zirconium oxide with other metallic oxides. However, because the color changes during the firing process, it takes countless trials and a lot of experience to find the right mixture. In a first step, IWC took several reference colors from the Pantone® color system to narrow down the color search. “As we progressed, we continually compared the ceramic samples with the reference colors, getting closer and closer to the desired color one step at a time,” says Knoop. In the end, “IWC Mojave Desert,” “IWC Lake Tahoe”, and “IWC Woodland” became the new IWC standard. In future, they will be the in-house color reference.

### PERFECTION DOWN TO THE SMALLEST DETAIL

But this was just the beginning. The dial and printing, the hands, the luminous material, the date disc, the rubber strap including the textile inlay and the stitching: everything had to be perfectly color-coordinated with the case. “It was enormously challenging to translate the newly developed colors to different materials, each with completely different properties and manufacturing processes,” explains Knoop.

In the finished watch, for example, the luminous material on the hands and dial must be the same color. However, the dial and hands call for different materials and manufacturing processes and have entirely different technical and geometric requirements. For instance, a background color can be used on the dial, which in turn affects the color of the luminous material. “Simply fine-tuning the luminous material was a lengthy process. Our in-house specialists and the suppliers maintained a constant dialogue as they gradually moved towards the optimal solution,” explains Knoop.

### A GREAT DEAL OF EXPERIENCE AND A TRAINED EYE

As is often the case with wristwatches, the size of the parts was an additional obstacle. With textiles or interiors, for example, high-precision color measuring devices – spectrophotometers – can be used to match several color tones precisely. The miniscule dimensions of watch hands make this an impossibility. The colors cannot be mixed automatically or applied by machine, which ultimately necessitates a lot of manual work.

Numerous detailed questions had to be clarified in the further course of the color engineering process. One example was color saturation. Numerals and markings are usually printed several times on top of each other on the dial. However, the color effect changes depending on how many layers are applied. It therefore takes a lot of experience and a practised eye to ensure that everything matches perfectly in the finished watch.

“With the TOP GUN chronographs, we have proved our innovative strength and explored new ground. We are adding an exciting new chapter to the tradition-rich history of our Pilot’s Watches and, at the same time, expanding our expertise as a ceramics expert. The new models pick up exciting stories from the universe of the U.S. Navy. They are fresh and surprising, and we hope they will inspire many watch lovers,” Knoop concludes.

#### Quote 1:

The big challenge was to translate the newly developed colors onto various materials, each with different properties and manufacturing processes.

#### Quote 2:

At a certain point, we no longer followed the color systems. “Mojave Desert”, “Lake Tahoe”, and “Woodland” became the new IWC standard and will mark the in-house color reference in the future.

#### Quote 3:

With the new TOP GUN chronographs, we are adding an exciting new chapter to the tradition-steeped history of IWC Pilot’s Watches while at the same time expanding our ceramics expertise.

## IWC SCHAFFHAUSEN

In 1868, the American watchmaker and entrepreneur Florentine Ariosto Jones travelled from Boston to Switzerland and founded the 'International Watch Company' in Schaffhausen. His visionary dream was to combine advanced American manufacturing methods with the craftsmanship of Swiss watchmakers to make the best pocket watches of his time. In doing so, he not only laid the foundation for IWC's unique engineering approach but also established the centralised production of mechanical watches in Switzerland.

Over its 150 year history, IWC Schaffhausen has developed a reputation for creating functional complications, especially chronographs and calendars, which are ingenious, robust, and easy for customers to use. A pioneer in the use of titanium and ceramics, IWC today specialises in highly engineered technical watch cases manufactured from advanced materials, such as titanium-aluminide and Ceratanium®. Preferring the principle of "form follows function" over decoration, the Swiss watch manufacturer's timeless creations embody their owners' dreams and ambitions as they journey through life.

IWC sources materials responsibly and takes action to minimise its impact on the environment, creating intrinsically sustainable timepieces that are built to last for generations. The company prides itself in training its own future watchmakers and engineers, as well as offering an excellent working environment for all employees. IWC also partners with organisations that work globally to support children and young people.

## DOWNLOADS

Images can be downloaded from [press.iwc.com](https://press.iwc.com)

## FURTHER INFORMATION

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