



CLOCKWISE FROM TOP
LEFT UR-110 Torpedo,
UR-202, UR-103 Tarantula
Mexican Fireleg

UNTANGLING THE BEAST

THE SATELLITE COMPLICATION LIES AT THE HEART OF EVERY URWERK WATCH, A VARIATION OF THE AGE-OLD WANDERING HOUR THAT EMBODIES THE BRAND'S INTREPID HIKE THROUGH THE OUTLANDS OF HOROLOGY

BY SUZANNE WONG

The first time you meet any URWERK timepiece is never going to be easy. Firstly, they're all so fierce. It doesn't help that they all have names like Mexican Fireleg and White Shark. Secondly, they suck you in. They capture your imagination like few other watches can, and you're going to have a difficult time of it if you happen to be thinking about an URWERK piece without one close at hand to fiddle with.

There's no straightforward explanation of this effect. It's not the alluring how-does-it-work mystery of it. The continuing fascination that URWERK timepieces command from us persists even after their mechanisms are laid bare, as they have been since the UR-103T (T for Tarantula!) shed its last inhibitions and featured a full pane of sapphire crystal, to the horror of arachnophobes everywhere.

So, just what is it about these watches?

URWERK UR-110 TORPEDO (OPPOSITE, TOP LEFT)

MOVEMENT Caliber UR 9.01 self-winding movement; 39-hour power reserve
CASE 47mm x 51mm; Grade 5 titanium
STRAP Black alligator leather

ESSENCE OF URWERK

At the very core of each URWERK timepiece is a single complication — the wandering hour. There are several variations on the theme, but the foundations remain constant. The wandering hour is essentially a third method of displaying the time, distinct from the other two methods of using

hands or jumping digits. A numeral indicating the current hour sweeps across a semicircle, its continuously changing position representing the aggregating minutes. At the end of the hour, the numeral moves out of sight at the endpoint of the semicircle just as the following numeral makes its appearance at the starting point. Lather, rinse, repeat.

It's certainly not anything new in the realm of horology. Other brands ranging from Audemars Piguet to Alain Silberstein have released timepieces in the same vein. The key, then, is how URWERK presents it. The first foray that brand founders Felix and Thomas Baumgartner (the latter has since left the company) and Martin Frei made into watchmaking as a team was the UR-101, dubbed the Millennium Falcon after the *Star Wars* spacecraft. The UR-101 was presented alongside the stainless-steel UR-102, nicknamed Sputnik. Both pieces featured the same minimalistic design, with a single semicircular arc cut into the polished case to show the movement of the traveling hour. It was a good start, and the names of these first-generation watches only served to highlight the astronomical ambitions of the brand.

The real potential of URWERK came to fruition in 2003, when the UR-103 saw light. For the first time, the brand's signature system of revolving satellites, as inspired by historical wandering-hour timepieces, was presented to admiring audiences. The grooved white-gold case with a wide-mouthed grin showed a tantalizing glimpse of the activity within, of four orbiting hour-marked cones taking it turn in turn to zip cleanly past a precisely calibrated minute scale. The design was prompted by the Baumgartners' father,

a respected and experienced watchmaker himself, who had suggested that URWERK should create a watch that was easy to read whilst driving. Accordingly, the time is quickly and intuitively read off the wrist with the first UR-103, with its forward-facing conical hour satellites, sloping minute-marked flange, and its narrow glass, which focuses the relevant information in a single visible band.

Subsequent iterations of the UR-103 revealed increasing amounts of the dial, culminating in the UR-103T, which showed in full the motion of the hour satellites as they rotated through the dial and also on their own individual axes. The gradual exposure of the dial detracted from the original readability of the first UR-103. What the watch lost in user-friendliness, however, it gained in spades of impressiveness and theatricality — and then some.

The next generation of URWERK's satellite-complication timepieces arrived in the form of the 2007 UR-201, called the Hammerhead, due to the unique shape of its dial-side sapphire-crystal glass. The quartet of flattened cones of the UR-103 were replaced by three spinning cubes equipped with telescoping arms that adjusted themselves to different lengths to suit the case dimensions — a micro-engineering tour de force replicated in the rest of the UR-200 collection.

This year's UR-110 Torpedo is at once an intermediary step between the UR-103 and the UR-201 (as the nomenclature suggests), and also an evolution of both. The telescoping hands are absent in the Torpedo, so the hour modules describe a smooth curve down the minute scale like the UR-103. The spinning cuboids of the UR-200 collection show up in the UR-110, along

with an additional complication to conserve the space taken up by the satellites. Instead of retracting into themselves as the arms of the UR-201 and its successors do, the hour satellites of the UR-110 continuously reorient themselves to point toward the minute scale, maneuvering within the confines of the case. A system of planetary gears facilitates this intricate choreography, an attention magnet that elevates the UR-110 beyond timepiece into dynamic, kinetic art.

MODERN STANDARDS OF MILLING BY CNC MACHINES MAKE THE GENEVA-CROSS SYSTEM, WHICH REQUIRES PRECISE TOLERANCES FOR EACH COMPONENT, VIABLE AND IN MANY WAYS EVEN SUPERIOR TO THE STAR-WHEEL SYSTEM

mechanism. Modern standards of milling by CNC machines make the Geneva-cross system, which requires precise tolerances for each component, viable and in many ways even superior to the star-wheel system.

The UR-101 had a six-lobed Geneva cross affixed to the underside of both of its six-hour discs — one disc bore the odd hours and the other, positioned diametrically opposite, bore even numbers. In this way, the journey taken by the wandering hour traversed a 180-degree arc from the nine o'clock to the three o'clock position, with the advancing post mounted at six o'clock to switch the disc forward a single step. The curve at the end of each of the Geneva-cross lobes aligned with a raised circular section surrounding the central axis, preventing the hour disc from advancing further than a single step at each cycle. With each hour disc alternating turns through the 180-degree wandering hour window, each hour's progression is smoothly achieved throughout an entire day.

The UR-103 followed much the same system, with the two hour discs replaced by four three-hour cones. The UR-200 collection, however, came with the Geneva crosses embedded directly into the base of the hour satellites themselves, such that the crosses engaged the advancing post on a perpendicular plane — a theoretically simple workaround that nonetheless required considerable adjustment, most significantly the milling of components to exacting tolerances of within a single micron (about 1/100th of the thickness of a single human hair). With the UR-110, the complexity is kicked up a notch, as the Geneva crosses in each of the hour satellites are engaged by advancing posts mounted on each of the planetary gearing systems that extend from each arm of the central rotating carousel.

URWERK has managed to take something old and make it exciting again. The feeling prevalent in industry observers that there is nothing new — horologically speaking, at least — under the sun has been arrested by the flair of URWERK's watches. The wandering-hour timepiece may have been done before — but not like this.



Felix Baumgartner affixes a three-lobed Geneva cross on the reverse of an UR-103 hour satellite

Judging by URWERK's current record of creativity and innovation, there's no knowing what the next incarnation of the satellite complication is going to be. One thing's for sure — it'll be exciting, inventive and essentially URWERK.

A PERFORMANCE BEYOND STELLAR

URWERK's satellite complication may be based on the pre-existing concept of the wandering hour, but slavish imitation has never been — and it's safe to say, will never be — part of the brand's DNA. Even from its very first timepieces, the UR-101 and UR-102, URWERK has always striven to offer only the highest-performing mechanisms. Although entirely hidden, the movements of the UR-101 and UR-102 boasted a significant improvement on the conventional method of expressing the wandering-hour complication.

A decade ago, most of the extant timepieces

offering a wandering hour did so with a system of star wheels and springs. There are a few impediments to this system working as smoothly as it was designed to. There is the marginal load placed on the power train twice each hour in driving two star wheels to overcome spring tension. Continuous friction between the spring and star wheel also compromises the performance and longevity of the mechanism. Adding to this is one of the most common issues with this system, of the wheel skipping forward more than one step if the spring tension is insufficient.

URWERK negotiated this issue by replacing the star wheels and springs with Geneva crosses. In this way, the hour disc is advanced in a controlled manner without risk of it moving further past the amount determined by the shape of the Geneva cross. The marginal load on the power train is also significantly less, now that the spring is no longer a part of the

JOURNEY THROUGH TIME – HISTORY OF THE WANDERING HOUR

Not everyone realizes how much history there is behind the wandering-hour complication. Wandering-hour clocks have been documented as far back as the mid-17th century, one of the more well-known examples being the back-lit wandering-hour night clock of Pope Alexander VII which allowed His insomniac Holiness to tell the time without the aural intrusion of chimes.

If one had to categorize timekeeping displays into dichotomous categories of prosaic or poetic, the method utilizing coaxial hands would fall into

the former group, while the wandering-hour complication would without argument belong to the latter. Apart from its whimsical name, there's nothing quite as emotive as watching the time literally drift past, translating the metaphorical rise and fall of each hour into a graceful dial-side parabola. Writ large, the movement echoes the very foundations of what must have been man's first awareness of time — following the arching journey of the sun and the stars across the sky.

The precise curve of the wandering hour's trajectory may have changed under URWERK's employ — the pure arc of the minimalist UR-101

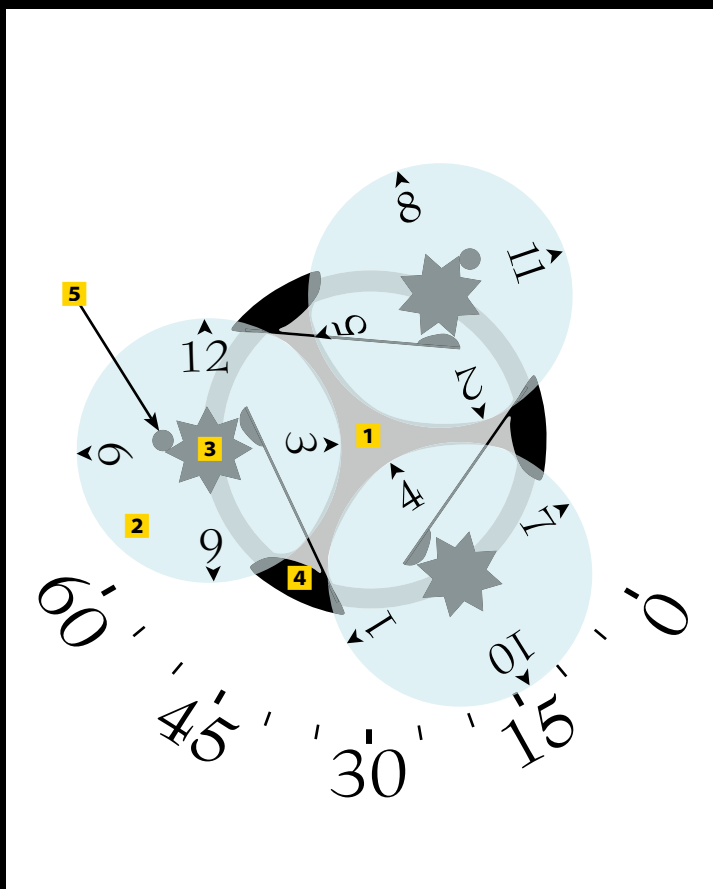
giving way to the modified angularity of the UR-200 collection — but the unmistakable family resemblance to those centuries-old timepieces is still strongly discernable. So the poeticism of a 17th-century papal timepiece, its elegant phrasing of the horological language — these things are now presented in the audacious guise of an ALTiN Hammerhead, a titanium Torpedo. There's been a lot of talk about what the Baumgartner-Frei partnership has accomplished in the field of modern, independent watchmaking. Personally, I'm giving them props for making poetry cool again. ★

HOW IT WORKS — THE STAR WHEEL VS THE GENEVA CROSS

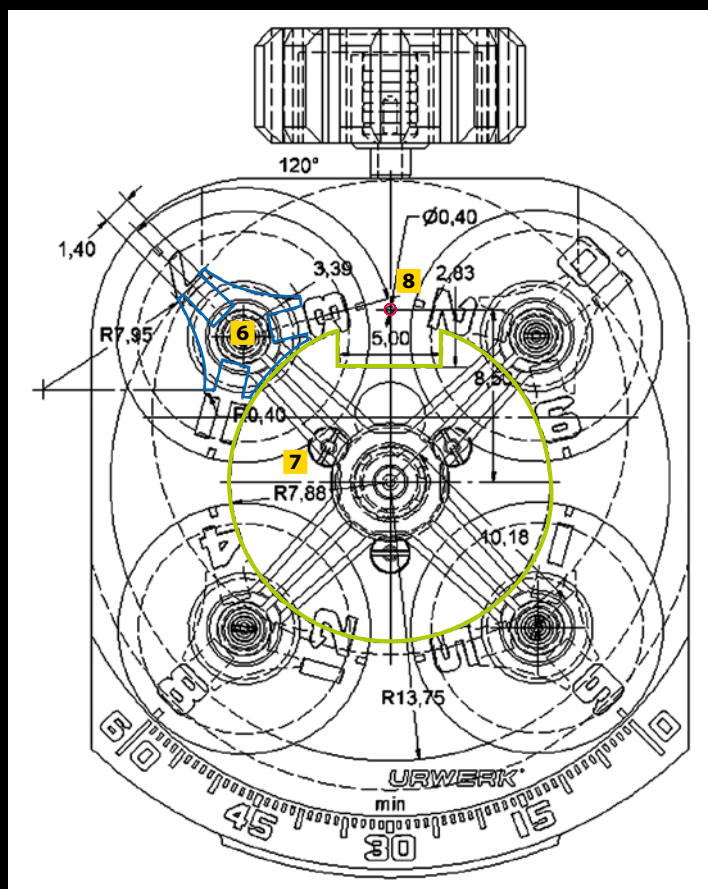
The star-wheel assembly is carried entirely on a central platform **1** whose rotation is driven by the cannon pinion. The platform bears the hour discs **2**, each of which come with a star wheel **3** affixed to its base. Each star wheel is held in place by a single tension spring **4**. As the central platform rotates clockwise, each star

wheel comes in contact with two consecutive advancing posts **5**, which clicks the hour disc as many steps forward. The tension of the spring held against the star wheel keeps the disc from spinning forward any more than a single step per advancing post. In the Geneva-cross system, the

Geneva cross **6** is affixed to the base of each hour module, with the number of lobes corresponding to the number of hours on the module. The curved section of each lobe glides smoothly over a raised circular cam **7**. When the cross meets the advancing post **8**, the cross rotates by one step and continues along the cam.



The star-wheel assembly was previously the most commonly seen method of implementing a wandering hour



The Geneva-cross system requires extremely precise standards of milling — even the slightest errors in each component will throw the system off completely