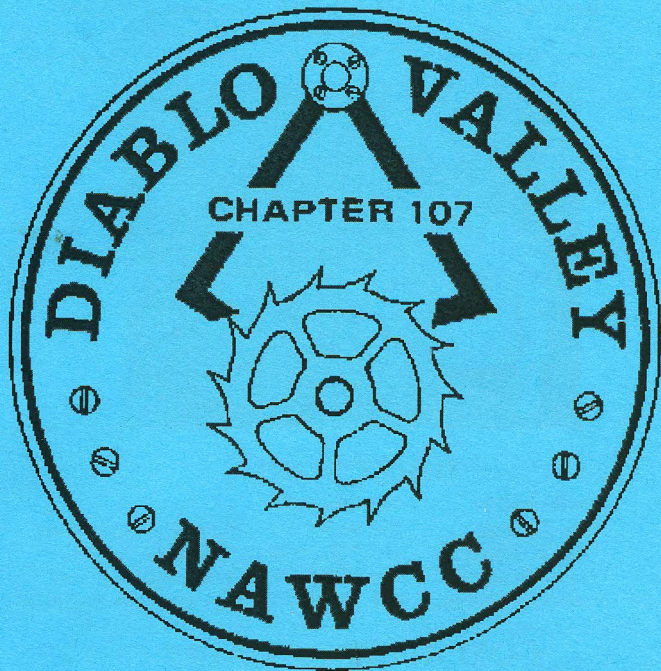


# BULLETIN



**February 2016**  
**Volume 223**



## DIABLO VALLEY

### Chapter 107

National Association of Watch and Clock Collectors

[www.community.nawcc.org/chapter107](http://www.community.nawcc.org/chapter107)

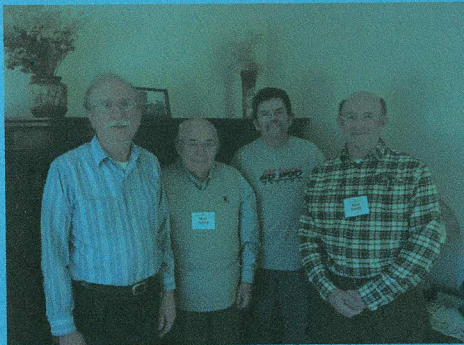
email account [chapter107nawcc@gmail.com](mailto:chapter107nawcc@gmail.com)

Chapter Established March 5, 1978

### "Accent on Education"

#### 2016 OFFICERS

President	Price Russ	925-937-9231	<a href="mailto:gpruss@pacbell.net">gpruss@pacbell.net</a>
Vice Pres.	Bob Thomas	209-815-3292	<a href="mailto:btclock@comcast.net">btclock@comcast.net</a>
Secretary	Ross Smith	925-820-2180	<a href="mailto:mainuse@msn.com">mainuse@msn.com</a>
Treasurer	Walt Hubrig	925-685-0260	<a href="mailto:dottiewalt@astound.net">dottiewalt@astound.net</a>
Past Pres.	John Koepke	510-236-2197	<a href="mailto:jskoepke@comcast.net">jskoepke@comcast.net</a>



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Tool Library	Walt Hubrig	925-685-0260	<a href="mailto:dottiewalt@astound.net">dottiewalt@astound.net</a>
Video Library	Price Russ	925-937-9231	<a href="mailto:gpruss@pacbell.net">gpruss@pacbell.net</a>
Web Master	Price Russ	925-937-9231	<a href="mailto:gpruss@pacbell.net">gpruss@pacbell.net</a>

## Meeting Notice

February 14, 2016

Mart 9:30 Meeting 12:00

Note new Mart and Meeting times

Grange Hall

743 Diablo Road

Danville

### CLOCKS AND WATCHES FROM THE BRITISH MUSEUMS AND OTHER MUSEUMS

By Bob Simon

#### THE BRITISH MUSEUM

Great Russell Street  
London WC1B 3DG

Clocks and Watches (Room 38-39)  
*The Sir Harry and Lady Djanogly Gallery*  
AD 1300 – present

Mechanical clocks were invented in Western Europe in the medieval period and were first used in cathedrals and churches. Room 39 traces their development from these earliest examples to complex and highly decorative domestic clocks, marine chronometers, mass-market designs and modern precision time-keeping.

Many of the hundreds of exhibits on display are working and can be heard ticking, striking and chiming the hours.

The story of the watch will also be traced from the early sixteenth century to modern quartz precision and radio-control.

THE BRITISH MUSEUM CONTINUED ON PAGE 11







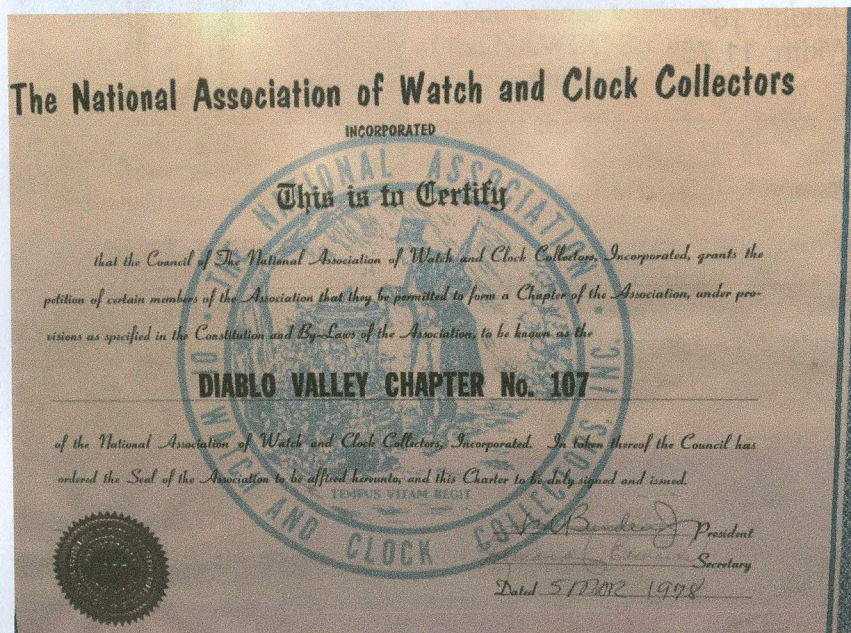
### Diablo Valley Chapter 107

The Diablo Valley Chapter 107 was established on March 3, 1978 nearly 38 years ago. The first issue of our Bulletin was dated December of 1978. The President's message written by **Dorothea Sanderson** who was the chapters first President states that the chapter started with 34 charter members and has grown to a paid membership of 58 entering into the December 1978 meeting. It's interesting to note that our current membership is very close to this number. The chapter still has three of those charter members. They are **Leonard Boone, Jack Coulter** and **Jerry Kroeger**. Two other long term members who joined in the first year are **Ray Luciano** and **Bob Wahrer**. That so many of our early members are still active is remarkable.

Our chapter is fortunate to have several other important NAWCC categories of members. The Fellows Award is considered for those members who contribute significantly to the goals and interest of the NAWCC. This group has about 300 members. We have four members who have received this award. They are **Vince Angell, Nancy Ankrum, Ron Bechler** and **Seth Finkelstein**. In Addition **Nancy Ankrum** has won the Star Fellow Award. This award is given after a minimum of 5 year from the awarding of the Fellows Award for those who continue to serve the NAWCC. This group has about 66 members. One last category of NAWCC membership is the Old Timers. This group consists of the 200 Longest NAWCC members who are still active in NAWCC. We have one member in this group **Seth Finkelstein**. The last member to enter this group has a NAWCC number of 10545.

We will be handing out new badges for our members at the February meeting. If you have not paid your dues please mail your \$25 in or bring your check to the February meeting.

John Koepke Membership Chairman

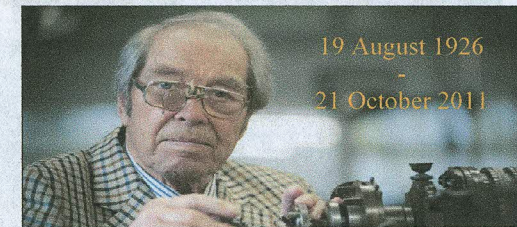


### September/October 2015 NAWCC MART & HIGHLIGHTS

**Richard Taub of Chapter 2 gave a detailed and informative workshop on producing clock dials, banjo throats and tablets through the use of one's computer and digital photo-editing program. A copy of this workshop including a comprehensive dial file, is available at [www.nawcc.org/chapter2](http://www.nawcc.org/chapter2). Click on the dial workshop icon on the top bar.**

**Thanks Chip for the information**

#### The Daniels Escapement



A passionate horologist throughout his career, George Daniels applied himself relentlessly to the major task of redesigning the mechanical watch to compete and in the long term outperform the quartz watch which was threatening its future. By 1974 he had completed designs for the most successful of his revolutionary escapements, the Daniels Co-axial. This escapement represented the greatest advancement in mechanical escapement design since the invention of the lever escapement by Thomas Mudge in 1754. Its success lies in the tangential impulse and lock in both vibrations of each oscillation without sliding friction which, unlike the conventional lever escapement, remain unaffected by changes in viscosity of the lubricant.

After rigorous testing, the results were extremely positive and, following a twenty-five year campaign, found international support in the notoriously conservative watch industry. Consequently, the Co-axial escapement was later adopted by Omega for use in its premium watches.

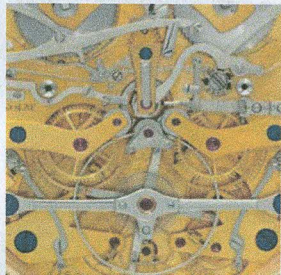
Continued on page 10



# December 2015 Meeting







The advance of the quartz watch in the 1960s and 70's was responsible for a massive shift in focus for the Swiss watch making industry which caused great concern to George Daniels. The revival of the mechanical hand-made watch by George Daniels in 1969 attracted the attention of connoisseur collectors of watches from which blossomed a new era in precision wrist watches.

Extra complications were included in Daniels' watches. These included tourbillons, perpetual calendar and a minute repeater mechanism which along with many more too numerous to mention, continued to enthral the connoisseur collector. George Daniels viewed horology as a continuous scientific art, with social significance and useful qualities, which continues today under the leadership of Daniels' protégé Roger Smith.

The decline of the mechanical watch industry was reversed and there can be no doubt that George Daniels, with his pioneering approach to watch making made the most significant contribution to horology by demonstrating that the mechanical watch can, in the long term, out perform the electronic quartz watch.

The Anniversary watch, designed with and made by Roger W. Smith to celebrate 35 years of the Co-axial escapement, is a fitting tribute to a momentous achievement in watchmaking.

## LEGACY

*Watchmaking*, written by Daniels and first published in 1981, remains one of the most definitive books on Horology. It was the first of another six books, some of which have been translated and published in French, Italian and German, that remain in print. *Watchmaking*, now in its Third Edition, was revised and reprinted in 1999.

On 6 November 2012 part of Daniels' collection, including some pieces he made, was sold by Sotheby's in a 134-lot sale. The auction raised over £8 million for the George Daniels Educational Trust, which helps students seeking higher education in the fields of horology, engineering, medicine, building or construction. The most expensive item was his 'Space Traveller's Watch' which sold for £1,329,250.

Continued on page 12

Pictures of Space Travellers Watch on page 13

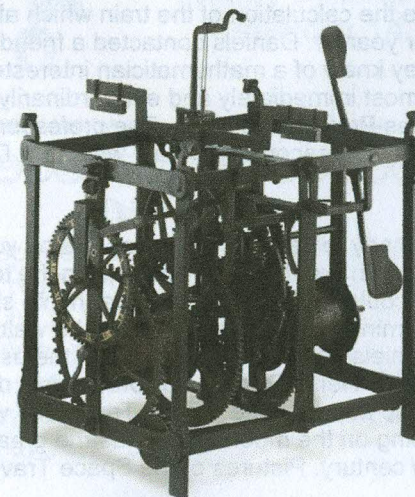
## THE BRITISH MUSEUM

### Cassiobury Park turret clock 1600 - 1620

From the end of the thirteenth century clocks were being installed in cathedrals, abbeys and churches around Europe. As early as 1283 a clock is known to have existed in the Dunstable Priory of the Austin Canons. Two surviving clocks from this embryonic period in the history of clocks are those made for Salisbury and Wells Cathedrals. These were made in 1386 and 1389 respectively. The former can still be found in the cathedral itself while the latter is now in the Science Museum in London.

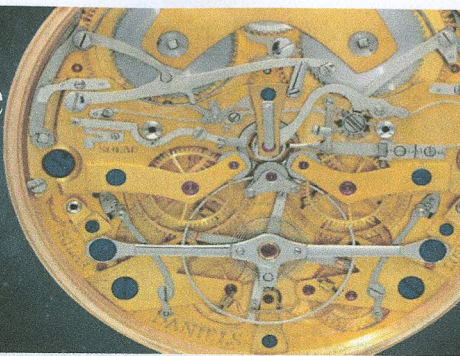
The design of the turret clock changed little over the following three centuries and this particular example has similar characteristics to clocks made for churches in the medieval period. The maker of the clock was Leonard Tenant (died 1646), one of the most prolific makers of church clocks in the first half of the seventeenth century. The clock was installed in Cassiobury Park, a country house near Watford.

The clock is weight-driven and has two separate gear trains mounted side by side. One is the going train which regulates the time and is controlled by a verge escapement with an oscillating foliot with adjustable weights. The other is the striking train which determines the number of blows struck by the hammer on a bell, probably mounted above the clock. Over the years the clock has been modified and restored, but now resembles, in essence, its original conception as a seventeenth century tower clock. The clock is marked with a scallop or cockle shell and is one of a group of five such clocks.





## The Space Traveller

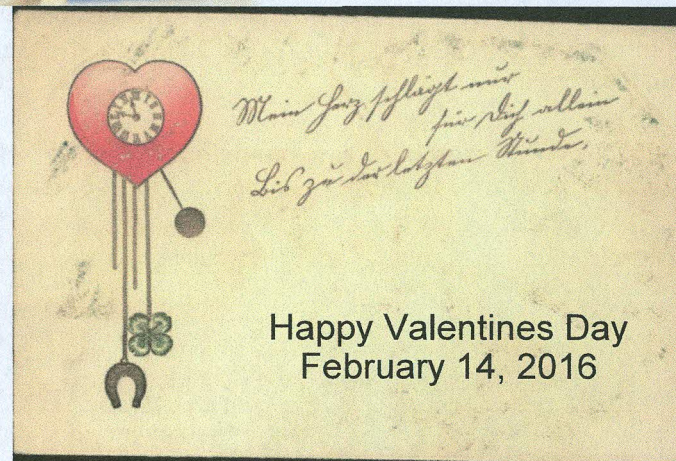


Dr. Daniels was on a trip to Zurich where he met an important collector for dinner. The collector nudged him and said 'what do you have in your pocket', so he took out his watch, a gold Daniels pocket watch with independent double-wheel escapement. The collector said he had to have the watch and asked him to sell it to him. Dr. Daniels said it was not for sale but the collector persisted. Dr. Daniels thought this was an enormous compliment as he did not even ask the price, and so sold him the watch. Dr. Daniels immediately regretted selling this watch and therefore decided to make another which would be an improvement on the first both in terms of complication and accuracy. Having not fully exploited the first watch, the second watch would have separate calculations for each train, it was therefore possible to indicate both mean-solar and sidereal time. In the 18th century to check the accuracy of your watch you had to have a precision clock which was set by a star. This watch by means of having solar and sidereal time could make the calculation for you, the difference being 3.555 minutes per day.

To try and improve the calculation of the train which allowed for an error of 0.8 seconds per year Dr. Daniels contacted a friend at Cambridge University to ask if they knew of a mathematician interested in watches. He got a response almost immediately and extraordinarily enough the mathematician's name was Professor Daniels. The professor was able to calculate a better ratio of 0.28 seconds per day, which Dr. Daniels was very happy with.

Dr. Daniels used to say to people, 'when you are on your package tour to Mars you need a watch like this, and when using the telephone for long distance calls you could switch the chronograph into sidereal time to cut your bills by 3.555 minutes per day'. Originally the watch had been referred to as the Daniels squared (2) because of the assistance he received from Professor Henry Daniels but Dr. Daniels did not think this was good enough so named it the 'Space Travellers' watch in honour of the American landing on the moon which was the greatest space exploratory journey of the century. Pictures of the Space Traveler watch on page 13.

## THE SPACE TRAVELER WATCH



### Disclaimer

Statements of opinion and/or fact made by authors of papers or articles read before or appearing in the publications of the Chapter are to be accepted as the author's own. The Chapter assumes no responsibility for the accuracy or correctness of any statement of its contributors. This statement of responsibility shall appear in each issue of the Bulletin containing any of the foregoing.



## CHAPTER #107 MEETINGS

### Second Sunday of the Even Numbered Months

Mart: 9:30AM  
 Chapter: 12:00PM  
 Board: after the Chapter Meeting

### Future Meeting Dates

April 10, 2016	June 12, 2016
August 14, 2016	October 19, 2016
December 11, 2016	February 12, 2017

We want to keep our members coming to the chapter meetings on a regular basis. If you have problems with transportation to and from meetings, let a director or officer know so we can help you find a carpool.

**Only NAWCC members can participate (buy or sell) in our Mart. Be prepared to show your current membership card.**

Other NAWCC Chapter Meetings in Northern California		
Chapter	Meeting Address	Meetings
De Anza #94	Odd Fellows Lodge 20589 Homestead Rd Cupertino, CA	2 <sup>nd</sup> Sunday even months (except April)
Monterey Bay #70	Live Oak Grange Hall 1900 17th Ave Santa Cruz, CA	3 <sup>rd</sup> Sunday odd months
Sacramento #71	Sacramento Garden Center 3330 McKinley Blvd. Sacramento, CA	4 <sup>th</sup> Sunday odd months
San Francisco #5	Boys and Girls Club 401 Marina Blvd. San Leandro, CA	2 <sup>nd</sup> Sunday odd months

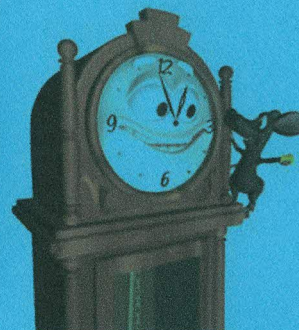
## DIRECTIONS TO CHAPTER MEETINGS

(except August and December)

### 743 Diablo Road, Danville

Take Interstate 680 to the Diablo Road exit in Danville. Go east on Diablo Road for 0.6 mile. The Grange Hall will be on your right. Parking is available in the front and rear. Enter from the front; *i.e.*, street side. Facing the building from the street, there is a ramp on the right side for handicap and cart access.

## CHAPTER LIBRARIES



**BOOK:** The Chapter book library is located at Classical Clocks and Antiques, 1082 E. Stanley Blvd., Livermore. Contact Nile Godfrey (925-449-2127) for more information.

**VIDEO:** Chapters 107 and 5 share a DVD video library. Contact Price Russ (925-937-9231) for information.

**TOOL:** Contact Walt Hubrig (925-685-0260) or Price Russ (925-937-9231) for information on the tools and parts available for use by Chapter members.

## NOTICES FOR MEMBERS

(The Bulletin accepts notices from Chapter members for all items/subjects horological - wanted, for sale, give-away, services, and so forth. There is no charge. All you have to do is supply copy to the editor.)

**Wanted:** Articles for the *Bulletin*. Contact Tina Thomas (209) 481-3930.



2016 Budget

1/8/2016

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Category	Actual	2015 Budget	2016 Budget
<b>INCOME</b>	<b>5,010.28</b>	<b>4,100.00</b>	<b>2,800.00</b>
CD INTEREST	86.70	80.00	80.00
MEMBERSHIPS	1,245.00	1,300.00	1,300.00
Refunds	-25.00	0.00	0.00
OTHER INCOME	3,678.58	2,720.00	1,420.00
Auction Sales	294.00	220.00	220.00
Christmas Lunch	890.00	1,000.00	1,000.00
Donations	0.00	0.00	0.00
Miscellaneous	0.00	0.00	0.00
Programs	588.00	0.00	200.00
Regional	1,906.58	1,500.00	0.00
Tools	0.00	0.00	0.00
<b>EXPENSES</b>	<b>5,787.66</b>	<b>2,600.00</b>	<b>2,800.00</b>
BULLETIN & NOTICES	189.15	100.00	200.00
Other	0.00	50.00	0.00
Postage	189.15	50.00	200.00
Printing	0.00	0.00	0.00
FOOD, DRINK, & SUPPLIES	1,624.78	1,730.00	1,720.00
Christmas	1,156.11	1,300.00	1,300.00
Meetings	203.82	230.00	220.00
Picnic	264.85	200.00	200.00
INSURANCE	0.00	0.00	0.00
LIBRARY	125.45	100.00	0.00
Books	101.50	0.00	0.00
Tools	23.95	100.00	0.00
MISCELLANEOUS	0.00	0.00	0.00
Bank Charges	0.00	0.00	0.00
Donations	0.00	0.00	0.00
Door Prizes	0.00	0.00	0.00
P.O.BOX	192.00	190.00	200.00
PHOTOS	0.00	0.00	0.00
PROGRAMS	1,056.28	0.00	200.00
REGIONAL	0.00	0.00	0.00
RENTALS	600.00	480.00	480.00
Grange Hall Danville	600.00	480.00	480.00
Transfers to Savings	2,000.00	0.00	0.00
<b>Net Difference:</b>	<b>-777.38</b>	<b>1,500.00</b>	<b>0.00</b>