



Chrono Times

NAWCC Chapter 190 Newsletter

Ventura and Santa Barbara Counties
March/April 2016

PRESIDENT'S MESSAGE BY KEN McWILLIAMS

It may be early in 2016, but Chapter 190 is off to a fast start. We have always been a progressive chapter, and try to keep abreast of the latest technologies and methods. In January, the Board of Directors created a new category, "Social Media". One of our newest members, Jess Ashby, was appointed Director of Social Media. At the February Board of Directors meeting, Jess gave the board a very comprehensive description of the various social media entities available at this time. He also presented a very detailed plan on how we can use some of them to spread the word about our chapter and our projects. We will soon have a presence in the social media world.

(continued on page 6)

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TALES FROM THE BENCH
BY FERDINAND GEITNER

Beat Conversion

A very interesting movement came across my desk the other day. A nice 8 day desk clock made by Omega, Caliber Number 120. As expected it was a fully jeweled quality movement with one very special feature. With a standard Swiss lever escapement, the balance oscillates at 18000 beats per hour or five beats per second. The escape wheel has fifteen teeth so it turns one full revolution in three seconds or five teeth per second. Watch factories often opt for faster beats of the balance as it gives the second hand a sweeping rather than ticking motion and tends to be more accurate. (continued on page 3)



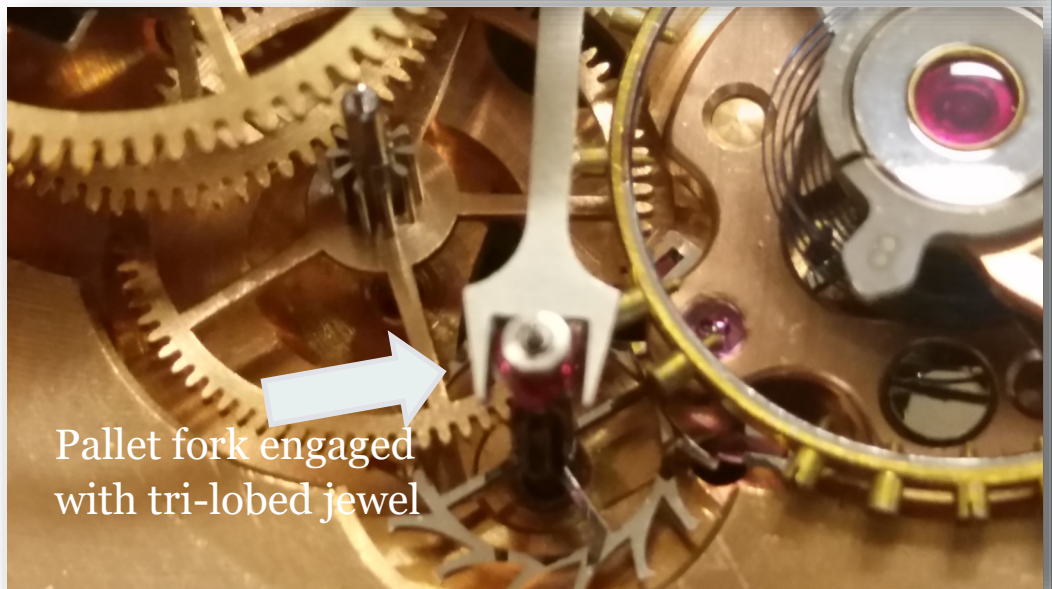
Tri-lobed jewel mounted to escape wheel shaft

CHAPTER 190 MEETINGS ARE HELD THE THIRD SUNDAY OF THE MONTH (EXCEPT JUNE AND DEC.) AT VENTURA COLLEGE IN THE CAMPUS STUDENT CENTER

SELLERS MAY START SETTING UP AT 11:30

THE MART IS OPEN FROM 12:00 TO 1:15

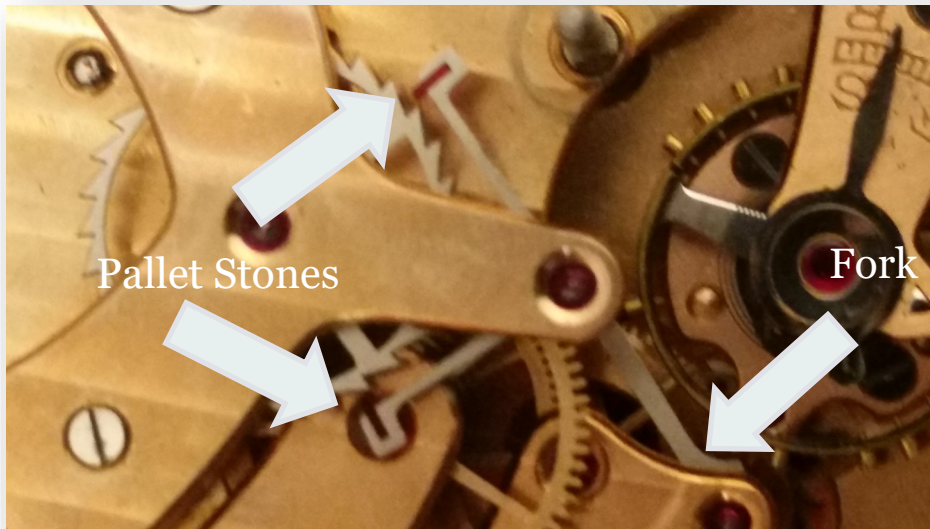
THE MEETING STARTS AT 1:15



Pallet fork engaged with tri-lobed jewel

Close-up of fork engaged with the tri-lobed jewel

TALES FROM THE BENCH
(CONTINUED)



The special pallets, fork and wheel

In this case a jewel which is polished into a triangular shape was added onto the shaft of the escape wheel. The jewel engages with the fork of a larger “pallet” with specially shaped pallet stones. These are designed to push on a gear with sixty specially shaped teeth advancing the wheel one tooth at a time every time the triangular jewel on the escape wheel makes a third of a revolution. This gear acts like a center seconds wheel going through the center wheel and has its own bridge which it shares with the special “pallet” lever.



The Omega movement

Each time the escape wheel turns one third of a revolution its triangular jewel moves the pushing pallet in one and then the other direction. Advancing the center seconds wheel one step every five escape wheel teeth and showing seconds impulses on the dial turning a standard fast beating lever escapement into a motion like a chronometer with seconds impulses.

THE FIFTH POCKET BY TOM FERKEL

I remember as a kid, asking my father what the tiny pocket on my jeans was used for. He wasn't sure, but his guess was that it was a change pocket. I tried using it for that, and must admit that it worked very well for that until a few years passed and my fingers were larger. I still used it for change, but really, it became more of an agility chal-



View of a pocket watch pocket in action

lenge. Once my fingers were in, it was hard to get them back out, and they seldom came back out with the pocket change I was hoping to grab. I became the monkey and the cookie jar. Eventually I stopped putting my loose change in there, so I guess that at that point the pocket became an intelligence test as well. That was the last I thought about it for many years. Fast forward about 55 years to last week. I was looking around on the internet the other day and ran across an article that addresses the small, 5th pocket on a pair of Levis. Many of you may know this already, but it was news to me that the tiny 5th pocket

was intended as a watch pocket. Levi Strauss confirms that it was indeed intended as a place to keep one's pocket watch. The pocket dates back to at least 1879. If you would like to see the entire article, here is the link:

www.huffingtonpost.com/entry/small-pocket-jeans-watches-cowboys_us_56a7720ce4bob87beec5eb5f?cps=gravity_5115_-5333126535354758754

Of course, as soon as I read the article, I pulled out a couple of my pocket watches and, as promised, they fit perfectly.

FROM AROUND THE WEB BY STEPHEN PULVIRENT

One of Patek Philippe's signatures is the level of hand-finishing that each component receives. The internal and external edges of every bridge and plate are beveled, the tops are brushed and decorated, and nothing is allowed out of the factory without going through stringent quality controls.

<http://www.bloomberg.com/news/photo-essays/2015-10-21/a-rare-look-inside-patek-philippe-s-geneva-headquarters>

Photographer: Luke MacGregor/Bloomberg



THIS MONTH'S MINI WORKSHOP



Starts At 11:00 a.m.

This will be an open workshop

All are invited to share and ask questions on all clocks and watches.

CHAPTER MEETING CALENDAR

20 MARCH MEETING

MATT BONACCORSO

"A SAMPLING OF QUALITY AMERICAN CLOCKS FROM THE COMPANIES OF JOSEPH HENRY EASTMAN"

17 APRIL MEETING

MOSTYN GALE

"CLOCK CONSERVATION FOR DUMMIES"

INTRODUCTION TO HOROLOGY COURSE
BY DAVID PEREZ

A video series covering a basic American time-only movement is available on the NAWCC YouTube channel. It is made up of sixteen short videos

(no longer than 8 minutes each), describing the various components of how a clock works. The content is from an "Introduction to Horology" course, which NAWCC Chapter 190 member Lex Rooker teaches and will travel to teach for free to



The proud owner of an impressive new clock was showing it off to a friend. This clock, he said, will go for 14 days without winding. Really? replied his friend, And how long will it go if you do wind it ?

Chapter 190 Meetings

Third Sunday of the month (except June and Dec.) at Ventura College in the Campus Student Center

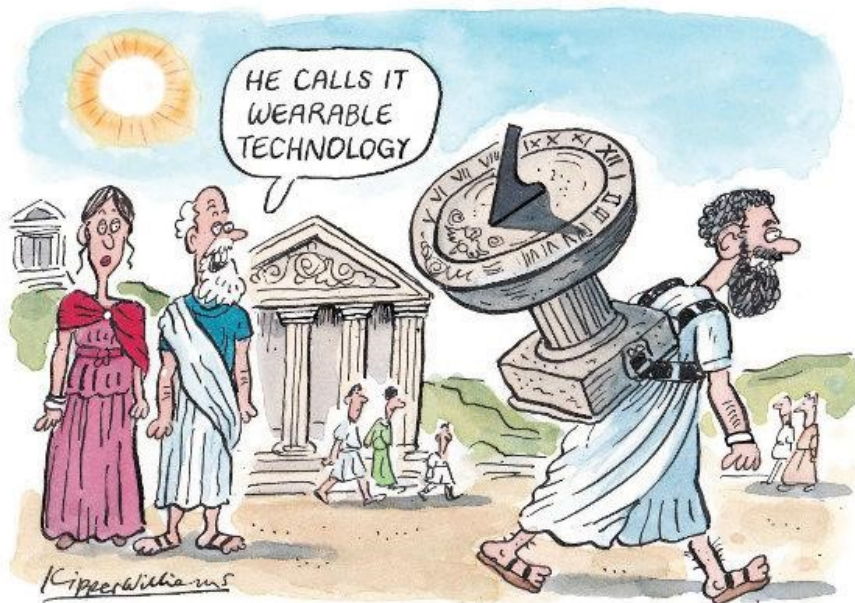
Sellers may start setting up at 11:30

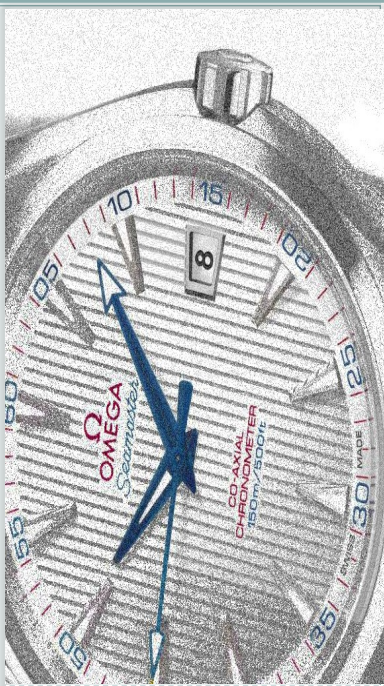
The Mart is open from 12:00 to 1:15

The meeting starts at 1:15

- [Introduction](#)
- [Chapter 1](#) - How a Clock Works
- [Chapter 2](#) - The Going Train
- [Chapter 3](#) - The Power Source
- [Chapter 4](#) - The Escapement
- [Chapter 5](#) - The Timing Source
- [Chapter 6](#) - The Beat vs. Period
- [Chapter 7](#) - The Wheel Train
- [Chapter 8](#) - Movement vs. Force
- [Chapter 9](#) - The Motion Works
- [Chapter 10](#) - Escapement Theory
- [Chapter 11](#) - Deadbeat Escapement
- [Chapter 12](#) - Disassembly
- [Chapter 13](#) - Mainspring and Spring Winder
- [Chapter 14](#) - Reassembly
- [Chapter 15](#) - Putting the Clock in Beat
- [Chapter 16](#) - Setting the Rate

other chapters if they contact him at lex.rooker@usinter.net. Lex produced the videos and donated them to the NAWCC for our use to promote the NAWCC as a source of horological education. To view go to the Chapter 190 Website Video Library <http://www.nawcc-ch190.com/VideoLibrary.html>





PRESIDENT'S MESSAGE (CONTINUED FROM PAGE 1)

Our chapter is also looking to expand our education program. Providing quality learning experiences for our members, and others, has been the cornerstone of Chapter 190 since its inception. While still in its design phase, our goal is to provide two-day workshops equivalent to many of the present four-day NAWCC Field Suitcase Workshops, as well as many other horological subjects not covered by them. To achieve this, we have created a nine person education committee. The education committee will meet for the first time on March 26, 2016, to lay the foundation and create a plan to accomplish our goal. One of our biggest challenges is to find and train instructors. If you feel that you could contribute to this, please contact me, I welcome all suggestions.

“Our chapter is also looking to expand our education program. Providing quality learning experiences for our members, and others, has been the cornerstone of Chapter 190 since its inception.”



The program at our January meeting was on the Santa Barbara tower clock presented by Rodney Baker. There was a question and answer session after the presentation, and member Bill Robinson recalled the time that our chapter met there for lunch and a tour of the courthouse and tower clock in October 2012. Bill suggested that since we have so many new members, maybe we should consider it again. I asked if anyone in the audience would be interested in something like this. Virtually every hand was raised. Well, since it is my job to accommodate our membership, whenever possible, I have formed a committee to determine the feasibility of another meeting at the Santa Barbara Courthouse. We are looking at the October 2016 timeframe.

Our Board of Directors has decided to cancel our annual Mart for 2016. This was due to the close proximity to the Channel Islands Regional that was just held at the Fairgrounds. An item on the agenda for the March 2016 Board of Directors meeting will be to discuss whether or not Chapter 190 should consider participation in the 2017 Channel Islands Regional. Along with this will be a discussion on rescheduling the chapter's annual Mart. I welcome any and all comments that you may have on these subjects.

I hope to see you all at the March meeting.

Ken McWilliams

The Verge Escapement

(From Wikipedia)

The verge (or crown wheel) escapement is the earliest known type of mechanical escapement, the mechanism in a mechanical clock that controls its rate by allowing the gear train to advance at regular intervals or 'ticks'. Its origin is unknown. Verge escapements were used from the 14th century until the mid 19th century in clocks and pocketwatches. The name verge comes from the Latin *virga*, meaning stick or rod.

Its invention is important in the history of technology, because it made possible the development of all-mechanical clocks. This caused a shift from measuring time by continuous processes, such as the flow of liquid in water clocks, to repetitive, oscillatory processes, such as the swing of pendulums, which had the potential to be more accurate. Oscillating timekeepers are used in all modern timepieces.

https://en.wikipedia.org/wiki/Verge_escapement

MY TRAINING AT WEST DEAN COLLEGE BY MOSTYN GALE

Many of you know that I spent the last year in England at West Dean College taking clock courses. I thought you might be interested to learn a bit more detail, so this article will answer the burning questions: What is West Dean College? Why did you go there? What did you actually do all day?



West Dean College in West Sussex, UK

West Dean College is a small, private college near the south coast of England, about 100 miles southwest of London. The College was opened in 1971 and is funded by the Edward James Foundation which was established by Edward James in 1964. Edward (1907-1984), was the heir to his family's fortunes and a life-long patron of the arts. He is best known for his patronage of Surrealist artists Dalí, Magritte, Tchelitchew, Fini and Carrington. He built reputedly the finest private collection of Surrealist art in the world. He set the course for the college to be a place that champions creativity and teaches traditional arts and crafts practices. Today it enjoys a reputation as the premier institution for conservation of heritage crafts and objects. Many of its graduates have gone on to work at some of the most prestigious organizations worldwide. The College has a formal relationship with the University of Sussex, wherein the University academically validates and awards the college's Masters degrees. The College also offers Diploma programs which are less academic and focus on the hands-on aspects of heritage crafts.

(continued on page 8)

MY TRAINING AT WEST DEAN COLLEGE (CONTINUED FROM PAGE 7)

The typically 60 full-time students each year are enrolled in Masters Degree Programs in Conservation Studies and Collections Care as well as Diploma Programmes in conservation of books and library materials, ceramics, clocks, furniture, metalwork, musical instruments, and historic buildings. I was enrolled in the Postgraduate Programme for Conservation of Clocks and in the Master of Arts program for Conservation Studies. At the Chapter meeting in April, I will be presenting a program entitled, "Clock Conservation for Dummies". Hopefully you will find it interesting and instructive.

THE CLOCK PROGRAMMES

In all, there were seven students in the various clock programmes while I was there but the workshop can handle up to nine. Normally the programmes have a two year duration, but because of my training at Chapter 190, I was able to jump in half way and complete the course in just one year. To my knowledge there are no other schools in the world like this for clocks. In addition to learning restoration and repair skills, learning about conservation and how best to preserve history was very important to me. Additionally, this school has great connections to institutions such as Greenwich and the British Museum as well as a host of other highly regarded institutions and collectors throughout the UK. These connections provide opportunities for learning, for work on historic objects and exposure to some of the most highly regarded conservation professionals that regularly lecture at the college. For example, David Thompson, the recently retired curator of horology at the British Museum gave us four lectures on the history of horology whilst I was there. In short, I went there because it's the best school in the world for clocks.

(continued on page 9)



The clock I worked on was made about 1725 by James Snelling

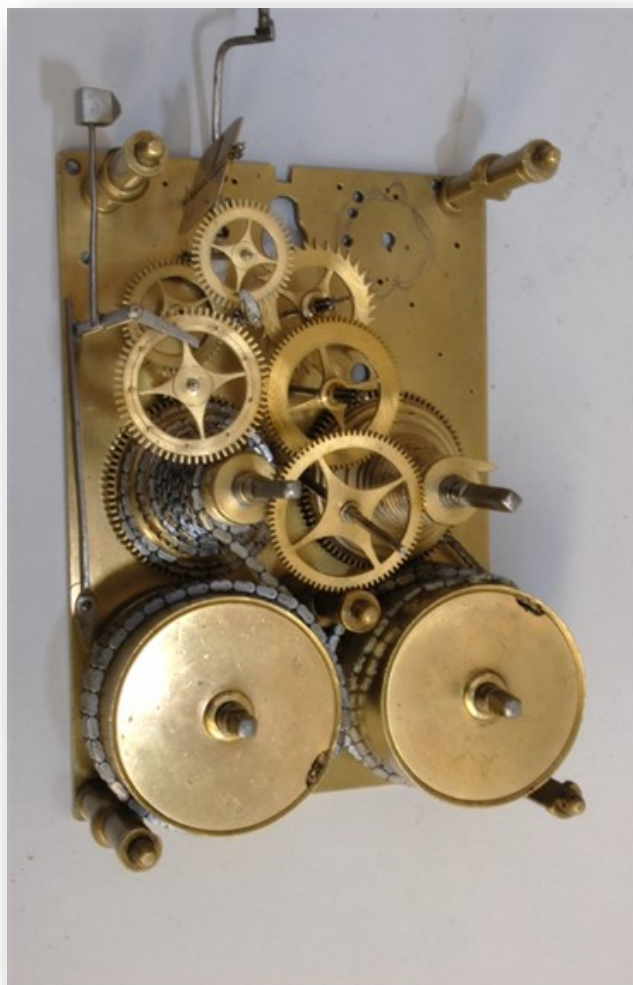
MY TRAINING AT WEST DEAN COLLEGE (CONTINUED FROM PAGE 8)

What did I do each day? Every day was like a dream to me and hard work was part of it. We were required to be in the workshop by nine o'clock (I was usually there about 8:30) and we were there until at least 5:30 or 6:00 at night. We had tea breaks in the morning and afternoon and a very nice lunch provided at the school. I began the course work by learning some basic hand skills; primarily filing steel and brass, but also cutting, heat treating, grinding, piercing, and finishing. We learned these by making some basic tools such as a file cleaner, a scribe, a punch, a screwdriver. That basic work took up about six weeks. Interspersed with time in the workshop we had classes on topics

“Topics for these included blacksmithing, sand casting, gilding, lacquering,”

such as science for conservation and academic writing. Typically, sometime during the week, in the workshop we would also have a session on how to assess the condition of a clock or write a Condition Report or a hands-on skill such as riveting. We were also taught to photograph our work and keep daybook records of what we were doing. About once a month we had a special topic involving a 2-day class, usually held in another workshop in the college. Topics for these included blacksmithing, sand casting, gilding, lacquering, copper and its alloys, turret clocks, wood identification, engraving, finishing and mathematics for horology.

After learning some basic skills, we turned our attention to designing and building clocks. Essentially, the normal two year Postgraduate programme spends the first year building a basic clock and the second year restoring several different kinds of clocks. Since I was trying to do everything in a year, I began the designing and building process but did not finish it. With some guidelines given as to the overall objectives, the design/build process began with understanding gear ratios, laying out the wheel placement, and building an anchor escapement model to learn the escapement principles as well as some basic skills like making fly cutters and cutting teeth on wheels. We then moved on to gear and pinion cutting, hard and soft soldering, crossing out and colletting wheels, depthing, bushing, cutting pillars and staking them to plates, and more. (continued on page 10)

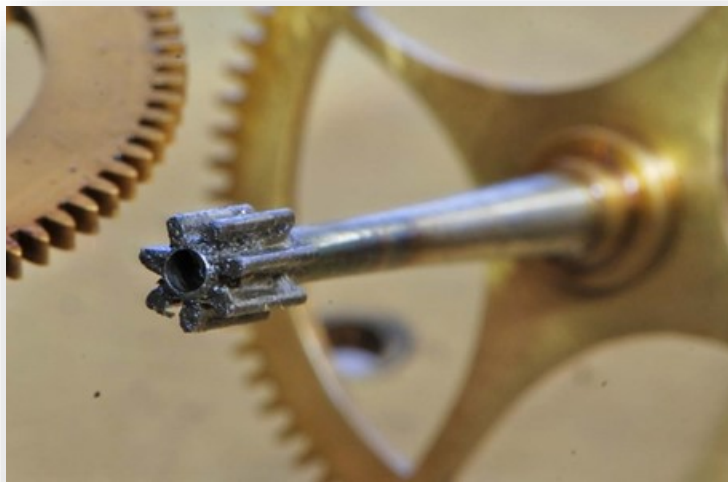


The inside of the movement showing the anchor escapement wheels that need to be replaced.

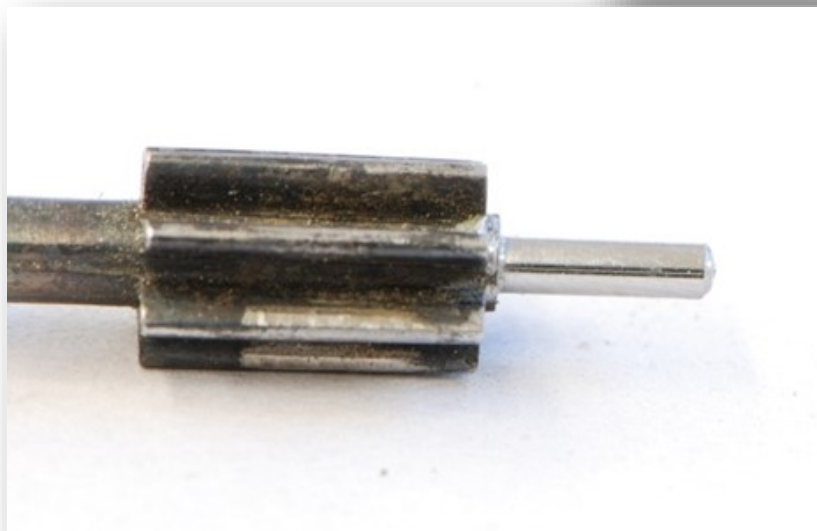
MY TRAINING AT WEST DEAN COLLEGE (CONTINUED FROM PAGE 9)

While I practiced most of these tasks, I did not use them in making a clock because I was on a one-year timeline. Instead I began work on a major restoration project that was to take me through the duration of the year. My project was to convert the going (time) train of a 300 year old bracket clock back to the verge and crown escapement that it started life with. Sometime in the mid-18th century, it became the proper thing to do to upgrade your clock from a verge and crown wheel to an anchor escapement. Many clocks were converted. Over the last decade or so, it has become a popular (some think it was the right) thing to do to convert them back. Regardless of the rationale, it served a very useful project for me to learn some fundamental restoration skills as well as learn a bit about a different escapement type. This task involved making everything needed from raw materials, mostly steel rod/plate and cast brass – here's a partial list of over 50 parts that I had to make: center wheel, contrate wheel and pinion, crown wheel and pinion, verge, mounting potences, back cock, rise and fall levers, hands for the dial, crutch, pendulum, false pendulum, holdfast, and screws. Lots of fun! The photos do a better job than a description – take a look.

What I have described thus far was all work that went toward a Postgraduate Diploma in restoration of clocks. As I mentioned, I also received a Master of Arts degree in Conservation Studies. This work started in the second half of my year and continued through the summer months. The main goal here was to do some research and write a 10,000 word thesis. There were weekly classes designed to both help us along with our research and writing and also to learn about conservation. The classes were taught by highly respected people in their areas from institutions such as the University College London, the British Museum, and the University of Amsterdam to name just a few. (continued on page 11)



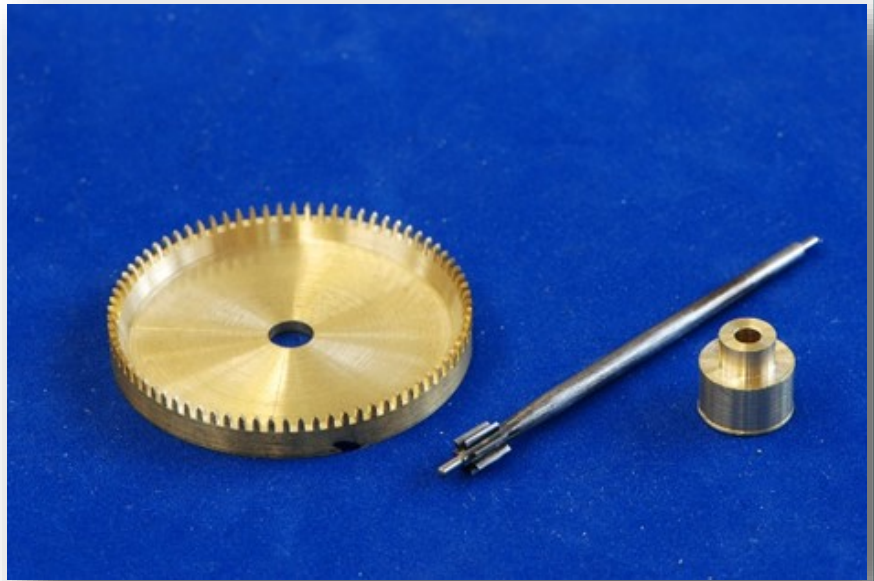
Above: The pivot fell right out of the center arbor when I took the clock apart – a good chance to practice repivoting



Left: The finished pivot

MY TRAINING AT WEST DEAN COLLEGE (CONTINUED FROM PAGE 10)

To help us in our research and writing we also had regular assignments to turn in; three oral presentations, two written essays, and 4000 and 8000 word thesis drafts. One of the essay topics was “Identify and explore the intangible and ethical aspects of conservation related to your research question (2000-2500 words).” Aren’t you glad you didn’t have to write that one? We also met with the tutors on a regular basis to discuss the scope and progress of our research, beginning with trying to define exactly what it was that we were going to do. The thesis could not be just research, being a practical school with a conservation focus, we had to do something practical that had to do with conservation. It took a good six months to nail down what I was going to write on and what the practical aspects were going to be. In the end my thesis title was, “Exploring Methods for Determining the Age of Mainsprings.” I will write about this in another (shorter) newsletter article. I am sure you don’t want to read the whole thesis. My research involved visual characterization, microscopic analysis, and use of an x-ray florescence analyzer on a collection of 20 mainsprings. Of course there was a lot of reading on the history of steelmaking to



The components of the contrate wheel.

begin to understand the process for making mainsprings. I also performed a survey of horologists regarding the replacement of mainsprings – that will also have to be the topic of another article – some of you participated in that.



The assembled contrate wheel

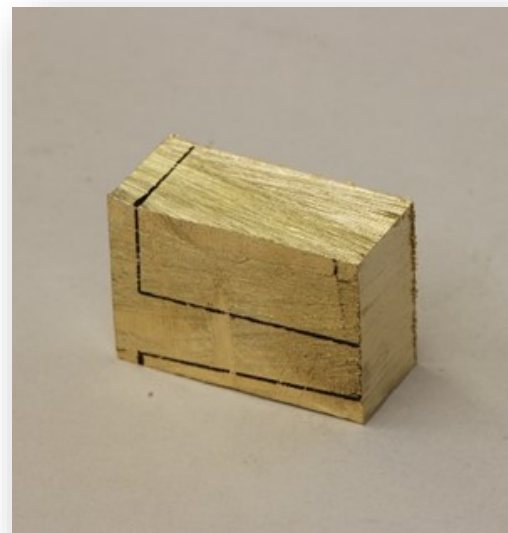
(continued on page 12)

MY TRAINING AT WEST DEAN COLLEGE (CONTINUED FROM PAGE 11)

Writing and rewriting, formatting, editing, and re-editing - somehow it all got done in time. I do appreciate the learning but it was not a piece of cake. After all the work, it seemed that I would not get any useful results until I did more structured analysis of the data – then things began to make sense. I was able to confirm the approximate manufacturing date of mainsprings for two different clocks at the college and confirm them to be, to the best of our knowledge, original to the clock.

My work was completed on the 18th of September and we returned home on the 1st of October. We plan to return to West Dean this coming July for my formal graduation. This was a great adventure – I think you can tell that I learned many things while I was there – of course, you don't have to go to West Dean to learn about clocks – we have many good courses, workshops, and educational lectures right here at our Chapter. There is something for everyone, an enormous amount of work to be done and fun to be had! It is especially important to have fun!

If you want to read more about our trip to England and West Dean College see my blog at www.saving-time.org. (continued on page 13)

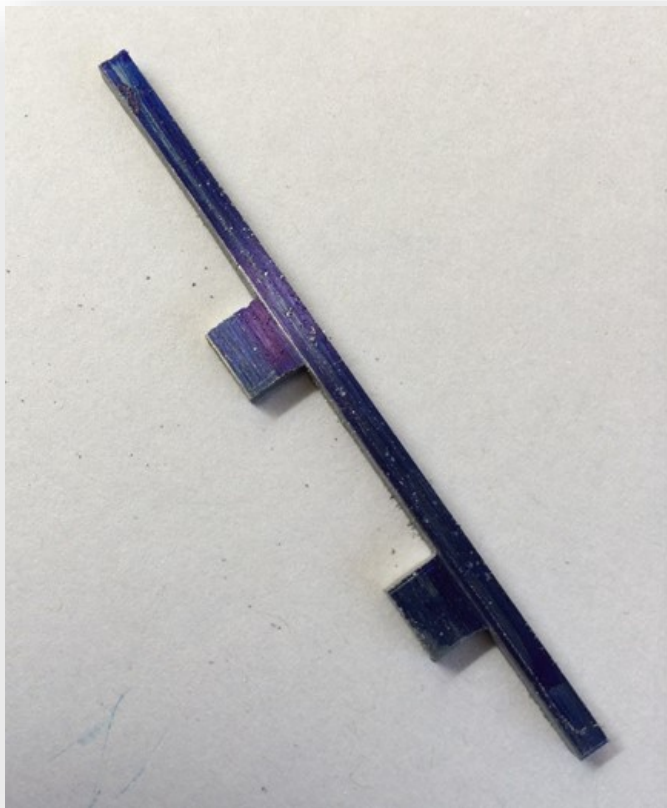


Potences (the mounting pieces for the crown wheel) were cut and filed from pieces of solid cast brass



This photo shows the center wheel, the contrate wheel, and the crown wheel arbor in place with top and bottom potences for testing the depthing

MY TRAINING AT WEST DEAN COLLEGE
(CONTINUED FROM PAGE 12)



The verge was cut from a piece of 3 mm steel gauge plate. I marked it blue so that I could see scratched cutting lines

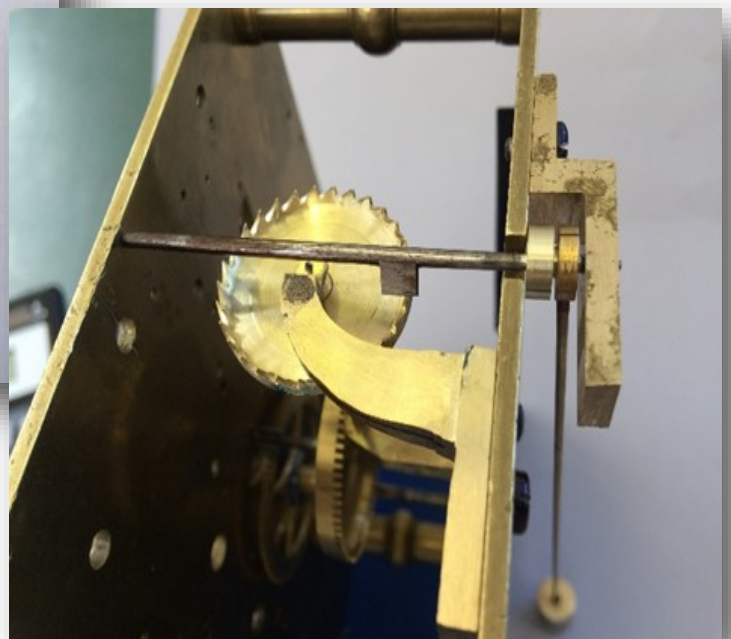


The pallets are cut in half lengthwise, to get their faces in line with the arbor center, and then twisted to get the right offset angle



The finished verge

The verge and crown wheel being tested in position. Note that none of the parts are finished at this point

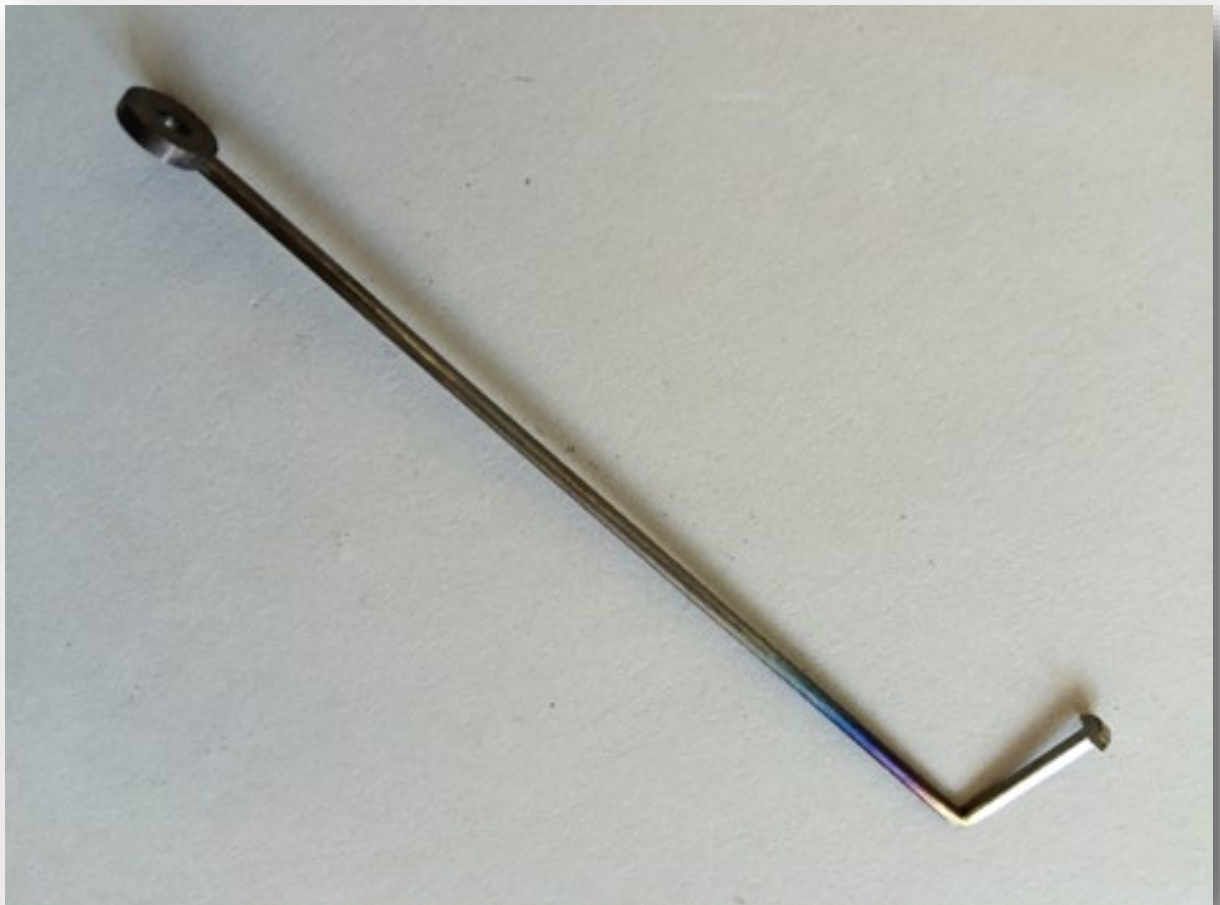


MY TRAINING AT WEST DEAN COLLEGE
(CONTINUED FROM PAGE 13)

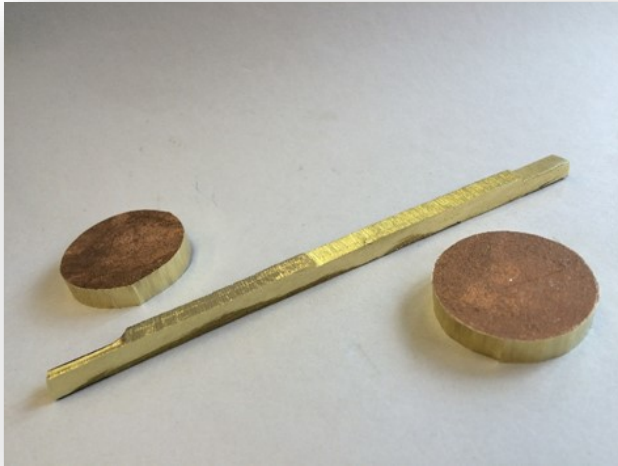


The pendulum crutch was cut from a piece of steel gauge plate then filed, formed and heat treated.

The finished pendulum crutch



MY TRAINING AT WEST DEAN COLLEGE
(CONTINUED FROM PAGE 14)



The pendulum was cut from pieces of cast brass.

The bob was made in two halves and soldered together.



The pendulum rod took a lot of careful filing

The finished pendulum. The bottom part of the rod was left long until rating was completed.



(continued on page 16)

MY TRAINING AT WEST DEAN COLLEGE
(CONTINUED FROM PAGE 15)

Two new hands were cut from gauge plate and finished to better match the period style.



The new hands are in the center and far right subsidiary dials.

(continued on page 17)



MY TRAINING AT WEST DEAN COLLEGE
(CONTINUED FROM PAGE 16)



The pendulum was suspended on a long spring and the rate controlled by rise and fall levers. You can see one of the levers riding on a snail on the back of the dial. As the snail is rotated (manually from the front) the pendulum is raised or lowered to adjust the rate.



Happy Birthday

March

GREG ANSERLIAN
MICHAEL ARNOLDUS
RICHARD BRINSER
ALAN DAVIS
TIM HARRIMAN
JORGE MONTOYA
RICHARD MUNTZ
TOM MUSSELMAN
MICHAEL POLLARD
STEVEN STEWART
JERRY TREIMAN

April

MARK DAVENPORT
DONNA GAGLINI
CATHY GILLOGLY
WILLIAM HALL
RON KUBITSKY
LOREN MILLER
WALTER PICKETT
DEAN SANDERSON
JEFF SLOBODIAN
LARRY SMITH
LEE WADE

BIOGRAPHY: SUE GARY

BY WALTER PICKETT

– Husband is Robert Gary and adult daughter is Eren-Marie Gary.

– Born in Los Angeles. However, she lived in Colorado, Michigan and Nebraska prior to moving back home to the greater Los Angeles area in 1986.

– Bachelors of Arts degree in Speech and Hearing from UCSB, and a Masters of Arts degree in Audiology from the University of Denver.

– She and her husband Robert owned a promotional products business for 26 years. Prior to that she worked as an audiologist in both Iowa and Michigan.

– She loves scrapbooking and reading. Currently, she's a volunteer at the Camarillo Friends of the Library Bookstore as well.



Here is Sue's story in her own words

My first direct contact with the group, other than walking around meeting marts and regionals rather aimlessly with Robert, was when I attended Phil Gregory's Reverse Glass Painting class, in Northridge a few years ago. Previously, I had taken decorative painting classes at our local Michael's Craft store, and I felt pretty confident my skill set in painting would make the 4 day class a piece of cake. Was I ever wrong! The gentlemen in the class had fabulous fine painting skills and I was barely able to keep up. It was a terrific learning experience. Not long after I finished the class, I found a very sorry looking decorative clock at a Pasadena regional, for \$10. One of the existing porcelain panels had a lovely painted eastern Indian image. The other panel was totally missing. I purchased the clock thinking I could practice my new reverse glass painting skills. As Robert and I did the necessary steps to create the image for transfer and painting, we realized we could reproduce the image through scanning much better than I could ever hope to paint it. So, that is what we did, and I have yet to practice my reverse glass painting. (continued on page 19)

BIOGRAPHY: SUE GARY (CONTINUED)

NAWCC Achievements and Participation

I really began feeling connected to NAWCC after Robert and I were able to visit the headquarters and museum in Columbia, PA, in the Fall of 2013. The museum is stunning, and meeting many of the staff was a terrific way for me to get a feel that the organization is there to help me explore my interests. Shortly after our visit, we were asked to do the video work for the Ward Francillon Time for Everyone Symposium in Pasadena. The lectures truly got me “hooked” on the entire study of time. I loved meeting so many of the lecturers and being able to speak with them informally.

Since that time, we have been on a heavily, clock-based travel schedule, which has been just terrific. Completing Chapter 190’s Public Introduction to Clocks Class gave me the confidence to assume I would be able to understand much of the information presented on the AHS Germany Horology Study Tour we took in the Fall of 2014 (a dream trip). The experiences I have had, by being involved in this fascinating field, have been truly magnificent.

Co-Directing the Chapter 190 Mart with Donna Gaglini was a pleasure, as well as tons of work. It was very rewarding to have the Mart be profitable, and to be able to donate some funds back to National really made it feel like the effort was worthwhile both for Chapter 190 and National.

I currently serve as the Board Secretary for Chapter 190, and I am currently a member of the NAWCC Audio/Visual committee.

I created the program “Do You Know What Time It Is? The creation of standard time in the United States” for a local Rotary Club. I also presented this program to Chapter 190, and it was also made into a NAWCC webinar.

FROM: WATCHTIME - USA'S NO.1 WATCH MAGAZINE

Written by Mark Bernardo, February 12, 2016

Omega spent years developing a material blending ceramic and 18k gold, known as Ceragold. The technique used to make Ceragold allows for the growth and bonding of 18k gold in ceramic, and is used to create ceramic bezels with gold numbers that are smooth to the touch, as in the Omega Seamaster Planet Ocean Ceragold (right).

For more information go to: <http://www.watchtime.com/blog/7-brands-metals/>
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Welcome New Members

David Spong
from
Rancho Palos Verdes
and
Rand Huffman
from
Oxnard



Point Vicente Park and Lighthouse at Rancho Palos Verdes



Oxnard, CA home of the Dallas Cowboys' Summer Training Camp



HIGHLIGHTS OF JANUARY'S AND FEBRUARY'S MEETINGS

By DAVID PEREZ

Rodney Baker started working with clocks as a teenager. The realization that there was a tower clock at the Santa Barbara Courthouse intrigued him. He noticed that the room in which it was housed was very dark and used extensively for storage. The clock had this forlorn look, isolated and dirty. Outside the tower, the four faces of the clock were not indicating the correct time nor the same time!

Along came David Bisno who was showing some of his students the clock. He and students Dick and Maryan Schall thought that something should be done about the state of this beautiful clock. What they started was a two year long effort to restore this graceful mechanism, giving it the space and presentation that it deserved.

Rodney, and the restoration crew, while combing through the piles of boxes around the clock and in dark corners of the room, discovered two sealed boxes of components originally delivered with the clock. Amazingly, these boxes contained the components needed to strike the bells. The bells turned out to be so expensive that the city of Santa Barbara never purchased them. So the boxes of parts sat there for over 80 years—untouched.

Bells were procured for the restoration. But these were no ordinary bells. Cast bronze bells would be extremely expensive and very heavy. Instead foam bells were made and covered in a faux patina to represent the finish one would see on 80 year old bells.

The restoration work on the clock and its gallery is so spectacular that last year the state of California awarded it the 2015 California Governor's Historic Preservation Award.

The end result of all this effort is named the Bisno-Schall Clock Gallery and is open to the public Wednesday through Saturday from 1 to 2 PM.



David Bisno in the Santa Barbara Courthouse clock tower's Bisno-Schall Gallery

Photograph by Fay Bisno

For more information go to the following website:<http://www.bisnoschallgallery.com/Welcome.html>

Meeting Snapshots



Virginia Norwood demonstrating the fine art of winding custom clock springs during the workshop



Ferdinand Geitner examining a members' see-through clock. "How does this thing work?"

HIGHLIGHTS OF JANUARY'S AND FEBRUARY'S MEETINGS (CONTINUED)

BY DAVID PEREZ

The topic of February's meeting was "Show and Tell". Here are a few pictures.



Giorgio extolling the virtues of French clocks. He brought the "Bullseye" clock (right) made around the end of the 19th century and generously donated it to a lucky conservator to take home. An interesting note; In France, if a chair is placed strategically outside a storefront, that indicates an antique store.



A beautiful and clever example of wood craftsmanship. The entire train was handmade. This is an example of the engine accentuated with spare clock parts



Ferdinand performing his magic on a member's clock

George showing his Schatz 1000 Day Clock mounted on his hand-made polished marble base.



WATCHMAKING

EDUCATIONAL WORKSHOPS

Chapter 190 continues to offer our popular ***Introduction to Antique Clock Collecting, Repair & Maintenance*** workshop. Open to members, friends and the public. The only prerequisite for this workshop is “**Interest & Curiosity**” in mechanical clocks. All tools, movements, and knowledge will be supplied. The next workshop is April 9th and 10th of 2016. **For further information contact Mike Schmidt 805 988 1764 or email EagleCreekClocks@msn.com**

The ***FSW 301 Introduction to Basic Pocket Watch Repair-American Watch*** for January 22-25, 2016 has been completed. Congratulations to the instructor Ferdinand Geitner and the ten students who completed this workshop.

Other workshops will be scheduled as interest develops: These may include: ***FSW 302 Wristwatch, FSW 200, 201 and 202 Lathe Workshops, FSW104 Fusee & Vienna Regulators, FSW101 Introduction to American Clocks*** and others.

Chapter 190 Educational committee will soon be offering some new workshops and some new reformatted Field Suitcase Workshops. In addition to new Field Suitcase Workshops we have strong interest in a ***Platform Escapement Workshop*** and a ***400 day/Anniversary clock Workshop***.

Complete workshop descriptions and information can be found on the NAWCC website.

Please let us know what workshops or repair instructions you desire.

For further information on any of the above workshops, contact Mike Schmidt 805 988-1764 or e-mail eaglecreekclocks@msn.com

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NAWCC CHAPTER 190

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