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FIELD REPORT

CRAFTING A WATCH
WITH PAUL GERBER

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WATCH YOU LEARN BY DOING



Creating a watch alongside Paul Gerber

Really powerful events in our lives always create a sense of “before” and “after.” These events need not be noisy Hollywood dramas. They can also come as a subtle shift in perspective that suddenly opens a whole new view on some aspect of your life and prevents you from ever going back to the old and familiar roadmap you had before.

For ever so long, I assumed I knew a fair amount about the intricacies of watchmaking and its industry. Had I not, as a journalist, manipulated thousands of timepieces, peered at them with wizened forehead through my faithful loupe? Had I not observed first-hand those taciturn watchmakers hunched at their établises in the big manufactures? My carefully built up illusion of knowledge was about to be shattered at a three-day watchmaking workshop led by one of the industry’s leading figures: Paul Gerber.

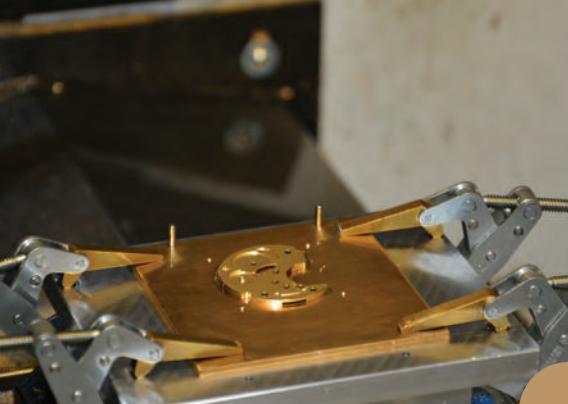
Gerber does not have much time or inclination to sell himself, so few know what he has actually done in a career spanning nearly fifty years. Besides his own collections, he has been involved in dozens of complex projects. Let us note outstanding table clocks for Fabergé, like the Serpent Egg clock; watches for Perrelet; a discrete alarm complication for a Valjoux movement used by Fortis.

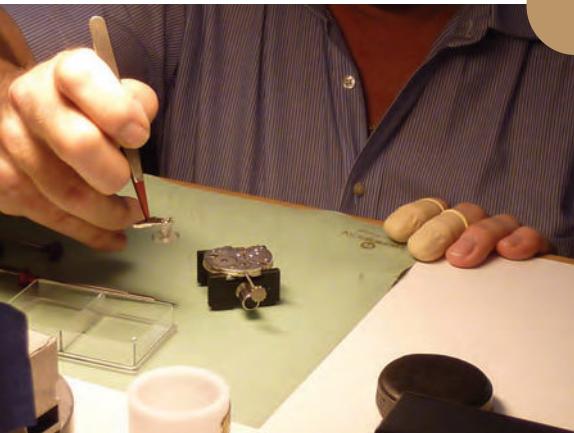


He worked on the beautifully minimalist MIH watch for the Museum of the Watch Industry (MIH) in La-Chaux-de-Fonds. He was tasked by Swiss industrialist Willi Sturzenegger (“Earl of Arran”) with adding a few complications to an already complicated 1892 pocket watch by Louis-

Elysée Piguet customized by Frank Muller: a flying tourbillon, a split second flyback, two power reserve displays, and a jumping minute...without changing the size of the watch! He spent eleven years with the watch in all, and ended up in the Guinness Book of World Records for the second time. The first time was for his miniature wall clock with a wooden movement.

This was the giant with whom Peter Nyfeler, Urs Frei, and myself were about to spend three days. We met at his atelier for a congenial aperitif with him and his wife, Ruth, a very busy Jane-of-all-trades. We got to know the premises where we would be working. It was a far cry from the more flamboyant rooms I had come to know from the big name brands. We were in the low-ceilinged basement of the house where Gerber and his wife Ruth have lived





for decades. The place was crammed full of all the tools of the trade, screwdrivers, tweezers, the typical small cheese bells, lathes, drills, and what turned out to be a variety of clamps needed to hold workpieces. The toilet shared space with the ultrasound cleaning basin and the galvanic vessels. The CNC machine and the machine to blow glass pearls onto the pieces were in the garage.

Gerber, a calm man with steady, measured gestures, briefed us with a great deal of good humor and reassurance: We were going to take an old Unitas caliber apart, replace the bridges by a three-quarter bridge and a balance cock, decorated by our own hand, with blue the screws, a gold châton, the works. Then we would put it back together again.

“Piece of cake,” I thought, “why does this take three days?”
Famous last words...

THE BREAKING-IN

Next morning, a Friday, after some fluffy croissants and strong coffee, we received our instructions. We were a-rarin’ to go, but before taking our ébauches (the movement kit) apart, we had to put them on the Witschi. “The professional always checks his work,” Gerber told us while winding up the movement and getting it ready for the test. “We have to make sure this is in working order before starting.”

We could now begin taking the movement apart. First step: unwinding the mainspring. Paul had explained each step, beginning with how to hold the barrel spring with a wooden stick while gently unhooking the click mechanism and then letting out the



tension slowly. “It’s easy...,” he said. My two companions – one of whom, Peter Nyfeler, shared a passion with Paul Gerber for flying model planes on a wire – managed well. I pressed down, but my mainspring discharged all at once with a little zinging noise, but no damage, luckily. This was not starting out well.

Taking the movement apart was fairly simple and taught us already how to use the tweezers efficiently. The custom-made brass three-quarter bridge and balance cock now needed to be abraded using a series of sandpapers, files, and, finally, buffing grits. This activity is a lot more painstaking than one is led to believe when touring manufactures. The edges are particularly tricky: “Always look for the reflected light as it comes off the edge while you turn the workpiece,” Gerber instructed “Filing and checking your progress later might well deliver a nasty surprise later on.”

Following a delightful lunch on a shady terrace of a local restaurant, we began the process of angling, that is, taking the edge of the plate including along the opening for the escapement and the



WE WERE BEGINNING TO BE ABSORBED BY THE LITTLE UNIVERSE IN FRONT OF OUR LOUPES

tiny balance cock. “It’s not the usual 45 degree angle that makes sense in mechanics,” Gerber cautioned, “you want a shallower angle, 20 to 30 degrees, because it will catch the light and reflect it outward. The angle, though, can only be seen close up.”

For the next ninety minutes or so, silence descended on the workshop. We were beginning to be absorbed by that tiny universe in front of our loupes. Grunts and polite curses accompanied every slip of the file off a sharp corner like the one at the end of the escapement recess. You have to remember to breathe occasionally, or unclench your stomach muscles. It’s physically tiring.

We closed the first day by drilling the three holes for the infinitesimal châton screws using a hand drill. This was followed by a tour of duty at the to cut three pegs for the mainplate to keep the three-quarter plate well positioned. This involves grinding raw stock to a diameter of 0.99 millimeters, chamfering the end to a 45-degree angle, and cutting off a 2-millimeter section with a 0.25-millimeter saw (FYI: you have to literally saw off the bit while pressing it down with your finger to catch it). I was not confident in my abilities, but I looked at Urs and Peter before me and beat the learning curve. I only lost one little peg.



HARD LESSONS

Being around Paul Gerber is comforting. He is gently humorous, patient with our newbie foibles, and very generous with his tremendous knowledge of the craft. He would often explain the fine points of watchmaking in simple and concise terms and give small lectures on different aspects of watchmaking, be it the mainsprings and how are affixed to the barrel, or how materials might react to being filed. He even chatted to us about his model airplanes. He also gave encouragement whenever we had to redo a step because of some silly slip of a file.



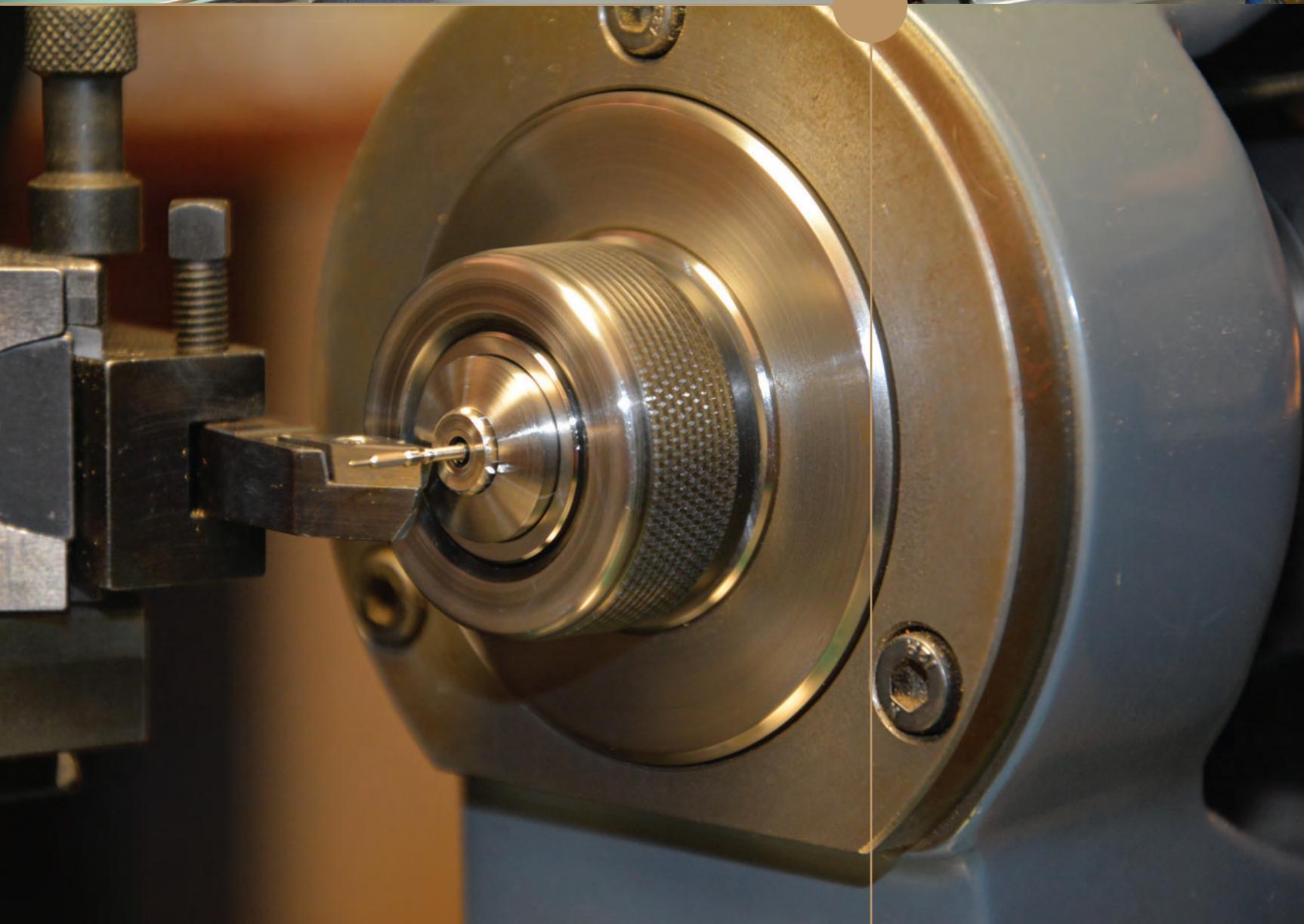
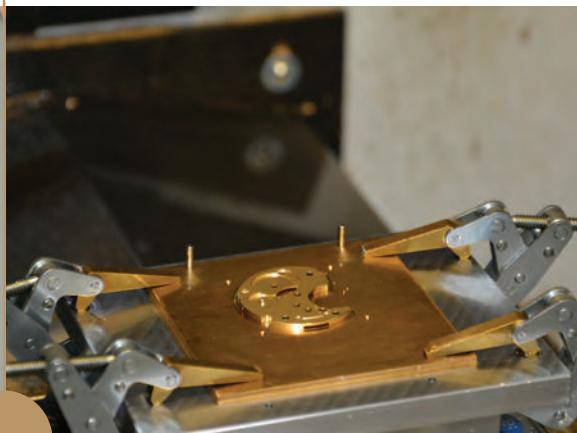
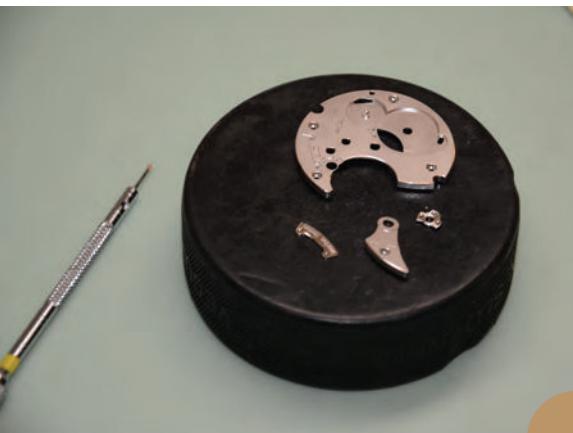
On the Saturday, reinforcement came in the guise of Sean Fuchs, a former Gerber apprentice. The rhythm was now different. Urs, Peter and I wandered around from the glass pearl blower in machine, which gave the brass pieces an even, matt, frosty look, and then to the CNC machine to engrave “Paul Gerber Zürich” on the bridge plate. Occasionally we would bring have to clean the pieces in an ultrasound basin in the little restroom. From now on, we only touched our plates with rubber-clothed fingers and we dried them by blowing air mechanically on them.

After that, it was back to the workbench for a special step: polishing the beveled edges by pressing them with a tough metal spike. Again, Gerber cautioned us: “Pressing too hard raises a tiny metal ridge on the upper side of the plate that would require filing again.” The other danger was slipping and scratching the satin-like surface. Gerber also demonstrated how to get a really good polish, namely by using the skin grease from the side of your nose. Never heard that on my visits to the manufacturers....

The two bridges were now looking frankly beautiful. The screw holes and jewel holes still needed countersinking with a special tool, before the pieces could be rhodium-plated, giving them a light silvery look. By the afternoon coffee break – during which we had



The author assembling his movement.





the privilege of tasting Ruth Gerber's outstanding orange-flavored tiramisu – we were about ready to start reassembling. It was the moment to seize our screwdrivers. Index finger on top to keep them steady, thumb and third or fourth finger do the turning... gently! I managed the châton – which we had polished between other steps – without a problem, but when screwing in the little plate bearing my name, the tip slipped out of the screw head and left a small groove across the plaque. "You can't rush these things," said Paul inspecting the irreparable damage. "Let me see if I can find a solution, though." He left the room with a mysterious smile, and came back with another nameplate. Visibly, I was not the first amateur watchmaker to destroy a component. I was just lucky the screwdriver did not slide across the rhodium-plated bridge...

The final task on the Saturday was mirror polishing screws, another one of those careful, ruminative procedures that takes several steps. First, the screws are affixed into a circular holder and treated to a buffing using extremely fine diamond grits spread in a fluid on a board. The trick is to rub the screws in the powder and maintain even pressure on all six screws in the holder. In the end, Sean tactfully, and with a steady hand, gave the screws a final rub.

Each screw is then removed, tied into a wire, heated up and dipped in a special compound that Gerber gets from a company in Lucerne – composition of this so-called Bläusalz is a secret. The compound is melted in a gas flame and envelops the screw. This cocoon is then dropped in cold water and removed. The last step is the one requiring most care: The screws are put into the holder again and reheated in a liquid, as the temperature rises, the screws change color. When they reach a certain violet indicating 285° C, they must be removed from the heat source. Again, experience is invaluable. A few seconds either way, and the screw will have a different color.

THE FINAL COUNTDOWN

Compared with the dozens of different steps required to finish the pieces – I did not mention several, such as pulling and reinserting the jewels, or polishing the châton – the process of reassembling the movement seemed simple and straightforward. You need patience, a steady hand, and notes on where to start and what to be careful of. We started bright and early Monday morning after the usual breakfast-briefing routine.

The most difficult section is the dial side, in particular the installation of the winding stem and the setting mechanism, with its flat cams and spring clip, which likes to jump into oblivion. The gearwheels by comparison are easier. But all ends with the escapement assembly, with its bouncy spring and the free-floating pallet lever that has to be placed on the correct side of the impulse pin. I got everything into place and it all looked fine. But the machine was not ticking the way it did when Paul Gerber had showed us how to do it. It took Sean to point out that my pallet fork was lying unevenly and blocking the mechanism. So, the escapement had to be taken apart again – calmly, breathing deeply through the nose – at which point the balance spring got caught somewhere and I almost stretched it out of shape. I was lucky, again. Peter's balance cock fell through the spring and he and Paul had to take the assembly apart. But this was material for the Hogwarts School of watchmaking, senior classes. →





Somewhere in between, we chose our dial, hands and strap. I chose a dial with a silvery pearl pattern, a decorative track that says "Paul Gerber Uhrenworkshop," blue numerals and markers, and a blue alligator strap with a folding clasp.

At about 6 p.m. we finally finished up the work. The watches (except Peter's, which required extra work) had been tested on the Witschi and adjusted. Sean Fuchs and Paul Gerber had installed the KIF shock absorbers, since that required very special skills. I had another test for watch: a train to catch on a tight schedule. Ruth drove me into town, and I got to the station with, according to my watch, two minutes to make my train. And I made it. The train left at 6:53. The watch said: 6:53. We arrived in Geneva at 9:46. My watch said 9:46. It was a moment of exhilaration.

EPILOGUE

Besides learning a great deal about the watchmaking process, I also realized that nothing about the craft is easy. Even oiling the parts requires care and experience: Three oils and one grease were available in a special dispenser. Drops the size of a 12-point comma had to be spread in the jewel sinks using pins. Tiny smears of grease were added to the moving parts. And all that done through the looking glass... In fine mechanical watches, smallest detail becomes important. Is there a scratch on a screw that is even out of sight, or a screw that is not properly blued? It's not what others might think. The point is: You know it, and that is what counts. Both Paul Gerber and his former apprentice, Sean Fuchs, bantered often about the little tricks they had learned to help the processes along,

Right: The handiwork of Mr. Paul Gerber.

but in the end, the craft tolerate no cut corners.

Anyone with a deep interest in watches and watchmaking should at some point go through an initiation rite like the workshop

with Paul Gerber. There is something deeply humbling about it, and it can only increase one's respect for the independent watchmakers who pour all their knowledge, experience, talent and even genius into these tiny wonders, even the simplest ones. He only gives about four a year, so it's no for the income. "If I know something, I like to share that knowledge with others," he says with a bright smile. "And if you enjoy making a watch and you enjoy your watch, I, too, take pleasure in that enjoyment."

The workshop with Paul Gerber continues to reverberate. I can no longer look inside a watch without thinking of those three quietly intense days and feeling the breathlessness of such an elementary job as abrading brass. And I wonder about my "before" experience and if my judgment had been correct in the past. Will this make me more tolerant or intolerant? Time will tell.

I spent much of the train ride back looking at the watch and basking in the somewhat mitigated pride of having actually done so much work on it. A few weeks later, a new client of mine asked what watch I was wearing. I took it off and handed it to him. "A unique watch," I said, "no amount of money can buy it." He was a watch man and turned it around to look at the back. "You made it?" he asked with some surprise. "Yes," I answered, adding sotto voce "mostly." Mustn't forget to render unto Caesar, or in this case, Paul Gerber. ♦

