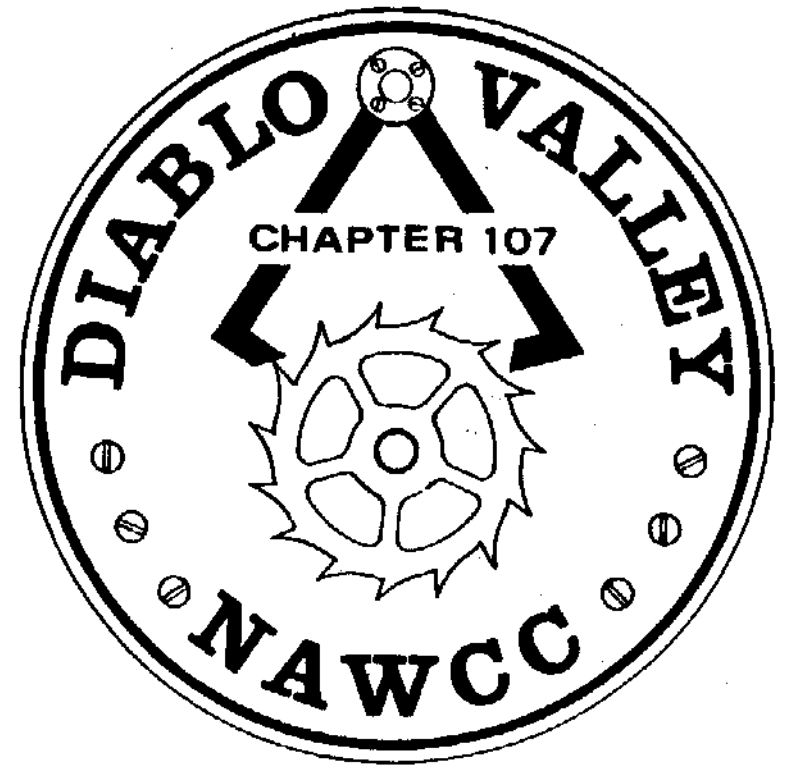


# BULLETIN



**December 2009**  
**Volume 186**

# DIABLO VALLEY

## Chapter 107

National Association of Watch and Clock Collectors

Chapter Established March 5, 1978

### "Accent on Education"

#### OFFICERS

President	Tom Kochmann	925-228-8436	kochman3@aol.com
Vice Pres.	Nile Godfrey	925-449-2127	jng3@aol.com
Vice Pres.	Jay Taylor	510-522-2409	4nutnut@att.net
Secretary	Roy Holman*	510-530-5428	royholman@gmail.com
Treasurer	Walt Hubrig	925-685-0260	dottiewalt@astound.net
Past Pres.	Dean Thomas	925-455-0929	dno337@att.net

\* acting

#### DIRECTORS

2009	Bert Bradley	510-527-3454	bertrambradley@cs.com
2009	Chip Kumparak	408-499-4538	chips@garlic.com
2009	Bob Thomas	209-823-3863	btclock@comcast.net
2009-2010	Gareth Busher	925-686-5983	
2009-2010	Ross Smith	925-820-2180	mainuse@msn.com

#### COMMITTEE CHAIRS

Display	****open****		
Editor	Price Russ	925-937-9231	gpruss@pacbell.net
Library	Nile Godfrey	925-449-2127	jng3@aol.com
Mart	****open****		
Membership	Earl Watrous	510-569-4175	efwatrous@yahoo.com
Nominating	****open****		
Photo	Sophia Gardner	510-531-7565	
Program	Jay Taylor	510-522-2409	nutnut@alamedanet.net
Program	Nile Godfrey	925-449-2127	jng3@aol.com
Raffle	Jack Coulter	925-284-1031	
Refreshment	****open****		
Tool Library	Walt Hubrig	925-685-0260	dottiewalt@astound.net

## Meeting Notice

December 13  
11:00 AM - 3:00 PM

### Annual Holiday Program

#### Election of Officers

#### Luncheon

#### Auction of Quality Pieces

#### Back Forty

100 Coggins Dr.

Pleasant Hill

(Corner Coggins and Buskirk)

(Map on page 15)

If you have not made your reservation,  
contact Walt Hubrig (925-685-0260)  
immediately.

#### TIME TO RENEW MEMBERSHIPS

Chapter dues are \$25.00 (spouse included). To avoid standing in line, mail a check payable to "Diablo Valley Chapter 107" to Earl Watrous, 4507 St. Andrews Rd., Oakland, CA 94605. If you include a self-addressed, stamped envelope, your badge will be mailed to you. This will help Earl and give us a chance to confirm your contact information.

## *President's Message*

Happy Holidays.....

This has been a great year for our chapter. We have had outstanding speakers, a fantastic picnic, fabulous pictures, enjoyed the best Chapter Bulletins in print and I'm sure a GREAT Christmas party. We have also moved to a new location for our chapter meetings, which has given us the opportunity to have the largest mart that I can remember and the chance to expand and grow as a chapter. This also comes with some challenges for each and every one of our members. If we want to grow as a chapter, we must grow our membership. I think the best way to do this is to challenge each and every one of you to bring one new person to one of our meetings in the coming year. This could be the kid next door who is always in the way when you are trying to do something or someone you just met who likes your clocks or your watches. We have the opportunity to GROW and move forward, lets use it!

This year has also been a sad time also. We have lost a great member, John Stohr, a member who gave our chapter 110 % of himself whether he was on the refreshment committee or President of the chapter. We also lost a President, Tom Kochmann, who quit "because of personal conflicts with some of our members."

The new and returning 2010 officers, directors and chair people will have their work cut out for them and will need all of our help and support to make 2010 the best year the chapter has ever seen. We will also be working with Chapter 5 on the Golden Gate Regional to be held in Pleasanton in October 2011.

In closing, I would like to welcome our new officers on board and to remind you to bring your dues to the Christmas luncheon. I hope to see you ALL there.

*Nile*

## *Editor's Page*

This has been an eventful year for our chapter. Nile has pointed out some of the highlights. I want to thank Nile for stepping in to supply what is normally the President's Message. I also want to join him in thanking all those who have contributed to Chapter 107 by giving a presentation, serving in an official capacity, helping out in other ways, and especially contributing to our *Bulletin*.

Now that we have a new meeting place with more space, parking, and easy access, we can look forward to more exciting marts and increasing our membership. The October mart showed what can be done. Tom Kochmann deserves our thanks for making it a very successful event. I admit I was skeptical of heavily promoting the mart for our first meeting at the new location, but it was a great success. Now it is up to us to keep it going.

As usual I am looking for additional contributors to the *Bulletin* and new ideas. I try to incorporate articles that will appeal to the various interests of the members, but I realize that I tend to write about whatever is interesting me at the moment or miscellaneous tidbits that I happen to notice. My interests tend to center on tools, new developments, and history, particularly connections among ideas and people. The *Bulletin* would profit from more articles on collecting and restoration techniques. Reports on horological sightings during travels are also interesting. Consider submitting an article or at least an idea. It is easy and fun, and your fellow members will enjoy your contribution. With your help, we can continue to have a quality *Bulletin*.

I look forward to seeing you at the Holiday Luncheon and participating in the auction. Bring lots of goodies to tempt me and the rest of the crowd. Remember you get to keep the money for the items you sell.

Happy Holidays and as the line from Rip Van Winkle says "live long and prosper".

*Price*

## SPRINGS AND THINGS

**Clock Mainsprings:** When replacing the mainspring of a watch, one can go to a parts list and look up the proper one. (Finding it may be a different issue.) For clocks mainspring selection tends to be more haphazard. One approach is to measure the old one and put in a new one with the same dimensions, but how do you know the old one is the correct one? Some old catalogs; e.g., Frei-Borel, have tables based on manufacturer and model, but most modern catalogs just give dimensions. Tables can also be found in a few books including *The Best of J.E. Coleman: Clockmaker*. For those with computers, there is a list on the NAWCC website at <http://mb.nawcc.org/showwiki.php?title=Clock+Mainspring>. For what it is worth, recently I obtained an odd-sized mainspring that was not listed by my more usual sources from R&M Imports in Harveysburg, Ohio.

**Patent Database:** Those interested in horological history may want to look up old patents. There are a number of on-line databases of patents. The one maintained by the patent office is not very user friendly for old patents. They can be located by date or number but not by inventor. Old devices often are marked with patent dates but not number. In the mid-nineteenth century several hundred patents were often granted on a single date, so searching by date is not practical. Google has a database that can be searched by number, title, inventor, assignee, and classification. Using it I was able to locate the patents pertaining to the chuck discussed on page 13. Strangely I was able to find them by subject but not by author, so the system is not foolproof.

**Inflation:** Those who lived through the war years of the 1940s are familiar with inflation during that period. On the other hand, I was surprised to see that a lathe listed for \$110 in the 1941 Paulson catalog was listed for \$175 in the 1944 catalog. It turns out I have the model in those ads. I'm glad that their value has not continued to increase at that rate.

*Price*

## JAI SINGH'S INSTRUMENTS (3)

The equatorial coordinate system is based on the plane of the equator and the axis of the earth, which of course is at right angles to the equatorial plane. Projected into space, the axis is the point that we see the stars rotating around. It is also known as the celestial pole. Around the first century A. D. (now often called C. E. for current era), someone figured out that a rod pointed to the celestial pole and a disk at right angles served as an equal-hour sundial. This example from China illustrates the simplest form of the equatorial dial. In the winter the shadow of the rod falls on the south side of the disk. In the summer it falls on the north face. The disk is divided into 24 equal segments for a 24 hour day. The equatorial system is the basis of most sundials and is also widely used in astronomy. One of Jai Singh's dials is shown on the left.



In the most common form of the equatorial sundial, the rod or gnomon is replaced by a wedge mounted on a horizontal surface. The upper edge of the wedge is aligned to point to the celestial pole and the hours are marked on the horizontal plane as in the example on the right. It is possible to construct equatorial dials on walls and slanted surfaces, but that is outside the scope of this article.



By constraining the width of the sun's shadow or using a slit to project a narrow beam of sunlight, one can make a dial that can be read accurately to about one minute.

In Jaipur Jai Singh constructed the world's largest equatorial sundial, the Great Samrat Yantra or Supreme Instrument. As with many of his major instruments, it is of masonry construction.

*Continued on page 10*





**Wayne English**



**Guest & Tom Kochmann**



**Ray & Gail Luciano**

# October 2009 Meeting



**Jack Coulter & Walt Hubrig**



**Ross Smith**



**Nile Godfrey**



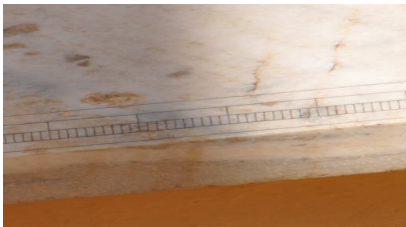
**Frank Keillor & Ron Bechler**

(Continued from page 7)

The Great Samrat Yantra is LARGE. It can be used as a sundial in the day and to determine positions of stars at night.



The gnomon is 74 feet high. The length along the hypotenuse is 164 feet and nearly 10 feet wide. The edges of the gnomon are marked for measurements of declination, the angle of an object above the horizon when it crosses the meridian. Steps going up the hypotenuse lead to a pavilion at the top and are used in connection with the declination measurements. Time by day and ascension of stars at night are measured along arcs on either side of the gnomon. These arcs, are 50 feet in radius and marked to 2 seconds of time. The time marks and the edge of the sun's shadow are shown in this "close up". Both the gnomon and arcs are faced with marble.



Although the structure was carefully leveled using water channels and built to high standards, it can not live up to the expectations implied by its large size and detailed scales. One problem is that such massive structures are difficult to build to high accuracy. They tend to settle and thereby get out of alignment and can not be adjusted.

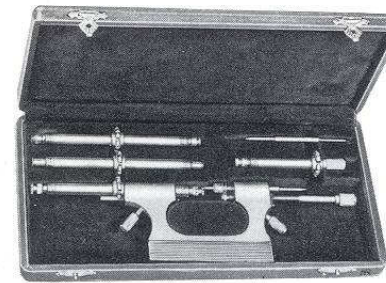
A more important limitation is imposed by the half-degree width of the sun. Because of this width, the sun's shadow does not have a sharp edge. The partial shadow, penumbra, limits measurements to  $\pm 15$  seconds. It is claimed that on a clear, sunny day better measurements can be obtained by observing where the shadow of a string or small stick held near the scale merges with the shadow of the gnomon.

Similar Samrat's were built at several other locations, but the great one in Jaipur is the largest.

## Wait. Don't Tell Me!



What is the connection between these airplanes and the watch?  
Clue: The watch is the famous Marie Antoinette watch by Abraham Louis Breguet.



This pivot lathe is described as "the first advance in years on the 'Jacot' tool". Its virtues are said to include manufacture from the latest alloys and positioning the tightening screws underneath rather than behind the body. What other characteristic makes this particular device interesting?

This tower clock is on St. Nicholas Church in Bristol, England. The church including the clock mechanism was largely destroyed in World War II but was rebuilt. The building is now a tourist information center. What is unique about the clock?



If an object contains screws with this type head, what can you say about its age?



## OK, Now Tell Me.

Louis Charles Breguet (1880-1955) was the great grandson of Abraham Louis Breguet. He was the fourth in a line of talented engineers. His father and grandfather were involved in the electrical industry. Louis Charles was an aviation pioneer. He built airplanes for the French in World War I, worked on early designs for helicopters, and founded the company that grew into Air France. He is most famous for deriving an equation that is used to calculate the range of aircraft.



The illustrated tool is an “Obama Pivot Lathe”. It was offered for sale for \$55.50 in a 1960 catalog. (I have not been able to find out anything else about it.-ed.)



The clock on St. Nicholas, originally installed in the early 19<sup>th</sup> century, was electrified when the church was rebuilt at the end of World War II. It is unique in that it is the only church clock in Britain with an inset dial showing seconds. The seconds hand was added during a renovation in the 1870s. The picture is a pre-war view of St. Nicholas and its environs.

The screw head shown is from a Phillips-head screw. These screws were designed by a J. P. Thompson who sold the design to Henry F. Phillips who founded the Phillips Screw Co. in 1933. Any object built with Phillips-head screws must be younger than that. Keep this in mind when replacing screws during restorations. The rounded corners in the tool recess was designed so the driver will slip out (cam out) under high pressure. This prevents over tightening. There are several other types of screws with cross-head design including Pozidriv and Frearson. Each requires a different type screwdriver.

## AMERICAN WATCH TOOL/DERBYSHIRE

You never know what you are going to find on a mart table. This three-jaw chuck was in a box with a very tired lathe. It looked pretty sad itself, but with a little cleaning it is now respectable. What makes it interesting is that it is marked American Watch Tool Co. on the back and Derbyshire on the front. American Watch Tool was founded by Webster and Whitcomb of WW lathe fame. F. W. Derbyshire was apprenticed to the firm in 1874. He went on to become Chief Superintendent. In 1911 he left the company to found his own lathe business. In 1917 AWT was liquidated and Derbyshire bought the 8 and 10 mm lathe part of the business along with trade names, patents, and other assets. F. W. Derbyshire, Inc. is still in business. In reply to an inquiry about the double marked chuck, they suggested that it was made shortly after the purchase using parts acquired from the American Watch Tool Co.



## CHAPTER LIBRARIES

**BOOK:** The Chapter book library is located at **Classical Clocks and Antiques**, 1086 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.

There is no cost to borrow items from these collections.

## NOTICES FROM MEMBERS

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

**CHAPTER #107 MEETINGS**

**Second Sunday of the Even Numbered Months**

Mart: 11:30AM  
 Chapter: 12:30PM  
 Board: after the Chapter Meeting

**Future Meeting Dates**

February 14, 2010                      April 11, 2010  
 June 13, 2010                            August 8, 2010  
 October 10, 2010                        December 12, 2010

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.**

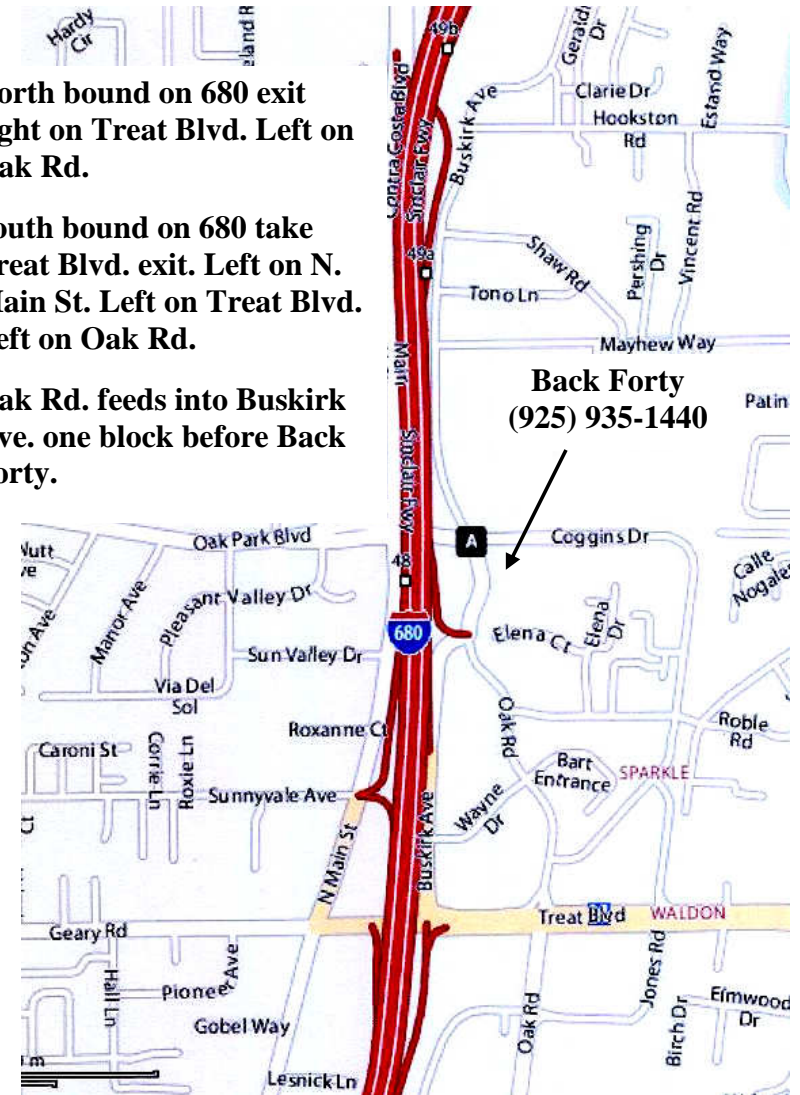
Other NAWCC Chapter Meetings in Northern California		
Chapter	Meeting Address	Meetings
<b>De Anza #94</b>	Odd Fellows Lodge 20589 Homestead Rd Cupertino, CA	2 <sup>nd</sup> Sunday even months (except April)
<b>Monterey Bay #70</b>	Live Oak Grange Hall 1900 17th Ave Santa Cruz, CA	3 <sup>rd</sup> Sunday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

**DIRECTIONS TO BACK FORTY**

North bound on 680 exit right on Treat Blvd. Left on Oak Rd.

South bound on 680 take Treat Blvd. exit. Left on N. Main St. Left on Treat Blvd. Left on Oak Rd.

Oak Rd. feeds into Buskirk Ave. one block before Back Forty.



**Closing Thought**

**The bad news is time flies. The good news is you are the pilot.**

**Michael Althsuler**