

# Horology with Cameron Weiss

## Ologies Podcast

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Episode 5. You're here!

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Okay, horology. What is it? I know what you think it is, or what you wish it were. But it's not the study of [*clip of Siri*] "your moms." Wow. I did not say that, Siri said that. That's very inappropriate.

Okay, horology comes from the Greek *hora*, meaning hour, or time. A horologist is someone who studies the measurement - or the instruments of measurement - of time. But in common parlance, horology now kinda refers to mechanical timekeeping, so if you're like, "is there a rift between mechanical and electronic timekeeping?" well, [*exclaims quietly*] WHEW, let's just say that was some foreshadowing for you.

Prepare to learn how many goddamn tiny pieces are used to make an old-school mechanical watch, and how expensive watches can get, and how much coffee watchmakers drink, and what would happen if you scared one, and the history of timekeeping: there's so much information in this! You're never gonna look at your watch quite the same again.

I found this horologist by Googling 'horologist + Los Angeles' - just took a stab - and came across a few articles about this one dude in *GQ* and the *LA Times*. I was shocked to see a photo of him, and he appeared to be under 100 years old, which was odd for a horologist. He looks like a California type who has definitely surfed at least once. He may have had a short ponytail but honestly I don't remember, because there was a dog in the office and I got so excited that I got distracted. I can't remember.

Anyway, horologist. I needed to know his deal. So I drove to a business park south of the airport to sit down in the break room of the Weiss Watch Company - an LA-based, handmade, old-school-but-also-new-school mechanical watch company - and I asked this nice man a million questions. Please enjoy professional horologist, Cameron Weiss. [*gingerly testing out pronunciations*] Weese? Wice?

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**Cameron Weiss:** I say "Wice."

**Aside:** Cameron has owned the Weiss Watch Company for four years.

**Alie Ward:** How did you start a watch company? Because you're a young person. You're like, what, in your 30s, right?

**Cameron:** Not yet.

**Aside:** Here's where I awkwardly try to ascertain Cameron's age. Because, listen, in my defense, he looks young as hell! He has that kind of southern California guy look, but he carries himself and he speaks like a tweed-clad professor. It's very confusing.

**Alie:** [*in high-pitched disbelief*] You're in your 20s?!

**Cameron:** Yeah, 29.

**Alie:** How did you start a watch company in your 20s? How did you do that?

**Cameron:** I was fortunate to find watchmaking pretty young.

**Alie:** How did you get obsessed with horology and clocks? What was the first thing? Do you remember cracking open a watch when you were five and being, like, [*excited, like a little kid*] "what's happening in here?"

**Cameron:** I don't know about the first thing, but pretty early on I was given a cheap little plastic watch. I think it had alligators on it or something, but it was when I was a little kid, and I really enjoyed wearing it. Something about it just felt nice to have on my wrist, and that was the beginning.

**Aside:** I really needed – needed – a visual of this and searched for 'alligators + kids' watches' and didn't turn up anything. Then I realized, what if it was a crocodile, and then I realized, what if it was a CLOCKodile!? Then I got bummed and overwhelmed because clockodile is such a good idea that I'd have to quit my whole life and pursue that as a children's watch company. I was relieved – [*whistle-like exclamation of relief*] WHEW – that there's already a kids' book of that name. Somebody's on it. Good job. I can continue with my life as planned. Anyway, from the alligator watch Cameron became interested in stopwatches.

**Cameron:** And then I found my way into a watchmaking school...

**Aside:** Cameron went to school and did that for two years, full-time.

**Cameron:** ... I was able to train in Switzerland as well...

**Aside:** [*Sounding impressed and intrigued*] Woaah! I did not ask him about the landscape or chocolate, and I regret that.

**Cameron:** ... and eventually I was confident enough to start my own brand.

**Alie:** How old were you when you started going to watchmaking school? Were you the youngest person there? Because I feel like I've met a couple horologists and they're all like, 70. Are you always the youngest when you go to meetups?

**Cameron:** Oh yeah. At meetups, definitely. In school I wasn't the youngest, but it's more so because there's very few people who are actually admitted into schools.

**Alie:** How rigorous is it? Do you have to have great eyesight and not-shaky hands?

**Cameron:** Yeah. That along with a couple of certain learning styles, like being able to focus for long periods of time and maybe sit there for eight hours working on bending one little piece of metal into a certain shape or filing something perfectly flat. Being able to focus and keep your patience is very important. The teachers weed out people who wouldn't be able to handle that.

**Alie:** So they're like no spazzes, no dicks, essentially? *[laughs]*

**Cameron:** Yeah, exactly. It's a major time investment to teach someone watchmaking, so they don't want to teach it to someone who might not actually succeed in the program.

**Alie:** Right, they're like, "go do something else. Fix pinball machines. Be a bartender." I imagine it's a very quiet classroom, also?

**Cameron:** Yeah, it can be.

**Alie:** Because if you go up behind a horologist and you startle them while they're working on these movements, I feel like you will get stabbed.

**Cameron:** Yes, it's not a good idea, tweezers and screwdrivers are very sharp. *[chuckles]*

**Alie:** So, watch movements are tiny, right? But are you also interested in clocks? Are you more interested in wristwatches and pocket watches and smaller items?

**Cameron:** Personally, I'm interested in anything mechanical that keeps time, really. For the business, we only make wristwatches and I don't do any kind of clock making. It's a completely different craft.

**Alie:** Really? Okay. Your watches are all mechanical and not quartz, right?

**Cameron:** That's correct.

**Alie:** Can you explain the difference between a mechanical watch and a quartz watch?

**Cameron:** Mechanical watches are powered by springs and they can either be wound by hand, by turning the crown, or they can be wound by a weight in the back of the watch that actually moves with your arm movements. A quartz watch is battery powered, so you

actually have a battery that is then putting energy through a quartz crystal, and the crystal oscillates back and forth.

**Alie:** And that's why it's a quartz watch.

**Cameron:** Yes, right.

**Alie:** How do you feel about lyrics that reference watches? I didn't know that with a mechanical watch, wearing it winds it, until I heard a Jay-Z lyric about it.

**Aside:** I need to give a special thank you to the website Rap Genius which is now just called Genius - I liked it better when it was Rap Genius - but this site will explain all of your "I don't know what this lyric is or what it means" problems.

If you remember - I'll set the scene - 2011, a Jay-Z and Kanye West song comes out. There's a line where Jay-Z says [*speaks the lyrics as if reciting a poem*] "ball so hard, got a broke clock, Rollies that don't tick tock, Audemars that's losing time."

[*sheepish, embarrassed*] I'm not good at rapping.

[*clip of Jay-Z and Kanye West's N\*\*\*\*\* in Paris: "ball so hard, got a broke clock, Rollies that don't tick tock, Audemars that's losing time, hidden behind all these big rocks"*]

On Rap Genius I found out that having a broke clock and Rollies that don't tick tock means two things. Number one: you ball so hard that you don't even have time to wear your watches, because automatic watches of the mechanical variety wind themselves just by wearing them. So he has so many nice watches that they don't even work, because he doesn't wear them enough.

And when you have a Rollie that doesn't tick tock, that's good, that means the hand sweeps and it's authentic, unlike a "tick-tock-tick-tock" quartz imitation Rolex. [*satisfied tone*] Huh huhhh...

So how does Cameron feel about rap lyrics? Does he love them as much as I do?

**Cameron:** I mean, [*struggling to find a nice way to put it*] it's something that doesn't really... appeal... to me?

**Aside:** Okay. Alright. Moving on.

**Alie:** How do you feel about watches being... not status symbols, but jewelry as well as something functional? Which part of it appeals to you, the functionality or the style of it?

**Cameron:** That brings me back to why I chose watches in the first place. To me, you have this artwork and it's the mechanical movement which has this whole watchmaking background behind it, all the history that goes into it, all the mechanics; it's like a work

of art. Then you put it inside of the watch case and you can actually carry that piece of art on your wrist and it functions, too.

It's like a little motor that is encased on your wrist. You can bring it anywhere, not like your Mercedes or your car which you park outside and you can't bring it inside. The wristwatch, to me, appeals for both those reasons: the mechanics and the art.

**Alie:** And just for the record, I don't have a Mercedes, but if I did I also would not bring it in the building! *[both laugh]*

**Cameron:** Exactly!

**Alie:** My 2007 Prius is not something I can bring in. So, it's the art and the functionality of it. How many parts are there in a wristwatch, roughly? Can you describe how it works, super super basic?

**Cameron:** You have two springs. You have a mainspring, which is in the barrel and is where we store the power. So instead of having a battery, you have the mainspring and that, once it's been wound either by the movement of your hand or by physically turning the crown, it stores the energy and then it goes through a gear train. At the end of the gear train there's an escapement...

**Alie:** What's an escapement?

**Cameron:** The easiest way to explain it is if you think about a pendulum on a clock, it swings back and forth. Well, the escapement in a watch is the same thing, except it's been designed to fit in a watch. So it's a coiled spring.

**Alie:** Okay. Alright.

**Cameron:** So you have these two opposing springs: one stores the energy, one releases the energy in a certain fashion where we know exactly how slowly it releases the energy and we harness that to actually translate it to the hands.

**Aside:** I'mma explain this again, really quick, in non-horology terms. Number one: You wind that little knob. That knob coils up a mainspring that gets all tense and it wants so badly to go *[imitating cartoon spring release]* "boinnnng-oinggg-oinggg." This is the mainspring in a mechanical watch. But, it's in this little barrel dish that keeps it from doing that. The barrel transfers all that wound-up energy to a gear train, which is just a series of wheels with little notches or cogs. It's all very steampunk.

What stops those wheels from just spinning out all that potential energy at once is a thing called an escapement, and that regulates how fast the watch goes. The escape wheel has these crazy notches that look like insane sawblades. They lock and only let it

turn a little bit at a time. Now the escape wheel turning a little bit at a time makes a weighted balance wheel swing back and forth like a pendulum.

That's regulated by another spring, called a hairspring, and that makes the hands on the watch face tick off the moment until your death. Or the next time you eat a hot dog. Or whatever the future holds for you. Oh also, together the balance wheel and hairspring are called a harmonic oscillator! I think that's cute.

Did you know that to oscillate is to swing back and forth but to osculate is to sloppy kiss? Isn't that gross?

**Alie:** How do you know if it's right? Like, do you have nightmares about springs not being the right tension?

**Cameron:** No, no. I mean, everything is... it's traditional watchmaking, so it's been tested over time. What we make today is the same thing that was made 100 years ago.

**Aside:** Okay. Brief, brief history of timekeeping devices. 1500 BCE, sundials. 1300 BCE, water clocks. So water would drip, and that would fill something that would show you how much time has passed.

800 CE, candle clocks. You'd burn a candle and depending on how tall the candle was, you'd know what time it was. There were also incense clocks, where you'd burn some incense and when a different smell would hit you and you'd be like, [*nasally, nerdish voice*] "oh, it's time for me to go to work".

In 1500, spring-driven clocks became a thing, and then in 1656 - thanks to Galileo - pendulum clocks were invented. And then from there, the latest technology was quartz clocks and atomic clocks.

Atomic clocks rely on measuring the vibrations of certain atoms as their electrons vault around. Atomic clocks are by far the most accurate. They're so accurate that they won't lose a single second over the next - you ready for this - [*emphasized because of how crazy it is*] 15 billion years. You and I will not be around.

When did we start caring about time for reals, for reals? Well, mid-1800s, so many places just had local times, where they'd be like [*noncommittally*] "ehhh let's say it's 2:00 around here..." and it didn't really matter what was happening a few hours away. Until we started hopping on trains, and then we needed to know what time is this train gonna be here?

So in 1884 there was the International Meridian Conference in Washington, D.C., where we were like, "We're doing this! We're having time zones! Get your SHIT together people!" The world was divided into 24 different time zones, and everyone had a certain time, everyone was like, "get a watch, come on, people. Be on time."

Clocks have been around for a while, is what I'm trying to say.

**Cameron:** We don't really have nightmares because it's nothing new. It's like if you're a painter, everyone's been using paints for a long time. We're not trying some new fancy paint that might disappear in a day or two, might fade or something like that. It's all traditional watchmaking. So, there's great watchmakers that I borrow all of that engineering, and physics, and everything they did. I borrow that and put it into our watches.

**Alie:** Were you good at physics and chemistry and sciences as a child, or were you better at just like, "I'm gonna take the TV apart and put it back together before my parents come home"?

**Cameron:** Yeah, I have more of a mechanical mind, hands on... if I can physically have something in front of me, take it apart.

**Alie:** How are you with Ikea bookshelves?

**Cameron:** I have no problem with Ikea stuff. *[laughter]* All the stuff that goes into Ikea: the screws, the pegs, everything; they're way larger than watch parts.

**Alie:** Which brings me to watch parts. You're wearing one of your watches, *[overtly, comically complimentary tone]* which is gorgeous, by the way. How many parts are in that, mechanically?

**Cameron:** In our watch, it's about a hundred fifty pieces.

**Alie:** Okay. A hundred and fifty pieces. And they're all the size of what, not a sesame seed, like a... I don't even know. Like a piece of confetti? Like, how big are these parts?

**Cameron:** A lot of them are about the size of a grain of rice.

**Alie:** *[whispers; shocked]* Oh my god.

**Cameron:** Some of them are smaller, some are bigger. It depends on which component.

**Alie:** And do you drink coffee?

**Cameron:** Yes.

**Alie:** You do? How do you not have shaky, like, Captain Shakyhands?

**Cameron:** I find that there's a certain amount of coffee, and when you kind of get over that threshold that's when you start to get shaky. Just the right amount of coffee is good. I have no problem with it, it keeps me awake even if I'm sitting there at the bench quietly. But too much coffee and there's no more watchmaking, I move over and start doing emails and business stuff. *[Both laugh]*

**Alie:** How many coffees is it? Do you know? Is it, like, two espressos?

**Cameron:** Oh no, it's more than that, maybe four espressos.

**Alie:** Are you serious? God, if I had four espressos I would just be, like, sweating and shaking! The fact that you can even do that, that's amazing. So you had to learn that probably by trial and error, where you're like, "Cameron, get away from the bench."

**Cameron:** Yes, yes, "this is too much, I can't, watchmake."

**Alie:** That brings me to a question. Is it harder to make a lady's watch because they're tinier parts?

**Cameron:** Yes.

**Alie:** [*excitedly*] Really?! Do they cost more because they're tinier parts? Tell me about this. Tell me everything!

**Cameron:** That's the thing, they don't normally cost more. There's actually a lot of vintage women's watches that were mechanical, that watchmakers will not even repair today because they're so small.

**Alie:** [*whispers*] Wow...

**Cameron:** Yeah. They're very hard to find, people to work on those watches.

**Alie:** Are a lot of watchmakers guys? Fixers? Horologists?

**Cameron:** In Switzerland it's not so much male dominated.

**Alie:** What is it about Switzerland? Why are they cornering the market on watches, why are they so good at it?

**Cameron:** They've been doing it a long time.

**Aside:** I never knew this, but during World War II, because Switzerland was neutral, that let their watch industry continue making consumer time-keeping things. Other nations of the world were like, "if we're gonna make an apparatus, it better bomb someone." The Swiss were like, [*cautiously; as if politely rejecting an invitation*] "ehhh, I'm just gonna keep making watches." So, as a result, the Swiss watch industry had a pretty good monopoly. They were like, [*high-pitched, throaty voice similar to Steve Urkel*] "I'm just over here making watches, eatin' chocolate."

**Alie:** I can't function without a wristwatch, but how do you feel about the relationship a person has to time when they're wearing a clock face as opposed to, say, a digital clock in their pocket?



**Cameron:** It's almost like a crutch, I think, when people pull out their phones and they're just sucked into their phone - checking Facebook, checking email. Whereas the watch is more of like, bringing you back into the real world, where you have a mechanical item that's on your wrist. It's real pieces, they move. There's a spring in there, you have to wind it every day or you have to move to keep it going. For me it's a little more grounded in the real world than pulling out a phone and looking at that.

**Aside:** You know what has nothing to with watches but it does have something to do with watches? Punctuality. I live in Los Angeles so everyone shows up like, four hours late to things, if they show up at all. Some people are punctual, and some people aren't. I always run a few minutes behind, to be honest. I wanted to find out why this was; why, essentially, I'm a garbage person, so I Googled it.

In 2001, Jeff Conte, a psych professor, ran a study. He separated participants into Type A people who are ambitious and competitive; and Type B, who are usually creative, they're explorative. Now these are also known as "tight asses" and "societal fuckups" [*quietly, as if sharing a secret*] I'm just kidding. He asked these people to judge, without clocks, how long it took for one minute to go by.

Type A people felt like a minute passed in about 58 seconds, so they were close. Type B participants thought a minute had passed after about 77 seconds. So, clearly, Type B people are just on their own time, so give them that. But you know what? Either way, everyone was wrong. Everyone overestimated it. Also, what is time anyway? Time is a construct. [*quietly; reflective*] Oh man, this is the time in the episode where I ask about existential bullshit.

**Alie:** Do you have any existential crises working on watches about time, and impermanence, and mortality. Does watchmaking ever factor into that psychologically for you?

**Cameron:** The only time I ever think about anything like that is when I service watches that come back in. They have moving parts so they all need cleaning and oiling just like a car engine. But realizing that, at some point, somebody is going to have this watch and I'll be long gone but it'll need somebody to work on it, service it, or somebody will pull it out of a lockbox in a hundred years and be like, "wow, what's the story with this watch?" That's the only time I really think about not being around and these things lasting for so long.

**Alie:** When *True Detective* came out did you get a lot of "time is a flat circle questions" from your friends? Were you like, "Okay, guys..."

**Cameron:** I did not.

**Alie:** Do you ever do you ever think a lot about the time space continuum? And whether or not time is a fourth dimension?

**Cameron:** No, not really. [*Alie laughs*]

**Aside:** I just, I had to check.

**Alie:** I think all I've done is just revealed that I have an anxiety disorder about mortality. [*both laugh*]

**Aside:** Okay, here's the part where Cameron almost makes me start crying.

**Cameron:** The previous generations actually were able to maintain mechanical watchmaking and kind of promote the art form behind it, rather than just focusing on "well, it keeps time." Because if you just focus on the time aspect, a quartz watch is far superior. It keeps better time and it costs a lot less money. But a mechanical watch would be like the actual painting, whereas the quartz watch would be the poster print.

The poster print is going to be very accurate: colors won't fade, it'll be really nice and perfect, just like the last one. But the actual painting on canvas, that one is going to be unique. It's a real work of art. The artist may have had a slightly different brush stroke, or... So, that one has more of an artistic appeal, almost like each one is unique.

**Alie:** Right! This is making me want to cry! That was such a wonderful way of putting it. That makes every mechanical watch seem so much more emotional. Do you know what I mean? When you consider that there's a person behind it working on this who's gone through all this schooling, squinting, looking at these tiny cogs. That's pretty nuts! How do you even deal with those tiny tools?

**Cameron:** It's a lot of repetition and training. Learning to look at things in a certain way, being able to see perfection is really important. And when you go to school, you actually spend about the first six months just learning how to see if your work is perfect or not. And by perfect, I mean down to 20x magnification. Learning to see any imperfection and then actually act on correcting it is a big part of learning how to work with everything, even just making sure your tools are perfect. That's the base for good watchmaking.

**Alie:** Is that part of your personality? Are you a perfectionist? Is your house, like, immaculate, are your tax returns sparkling?

**Cameron:** It does kind of become ingrained in everything you do. However, I do also enjoy working on cars. And the reason I like that is because if something doesn't fit you can bang it with a hammer. [*Alie laughs*]

If something's not exactly perfect it doesn't matter so much. So, there's other parts of my life where I kind of relax a little bit and don't focus so much on the tiny little details that I focus on with watches.

**Alie:** Yeah, I'm sure cars just seem like these big crazy... like working on a dinosaur, like doing surgery on a huge animal. That's gotta be so different.

**Cameron:** Yeah, and all the parts are greasy and dirty, and watchmaking is much cleaner.

**Alie:** When you decided to form your own company, Weiss, what did you want to do differently?

**Cameron:** I truly believe that mechanical watches are very important because we don't need clocks or watches, we have that everywhere. The time-telling part is not my main interest. The art behind it is so beautiful, and the amount of work that goes into it is recognized. For me, I wanted to take that and expose more people to it.

I think there's a lot of people who don't even really know about mechanical watches. They may have heard it, but they don't understand it. I'll show my watch to people and I'll tell them it's mechanical and then they'll see the movement and they'll still ask me "where's the battery?"

**Alie:** *[laughs]* Right! I think a lot of people are like, "of course a watch is mechanical," and you're like, "no, there's actually taxonomic things, like if it's a quartz watch, there's a battery, and if it's a mechanical watch it's all based on springs and tension and there's far more parts and more complexity to it."

**Cameron:** Yeah.

**Alie:** I feel like you're the Jack White of horology. There's something about mechanical watches that's very akin to like, "I appreciate hearing music on wax cylinders and vinyl," you know what I mean?

**Cameron:** Very much so. Winding your watch every morning, it becomes this ritual. And because my watches have a display back, I always wind mine looking at the movement.

**Aside:** A display back is where, if you flip over a mechanical watch, you can see the guts tick-tocking and working and clickety-clocteking and doing all of their horological magic. Now, I thought these were just glass backs, but I looked and, no, oftentimes in really good watches - including Cameron's - they're not glass. They're made of polished sapphire crystal, which is *[quietly hollering]* hard as hell.

**Cameron:** I watch all the wheels turn, and it's maybe 30 seconds, but I do it every morning. Then when I look at my watch I know that I've wound it and set it and it's almost this connection you have. Like if you had an animal and you feed it in the morning, you're feeding your watch every morning.

**Alie:** Oh that's an interesting way of looking at it! It's like kind of a 30-second mechanical meditation. And I love that your watches have that display back, it's kind of like a

*Sleeping Beauty* glass coffin where you can see inside. Was that one of the first things that when you were like, “when I have a watch company, it’s going to be display backs all the way”?

**Cameron:** Definitely. Because, like I said, I want to I want to show mechanical watchmaking to a lot more people, especially here in the U.S. where we used to make a lot of watches, it used to be a major industry here. There used to be a lot of watchmakers around the early 1900s, it was a massive industry. And you would actually meet watchmakers, but now I’m the only watch maker that people meet usually. They’re like, “oh, I’ve never met a watchmaker. This is amazing! What does that mean? What do you do? How did you become a watchmaker?” It’s always interesting to talk to people.

**Alie:** Did you listen to every drop of *S-Town*, that podcast about a horologist?

**Cameron:** No, I did not.

**Alie:** Did you listen to any of it?

**Cameron:** I have not yet.

**Alie:** [*comically accusatory*] CAMERON!

**Aside:** Just gonna bounce in here with a quick email update. I figured, okay, we recorded this a few months ago; he probably listened to it, so I’ll get his reaction. I emailed the company, and got this back: “Cameron still hasn’t listened to *S-Town*, but I would estimate he’s had about 70 people ask him thus far. Oops.”

**Alie:** I’m just saying, put it on your list. Do you listen to anything when you’re watchmaking or do you just need the sound of silence?

**Cameron:** Usually, silence. But sometimes if I have a lot to get done I’ll turn on some music and that helps me sit at the bench for a longer period of time.

**Alie:** What kind of jams?

**Aside:** We already know he’s not a huge fan of Jay-Z and Kanye.

**Alie:** Classical or just like, old Carly Simon?

**Cameron:** Sometimes when I polish I’ll listen to classical music, like if I’m at the polishing machine, but usually just a bunch of random mixes.

**Alie:** You’re just like, “Pandora...”

**Cameron:** Anything, yeah, exactly.

**Alie:** ... Play me some hot jams!"

**Cameron:** Yeah.

**Alie:** I have a bunch of questions that people want to ask you, so I'm going to fire them off. This is kind of like a speed round. I'm just going to lob a bunch of questions that people want me to ask you. Okay. Emily was like, "did you listen to *S-Town*?" Everyone wants to know if you listened to *S-Town*!

Elsbeth [phonetic] wants to know: What is your absolute favorite time piece you've ever worked on? The rarest or your favorite that you've ever worked on?

**Cameron:** The rarest that I've ever worked on was a Grande Complication from Audemars Piguet.

**Aside:** First off, 'Grande Complication' sounds like a Wes Anderson movie. Is this an expensive watch? [*high-pitched yet unimpressed*] Eehhhhhh, it's not too bad. It retails for \$996,000 but the good news is that I think there's free shipping.

**Cameron:** They've utilized multiple complications in one watch: split second chronograph, perpetual calendar, minute repeater. And a lot of people, this won't mean anything to them...

**Alie:** I don't know what any of those mean. Now a complication, is that when there's a dial within the dial?

**Cameron:** Well, there will be extra sub-dials because the more complex the watch is, the more it needs to tell you. The minute repeater, though, is what I like the most about it.

**Alie:** What is that?

**Cameron:** The minute repeater is... it's a chiming watch, so you actually pull a slide and then it will sound off the time. Kind of like a grandfather clock, it will actually repeat the time to you on demand, down to the minute.

**Alie:** How does it do that?

**Cameron:** It's all mechanical.

**Alie:** So it's a musical instrument also?

**Cameron:** Exactly.

**Alie:** How big was this thing?

**Cameron:** It certainly doesn't seem that big, it's still smaller than a pocket watch.

**Alie:** [*drawn out*] Thaaaaat's craaaazy! So you got to work on that?

**Cameron:** Yeah.

**Alie:** Were you so nervous?

**Cameron:** Yeah! *[laughs]*

**Alie:** How did you prep for it?

**Cameron:** Well, there wasn't any prepping for me, it was just a simple little fix on it.

**Alie:** I'm physically nauseous just thinking about it.

**Cameron:** That watch has fifteen hundred pieces.

**Alie:** *[exclaims exasperatedly]* Oh, god! And they're all about the size of a grain of rice?

**Cameron:** In that, because it's so complex, many of them are, like, an eighth the size of a grain of rice. Tiny.

**Alie:** *[mind-blown]* I can't even... I can't... I don't understand how... how... You're not... Your palms aren't just, like, so sweaty you can't even handle this stuff.

**Cameron:** Just move slow. Very slow. *[chuckles]*

**Alie:** Lena wants to know: If you're a horologist... I love this question a lot. Do you feel like a total sell out if you want to buy a Fitbit or a smartwatch?

**Cameron:** I would feel pretty weird wearing that. *[Alie laughs]* It would be hard to tell people what I do all day if I had a Fitbit on my wrist. Not to say there's anything wrong with it, but... Maybe on the other wrist, and then a mechanical watch on one wrist with the Fitbit on the other?

**Alie:** Yeah, I feel like you'd have to get an ankle Fitbit or something. You know, hide that under your pants. Your wrist is good real estate! It better be reserved for a mechanical watch, maybe a medical alert bracelet, but I don't think you could just, like, slap a Livestrong band and a Fitbit on there. A few people asked this: Britt wants to know why some clocks click as seconds tick by but others are silent?

**Cameron:** They all make noise. All of them. The difference is how loud. It really just has to do with a couple of the components that actually knock into each other.

**Alie:** Oh, they knock into each other? On accident or on purpose?

**Cameron:** On purpose. There's five noises that the mechanical watch will make. And that's actually how we time the mechanical watch and make sure that it is keeping time accurately, because we know how many noises it should make in a set period of time based on the

frequency of that escapement – the balance wheel and hairspring. What we'll do is we actually lengthen and shorten the spring - that hairspring - in the watch.

**Alie:** Oh, got it! So that's how... if the watch is fast or slow it would have something to do probably with the hairspring?

**Cameron:** Yeah. It would likely have something to do with your hairspring or some of the oils that are on the on the parts associated with the escapement.

**Alie:** You have to wash your hands before you use it probably, right, or you get your grimy dirty hand oils?

**Cameron:** Yeah, definitely no touching the parts with your bare hands.

**Alie:** You just need tiny tweezers.

**Cameron:** Everything is only touched with tweezers and small other little prodding type devices to move things around. We never touch the components with our bare hands.

**Alie:** Yeah, I guess you don't want pepperoni smudges on that thing!

**Cameron:** Exactly! [*Alie laughs*] Cleanliness is very important when working with watches.

**Alie:** No one's eating lasagna at their desk?

**Cameron:** No definitely not! [*both laugh*]

**Alie:** Can you imagine, what a nightmare?!

**Cameron:** Yeah. I would not want to think about opening that watch up in 10 years and finding little bits of red sauce or something like that!

**Alie:** [*sounding tortured*] Oh, god no! [*Both laugh*]

Okay, last two questions: What is your least favorite thing about what you do, and then we'll end on a positive note, and you can tell me your favorite thing about what you do.

But what's your least favorite thing? What's the one thing that drives you crazy, or that you didn't expect to encounter when you got into this field, or questions that people ask you that are annoying?

**Cameron:** Everything about the making of watches I absolutely love. However, the business side sometimes, well, often gets in the way of that, and it kind of takes me away from why I got into this in the first place, which was to work on the watches. So, I'd say my most favorite thing is developing something new, and designing, and kind of prototyping,

testing something, making something that I haven't made before, that is very exciting to me.

**Alie:** Do you have a favorite moment that you've ever had doing what you do?

**Cameron:** More so, something I didn't expect that would be really exciting, is driving around and looking at the person next to us in the car and they're wearing a watch that I made! [*Alie quietly squeals*]

Something like that is really exciting, that just blows me away and it reminds me why I got into this, which was to expose more people to mechanical watches, and try and restore an industry, and just create this resurgence of watchmaking here in the U.S.

**Alie:** Do you ever roll down your window and you're like, "bro, that's my watch"?

**Cameron:** I haven't in the car, but when I see people in person I usually say, "I like your watch!" And then I'll show them mine, and I'll let them know that I made theirs.

**Alie:** Do they freak out?

**Cameron:** Yeah, usually. [*chuckles*]

**Alie:** I bet people want to hug you. I bet they're like, "good job, bro." Or they give you, like, that back pat, that man back pat that means "I respect you."

**Cameron:** And sometimes I won't even notice. I'll be at a restaurant or something and I'll hear someone say "Cameron? Cameron, is that you?" And you know, lo and behold, it's somebody that's got my watch and...

**Alie:** No way!

**Cameron:** ... they recognize me.

**Alie:** You're like, [*comically snobby voice*] "famous horologist over here. Thanks very much."

**Cameron:** Yeah! I never would have thought. [*both laugh*]

**Alie:** Where can people find you, number one what's the website for your company and also do you guys maintain a social media presence so people can gawk at your wares?

**Cameron:** Our website is WeissWatchCompany.com. We also have Facebook and Instagram. On Instagram and Facebook, we're oftentimes showing the workshop and how we make certain components, how we assemble something, new things we're working on, so for people who are really interested in watchmaking, they can get an inside look at how watches are made.



**Alie:** And if someone wants to be a horologist? Start young, maybe? No?

**Cameron:** You don't have to find it young if you're interested. For me, it just so happens that I found it young and it's a major passion of mine, so it's perfect for me.

**Aside:** If you happen to own a Weiss watch and you see Cameron around, you should definitely high five him. And, if you're wondering how much his watches cost, which, after writing up this episode I was like, [*quietly, out of the corner of her mouth*] "how much do these watches cost?" They're not that bad! They're mechanical watches, and they start at under \$1,000. Some of them go to \$7,000, but, in terms of other watches, they're not like, second-mortgage-level expensive watches. Really nice watches! I'm just gonna say. If you're a horologiphile... horolophile? Horophile?

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So I suppose it's [*extended for intentional pun*] tiiiime to wrap this up. Thank you guys for listening! Subscribe, rate, review, all those things. And thank you to everyone who is supporting on Patreon. You can support for as little as \$1 a month, 25 cents an episode, and that gets you access to behind-the-scenes pictures and you can also vote on questions for ologists first. If you feel like doing that, go to [Patreon.com/Ologies](https://Patreon.com/Ologies), and thank you everyone for making this possible by doing that. I heart you!

Don't be afraid to ask smart people stupid questions, before [*spookily*] the bell tolls for us all!! Next week? [*with hushed excitement*] BUGS! Entomology...

*Transcribed by your older sister's weird friend who spends more time talking to the family cat than you, Katlyn Catron, of Blacksburg VA.*

### **Links to things discussed:**

[History of standardized time](#)

[Audemars Grand Complication million dollar watch](#)

[Genius.com lyrics](#)

[History of timekeeping devices](#)

[Clock o' dial](#)

[DOES TIME EVEN EXIST?](#)

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