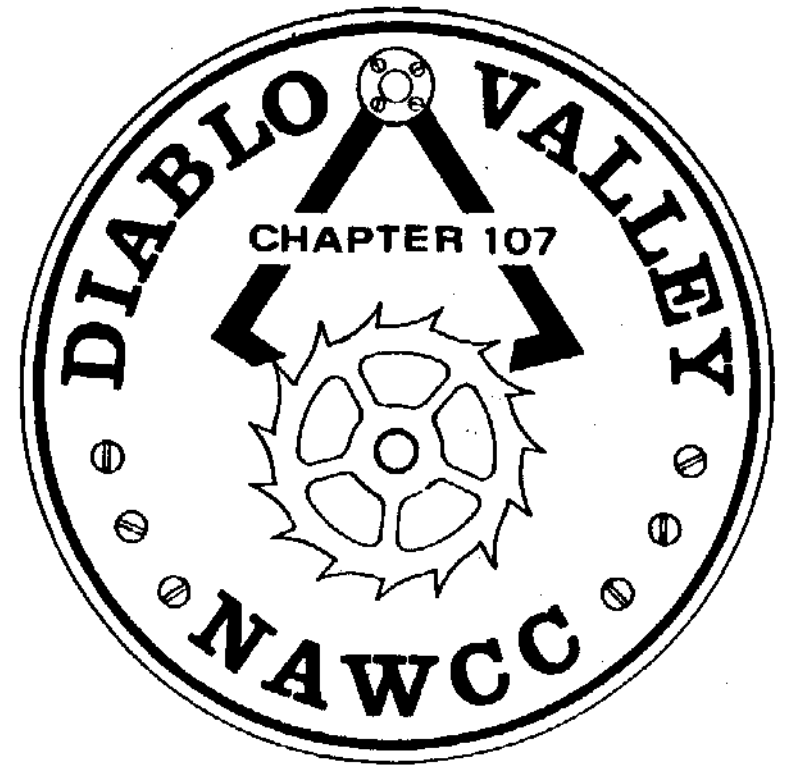


# BULLETIN



June 2011  
Volume 195

# DIABLO VALLEY

## Chapter 107

National Association of Watch and Clock Collectors

Chapter Established March 5, 1978

### "Accent on Education"

#### OFFICERS

|            |                |              |                        |
|------------|----------------|--------------|------------------------|
| President  | Chip Kumparak  | 408-499-4538 | chips@garlic.com       |
| Vice Pres. | Mike Kooken    | 925-933-1257 | mgkooken@yahoo.com     |
| Vice Pres. | Clarence Kobel | 925-447-3383 |                        |
| Secretary  | Ross Smith     | 925-820-2180 | mainuse@msn.com        |
| Treasurer  | Walt Hubrig    | 925-685-0260 | dottiewalt@astound.net |
| Past Pres. | Chip Kumparak  | 408-499-4538 | chips@garlic.com       |

#### DIRECTORS

|           |                |              |                      |
|-----------|----------------|--------------|----------------------|
| 2011      | Jack Coulter   | 925-284-1031 |                      |
| 2011      | Dean Thomas    | 925-455-0929 | dno337@att.net       |
| 2011      | Bob Wahrer     | 925-462-4912 | bob_wahrer@yahoo.com |
| 2011-2012 | Roy Holman     | 510-530-5428 | royholman@gmail.com  |
| 2011-2012 | Celeste Graham | 925-676-7525 | cqgraham@yahoo.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   | Jerry Konicek  | 510-783-6451 | jakonicek@pacbell.net  |
| Nominating   | ****open****   |              |                        |
| Photo        | Sophia Gardner | 510-531-7565 |                        |
| Program      | Mike Kooken    | 925-933-1257 | mgkooken@yahoo.com     |
| Program      | Clarence Kobel | 925-447-3383 |                        |
| Refreshment  | Linda Towers   | 925-935-6272 |                        |
| Tool Library | Walt Hubrig    | 925-685-0260 | dottiewalt@astound.net |

# Meeting Notice

June 19, 2011

Mart 11:30 Meeting 12:30

Grange Hall  
743 Diablo Road  
Danville

**Gearing Up for a Challenge:  
The Story of Making a Gear Cutter from a  
Box of Old Parts**

By

**Rick Hubble**

**Attention! Attention! Attention!**  
**This meeting is the third Sunday of the  
month.**

## *President's Message*

Greetings Members! I'm sure glad we have an indoor facility for our meetings and marts. Will it ever stop raining?

First, I would like to thank Linda Towers for taking the time to buy the large 'danishes' as refreshments and for supplying & making the coffee. The first time was 'on the house' donated by Linda and a few donations given, but let us please show our appreciation by donating a fair token for her efforts, so that she at least breaks even, and please add a bit more for the gas. I certainly enjoyed having the food and coffee, and would like to see it continue, but it won't unless she can break even or in my opinion deservedly a bit better. Please add a couple bucks to the money cup or till & Thank You all!

I am looking forward to having a Silent Auction this month. It's spring cleaning time! Bring some better than White Elephant items, but also be sure to save some good items for the Picnic Auction in August!! The Silent Auction will be a work in process, and we'll learn as we go. It should prove to be fun!

Many Thanks to Bob Wahrer for his outstanding program on the Clocks of the Forbidden City. He showed numerous photos of the elaborate clocks created as gifts for the Emperors, and explained how many of the Automated features functioned. Special thanks also for his providing the handouts since I was not able to connect on borrowing the digital projector.

I am sorry to announce that for personal reasons, Earl Watrous has asked to step down as membership chair. I want to thank him for the many ways he has served this Chapter. Jerry Konicek has agreed to serve as interim membership chair. Thanks, Jerry.

Needless to say I have been thrilled the last 2 months for the larger marts. I plan on having a couple of tables this month myself, so come make some spare money like the rest of us!

*Chip*

## *Editor's Page*

When I sat down this morning to work on this issue, I had very little idea of what the contents would be. I had a note literally jotted down on a napkin about the clock signal at the Collegio Romano and a clock in a Roman garden. Sometime ago Chip had pointed me to the work of John Wilding. A book I picked up today on the history of Bayesian statistics lead me to the Lepaute family. Put it together, add a few tidbits uncovered along the way, and suddenly we have a *Bulletin* plus an article for next time on a 17<sup>th</sup> century magnetic clock.

Unfortunately I missed the April meeting because of work related travel. I'm sure Bob Wahrer had lots of interesting things to say about the clocks in the Forbidden City. When other plans fell through, we called on him at the last minute to be the speaker. Thank you, Bob, for "volunteering".

You may have read the article in the April *Watch & Clock Bulletin* by Alan Bloore on the Standard Electric Time Company. Alan and I have exchanged several emails about one of my clocks. He has an amazing amount of knowledge about these clocks and subtle differences among them. His comments on my clock inspired one of the questions in "Wait Don't Tell Me". He also referred me to a "serious" local electrical clock collector. I am hoping we can get one or both of them to speak to us at a future meeting.

*Price*

## **PICNIC PLANNING**

The August meeting will be our annual picnic. It will again be held at the Grange Hall. At the June meeting, we need to discuss the arrangements for food. No reasons have been advanced to change the basics of what the Chapter furnishes and what members bring, but we do need to discuss whether we cook meat or buy it already prepared. Bring your ideas for discussion.

## JOHN WILDING and the CRAFTSMANSHIP MUSEUM

John Wilding is a clock maker and writer based in England. He is one of the people featured in the Internet Craftsmanship Museum ([www.craftsmanshipmuseum.com](http://www.craftsmanshipmuseum.com)). Both Wilding and the museum are noteworthy.

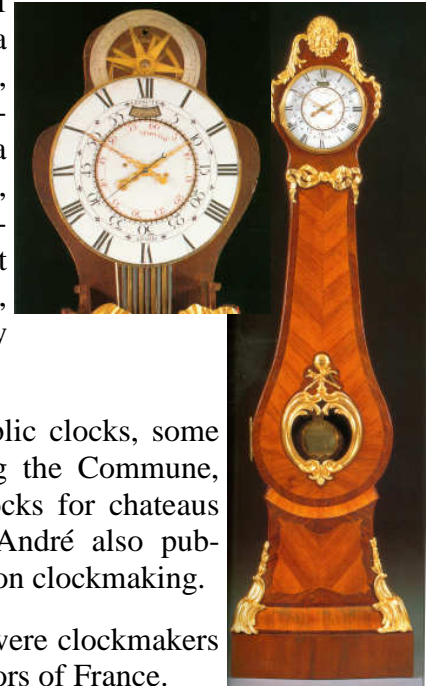
John Wilding was trained as an agricultural engineer. Using his knowledge of lathes and tools, he started making clocks from plans in *Model Engineering*. From there he began making clocks on his own and writing up his experiences in *Model Engineering* and *Horological Times*. He has published roughly 30 “how-to” books on making various types of clocks. He was elected a fellow of the British Horological Institute in 1986 and was awarded a silver metal in 1998. Some of his clocks are shown below. Recently he decided to down-size and offered a number of his clocks for auction at Bonham’s.

The Craftsmanship Museum has both a physical location in Carlsbad, CA and the web site. Both the physical and internet museums display projects from a wide variety of metal and wood crafts. In the area of clock making, Ray Bates (UK) and William R. Smith (USA) are showcased in addition to John Wilding. At least one local group, The Bay Area Engine Modelers Club, is also featured.



## LEPAUTE

Jean André Lepaute (1720-1789) and his younger brother Jean Baptiste (1727-1802) were the first of four generations of Lepaute clock makers. The example of their work shown here is from ca 1760. It features month duration, equation of time, gridiron pendulum, Huygens continuous rope (a possible topic for a future article), and a double-sided pinwheel escapement. The Lepautes did not invent the double-sided pinwheel, popular in French clocks, but they perfected it.



Their work included several public clocks, some of which were destroyed during the Commune, observatory clocks, and fine clocks for chateaus and important buildings. Jean André also published three editions of a treatise on clockmaking.

Various members of the family were clockmakers to the kings, deputies, and emperors of France.

The clock pictured below by Jean Baptiste is particularly interesting. It is a one-wheel clock using a double-sided pin wheel escapement released once a minute. Seconds are indicated on the sector that runs along the lower part of the main dial. The seconds hand, pivoted below XII on the main dial, moves left-to-right and then right-to-left.

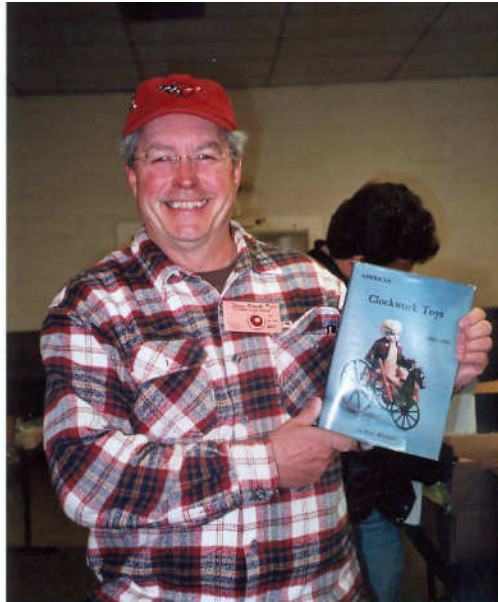


For more information on the Lepaute family see *Precision Pendulum Clocks (vol. 3)* by Derek Roberts.



# April 2011 Meeting

Photos by Sophia Gardner



**Jason Evans**



**Bob Wahrer - speaker**



**Tosh Yumae**



**Nancy Ankrum**



**Dave Prinz, Chip Kumparak, Nile Godfrey,  
& Ron Bechler**



**Helen & Gordon Richards**



## CLEMENT, COLLEGE, & CANNON

In order to establish noon and the time for Easter, while representing the victory of the Christian practices over those of the pagans and asserting the importance of Rome, Pope Clement XI commissioned Francesco Bianchini to construct a meridian line in the Basilica of St. Mary of the Angels and the Martyrs. The basilica was chosen for its orientation, size, and ancient, therefore stable, foundation - the baths of Diocletian. The project was completed in 1702 and served as the official time reference for Rome.



At solar noon a ray of light enters the church through the lens circled in red and shines on a metal bar in the floor. Note the lens is part of a papal shield. The position of the light along the length of the bar depends on the seasons and therefore indicates the passage of critical times such as solstices and equinoxes.



The spring equinox of course sets the time for Easter. The bar is nearly 145 feet long giving both good time resolution and establishing its importance.

The circular device at the end of the meridian line was used in observing stars.



Meanwhile an observatory was built at the Jesuit Collegio Romano and a signal ball was installed on the roof of a nearby church. Beginning in 1846, a cannon at the Castle Sant'Angelo was fired when the ball was dropped. When the French laid siege in 1849, the first shot was mistaken for the noon signal. The firing of the noon cannon was suspended during World War II but later resumed on the Janiculum Hill where it remains a popular attraction.

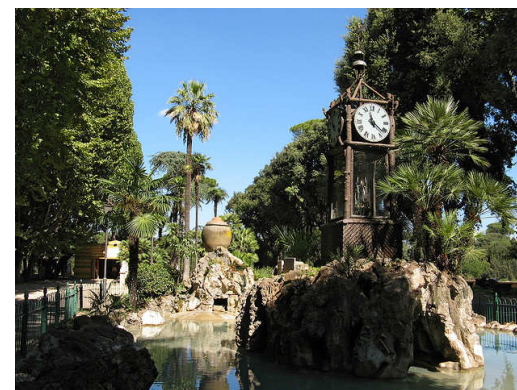
## Wait. Don't Tell Me!

How might one date this Standard Electric slave clock?



This clock has only 6 hours on the dial. Why? Where is it?

Who is this lady? Why is she famous? What is her connection to horology?



Where is this delightful setting? How is the clock powered?

## OK, Now Tell Me.

According to Alan Bloore's article, the fact that the dial is marked Springfield places it after 1912. Alan was able to add that the comma after Springfield constrains the date to after 1918. The hands and other features help narrow the window to about 1918-1925. (There is a lot to be learned from the experts.)



The clock with the six hour dial is in the cloister of the Santo Spirito in Sassia Church in Rome. It was installed in 1743 and tells "Italian time", which is measured from sunset and is based on 24 hours. According to one source there are only two clocks with six hour dials remaining in Rome. Italian time was officially abolished in 1755, but continued in some areas until the mid-19<sup>th</sup> century. This system of timekeeping is also referred to as "old Czech time". There are conflicting reports on why some clocks based on Italian hours have six rather than 24 hour dials.

Astronomer Nicole-Reine Lapaute (1723-1788) is known for calculating the exact time of a solar eclipse in 1764 and calculating the effect of Jupiter and Saturn on the return of Halley's comet in 1759. Her husband, Jean André Lapaute, was a clockmaker (see p. 6). She calculated a table of pendulum lengths for his book on clockmaking.

The setting is the Roman gardens of the Passeggiata del Pincio in Villa Borghese. The gardens were initially constructed by Cardinal Scipione Borghese in the early 1600s. The clock is a clepsydra. When the gardens were restored in 1871, the clock was added. It was a collaboration between the architect Gioacchino Ersoch who was in charge of the restoration and a Dominican priest and scientist, Giovan Battista Embriaco. Embriaco had a hobby of building mechanical water clocks. Several are still in existence. The clock is powered by filling and emptying containers on a balance arm that controls the escapement. The case decorated with botanical themes is meant to mimic a Swiss chalet. The clock ran for about 40 years then due to wear was still for the next 80. It was restored to operating condition in 2007.

## NEW MATERIALS

New materials have created opportunities for radical changes in watch design. For example, the use of silicon wheels was discussed in the April 2008 issue of the *Bulletin*. The use of carbon nanofibers, ceramics, and special alloys have made it possible to create light-weight, small, and extremely durable watches of innovative design. The Richard Mille collection, which consists of roughly 30 limited-production models, is an example. The tourbillion movement of the watch shown weighs 3.8 grams, about the same as a small lady's bracelet movement. With the strap, it weighs 20 grams. As a demonstration of durability, a French tennis professional actually wears one of these when he plays. Before rushing out to make a purchase, be advised that they list for about \$525,000. (Anyone care to bet on whether or not the tennis player actually paid for his?) The Richard Mille company is interesting in that it uses "manufacturing partners" rather than in house production. As the *NY Times* pointed out these timepieces are examples of inconspicuous consumption to impress one's peers.



## 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.

## NOTICES FROM MEMBERS

(The Bulletin accepts notices from Chapter members for all items/subjects horological - wanted, for sale, giveaway, services, and so forth.)

# CHAPTER #107 MEETINGS

## Second Sunday of the Even Numbered Months

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

### Future Meeting Dates

|                   |                   |
|-------------------|-------------------|
| August 14, 2011   | October 9, 2011   |
| December 11, 2011 | February 12, 2012 |
| April 8, 2012     | June 10, 2012     |

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<br>20589 Homestead Rd<br>Cupertino, CA          | 2 <sup>nd</sup> Sunday<br>even months<br>(except April) |
| <b>Monterey Bay #70</b>                             | Live Oak Grange Hall<br>1900 17th Ave<br>Santa Cruz, CA           | 3 <sup>rd</sup> Sunday<br>odd months                    |
| <b>Sacramento #71</b>                               | Sacramento Garden Center<br>3330 McKinley Blvd.<br>Sacramento, CA | 4 <sup>th</sup> Sunday<br>odd months                    |
| <b>San Francisco #5</b>                             | Boys and Girls Club<br>401 Marina Blvd.<br>San Leandro, CA        | 2 <sup>nd</sup> Sunday<br>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.

### WATCH TRAINS

NUMBER OF TEETH IN WHEELS OF WATCHES WITH 18,000 TRAINS

|                            |     |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------------------------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Centre Wheel ... ..        | 100 | 96 | 96 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 75 |
| Third Wheel Pinion ... ..  | 12  | 12 | 12 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Third Wheel ... ..         | 96  | 90 | 75 | 75 | 75 | 75 | 75 | 70 | 60 | 60 | 60 | 60 | 70 | 70 |
| Fourth Wheel Pinion ... .. | 12  | 12 | 10 | 10 | 10 | 10 | 8  | 8  | 8  | 8  | 8  | 8  | 8  | 8  |
| Fourth Wheel ... ..        | 90  | 80 | 70 | 80 | 70 | 60 | 60 | 60 | 60 | 80 | 70 | 60 | 64 | 64 |
| Escape Wheel Pinion ... .. | 10  | 8  | 7  | 8  | 7  | 6  | 7  | 7  | 8  | 7  | 6  | 7  | 6  | 7  |
| Escape Wheel ... ..        | 15  | 15 | 15 | 15 | 15 | 15 | 14 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
|                            |     |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Centre Wheel ... ..        | 75  | 75 | 72 | 72 | 64 | 64 | 64 | 64 | 63 | 60 | 60 | 60 | 54 | 54 |
| Third Wheel Pinion ... ..  | 8   | 8  | 9  | 9  | 8  | 8  | 8  | 8  | 7  | 8  | 7  | 8  | 7  | 6  |
| Third Wheel ... ..         | 56  | 60 | 60 | 60 | 70 | 63 | 60 | 60 | 60 | 60 | 60 | 54 | 50 | 50 |
| Fourth Wheel Pinion ... .. | 7   | 7  | 8  | 8  | 8  | 7  | 8  | 8  | 7  | 6  | 6  | 6  | 6  | 6  |
| Fourth Wheel ... ..        | 48  | 48 | 70 | 60 | 60 | 50 | 70 | 60 | 50 | 48 | 50 | 48 | 48 | 48 |
| Escape Wheel Pinion ... .. | 6   | 6  | 7  | 6  | 7  | 6  | 7  | 6  | 6  | 6  | 6  | 6  | 6  | 6  |
| Escape Wheel ... ..        | 15  | 14 | 15 | 15 | 15 | 15 | 15 | 15 | 14 | 15 | 14 | 15 | 14 | 15 |

Because the seconds hand makes 60 turns while the minute hand makes 1, the following formula relating to the number of teeth must apply:

$$60 = \frac{\text{centre wheel} \times \text{third wheel}}{\text{third wheel pinion} \times \text{fourth wheel.}}$$

from Watch & Clock Encyclopedia by Donald de Carle

### Closing Thought

Time may be a great healer, but  
it's a lousy beautician

*Unknown*