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October 2004



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COVER

This month's cover features Alice B. Carpenter, 2004 AWCI Fellow Award Recipient



President's Message

Jim Door

The Board of Directors recently modified our mission statement. The term "professional" was inserted; thus referring to the AWCI as the premiere professional international organization dedicated to preserving and promoting the highest standards of workmanship in the horological crafts. That is a pretty lofty goal.

Some members had reservations about inserting the word "professional". They were concerned it meant we were disregarding that portion of our membership who do not make a living from horological servicing. Be assured that is not true.

Professionalism is more a way of doing things, an attitude, than just making a living engaging in a particular occupation. I worked with a college drama director who told us that just because we were not performing on Broadway didn't mean we couldn't or shouldn't be professional in our efforts and approach to our play. To not do so would be a disservice to our customers (the audience) and to us.

We can all be more professional. One part of being professional is improving one's skills. Another part is how we set up our repair areas. (Refer to Jack Kurdzionak's "From the Workshop" articles, June-September 2004, for some good ideas.) Another is how we handle our clients and their belongings. When busy, do you just toss a customer's watch on a counter or place their clock on the floor, instead of taking the 30 seconds to put it in a safe and appropriate place?

There was a time in history when being the clockmaker or watchmaker was a high status occupation, when kings and nobility sought out these craftsmen. Today's "nobility", the wealthy, are seeking out the better craftsmen and respect their skills. But for many, we are thought of as poor stepchildren of the jewelry trade. All of us, the full-time, the part-time, and the hobbyist horologists can work together and improve our lots. To do so we must remain committed to improve ourselves and others, and work to deserve the respect of the public.



Executive Director's Message

James E. Lubic, CMW

Recently I received a fax from a long-time member wanting to alert the AWCI membership of what he called a "scam". I appreciate this member taking the time to contact AWCI with this warning, but unfortunately we cannot name this company for legal reasons. However, I would like to take this opportunity to remind everyone that when doing business it is always a good idea to do business with reputable companies. This is not to say that new businesses can't be reputable or competitive. All reputable businesses also were once start ups. Following are some steps that you might want to consider before doing business with a company that you are not familiar with:

1. Check to see if the business is a member of the Better Business Bureau.
2. Is the business registered or licensed in the city and state were they say they are located.
3. Ask if they have references.
4. Is the company forth coming with full contact information: i.e. name, address, phone and fax numbers, and possibly e-mail and or website addresses.
5. Ask about professional affiliations.

Next, I would like to let you know that we are very close to completing the work for our new website. The biggest challenge we will have with this new website is educational content. Prior to the digital era and even videotape, the popular way of delivering educational material was through slide presentations. Most families owned a 35mm camera and for a small investment you could purchase a zoom or macro lens for that camera. In the so-called olden days AWCI members would make slide presentations pertaining to a particular topic that they felt was important for our membership to be aware of. It didn't matter if the topic was new or old, or maybe it was a new method of performing a job that could make a fellow member more profitable in their work. A lot of valuable information was shared with our members through this media over the years. You have probably heard the saying, "everything old is new again". Well that is how I look at all this new technology. These days almost everyone has a computer and a digital camera, which means that it would be very easy for you to share your expertise with the AWCI membership once again.

A digital camera can be used to take pictures of a process, method or tip that you might want to share. Or one could document the restoration or servicing of a particular watch or clock that they would like to share with the AWCI members. You can download the pictures onto your computer and size them properly and add text. Once you are happy with the product you can e-mail your presentation to AWCI. We can then share this information with the membership by uploading it to our website in the "members only" section of our new website. I see this as a very important role that you, the member, can play in shaping the future of our organization while at the same time sharing your expertise.

I realize that the above description is somewhat simplified, but it is not out of the realm of possibilities. I recently met a gentleman at a chapter meeting in Indianapolis that is willing to help us develop a template in a commonly known and available software that will help us to standardize the process. Let me know if you want to get involved and help your fellow professionals.

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Questions & Answers

Question

The watch is 43.5 mm, signed Tiffany & Co New York, S/N 20231, open face, ¼-split second chronograph with register. The dial is signed "Tiffany & Co" in the register dial. The case is silver, not signed and is probably a replacement.

I would like to know who made the movement and if possible who purchased it from Tiffany. I tried their e-mail with no response. I believe this watch came from the estate of a family engaged in horse racing about the time Leland B. Stanford was doing his demonstration that all four hooves are off the ground when a horse is running.

Any information is appreciated.

Gerald Stone
Scotts Valley, CA

Answer

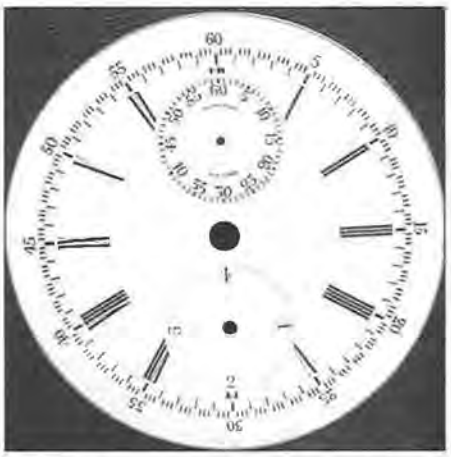
Your Tiffany & Co. split second chronograph is a fine example of precision Swiss complicated watchmaking. Unfortunately I do not know who made the movement but the style of the levers, bridges, ratchet wheels and crown wheel all point to a circa 1900 manufacture date.

Tiffany's, the New York jeweler, always sold the finest of watches, buying from such prestigious makers as Patek-Philippe, Longines, Agassiz, Audemars and the International Watch Company, to name a few. They even made their own unique movements from about 1870 to about 1890.

The late Henry Fried once told me that the style of stud holder gives a strong indication of the origin of Swiss watch movements. This makes quite a bit of sense. A regionalized stud holder style would be passed down from mentor to student and from school to student and company to maker within each particular region or city as the case may be; and would remain the dominant style found within that region. Of course as the student moved to another region he might retain the original style that he had learned, but in most cases he would probably change his style to that of the company and/or the region in which he was working. The style of your stud holder is representative of that area around the city of Geneva. The "Geneva Stripes," the pattern of finish on your movement plates, supports this supposition that

(Continued on page 34.)











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Triple, deluxe, enclosed, with view window,	Black	**WTB1500GLBK**	**295**	685
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Ask Huck

J.M. Huckabee,
CMC, FAWI, FBHI

Question

The mainspring in the old American clock is powerful and dangerous. What type of "let down" tool do you recommend?

Answer

Yes, if one of those springs escapes the spring-clamp, your shop is too small to be in for a few moments. The 8-day mainspring is an ever-present danger to the clockmaker.

In my 60+ years at the bench, I've probably seen a dozen "let down" tools. Someone likes each of them because all are functional. I own several types of the tools. However, over the years my favorite tool is one shop-built from a wood dowel (unpainted) and used with the winding key of the movement-at-hand. This tool fits every movement "on the first try."

I suggest you study the book, *The Top 300 Trade Secrets of a Master Clockmaker*, under the heading of "Mainspring Clamps, Let-Down Tools, and Winding Keys." That material will help you to develop good safety practices, and to get springs in and out of movements and clamps. Pay special attention to how the tools are held for your personal, and the movement's safety.

The same book has a section that shows how I determine the strength of a spring, and answers the question of "use or replace."

Question

How long should I expect an 8-day American clock to run on a full-wind of the mainspring?

Answer

Much more than 8 days, most of those movements release the mainspring at the rate of about one turn per day. Also, most are pretty much down at about 11-12 turns. With that as an accepted norm, the movement should operate about 10 days.

I pre-test a movement with the spring about 10 turns down. With the movement functioning at this condition, the problem with "latent-stoppers" is almost eliminated. And, I like to check the rate at about 4 turns down.

The framework of these movements is not real strong. Check that your mounting surfaces fit down to the case such that the mounting screws do not "rack" (twist) the movement. Often a movement runs well in a test stand and fails in the case. This procedure will essentially eliminate that type of problem.

The old American clock is one of the "great marvels" of American industry. How many other machines can we find that yet function as new after a hundred years of operation? And, we the clockmakers can send these clocks through several more hundred years. I'm proud that we have, and will continue to practice those skills.

NEED INFORMATION ON A PARTICULAR WATCH, CLOCK OR ITS MAKER?

The Henry B. Fried Library is considered to be one of the world's finest horological libraries. Hundreds of books are available for your use whether it be for finding information for yourself or a customer, doing research on a special subject, or just for enjoyable reading. Customers appreciate a person that can talk intelligently when answering their questions. Make use of the library, it will pay big dividends!

ANOTHER BENEFIT OF AWCI MEMBERSHIP

New Members

California

Allgood, Jerry—Grass Valley, CA
Boger, Wes—Moss Landing, CA
Dickey, Keith—Fresno, CA*
Foote, Gordon J.—La Jolla, CA*

Connecticut

Cannan, Samuel G.—West Hartford, CT*

Indiana

Stutsman, John L.—Plymouth, IN*

Kansas

Johnson, David—Dodge City, KS

Louisiana

Truxillo, Jonathan B.—Lafayette, LA

Maryland

Grau, David—Bethesda, MD
Schaps, Joseph E.—Ellicott City, MD

Michigan

Flood, Robert—Benton Harbor, MI

New York

Ho, John—Flushing, NY

Ohio

Accurso, Michael J.—Cincinnati, OH*
Pugh, Joshua S.—Mentor, OH

Oregon

O'Mara, Brendan—Jefferson, OR

Pennsylvania

Behney, Jason B.—Myerstown, PA
Carbaugh, Matt—Telford, PA
Fredell, Nate—Lititz, PA
Gruber, Robert—Eric, PA
Humphreys, Kesse—Kirkwood, PA
Hurst, Steve—New Holland, PA
Kiehl, Jonathan—Leola, PA

Tennessee

Hickey, Russell M.—Knoxville, TN

Texas

Armendaiz, Heriberto—Houston, TX
Carvalho, Claudio—Frisco, TX
Crockett, Clint—Copperas Cove, TX
Pigott, Joe—Lubbock, TX
Ridley, Bob—Arlington, TX

Virginia

Stairs, Paul—Richmond, VA*

Washington

Hickey, Daniel J.—Scaview, WA
Perkins, William J.—Centralia, WA*

Canada

Adamson, Robert—Wheatley, Ontario

International

Koningsberger, Marco—Tilburg, Netherlands
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Alice B. Carpenter Receives the 2004 AWCI Fellow Award

Lucy Fuleki

Article 27 of the AWCI constitution states:

The title of "Fellow in the American Watchmakers-Clockmakers Institute" (FAWCI) may be conferred upon a carefully selected individual whose outstanding and meritorious contribution (to the field of horology) on a national or international level, has enriched the field of horology. This title shall be the highest honor awarded by the American Watchmakers-Clockmakers Institute.

The 2004 recipient of the FAWCI award meets those criteria with no problem.

Alice B. Carpenter was born and raised in North Carolina. Her family has a long history in horology. Her father was a watchmaker, as was her sister. She learned early that horology would be her career of choice and she fit easily into the mold of watchmaker. She learned watch, clock, and jewelry repair skills as an apprentice from 1942 to 1950. Horology was more than a job to Alice; it was a way of life. Even her beloved husband, Buddy, was a clockmaker (trained by Alice's dad, I might add). Together Alice and Buddy made a great team—not just as husband and wife, raising their two children—but as watchmaker and clockmaker, too.

Alice operated her own trade shop for jewelry and watch repair for 21 years before she became the horology instructor at Wayne Community College. When that program was discontinued by Wayne College, Alice re-established her trade shop, which she still operates today. She is a Certified Master Watchmaker and a Certified Master Electronic Watchmaker.

Alice has been a very active member of AWCI. Together Alice and Buddy wrote the *Q & A in Quartz Watch Repair* which was published by AWCI. Alice has been a bench course instructor for AWCI for many years, traveling the country presenting her "American Pocket Watch Repair" program. She has been elected to the AWCI Board of Director numerous times, and has served as REC Director, 2nd Vice President, 1st Vice President, and President. She is currently on the AWCI Executive Committee as Secretary.

Alice Carpenter has overcome many obstacles in her life, and she's done it with grace and dignity. She has devoted her horological expertise to helping others learn the trade by graciously sharing her knowledge and talent. She is truly a credit to the profession and a most deserving recipient of "Fellow American Watchmakers-Clockmakers Institute".





SEEKING CANDIDATES FOR THE AWCI BOARD OF DIRECTORS

The committee involved with securing candidates to run for the AWCI Board of Directors is seeking recommendations from the membership. If you plan to suggest a possible candidate, please send that individual's name and background to: Nominations for Board of Directors Committee, AWCI, 701 Enterprise Drive, Harrison, Ohio 45030-1696.

Each recommendation will be carefully considered by the committee. Candidates will be selected on the basis of their local association or AWCI experience, geographic location, present job status, horological experience, and willingness to serve.

Recommendations must be received before December 31, 2004 to be considered for the 2005 election.

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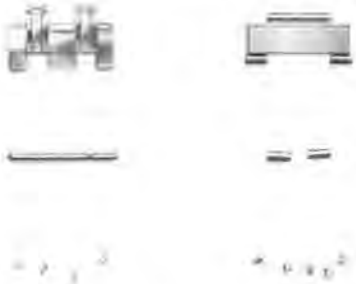


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Record Attendance at AWCI 44th Annual Meeting in South Portland, Maine

Lucy Fuleki

The attendance at the "Maine Event" held August 5-8, 2004, let us know that what the members have been saying is true, "If you hold it somewhere else, we will come." Of course, it can't just be "anywhere" else. Along the coast of Maine, with a boat trip into Casco Bay; shopping at the original LL Bean store in Freeport, Maine; temperatures in the low 70s; enough seafood to satisfy a seal; and 170 of your friends and fellow horologists, might be why the attendance was higher. The American Watchmakers-Clockmakers Institute (AWCI) Board of Directors is now faced with finding a location that will keep the convention's upward momentum.

Lest it sound like all was fun and games, it was quite to the contrary, as well-attended and productive meetings were held throughout the four-day period. The kick-off day, Thursday, August 5th, started with the Chronometer Club bench course, taught by Tamara Houk and attended by 41 members. Ewell Hartman, Secretary of the Chronometer Club, said that this is the first time he has turned away registrants because the session was too full. The Thursday night receptions were well attended and, although there were no new members, there was a great show of hands when Terry Kurdzionak asked how many were attending their first convention.

The Friday, August 6th, Affiliate Chapter Meeting was also record setting. Seventeen of the 25 AWCI Affiliate Chapters were represented. Glenn Gardner was elected Chairman of the Affiliate Chapters and Gene Bertram, Vice Chairman. The Affiliate Chapters completed their work by Sunday morning and had a number of proposals ready to present to the AWCI Board.

In the afternoon, the AWCI Board of Directors had a changing of the guard. Jim Door was elected President; Dennis Warner, First Vice President; Mark Butterworth, Treasurer; and Alice Carpenter, Secretary.



Tamara Houk presented the Chronometer Club's Technical Seminar on repair, adjusting and servicing chronograph movements.



Manuel Yazijian repairing a chronograph during the Chronometer Club's technical seminar.



The Chronometer Club at the chapter's 2004 annual seminar and business meeting in Portland, Maine.



Glenn Gardner, Affiliate Chapter Director, addresses the AWCI Board of Directors meeting.



Terry Kurdzionak swears in the AWCI officers: Mark Butterworth, treasurer; Jim Door, president; Alice Carpenter, secretary; and Dennis Warner, vice president.



Jack Kurdzionak congratulates Jim Door, AWCI's new president.



Terry Kurdzionak swears in Willem VanKempen, Industry Advisory Board Director; Glenn Gardner, Affiliate Chapter Director; and Doug Thompson; Research & Education Council Director.



AWCI's newly-elected directors, Mark Butterworth, Gerald Jaeger and Mark Baker.

Newly elected Mark Baker, and newly re-elected Mark Butterworth and Jerry Jaeger, were sworn into office by Terry Kurdzionak. Paul Wadsworth was reappointed as Parliamentarian.

Doug Thompson was elected by the Research and Education Council (REC) to represent the Council on the Board of Directors, Elbert Lewis was named Secretary and heir apparent. Joe Juaire reported that the number of REC schools (11) has remained constant after what had been a downward spiral. He said the REC schools stand behind the new certification standards and testing.









Pictured, top to bottom: Chippewa Captain welcomes AWCI aboard on tour of Casco Bay to House Island; Passengers disembark at House Island for AWCI-ELM Charitable Trust Dinner; Civil War Fort toured prior to lobsterfest; Rolex is thanked for its sponsorship by Terry Kurdzionak

Willem VanKempen was elected by the Industry Advisory Board as their representative on the AWCI Board of Directors. Tony Riggio reported that AWCI has more industry partners than it has had in many years because of AWCI's activities in education and working with industry toward a certification program.

Other office changes include a new chairman of the AWCI-Educational, Library & Museum (ELM) Trust, Mark Baker. Mark Butterworth will serve as Treasurer; Jack Kurdzionak, Secretary; Charlie Cleves as Museum Curator and Jim Door as Trustee at Large. Mark Baker reported that the "Friends of the Trust" program will continue and that the Trust will be publishing a book of the "Rock Quarry" articles by Fred Burckhardt.

The Perpetuation Fund Committee will be chaired by Jim Door, with Jim Lubic, Mark Butterworth, Alice Carpenter, Wes Door and Charlie Cleves serving as members.

Committee reports submitted by committee chairs were reviewed by the board. It was reported that the total net assets of AWCI are $8.4 million, which includes the headquarters building and well-protected government backed securities. Jim Sadilek reported that the *Horological Times* is maintaining its quality publication and credited Donna Baas, Managing Editor, for spearheading its improvements.

Membership dues in AWCI will increase from $74 to $79 following acceptance of the budget proposed by Mark Butterworth and the Finance Committee. Approval of a subsequent motion allows affiliate chapters to submit their annual meeting reports in electronic format.

A motion by the Affiliate Chapters repeated its request of last year that AWCI offer Internet courses preparing students to take the certification test. Executive Director Jim Lubic said that the new designations of Watch Technician I and Watch Technician II are planned to be largely internet training. He supports correspondence courses for beginning watchmaker technicians, but does not want this to be confused with the certification program.

The next Affiliate Chapter motion, passed unanimously by the board, requires the *Horological Times* (*HT*) committee to review the process for paying for ads and reimbursing authors. Author guidelines are to be established and published. Another Chapter motion, requiring publication of committee reports bi-annually in the *HT*, was later amended to require the reports be published but not specifying where (the web site and AWCImatters were discussed as possible venues).

The quality of videos produced of former convention speakers prompted a motion by the chapters that the existing live convention videos are sold only to AWCI members. The motion passed by a vote of 6-4. The next motion, to provide more recognition of AWCI and its credentials by the public, requested AWCI to provide ad mats or similar copy for promoting the advantages of an AWCI certified repair person.



Jean Esslinger and Bill Esslinger from Esslinger & Co., St. Paul, MN.



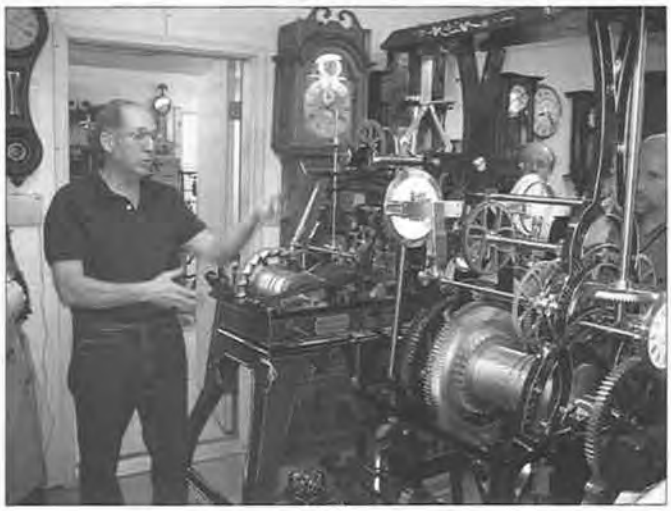
Bill and Marla Curley, Fixed in Time Clock Repair, Waterbury, CT.



Chris Gaber, Gaber and Co., Pittsburgh, PA, was on hand Saturday for the Trade Fair.



Gerald Wilson, Wm. S. McCaw Co., Toledo, OH, and Ira Goldstein discuss watch materials during the Trade Fair.



During the tour of Balzer Clockworks in Freeport, Maine, Richard Balzer shows one of the clocks he made.



Richard Balzer talks about a clock dial he is restoring.

Paul Fisk Receives AWCI Lifetime Achievement Award



The American Watchmakers-Clockmakers Institute (AWCI) during its Annual Meeting in South Portland, Maine, August 5-8, 2004, awarded the "Lifetime Achievement Award" to Paul Fisk of Charlottesville, Virginia. He is a graduate in business administration of Bridgewater College, Bridgewater, VA. Paul then attended the Philadelphia College of Horology where he received a senior degree in clockmaking. For graduation it was necessary to design and build a complete clock.

In 1955 Paul began his own business specializing in major restoration. During the 1970s he toured the country giving seminars for AWCI affiliate chapter conventions. He has also contributed articles to the AWCI monthly magazine, the *Horological Times*. Paul began to build clocks using his own innovations. His second clock was a tall case regulator with a very large exposed dead beat escapement. The open escapement was for the benefit of the public, allowing a person to watch the large escape wheel teeth drop on the pallets. He has succeeded in getting this clock down to one second variation in three weeks.

The third clock built by Paul is a very large tall case clock standing nine feet, two inches tall. The movement was eight years in the making with four different design changes from the original drawings. One of the most interesting features is the automatic ratio change. It automatically changes gears—one ratio for the quarters and another ratio for the hour strike. It sounds the quarters on four large hand bells. Another feature of his design is the double impulse gravity escapement using two escape wheels. It also has a perpetual calendar: part conventional and part his design. This clock won four gold medals at the National Watch and Clock Convention in Dallas in 1993. At the same convention, Paul won a gold medal for his fourth clock. This clock was a remontoire constant force crystal case regulator driven by differential gearing. It was featured in the *Horological Times*, Vol. 22, in August 1998. In 2003, Paul won a second place medal for his fifth clock, a quarter repeater with a four position selector.

The AWCI Lifetime Achievement Award was created to recognize a watchmaker or clockmaker for outstanding **personal** achievements or accomplishments. This recognition includes projects, inventions, innovative or creative ideas that meet a need, a recognized business success, etc., and Paul more than fills this requirement.

AWCI is the descendant of the American Horological Society founded June 9, 1892 in Chicago, Illinois. AWCI's 3600+ association members are dedicated to setting the standard of excellence in both the instruction and practice of quality horological repair and restoration work worldwide. AWCI offers certification for its members and a library and museum run by the Education Library and Museum Trust (ELM-Trust). The office is located at 701 Enterprise Drive, Harrison, OH 45030.

AWCI revised its mission statement to add the word "professional," by action of the board's 7th motion. The statement to be published now reads:

"The American Watchmakers-Clockmakers Institute is the premier professional international organization dedicated to preserving and promoting the highest standards of workmanship in the horological crafts. It is the role of AWCI to set the standard of excellence to be applied to the quality of instruction for both the repair and restoration practices that are taught worldwide."

A Bylaws change recommended by the Education Committee was unanimously approved by the Board, and changes the Certifications of AWCI to the following:

Watch Technician I (WT I)
Watch Technician II (WT II)
Certified Watchmaker (CW)
Certified Master Watchmaker (CMW)
Clock Associate (CA)
Certified Clockmaker (CC)
Certified Master Clockmaker (CMC)
Certified Master of the Institute (CMI)

The Board amended the Policy Manual to require AWCI to pay 50% of a speaker's travel expense to affiliate chapter meetings, provided 50% of the chapter members are AWCI members.

In compliance with Board policy requiring bi-annual teleconference calls, President Jim Door



Gerald Kincaid and Dan Spath present Paul Wadsworth with the AWCI Appreciation Award.



Gerald Kincaid presents Jack Kurdzionak with an Honoray Lifetime Membership Certificate.



Retiring directors are: Jack Kurkzionak, Robert Porter, Henry Frystak, Joe Juaire, and Tony Riggio.



D.C. Chambers, Gerald Kincaid and Dan Spath congratulate Dennis Warner as he accepts the Affiliate Chapter of the Year Award.



Sue and Jerry Fair, Jim Lubic and Vince Schrader.

scheduled teleconferences for Wednesday, October 27, 2004, and Wednesday, April 27, 2005. The Mid-Year meeting of the Executive Committee will take place February 5-6, 2005. The entire board will participate in the meeting by telephone conference call.

A website content committee was formed which will be similar to the *HT* committee and review primarily the educational content of the AWCI website. The Judiciary Committee will be dissolved.

Since the convention was held on the northeast coast, Immediate Past President Jack Kurdzionak tapped resources in and around the region to invite some of the best horological experts in the area to give presentations during the Saturday, August 7th Education Program. AWCI members gave glowing reports on the presentations and we offer our sincere thanks to the following presenters: James Moss, Cleaning Solutions and Differences Between Repair, Restoration and Conservation; George Collord III, History of Watchmaking in America; Richard Ketchen, Tools of the Trade, Past and Present; Richard & Linda Balzer, Life in the Towers after Seth Thomas and Howard (tower clock restorations); Tamara Houk, Job Track – Computerizing Your Shop; John Anthony Sorriento, Mechanica Handmade Watches. Richard and Linda Balzer were most gracious in allowing two tours of their shop. Many who were unable to take the



Dorrine Sadilek, Manuel Yazijian and Jim Sadilek



The Doors: Nathan, Merrianne, Jim, Betty and Wes



Terry and Jack Kurdzionak



Glenn and Donna Gardner

tour because of space limitations were able to see one of the Balzer's clocks in the original L.L.Bean store in Freeport.

During the Saturday Trade Fair luncheon, while the ballroom was filled with attendees enjoying a continental cuisine luncheon buffet, vendors tables outlined the ballroom enabling members to purchase items from the following: William Curley, Fixed in Time Clock Repair; Bill Esslinger, Esslinger & Company; Chris Gaber, Gaber & Co.; David and Trisha Kurdzionak, Eckcells; Doug Mauch, Chelsea Clock Co.; Dean Sarnelle, Once Upon a Time Clock Shop; Tony Voight, Witschi USA, Inc.; Gerald Wilson, Wm. S. McCaw Co.; and Ron Price, Price-Less Ads. While sales were being made, names were being drawn for door prize winners of the most excellent array of donations. Not only did Rolex sponsor the lobster dinner and Swatch the trolley rides, but AWCI received its largest ever collection of door prizes.

Attendees took home a mantle clock from Hermle Black Forest, a man's Seiko watch, a Chelsea mini-Constitution clock; free dial refinishing envelopes from International Dial Co., two lobster trap baskets filled with items endemic to Maine from Eckcells; as well as miscellaneous items from Merritt's Antiques, S. LaRose, and Butterworth Clocks. No one went home empty handed; at the registration desk each attendee received an AWCI tote bag and Baume-Mercier donated AWCI t-shirts for everyone.

The winner of the raffle drawing for a one-week stay at the Kurdzionak cottage in the White Mountains of New Hampshire was Arthur St. Germain of Melrose, MA. Lou Esselman of Cas-Ker Co. won a free meeting/conference registration and Arnold VanTiem won a one-year AWCI membership.



Arthur St. Germain



Ruth and Dennis Warner



Bob Porter, Lucy Fuleki and Lu Porter



Lori and Mark Baker



Sharon and Mark Butterworth

The AWCI Awards Dinner, Saturday, August 7th was the first opportunity for AWCI members to officially greet the new Board of Directors and their families. Award recipients were as follows:

Alice Carpenter, FAWCI
Paul Fisk, Lifetime Achievement Award
Paul Wadsworth, Appreciation Award
Bob Porter, Jack Kurdzionak, Henry Frystak, Tony Riggio, and Joe Juaire - Retiring Directors
Fred Burckhardt, Retiring ELM Trustee
Texas - Capitol Area Watch & Clockmakers Guild - Affiliate Chapter Award

Dan Spath and Gerald Kincaid presented awards. Terry Kurdzionak mingled with the audience dispensing gifts and quips to lighten the mood and encourage camaraderie.

Mark your calendars now. Next year's AWCI Annual Meeting will be held August 4-7, 2005.



Doug, Karen and Frank Thompson



Ron DeCorte, CMW

Vacheron Constantin

A Minute Repeater

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This article was produced in cooperation with TimeZone and the American Watchmakers-Clockmakers Institute (AWCI). This article recently appeared on TimeZone.com.

While visiting Vacheron Constantin in March, I was offered the opportunity to photograph some interesting watch movements in various states of completion, one of them being a minute repeater. Unlike a lot of other watch complications, the repeater is a bit mysterious, having most of its mechanism hidden under the dial. And so I thought it would be interesting to present an article on the subject of repeaters, particularly the minute repeater. This is not a definitive article on the subject, but rather a brief tutorial.

Striking watches, repeaters, were developed prior to electricity when checking the time during the night wasn't as easy as turning on a light bulb or looking at the illuminated electric clock. And during some of those long Sunday church services many a man was known to reach into his pocket, cradle his repeater in his hand, and count the hours and minutes until he was free to go fishing, drinking with his buddies at the pub, or visit his mistress!

The minute repeater strikes the hours, quarter hours, and minutes, on two gongs, each with a different pitch (Figure 1). Yes, there are exceptions to this two-gong rule, but they are very rare.

Setting the hour strike (Figure 3): The main operating lever "A" (inside the ellipse) slides along the perimeter of the watch case and pushes the hour-foot "B" against the hour-snail "C" containing 12 steps (hence 12 hours). The hour-foot is shaped like a boot, it's the toe of the boot (hidden) that contacts the hour-snail and sets the number of hours to be struck. The hour-snail is attached to a star wheel and is indexed once each hour.

Setting the quarter strike (Figure 4): When the main operating lever (slide) has been completely cocked and the hour-foot toe has contacted the hour-snail, the all-or-nothing spring "D" will release the quarter-rack "E" allowing it to rotate (fall) and make contact with the four step quarter-snail (hidden) that is located directly under the minute-snail. Note: The all-or-nothing spring gets its name for the fact that it only allows the watch to strike when the repeater mechanism has been fully cocked, eliminating false (incorrect) striking.

Setting the minute strike (Figure 5):



Figure 1. A Vacheron Constantin minute repeater wristwatch movement, topless.

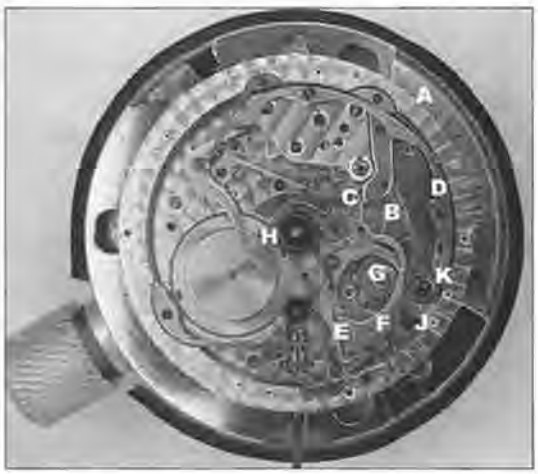


Figure 2. Basic operational and striking components of a minute repeater (see detail in Figure 3).

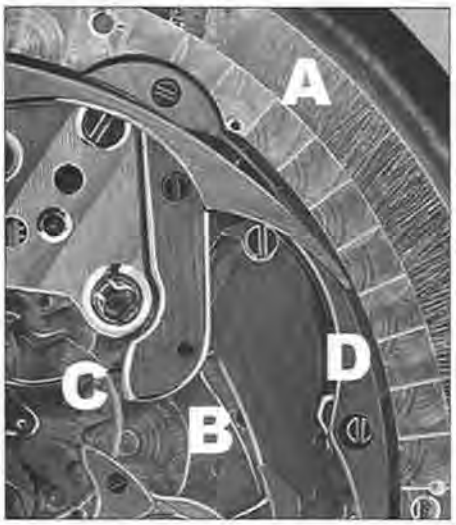


Figure 3. Setting the hour strike.

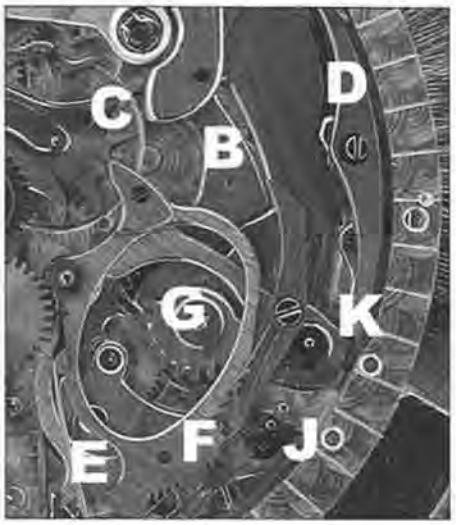


Figure 4. Setting the quarter strike.

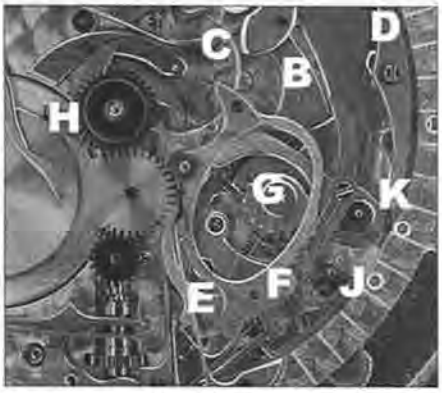


Figure 5. Setting the minute strike.

When the all-or-nothing spring releases the quarter-rack it also releases the minute-rack "F" that will rotate (fall) against the minute-snail "H". The minute-snail has four leaves, each with 14 steps (look closely, one leaf is hidden), and makes one revolution each hour. Notice the saw-toothed teeth on the edge of the minute and quarter racks (and similarly for the hours, hidden). These teeth will pass by the hammer-trips "J" and "K" when the racks fall and then engage the trips as the racks are retracted during the strike sequence, causing the hammers to strike the gongs.

Let's examine the process so far: The main operating lever (slide) is cocked, pushing the hour-foot toe

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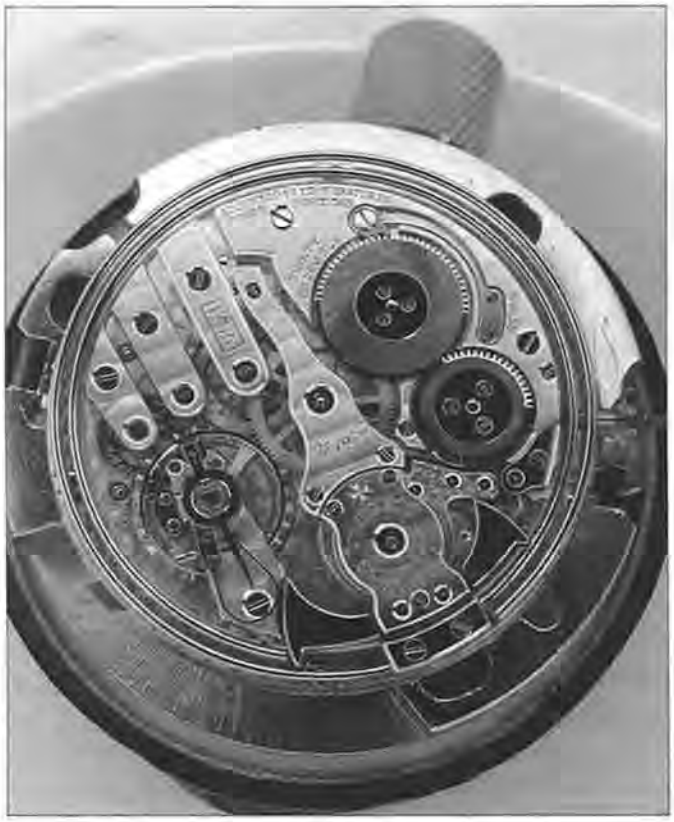


Figure 6. A view of the Vacheron Constantin minute repeater movement from the back.

against the hour-snail, the all-or-nothing spring releases the quarter-rack and minute-rack allowing them to fall onto their respective snails. At this point the mechanism is "cocked" and ready to strike the hour(s), quarter hour(s), and minute(s). Note: Cocking the main operating lever also winds the strike-spring, a small mainspring located at "G" (hidden) that will provide the power to raise the racks and make the striking.

As mentioned earlier the hammers "A" and "B" will strike the gongs "C" to mark the hours, quarter-hours, and minutes accordingly (see Figure 7). Hammer "A" is the "hour-hammer" and "B" is the "minute-hammer". The hour and minute hammers are used in alternating sequence to mark the quarter hours. Note that the hour-gong has a slightly lower tone (dong) than the minute-gong (ding), hence it is slightly longer and tuned differently.

Note: "Jeweled-to-the-Hammers" is a common statement when referring to high-grade repeater watches. Notice that the above Vacheron Constantin watch has two hammer-jewels "D" and the entire strike train is also jeweled, on both sides, making for a more friction and wear resistant watch. In some cases there is little, or no, jewelling of the strike train and in certain cases only jewels on the (visible) back side of the watch creating an illusion of quality that might not exist.

OK, let's make some noise, or music as the case may be. Let's say it's 03:35, and the slide has been cocked

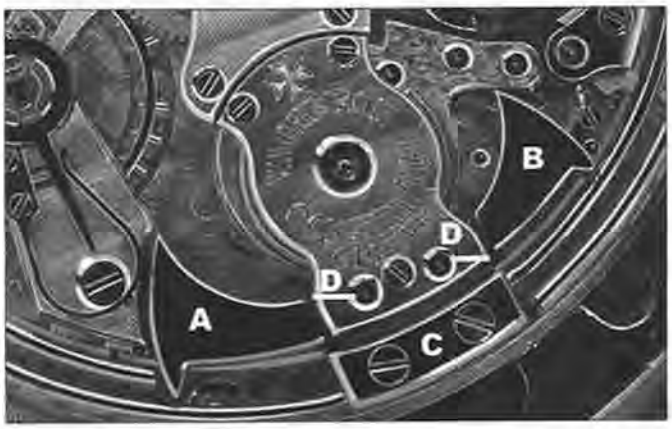


Figure 7.

and released. The third hour will be marked by three strikes on the hour-gong (dong-dong-dong), the second quarter of the hour is marked on the minute and hour gongs (ding-dong/ding dong), and the minutes are marked on the minute-gong (ding-ding-ding-ding-ding).

Sounds simple doesn't it? But believe me a striking watch requires a lot of precision to function properly and this article is only the tip of the iceberg!

Some important notes and comments about repeating/striking watches:

- Early repeating watches, "quarter repeaters", marked the hours and quarter-hour. Later the "half quarter repeater" was developed to mark the hour, quarter hour, and half-quarter hour. The "five-minute" repeater marks the hour and indicates the minutes within five. And then of course the minute repeater.
- A minute repeater is extremely complicated, far more complex than a tourbillon or perpetual calendar complication, surpassed in complexity only by the "grand-petit-sonnerie-minute-repeater" complication.
- All repeating/striking watches demand the most careful attention in operation and servicing.
- It's imperative that striking watches be serviced by highly qualified technicians. Each and every, and I mean EVERY, component should be removed and cleaned by hand. Anything less will result in corrosion and/or a sticky mess that will not operate correctly. You wouldn't take your expensive automobile to a backyard mechanic would you?
- Never force the strike operation or setting of the hands. Stop and get professional help.
- Moisture is the death of complicated watches. If you have complicated watches in storage, make sure they are stored in a dry wooden box (cigar boxes work very well), wrapped in a piece of wool (or a wool sock).

If you would like to see a more technical article regarding minute repeaters let us know, it might be arranged!



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Mark Butterworth

The Modern German Clock Movement

Part 47

The Urgos Model UW 7/53 Conversion

The background for this article comes from a conversion project by an old friend, Ray Pavkov of the Yankee Clock Peddler in North Haven, CT. He was kind enough to document the process in text and pictures. The Urgos UW 7/53 unit (left portion, Figure 1) is a basic time and strike, weight driven unit that was produced by Urgos over a period of many years. The unit was an excellent one, but by now many need to have the wheels repivoted to be rid of the plated steel that was used in the later 1970s and 1980s. It was used in many applications by a number of manufacturers, but one very nice and popular one was by the New England Clock Co. It is often called the American cuckoo clock, or Chalet clock, but the formal term was Model #216C Chapel wall clock. (See Figure 2.)

It turns out that a Hermle unit exists that is close to this model—the 241-030/45cm unit. It is shown on the right portion of Figure 1. There are both similarities and differences: Both have the same weight requirement and pendulum length. As a result, these do not need to be changed. The Urgos has a slightly longer hand shaft length of 37 mm against the 33 mm for Hermle. The height of the hand shaft of the Hermle from the bottom of the movement is about 1/8" higher. The hammers are directly between the plates instead of partly behind as in the Urgos, and strike in reverse order.

As a result, some adjustments must be made to do the retrofit. Ray has laid out the plan of attack:

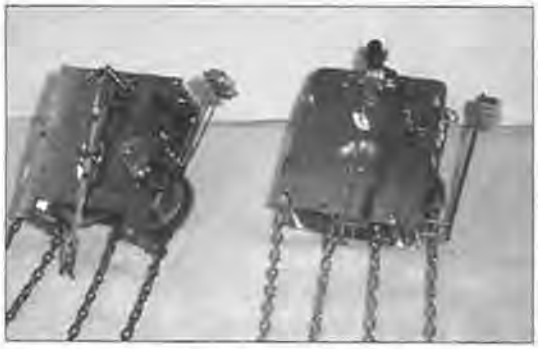


Figure 1. Urgos UW 7/53 on left and Hermle 241-030/45cm on right.



Figure 2. New England Clock Company Chapel wall clock Model 216C.



Figure 3. Inside clock case with Urgos unit.



Figure 4. Chime block after reversing the outer rods.

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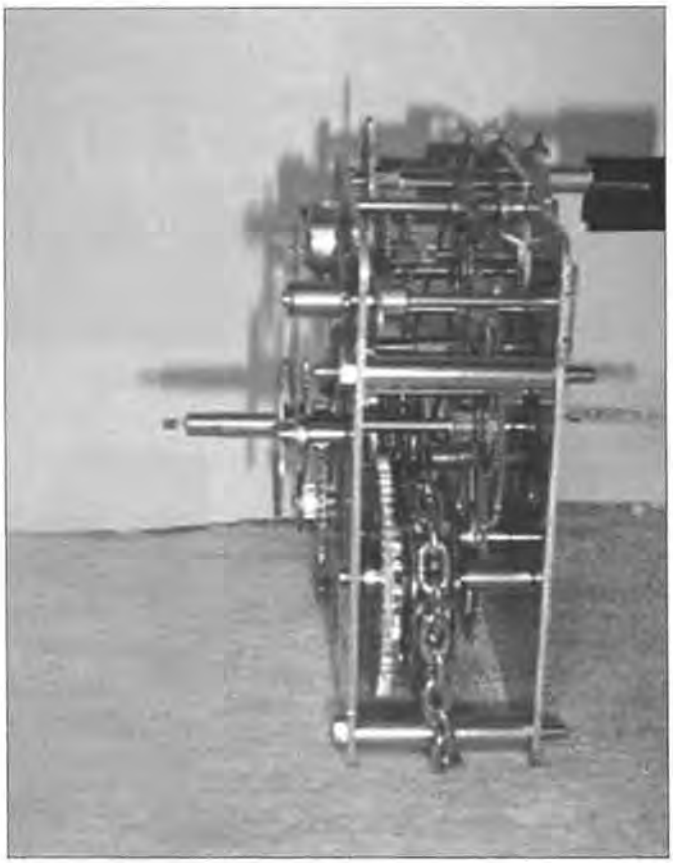


Figure 5. Hermle unit with front lower pillar extensions filed off.



Figure 6. Hermle installed with hammers adjusted at bottom to hit chime rods.



Figure 7. Reconfigured pendulum top to adapt to Hermle unit.

1. Remove old unit and chains. Figure 3 shows the inside of the clock case.

2. Raise dial 1/8" by removing the 4 brads holding the dial onto the case and recentering.

3. Cut off lower front mounting pillar studs from the Hermle as they stick out too far and hit the clock case. (See Figure 5.)

4. Bend chime hammers about ½" backwards. (See Figure 6.)

5. Exchange outside chime rod positions on the chime block. (See Figure 4.) Center rod remains unchanged.

6. Install new unit and chains and install chain hooks and rings.

7. Cut apart and bend over pendulum top to fit new leader or alternatively solder part of the old leader onto the new one. (See Figure 4.)

8. The new unit will beat at 6113 bph.

You now have a beautiful clock ready for many more years of service.

Final thought: *"Many a false step is made by standing still."—Anonymous.*

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Material Matters

Peter W. Eckel

Wow, it's been a while since "Material Matters" has seen the pages of *Horological Times*. For those of you that have been faithful readers for a number of years you may remember the column, in fact I know that someone does because every once and a while a customer asks me if there will be another. I guess this column answers the question in the affirmative.

For the uninitiated, "Material Matters" is about the one thing that the watchmaker can't live with and can't live without, watch material. As profound as that observation may be, the purpose of this particular writing is more specific. As any of you out there who may work on Omega, Rado, Tissot, Longines and Hamilton (modern) watches may have noticed, the parts distribution for those brands in the United States has undergone a rather enormous convulsion beginning approximately three or four months ago. This has made your professional lives much more difficult as it has for those of us who try to sell you the material. My goal is to give you the information that I have at my disposal in this confusing matter and to explain the new situation in which we find ourselves.

First, if you will allow me to digress, a little history pertaining to this dilemma. Long ago and far away life was reasonably simple for the watchmaker and the material person. You ordered FF 60 stems and set bridges by the dozens and bought cleaning solution by the case. Most material houses were quite regional in nature, parts were common, plentiful and cheap, and all was well. OK, this utopia may have been a little before my time which dates back to 1976 in the material business but that's what everybody told me it was like and I have no reason to doubt them.

Things began to change when watch companies decided that it was their responsibility to save the consumer from repair people who didn't know what the heck they were doing. I cannot tell you whether this threat was/is real or imagined on their part or whether they had other motives in mind. This probably began with companies such as Ebel and LeCoultre who were some of the first to restrict distribution of their replacement parts. Others followed; Tag, Breitling, Rolex and the list became longer and longer. Some cut out the material house only, others sold only to retailers that sold their product, some sold directly to the watchmaker while others went a step further and required proof that you had the knowledge and equipment to properly service their product. At first this was only a minor annoyance, I mean let's face it, when you were doing fifty or more mechanical watches a week and only came across these brands once in a while who cared. But as the ranks of the restricted grew so did the threat to your livelihood and mine.

If you the reader will indulge me further for a moment, I would like to brush the cobwebs from my soapbox and make an analogy. As anyone who remembers previous "Material Matters" will tell you, I am a car guy, a motor head if you will. I have finally come to peace with this and I no longer feel compelled to explain or apologize for it. When there is a repair needed and I do not wish to do it myself I always have the option to pay someone else to do it for me. Believe me, as I have gotten a little older the list has grown steadily. So, for example, I decide to have someone put a new rear main seal in the engine, if you don't know what that is all I can say is I hope like anything you never have to find out! I am left with a choice. I may choose to take it to the dealer, pay a higher price and assume that the promise of all the factory knowledge, skill and supervision will provide superior workmanship. I may choose to take it to any other reputable shop and trust that I will pay a little less but still get a job well done. Last and probably least I can call my best buddy's brother-in-law who thinks he is a mechanic and will probably do it for a case of beer and a pizza. Now if I choose the latter I am going into this with my eyes wide open and if he does a crummy job I will be forced to take it to someone more competent to have it done again. The important thing is the fact that when I bought the car it became ***MY*** car to do with as I wished. If I am foolish enough to let my friend's brother-in-law work on it, it's my decision. A good friend of mine who is also a fine watchmaker disagrees with me on this point. He believes that the manufacturer has the right to control the quality of the work done on their product in perpetuity. I see his point too. If I manufactured a fine timepiece I would not like to see shortcuts taken in its repair. However this is really none of my concern. So my friend and I respect each other's opinions and agree to disagree. The real point in our industry is this, who decides which among you out there is qualified to work on a high-grade watch. Certainly not me!

So back to the business at hand, the Swatch Group

situation. Please allow me one more disclaimer. Everything I write should be taken as the best information I had at the time of this writing. If there are inaccuracies I apologize ahead of time.

Swatch Group used to have a multi-tiered distribution program. They would sell parts directly to consumers, jewelers, watchmakers and material houses at varying levels of discount. When they decided to discontinue parts distribution four of the lines they carried became unavailable. Those four are Hamilton (modern), Rado, Tissot and Longines. The parts still available for these brands in the United States are limited to what your material house still has on hand. Luckily most of these watches use ETA movements for which parts are still available and plentiful for the time being from your favorite material house. A side note, I was told that Rado, Tissot, Omega, Hamilton (modern) and Longines parts would still be supplied by Swatch Group to authorized retailers of these products; however, after talking to both Bestfit and Newall, both have received calls from authorized retailers looking for parts because they have been unable to acquire them from Swatch Group.

Omega is the sole exception to this rule. Many of you, along with consumers inquiring about parts formerly available from Swatch Group, have been given the phone numbers of Bestfit and Newall. This was done without their knowledge and much to their dismay because neither of these companies sells parts to anyone other than material houses. After having talked to the powers that be at both Bestfit and Newall I have discovered that both have been inundated with calls from consumers, watchmakers and jewelers. Here is the important part; again neither of these two companies sells to anyone but material houses. You can't buy from them. That's the bad news. However the good news is that as long as the material house you do business with is a distributor for Newall or Bestfit they can obtain any Omega part you need or that you were getting from Swatch Group.

Yes this includes bands, links, bezels, crystals, crowns and all the movement parts that are still available. Both Newall and Bestfit are authorized agents for Omega Swiss just as Swatch Group is. When I spoke to both companies they also cleared up another misunderstanding causing problems for anyone servicing Omega watches, that problem being the pricing of the parts. Although neither company would go into detail about the specifics of pricing, they both told me that the prices of these parts has gone up a lot, kinda. Bear with me on this. Both Bestfit and Newall informed me that they have not adjusted their respective prices for any parts for Omega that they carry since Swatch Group discontinued parts distribution. Both have always carried or had available to them the full line of Omega parts. The problem in the past was that no one ever ordered bands, links or bezels from them because they weren't competitive with the prices Swatch Group was charging.

Even though Swatch Group is affiliated with its parent company in Switzerland they were supposed to be paying the same for Omega parts as Bestfit and Newall. However during the last eighteen to twenty-four months as the dollar declined and Omega Switzerland adjusted their pricing policies upward Swatch Group U.S. continued to sell many parts at or below Bestfit and Newall's cost... tough gig to make any money that way. In fact Bestfit told me that up until twenty months ago or so they could tell the material house how much a yellow, water-resistant Omega crown would cost without looking it up because they were pretty much all the same. Now each crown, crystal, bezel, band and link must be looked up first because they are coming in from Switzerland at widely varying prices. That was the situation until that fateful day a few months ago when Swatch Group changed their distribution policies.

So if you are ordering Omega parts have no fear, for the time being the pipeline is wide open from Omega in Switzerland through Bestfit or Newall in the United States to your favorite material house. The problem you are going to have to deal with is pricing and minor delays on things such as links and bands. Your material house is not ripping you off; Bestfit and Newall are not ripping off your material house, they are simply dealing with the situation in which they find themselves. If your material house **had** been buying many of these Omega parts from Bestfit and Newall all along you would have already noticed the prices getting higher and higher albeit more gradually. Since no one was really doing that, the shock of this new situation has caught everyone off guard.

So that is all the information about this industry altering event I have. I hope it has given you a better, clearer idea of what's going on and what you may expect for the foreseeable future.

And remember, Material Matters!

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Treasures of Memories

Don't get me wrong, I'm not getting sentimental, but I've been thinking about some of the things the new watchmakers don't experience. For example:

I remember when stems were forty-five cents a dozen.

I remember when fitting a crystal in a watch cost fifty cents for the thin type and seventy-five cents for the cylinders.

I remember when there weren't many timing machines around and each watch had to have the balance poised and the hairspring perfect in the flat and round. Then it was hung on a board for several days to check the timing.

I remember pre-ultrasonic days when watches had to be taken apart and the jewels had to be pegged.

I remember when there were no so-called no-break mainsprings and just about every watch needed a new spring because the old steel springs would "set".

I remember when the only batteries you had to worry about were those in the car and flashlights.

I remember when trade work was three dollars a watch and many times it included a new stem or crown or mainspring and if it was a good account, sometimes all three.

I remember when a person's word was all that was needed to bind an agreement in this business.

I remember when there were so many watchmakers around it was hard to find a job.

I remember when you didn't need all the fancy equipment to do a good job on a repair.

I remember when watchmakers were relegated to the back room or cellar because repair work was only a necessary evil and not considered a profit center.

I remember when a few seconds a day was considered excellent timing for the average watch.

I remember when a watchmaker who was making $80.00 a week was a real big shot.

I remember, before all the shock resistant devices became standard, when about seventy percent of all repair jobs needed a new balance staff.

I remember when you had to repair pin levers, fusees, cylinders and other lower grades in order to make a few dollars. (Don't kid yourself, they gave you great experience and an appreciation for higher-grade watches.)

I remember when six days and a couple of nights were standard workweeks.

Now that I remember these things maybe the so-called "Good Old Days" weren't that great after all!!!

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2004 North Seattle Community College Watch Technology Institute (NSCC WTI) Graduation

Chip Lim, CMW, CMC, CMEW
Photos by Chip Lim

With rucksacks in tow, nine of the latest WOSTEP ambassadors graduated from the NSCC WTI on an uncharacteristically sunny and warm Puget Sound afternoon. The date was Friday, the 20th of August at 15:28... Members of NSCC and WOSTEP administration, faculty, industry representatives, family and friends joined seven members of the class of 2004 to celebrate this milestone in what promises to be nothing less than dynamic, opportunity-laden careers for all. A cursory glance at Swiss Watch Federation (FHS) sales figures is but one factor in this favorable outlook. The U.S.A. continues to be the leading market for Swiss watch exports; sales for the first half of 2004 were CHF 837.8 million, an increase of 16.3% over the same period in 2003. This past June alone saw a 38.5% rate of growth.

Graduation speakers Jeff Grieff, head watchmaker, Ben Bridge Jewelers, Seattle service center; Mary Ellen O'Keeffe, Ed. D., NSCC Dean of Professional Education; Ron LaFayette, Ed. D., NSCC President; Bernhard Stoeber, Vice President of Technical Operations, Rolex U.S.A.; and Maarten Pieters, WOSTEP Director, covered a veritable mélange of captivating topics, replete with humorous anecdotes which kept smiles on the faces of everyone in attendance. An unbridled sense of optimism, accomplishment and pride in the horological profession was a common thread throughout the day. Thanks to Rolex



Class of 2004 Rear: John Schuitemaker, Karen Lindeman-Rohrer, Deane Benninghoven, Michael Sharkey, Evan McKay, Kelly Hunter, Steven Thompson. Front: Ron LaFayette, Henry Hatem, Maarten Pieters, Elaine Rolf, Bernhard Stoeber.



Maarten Pieters addresses graduation attendees.



A moment of relaxation for the class of 2004.



Post graduation ceremony.



Elaine Rolf, Steven Thompson, John Schuitemaker, Jeff Grieff.



A congratulatory message from Ron LaFayette.

U.S.A. this spirit of cooperation and camaraderie will continue uninterrupted into the future. Along with presenting scholarships to the two students achieving the highest scores on the first year's intermediate examinations, Bernhard Stoeber had the pleasure to announce that Rolex will continue to support the WTI program with an open-ended annual grant of $200,000.00 after the initial five-year agreement concludes next year.

"For the same price, you just get more..." Originally an advertising slogan for a local Pacific northwest company, this phrase found a new application at the WTI the week after graduation. For the first time in the WOSTEP program, Rolex U.S.A. provided an instructor (reportedly a WTI alumnus) from their training center in

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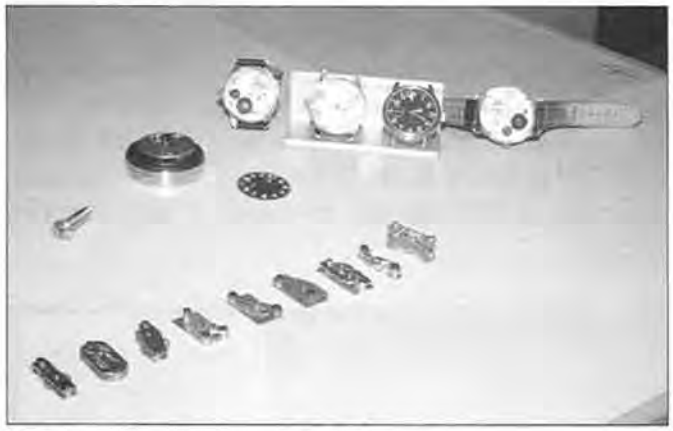
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Class of 2005 around the George Lewis Memorial Sundial. Henry Hatem, Ted Ojeda, Djerassi Cuevas, Luis Oseguera, Bryn Quinlan, Simone Braun, Kathryn Berne, Israel Coughlin, Kensuke Abe, Ed Cruz, Emilio Vadnais.



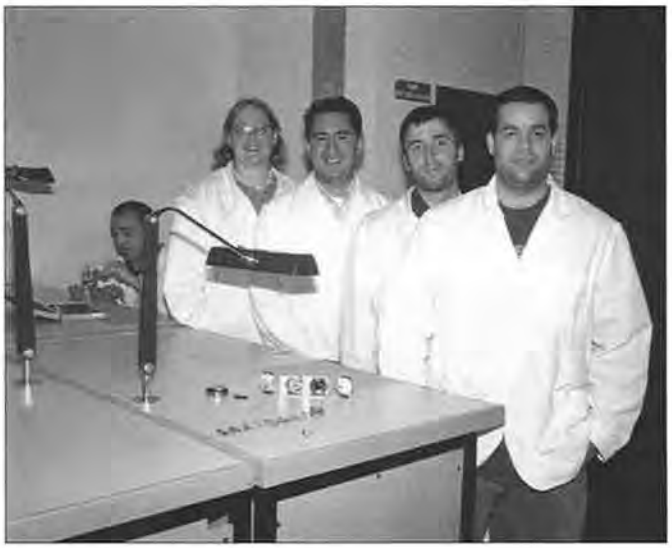
Class watch and micromechanics projects.



Maarten Pieters, Bernhard Stoeber, Ron LaFayette.



Open house: Simone Braun demonstrates screw head polishing.



Some of the class of 2005 with micromechanics projects.

Lititz, Pennsylvania to conduct a one-week program on the servicing of automatic calibers 2035 and 3035. Look for this module to be incorporated into the upgraded curriculums at the other three U.S. partnership schools.

The prolific team of Paul Williams and Roger Nichols captured the moment perfectly when they penned the jingle for a 1968 Crocker Bank commercial (which ultimately became the signature tune for Karen and Richard Carpenter): *"We've Only Just Begun..."*

First Student Completes AWCI Home Study Course in Clock Repair

In September 2002, AWCI announced the availability of the new Home Study Course in Clock Repair. The course is based on the original correspondence course written and administered by Laurie Penman, AWCI's resident clock instructor.

On July 16, 2003, Mark E. Lamb, Indianapolis, Indiana became a home study course student. After a year of hard work and dedication, Mr. Lamb successfully earned his certificate of completion on July 19, 2004. He is the first of the Home Study Course's 73 students to complete the 12 projects.

Mark Lamb is a man of many dimensions. He was born and raised in Indiana, holding many jobs throughout his 40 years. He has worked in a junkyard, cleaned swine barns, been a computer technician, and played in a country western band. These are just a few of the occupations that Mark dabbled in along the way.

In 1988 he met his first clock. It was an Ingrahm kitchen clock that had belonged to his great-great grandmother. It had been discarded, in pieces after going through a house fire several years before. Mark refinished the case and replaced the glass and dial. It looked so good, he decided it should run, so he went to the library and started reading books on clock repair. He was hooked.

He had married Brenda in 1982, and daughter Monica was born in 1986, and although there were other jobs along the way, his love of clocks and working with them never was far from his mind. In 2000, he and Brenda purchased the Speedway Trophy Center and Clock Repair. With hard work and dedication, they have turned it into a thriving trophy and clock business, repairing between 450-500 clocks per year. Daughter Monica is serious about getting into the clock business, and is looking forward to starting the home study course herself.



Mark Lamb, along with the 72 other students of AWCI's home study course in clock repair, have made the decision to build a strong foundation for their horological career. In Mark's own words: *I found it* (the course) *very challenging. It is definitely for someone who is serious about learning the trade...this course has added to my confidence level as clock repairman.*

If you are interested in learning more about clock repair and more about the Home Study Course in Clock Repair, contact Nancy Wellmann, Education Coordinator at AWCI. Nancy can be reached at (866) 367-2924, Ext. 303 or nwellmann@awi-net.org.





Questions & Answers

(Continued from page 4.)

the movement was made by one of the Geneva makers.

Most of the makers of complicated watches relied on independent specialists to make and fit the complications, like your chronograph mechanism, to the maker's precision movement. The very unique ¼-split second recording mechanism certainly would give a clue as to the actual maker, but I have not been able to find a definitive example of this in my references. I don't believe the maker was Patek-Philippe, with whom Tiffany has had a strong relationship since 1851, but it is certainly of a comparable quality.

Watches signed by Tiffany have a fine value all their own and knowing the actual maker would not enhance this value at all, although it certainly would be of historic interest if the maker could be known.

David Christianson, CMW, CMEW, FAWI, Technical Editor

Question

I read your article in my "*Bulletin*" dated December 2002 and I have kept it because it is so interesting and gives an indication of the effort and research you put into it. I got your home address from the NAWCC so I could write you. Any information you can give me I will certainly appreciate.

I have an old English pear case pocket watch with original dial, glass, ("bull's eye" glass?) and with a fusee chain drive movement. (In good running condition for its age.) The maker's name is George Bickerton – London – and the serial number is 10595. Both cases (inner and outer) have identical "hallmarks" stamped in the silver and there are three paper repair labels inside. One label is that of "David Straiton – watch & clockmaker – Montrose" the label has the number 8/245 (whatever that is) and the serial number of the watch 10595. The other two labels are of "D. King – watch & clockmaker – engraver – Montrose". The repair dates are July 1825 and April 1828. (Oh yes, the ceramic dial has Roman numerals and a second hand.) The hallmarks are below.



Crowned Leopard Head



WIL
Lion Passant



Date Letter & Shield

I gave this watch to my son to pass along. It was given to me many years ago when I repaired some clocks (for free) for an old lady who said at the start that she didn't have any money. When I returned all her clocks and was leaving, she took the pocket watch out of an old shoebox and gave it to me. I didn't know what I had, but after reading your article a few more times, I began to realize its value. It has the original chain drive and is key wound and set (of course). Any information you can give me will be most appreciated Mr. Christianson. Thank you for a very fine article.

John Barton
Clarksville, OH

Answer

Thank you for your inquiry and kind words. Normally I only answer questions forwarded to me through the American Watchmakers-Clockmakers Institute. But since you were so flattering, I thought I'd make an exception this time.

Brian Loomes, in his book *Watch and Clock Makers of the World, Volume 2*, lists a George Bickerton as working in Kidderminster between 1828 and 1850. This may or may not be the same one as your George. If he were, he would have lived to be mighty old, as you'll see later. Loomes lists the two repairmen, David Straiton as being in Montrose in 1820 and David King as being in Montrose between 1821 and 1851. The 8/248 on the repairman's label is probably his repair record book number.

Hallmarks stamped inside the watchcase go a long way in helping to establish the place, metallic content and year that the case was made. Many countries had a hallmarking system, but Great Britain had one of the most thorough. There were generally four stampings on silver and gold cases. One is for the initials of the case maker. One is for the assay office or assay "hall", hence hall-mark, giving an indication as to when the case maker lived. One mark shows the quality of the metal. The other mark gives the date letter inside a shield that indicates the year in which the case was assayed.

Old hallmarking punches were cut by hand, so there is some variance in the shapes of the marks and if the punch was tapped lightly or at an angle, the combination made some marks difficult to discern.

These hallmarks show a "crowned leopard head," which would have been the London assay office mark (until 1823). The "lion passant" (a walking figure of a lion) is the symbol for sterling silver. The shield with clipped upper corners was used by the London assay office and begins a date series starting on May 29, 1796. The letter framed within the shield indicates a date of May 29,1809 to May 28, 1810 (the assay office's fiscal year for that date letter). And the "WIL" would be the maker's initials. Unfortunately Philip Priestley's book, *Watch Case Makers of England*, does not list a maker with these initials, so we don't know who made the case.

With this information we know that your antique fusee pear-cased watch is of sterling silver and was made in London around 1809. If this were the same George Bickerton that Loomes lists, he would have been a very old man (considering the average life span in the mid-19th century)

when he quit working in 1850. He would not have been able to sign his own watches until he become a master at around 21 years of age. If this were one of his first watches, he would have been at least 71 years old when he was ending his career in Kidderminster, a venerable age at that time in history. If this were not he, then it could very well have been his son; although there is no indication that he had a son that followed him into his profession.

This information about the case hallmarking comes from *Watch Case Makers of England*, by Philip Priestley. *NAWCC Bulletin,* Supplement #20, Spring 1994. Columbia, PA.

Hope this is of some help.

David Christianson, CMW, CMEW, FAWI, Technical Editor

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David Pierce, Gambier, OH, is seeking a copy of a chart for the Swartchild friction jewel assortment #49004JF.

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HT



Laurie Penman

New Bushing System

Part 3

The Bushmaker and the Installer

The system and tools described in these articles are the subject of five-day classes at Harrison or by local Bench Course, Using the Center Lathe for Clockmaking Tools #1, *during which most of the tools can be made and used. The class is intended to provide instruction and experience in the use of the center lathe and other workshop tools. Please contact Nancy Wellmann at (866) 367-2924, ext. 303. This new system of bushing was designed by Laurie Penman and developed at the AWCI in Harrison.*

The Drill

Although this is being described here in the third article, the choice of drill needs to have been made when making the quill of the bushing tool. There is a note to this effect in the second article, which I repeat:

Flat-sided, or straight-fluted drills of 3/16" or 5 mm diameter and 2¼" to 2½" overall length and a shank of the same diameter as the bit will meet the needs of bushed holes up to about 3/32" diameter, 5/16" or 8 mm diameter will produce bushes that will deal with pivot holes up to 3/16" diameter. I would not use a bushing tool for holes of 3/8" or more.

The actual drill (Figure 11) that I have used is described in MSC's catalogue as: Solid Carbide 2 Flute 140° Straight Flute Drills. 3/16" dia. (about $15). It drills easily and is not affected by the worn hole it is removing. I have successfully lined it up on the periphery of a 1/16" hole and had it cut without effort and no movement of the plate. It may sound expensive for a drill, but compare it with Bergeon reamer and take into account that it should last for years, and it looks good.



Figure 11



Figure 12

The Hollow Mill or Bushmaker

This is a simple tool to make but it needs care. The drawing shows much of the detail but not the actual diameter of the bore of the tool because that depends on the bush diameter that you intend to cut. This tool is made from drill rod because it must be hardened and tempered light amber to form a cutting tool.

Prepare the rod by cutting to length and drilling its whole length with a hole that is about 0.010" smaller than the bush-forming diameter. Use a sharp drill and drill carefully so that the exit hole is pretty concentric with the outside diameter—a "run-out" of 0.005" is acceptable. By making careful measurement of the length of the rod and marking the drill accordingly, drill down this first hole with a drill that is

0.015" to 0.020" larger than the bush diameter, stopping 1/16" short of the other end.

Turn the rod around, set it true and lightly face the end, remove no more than about 0.005" to 0.010". Bore out the hole to be 0.005" smaller than the drill diameter, turn about ½" of length down to a diameter 3/16" larger than the bore. You now have a short tube with a wall thickness of about 3/32", which should produce bushes 0.002" to 0.003" larger in diameter than the drilled hole—when teeth have been cut into it!

Cutting the teeth can be done by hand but it is far simpler to use a milling machine and a dividing head. Whichever method is used, the work needs to be held in a chuck. First, cut the spaces between the teeth. A small milling cutter like this really calls for three teeth to maintain their strength, but if you are making by hand, four teeth allows the use of a saw cutting directly across the diameter, producing two slots at right angles to each other.

Two angles need to be produced on the end of the tooth, the "relief" (20°), should leave a "land" (part of the original face) of about 1/32". The second angle of 10° is the cutting angle and removes this "land". A milling machine will enable you to establish this equally on all teeth, but if you do it by hand, file the angle until the last of the land is about to disappear—and then stop.

Carefully remove any burr or fraze from the inside of the bore and then oil harden. Temper to light amber at the tip and almost purple at the root of the tooth.

I incorporated a centering device in my hollow mill so that the bushes would emerge with a spot for the pivot drill to locate in accurately. Figure 13 shows this as well. The point is a three-sided pyramid made by filing or milling. To file it by hand, make a cone first of all that is true to the diameter, then file three flats that end precisely on the point of the cone. This should produce a cutter that makes a small cone in the dead center of the bush as it is being turned. After installing the bush this cone locates the required drill accurately.

The Installation Tool

This is a simple matter of a making a flat-ended punch that fits inside a brass tube. The face should be about 0.05" larger than the diameter of the largest bush it is to install. Since all the bushes will be made to one or two standard outside diameters this should not pose a problem. Note that the length of the strike places the lower end lever with the lower end of the bush, this will make sure that the striker does not mark the clock plate. Make the punch a nice slide fit in the tube and ensure that the flat end is smooth and polished. The other end should

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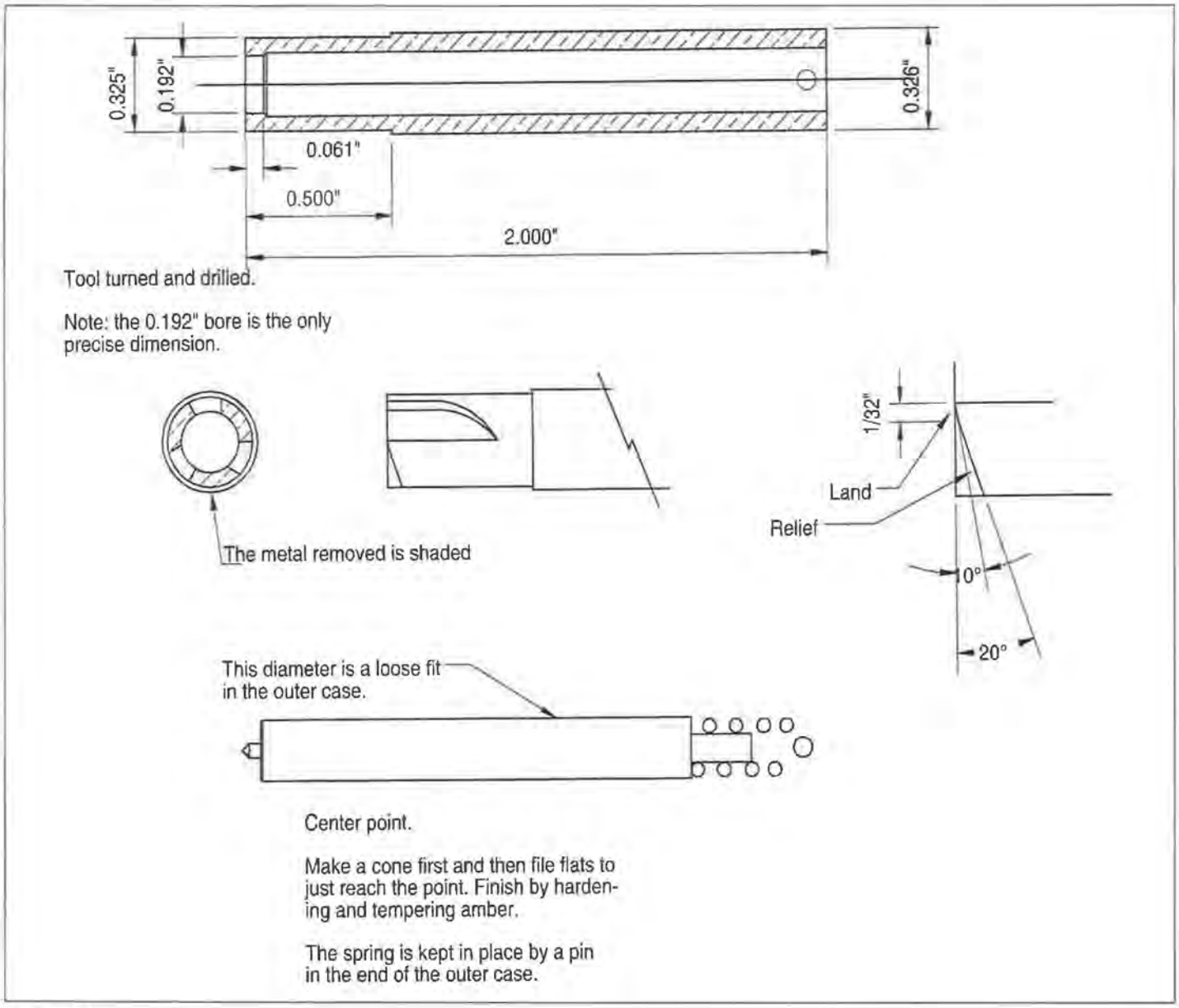


Figure 13

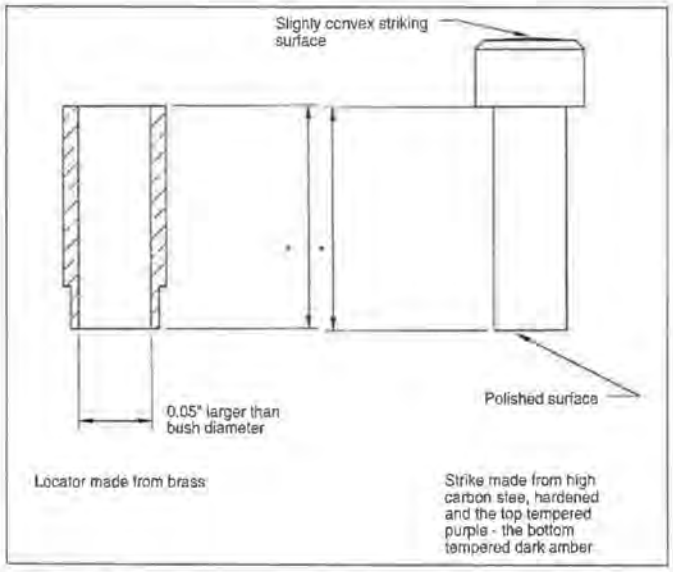


Figure 14

protrude about ¼" from the top of the tube and have a chamfer on it. This is the end that is struck by a hammer and the chamfer is simply to prevent it burring. The smooth face is hardened and tempered dark amber, the struck end is tempered purple or left soft. It is most improtant that the top surface is not hard or it is liable to produce dangerous splinters when struck by a hard faced hammer.

Make the tube easy to handle—and pretty to look at.

That is the full complement of tools, next month I will detail the use of the whole set.



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Jack Kurdzionak, CW

From the Workshop

You Are Invited

Do you have a solution to a watch or clock repair problem that you want to share with our membership? Do you have a question about a repair problem you would like to ask? I invite you to participate in this column with your suggestions, questions, and comments. It's easy. Just e-mail me at AWCI<magazine@awi-net.org> or write using the old standby known as the postal service. You can even fax me at 513-367-1414.

I will do my best to help you help the membership. By sharing your questions and suggestions all of our members can benefit from our combined knowledge and experience. The ideas, tools, techniques and products presented in this column are suggested by the author and contributing members and are not endorsed by any manufacturer, supplier, advertiser or AWCI itself.

Twenty-First Century Watchmaking

Seldom used tools, equipment, and supplies should be stored, sold, or otherwise disposed of. The efficient watchmaker has his commonly used hand tools, equipment, and supplies close by, preferably within arm's length. The watchmaker should be able to access these items without getting up and moving around the shop. It does not make sense to have a Seitz jewelling set on the bench taking up valuable space, while keeping the watch screwdriver set in a cabinet several feet away. Frequently used hand tools can be kept on the bench; all others should be away from the immediate work area. Tools that are used less frequently can be stored in drawers or cabinets, not too far away from the bench, but not too close either. Seldom used tools should be kept even further away. The efficient watchmaker should always follow the "tool rule."

Essentially the tool rule states "the less they are used the further away they should be stored". Some tools, especially duplicates, are so seldom used they should be stored away from the shop, sold, or even thrown away. One watchmaker I knew owned nine complete staking sets, however he used only his favorite one for over thirty years. The remaining sets were kept in his shop, gathering dust on a shelf. The same person also owned six lathes and only used one. Eventually, he sold most of the staking sets and the lathes. Only after doing this did he discover that he really did not need all of his spare tools. He was able to work quite well and more efficiently after eliminating the pile of obsolete equipment taking up his valuable shop space.

Many watchmakers have accumulated a large number of old GS crystal cabinets, full of GS fancy crystals. These crystals now sell for nearly $100/dozen *when they are needed.* A watchmaker with a collection of GS cabinets who is able to sell his entire stock immediately, at half that price, would be able to opt for an early retirement. This scenario leads one to ask the important question, "Does anyone buy these crystals anymore?" The answer is "Yes, but not too often." The demand for these crystals has declined much faster than their price has risen. Our own shop now uses about eighteen or so per year. When one is needed, it is selected from the nearly complete set of eleven cabinets we own and store away from the workshop's premises. The revenue generated by these cabinets did not come close to paying their share of the store's rent when they were kept on the premises. They were non-performing assets that used valuable shop space, generating a mere $150 annually in revenue. We moved these eleven cabinets from the shop to the cellar of my house where I had some low cost, unused storage space available. Now, when a GS crystal is needed for a vintage watch, it is taken from the supply at home. Moving these cabinets out of the shop has freed up considerable shop space and improved the appearance of the shop; these old cabinets would not win any beauty contests. One supplier of GS crystals has told me that when he receives a call from someone offering to sell a set of GS crystal cabinets, complete with thousands of crystals, he refuses to buy them or even accept them as a gift. His suggestion to anyone owning these cabinets is to just dispose of them. He says he will not live long enough to sell the crystals he already owns. Only regularly used crystals should be kept in the watch shop. All others can be stored off premises or purchased on an "as needed" basis. Watchmakers do not have to have a tremendous supply of crystals on hand for watches that seldom come across the bench.

Obsolete watch spare parts also take up space. Why do we, as watchmakers, save old parts that we will most likely never use? There are several answers to that question. We think that we may need those obsolete parts *someday*, and we worry that they will not be available. We are unsure of what is worth saving hence we save *everything*. Also, we worry they may be worth a *great deal more* in the future, and we will miss the gain in value. These and other concerns can prevent us from taking actions because inaction seems like the safe thing to do. In reality, inaction can be a very costly gamble. Watchmakers who maintain a large inventory of obsolete spare parts are gambling that those parts will be worth much more in the future, **IF** they can be sold or used in a repair.

Why not turn these spare parts into cash by selling them or take a tax write off by donating them to a charitable organization? Some obsolete parts are plentiful and will never be used. The A. Schild calibers 1187 and 1200 come to mind immediately. Watchmakers seldom see these once very popular models today, yet because of their former popularity, spare parts are plentiful. An excess supply of these spare parts can be painlessly disposed of and never missed. Other seldom needed spare parts for obsolete models are valuable to watchmakers who still service them. Spare parts for the Hamilton 500 and 505 model electric watches that were made about forty-five years ago are a good example. It makes sense for watchmakers no longer servicing these watches to sell them to a person who specializes in the repair of these models. Spare parts for tuning fork watches also fall into this category. If you do not service the watch, sell the parts to someone who does.

Deciding which parts to keep on hand and which to dispose of is the most difficult part of dealing with obsolete parts. The triage method works well here. Separate the stock into three sections; one for parts that will definitely be needed, another for parts that may be needed, and the last for parts that will likely never be needed. The ones in the never needed section can be sold, donated or thrown away. The ones that are definitely needed should be stocked in an easy to understand and quickly accessed system. The others can be put into storage in a back room or cellar to be accessed as required. Watchmakers should always maintain their focus, which is to provide quality watch repair service and only maintain a supply of currently used spare parts. All others are essentially obsolete and holding them is a long-term gamble, which may never pay off.

Jack Kurdzionak

Pallet Arbors

The late Irving Cohen, a well-respected watch material dealer in Boston, was a watchmaker's watchmaker. In addition to selling spare parts, he also fit them for watchmakers who were unable or unwilling to do so. He observed during his seventy years in business that the vast majority of the trade and retail watchmakers in Boston at that time (there were over 100 of them) had difficulty fitting pallet arbors. That small part can be difficult to install without proper equipment but simple to install with the appropriate tools and the skillful hands of a watchmaker.

An AWCI member has asked how to install a new friction pallet arbor in an Omega wristwatch. First, note the position of the original pallet arbor in the pallet fork before



removing it. Next, remove the existing pallet arbor using a set of Seitz jewelling tools. Select a small flat stump with a hole large enough to accept the arbor. Then place the pallet upon the stump with the long part of arbor in the hole. Choose a pusher from the ***anchor regul*** section of the jewelling tools (as shown in the photo). These pushers are very small with a tiny hole just large enough to accept the pivot of the pallet arbor. Use the jewelling press to gently push the old arbor out of the pallet. Compare the replacement arbor to the original to make certain it is the correct replacement. Now turn the pallet fork over on the stump and place the new arbor onto the hole in the pallet. If it falls away, use a small portion of grease to hold it in place and upright. Then, using the same pusher as before, gently press the arbor into the pallet with the jewelling tool (as shown in the photo). Duplicating the position of the original will accurately set the position of the replacement arbor. In every case, test the pallet's position in reference to the escape wheel and the roller on the balance. Make adjustments to the pallet's height as required. Pallet arbor replacement is neither tricky nor impossible; it just requires the proper tool and a watchmaker's skill.

Jack Kurdzionak





Glenn D. Gardner, CMW

Affiliate Chapter Report

Going over the affiliate chapter reports we can see that membership in the affiliated chapter groups isn't any different from AWCI. Most groups had a decline in membership but the ones that started having more training sessions have gains in that area. Two groups in particular were the Maryland and Virginia groups. Maryland has been having 12 meetings a year for quite awhile. They have watch and clock sessions for their members and have gained quite a few new members from these seminars. Virginia has a clock school at night. The school was started by Marvin Whitney many years ago and now has been doing well getting people interested in the trade. It was announced at the meeting that they will not be held this year with Maryland and Virginia.

Looking at some other groups I find St. Louis has a monthly meeting and has very much expanded their programs of instruction. They have 23 members now and seem to be growing.

According to my notes it was mentioned that New Jersey and New York were planning on having a joint meeting in the future. With all of their contacts among company representatives in that area it should be something to watch for.

Pennsylvania is another group that meets monthly. I know they are very active because I get their monthly newsletter. It would be helpful if more affiliate chapters put me on their mailing lists. That way I would know what is going on and could give groups recognition once in a while. The Capital Area Guild in Texas also has monthly meetings. They have grown from being a new chapter just a couple of years ago. They now have 68 members. Minnesota Watch and Clockmakers Association shows only one meeting a year but I happen to know they have seminars at St. Paul Technical College quite often. They also are a strong group holding their own with 87 members. Massachusetts has 87 members and seems to be attracting new members with interests that coincide with our trade.

With the new AWCI website being introduced, each chapter should have their own site for information about their chapter within the AWCI website. This should help get new members for your chapters. I would like to see more information on *AWCImatters* about chapter meeting dates and a contact person for more information. Next month I hope to have a report from one of the chapters.

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