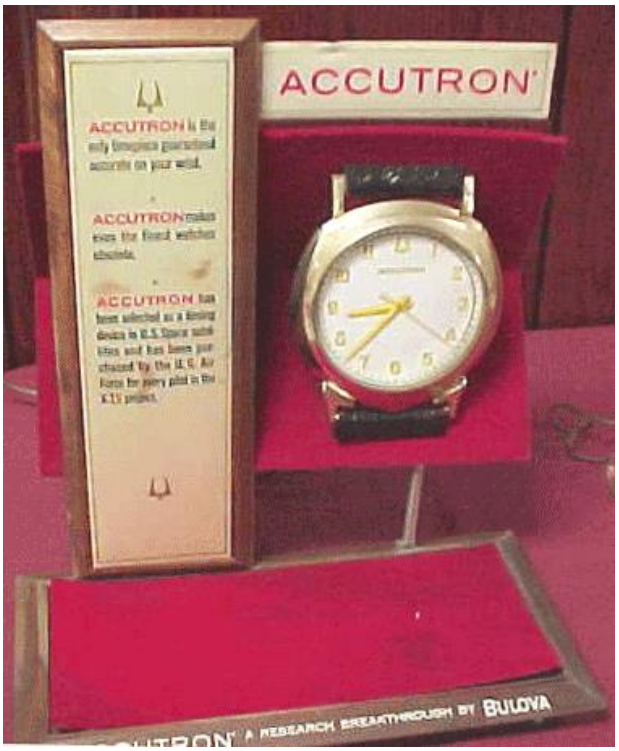
A Humdinger of a Watch

...Tick, Tick, Tick, Tick, Tick, Tick, Tick, Tick, Hummmmm...

Historians generally credit the development of the first watch to German locksmith Peter Henlein,[1] although many details about its invention have been lost, perhaps appropriately, in the mists of time. The portable device Henlein created in the 16th century ticked as it tracked the hours—it only had one hand.[2] All watches that followed made a similar sound...until October 25, 1960.

Then Bulova, which began operations in 1875 as a Manhattan jewelry store,[3] introduced one that didn't tick but instead hummed. It was named Accutron, a melding of "accurate" and "electronic," words that described the watch's precision and operation.

The essence of the Accutron is a tuning fork that oscillates at 360 Hz. Powered by a battery about the size of an aspirin, it provides a space-age way of counting seconds, minutes, and hours and produces the watch's distinctive hum,[4] a tone slightly above F#.[5] "Some musicians tune their instruments using their Accutrons," says Bob Piker of Normal, Illinois, who repairs and restores Accutrons and sells some that he buys and refurbishes.



Early Accutron.
Courtesy of Bob Piker www.mybob.net.

Max Hetzel

Accutron's innovative, electromechanical movement was invented by Swiss immigrant Max Hetzel, who joined Bulova in the early 1950s. Hetzel was born in 1921; began making radios at 12; was plotting planetary orbits at 16, aided by a telescope he built himself[6]; and later received a masters degree in electronics from Zurich's Federal Polytechnical University.[7]

Two years after joining the firm, he was challenged by company chairman Arde Bulova—son of founder Joseph—to design a timekeeper that could compete with electric watches that had recently emerged from the R&D departments of rival firms. After studying the competition's offerings, he judged them to be battery-powered versions of conventional designs and said he would create an entirely new concept.[8]

The watch he developed was introduced to potential customers in Bulova print ads with headlines such as, "Why you should wear Accutron instead of a watch"[9] that appeared in leading magazines of the day, including *Look*, *National Geographic*, *Popular Mechanics*, and *The Saturday Evening Post*.

Bulova's confidence in Hetzel's tuning fork approach was so strong the ad portrays the name as not just synonymous with the word watch but able to supplant it: It's not a watch, it's an Accutron; you wear it instead of a watch. It was guaranteed "not to gain or lose more than one minute a month in actual daily use" for a period of one year after purchase.[10]

Display Models and Conversions

Although certainly a marvel, the Accutron wasn't a hit until an unintended consequence gave it an unusual appearance—one that appeals to people who admire form-follows-function design. Piker tells the story:

> "Early Accutrons looked like typical watches and sported gold dials. Bulova wanted jewelers to be able to show their customers how different the Accutron was inside, so the company made 'display models' with the dials removed, allowing people to view the watch's internal parts, including the tuning fork and electronics."

On his Web site, Accutron repairer-restorer Martin Marcus (www.accutron214.com) of Marblehead, Massachusetts, recounts what happened when jewelers put the display models in their windows:

> "Perhaps because of its uniqueness, potential customers who thought that the watch in the jeweler's window was a standard model started asking to buy one. Dealers who didn't want to lose a sale were happy to sell the 'display model' and the strangely attractive watch started selling like hotcakes."[11]

Courtesy of Bob Piker www.mybob.net.

Bulova was surprised and delighted by the interest in these dial-less Accutrons and quickly moved to capitalize on the demand. First, it offered a conversion kit that allowed jewelers to transform standard Accutrons into dial-less

models. The kit included a replacement crystal with hour and minute marks so the modified watch's hands had something to point to.

Courtesy of Bob Piker www.mybob.net.

Courtesy of Bob Piker www.mybob.net.

NASA Connection

Bulova also began working on a production version that came to be called Spaceview, a name that took advantage of Accutron's association with NASA, which employed the tuning fork timekeeping mechanism before it was introduced to the public. Hetzel's movement, in fact, helped send America's first satellite, Explorer, into orbit,[12] as described in a Bulova press release:

> "Although the earliest prototype...appeared in 1955, within four years Accutron timers were an important feature of the Explorer satellite program, essential for the control data transmissions." [13]

Accutron timers continued soaring into space, and on July 20, 1969, one was placed on the Moon's Sea of Tranquility when the Apollo 11 mission landed the first humans on the lunar surface.[14]

Spaceviews began rolling out of the Bulova plant in 1961. Early models were similar to conversion-kit Accutrons and sported crystals with dots and dashes that marked the hours and minutes.

Early Accutron demonstrator.
Courtesy of Bob Piker www.mybob.net.

Chapter Ring Debuts in '62

In 1962, the decorated crystal was replaced by a "chapter" ring installed around the exposed electronic and mechanical parts. In horology—the art and science of making timepieces or measuring time—chapter refers to the marks or numerals designating divisions of time on a clock or watch.

For the next 15 years, a variety of Spaceview styles were made in gold and stainless steel and millions were sold before production was halted in 1977, primarily due to the emergence of quartz technology, which was as precise as Accutron's tuning fork mechanism, but priced much lower.

I grew up in the sixties and liked the Spaceview the first time I saw one. Being able to see the workings of the watch was groovy, in the parlance of the era, and appealed to my sense of aesthetics and interest in science and engineering. The odd mixture of copper coils, resistors, tuning fork, and other parts got my attention and held it.

In a way the Spaceview was the rising sun of a stylistic approach that came to be called high tech—cool embodied by the parts that made things tick or, in this case, hum.

A watch for high school graduation was a typical gift in 1969, but my family couldn't afford a Spaceview, which at the time had a retail range of $200 to $350, so I received a nice but plain-by-comparison silver Bulova, priced at $50. Fifty 1969 dollars is equivalent to $300 today.[15]

Early Spaceview.
Courtesy of Bob Piker www.mybob.net.

Chance Encounters

Years later I was working in downtown Milwaukee when I was stopped in my tracks by a stainless steel Spaceview I saw in a pawn shop window. I went

inside, asked the price, and wound up buying it for $40.00. It kept perfect time, and I wore it regularly for the next dozen years, replacing the battery as needed.

In the early nineties I was on a video shoot when a crew member named Keith noticed it. He said he had a similar watch in gold that was presented to him upon his graduation from high school. It wasn't working, had sat in a drawer for years, and he no longer wanted it. Was I was interested in buying it?

I tried to talk him into keeping it—seriously—but he was adamant. The next day he brought the watch to the set, and I took a look during a break. It was in poor condition with the minute hand disconnected and drooping into the mechanism. The gold case was scratched and nicked, and the crystal cracked, but I could tell that in its day, it was a sharp piece. He persisted, "Are you sure you don't want it?" Again I told him he was nuts to consider parting with his Accutron.

But that night I gave it some thought and the next day called a local jewelry store whose yellow pages advertisement stated it serviced Bulova watches. A repairwoman said that parts were still available for the Spaceview and probably it could be refurbished and made to work, but it would cost at least $100.

When Keith again asked me about the gold Spaceview, I told him what I had learned, mentioning that I had no idea what the watch was worth but that it could be worth a lot. This occurred way before the Web became commonplace, so I didn't know any simple way of checking. I suggested he do some research, discover the watch's value, and give me a price. Might be something at the public library, I pointed out, a book on collectibles, for example.

However, if he didn't want to check further, I said I would be willing to pay him $100 for the watch. He immediately said, "It's yours." I took it to the jewelry store I had called and was happy to discover the watch could be fixed. After repairs and new parts, it kept time precisely for well over a decade. My original Accutron with the battery removed spent the years in a safe place.

Like its stainless steel predecessor, my gold Spaceview occasionally drew favorable comments from people who noticed its unusual appearance. Unfortunately, it stopped working around the time the economy slowed in the wake of the Iraq War. I put off having it repaired and installed a new battery in my steel Spaceview. After lying dormant for more than a decade, it didn't hum in response.

Early Spaceview.
Courtesy of Bob Piker www.mybob.net.

Spaceview featuring chapter
ring hour and minute marks.
Courtesy of Bob Piker www.mybob.net.

Spaceview Service

In the fall of 2008, I looked into having my gold Spaceview repaired, decided to send it to Bulova, and followed the admonition listed on the company's Web site under "service center." "DO NOT PUT 'BULOVA' ON THE PACKAGE"[16] it warns in all caps. My impression was that experience taught the company

that someone in the postal service with an atom of larceny in her or his heart would be tempted to appropriate the small carton if the address indicated it might contain a watch, perhaps a valuable one.

The Spaceview was returned ten days later with a note stating Bulova was no longer able to repair it. Bummer. This sent me online where I found Piker's Web site (www.mybob.net) through a Google search. Ultimately he repaired and refreshed the appearance of both of my Spaceviews.

Piker was born in the mid-60s in East St. Louis, Illinois, and perhaps received his transistor-diode-solder inclinations from his father, who was an electronics technician for General Electric.

His journey to Accutron repairman was unusual. After receiving a degree in journalism and working for the college newspaper at his alma mater, Illinois State University-Normal, he operated his own graphics arts business before taking a job with a larger firm.

Eventually the company discovered his technical leanings. "I was with them for 16 years and became their computer geek, which included managing their databases and networks, activities that put to use the logical approach to problem-solving my dad instilled in me."

Courtesy of Bob Piker www.mybob.net.

"Soul of Watches"

He traces his interest in watches to an antique show. "I was walking along and came upon a guy selling old watches," he says. "I picked up an Elgin with

a tag stating it was made in 1915 and asked if it worked." The seller said it kept "perfect time," so Piker bought it.

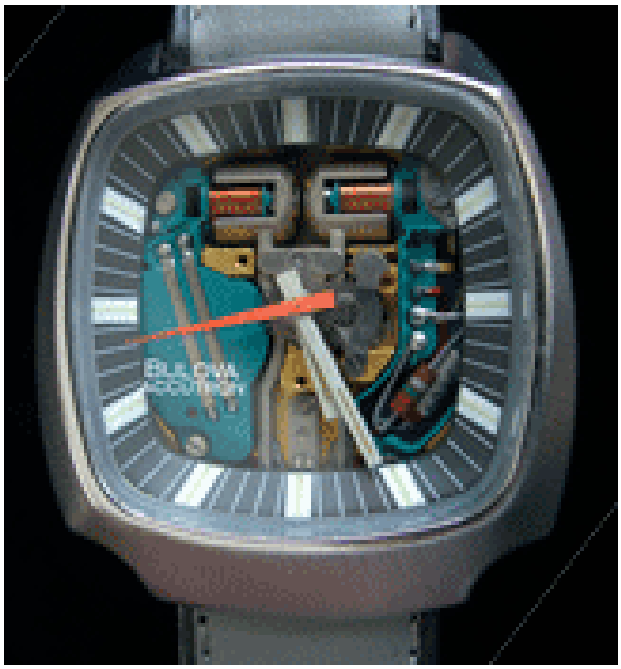
"It amazed me because here was this device that was almost a century old, and it's still capable of doing what it was designed to do. I thought about how someone was wearing it before World War I and it got me hooked on the 'soul' of watches so I became a collector. I bought a price guide and read it like it was a best-selling novel."

In 1990, he stumbled upon the watch that would take his life in a different direction and lead to a new business. "I was at a flea market and found a stainless steel Spaceview. I didn't know it was called that at the time, but I liked the skeletal look and hum and wound up paying $150 for it."

He set out to learn what he could about the watch but didn't find much. "This was pre-Internet," he says. "But eventually I encountered a watchmaker who sketched the history for me."

Piker looked for more Spaceviews, often bought what he found, also purchased Accutron parts, and ultimately acquired original repair manuals. He decided to take a crack at fixing examples in his collection.

"It was a challenge because the manuals used words I wasn't familiar with," he said, but Piker kept at it and grew skilled. After years of working on his own watches, he realized that he could probably repair any Accutron and maybe a new career direction was in the offing.



Spaceview commemorating
Bulova's 100th Anniversary in 1975.
Courtesy of Bob Piker www.mybob.net.

Hobby Becomes Business

"From my own collecting, I knew there was a lot of interest in Spaceviews," he continues, "so a couple of years ago it struck me that I could be one of those lucky people who takes a hobby he loves and turns it into a business."

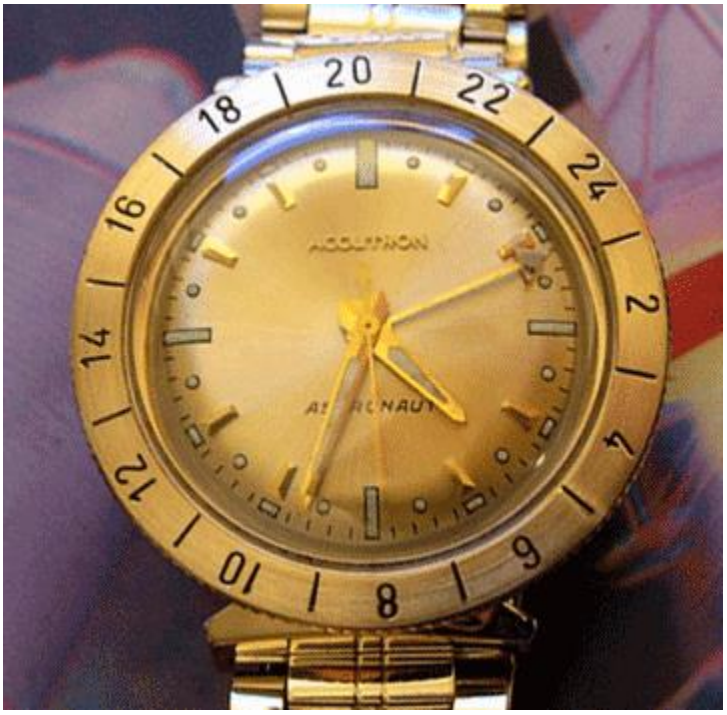
After customers find his Web site, Piker advises them to mail their watches to him, being sure to buy postal insurance against damage or loss. "The most valuable Spaceview today is worth about $2,000 retail," he says. Accutrons are almost always restorable, according to Piker, and the commonest problem he encounters is plain old dirt. "After years of use or of sitting in a box or drawer, fine particles work their way into the mechanism and gum up the works."

He cleans watches using a cavitation process which he likens to "scrubbing with an Alka-Seltzer-like" action powered by ultrasonic vibrations. He then replaces parts as needed, applies lubrication, reassembles the watch, and polishes the exterior.

He has repaired hundreds of Spaceviews along with dialed Accutrons, including another popular sixties model called the Astronaut. "Elvis Presley had one with a black dial," he notes. Interest in tuning-fork watches is high enough to bring between five and eight to his shop-in-the-home every week.[17]

Since becoming interested in the watch almost 20 years ago, Piker has had "well over 200 Accutrons" in his collection. He is always on the lookout for the "perfect" Spaceview and has encountered some that were close. "I've seen a few that went unsold and were still in their original boxes," he says, "with promotional stickers and price tags attached." This might occur if a jewelry store ceased operations and the remaining stock was packed away and forgotten. Other times Piker says an Accutron or another interesting timepiece might be "lost"—wedged out of sight between a watchmaker's workbench and the wall, only to be found when the store is deep-cleaned or remodeled.

Demand for Spaceviews and their increasing value has attracted the attention of crooks. Some unscrupulous watchmakers take the dials off later-model Accutrons, install marked crystals, and sell them as early Spaceviews. Piker calls these specimens "Franken" watches and urges care when shopping.



Accutron Astronaut.
Courtesy of Bob Piker www.mybob.net.

Author's 1966 Spaceview.

40th Anniversary Spaceview

In 2002, to commemorate the 40th anniversary of the Spaceview, Bulova produced a watch with exposed internal parts that it called the Spaceview 21.[18] The quartz movement is attractive but not as exotic or interesting as

Hetzel's tuning fork mechanism, and the 21 doesn't hum. The watch was discontinued after its initial run of 1,000.

Bulova Marketing Manager Angelica Almeida says that interest in the original Accutrons, especially Spaceviews, remains strong. "We get regular calls from customers who want to know where they can buy a Spaceview or get one serviced," she explains. Almeida attributes the watch's continuing popularity to its "unique tuning-fork technology" and "the ability to view the mechanism through the crystal." Bulova, she mentions, "is working on another limited edition watch to commemorate Accutron's 50th anniversary in 2010. It's top secret and will be a special piece that is great for collectors."

Author's 1970 Spaceview.

50th Anniversary Accutron

Bulova recently announced it will offer a limited edition Spaceview to commemorate the 50th anniversary of Accutron technology. The watch will feature a tuning fork mechanism similar to the original Accutron, a stainless steel case, and an alligator strap. First impression from a small photograph is it looks a like a combination of early marks-on-the-crystal Spaceviews and later chapter-ring models.[19]

This is exciting news to people like me who love these watches, but at a suggested retail price of $4,000, the new Spaceview will need to appeal to well-heeled enthusiasts, too. Only 1,000 will be made with with each bearing a production number on the watch and on a plaque that will adorn an accompanying presentation case.[20]

Time Told Beautifully

I'm glad to have my Spaceviews working again. Both have an original Accutron band that is appropriate to the year the watch was made, 1966 for the stainless steel Spaceview and 1970 for the gold.

Ironically, the ubiquity of cell phones has made wristwatches as threatened by the Information Age as newspapers, but I enjoy wearing mine and answering the questions people who haven't seen a Spaceview before sometimes ask.

Moreover, after all these years, I still pause now and then to examine the intricate connections and electronics of the high-tech, tuning-fork mechanism and occasionally put the watch to my ear to hear that slightly above F# hum. I even use my Accutrons to tell time although with a Spaceview that seems secondary.

Accutron 50th
Anniversary Spaceview.
Courtesy of Bulova.