

Progression of Wristwatch Styles: From Bracelet Watches to Smartwatches

Part 2: 1920—1939: Art Deco, Smaller Is Better, and Technology Advancements

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Editor's Note: This is Part 2 of a continuing series. Part 1 was published in the November/December 2017 Bulletin (pp. 511–516).

Author's Note: As the production of wristwatches steadily began to rise around the world during the 1920s, the pocket watch was increasingly challenged for the timepiece of choice. The Art Deco¹ movement, which began to flourish during the 1920s, influenced wristwatch designs with progressive styles including dashing geometric shapes and posh embellishments. Men's wristwatch cases began to be designed in smaller sizes (30 mm wide or less) to demonstrate new and advanced technology and to emphasize the convenience over a pocket watch. Technology advancements during the 1920s and 1930s, despite the worldwide economic downturn of the Great Depression,² had profound effects on wristwatch functions and styling. Some of the prevalent technologies used in wristwatch manufacturing during this period included self-winding, hermetically sealed,³ shock-proof⁴ (Incabloc), jump-hour, and curved movements. The wristwatch was now considered to be a more modern and progressive timepiece than the pocket watch and surpassed it in worldwide production during the 1930s.

Art Deco Influence

The Art Deco movement inspired wristwatch styling that deviated from the traditional circular case and favored symmetrical, geometric, square, rectangular, and barrel-shaped designs that often included streamlined, graphic, and flamboyant engravings (Figure 1). In addition, precious gem stones, platinum, various inlays, and exaggerated (illegible) hour markers were often used on Art Deco influenced wristwatches. Many of the major watch companies



Figure 1. Croton Watch Co., Art Deco-inspired tank wristwatch featuring an ornately engraved case and dial, ca. 1920s.

designed and manufactured wristwatches with Art Deco styling including Bulova, Cartier, Elgin, Gruen, Hamilton, Omega, Patek Philippe, Rolex, and Waltham. Art Deco's lasting effect on wristwatch styling can be seen in today's watch industry as many of the style's hallmarks are still being incorporated on varied models.

Small Wristwatch Case Designs

Is a smaller wristwatch more desirable than a larger pocket watch? Starting in the 1920s, the answer from many watch manufacturers, and a growing number of consumers (especially men), was "Yes." Watch manufacturers proved that smaller wristwatches could keep accurate time (many as good as the traditional pocket watch) and that they were convenient to use.

At first it was more of a matter to demonstrate advanced technology with small precise movements and overall convenience than a fashion statement. As smaller wristwatch movements were developed and fitted into smaller cases, more progressive and stylish case designing became a common characteristic. The wristwatch with a small case design became popular in the 1920s and 1930s as growing numbers of men preferred it over a pocket watch (Figure 2).

Self-Winding Technology

The first self-winding (automatic) wristwatch (Figure 3) was invented in 1923 by John Harwood,⁵ a British watch repairer. On September 1, 1924, the Federal Institute of Intellectual Property in Bern, Switzerland, awarded him a patent no. 106583. This invention helped revolutionize the wristwatch industry.

Harwood realized that dust and dampness in a wristwatch movement caused issues that led to malfunctions and inaccuracy. Because he knew that most of the foreign matter and moisture got into the

movement through the winding stem, he eliminated it by putting a wristwatch's winding mechanism inside its case. These early self-winding movements are now referred to as a "bumper" and "180 bumper." They use a pivoting weight that winds the mainspring when the wearer moves his or her arm. Harwood said he was influenced by watching children play on a seesaw. A concern with this design is that the spring bumpers limit the swing to less than a full 360°.

The first Harwood automatic wristwatches were produced with the financial backing of Swiss watch manufacturer Fortis and went on sale in 1928. The Harwood Self-Winding Watch Co. produced 30,000 wristwatches before it was forced out of business in 1931 due to the Great Depression.

In 1931, Rolex improved Harwood's concepts and invented a more reliable self-winding wristwatch mechanism, which allowed the semi-circular weight to rotate 360° (a patented winding system). Rolex's new winding system eventually replaced the bumper winder design. When Rolex promoted its Oyster

Figure 2. Left, an 18 size Hampden full hunter case pocket watch (ca. 1894). Right, a Longines 24-mm wide Art Deco-inspired rectangular wristwatch, ca. 1938. Note the considerable size difference between the watches.



Perpetual wristwatch, which featured a 360° (full circular) rotor self-winding mechanism, the company erroneously claimed that it was the original inventor of the automatic mechanism on a wristwatch. Obviously, Harwood was the original inventor of the mechanism's use on a wristwatch and was exasperated by Rolex's claim. Harwood did receive a public apology from Rolex on June 10, 1956, in the London publication *Sunday Express*. It stated, "Mr. John Harwood of Harrow, Middlesex, was the inventor of the first self-winding wristwatch and we apologize for any injury to his feelings which may have been caused by our advertisement..."

Hermetically Sealed Technology

The Rolex Oyster (Figure 4), introduced in 1926, was an airtight, dustproof, and water-resistant (often referred to in the literature and advertisements as "waterproof") wristwatch that was hermetically sealed. There were many water-resistant watches (pocket watches and wristwatches) before 1926, including Jacques Depollier & Son water-resistant wristwatch cases that were commercially available and being marketed as early as 1918. The most relevant characteristic regarding the Rolex Oyster is that it marked an important technological improvement in the progression of wristwatch development because it provided maximum protection for the movement.

In a brilliant marketing campaign Rolex gave an Oyster wristwatch to a 26-year-old English female professional swimmer named Mercedes Gleitze,⁶ who wore it while she swam across the English Channel in 1927. After more than 10 hours in the cold waters between France and England the Rolex Oyster wristwatch was proven to be in working order. Rolex declared the Oyster wristwatch a great triumph in watchmaking and called it the "wonder watch that defies the elements."⁷ The Rolex Oyster helped make the wristwatch a technically sound and reliable timepiece and established the company as a name brand recognized around the world.

Shockproof (Incabloc) Technology

One of the more common reasons that early wristwatches were susceptible to stopping or running inaccurately was due to the shock of being dropped or jarred, which routinely caused balance staff pivots to break. After all, the wristwatch is worn in a vulnerable position on the arm that can easily be bumped or knocked during regular daily wear.



Figure 3. The Harwood self-winding (automatic) wristwatch, ca. late 1920s, movement view. Made in Britain. Accessed May 13, 2016. http://madeupinbritain.uk/Automatic_watch



Figure 4. The Rolex Oyster. Hermetically sealed technology advanced the reliability of the wristwatch, ca. 1926. Rolex. Accessed June 8, 2016. <https://www.rolex.com/rolex-history/1926-1945.html>



Figure 5. The Cortebert jump-hour wristwatch. The front case and rotating disks on the movement views, ca. 1920s. Unique Watch Guide. Accessed June 6, 2016. <http://www.uniquewatchguide.com/mechanical-digital-watches.html>

In 1928, a Swiss engineer named Fritz Marti created a wristwatch movement that featured movable balance staff jewels that protected the balance staff pivots from shocks. In 1931, Fritz Marti and Georges Braunschweig established the company Porte-Echappement Universel SA. It was at this company that Marti improved on the design by incorporating a simplified spring-cushioned bearing system that required only one spring (this shockproof system has the trade name of Incabloc).

Marti's new shockproof system, which directed the spring to return the jewels and pivots to their correct positions after absorbing a shock, started production in June 1933. The Incabloc trademark was registered in Switzerland by the company on July 6, 1933. Swiss patent number CH 168494 was awarded on April 15, 1934. The Incabloc system was so prominent in the first few decades following its trademark that many watch companies using the technology included the name Incabloc on the dials of their wristwatches.

The shockproof (Incabloc) system obviously helped protect the wristwatch movement from failure and prevented costly repairs. This added more reliability to the wristwatch, which expanded its acceptability as the timepiece of choice.

Jump-Hour Technology

Jump-hour wristwatches show the time directly with digits instead of using hands. The numbers are located on disks that rotate and are seen through windows on the dial. Some show only the hours on a single disk while others include disks with hours, minutes and seconds (a disk displaying seconds rotates continuously). This technology is also referred to as direct read, wandering minutes, or digital. There were pocket watches as early as the mid-nineteenth century that used rotating disks to display the time, so it was just a matter of time before this technology was incorporated into smaller wristwatches. In the early 1920s, the Cortebert Watch Co. developed a jump-hour wristwatch (Figure 5).

Other watch companies, including Audemars Piguet, released jump-hour wristwatches in the 1920s. This variation on basic timekeeping is an eye-catching curiosity that is easily seen on a wearer's wrist and can increase the mystique and desirability of the wristwatch.

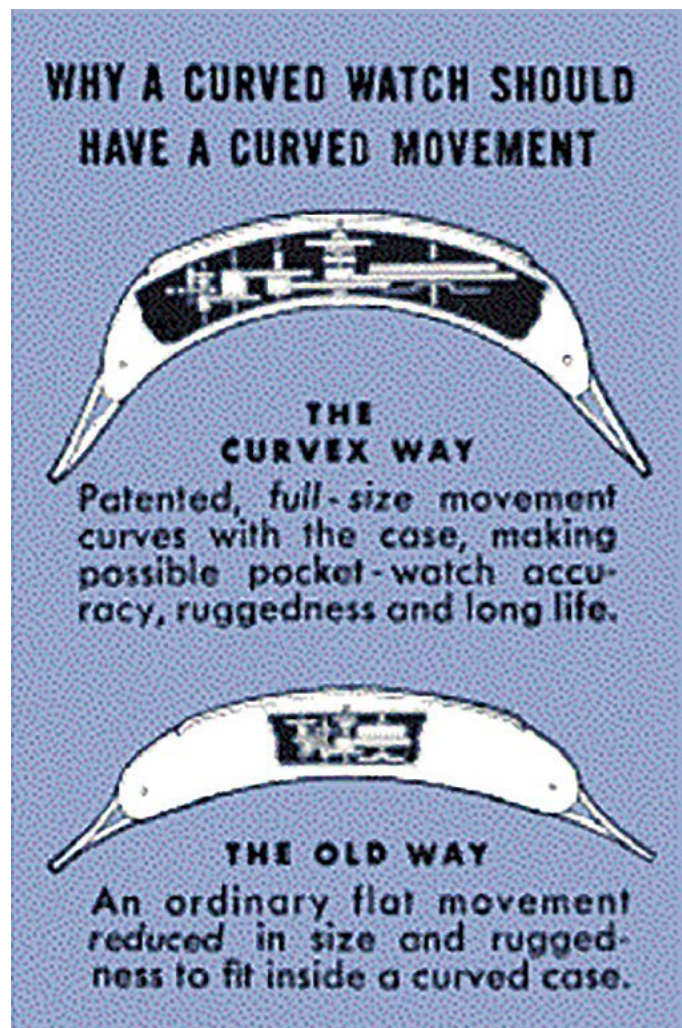


Figure 6. Diagram from a Gruen Watch Co. advertisement demonstrating why a curved watch should have a curved movement, ca. 1938. Pixelp. Accessed June 8, 2016. <http://www.pixelp.com/gruen/1929.html>

Curved Movement Technology

In the 1930s, curved wristwatches were a popular style because they fit the natural curve of the wearer's wrist. This design⁸ was enriched with the combination of a curved case with a curved movement. An innovator of this design was the Gruen Watch Co. with their Curvex models. Originally released in 1935, they included a patented curved movement and elongated rectangular curved cases. The Gruen Curvex became very successful and inspired other watch companies to design similar case shapes.

The most important technical innovation of this design was that it allowed the movement to be fit into a thinner and more curved case. This allowed a wristwatch with a curved case to be more accurate and

reliable than if it would have had a flat movement (Figure 6).

Many other watch companies released curved wristwatches, but their designs were secondary to the Gruen Curvex because they used flat movements that were not as accurate or reliable. The Gruen Curvex expanded the popularity of long rectangular styles of the 1930s and added more accuracy and reliability to this wristwatch style. They remain highly desirable for vintage watch collectors and are the company's most famous wristwatch model.

Soaring Wristwatch Popularity

Technological advancements, numerous styling options, and the overall convenience for the wearer to see the time at a glance are practical advantages for the wristwatch over the pocket watch. By 1934, production numbers of the wristwatch were equal to the pocket watch. By the end of the 1930s, the popularity of the wristwatch far surpassed that of the pocket watch. As worldwide production numbers of the wristwatch increased, pocket watch production swiftly declined. The wristwatch was now the time-piece of choice for women and the majority of men, all over the world.

With the beginning of World War II, in 1939, watch companies around the world began to prepare for the challenge of changing times and markets within the wristwatch industry.

Notes

1. Art Deco is a visual arts design characterized by rich colors, courageous shapes, and ornamentation that first appeared in France before World War I. It gained worldwide popularity during the 1920s, 1930s, and 1940s and inspired paintings, furniture, architecture, jewelry, watches, car design, and sculpture.
2. The Great Depression was the most severe worldwide economic decline to ever affect the Western industrialized world. It began in the United States with the stock market crash of October 29, 1929 (known as Black Tuesday). Some economies in several nations began to recover by the mid-1930s. However, many countries (including the United States) experienced economic hardships until the beginning of World War II (1939–1941).
3. A hermetically sealed wristwatch case is completely sealed airtight; this protects its movement from the outward influence of the elements.
4. The term “shockproof” as it relates to a wristwatch movement is in reality shock-resistant. Although the Incabloc device protects the important balance staff pivots, there are surely other areas on a wristwatch movement that can possibly sustain damage due to a severe shock which the Incabloc device does not protect against.
5. John Harwood (1893–1964) was born in Bolton, Lancashire, England, and was a watchmaker and inventor. After World War I he served as a watchmaker apprentice with the Hirst Brothers and Co. of Oldham, England. In 1922 he moved to the Isle of Man, England, and opened his own watch repair business. Recognized as the inventor of an important horological mechanism (the first self-winding wristwatch movement), he was awarded the prestigious Gold Medal of the British Horological Institute in 1957.
6. Mercedes Gleitze (1900–1981) was a professional swimmer from England. She was the first person to swim the Straits of Gibraltar, and the first woman to swim the English Channel. Rolex used her name to successfully market its Oyster wristwatch.
7. Rolex ran a front page advertisement in London's *Daily Mail* on November 24, 1927. It stated, “Rolex introduces for the first time the greatest Triumph in Watch-making – Rolex ‘Oyster’ – The Wonder Watch That Defies the Elements. Being hermetically sealed the Rolex ‘Oyster’ is proof against changes in climate, dust, water, damp, heat, moisture, cold, sand or grease... [it] marks an unique development in the forward stride of the chronometric science, and perfect timekeeping under all conditions is at last a possibility.”
8. Before the very successful, highly collectible, and well-known Gruen Curvex models, the Movado Polyplan wristwatch movement was built on three planes that were angled to fit into a curved case. This innovative design actually earned Movado a patent in 1912.

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About the Author

Randy Jaye has been the president of Chapter 154 in Daytona Beach, FL, for many years and was the General Chair for the 2016 and 2017 Florida Mid-Winter Regionals. He is a watch and clock collector and occasional restorer. He has contributed several articles to the *Watch & Clock Bulletin* and is planning on completing several more in the near future with a focus on wristwatches and "modern" horology. He recently published the book, *Flagler County, Florida: A Centennial History*.

Museum Celebrates 40 Years

On November 29, 2017, more than 160 NAWCC members, staff, friends, and supporters gathered to celebrate the Watch & Clock Museum's 40th Anniversary. Several sponsors and their representatives attended from around the nation and around the world. Many NAWCC Board Members were also present, extending their stays in Columbia, PA, to attend their annual meeting.

Attendees enjoyed meeting, connecting, and sharing in the festivities of the evening. They also had the opportunity to take the first look at the RGM 40th Anniversary Watch, which was donated to the Museum and will be auctioned in 2018.



RGM special 40th Celebration Watch.



Museum Director Noel Poirier receiving a certificate of appreciation from Susquehanna Valley Chamber of Commerce Executive Director Beverly Shank.