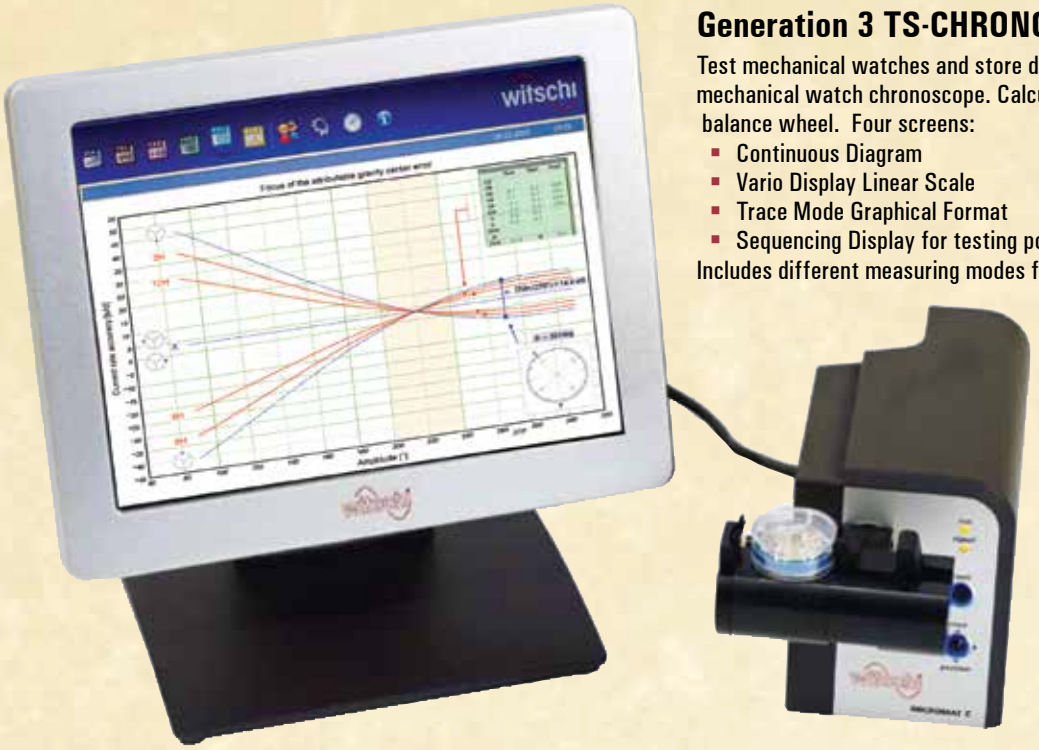

HOROLOGICAL TIMES™
April 2016
SETTING SERVICE STANDARDS AND EDUCATING THE HOROLOGICAL COMMUNITY
AWCI
AMERICAN WATCHMAKERS-
CLOCKMAKERS INSTITUTE

Witschi Chronoscope-X1 THIRD GENERATION model... now with a highly sensitive touch screen and faster firmware



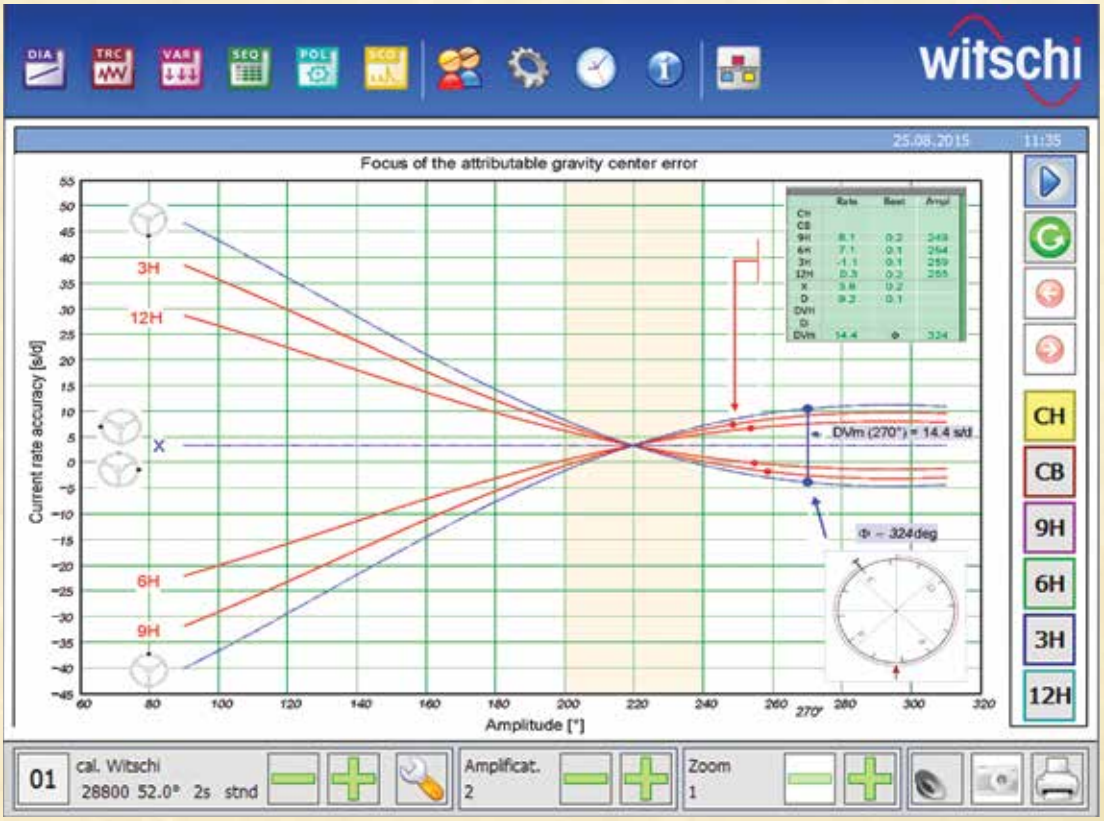
Generation 3 TS-CHRONOSCOPE-X1 $7,899.00

Test mechanical watches and store data using this six-position mechanical watch chronoscope. Calculate the gravity point of the balance wheel. Four screens:

- Continuous Diagram
- Vario Display Linear Scale
- Trace Mode Graphical Format
- Sequencing Display for testing positions results

Includes different measuring modes for different types of movements.

Poising Graph



- Faster firmware and a capacitive touch screen like smart phones allows you to work more efficiently
- New screen also has better color contrast

Jules Borel & Co.
1110 Grand Boulevard ■ Kansas City, Missouri 64106
Phone 800-776-6858 ■ Fax 800-776-6862 ■ julesborel.com

Official Publication of the American Watchmakers-Clockmakers Institute

EXECUTIVE & EDITORIAL OFFICES
American Watchmakers-Clockmakers Institute (AWCI)
701 Enterprise Drive
Harrison, OH 45030
866-FOR-AWCI (367-2924)
or 513-367-9800
Fax 513-367-1414
awci@awci.com • www.awci.com
www.facebook.com/MyAWCI

Jordan P. Ficklin, CW21
Executive Director
Ext. 310 jordan@awci.com

Donna Hardy
Managing Editor
Ext. 305 donna@awci.com

Kathy Ortt
Editor
kortt@awci.com

Janette Torres-Gomez
Graphic Designer &
Assistant Technical Support
Ext. 302 jgomez@awci.com

Tom Schomaker, CMW21
Watchmaking Instructor
Ext. 309 tschomaker@awci.com

Cindy Whitehead
Education & Certification Coordinator
Ext. 303 cindy@awci.com

Maureen Seals
Membership Coordinator &
Technical Support
Ext. 301 mseals@awci.com

HOROLOGICAL TIMES
ADVISORY COMMITTEE
Karel Ebenstreit, Chairman, CMW, CC21
Paul Corn
Andrew DeKeyser, CW21
David Fahrenholz
Bob Little, CC, CW
Robert D. Porter, CMW
Wesley Simmons

Reprinting and reproduction is prohibited without written permission from the American Watchmakers-Clockmakers Institute. Copyright ©2016 by the American Watchmakers-Clockmakers Institute.

Horological Times (ISSN0 145-9546) is published monthly and copyrighted by the American Watchmakers-Clockmakers Institute, 701 Enterprise Drive, Harrison, OH 45030-1696. Subscription price for the public is $175.00 per year ($15.00 per copy). Members subscription is $99.00 which is included with annual dues of $175.00. Periodicals postage paid at Harrison, OH 45030 and additional entries. POSTMASTER: Send address changes to *Horological Times*, 701 Enterprise Drive, Harrison, OH 45030

IN THIS issue

VOLUME 40, NUMBER 4, April 2016

Features

Workshop Photography
By Judd Wood
page 10

Horological Repair
Photojournalism
By Dale LaDue, CMW21
page 15

A Little Light
By Dale LaDue, CMW21
page 18

Smartphone Photography
Apps and Accessories
By Andrew DeKeyser, CW21
page 21

The American Spirit
Greg Stevens Design
By Aaron Recksiek, CW21
page 28

AWCI News

President's Message
By Fred T. White, CMW21
page 4

Executive Director's Message
By Jordan P. Ficklin, CW21
page 5

Editor's Forum
By Donna Hardy
page 6

Committee Volunteer Form
page 47

Affiliate Chapter News
page 50

Technical Discussions

How to Make
Tapered Pins *Easily*
By Robert D. Porter, CMW
page 26

Tips

Clock Tip: Storage Tubes
By Paul Corn
page 41

Workshop Tip: How to Make a Surface for Your Workbench
Bob Little, CW, CC
page 42

Industry News

Eterna Movement SA and AWCI Collaborate to Educate Watchmakers
page 36

SIHH Embraces the Independent Artisan Watchmaker
By Aaron Recksiek, CW21
page 37

Education & Certification

AWCI Educational Calendar
page 8

Columns

Watchmaking Excellence
CW21 Standards
page 32



Cover Image:

Photo by: Ken Nichols

Clockmaking Excellence
CC21 Standards
page 34

From the Workshop
By Jack Kurdzionak, CW21, FAWCI
page 44

AWCI's Governing Structure
page 46

Ask David Christianson,
CMW21, FBHI, FAWCI
page 48

Classifieds

Buy, Sell, Trade, and Employment Opportunities
page 55

Advertisers' Index
page 58

Industry Advisory Board Members
page 58

OUR VISION:

AWCI's vision is to have an educated and passionate horological community practicing the highest standards and with the resources to provide quality goods and services.

OUR MISSION:

Setting service standards and educating the horological community.

Like us on Facebook!
www.facebook.com/HorologicalTimes

Follow us on Twitter!
www.twitter.com/AWCInstitute

Follow us on Instagram!
www.instagram.com/americanwatchmakers

LIKE US ON FACEBOOK!
www.facebook.com/MyAWCI

a message from the president

FRED T. WHITE, CMW21



Fred T. White
fwhite@awci.com

We have just finished our midyear board meeting, and I want you, the members, to know that the Board of Directors is a hard-working group. Not only are they hard working, but they are trying to do what is best for AWCI. We had two very busy days, sometimes working through lunch, reviewing a report, hammering out a motion, or debating an issue. It is hard to put into words all the hard work these volunteers do, giving of their own money and time away from their benches to make AWCI work for you. It's not only the Board of Directors who are putting in many hours, but many committees are doing good work too. One example is the *Horological Times* Committee. They review every article that is published in HT. They review technical articles for accuracy of the technical information, and they review the articles that keep us abreast of the latest and greatest new thing on the horizon. First, the writer submits the article to the managing editor, and then it goes before the HT Committee, who discusses and decides if it is accurate and worthy to be published. The article then comes back to our editorial staff, who edits, fact-checks, does graphic work, and lays out the magazine. Then off to the presses. I recently visited the NAWCC Board of Directors, and they were very impressed with the quality of our product. I have shown it to people outside of our trade, and they ask, "You do this every month?" and the answer is yes, always. So, you see we have every reason to be proud of what we do. However, we do need more writers to join our ranks.

Education and certification is our main objective. We have a state-of-the art classroom, which is home base to one of the most talented teachers I have ever known, Tom Schomaker, CMW21. We are keeping an average of eight students in every class, which is small enough to give students one-on-one time with the instructor. If you are truly interested in an excellent education or you want to hone your skills as a craftsperson, then AWCI is where you want to be. Whether you take classes for certification or you want to give your best to your clients, AWCI's classes can help you. I have never sat in one of Tom's classes without coming away with an idea or point of view that helps me at the bench. IT IS WHAT YOU LEARN AFTER YOU KNOW IT ALL THAT COUNTS.

One of the most common types of certification in modern society is professional certification, where a person is certified as being able to complete a job or task, usually by passing an examination and/or the completion of a program of study. The certification team held their annual review of the certification process. It was three very busy days of meetings covering all aspects of the certification process, involving some 14 people who are part of the certification team, either as administrators, assessors, or preparing the watches. To make it easier to take the exam, we have broken it into modules. For instance, you can take the 7750 component of the exam or the quartz component only, or any other part you wish. Or you can take the entire exam at one time. Certification should be something we all strive for—just as CPAs sit for their board to show they are the best at keeping us straight as to accounting and tax laws. Certification is a banner we can wear that says we are among the very best horologists in the world. Are you wearing that banner?

a message from the executive director

JORDAN P. FICKLIN, CW21



We just wrapped up an exciting week at AWCI!

For three days a team of very dedicated individuals reviewed our certification program at our second annual Clarity Conference. This fall there will be some exciting changes to the way the exam is administered. Most importantly, the exam will be administered in a modular format, meaning you can take each component individually if you would like, or all of them together at a single time. Along with the modular administration of the exam, there will be a series of endorsements that allow for multiple pathways to become a CW21 and that create a clear path from CW21 to CMW21. Stay tuned for more details as the certification task force wraps up its work and publishes the details of the new pathways.

Following the Clarity Conference, the Board of Directors met for the midyear meeting. Your Board of Directors worked as efficiently as I have ever seen, and there are exciting things happening within the organization. Among the activities and programs the board decided to pursue are:

- Webinars! AWCI will be presenting a series of three free webinars this summer focused on the topics of:
  - Customer Reception: Take-In Procedures
  - Workshop Security
  - Quality Control & Returning Repairs to Customers

We hope you will attend the webinars. Please encourage the customer-service specialists and sales staff in your store, or at the stores for which you do work, to attend as well. We know it will help improve workflow and customer satisfaction.

- Austin Maker Faire
  - AWCI will be supporting the Capital Area Watchmakers Clockmakers Guild at the Austin Maker Faire in their efforts to attract more individuals to their local chapter meetings and to encourage young people to enter the profession.
- Marketing
  - AWCI will be investigating ways to promote our members on a national level by marketing the membership directory and pursuing a trademark on the term AWCI Certified.
- Magazine Subscription
  - AWCI will be making our magazine, *Horological Times*, available to nonmembers for an annual subscription of $99 per year.
- JCK Meet & Greet
  - AWCI will be at the JCK show in Las Vegas again this year. If you will be in Las Vegas for the JCK show, or if you live in the Las Vegas area, we are inviting you to meet up with fellow watchmakers and clockmakers over dinner on Saturday, June 4, 2016. Location to be determined. RSVP by emailing jck@awci.com or go to Bergeon Booth (B68070)—Essentials & Technology during the show.
- A new program to support the REC schools
  - AWCI is making available a limited quantity of ETA 7750 movements to be loaned to REC schools for training the next generation of watchmakers.

I can't emphasize enough how hard the Board of Directors worked at the midyear meeting. These volunteers have taken valuable time away from their workshops to make this organization and this profession better for each of you. Please reach out to them and thank them for their service! A simple email to awciboard@awci.com or to each board member individually at the emails listed on page 58 would mean a lot. Volunteering to serve on a committee to help them accomplish the work they have agreed to do would mean even more. You are AWCI!



Photography in the Workshop

A camera—whether it is a cellphone, a point-and-shoot, or a digital single-lens reflex—is indispensable to watchmakers and clockmakers today. In this issue of HT we have several articles to help you utilize your camera, no matter what kind it is. On page 10, you'll learn several tips for photographing in your workshop. On page 21, you'll find tips for using apps and add-ons to your smartphone. On pages 15 and 18, you'll find advice on combining your photos with words to explain a repair project, along with some tips on lighting.

Sit on Your Hands: Horology Q&A

We received this answer to the "Sit on Your Hands" question too late for publication in March HT. See March HT, 2016, page 43, for the question and accompanying photos.

The oscillating weight axles.

The first picture clearly demonstrates an aftermarket part made with no respect to original design and quality intent. Also, the heat treatment looks questionable, judging by the cut.

The second picture indicates the same as first, plus the shoulders of the lower pivot of the axle are not cut square and are not polished.

The third picture, in addition to the previous two, demonstrates the difference in the width of the groove for the gib. The inside corners of the quality axle are rounded on purpose, and also polished. Bad "brother" has no polish on shoulders where it should be in contact with lower jewel, and it's the same with part of the axle contacting the upper jewel.

The last picture indicates lack of correct surface preparation and disregard of product-specific standards. This part most likely will not serve as it should.

Unfortunately, the aftermarket part was not made specifically to start a discussion, but was probably just simply purchased from one of the "suppliers." Watchmakers need to avoid temptation to work with parts like this, and stay away from this type of inexpensive manufacturers.

With respect,
Alan Chernomashentsev

~

Dear AWCI,

After reading the editorial from Ambrose Denvir in the March 2016 issue (page 26), as a former Rolex employee, I painfully must agree with him. I know no one that can get genuine parts. Hence the need to use generic parts that actually work, even though aesthetically they are not as clean and shiny as the genuine product. It seems there is control and monopoly on the parts industry.

Thank you,
Richard Mazza

Grateful for AWCI

Hello AWCI,

This month's issue of the *Horological Times* compelled me to finally submit a letter.

I am an amateur watch "repairer." Never would I claim to be a watchmaker, nor do I provide service professionally—only friends and pro bono on non-running watches of sentimental value and low cost.

The willingness of *Horological Times* to print combative or conflicting letters shows a quality of journalism that earns respect. It is what compelled me to write. It's rare to see this anywhere. And the technical articles have educated and enhanced my skillsets. These have allowed me to do repairs I never would have considered.

Writers for *Horological Times* can earn between $300 and $875 or more per article. It depends on the length of the article (25 cents per word). Earn a 10% bonus for submitting assigned articles early or on time. If you'd like to write for *Horological Times*, email editor@awci.com for guidelines.

Like us on Facebook! www.facebook.com/HorologicalTimes
Follow us on Twitter! www.twitter.com/AWCInstitute
Follow us on Instagram! www.instagram.com/AmericanWatchmakers

A few years ago someone found me through AWCI. His grandfather's pocket watch did not run, and he wanted to get it repaired and give it to his grandson. He also desperately wanted to see the cover off. He went to two watchmakers who could not remove the cover. The third would, but it would cost him $500. However, he would lubricate it. This man found me through AWCI. I opened the case for free. Likewise, I explained I was an amateur and not a watchmaker. Despite this he asked me to repair his watch, and I agreed. I bought similar parts on, yes, eBay and practiced a balance staff replacement. I cleaned and lubricated the watch, and replaced the balance shaft and mainspring.

I've also made a pallet arbor for a Gruen, and retrofitted a new movement in a Gucci quartz.

No, I did not intend for this to be "me me." My point is I am becoming educated and confident, thanks to AWCI and this monthly publication. It is a genuine treasure.

For you bona fide watchmakers, it must take guts to disassemble a watch that's expensive, and it must be very frustrating to not be able to get parts. Just sacrificing that second cup of coffee for gaining better tactile skills was a hurdle for me.

But to you, watchmakers, your best testimonial, and you've probably heard it before—"If only I had known, I should have become a watchmaker."

~Albert Einstein

Respectfully,
Dean Pocius

A Comment on February's Cover

Hello Donna,

Has anybody mentioned that the hour hand on the TAG Heuer watch on the front cover of the *Horological Times* February 2016 is out of place, or is this just artistic license? The hour hand should not point to 50 (or 10 minutes to the hour) when the minute hand is at 7 past the hour. Surely the hour hand should be past the 50 point when the minute hand is at 7 minutes past the hour. Not wanting to be smart, but maybe the manufacturers would notice too?

Yours truly, in the interests of horology,
Charles Wm. Switzer



Hi Charles,

Thanks for your email. I think this is artistic license. We got the photo from TAG Heuer's "Press Corner" on their website. It's a web page where members of the media can download high-resolution images to print in their news stories. So I'm assuming it was probably Photoshopped to look that way. We did not manipulate the photo here at AWCI. If we had, we would have done it right!

Donna Hardy

Timing Machines

Dear AWCI,

I read with interest the article on timing machines by Dale Sutton in February 2016 HT. Although it was fairly interesting, I find most folks are using a Witschi timing machine with digital read-out. This would have made for better reading. I cannot think of anyone that uses the B200 anymore.

Thank you,
Richard Mazza

P.S. Thank you for the cleaner format of HT and good reading material.



Thank you for your comment. February HT, where "Timing Machines and How They Work" appeared, took a historical perspective on some horological topics. This article was meant in part to do that and also to explain why timing machines are needed and how they work.

Donna Hardy

Correction

In March 2016 HT we listed the name of one of the new CW21s incorrectly: Kenneth James Patterson should be Kenneth James Peterson.

educational calendar

Prices reflect member's discount! Contact us so we can help you find the best course suited to your skill level, expertise, and interests.

April 4-8	**WATCH 210:** Quartz & Quartz Chronograph Service Procedures & Diagnostics Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	Fundamentals of modern quartz watch repair and quartz chronographs including the various important electronics tests, e.g., current consumption, coil resistance, and lower working voltage.
April 11-15	**WATCH 420:** Vintage Chronograph Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	This five-day class covers in detail the features, adjustments, theory, and service procedures of 20th-century chronographs featuring one-piece cams, two-piece cams, and column wheels and includes technical instruction on the intricacies and unique features of early chronographs.
April 21-23	**Wisconsin Horological Society** Escapement Principles for Clockmakers & Watchmakers Instructor: Jerry Faier Osthoff Resort, Elkhart Lake, Wisconsin	**$65**	Review of the principles for properly adjusting any escapement (watch or clock) including: deadbeat escapement, recoil escapement, cylinder escapement, Brocot escapement, pin-lever, and Swiss-lever.
May 2-6	**WATCH 200:** Modern Automatic Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	Fundamentals of modern mechanical automatic watch repair including: cleaning, assembling, adjustments, dialing, and casing.
May 14-15	**Midwest Watch and Clockmakers Association** 90th Annual Conference Best Western Kelly Inn, St. Paul, Minnesota	**$90**	Jeffrey Keiffer, Susan Wood, Nick Pechman, CW21, and Josh Wilkes present on various topics for the clockmaker and watchmaker. www.mwca.us for more info.
May 16-20	**WATCH 240:** Servicing the Lever Escapement Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	This intense five-day course will help you refine your adjusting skills. The course covers all of the adjustments for the Swiss lever escapement, hairspring, and balance. Also covered is the ETAChron system.
June 13-17	**WATCH 100:** Introduction to Watch Repair Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	Course for the new or prospective watchmaker, covering the basic skills and techniques used by the modern watchmaker, including assembly/disassembly, lubrication, and basic adjustments.
June 27-**July** 1	**WATCH 290:** CW21 Preparatory Course Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,295**	Individuals who have taken courses at AWCI will benefit from this course. Specifically designed to help and identify areas that need improvement and provide students with individualized instruction to help them prepare for successful completion of the CW21 exam. Prerequisites: Three or more 200-level courses.
July 11-15	**WATCH 220:** Modern Mechanical Chronograph—ETA 7750 Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	This is the perfect course for anyone preparing the CW21 exam. It focuses on the service and adjustment of modern mechanical chronographs, such as the ETA-7750.
July 19-21	**WATCH 102:** Watchmaking Theory Instructor: Tom Schomaker, CMW21 Location: To Be Announced	**$595**	The fundamentals of how watches work with a special focus on practical application and developing strong troubleshooting skills through understanding the roles and interaction of various watch systems.

For additional details about specific courses in comprehensive syllabi form, including complete tool lists, visit: **http://www.awci.com/classes**. or contact Cindy Whitehead at 866-FOR-AWCI (367-2924), ext. 303.
For additional calendar events visit: **http://www.awci.com/calendar**.

August 1-5	**WATCH 475:** **Restoration & Construction Techniques** Instructor: Henrik Korpela AWCI Headquarters, Harrison, Ohio	**$1,095**	Techniques used in vintage restoration and construction of "kit" watches used by high-end manufacturers.
August 8-12	**WATCH 190:** **21st Century Watchmaking Standards** Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	Fundamentals of modern mechanical watch repair including cleanliness, lubrication, endshake adjustment, and may include the verification and analysis of escapement function.
August 22-26	**WATCH 210:** **Quartz & Quartz Chronograph Service Procedures & Diagnostics** Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	Fundamentals of modern quartz watch repair and quartz chronographs, including the various important electronics tests—e.g., current consumption, coil resistance, and lower working voltage.
September 12-16	**WATCH 240:** **Servicing the Lever Escapement** Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	This intense five-day course will help you refine your adjusting skills. The course covers all of the adjustments for the Swiss lever escapement, hairspring, and balance. Also covered is the ETAChron system.
September 26-27	**WATCH 475:** **High-End Horological Decoration and Finishing** Instructor: Henrik Korpela Eaglewood Resort & Spa, Itasca, IL	**$595**	Techniques used by high-end brands, including black polishing, straight graining, sablage, and other techniques as time permits.
September 28-October 2	**Annual Convention & Educational Symposium** Eaglewood Resort & Spa, Itasca, IL	**$649**	14 hours of continuing education, 3 days of networking, a vendor fair, and business meetings in the luxurious surroundings of the Eaglewood Resort & Spa located in the suburbs of Chicago. www.awci.com/symposium for more info
October 3-7	**WATCH 175:** **Case & Bracelet Refinishing** **(includes polishing kit)** Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,350**	Today's luxury watch consumer demands perfection. This course is perfect for the watchmaker or dedicated refinisher. It will help you achieve the different finishes on modern watch cases. Also covered is disassembly and assembly of common watch cases.
October 17-21	**WATCH 230:** **Balance Staffing & Timing** Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,095**	Topics covered will include the verification and analysis of the escapement function, poising (static and dynamic), truing, and timing adjustment in a mechanical watch, cutting out a balance staff on a lathe, and adjusting the balance staff, and removing the balance staff from glucydur balances with the horia tool.
November 14-18	**WATCH 430:** **Hairspring Vibrating** Instructor: Tom Schomaker, CMW21 AWCI Headquarters, Harrison, Ohio	**$1,295**	Fundamentals of hairsprings including: the classical art of vibrating hairsprings, manipulating and correcting errors, and forming new hairsprings from raw materials.

CW21 Exams

October 10-14
$2,495
AWCI Headquarters
Harrison, Ohio

October 31 - November 4
$2,495
OSUIT
Okmulgee, Oklahoma

Workshop Photography

By Judd Wood

Watchmaking is a precise art. With tolerances of hundredths or sometimes thousandths of a millimeter, it's nearly impossible to adequately explain to the average person–or client–what seems to us as normal occurrences or issues. When words fail to properly convey an idea, at times it's helpful to be able to turn to something more visual. Sometimes a sketch on a notepad or an analogy to something more common can suffice, but a good photograph is probably the best assistant when it comes to showing exactly what we hope to describe. Whether one wants to show off an exceptional piece that comes across the bench, or be able to show a client details from damage or restoration, it's helpful to know how to capture what you want to show. Workshop photography needs to be instructive and pointed, but not at the expense of productivity; being able to get the point across with a minimum amount of disruption and cost is the goal.

The Subject/Intent

Hopefully, if one is taking the time to photograph something, there's an intent behind it. In a workshop setting, it could be to show off a watch in its entirety, to highlight the condition of a specific aspect of a watch or movement, or to give a close-up, detailed shot. It's worth a bit of forethought about what you want the picture to show in order to know how to approach it. For example, if your intent is to show the effects of an impact on a case, you'll want to make sure that the most prominent part of the image is that dent, shifted dial, or broken pivot.

Light

Light is absolutely necessary for a picture to be taken, but it's the quality and quantity of the light that make the difference in how effective a picture is at getting its point across. For quantity of light, it is important to have abundant light, particularly when shooting at close distances and/or with a smaller-sensor camera such as a cell phone or compact camera. When light levels drop, most compact cameras will automatically increase their sensitivity (ISO) to compensate for the lack of light and brighten the exposure. The drawback of this is that as ISO increases, so does noise, usually most visible as speckling and shifts in color. Anyone who has taken a cell phone picture in low light should be quite familiar with these degrading effects on photo quality.

Quality of light is difficult to describe, but its effects are usually easy to see. Using harsh, direct lighting generally yields pictures with more distracting elements rather than directive elements. Diffuse light provides a more even exposure.

Low-Cost, High-Result Setup

The quickest step toward better-looking photographs is to control the quality of light. Workshop environments usually don't have the greatest ambient light, but a very simple setup can make a huge difference at little cost. A single sheet of printer paper serves as a readily available light diffuser, turning harsh light into even, usable light. Cutting a circular hole in the paper the size of the camera lens minimizes the amount of

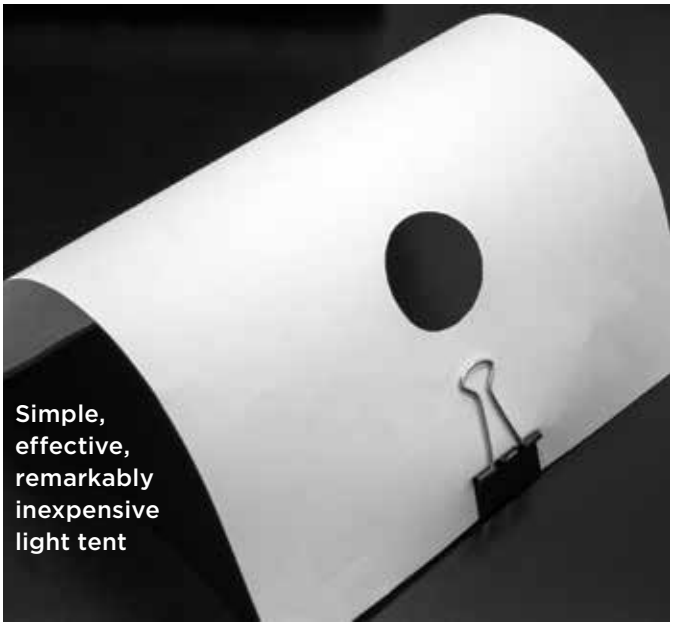


Same movement, different lighting: direct (left), diffuse (right)

reflection of your camera/lens on your subject, which is particularly important with polished cases or movement parts.

A clip-on macro lens (approximately $15 from Amazon or eBay) allows you to take high-quality close-up photos with your phone. Depth of field—the area of the picture that is in focus—is quite narrow using these lenses, so use care to ensure the intended subject is in focus.

For better all-around image quality, most inexpensive compact cameras have excellent close-focusing ability, and many today feature Wi-Fi connections that allow you to send pictures directly to your phone or computer. While no substitute for a dedicated macro setup, compact cameras are capable of delivering more than adequate results at low cost, not to mention the ease of an all-in-one package compared to a large and complicated interchangeable-lens camera setup.



Simple, effective, remarkably inexpensive light tent



Iphone 6S + clip-on macro lens







Examples of photos from iPhone 6s + clip-on macro lenses.



Quick Tips

- Try to highlight the subject of your picture; the eye is naturally drawn to the brightest spot in the frame.
- Do your best to eliminate distracting elements (tools or parts in the background, for example). Simplicity allows your subject to stand on its own . . . the picture should tell the story by itself.
- Hold steady: bracing the camera rather than holding it in the air will greatly reduce motion blur in your photos.
- Bring out the blower: double-check to ensure that no dust or debris is contaminating your subject, unless poor work itself is your subject.
- Practice, practice, practice! As with anything, a healthy balance of persistence and patience pays off.

Photography and Social Media

Social media sites and apps, particularly Facebook and Instagram, allow for nearly instant sharing of pictures of all kinds, and this can be used to the advantage of watchmakers and enthusiasts. Several Facebook groups are dedicated specifically to watchmaking, and an ever-growing number of watchmakers on Instagram are contributing their pictures and accompanying experience. Users are able to post pictures asking for feedback on how to approach a specific task, request spare-part reference numbers, or just show off something special or unique. From a business standpoint, watch enthusiasts and collectors also follow the social media accounts of watchmakers, and do occasionally approach them with requests for advice or services. Through social media, watchmakers have the opportunity to engage with and educate potential clients; take care to ensure that all posts are presented in a professional (though casual) and informative manner. In this way, everyone benefits from the interaction, with the entire watch community working toward better understanding and appreciation of watches and watchmaking.

Judd Wood is a lifelong watch enthusiast and WOSTEP-certified watchmaker. To see his photography on Instagram, visit www.instagram.com/escapewheel.

Some AWCI Members to Follow on Instagram

Below is a list of just a few AWCI members who can be found on Instagram. See what your colleagues are up to.

www.instagram.com/zimmermanwatchrepair
Drew Zimmerman
www.instagram.com/uhrmacher
Aaron Recksiek
www.instagram.com/nesbitswatchservice
Tom Nesbit
www.instagram.com/micromechanical
Andrew DeKeyser
www.instagram.com/horologicalsocietyofny
Horological Society of New York
www.instagram.com/Henrikkorpela
Henrik Korpela
www.instagram.com/ei8htohms
John Davis
www.instagram.com/Kroman_watchworks
Josh Kroman
www.instagram.com/manuelwatchmaker
Manuel Yazijian
www.instagram.com/cosylda
Ron Landberg
www.instagram.com/bostonwatchco
Dave Kurdzionak
www.instagram.com/Vanessa.cw21
Vanessa K. Contreras
www.instagram.com/timedoc
Wesley Grau
www.instagram.com/art_of_the_watch
Kelly Hunter
www.instagram.com/Americanwatchmakers
American Watchmakers-Clockmakers Institute

Instagram for horologists is not just about ogling beautiful timepieces. You can also see (and comment on) what other watchmakers and clockmakers are working on. Andrew DeKeyser shares a comparison between old and new clock pinions, Figure 1. Manuel Yazajian likes to educate his clients by showing poorly performed repairs, Figures 2, 3, and 4. This is another way to use Instagram as a marketing tool.

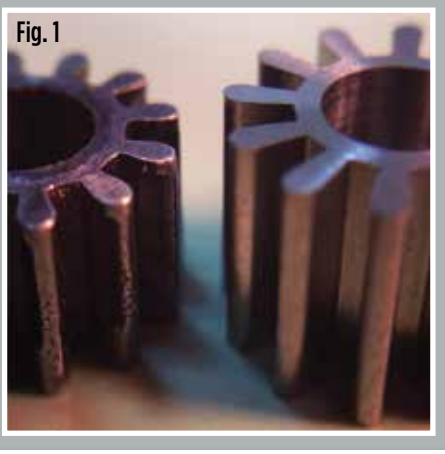

Fig. 1



Fig. 2



Fig. 3



Fig. 4

One Member's Top 10 Favorite Instagram Accounts*

Every day a quarter of the US population adds some 70 million images to Instagram accounts. There are probably a few million watches in that number, so where do you start? Here is a short list of accounts to get you started.

1. www.instagram.com/thehorophile
2. www.instagram.com/kicktoc
3. www.instagram.com/wornandwound
4. www.instagram.com/thewatchcollector
5. www.instagram.com/horologyandtechnology
6. www.instagram.com/watchesbysjx/
7. www.instagram.com/ABTW_David
8. www.instagram.com/watchuseek
9. www.instagram.com/atommoore/
10. www.instagram.com/watchfred

*Contributed by Ken Nichols, who photographed this month's cover.

Horological Repair Photojournalism

By Dale LaDue, CMW21

Imagine the watch and clockmaker's repair world without instructional pictures or drawings. All descriptions given in the written word to depict shapes, contours, dimensions, procedures, and techniques would be quite cumbersome, to say the least. Describing all of the dimensions of a simple set bridge in order to identify a replacement would be most bothersome. Consider how the "fingerprint" sections of the old Bestfit and other parts catalogs would "explain" a set bridge for movement identification.

To tell a story with words and photographs, whether human interest, nature/wildlife, or scientific/technical, is photojournalism. Whether you take photos at a wedding or capture travel photos on vacation, it can be rewarding to experiment with the challenges of this style of storytelling. I consider clockmakers and watchmakers who contribute horological repair stories with text and photos to *Horological Times* photojournalists. Creating a series of photographic images compels us to tell a story. Sometimes the series of photos can stand alone, conveying the steps within a repair project. But usually it needs words too. Simple annotation or a 1,000-word essay should be able to clarify details, answer any questions readers may have, and provide a full understanding of the project.

Images captured during a bench repair project are a natural progression from start to finish. In this age of digital photography, many images of the same subject can be taken and viewed immediately. The best images can be scrutinized in camera for perspective, focus, exposure, and composition. Thus, images can be deleted or saved for final editing on a computer.

An image list may be helpful in developing a story line of photos.

First Photo

Like the first few sentences in a newspaper article, the first image should draw in the viewer. For example, the Russian engraving inside the front cover of the silver-cased pocketwatch in Figure 1 piques a reader's interest.



Fig. 1

Scenario Photo

The scenario photo should set up and describe the scope of the repair project. For example, Figure 2 obviously displays certain facets of a repair project.



Detail Photo

This type of photo can show one or more elements of the project. The text can be much more engaging and meaningful with detail shots as shown in example Figures 3 and 4.





Close-up Photos

Similar to the detail shots, close-ups can isolate specific repairs as shown in Figures 5, 6, and 7.

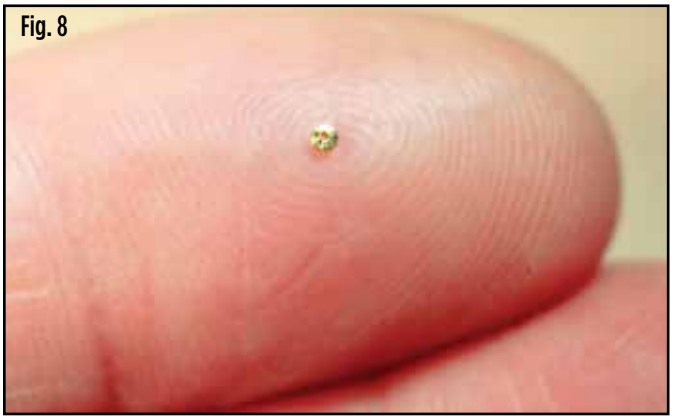






Comparative Photos

Typically, close-up images of miniature objects photographically compared to a familiar standard object such as a ruler's scale, coin, or even the epidermal ridges on a finger, Figure 8.


Fig. 8

The Defining Photo

The defining photo captures and sums up the key elements in your project, Figure 9.


Fig. 9

End Photo

The last image should leave the viewer with a sense of completion and inspiration, Figures 10 and 11.


Fig. 10


Fig. 11

In conclusion, you can see how a photographic history can be created through an appropriate series of descriptive images creating a compelling repair-project story!

Dale LaDue graduated from Gem City College School of Horology and The University of Illinois Micro Precision Technology Project with AWI Certification. He has served the Rochester, New York, area as an independent retail and trade watchmaker/clockmaker for 48 years.

A Little Light

By Dale LaDue, CMW21

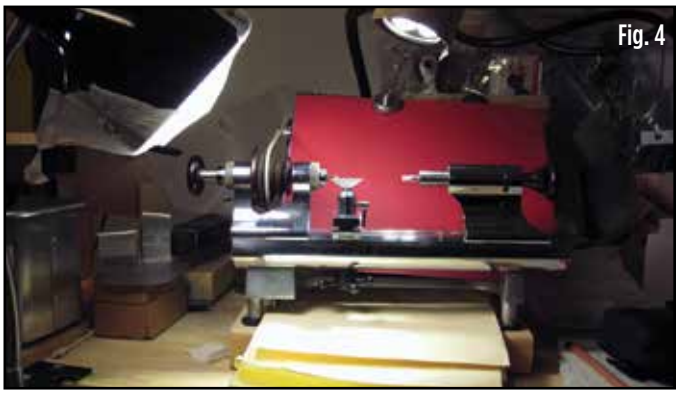
Photography is light. If you can control the lighting, modern digital cameras can white balance the color of light, set the correct exposure by selecting aperture and/or shutter speed, and auto focus for the photographer at the push of a button. These are all attributes we "bench mechanics" need to rely upon, especially during a repair in process. Profit is in the repair project at hand—not in the time spent creating and editing images. Professional photographers have deep and broad knowledge of their realm—just look at the superb photographs in the world of luxury watch advertising and catalogs. Those masters of lighting allow every detail to be viewed. As watchmakers and clockmakers, we may not have the same quality of equipment and skill as those professionals, but we can make the best images possible in the limited time we have with some knowledge of lighting and simple post-production in image-editing software.

Figure 1 shows an image of my simple two-light set up. My lathe LED work light (Dazor 7 LED Ecoflex lamp #LED-FA35 with various bases and lengths) is dimmable and situated above the lathe headstock. An auxiliary desk lamp is placed lower than the headstock. The closer view, Figure 2, demonstrates the highlighted (from above) work piece and the opened shadows lit from below. The lower lamp shown in Figure 3 contains a small, 50-watt LED floodlight with tissue paper over the front creating some diffusion. Any kind of material that is


Fig. 1


Fig. 2


Fig. 3


Fig. 4

very white and translucent can be used to modify the light. I happen to use Kimwipes* KIMTECH, Science* Brand—Delicate Task Wipers, distributed by Kimberly-Clark, www.kcprofessional.com.[1] The desk lamp can easily be swung away or positioned above the work piece, Figure 4. The closer your light source is to your subject, the more diffuse or broad the light is. Conversely, the farther away the light source is from the subject, the harder or narrower the light is. This stands to reason: Move a light closer and you make it bigger—that is, broader—in relation to your subject. Move it farther away and you make it relatively smaller, and, therefore, narrower. With a broad source, the light rays hit the subject from more directions, which tends to fill in shadows and give more even illumination.

For images larger than the camera's 4X digital magnification, I mounted a watchmaker's loupe lens (maybe 5 or 7 power) in an old lamp-switch housing, Figure 5. Hey, sometimes you have to think outside the proverbial box! This lens simply rests over the camera's extended lens housing, Figure 6.



Fig. 5



Fig. 6

My little Canon camera is showing some wear and tear, but I can still quickly produce some remarkable 4X images with simple lighting as shown in Figure 7. Merely holding the auxiliary lens over the prime lens increases the image to nearly double in size, Figure 8. I use the simple sliders to provide minor adjustments in the iPhoto editing software (iPhoto is an Apple product; you can use other photo-editing software). I moved the "Shadows" slider up to the maximum value of adjustment possible and also adjusted the "Highlights" and "Definition" sliders slightly, Figure 9. The hidden detail is exposed in this

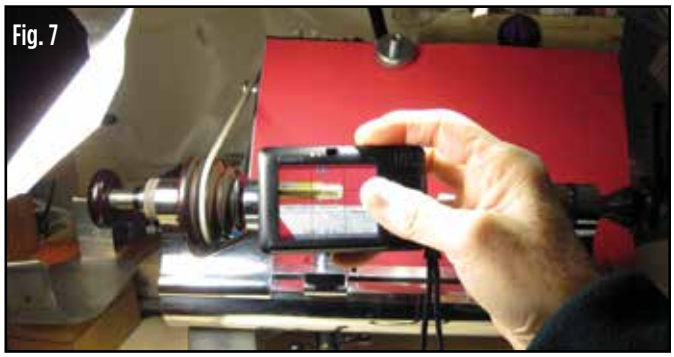

Fig. 7


Fig. 8

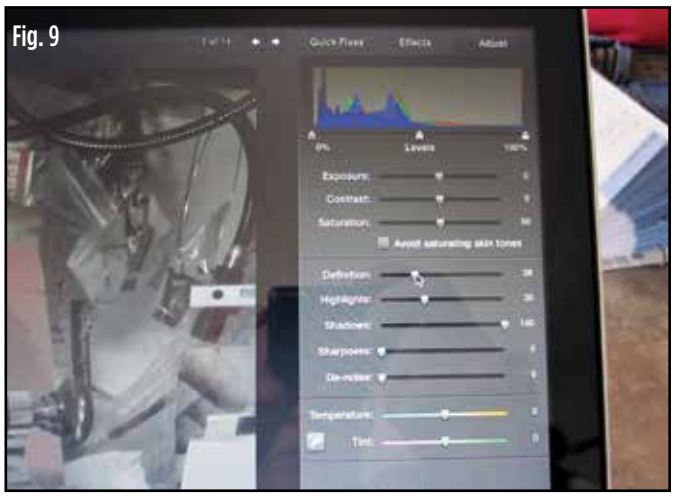


Fig. 9

1. **Note:** Although LED lights are cooler than other lights, they do give off heat. When turned on, the glass stays cool, and the base with the power supply in it warms up initially and gets progressively warmer. The glass bulb stays cool but the base (the Edison screw-in base and the silver-colored part above it) eventually warms it up. After five minutes, the case is too hot to hold onto, but the glass is still about room temperature.

extreme example, Figure 10. In my close-up photos for printing in magazines, I use these correction sliders with discretion. An editor or graphic designer may also use adjustments for their printing criteria. Another iPhoto tool is the "Straighten" slider that when clicked on provides a grid that guides horizontal and vertical positioning of the photo content, Figure11. This photo only needed a 3.1° correction shift that rendered a more aesthetic version, Figure 12.

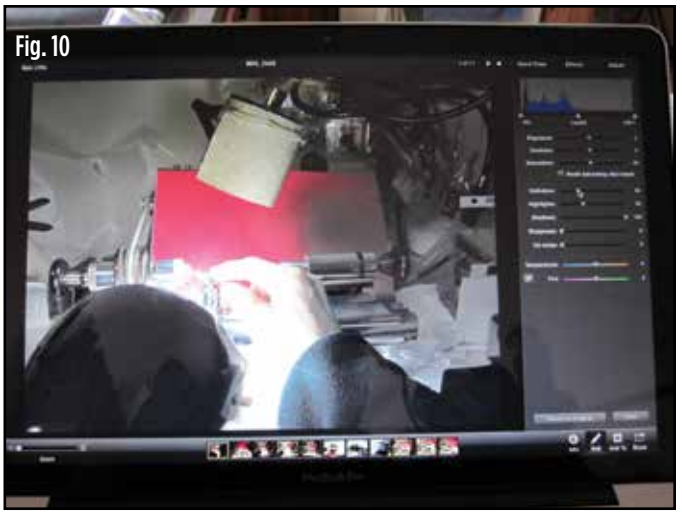
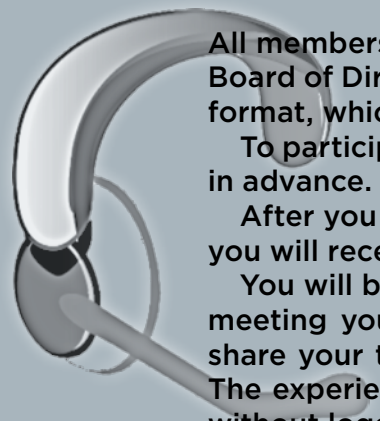

Fig. 10


Fig. 11


Fig. 12

Dale LaDue graduated from Gem City College School of Horology and The University of Illinois Micro Precision Technology Project with AWI Certification. He has served the Rochester, New York, area as an independent retail and trade watchmaker/clockmaker for 48 years.

AWCI Board Meetings Now Open to All Members!



All members are invited to participate in the monthly conference calls of the Board of Directors. The meeting will be streamed live using the GoToWebinar format, which will allow all interested AWCI members to participate.

To participate in the next meeting you will need to register at least 24 hours in advance. You will need to have your AWCI member number available.

After you register, we will verify your membership. The morning of the call you will receive an email with instructions to join the call.

You will be able to listen to the entire meeting. At certain times during the meeting your feedback may be requested, and you will be able to briefly share your thoughts by using the "raise your hand" button in the platform. The experience will be very limited for individuals who call in on the phone without logging in on their computer.

Smartphone Photography Apps and Accessories

By Andrew DeKeyser, CW21

In recent years, smartphones have become more prevalent, and the camera sensors they employ have become more advanced than most affordable point-and-shoot cameras. As a result, many watchmakers and clockmakers carry around an extremely useful tool in their pocket. This camera, paired with the proper hardware and software, can be used to document work and open the world of micromechanics to those who have never looked through a loupe.



Olloclip

Hardware

Macro photography is producing photographs of small items in larger-than-life size. The stock camera in a smartphone does not have the proper optics to capture a macro image well. By using the digital zoom built into most camera apps, which is not recommended, the image quality is greatly reduced. By using a macro lens, detail of the subject can be shown while utilizing every pixel on the camera's sensor. Several companies produce lenses for macro photography applications. Here are a few highly rated options:

Olloclip makes a macro lens kit with 7x, 14x, and 21x capabilities, effectively turning your phone into a low-power microscope. The lens kit comes with the three lenses and two hoods that collect and diffuse light and facilitate focusing. It is simple to install (as long as your phone does not have a case) and retails for $70.

The **ExoLens** system has a handy aluminum bracket system with minimal coverage design and incorporates two mounts so it can easily be used with a tripod or other holder. Currently they do not offer a macro lens, but in January at the Consumer Electronics Show in Las Vegas, the company announced they would be making macro lenses with Zeiss optics in the near future. Their current lens kits retail for $70-$150.



ExoLens

Moment makes a macro lens with fantastic clarity and an advertised 1" focal length. Increased focal length is always handy when framing a shot. This lens also comes with a light hood/diffuser and has a companion app that allows full control of the camera's settings. The mounting system is simple and can be used in conjunction with some phone cases. It is available directly from Moment for $100. Moment is also rumored to be in talks with Zeiss optics.

There are also universal holders available that allow you to use other optics such as microscopes. Carson makes a particularly versatile adapter for this application that retails for $50. It can be somewhat tricky to use with certain microscopes, depending on the eyepiece and eye relief designed into the microscope.



Moment

Software (Apps)

Capturing and editing the image on the phone requires specialized software or apps. The stock camera and photo apps are improving on today's smartphones, but certain apps are more useful and powerful than these included apps. Pricing for these apps fluctuates from time to time, but they are generally less than $10 each and can be found in the Apple App Store or Google Play Store.



Carson universal mount



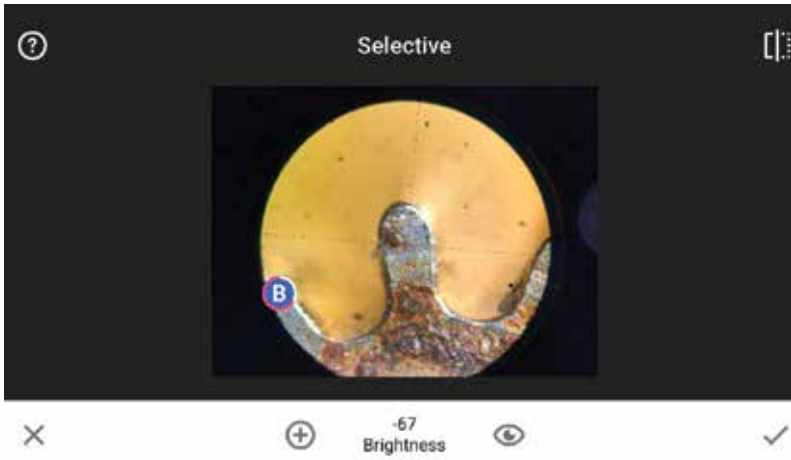
With Camera+ you can set your exposure separately from your focus point, allowing you to control how light or dark your shots are.

Camera+ is a favorably reviewed photo app that provides the capability to both capture and edit photos. The camera-user interface allows control of all of the camera's functions in a simple manner that is fairly unobtrusive. The adjustments and filters available in the app allow very fast and high-quality editing. The Clarity automatic adjustment usually does a very nice job of adjusting an image.

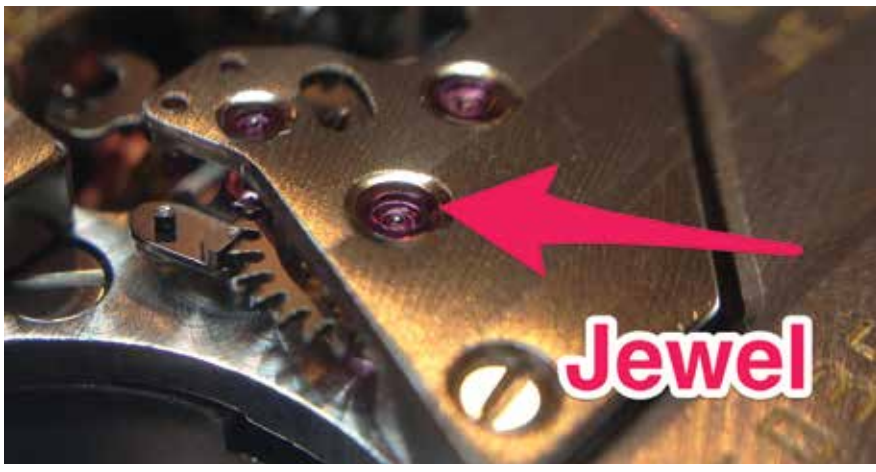
Skitch is a useful editing app that allows the images to be annotated and easily shared or saved in several different ways. This is useful when sharing an image of a complicated mechanism that needs a specific aspect to be highlighted, such as a broken jewel or worn pivot. Skitch's parent company, Evernote, stopped supporting Skitch on January 22 of this year, but it is still currently for sale on the Apple App Store.

Skitch allows you to annotate your photos.

Snapseed is another versatile photo-editing app that is easy to use. The user interface takes full advantage of the touch capabilities of today's smartphones. In the editing mode, swipe up or down to switch adjustments and swipe left or right to increase or decrease the level. It also has a selective editing feature that allows you to change the brightness, contrast, or saturation at certain adjustable points in the photo.



Selective brightness editing centered around the blue "B" in Snapseed.





Instagram's Hyperlapse

Instagram's **Hyperlapse** creates time-lapse videos that can showcase work performed over several minutes or several hours. This can be useful to impress upon customers the amount of work that goes into the service of their watch or clock. Although Hyperlapse utilizes an extremely simple user interface and image-stability technology to make transitions smoother, it is recommended to use a stationary tripod when capturing time-lapse videos. The time-lapse can be sped up to 12 times the original speed.

- All hardware can be purchased from the respective company's website.
- All apps can be found on the Apple App Store, Google Play, or Microsoft App Store.
- It is recommended to always use ample, diffused light and a tripod when using your smartphone to capture macro images.

Sources:
www.olloclip.com
www.exolens.com
www.momentlens.com
www.carson.com
www.iphonephotographyschool.com
www.macworld.com
www.evernote.com

Andrew DeKeyser is the owner of HCP Watchmaking in Sisters, Oregon. He graduated from the Lititz Watch Technicum with WOSTEP certification.

THE BEST IN WATCH TESTING TECHNOLOGY



Witschi Analyzer Twin for Quartz and Mechanicals
Offers all the functions of both the Watch Expert III and Quartz Analyzer Q1. Mirrored test platform, hi-res color display and mechanical microphone.

590.879 Analyzer Twin

Witschi Proofmaster S Leak Tester
A refined, user-friendly instrument for seal integrity testing with pressure and/or vacuum from -0.80 to +10 bar. Eight pre-programmed and ten freely programmable test cycles. Leak finder program for localization of watch leakages in water. Requires compressor with tank.

590.709 Proofmaster S



Panther Silent Compressor
Modified for 12 bar pressure required for 10 bar testing. 0.93 gallon tank, regulator with pressure gauge, 5 micron moisture filter and female quick coupler.

550.025 Panther Compressor

Please call for competitive quotation. SWISS MADE

Cas-KerCo. 1.800.487.0408 casker.com

IMPORTERS/DISTRIBUTORS - 2550 CIVIC CENTER DR PO BOX 31167 CINCINNATI OH 45231

VISA MasterCard DISCOVER



The Chronoscope X1 (G3) is synonymous with high-precision technology combined with modern design.

Superb materials and brilliant design combined with the latest technology – that is the Witschi philosophy. The new Chronoscope X1 (G3) offers even more. Namely taking pleasure in working professionally.

The best Chronoscope X1 (G3) ever is a fantastically finished device made of first-class materials.

witschi

Chronoscope X1 (G3)

Hightech for professionels

LEADING SWISS PRODUCTS

Witschi Electronic Ltd. | Switzerland | www.witschi.com

Distributed by:

Jules Borel & Co.
Phone 800-776-6858
www.julesborel.com

Borel

Cas-Ker Co.
Phone 1.800.487.0408
www.casker.com

Cas-KerCo. 1.800.487.0408 casker.com

HOW TO MAKE TAPERED PINS *EASILY*

By Robert D. Porter, CMW

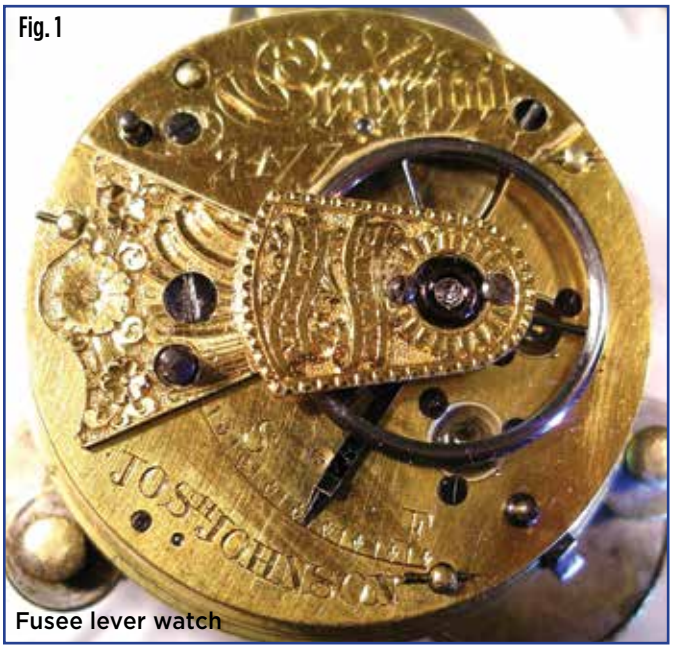
Many of us enjoy restoring very old watches, and we usually find that one or more of the tapered pins that hold various components together is missing. The pin for one of the dial feet was missing for this finely crafted Jos. H. Johnson fusee lever watch from Liverpool, England. Notice the combination of tapered pins and screws in Figure 1. We will make a replacement pin for the dial foot.

The best way I have found to make these custom-sized tapered pins is to use a set of three diamond files: 100 grit for roughing, then 400 grit, followed by 600 grit for finishing to the final size, Figure 2. For this job we'll use 1/16" (1.6mm) diameter hard brass rod from a hobby shop. Cut the stock about 2" (50mm) long to leave a handle for inserting the pin into the watch.

Take a "calibrated eyeball" look at the hole you want the tapered pin to fit. Then, chuck the brass rod in your lathe and use the 100-grit file to rough grind the taper to the approximate size you need, leaving enough stock to finish grinding to the final size and finish with the 400- and 600-grit files, Figures 3 through 7.

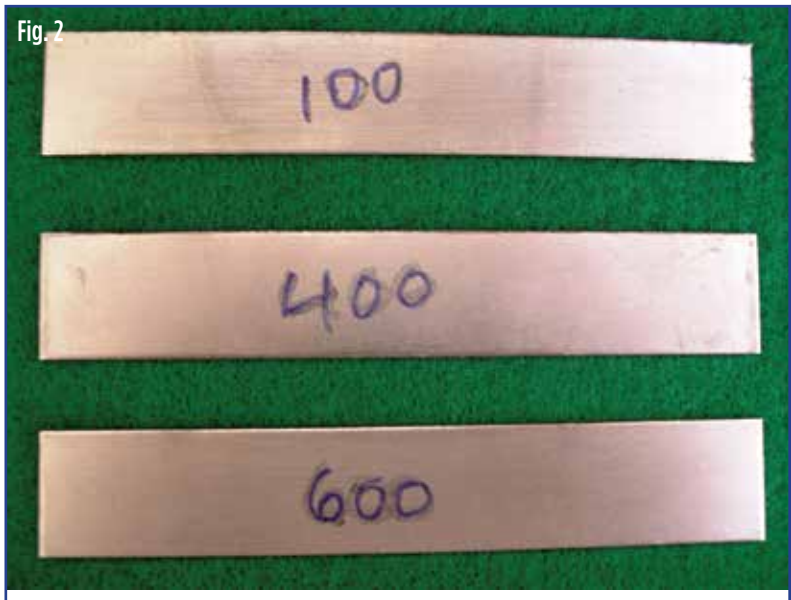
This method of making custom-sized tapered pins will allow us to easily make new pins for nearly any application, such as hairspring to collet and/or stud, regulator pins, and case-hinge pins. The same method can be used for making steel pins, but it takes a little longer.

Fig. 1

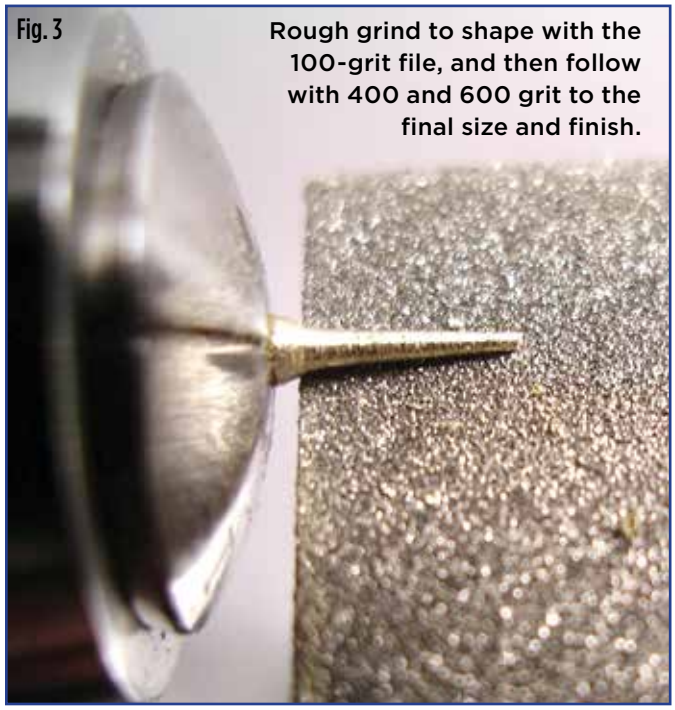


Fusee lever watch

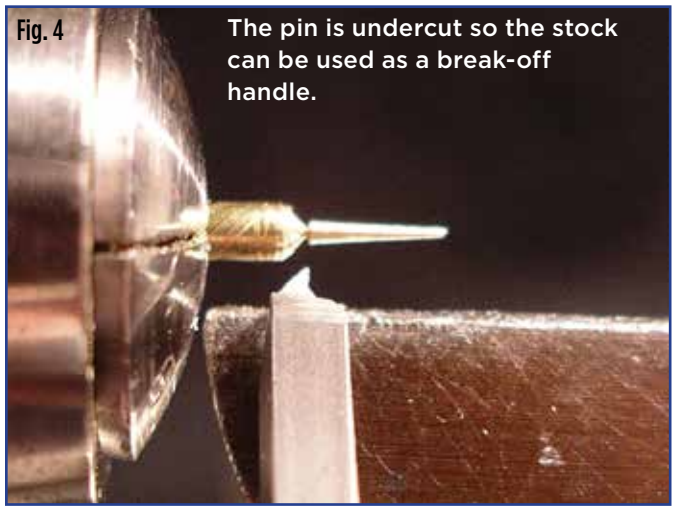
Fig. 2



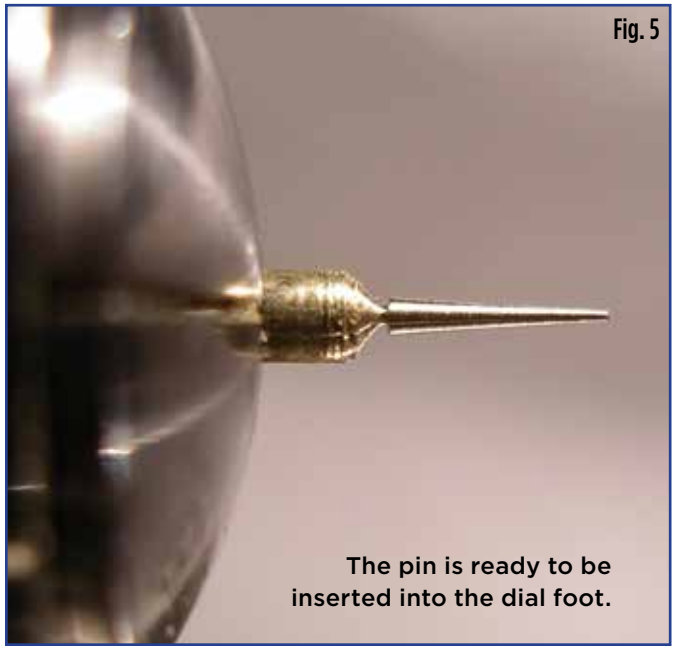
Set of three diamond files


Fig. 3

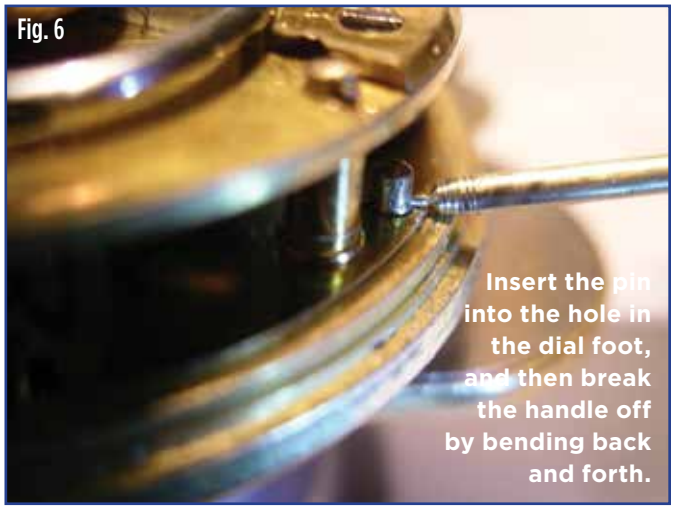
Rough grind to shape with the 100-grit file, and then follow with 400 and 600 grit to the final size and finish.


Fig. 4

The pin is undercut so the stock can be used as a break-off handle.


Fig. 5

The pin is ready to be inserted into the dial foot.


Fig. 6

Insert the pin into the hole in the dial foot, and then break the handle off by bending back and forth.


Fig. 7

The new pin is securely holding the dial in place.

My source for the set of diamond files used in this article is: Daniel Lopacki Co. www.lopacki.com.

My source for the brass rod: HobbyTown USA www.hobbytown.com.

The author is not affiliated with any of the brand names mentioned in this article, which are trademarks of their respective companies. *All rights reserved.*

Robert D. Porter is a semi-retired independent watchmaker who learned watchmaking through his father and the Chicago School of Watchmaking. He received his CMW certification from the Horological Institute of America.

THE Amer
Making Time

Greg Stevens Design



By Aaron Recksiek, CW21

The recession of 2009 was tough on many people around the world. Some lost their retirement accounts, their homes, or their jobs—and sometimes all three. It was also a very concerning time for the fine timepiece industry. Many small brands were closing their doors, and many large brands had substantial workforce layoffs. Amidst all the financial chaos, for some it was also a time of opportunity, to pursue a dream, including Greg Stevens of Greg Stevens Design.

Stevens made his first watch strap in 2005. He had been online constantly, perusing affordable watch enthusiast blogs and building a modest collection of personal watches. His need for a custom strap came about because he couldn't find a commercial strap that fit just right. After experimenting with different methods and improving the finished product, Stevens was finally comfortable enough to offer his straps for sale. He listed some straps for sale on the same watch blogs he had been following. He sold two the first night, and one of his first customers came back a week later to purchase two more. His side business took off from there. His initial intent was just to get some extra spending money to fund his watch collection. In just a few short months Stevens was able to purchase a favorite watch—a Panerai PAM

iCan Spirit

pieces Again

000. As he puts it, "The whole strap culture really started with Panerai." Many collectors wanted to customize the look of their watches, and there was a huge demand for a selection of straps that went beyond the traditional OEM offerings.

At the time, Stevens worked as a sales director for a large pest-control company in Utah. He is an outgoing person and enjoyed working with clients and his sales staff. In 2009, when finances with the company he worked for got tight, Stevens was laid off from his job. With a respectable workshop and client base already built, his wife told him he had six months to give the "leather thing" a go and that if they weren't making ends meet after six months, he'd have to go get a real job. Luckily for the watch community, Stevens worked hard and developed a product that has supported him ever since. That is what he is most proud of—the ability to do what he loves and support his family with a business he is passionate about.

There was a huge demand for a selection of straps that went beyond the traditional OEM offerings.

With many years of success, Stevens decided to apply his design skills in designing a watch that would showcase his strap to his specifications. The first model, GSD-1, was a stainless steel 46mm case watch with 24mm lugs, sapphire crystal, and a Swiss manual wind ETA 6497 movement. The watches were assembled in Hong Kong and fitted with a custom GSD strap in his workshop before being sent out to the customer. In the initial run, Stevens sold around 100 pieces. Last year, he decided to do another run of the GSD-1, this time with a Japanese automatic Miyota 9015 movement. He kept all the case dimensions the same but increased the water resistance to 30 atm, and moved the strap holes inside the lugs farther away from the case to accommodate the incredibly popular, thicker leather NATO straps.



An assortment of straps made by Greg Stevens Design.



Greg Stevens prepares one of his custom-made straps.

In the years since, Greg Stevens Design has expanded its offerings to many types of leather goods, including belts with buckles also made in the US. He also makes wallets, key fobs, and many other leather items. Straps continue to be his biggest seller, though, with sales over 1,000 per year. Stevens has also developed a relationship with Michael Kobold of Kobold Expedition Tools, and his straps have been featured on some of their models. He makes every possible effort to source leathers produced in the US by tanneries such as Horween, Wickett & Craig, and Hermann Oak Leather. The straps are priced from $175, and, being custom made, every strap is hand-finished and slightly unique, but they all follow Stevens's philosophy that "your strap should be every bit as nice as your watch."

He makes every possible effort to source leathers produced by tanneries in the US.

I have known Greg Stevens for several years. He grew up in Utah and has lived there most of his life. He has been married to his wife, Heather, for 25 years, and they have three teenagers. He enjoys the outdoors; his favorite thing to do is spend time surrounded by the red rock in the southern part of his home state. You can follow Greg on Instagram: @gregstevensdesign. His straps and leather goods are available for sale on his website at www.gregstevens.com.

Aaron Recksiek is an independent watchmaker in Salt Lake City, Utah. He was a graduate of the 2008 WOSTEP class at the Lititz Watch Technicum.



Free!!

WEBINARS

Essential Knowledge for the Retail Watch Repair Shop

MANAGE YOUR REPUTATION

AVOID COSTLY MISTAKES

Customer Reception: Take-In Procedures

- Wednesday, June 15, 2 p.m. EDT
- Thursday, June 16, 3 p.m. EDT

Essential tips and procedures that will help you make more money on repairs, make your watchmaker happy, impress your customer, and protect you from costly errors.





By Alvesgaspar (Own work) [CC BY-SA 4.0 (http://creativecommons.org/licenses/by-sa/4.0)], via Wikimedia Commons

Workshop Security: Keeping you, your employees, your customers, and their watches safe.

- Wednesday, June 22, 3 p.m. EDT
- Thursday, June 23, 2 p.m. EDT

It's a crazy world out there! These tips and procedures will help reduce the risks associated with the luxury goods industry, keeping you, your employees, your customers, and their treasures safe.

Quality Control: What to know before you return a watch to the customer.

- Wednesday, June 29, 3 p.m. EDT
- Thursday, June 30, 3 p.m. EDT

A few simple things you can do before returning a watch to the customer that will make their experience better and reduce the likelihood the watch will come back with problems.



INCREASE PROFITABILITY

Sponsored by Borel Cas-KerCo.

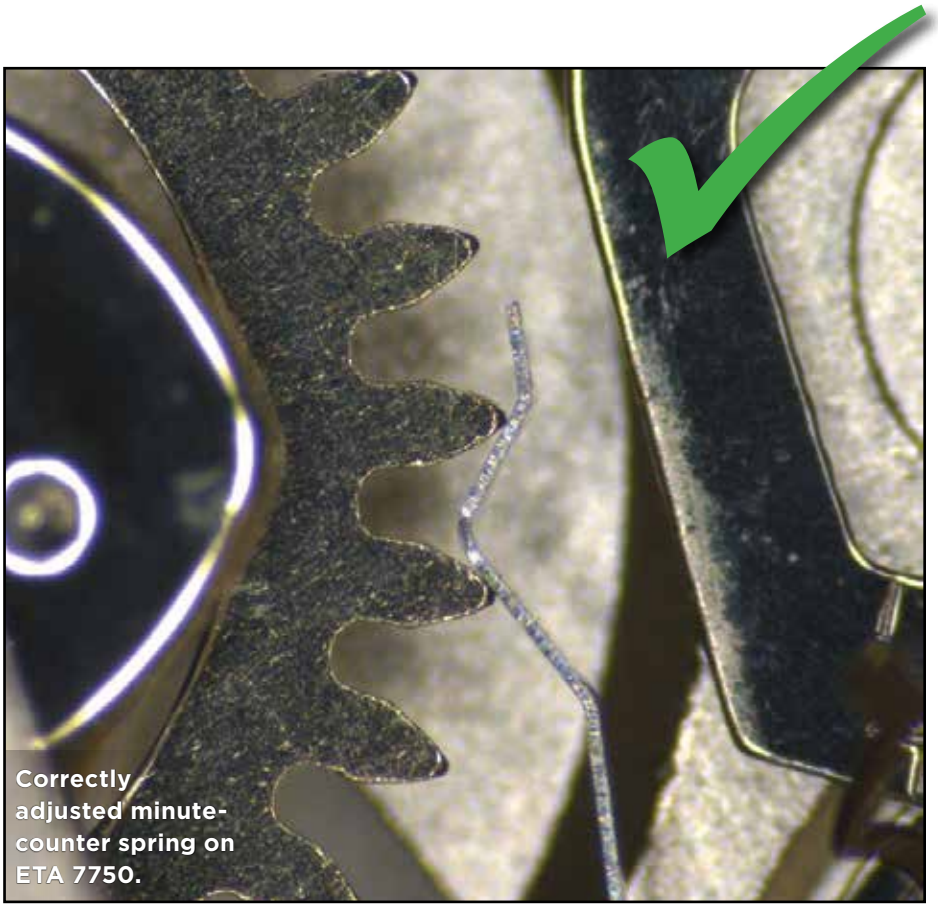
Register at
www.awci.com/webinars

www.awci.com/webinars

Watchmaking Excellence: CW21 Standards

MINUTE COUNTER JUMPER SPRINGS

In a chronograph with an instantaneous or semi-instantaneous minute counter, the minute counter wheel is independent of the other gear trains of the watch and only has tension during the short period when the minute-counter finger is advancing the minute-counter train. The role of the minute-counter jumper is to keep the minute-counter wheel stationary at all other times and to position the wheel so that the hand can align consistently with the markers on the dial.



Correctly adjusted minute-counter spring on ETA 7750.

The positioning of the jumper spring is usually adjustable with an eccentric post. The spring will position the wheel such that two teeth maintain contact with the spring when there is no tension. It is important that the wheel maintain the same position when the reset-to-zero hammer is in contact with the heart cam of the minute counter. The position of the spring should be adjusted when the hammer is against the cam. When the hammer lifts away from the heart cam, the wheel can shift slightly due to sideshake but should not rotate due to the tension of the jumper. The tension of the spring needs to be sufficient enough to prevent movement of the hand when the watch receives a shock, to limit its advance to a single tooth when it receives an impulse from the minute finger, but weak enough that it does not significantly impact amplitude during the advance of the counter.

In the ETA 7750, the base of the spring should be flat, flush to the edge of the chronograph bridge, and the eccentric post should be in the slot. Be sure to use the correct tool when adjusting the eccentric.

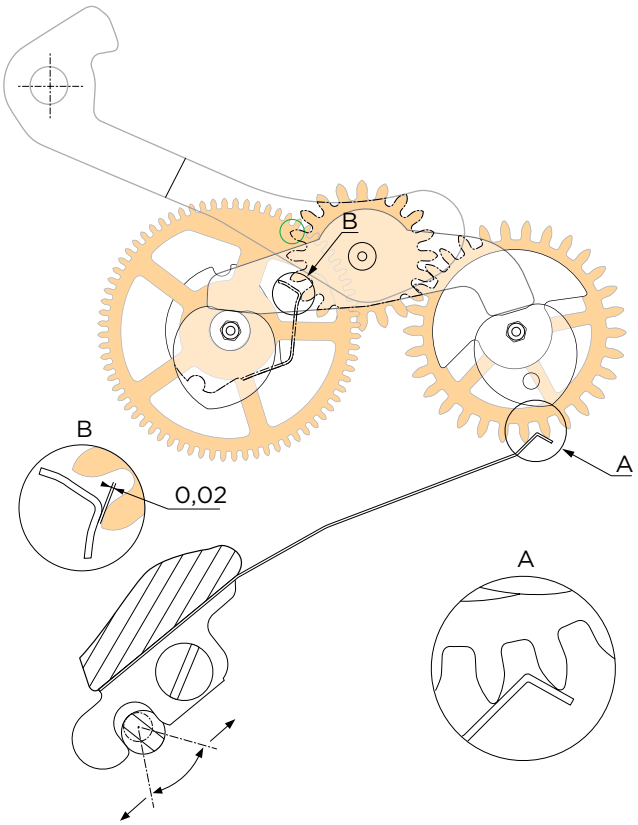
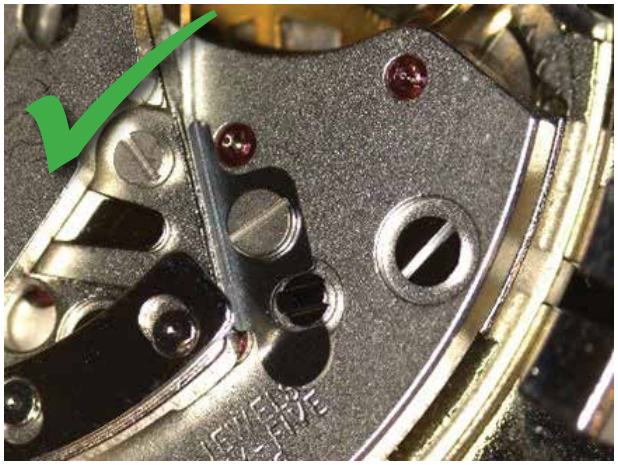
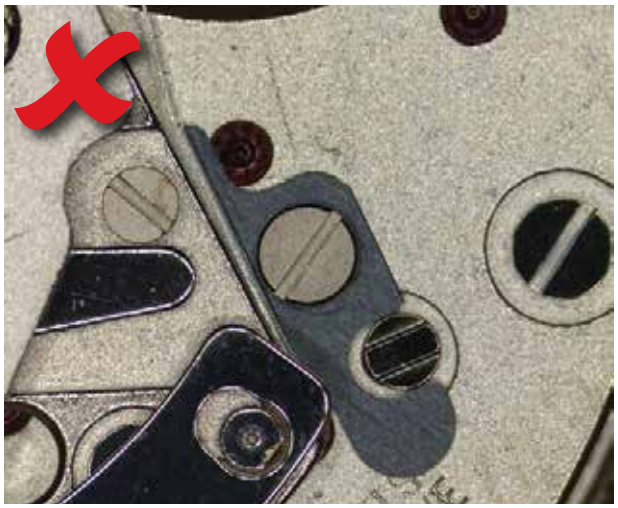


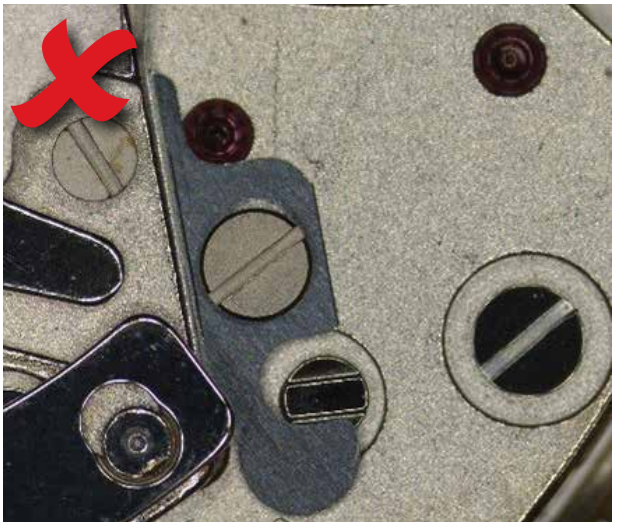
Illustration of ETA 7750.



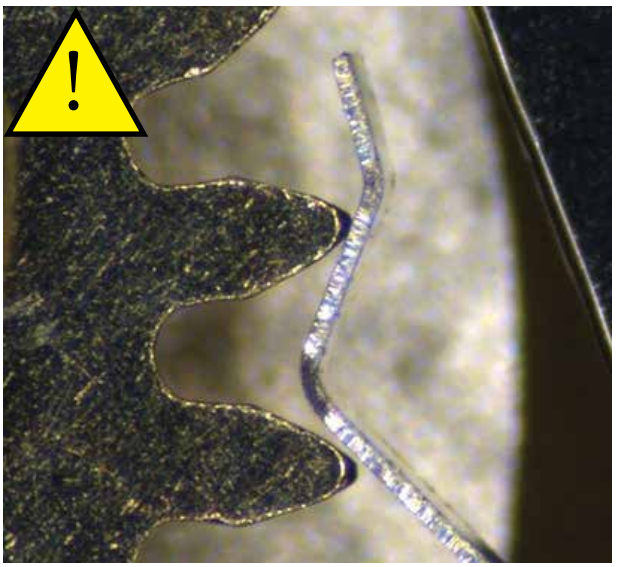
Jumper spring is flush against the adjacent chronograph bridge.



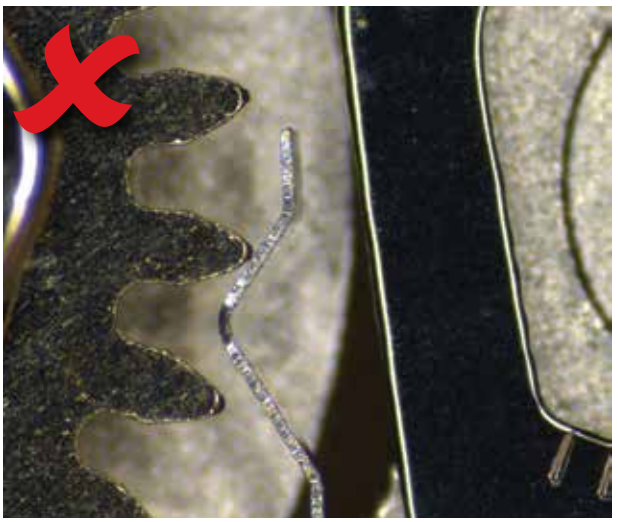
Jumper spring is not flush against chronograph bridge.



Jumper is on top of eccentric post.



A very small gap is acceptable, but not ideal, if no movement of the hand is visible when the hammer pulls away from the heart cam.



A large gap will allow the wheel to turn when the chronograph starts and the minute recording hand on the dial will not align with the marks.

Clockmaking Excellence:
CC21 Standards

CLOCK BUSHINGS

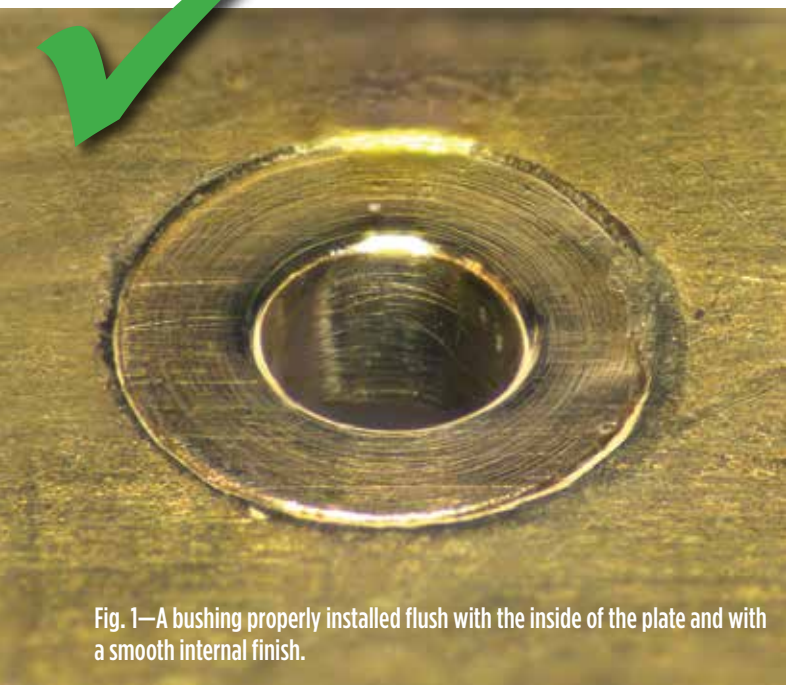


Fig. 1—A bushing properly installed flush with the inside of the plate and with a smooth internal finish.



Fig. 2— A bushing properly installed flush to the front of the plate.

An excellent bush is one that realigns the depthing of two wheels correctly. The wheel and the pinion pitch circles touch each other as close to their line of centers as possible. The excellent bush is always flush to the inside of the plate, Figure 1, and stands flush, Figure 2, or no more than 10% higher than the front of the plate, Figure 3. Any higher and the likelihood of the bush coming loose in preparation or usage increases markedly, Figure 4. Any lower than the plate and long-term support is compromised, Figure 5. Should the bushing need smoothing on the inside of the plate to bring it flush, the surface must be finished smooth. If it is sanded or filed, it will wick the oil from the shoulder and add drag to its motion, Figure 6. It is usually better to cut a bushing to size on the lathe rather than having to sand it down in place. The bush should have a bright, burnished hole whose edges are smoothly deburred on the back side of the plate and countersunk *slightly* on the front side, but only enough to allow for better oil retention and/or as close a match to other plate pivot holes, Figure 1.

A faceted pivot hole often results from a dull or worn cutting broach. Cutting broaches need to be reviewed regularly for wear and replaced as needed. These are not lifetime tools but simple cutting devices that wear with use. Smoothing broaches also need touch-up maintenance regularly. As their surfaces become uneven, scratched, or mottled, they must be re-treated (like burnishers—but round) to keep their working surfaces uniform for the best finish. Smoothing broaches, like their relatives the pivot burnishers, should be oiled when used with the same

oil types used to lubricate the movement. This reduces the potential for cross-contamination if any oil residue gets through the final cleanup processes.

Expecting a cut but unburnished hole to lap itself smooth is also incorrect. A newly cut hole should be cut and then smooth broached to the exact size needed. A hole cut to size but left unburnished will wear more quickly, as the particles from the ensuing lapping process add to the slurry and cut the new bearing more quickly out of size!

Pivot fit in its hole (*sideshake*) has several variables to consider as the new hole is sized. The general reference has been a 7° motion in any direction from straight up. This is more of a guideline rather than a hard-and-fast rule. Consider plate thickness, proximity to the main power source, solid- or lantern-pinion engagement, tooth quality, temperature, etc. If the teeth are stubby (or long and thin), extra sideshake can cause poor depthing during performance. With lantern pinions, there is more room for variation. When these types of movements are under load, they can have a subtle flex in the plates that causes the clock to bind—even though when not wound, the sideshakes look fine. When close to the power source, a bit more sideshake may be desirable to ensure the best power flow. If the plates are thick (e.g., Herschede clocks), an allowance must be made for just a bit more sideshake. If the bearings are too tight, it may cause the movement to bind up under load. Ever had a clock or watch leave the shop in the winter and six months later was a come-back? How about the reverse of that problem—summer to winter? For reasons like these, it's always better to get depthings a bit close and then open them up as needed. A loose hole that, under load, still keeps the depthing on line of centers is still acceptable and quite functional.

One last point, if the plates are flat and the bush work is perfectly flush, the endshakes should be adequate as was the original. However, always check the work, as plate deformity during bushing installation can cause a loss of endshake, and the product can bind up or fail to run properly.

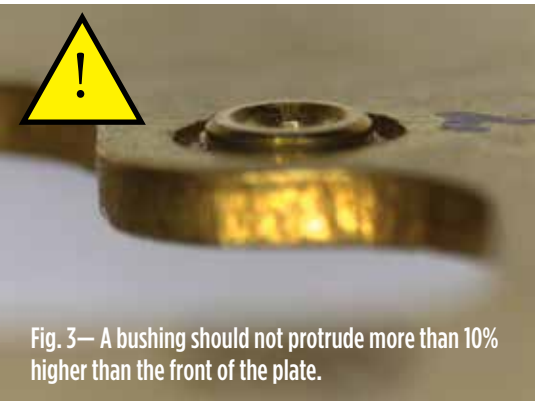


Fig. 3— A bushing should not protrude more than 10% higher than the front of the plate.

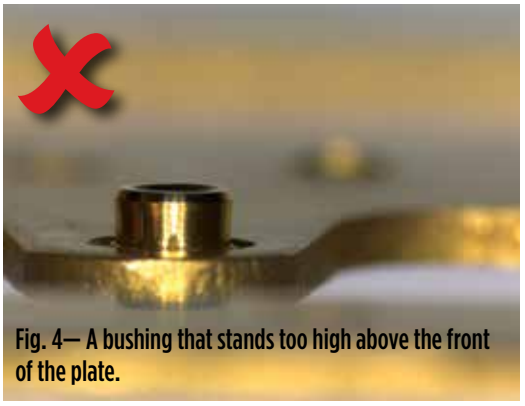

Fig. 4— A bushing that stands too high above the front of the plate.


Fig. 5— Too short of bushing installed.

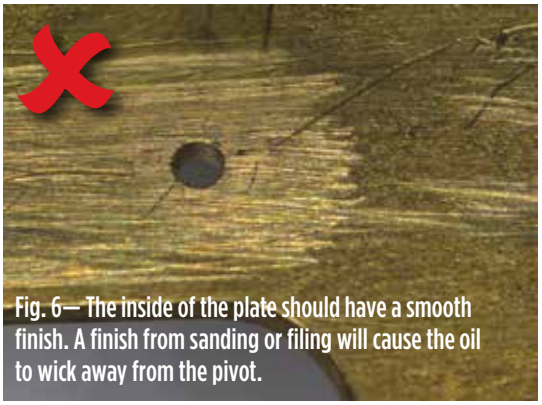

Fig. 6— The inside of the plate should have a smooth finish. A finish from sanding or filing will cause the oil to wick away from the pivot.


Fig. 7—The original hole.

Eterna Movement SA and AWCI Collaborate to Educate Watchmakers



The American Watchmakers-Clockmakers Institute is pleased to be a part of a collaboration with Eterna Movement SA to help develop young watchmaking talent. Eterna Movement SA is partnering with several watchmaking schools in Switzerland and with AWCI in the United States. AWCI will be the only training center for Eterna Movement SA within the United States. In the coming months Tom Schomaker, CMW21, will receive training from Eterna Movement SA in Grenchen, Switzerland, and will receive a selection of sample movements to be used in training in our classroom in Harrison, Ohio.



The mission of AWCI is setting service standards and educating the horological community. This collaboration allows us to expand our training opportunities in an exciting way. After Mr. Schomaker receives training, we will add new classes to our schedule. These classes will be available to members of the American Watchmakers-Clockmakers Institute and to representatives of American-based brands using Eterna movements in their products.

Eterna Movement SA is a supporter of the rebirth of the American watch industry. They showcased their products at the 2015 AWCI American Showcase in Kansas City and are working in collaboration with Niall Luxury and other American brands. Their Caliber 39 is a highly versatile movement that can be configured through the addition of modules to form more than 88 different standard combinations.

About Eterna Movement SA

Emerging in 2012 from Eterna SA, Eterna Movement SA is an independent movement manufacturer that crafts high-quality mechanical calibers in Grenchen, in the Swiss Canton of Solothurn. The Eterna manufacturers have been in business for 160 years and have produced some impressive developments. When the brand revolutionized automatic movements in 1948 with the invention of the ball-bearing mounted rotor system, it set a standard that still applies today. But the latest innovations from the company also demonstrate its consistent pursuit of continuous enhancement as well as its desire to master the challenges of the watchmaker's craft. For example, the Spherodrive ball-bearing mounted barrel system established unprecedented standards for quality and longevity in mechanical movements.

Sources:
www.awci.com/eterna
www.eterna-movement.com

SIHH Embraces the Independent artisan WATCHMAKER



The Christophe Claret Soprano.

By Aaron Recksiek, CW21

In the past several years, there has been a worldwide proliferation of the independent artisan watchmaker. In a time when not only the watch consumer market has developed a thirst for "connected" watches, whatever iteration you choose to associate that with, it has also developed an ever-increasing desire for small batch, handcrafted timepieces. Watches that are all entirely handmade tout a specific set of qualities that are mostly unavailable to the major brands. Their number almost certainly remains limited. The watch can usually be customized to the client's specifications and receives its own hand-finishing process. Each watch is treated like an individual piece of art. Although most watchmaker artisans employ a staff of watchmakers to assist in the process, each watchmaker inspects every detail of the process before any watch leaves the facility.

The Fondation de la Haute Horlogerie invited nine artisan watchmakers to the 26th edition of the Salon International de la Haute Horlogerie (SIHH). SIHH is an annual exhibition of fine watchmaking that displays new products, designs, and innovations for their 24 partner brands, most of which are fully or partly owned by the Richemont Group. The SIHH was presented this year in a completely refurbished interior with a more refined, contemporary look.

The independent watchmakers displayed in a new area called "The Watchmaker's Square," a separate but adjacent space to the big-name brands. Artisan watchmakers invited to participate were: Christophe Claret, De Bethune, H. Moser & Cie, Hautlence, HYT, Kari Voutilainen, Laurent Ferrier, MB&F, and URWERK. The standard used to select these watchmakers was not based on experience, production volume, price, or sales revenue. These brands share a specific set of values crucial to the independent artisan community. They strive for perfection at every turn with an unwavering dedication to preserving the art of watchmaking.



The movement of the Christophe Claret Maestoso. It features a wristwatch stable detent escapement. The movement also contains three individual patents.

Brief Histories of Each Artisan Watchmaker at SIHH

- Christophe Claret: Christophe graduated from the Geneva Watchmaking School in 1982 with a special "diploma" certificate, given only to the best students. Right out of school he worked with Roger Dubuis for 10 months. He then studied business and corporate management specifically geared to craftspeople and artists for two years. In 1984, he began producing his own handmade watches while still working in restoration. His first big break was being hired to develop and produce 20 minute-repeater calibers for Ulysse Nardin in 1987. He has been developing watches for other brands and producing his own brand of watches ever since.
- De Bethune: Founded in 2002 by David Zanetta, an art and watch collector, and Denis Flageollet, a fourth-generation watchmaker. Flageollet started as a technician at the Musée d'Horlogerie du Locle (Watch Museum of Le Locle). He then did restoration work for Michel Parmigiani under the guidance of master watchmaker Charles Meylan. In 1989 he started THA, a movement conception company, along with François-Paul Journe and Vianney Halter. Flageollet met Zanetta through THA, who was a client at the time. They soon discovered they held many of the same unique ideals in the art of watchmaking, using a historical knowledge of horology to improve the current design and technology of modern watches. They started De Bethune in 2002, and together they received the top prize at the Geneva Watchmaking Grand Prix in November 2011—the famous "Aiguille d'Or" (Golden Hand).
- H. Moser & Cie: Started by Heinrich Moser in 1828. Moser was born in Schaffhausen to a family of watchmakers and started his own watch factory in Le Locle when he was 24. He sold watches to Europe and Russia before expanding his local business development to contribute as an industrial pioneer. He led a project to build a dam and electricity-generating turbines across the Rhine River. Upon its completion in April 1866, Moser Dam was Switzerland's biggest dam. This sparked tremendous economic growth in the area and helped support many new businesses, most notably the International Watch Company (IWC). In 1874 Heinrich Moser passed away, and much of the company was dissolved and sold off. In 2002 Dr. Jürgen Lange, a great-grandson of Heinrich, internationally re-registered the brand name H. Moser & Cie under the parent company Moser Schaffhausen AG. In 2012 MELB Holding, a family-run investment firm, acquired the majority shares of H. Moser & Cie and continue to run the brand today. They specialize in producing every component in-house, including oscillators and escapements, with the collaboration of their sister brand Precision Engineering AG. They produce oscillators, escapements, and movement components for other boutique brands as well.
- Hautlence: The name Hautlence is an anagram of Neuchâtel, the location where the company began. The company was founded by Renaud de Retz, Guillaume Tetu, and Sandro Reginelli in 2004. Retz has a background as a sales, marketing, and business manager in the watch industry for Longines, Jaeger-LeCoultre, and LVMH. Tetu has degrees in industrial CAD design, and started out working for TAG Heuer, an LVMH brand. Reginelli, a product and marketing manager, worked for TAG Heuer from 1999 to 2002. It was there the three men met and began working on Hautlence in their free

time together. Retz left the company in 2010, while the brand was suffering from the economic downturn, and eventually became CEO of Ernest Borel. Tetu has continued to work with Hautlence, the last six years as CEO. He is now moving onto being Product Development Director at Ralph Lauren Watches & Jewelry. Tetu is being replaced as CEO by Reginelli, who has been working for Maurice Lacroix for the last 13 years and hasn't been involved with Hautlence since its early inception. The brand has a distinct vision of creating unprecedented ways of telling the time, while still maintaining an identifiable design. MELB Holding purchased the majority of ownership shares of the brand in 2012.

- HYT, "The Hydro-Mechanical Horologists," is a relative newcomer to the watchmaking community. HYT was started in 2012 by several Swiss executives, most notably the lead investor, Patrick Berdoz, and a product inventor, Lucien Vouillamoz. Their product is the result of "Mastering Micro-Fluids Motion," using bellows that expand and contract with the mechanical movement to compress liquid in order to display the time. Vouillamoz first came up with the idea in 2002, while working as a nuclear engineer and micro-fluids specialist. His vision was to make a modern version of a clepsydra, or water clock. The technology is also being used in the medical industry and is currently being developed for other industries using their sister company, Preciflex, which holds the technological patents.



From the skull collection at HYT (the Hydro-Mechanical Horologists).

- Kari Voutilainen: Kari attended the famous Finnish School of Watchmaking, the Kellosepäkoulu, when he was 19. After completing the three-year program, he attended two WOSTEP courses in Switzerland from 1988 to 1989, the latter being the complications course. He spent the next 10 years at the Parmigiani Mesure et Art du Temps restoring some of the world's rarest timepieces. When WOSTEP came calling in 1999 to head the department of complicated watchmaking, he couldn't refuse the opportunity to give back to the profession by training new watchmakers and developing new curriculums. After spending three years teaching at WOSTEP, he started the Artisan d'Horlogerie d'Art Voutilainen, his own watch company in Neuchâtel. There he works tirelessly to create some of the most elegant watches available and oversees about 15 watchmakers who assist him in the process. Since 2007 Voutilainen has won four Grand Prix d'Horlogerie de Genève awards for his watches.
- Laurent Ferrier: A graduate of the Geneva Watchmaking School in the late 1960s, Laurent went directly to work for Patek Philippe in the movement prototype department. At the same

This is the Voutilainen V-8R that won the Men's Watch Prize at the 2013 Grand Prix d'Horlogerie de Genève.



time, he was racing cars semi-professionally in the 24 Hours of Le Mans series. His team placed third in 1979, behind a team that included Paul Newman. After spending 37 years at Patek and being promoted to technical director, he decided to leave and start his own brand with his son, Christian. Together they produced their first timepiece in 2010, which went on to win a Grand Prix d'Horlogerie de Genève award. They have become known for a simple and classical styling done to the highest degree possible.

- MB&F: It's an acronym that stands for Maximilian Büsser & Friends. Büsser attended the Swiss Federal Institute of Technology and graduated with a master's in microtechnology engineering in 1991. Immediately out of school he began to work at Jaeger-LeCoultre at a time when the brand was struggling to survive. During the seven years he was there, Jaeger-LeCoultre increased their product output by tenfold. In 1998 he took a job at Harry Winston Rare Timepieces and ended up in the same situation, tasked with reviving the infrastructure of a struggling manufacture. Through connecting and collaborating with independent watchmakers, he was able to transform the brand into a respected haute horlogerie brand. In 2005 Büsser ventured off on his own to use his design and technical skills, paired with the ability to collaborate with others, to produce watches that fit his sometimes-controversial designs. His "Friends" consist of 31 watchmakers, engineers, designers, and other professionals that sometimes contribute outside of their regular day jobs to assist in the creation of his timepieces. He is known for his futuristic, sci-fi-inspired watches and clocks that are often referred to as "concept" timepieces.
- URWERK: Felix Baumgartner (not the same daredevil who jumped from the edge of space) was born in 1975 to a family of watchmakers in Schaffhausen. He enrolled in the National Watchmaker's School in Solothurn when he was 17. Upon graduation, instead of returning to work for the family business, Felix chose to open an independent shop in Geneva where he would develop new complicated movements and perform high-end restoration jobs. With his brother, Thomas Baumgartner, who was also a watchmaker, they met up with Martin Frei, a designer and founder of the group United Swiss Artists. They met in Zürich to discuss a project to develop a watch together. In 1997, two years after their initial meeting, they founded URWERK SA and introduced their first watch model. "Ur" was derived from the ancient city known for early timekeeping innovations, and "werk" was taken from the German word meaning work or produce. Their watches have an intensely modern, avant-garde style and have received numerous design awards.

All these watchmakers have vast amounts of talent. After reading about what makes up the individual pieces of each legendary artisan watch brand, though, it is difficult not to see common patterns in their stories—hard work, collaboration, and a respect for the horological traditions that have existed for centuries.

Sources
www.sihh.org
www.hautehorlogerie.org
www.wikipedia.org
www.watch-wiki.net
www.nytimes.com
www.ahci.ch
www.linkedin.com
www.christopheclaret.com
www.debethune.ch
www.h-moser.com
www.hautlence.com/en
www.hytwatches.com
www.preciflex.com
www.voutilainen.ch
www.laurentferrier.ch/en
www.mbandf.com
www.urwerk.comnic

STORAGE TUBES

By Paul Corn

Storage of material and parts can be a problem in any shop. The other problem is knowing where the material is when you need it. I used to have a problem with brass and steel rods being here and there; I couldn't find them when I needed them for a project or repair. They were all together, and I had to sort through them to find the size that I needed.

I came up with an idea of using 3/4" and 1" plastic tubing about 18" long with end caps. I just cut the material to 18" or shorter, and then I place the material in the tubes. The board that is used for the rack/holder is a piece of plywood with finishing nails driven in at an angle. The board is attached to the wall in an out-of-the-way area of the shop that I don't use for anything else. I labeled the tubes as needed, and the material is easy to see and find, Figures 1 and 2.



Fig. 1



Fig. 2

Paul Corn is an independent clockmaker and owner of Fine Clock Repairing in Waldorf, Maryland.

BRITISH HOROLOGICAL INSTITUTE

WOULD YOU LIKE TO READ WHAT MAKES BRITS TICK?

The Horological Journal – published monthly without fail since 1858 – gives you exclusive technical articles and practical updates on clock and watch making.

You'll find news on the latest issue and how to get it at www.bhi.co.uk

HOW TO MAKE A SURFACE FOR YOUR WORKBENCH

Bob Little, CW, CC

Not long ago I decided to install a new surface on my shop workbenches. I wanted a surface that was durable, easy to keep clean, easy on the eyes, and would make small parts easy to find. I chose to install countertop-grade Formica in a soft, light, non-reflective color called brushed aluminum. Since I have about 35 linear feet of workbenches, I purchased three of the 4' x 8' sheets of the Formica online from www.cabinetmakerwarehouse.com. I also got several tubes of color-matching caulking to seal the back edges. Formica is easy to work with and can be cut with sharp sheet-metal shears. It can be attached to the bench top with contact cement, and the edges can be trimmed flush with a simple handheld carbide scriber.

Formica will scratch, and the finish can wear through. Since clockmaking can be rather abrasive to the bench tops, I also purchased several 0.020" x 4' x 4' sheets of PETG (polyethylene terephthalate glycol-modified) thermoplastic from www.amazon.com. I simply cut them in half and placed them on the finished Formica top for protection. This material can be easily cut with sharp, heavy scissors. The seams and the fronts and sides are taped with clear 3M packing tape. This plastic sheet is somewhat softer than plexiglass, but it's more flexible and resilient and won't crack or chip under impact. While you wouldn't want to constantly expose it to highly volatile solvents, Acetone and Naphtha as well as other solvents will wipe right up if spilled. It is easily cleaned with Formula 409 cleaner. Figure 1 shows the flexibility of the PETG, which I have lifted up from the Formica with my hand.

In the area where I do most of my disassembly and assembly work, I also have what appears to be a white place mat (see photo on opposite page). I made this using our plastic laminating machine (Apache brand model AL13P). It is simply two pieces of 8.5" x 11.0" plain paper, placed side by side and laminated in 5mil clear laminate sheet 12" x 18". I made two of them. I use one when disassembling dirty movements, and I use the other for clean assembly work. I have found that no matter how dirty they get, spraying with Formula 409 cleaner and wiping clean removes all dirt and grime. These laminate sheets are very durable also; after six months of daily use, they look nearly



PETG (polyethylene terephthalate glycol-modified) thermoplastic.

new. If you like working on an off-white color, simply laminate the color sheet of your choice. If you don't have a thermal laminating machine, you can probably get yours made at an office supply center or print shop.

I see two big advantages with this setup: it is very easy to maintain, and the color makes it easy to locate a tiny spring clip, taper pin, or any other nearly undetectable part that might get away from you. I have also placed the Formica only (without the laminate) on my watchmaker's bench. The bench surface is original, which is clear-finished oak. For my watch bench, I cut the Formica to fit and then attached with contact cement and sealed the three side edges with a tiny bead of color-matching sealer. I have a light-colored pad that I work on, and small parts like jewels and screws are very easy to locate anywhere on the bench. The satin color does not produce any eye strain, even after eight or nine hours at the bench.

Bob Little is a certified watchmaker and clockmaker who owns and operates a watch, clock, and jewelry repair shop in Logan, Ohio.



Do you enjoy spending time with other watchmakers and clockmakers?

Join Your Local Affiliate Chapter

for more information log on to
awci.com/about-us/affiliate-chapters

Florida
Florida Watch & Clockmakers Association, Inc.
Michael Taylor, CW21
President
941-586-3761 (C)
michaeltaylorcw21@gmail.com

Matt Hritz, CW21
Vice President
Sarasota, FL
941-993-0514
fathertimeinc@yahoo.com

Richard LeBeau, CMW21
Treasurer
Saint Petersburg, FL
727-347-3758
SSastar7@aol.com

Fabio Rodrigues, CW21
Education Chairmen
786-344-2840
FAabusa@me.com

Indiana
Indianapolis Horological Association
Joseph M. Schrader, CMW21
Lafayette, IN
765-742-8716
jschra8193@msn.com

Massachusetts
Massachusetts Watchmakers- Clockmakers Association, Inc.
Christopher Carey
Newton, MA
617-244-3779
watrtwn@aol.com

Minnesota
Midwest Watchmakers- Clockmakers Association
Nick Pechman, CW21
Minneapolis, MN
612-801-2578
npechman@jbhudson.com
www.mwca.us

Minnesota
Minnesota Clockmakers Guild
Richard Zielike, President
Dean Ziegenbein, Secretary
Apple Valley, MN
952-454-1247
ziegedw@gmail.com

Missouri
Metro St. Louis Watchmakers/Clockmakers Association
Judit Katona, Secretary
watchmaker4225@gmail.com

New Jersey
Watchmakers Association of New Jersey
Richard Cuny, President
Tom's River, NJ
732-818-9460
www.wanj.us

New York
Horological Society of New York
Ed Hydeman, President
New York, NY
info@hs-ny.org
www.hs-ny.org

New York State Watchmakers Association
Dale LaDue, CMW21,
West Henrietta, NY
585-424-1493

North Carolina
North Carolina Watchmakers Association
Mack R. Shuping, CW21,
Treasurer
Winston Salem, NC
336-287-8402
336-768-1857 (fax)
mshupingwm@earthlink.net

Ohio
Watchmakers/Clockmakers Association of Ohio
Brad Wellmann, President
Cincinnati, OH
tbrady@fuse.net
513-746-7175 (C)
513-741-1337 (H)

Mark A. Baker, CMW, CC21
Treasurer
15852 ½ St. Rt. 62
P.O. Box 292
Damascus, OH 44619
330-537-3939 (W)
bakerclock@voyager.net

Pennsylvania
Watchmakers Association of Pennsylvania
George H. Jones
State College, PA
814-238-1668 (B & H)
jones_grace@hotmail.com

Texas
Capital Area Watch & Clockmakers Guild
Glen Morehead, President
Jay Holloway, Secretary
Pflugerville, TX
512-294-7371
jay@HollowayTrading.com
www.cawcg.org

Virginia
Horological Association of Virginia
Stan Palen
King George, VA
540-775-7027
spalen@crosslink.net
http://havhome.org

Wisconsin
Wisconsin Horological Society
Jeff Bergey, CMW, President
Oregon, WI
608-835-3698 (W)
608-843-7153 (C)
jeffbergey@gmail.com

LWT Alumni Association
Aaron Recksiek, CW21, President
801-580-7673 (C)
info@lwtalumni.org
www.lwtalumni.org

International Rep



The Chronometer Club
Christopher Kelly, CW21,
Secretary
Fremont, CA
650-544-8649 (C)
thechronometerclub@gmail.com
www.thechronometerclub.org

"DOES MACY'S TELL GIMBELS?"

BY Jack Kurdzionak, CW21, FAWCI

For many decades Macy's and Gimbels were fierce competitors in the New York City department store market. New Yorkers commonly used the expression "Does Macy's tell Gimbels?" as a retort for a question they did not want to answer. That quote came to mind recently while discussing the cost of a replacement bezel for a brand-name watch. After quoting the price of the bezel to the watchmaker, he asked me what it would cost if his customer sent the watch directly to the brand's service center. I said I really did not know and asked him, "Is that relevant?" He responded that it would be, if his customer knew the service center's price. That brought the old saying to mind, "Does Macy's tell Gimbels?" The answer is, "Of course not." Customers bring their watches to this watchmaker to have them serviced by him and not by a service center. If they wanted to use a service center or any other watchmaker, they would not have visited his shop.

Customers go to a watchmaker not to get the lowest cost, but because they expect quality service and prefer to patronize a business that offers a personal touch.

His concern, and that of many watchmakers, is customer comparison-shopping. Sixty years ago there were 50,000 watchmakers distributed all over the country. There were so many, even small towns may have had three or four watchmakers competing with each other for business. In many cities, trade shops fiercely competed with individual watchmakers and other trade shops to service the large number of jewelry stores that existed at that time. I have heard numerous stories from watchmakers of that era about how a 25-cent price differential with a competitor was enough to lose or gain an account. Jewelry store owners and price-conscious consumers had numerous options, even in a relatively small market, to do comparison shopping.

Those days have been gone for many years. No one knows for sure how many watchmakers we have in the entire country, but a guestimate of about 4,000 is well within reason. When we had 50,000 watchmakers, our country's population was about 50% of the current population of over 325 million. You do the math. In those days we had about one watchmaker for every 3,300 persons. Now we have one for every 82,500 persons. No wonder why almost every watchmaker I speak with is overburdened with work and the factory service centers have the same work overload.

Before retiring to New Hampshire, we owned a watch service center in the Boston area that was factory authorized by several major brands for warranty and post-warranty service. Even in a market as large as the Boston metropolitan area, there are only a handful of watchmakers and only a few held any certifications. When we first opened the shop, we expected to draw the majority of our customers from nearby cities and towns. It wasn't long before we had customers driving for two or more hours just to have a battery replaced. They certainly did not drive that far to save a dollar or two. They were seeking quality service and were unable to find it anywhere near their homes.

I have to believe customers go to a watchmaker not to get the lowest cost, but because they expect quality service and prefer to patronize a business that

offers a personal touch. Quality service accompanied by personal service outweighs any price advantage offered by an impersonal service center in a distant location. When it comes to pricing our services, just remember that, "Macy's would not tell Gimbels" and neither should you. If you are one of the many watchmakers with months of work waiting for your attention, you must be doing something right.

JOB SECURITY

Richie V. owns a neighborhood hardware store. Every winter he reminds me of how his customers buy bags of rock salt, throw it all over their driveways only to watch it dissolve and wash away. Then they return to his store to buy more and repeat the process. He always follows up by saying how badly he feels for his customers who buy something, throw it away, and then return to buy even more. Of course, this is said in good humor because the salt is a consumable item used to keep driveways ice-free. Rock salt is of no use when it remains in the bag. It must be spread and consumed to be of any use. How does this relate to watch repair? Consider how much of our repair activity concerns expendable spare parts. Immediately, gaskets, crowns, straps, batteries, and other such parts come to mind. All of these items deteriorate or wear out and need replacement. But wear is not limited to those items alone. Now we are replacing ball bearings, oscillating weight axles, train wheels with worn pivots, and even sapphire crystals, which can chip or break even though they are very durable.

This is really nothing new. Watchmakers working in the last century replaced balance staffs, balance jewels, and mainsprings multiple times every day. Back in the day, crystal replacement was promoted by G-S as a major profit center for watchmakers. Those items were always considered consumables and just part of a watchmaker's job to replace them as needed with every repair. I cannot say that the watchmakers of that era never lamented about parts failing or breaking, but I certainly hear it now. I hear it directly from watchmakers when they buy new ball bearings, axles for oscillating weights, reversing wheels, and the list continues. They say they wish parts never failed or wore out, but if that were ever possible, many of them would be looking for a new career. We should never forget the primary purpose of our job is to repair watches and repair them well. Watches, like any other mechanism, cannot work indefinitely without regular maintenance to keep them running. An important part of the maintenance procedure is to replace worn and damaged parts.

Yes, the watch manufacturers have been able to make some parts so well that their failure rate approaches zero. Mainsprings immediately come to mind. At the same time they have introduced new features, unheard of fifty years ago, that do need more attention during service intervals. We now have watches that are truly water-resistant, but that comes with a price. The water-resistant components need regular replacement. Almost every new mechanical watch has a heavy oscillating weight supported by a small axle or a set of tiny ball bearings. Those items wear out.

Rather than complain about the quality of a watch brought in for repair, look upon each watch as job security for our future. Do not forget that in 1950, major watch companies such as Bulova were recommending annual routine service for their watches and more often if needed. Now we have watches that will run, without service, for five or more years before needing a watchmaker's attention. We need to appreciate that watches still need repair and our task is to keep them in good running order. If Richie V.'s customers did not spread that salt all over their driveways, Richie would have a lot of unsold salt in stock.

Jack Kurdzionak, watchmaker and watch material specialist, owned a Boston-area watch sales and service shop for 40 years. He has a BS (Northeastern University, 1967) and has studied at ETA, WOSTEP, BHI, SGUS, and AWCI, and works for Eckcells Watch Material.

AWCI's Governing Structure

Committees: The Workhorses of the Institute

In a member-driven organization like AWCI, committees perform the bulk of the work. Work is delegated to committees, and proposals are formulated by committees. Committees are valuable because the smaller, more-focused groups can have:

- Greater freedom of discussion
- More time for discussion
- A less strict procedure
- And can have experts and consultants assigned to them

AWCI's constitution requires five committees:

- Executive Committee
- Finance Committee
- Nominating Committee for the Board of Directors
- Nominating Committee for Officers
- And the Constitution and Bylaws Committee

And several standing committees specified in our bylaws:

- Education Committee
- Horological Times Committee
- Strategic Action Committee
- Convention Committee
- And Ethics Committee

In addition, at any given time the institute can have other special committees created on either a long-term or short-term basis. As of today, the institute has the following special committees:

- Honors & Awards Committee
- Marketing Committee
- Spare Parts Directory Committee
- Membership Structure Committee
- Joint taskforce assigned to NAWCC
- Digitization of Technical Documents Committee
- Horological Seals Committee
- Board of Examiners

There are two main kinds of committees: Committees for Deliberation and Committees for Action. As their names suggest they have different roles. A committee, like the Digitization of Technical Documents Committee, may be created to determine the costs, merit, and feasibility of a project or idea. Other committees are given authority to act in a certain area or to carry out a project that the Board of Directors has already approved. The *Horological Times* Committee has the responsibility and authority to approve articles for publication, and the Horological Seals Committee has been given the authority to create a program to award American watch companies with AWCI Horological Manufacturing Seals based on their level of production or manufacturing in the United States.

Last month in this column we talked about the role of motions in moving the organization forward. Any board member can make a motion before the board. Motions that come out of a committee do not need to be seconded. In other words, the board must consider motions from committees.

When a committee has completed their work, or on a regular basis (in the case of standing committees), they should submit a report to the Board of Directors. The board should vote to accept or reject the committee report. Accepting the report usually means adopting any of the recommendations of the committee included in the report.

AWCI cannot function without the hardworking and diligent individuals who serve on our committees. We want to extend our thanks to these volunteers. Committees are an essential part of the success of AWCI. We invite anyone who is interested to volunteer to serve on a committee. You can volunteer by contacting our president, Fred White, directly at fwhite@awci.com, by visiting www.awci.com/volunteer, or by filling out and mailing the Committee Volunteer Form on page 47 in this magazine.



Committee Volunteer Form

The President of AWCI appoints committee members. AWCI relies heavily on its committees to establish and implement goals for the year. If you have time and talent to spare, consider volunteering to serve. The committees listed below are those which are currently established in either the AWCI Constitution or Bylaws. Please indicate the committee(s) for which you are qualified in the order of preference.

Please mark a number 1-11 in each box, with your desired choice(s). Please use #1 as your first choice, #2 as your second choice, and so on. Thank you!

Committees

- ☐ 1. Constitution & Bylaws Committee
- ☐ 2. Finance Committee
- ☐ 3. Nominating Committee for AWCI Board
- ☐ 4. Horological Times Committee
- ☐ 5. Education Committee
- ☐ 6. Internet Forum Committee
- ☐ 7. Convention Committee
- ☐ 8. Marketing Committee
- ☐ 9. Honor Awards Committee
- ☐ 10. Strategic Action Committee
- ☐ 11. Ethics Committee

Your Information

Name (required) _____

Membership Number _____

Address 1 _____

Address 2 _____

City _____ State _____ _____
Postal Code

Phone (Home) _____

Phone (Business) _____

Fax _____

E-mail _____
(valid email required)

Brief explanation of your qualifications to serve on committee(s) selected _____

Qualifications _____

www.awci.com/volunteer

Ask David Christianson

CMW21, FBHI, FAWCI

Question

I have an old hunting case pocket watch. On the dial is printed: R.M. Raynold & Co. Printed on the movement are: R.M. Raynold & Co, the serial number 1967869, and the word Swiss. In the housing is printed: GUARANTEED 25 YEARS, as well as a flag with a star. Could it be that this timepiece was made in Switzerland for R.M. Raynold & Co. (perhaps a watch retailer in the United States)?

My questions are:

1. Which company in Switzerland manufactured this watch for the United States and when?
2. What is, or was, R.M. Raynold & Co.?

Thank you for your help and I remain with kind regards,
Tadeusz Jarawka



Old hunting case pocket watch



Answer

Your photos reveal a Swiss-made hunting case pocket watch with a low-quality Swiss movement housed in an inexpensive case with a thin gold plating, intended to deceive the buyer into thinking he was purchasing a higher-quality American-made watch. The trade name R. M. Raynolds apparently does not exist. In fact the *Railroad Telegrapher* magazine of January 1912 and the *Locomotive Engineers Journal* of 1912 both warned railroad employees of the danger of buying watches marked R M Raynolds:

"For some time past, there have been principally through the states of Pennsylvania, Ohio and Indiana a gang of frauds who sell . . . a watch of the highest grade, 18 size, 23 jewels . . . but upon examination of the watch we find . . . the movement stamped R. M. Raynolds & Co. . . . so miserably constructed. The case is a gilt one although stamped 'Guaranteed for 25 years' . . . it is simply a watch case and will not last 25 days . . . it is a cheap Swiss movement."[1]

The Complete Price Guide to Watches shows your same watch movement and identifies it as a "Swiss Fake." They go on to say, "Before 1871 a flood of pocket watches were made with names strikingly similar to well-known American watches. But they were fakes, inferior in quality. At first they were key wound and key set then they became stem wound, full plate about

18 size, large jewels on the plate side, and used Roman numerals. In 1871 the US Congress passed a law requiring all watches to be marked with the country of origin. By 1885 these Swiss imitations were of better quality and resembled even more closely what was popular in America. But the Swiss fakes did not succeed, and by 1900–1910 they were no longer being sold here."[2] With all of this information, we can date your watch as a transition Swiss watch made near the turn of the 20th century. It is better in movement quality than the flood of movements prior to 1871 but not yet the quality that they tried to convey. They were still made to deceive the buying public with their cheaply gilded cases, false case quality markings, and an American-sounding company name. It is important to note that during this period the Swiss watch industry did not make only inferior-quality watches. The majority of the makers made very fine watches of very good quality. They, as an industry, mistakenly tried to break into the lucrative American market by offering cheap products. Following this period they changed strategies and began to market higher-quality watches, proudly marked "Swiss made" to the American market. World events, namely WWI and WWII, greatly aided their growth, prestige, and market share in America. But this is another story.

David Christianson

References:

1. *Locomotive Engineers Journal*, Volume XLVI, No. 1, January 1912, p. 604.
2. *The Complete Price Guide to Watches*, Tom Engle, Richard E. Gilbert, and Cooksey Shugart, No. 35, 2015, pp. 97-98.

David Christianson is a graduate of Purdue University, the Kansas City School of Watchmaking, the Gemological Institute of America, and is an internationally known horological historian.



Affiliate Chapter NEWS

Minnesota Clockmakers Guild (MCG)

For the March program Ken Danner presented "Repair Tips and Techniques for Cuckoo Clocks." Also Garth Antila completed his February presentation of the "Magic Center Finder." MCG provided a grinding jig and grinding wheel for grinding the drill blank. Jeff Pomeroy donated the door prize, *The Watch & Clockmakers Handbook, Dictionary, and Guide*, by F. J. Britton, which Jeff Johnson won. For Show and Tell, Amanda Eskelson shared a Junghans movement. Jeff Pomeroy shared two shop-made gravers and asked about techniques for sharpening them. Dean Ziegenbein shared a L.S. Starrett hermaphrodite caliper dated January 6, 1885, with a thumbscrew cam lock and split leg for fine adjustment. Dean also shared two antique wooden-handle screwdrivers and tap wrenches.

Future MCG Meetings/Topics:

April 7, 2016–3M Abrasives with Mike D'Andrea

May 14, 2016–Joint MCG-MWCA Symposium

May 15, 2016 Symposium class – Micro Machining on the Sherline Lathe with Jerry Kieffer.



Chuck Sandager reams the Magic Center Finder on a jewelers lathe as R. Widenhoefer and J. Johnson look on.

MCG OFFICERS

President	Richard Zielike
Phone	952-938-0681
Email	richard@edinaclock.com



Dean Ziegenbein shared an L.S. Starrett hermaphrodite caliper with a thumbscrew cam lock dated Jan. 6, 1885.

Secretary	Dean Ziegenbein
Phone	952-454-1247
Email	ziegedw@gmail.com
Treasurer	Garth Antila
Phone	715-386-3575
Email	3mgarth@gmail.com

Capital Area Watchmaker and Clockmaker Guild (CAWCG)

Central Texas Affiliate Chapter - American Watchmakers-Clockmakers Institute (AWCI), www.cawcg.org

For the February meeting Glen Morehead presented "Working with Metals." For the January meeting Rob Putney presented a program on wooden watches that are modern timepieces. Rob brought several examples for members to view.

Program Speakers for 2016

April: Michael Webb; **May:** Don Bugh; **June:** Pat Holloway; **July**: Open; **August**: Auction; **September**: David Douglas; **October:** Open; **November:** Terry Palmer; **December:** Christmas Party

CAWCG OFFICERS

President	Glen Morehead
Email	glenmorehead@sbcglobal.net
Vice President	Rob Putney
Email:	rob.putney@sbcglobal.net
Treasurer:	Hugh Lindsay
Email:	hugh@txcyber.com
Secretary	Jay Holloway
Email:	Jay@HollowayTrading.com

Horological Society of New York (HSNY)

The following information was obtained from The Horologist's Loupe, *submitted by Walter Pangretitsch, Recording Secretary, HSNY, Copyright©2016. Published by the Horological Society of New York, Inc.; All rights reserved.*

"John Harrison: Longitude, the Precision Watch and Pendulum Clock," presented by Rory McEvoy, Curator of Horology at the Royal Observatory, Greenwich, UK. Monday, April 4, 2016 from 6:00 p.m. to 9:00 p.m. at HSNY at the General Society Library, 20 West 44th Street, New York City.

This illustrated talk will take a look at the extraordinary story of John Harrison and his work in developing navigational clocks and watches for use at sea. It will explore his journey and unlikely beginnings, look at influences evident in his work found in the mechanical "DNA" of his sea clocks and highlight some of the aspects of his work that are significant to the modern world.

Rory McEvoy trained in conservation and restoration of antique clocks at West Dean College, Chichester in 1998-99 and subsequently worked at the bench, specialized in conservative restoration of "Golden Age" English clocks. After a three-year stint as clock specialist for Bonhams, a top-tier auction house, he joined the National Maritime Museum as Curator of Horology at the Royal Observatory.



Two of the wooden watches shown by Rob Putney for his January presentation to the CAWCG.

Watch Portraiture

For the March presentation, Atom Moore, Art Director for analog/shift, presented "Watch Portraiture: Taking a Closer Look with Macro Photography."

Photography is a very important part of keeping people engaged with horology. Atom Moore has focused his lens ever closer into the intricate details of these fascinating timepieces. Taking portraits of watches has become his passion. The tiny mechanical details are often hard to see or understand for those who are not watchmakers or experts in the field. To help shine a light on the complex details in mechanical watches, Atom shared some insight into his passion and methods for creating watch portraits. In presenting watches as portraits, he hopes to engage not just existing watch enthusiasts, but the general public as well.

HSNY OFFICERS

President	Edwin M. Hydeman
Vice President	Nicholas Manousos
Recording Secretary	Walter Pangretitsch
Treasurer	Charles S. Salomon
Archivist	Michael Osnato
Editor	Stephen Noble



Watch portraits by Atom Moore.
©copyright Atom Moore.

George McNeil's Potomac Guild

(A Guild of the Horological Association of Virginia)

For the March program Per Kullstam presented "Why the Pendulum Became the Time Regulator of Choice for Our Clocks." It included his Excel program for calculating the beat rate and pendulum length. His background led him to explore mathematical formulations to gain a deeper understanding of pendulum clocks and their design. In February Ryan Johnson spoke on "A Brief Introduction to the Apple Smartwatch."

GUILD OFFICERS

President	Joe Jabbour
Vice President	John Enloe (Acting)
Secretary	Barry Boling
Treasurer	Dick Riegel

Horological Association of Virginia (HAV)

Information obtained from Loupes and Tweezers, *Newsletter of the Horological Association of Virginia, Lloyd Lehn, Editor, February 2016.*

HAV 2016 Convention plans have been announced. The HAV 2016 Annual Convention will take place on April 29-May 1, 2016, at the Doubletree by Hilton in Charlottesville, Virginia.

Saturday Spouses Program—Gayle Graves

The group has reservations for a guided tour of the James Madison House in Montpelier—the home of James and Dolley Madison. They will then have lunch at one of the restaurants in Charlottesville's Historic Area. After lunch the attendees will be able to do some shopping.

Saturday Watch Speaker—Frank Poye

Poye will discuss the pragmatic approach to dynamic timing. If time permits, he will also touch on hairspring positioning. HAV will supply at least 20 mid-grade watches to utilize for hands-on training. Frank Poye is the Horology Instructor at the Texas Institute of Jewelry Technology at Paris Junior College in Paris, Texas. He operated his own watch sales and repair business before joining the faculty at his alma mater in 1991. His main interests are vintage timepieces and designing and fabricating watch cases and watch parts. He has served as director of the Research and Education Council of AWCI and was elected as an officer to the Board of Directors of the AWCI. He has attended the WOSTEP "Train the Trainers" program in Neuchâtel, Switzerland, and is a member of the NAWCC.

Saturday Clock Speaker—August Cornell

Cornell will teach techniques of repairing clock wheels, chiming racks, and spring barrels by replacing radial sections and cutting new teeth. The session is aimed at repair persons with modest tools and does not require a lathe or milling machine. August Cornell has become a well-respected and much sought after guest speaker and workshop conductor. Originally a professor of English literature and speech, he has extensive knowledge of the history of technology. His teaching ability results in frequent requests for his appearance in training centers throughout the US. His workshop participants finish his sessions with real and practical new skills.

Sunday Guest Speaker—Arthur Candenquist

This presentation will examine:

a) How time was kept and regulated in the turbulent war years between 1861-1865.
b) How the absence of standard time led to disastrous train wrecks.
c) The importance that almanacs and time signals played in everyday life.

Arthur Candenquist will look at the possibility that non-synchronized watches may have played a role in the lack of success on the battlefield, and how time was regulated in the armies from 1861-1865.

Mr. Candenquist is a serious scholar of the War Between the States. He focuses his attention on the more unusual and lesser-known aspects of the war. He has published articles on:

a) Keeping time during the war.
b) Stonewall Jackson's "appropriation" of the B&O Railroad equipment in 1861.
c) The world's first military railroad—the Centreville Military Railroad.

HAV OFFICERS

President	John Polk
Phone	804-749-3200
Email	john@oldfathertime.com
First Vice President	Billy Best
Phone	540-989-6959
Email	groovemaster2000@juno.com
2nd Vice President	Vacant
Treasurer	Stan Palen
Phone	540-775-7027
Email	spalen@crosslink.net
Secretary	Bob Stone
Phone	703-591-6690
Email	rhstone@cox.net
Loupes and Tweezers	
Editor	Lloyd Lehn
Phone	703-256-2684
Email	lloyd.lehn@verizon.net
Loupes and Tweezers	
Distributor	John Enloe
Phone	703-425-1524
Email	John_Enloe@verizon.net



"Columbia is home to one of the world's only horology museums"

—Smithsonian Magazine

The Smithsonian Magazine ranked Columbia, PA, among the top 20 best small towns to visit in the United States, in part, because of its strength in history.

The National Watch & Clock Museum in Columbia includes 19th-century American clocks and watches and timekeepers from around the world.

National Watch & Clock MUSEUM

UPCOMING CLASSES

Servicing a Swiss Lever Clock Platform Escapement
April 2-4, 2016

Luxury or Lie: How to identify genuine watches
May 21-23, 2016

Contact Director of Education Katie Knaub at 717.684.8261, ext. 237 or education@nawcc.org.

Check out www.museumoftime.org for more info.

Wisconsin Horological Society Annual Convention

Date: April 22 – 24

Location: The Osthoff Resort, Elkhart Lake, Wisconsin
Room Rate: $121/night

Banquet: $45

To register or for more information contact:
Jeff Bergey,
jeffbergey@gmail.com,
608-835-3698

Educational Presenter:
Jerry Faier, CMC21. Escapements

Classes: $65

SATURDAY: Jerry will review the principles for properly adjusting any escapement (watch or clock); practice using routine to adjust any escapement; practice using the routine by reviewing a number of clock movements and fixtures that have inserted escapement errors; and apply the routine to a number of common clock and watch escapements. We will also review the classic deadbeat escapement, the half deadbeat, the recoil escapement (both European style as well as the American and German strap pallet style), the cylinder escapement, the Brocot style, the pin-lever (Roskoff style), and the lever (club tooth) escapements. During the Q&A we can discuss any other escapement or adjustment practice that the class wishes to address.

SUNDAY: An open-format session in which members can ask Jerry questions. Jerry will offer his perspectives from 38+ years at the bench.







The Horological Association of Virginia
2016 Annual Convention
Charlottesville, VA

The Horological Association of Virginia is pleased to announce its plans for the 2016 Annual Convention.

Dates: April 29 - May 1, 2016
Location: DoubleTree By Hilton Hotel
990 Hilton Heights Road
Charlottesville, VA 22901
434-964-4470

Guest Speakers: Watchmaker's/Clockmaker's Programs (see below)

Convention Co-Chairmen: Wayne Simpson & J. Rodney Graves, III
wilkesjewelers@hotmail.com
434-352-5646 or 757-220-8353

Convention Details: You will find complete convention details including itinerary and registration forms available on our website, www.havhome.org, or contact this year's Convention Co-Chairmen, who can assist you with your registration requests or questions.

www.havhome.org/
2016ConvRegForm.pdf






2016 Convention Programs

Watchmaker's Programs
Saturday, April 30
Frank Poye, CW
Instructor Paris Junior College

Pragmatic Approach to Dynamic Timing
Frank will discuss the pragmatic approach to dynamic timing. If time permits, he will also touch on hairspring positioning. We will have at least 20 mid-grade watches to utilize for hands-on training.

Clockmaker's Programs
Saturday, April 30
August Cornell

Clock Wheel Repair by Tooth Section Replacement
August will teach techniques of repairing clock wheels, chiming racks and spring barrels by replacing radial sections and cutting new teeth. The session is aimed at repair persons with modest tools and does not require a lathe or milling machine.

Sunday, May 1
Arthur Candenquist

How Time Was Kept and Regulated During the Civil War
This presentation will examine:
a. how time was kept and regulated in the turbulent war years between 1861-1865;
b. how the absence of standard time led to disastrous train wrecks; and
c. the importance that almanacs and time signals played in everyday life. When the War Between the States broke out, railroads in the Union and Confederacy provided for local and railroad time in the stations, and enabled railroads to operate, and the army and navy to conduct military operations with some measure of precision. He will look at the possibility that non-synchronized watches may have played a role in the lack of success on the battlefield, and how time was regulated in the armies in 1861-1865.


Montpelier was the home of James Madison, fourth president of the United States, for 76 years. www.nps.gov.

Spouse's Program
Saturday, April 30

Lunch and a Tour of
James Madison's Montpelier
11350 Constitution Hwy
Orange, VA 22960

Classified Ads

help wanted

Watchmaker Wanted
James Free Jewelers

Due to growth, James Free Jewelers, located in Dayton OH, is seeking a watchmaker with Rolex training. James Free Jewelers features Rolex, Patek Philippe, Tudor, Beitling , Tag Heuer, Raymond Weil, and more. Applicant should be CW 21 Certified. We have a full Customer Service support staff, state of the art facilities with the latest equipment. We offer competitive benefits. Please contact **Dave Tellmann** at James Free Jewelers:

dtellmann@jamesfree.com

Watchmaker Wanted

Family-owned jewelry manufacturer in Atlanta, GA is seeking watchmaker to join our team. We have been in business for over 40 years, have a great company culture, and fun work environment!

REQUIREMENTS: * CW21 Certification required

* Prior repair/polishing experience with luxury watches required

BENEFITS INCLUDE:

* FREE Health, Dental, Vision, Life, and Disability Insurance!!!

* 4% Match on 401K!!!

* Paid Vacation!!!

For consideration, submit a resume and salary requirement to

jewelryapplication404@gmail.com

Senior Rolex Tudor Watchmaker/Technician for Rolex Authorize Dealer
RSWyatt Associates, Inc

After SalesService Center – A.H. Riise

St. Thomas, US Virgin Islands

To provide state-of-the-art after sales service on all Rolex timepieces either under Rolex Factory Guarantee or at agreed upon prices per Rolex price lists and to produce profitable repairs ensuring every client is 100% satisfied with all work performed.

Qualifications: Minimum of five (5) years experience in the watch making Industry.

Professional certifications and or training CW 21 and CMW21

Working knowledge of luxury automatic watch movements and their appropriate repair/service

Contact: jeffn13@gmail.com

843.324.6824

help wanted

Watchmaker Wanted
Freeport Jewelers

Located in the Caribbean on the Island of Curacao we are a company that has been established for 42 years. We are seeking a watchmaker full time. Service of Quartz and Automatic time pieces. Able to analyze and solve problems in an efficient manner

Contact: Mahesh Mukhi

mahesh@freeportjewelers.com

WATCHMAKERS WANTED FOR HONEYWELL AEROSPACE

This is a great position to showcase your watchmaker skills in Honeywell's Clearwater, Florida facility working as an Assembly & Test Technician IV.

Honeywell Aerospace is a leading global provider of integrated avionics, engines, systems and service solutions for aircraft manufacturers, airlines, business and general aviation, military, space and airport operations. Honeywell currently has an open position for an Assembly & Test Technician IV, located in Clearwater, FL.

Please contact Recruiter

Kimberly.Bahner@Honeywell.com or

800-308-6621

Watchmaker Wanted
Bobs Watches

Los angeles, CA

Immediate opening for a CW21 or SAWTA or WOSTEP technician with experience in Rolex watches, and high grade movements. We are a well established leader in pre-owned watches and have a brand new, authorized, state of the art repair facility with the best tools and equipment. Our office facility offers a friendly business casual environment where teamwork is one of our many objectives.

Contact **213-444-6386** or email

Kevin at kriley884@yahoo.com

Check out other ***Help Wanted*** ads on the AWCI website. Click on *Career Center.*

http://awci-jobs.careerwebsite.com

help wanted

Watchmaker Wanted
Ackerman Jewelers

is looking for an independent contractor to repair luxury swiss timepieces on the premises. They would need to be able to also set up the work shop as well. We have been in Tampa, Florida, in the same location for 32 years. We are family owned and operated. Please contact Ron Ackerman or send resume to:

tina@ackermanjewelers.com or

call 813-961-7321

Watchmaker Wanted
Breitling USA Inc.

is seeking Experienced Watchmakers for its state-of-the-art Service Facility located in Wilton, CT and Lombard, IL

Experienced candidates must have knowledge of mechanical and/or quartz watches.

Breitling offers a competitive salary and full benefits.

Please send your resume to:

Human Resources Manager

Breitling USA Inc., Hangar 7

206 Danbury Rd. Wilton, CT 06897

Fax: (203) 762-1178

Email: careers@breitlingusa.com

auction

2015 Timekeepers Exchange
June 14-15

Kidron, Ohio

Public auction Tuesday at 4pm.

AuctionZip.com, ID 13128

Mart and Educational seminars both days.

See Mark Butterworth demonstrate the Rollimat pivot polisher.

No entrance fee, meals available.

Register in advance.

Contact Joe Miller at 330-260-0800

for sale

CLOCKMAKING & MODELMAKING BOOKS & DVDS

by W. R. Smith, 8049 Camberley Drive, Powell, TN 37849.

Phone 865-947-9671

www.wrsmithclocks.com

Classified Ads

for sale

Dashto Inc
Established in 1974
Tom Mister
Virginia Beach, VA
We Do Watch Repair Now!
Huge and ever-changing selection. Used and new horological items. Sold by internet only
Check our our site:
www.dashto.org
TOOLS/EQUIPMENT/MATERIAL ASSTS/PARTS POCKET/WRISTWATCHES/WATCH MOVEMENTS WATCH CASES & DIALS/WATCH BRACELETS/BUCKLES & MUCH MORE
WE BUY AND TRADE ALSO: Dashto@cox.net

Our new 2014-2015 Catalog of Parts and Repair Supplies is now available... Free with any order!
or call/write for your copy today...
$5.00 postpaid
- Watch Repair Tools & Supplies
- Clock Repair Tools & Supplies...
for American and European clocks
- Horological Repair/Reference Books

Browse through our inventory and order on-line 24-hours a day!
www.merritts.com

Merritt's Clock & Watch Repair Supply
1860 Weavertown Rd,
Douglassville, PA 19518
610-689-9541 FAX: 610-689-0567

HAMILTON ORIGINAL MILITARY MATERIAL
Supplying original factory material for the Hamilton Model 21 Chronometer, Model 22 Deck Watch & Military 16 Size Watch Models 23, 3992B, 4992B and 2974B As well as much material for the 950B & 992B Railroad Watches. Also sell and trade.
LARRY CRUTSINGER
P.O. Box 8514 Norfolk, VA 23503
757-650-9470 E-mail: detent21@aol.com
www.militarywatchmuseum.com

wanted to buy

WANTED!
Entire Watch Collections
Scrap Watchbands
Gold-Filled Cases & Scrap
Gold, Silver & Platinum Scrap
Call Toll Free 1-800-208-2608
Visit our website for more information
www.specialtymetalsrefiners.com
Specialty Metals
2490 Black Rock Tpke.
Fairfield, CT 06825
203-366-2500 - Local
800-884-7966 - Fax
sales@specialtymetalsrefiners.com
Member: Jewelers Board of Trade

ATTENTION RETIRED WATCHMAKERS
Call us before you sell your parts, tools, and watches. We have helped over 200 watchmakers in the last 15 years to dispose of their accumulations. When you're really ready to sell, we're ready to buy!
Phone 229-928-9092 or 727-327-3306.
Ask for Jeff or Nancy.
E-mail: jeffnancy@mchsi.com

Rolex Dial Wanted
Buying Rolex dials and parts.
Top premium prices for vintage!
Daytona: up to $20,000 * Submariner: up to $5,000
GMT: up to $4,000 * Explorer: up to $2,000
Modern dials Gent's: $100 - $1,000
Call: **617-742-0221**
Email: paul@pduggan.com

Wanted: Chronograph Movements and Parts
Paying for Valjoux 69, 72, 88 up to $800.00, Venus 178 $300, Longines 13 ZN, 30 CH $500.00, Movado 90, 95 $300.00. Also buying high-grade movements and parts.
Dean Sarnelle
25 W. Beverley St., Staunton, VA 24401
1-866-877-8164
onceuptime@aol.com

wanted to buy

$$WANTED ANYTHING$$
Rolex - Cartier - Patek - Breitling- Panerai - Le Coultre Vacheron - AP - Etc.
Watches, Boxes, Dials, Links, Parts, Bands, Movements, Crystals, Bezels, Crowns, Clocks, Signs, Posters, Catalogs, Instruction Books, Polish Cloths, Wallets, Hats, Shirts, Promo Items, ANYTHING!
Doug Giard, 586-774-3684

WE BUY WATCHES
Rolex, Patek, Cartier, LeCoultre, Vacheron, Breitling, Audemars, Tudor and others.
Modern or Vintage.
Doug Giard, 586-774-3684

WANTED WATCH BOXES
Buy - Sell - Trade
We want most major brands.
Also buying high-end jewelry brand boxes.
Doug Giard, 586-774-3684

situations wanted

CLOCKMAKER/TECHNICIAN
CC21 Clockmaker is seeking employment in the greater Denver CO or Front Range area.
Please email: **atmosclock@gmail.com**
for resume and experience info.

WATCHMAKER/TECHNICIAN
30 years experience
Horology School Graduate
Please contact:
John jbuerger25@yahoo.com

tradespeople

CHELSEA CLOCK
Repair | Restoration



All Brands · Warranteed Work · Free Estimates
Mention Code HT2011 and Enjoy 15% Off
chelseaclock.com | 800 284 1778

Classified Ads

tradespeople



We also fit glass crystals to Openface, hunting, and English chain drive watches. Complete watches, dials, movements, case springs for sale

G F Specialties
1-800-351-6926
P.O. Box 170216
Milwaukee, WI 53217
www.gfspecialties.com

DENNIS KAYE
Advanced Clock Repair Services

108 Corgy Drive • Cary, NC 27513
Call 540-SERVICE (737-8423)

Porcelain Dial Restoration
Watch • Pocket Watch • Clock

Platform Escapement Repair
Atmos Parts & Service

Kundo / ATO Coil Repair

Large Stock of Electric Motors
All Types Clocks Serviced

Prompt Reliable Service . . . Guaranteed™

Large Supply of Watch Movements & Parts for LeCoultre, Wittnauer & Longines

Call or Visit at dialrepair.com

Watch Parts Fabrication:
I make all types of movement parts: Vintage to modern. MATT HENNING CW, 413-549-1950
www.henningwatches.com

tradespeople

FENDLEY & COX WHEEL AND PINION SPECIALIST
1530 Etain Rd., Irving, TX 75060
RICHARD COX, 972-986-7698/CMC, FNAWCC, CMBHI
www.fendley-cox.com

MAINSPRINGS
Clock and music box - All sizes.
Custom made. Brass gear blanks.
Timewise (formerly TANI Engineering)
Ph: 330-947-0047, E-mail: twclock08@att.net

services

SERVICE/SALES OF TIMING AND CLEANING MACHINES
Vibrograf, L&R, and Watchmaster
Over 18 years experience
Quick repairs & reasonable prices
www.timemachinerepair.com
Dale Sutton 609-374-5880 or
service@timemachinerepair.com

ELECTRONIC INSTRUMENT SERVICE
We are Factory Authorized Service for:
• Greiner VIBROGRAF
• TICK-O-PRINT & L&R
We service all makes of ultrasonics, all makes of watch rate recorders, and related equipment. 25 years experience.
190 Deepstone Drive San Rafael, CA 94903
Used Equipment Bought & Sold
For Information
415-479-8960
www.electronicinstrumentservice.com

DIAL REFINISHING CO. FAST SERVICE, FINEST QUALITY,
quantity works welcome.
Specialize on changing dial feet positions to fit the quartz movement.
Send your works to: **KIRK DIAL OF SEATTLE**
112 Central Avenue North, Kent, WA 98032
253-852-5125

2016 CLASSIFIED POLICY

AWCI HT classified advertising fees/rates and minimum schedule remain the same as last year. **We request that you put all classified advertising on a credit card.** We accept MasterCard, Visa, American Express and Discover. If you require a physical invoice and 30-day terms, your rates will be higher due to the additional costs incurred in labor, supplies and carrying charges.

HT Classified Rates for 2016:

For Credit Card Payments...
- $1.10 per word
- Classified "Display" ads with art borders: $47.50 per col. inch (2.25" wide)
- Blind ads – add'l $15.00 per ad

For Paper Invoicing...
- $1.20 per word and
- Classified "Display"ads with art/borders: $52.25 per col inch (2.25"wide)
- Blind ads – add'l $16.50 per ad

Minimum Schedule: 3-Month Minimum
Advertising studies show it takes over 3 viewings for readers to recognize specifics in your ad.

Deadline: 30 days before first of month for month you plan to run. Note: If you place a recruitment ad on the www.awci.com Career Center as a combo online/HT ad, there's no need to resend the ad to us. The website system is automatic.

To Place Your Ad:
Email: classad@awci.com **or**
Call: 866-FOR-AWCI (367-2924)/513-367-1414

VISA MasterCard AMERICAN EXPRESS DISCOVER

Follow us on Twitter!
www.twitter.com/AWCInstitute

Follow us on Instagram!
www.instagram.com/americanwatchmakers

Horological Times Advertising Policy & Editorial Policy

Advertising Policy for the *Horological Times*

The publisher reserves the right to approve all advertising copy and reject any advertisements not in keeping with the publisher's standards. The publisher may, at the publisher's sole discretion and for any reason and without notice, decline to publish or republish any ad, in which case any fees submitted or paid for such ads shall be returned or rebated to the advertiser. The publisher reserves the right to edit all copy. The advertiser and/or agency agree to assume liability for all content of advertisements printed. The advertiser will also accept responsibility for any claims or suits arising therefrom brought against the publisher. Printed articles may also be used by the publisher without permission expressly sought, or payment made, on www.awci.com, the American Watchmakers-Clockmakers Facebook page, or via other media.

Editorial material and letters of opinion are invited, but reflect the opinions of the authors only and do not represent the views of the American Watchmakers-Clockmakers Institute (AWCI), its directors, officers or employees. AWCI reserves the right to edit all submitted materials and is under no obligation to accept any submitted materials for publication. The approval procedures are available from AWCI and at www.awci.com. The appearance, reference, or advertisement of any product or service in this publication shall not be deemed an endorsement of such products, methods or services by AWCI, its directors, officers, or employees.

Publisher's Standards

AWCI makes a concerted effort not to publish any advertisement which promotes or depicts practices not in harmony with our professional Standards & Practices for Watchmakers & Clockmakers. The advertisement of generic parts, tools, and materials is allowed when such advertisement does not possess any trademarked image, brand, or name. Advertisers can refer to the items by name, function, quality, size, and description. Genuine parts can be advertised as such in accordance with the advertiser's relationship and agreement with the manufacturer.

We encourage advertisers to reach out to our members and market goods and services which will help them to professionally service their clients and represent themselves in a way which will "reflect positively on him or her, on the AWCI, and the entire watch and clock repair industry, including all of its participants." – *AWCI Code of Ethics*

awci directory

ADVERTISERS' INDEX

AWCI Courses
513-367-9800 8

British Horological Institute
bhi.co.uk 41

Cas-Ker Co.
1-800-487-0408 25

Clocks Magazine
011 44 131 331 3200 7

Jules Borel & Co.
816-421-6110 ...inside front cover

NAWCC
nawcc.org 53

Renata
800-527-0719 ...back cover

Richemont
richemont.com ...inside back cover

Witschi Electronic Ltd.
011 32 352 05 00 25

BOARD OF DIRECTORS

Officers
Fred T. White, CMW21: President
fwhite@awci.com
Drew Zimmerman, CW21: Vice President
dzimmerman@awci.com
Henry Kessler: Treasurer and IAB Director
hkessler@awci.com
Aaron Recksiek, CW21: Secretary
arecksiek@awci.com

Immediate Past President
Manuel Yazijian, CMW21
myazijian@awci.com

Directors
Joe Cerullo, CMW, CMC
jcerullo@awci.com
Wesley Grau, CMW21
wgrau@awci.com
Joshua Kroman, CW21
jkroman@awci.com
David Kurdzionak: Affiliate Chapter Director
davidkurdzionak@awci.com
Craig Stone, CW21
cstone@awci.com
Peter Whittle
pwhittle@awci.com

Fellows
*Robert F. Bishop
*James H. Broughton
Fred S. Burckhardt
Alice B. Carpenter
David A. Christianson
*George Daniels
Wes Door
Jerry Faier
*Henry B. Fried
*Josephine F. Hagans
*Orville R. Hagans
*Ewell D. Hartman
*Harold J. Herman
*J.M. Huckabee
*Gerald G. Jaeger
Jack Kurdzionak
*Benjamin Matz
*Robert A. Nelson
*Hamilton E. Pease
Archie B. Perkins
Antoine Simonin
*William O. Smith, Jr.
Milton C. Stevens
Dennis Warner
*Marvin E. Whitney

*Deceased

American Watchmakers-Clockmakers Institute
701 Enterprise Dr.
Harrison, OH 45030
Ph: 866-FOR-AWCI
513-367-9800
Fax: 513-367-1414
awci@awci.com • www.awci.com

WE THANK THE IAB

AWCI would like to thank our Industry Advisory Board members for their ongoing support of the institute and the industry.

RICHEMONT NORTH AMERICA, INC.

Richemont owns several of the world's leading luxury companies in the field of luxury goods, with particular strengths in jewelry, luxury watches and other luxury accessories.

We are seeking talented and qualified Watchmakers to work for our brands located throughout the United States and Canada in our Boutiques and Service Centers.

Responsibilities

- *Must be qualified to perform services which include Complete Maintenance and Quick Services on calibers that include*
  - *Quartz*
  - *Mechanical*
  - *Automatic*
  - *Chronograph*
  - *Complications*
- *Diagnosis*
- *Case Preparation*
- *Achieve and maintain Production and Quality Objectives*

Qualifications

- *Accredited Certification*
- *Experience working with luxury brands preferred*
- *Strong attention to detail, with the ability to handle multiple tasks*
- *Ability to work in a fast-paced environment*
- *Strong diagnostic skills*
- *Good customer service and communication skills*
- *Knowledge of SAP System would be a strong advantage*

We offer competitive compensation, on-boarding program, benefits and relocation assistance. To be considered, please submit your resume and profile on www.Richemont.com or by fax to 817-283-2304.



TRUSTED

swiss quality batteries

Renata Batteries are trusted for use as original equipment in the overwhelming majority of watches produced in Europe and North America.

Dedicated high and low drain • Freshness dated • Perfect leakproofness
Optimal performance • Mercury Free

renata batteries

0% MERCURY

© RENATA SA, Itingen Switzerland ©2016 SKS, INC.

C. R. Time Company
"WHERE WE HAVE THE TIME FOR YOU"
800.541.5494 Fax 800.341.8373
www.crtime.com