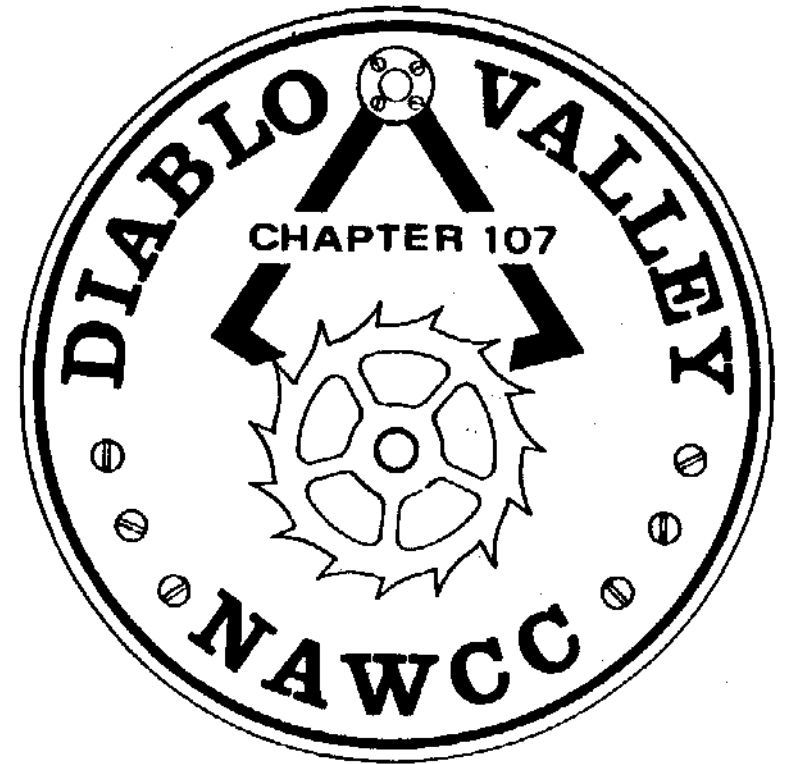


BULLETIN



December 2007
Volume 174

President's Message

Hi again. I am hoping that this letter finds all of you in good health and ready for the holidays. I just returned from the Del Mar regional. I had a great time and talked to a lot of people who I have met over the short time that I have been involved with clocks. It was great. I bought a few clocks and sold a few.

At this time, I would like to recognize and welcome the new members who joined the Chapter during 2007.

Brian Andresen
Devon Hoffman
Ron and Joanne Matinog
Mike Waddell
Tosh Yumae

Lastly, I want to thank all of you for your support.

Clarence



Enameled watch from the Museum of Arts and Crafts, Zagreb
from *The Watch* by Vesna Plantic.

Editor's Page

As we approach the end of the year, I want to thank Clarence and the other officers for their contributions in making our chapter what it is. I also want to thank all those who contributed to your *Bulletin*. Finally I want to thank Bob Wahrer and Roy Holman for their contributions to this issue. Keep those contributions coming. Your fellow members really do appreciate them.

I appreciate all the comments I received concerning the content of this publication. Based on the discussion at the October meeting, I do not see any big changes, but I would still like to see some regular columns.

Sometimes we don't realize how good something is until we don't have it. Sophia Gardner was unable to attend the last meeting, so John Stohr and I took pictures. Sophie rarely takes a bad picture. I can not say the same for the B team.

The *Favorite* column is taking a break this month. It will return in the new year. Actually the whole *Bulletin* nearly took a break due to a software hiccup. For a few terrifying minutes, I thought I had lost the whole thing.

Loren Scanlon is certainly missed. Recently a chapter member asked me about sources for books. Not having a computer, he did not have access to the resources of the internet. I was able to find and order the book for him in a few minutes. If others have similar needs, I will be glad to help you find what you are looking for. For those who do have internet access, remember that Amazon.com is not the only source of books. There are still a number of dealers specializing in horological titles, but I sure miss having one as a member of the chapter.

In closing I want to wish all our members a joyous holiday season and a happy and prosperous new year. Oh yes, you are still stuck with me as your editor.

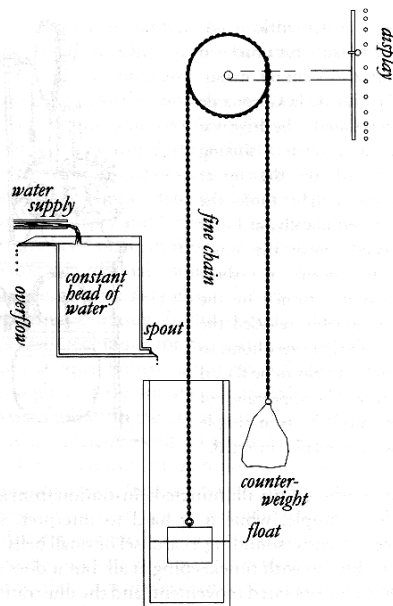
Price

ANAPHORIC CLOCKS

English teachers think of anaphoric as describing the deliberate repetition of a phrase at the beginning of several successive clauses. The word comes from the Greek word for to bring back. In horology anaphoric refers to an ancient type of astronomical clock (horologium anaphoricum) that transforms linear motion into circular. The dials of anaphoric clocks show the motion of the heavens throughout the year as well as time of day. The historian Vitruvius credits the invention of the anaphoric clock to Ctesibius of Alexandria in the third century B. C. There are two important features of these clocks - the mechanism and the dial.

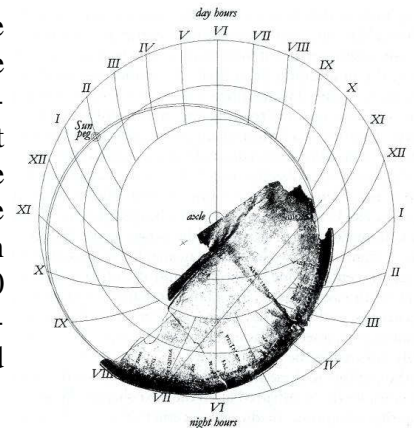
The mechanism is based on an inflow clepsydra. Water clocks are of two basic types - inflow and outflow. In the outflow clock water is allowed to leak out of a vessel and the level of the remaining water indicates the time. Unfortunately as the water level decreases the flow also decreases. In an inflow device, the level of water in a supply vessel is kept constant by allowing some to flow out a drain. The drip rate from a hole near the bottom of the vessel is therefore relatively constant. If this drip is collected in a second cylindrical container, the level will rise at a constant rate.

In the anaphoric clock, the rising water in the collection vessel is used to turn a wheel connected to a dial. As shown in the illustration, this is accomplished by using a float, string, wheel, and counterweight. As the water rises, the counterweight falls and the wheel and dial are turned. (In the illustration, the dial has been turned to the side to avoid obstructing the view of the wheel.) At the end of a day, the water was drained, the float pulled the string back, and the process started over.



The second interesting part of an anaphoric clock is the dial (disk). It is engraved with a celestial map showing star positions, a circle representing the ecliptic, the constellations of the zodiac, and holes for a plug that would indicate the position of the sun for each day of the year. A fixed grid of lines above the dial indicated the unequal hours throughout the year. The outer circle indicates the horizon at the location (latitude) for which the dial was made. As the disk made its daily rotation, it would simulate the rotation of the heavens. The construction of this type of dial is very similar to that of an astrolabe except the role of the fixed and moveable parts has been reversed. As you may recall from the last issue, Richard of Wallingford's clock is believed to have had a very similar dial.

During the 19th century, two fragments of Roman anaphoric dials were found - one in Austria and one in France. The fact that they were found in relatively distant parts of the Roman Empire has been taken to suggest that such clocks were fairly common. The illustration shows the piece found in France placed in a hypothetical hour grid. I could not find a reference to the size of the illustrated fragment, but the other one was originally 2 feet in diameter and weighed about 90 pounds. This would have required substantial support and bearings.



If one looks to the south, the stars move in the “clockwise” direction. If one looks to the north, they move “counter-clockwise”. The French and Austrian examples follow opposite conventions. Interestingly both representations were still in use in the middle ages.



Ron Bechler and Len Boone

October 2007 Meeting



Ron Bechler
Speaker



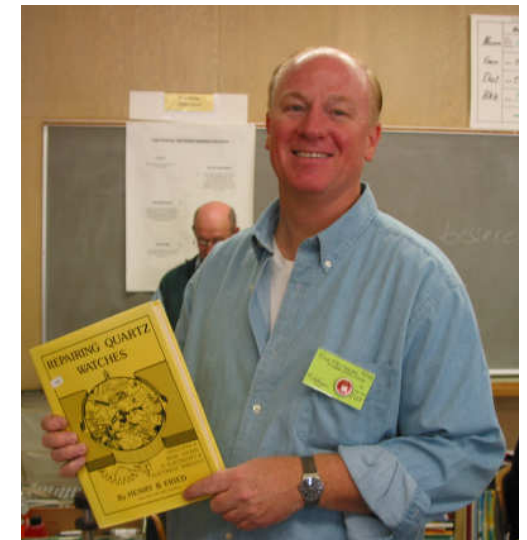
Bert Bradley



Mike Waddell (new member)



Lois Naye

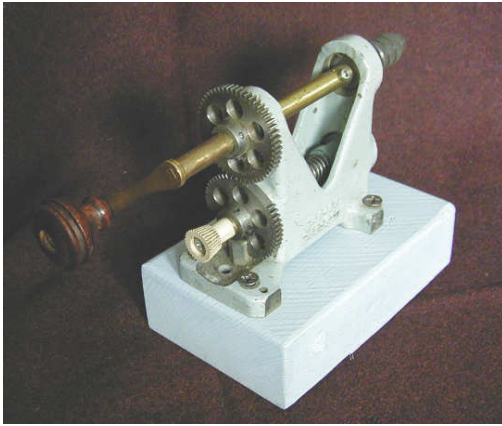


Rick Paltenghi

HOMEMADE TOOL

This mainspring winder is another example of a home-made clock tool. The winder was made about 40 years ago using a gear assembly that was found in a surplus store. It has served me well for clock springs up to about 1 inch wide.

The ratchet was formed out of the lower gear by removing several teeth at the top and cutting a 120° notch at the bottom. A fixed stop in the notch limits the rotation of this gear to allow about 4 teeth to engage with the upper gear in either direction. The helical spring, which can be seen inside at the



lower right, can be set by the white knob to move the ratchet gear into one of three positions for winding clockwise, counter clockwise or for free rotation. The shaft through the upper gear was fitted with a crank handle on one end and the chuck from a tap holder is attached on the other end. The chuck can hold a main spring shaft up to 4.5 mm square (size #10 key). The assembly is mounted on to a wooden block which is held in a bench vice during use. An assortment of hooks to hold the outer end of the mainspring is shown in the lower picture. A hook for a hole-end mainspring is shown installed in this picture. These hooks are made out of 3/16 inch steel rod.

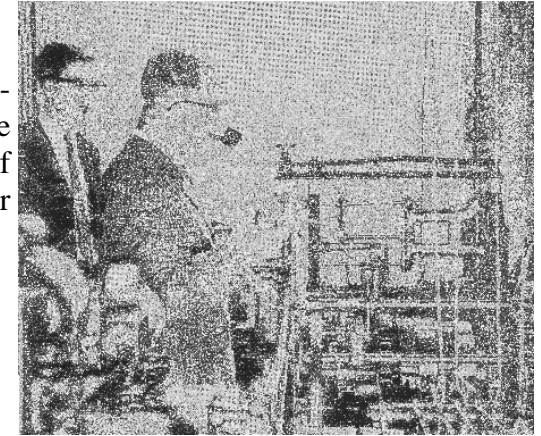
During use, an appropriate hook is slid into a hole drilled into the end of the wooden block. I soon found that the hole in the wooden block was wearing out so it was fitted with a 3/16 inch ID brass tube.



Bob Wahner

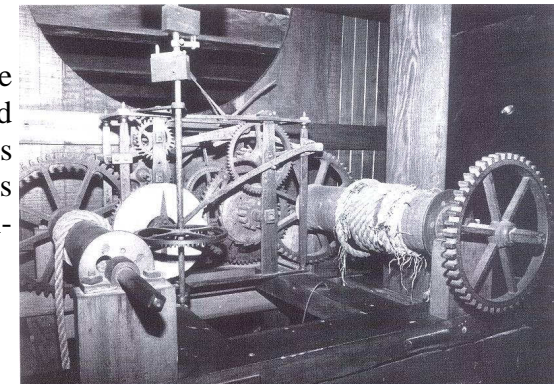
Wait. Don't Tell Me!

Who is the budding horologist looking over the shoulder of the keeper of this Seth Thomas tower clock?



The Tower of the Winds, an octagonal structure in the Roman Agora (market) in Athens, is virtually intact and has been continuously occupied until modern times. It originally had a wind vane on top. Each wall is topped by a depiction of the wind god appropriate to the direction the wall faces. The walls are also decorated with nine sun dials. What was the principal function of this building?

While we are on the subject of towers and tower clocks, what is the significance of this one? Hint: It is in Guilford, Connecticut.



OK, Now Tell Me.

The budding horologist was your editor, Price Russ, when he was an undergraduate at the University of the South and 42 years younger. Here he is last month with the current keeper of the campus tower clock. The restoration of the clock was described in NAWCC Bulletin #337 page 183 (2002).

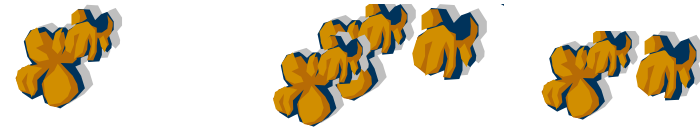


By all indications the Tower of the Winds held a water clock. Nothing in ancient literature describes the clock and it has been noted that the ancient literature generally says little about technology. Based on the design of the building, strong arguments can be made that it held an anaphoric clock similar to that described on pages 6 and 7. The existing building is mentioned as early as 37 B. C. Interestingly the stream that ran to the area of the tower and the fountain at its source were known as Clepsydra as far back as Aristophanes (5th century B. C.). This suggests the term, which literally means “water thief”, originally had a meaning other than describing a type of timekeeper. There are other water clock structures in the area, so it is difficult to know how the term became associated with water clocks.

According to Shelly’s Early American Tower Clocks, this clock now located in the Henry Whitfield House State Historical Museum is the oldest surviving American made tower clock. It was built by Ebenezer Parmelee (1690 - 1777) in 1726 for the First Church and Society of Guilford. It was moved to a new meeting house in 1829 and finally retired in 1893. In addition to tower clocks, Parmelee built tall case clocks of which a few survive. He was also a chair maker and shipwright.

NO MORE POPCORN

Did you know that on September 19 AT&T discontinued the time-announcement information service in this area? It will gradually be phased out across the country. Before the internet, cell phone, cable TV, and “atomic” clock (set by radio) era, the most common way to get the correct time was to dial POP-CORN (767-2676). According to an article in the Oakland Tribune, any number starting with 767 worked, so you may have learned a different mnemonic. The service was started in 1929 with an operator who read the time every 15 seconds. The familiar recordings went into use in the 1940s. As a spokesman for AT&T said “The Time’s time had passed.” Time correct to better than one second can be obtained from shortwave radio (WWV), “atomic” clocks that are set by the WWV signal, or time servers on the internet.



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 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

Days and Times

Mart Second Sunday 11:30AM Even numbered months
 Chapter Second Sunday 12:30PM Even numbered months
 Board Second Sunday after the Chapter Meeting
 Evening First Friday 7:30PM Odd numbered months

Future Meeting Dates

FRIDAY

January 4, 2008
 March 7, 2008
 May 2, 2008
 July 2008 - None
 September 2008 - None
 November 7, 2008

SUNDAY & BOARD

February 10, 2008
 April 13, 2008
 June 8, 2008
 August 10, 2008
 October 12, 2008
 December 14, 2008

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.

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

DIRECTIONS TO CHAPTER MEETINGS

Sunday Meetings
(except August and December)

From Oakland - Highway 24 going East

Take Pleasant Hill Road South exit.
 At light, turn right onto Pleasant Hill Rd.
 At end, turn left on Olympic Blvd. Go 0.9 miles.
 At light, turn right onto Tice Valley Blvd. Go 0.6 miles.
 Turn right into Acalanes Adult Center (1963 Tice Valley Blvd.).

From San Ramon - Highway 680 going North

Take Olympic Blvd. exit.
 Left on Olympic Blvd. Go 0.9 mile.
 At light, turn left onto Tice Valley Blvd. Go 0.6 miles.
 Turn right into Acalanes Adult Center (1963 Tice Valley Blvd.).

From Benicia - Highway 680 going South

Take Olympic Blvd. exit.
 Right on Olympic Blvd. Go 0.8 mile.
 At light, turn left onto Tice Valley Blvd. Go 0.6 miles.
 Turn right into Acalanes Adult Center (1963 Tice Valley Blvd.).

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



American Watch Co.
 14 Size, Model 1874
 Back Chronograph



Closing Thought

**This time like all times is a very good one
 if we but know what to do with it.**

Ralph Waldo Emerson