



Clock Rate Versus Humidity

by Mostyn Gale

Many things can influence the rate of a clock among them, temperature, barometric pressure, humidity, and other environmental factors such as wind. The graph (Fig 1) illustrates how the Santa Barbara courthouse tower clock is affected by humidity. The plot shows the rate of the clock from 21 Dec 2013 to 5 Jan 2014. Since all other factors are relatively stable, it is easy to see the impact of humidity alone.

The humidity is shown as the pink line, ranging from a low of 30% to a high of 64%. Comparing to a "normal" humidity of 50%, that is a change of 68%. You can't see these numbers on the graph since only temperature is shown on the right hand side of the graph. I looked up the actual numbers in the data file. The left side of the graph shows the rate; design rate is 1.25 sec/beat. The line in light blue shows the amplitude of the pendulum (the width of its swing). Assuming the average swing is about 7°, this change is from a low of 6.97° to a high of 7.03°, a change of about 0.7%. It does not appear to deviate very much but that is just a matter of how it is shown. You will notice that the amplitude decreases and increases very much in line with the humidity. The rate changes from 1.24998 sec/beat to 1.250014 sec/beat. This represents a change of only 0.003% - quite small!

But why is the rate affected by the amplitude? That is a result of the circular error. Circular error is a non-ideality of all pendulum clocks. Many of us learned in high school physics class that the rate of a pendulum was only related to the length of the rod – untrue! In fact as the arc of the pendulum gets wider, the rate slows down. Granted, this is a relatively small effect but also one of the fun things about using Bryan Mumford's Microset timer; it can see very small effects. You can see and read about more of these effects on his website, www.bmumford.com/mset/courthouse/graph.html.

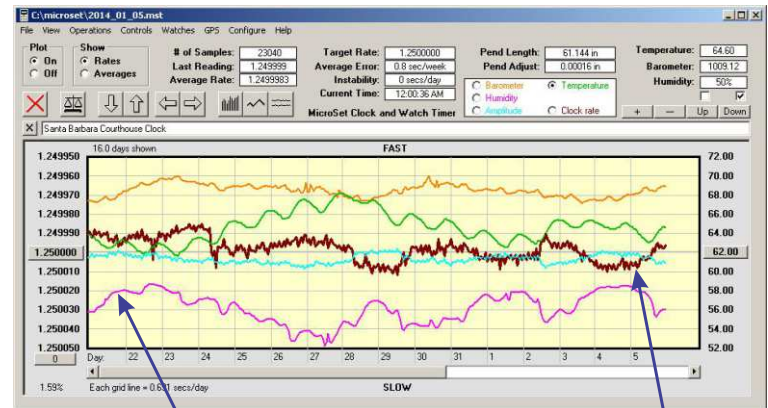
In the graph to the right (Fig 2), Bryan has increased the sensitivity of the amplitude plot until it about matched the humidity plot and deleted the plots of the temperature and barometric pressure to reduce the clutter. You can see from this graph how amazing the correlation between rate and humidity is. The amplitude is also shown in degrees on the right hand side of the graph.

Some of you are probably thinking that the most dominant environmental factor for a pendulum clock, like this Seth Thomas tower clock, would be the temperature.

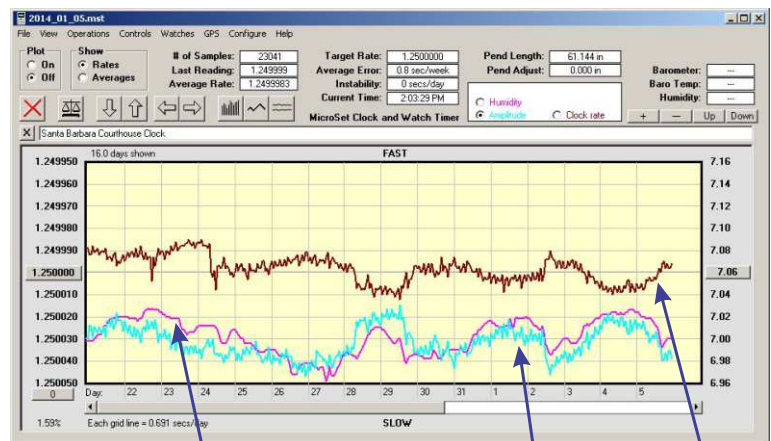
Normally that is probably the case. And in the first graph you can see that the temperature did vary some, from a low of 62° to a high of about 68°. This clock has a pendulum rod made out of a metal that is not as susceptible to temperature changes as normal steel would be. The original Seth Thomas order book says that it is called "stoic" metal. This seems to be an early form of invar which was invented in 1896 specifically for its low thermal coefficient of expansion to improve the accuracy of scientific instruments (like clocks).

We have noticed some effects of temperature during other times when the temperature changes were more significant. However, these changes may not have been only the result of the changing rod length – I am not sure yet. I have not yet done an analysis of the pendulum rod metal to determine its temperature coefficient of expansion but we plan to do that in the next couple months and we can then start to compare how each of these factors affects the clock.

Have fun! ■



(Fig 1) — Humidity — Clock rate —



(Fig 2) — Humidity Amplitude — Clock rate —

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PRESIDENTS MESSAGE

By George Gaglini

It seems like only yesterday that a small group of clock and watch enthusiasts met at Carrow's restaurant in Ventura to plan the founding of a new NAWCC Chapter. Now, approximately seven years later, Chapter 190 has over 140 members and a momentum built on solid achievements, most of which are documented in past editions of our newsletter, "The Chrono Times", and our website.

It's important to build on that momentum and keep it going.

At that first meeting someone said, "We will need an outstanding newsletter." Another said, "It's important to have a first class website." Yet another stated, "We can encourage membership through public outreach and education." Other declarations included the need for professionally taught Field Suitcase Workshops, a meeting schedule that would be interesting and stimulating, quality meeting programs at a central location that would capture the imagination and interest of clock collectors, watch collectors, persons in repair and service businesses, and those who simply were curious about horology.

In the past seven years these ambitions and many more have become realities at Chapter 190.

Our chapter has become a mature, effective, dynamic organization. I promise to do my best in preserving and stimulating its quality and growth.

See you at the next meeting.

George Gaglini



Happy Birthday

January

Mike Everman, Kenn Foster, Sylvia Griswold,

Richard Henderson, Darrell Jones, Virginia

Norwood, Tom Rementer, Lex Rooker,

Zaki Salahuddin, Beverly Schmidt, & Paul Skeels

February

David Perez

Tales From the Bench

by *Ferdinand Geitner*

The Wallace & Tiernan Clock

An unusual banjo came into my shop the other day. At first glance it appeared to fit into the “antique” category but it had no winding holes in the dial. It was battery operated which would suggest a newer model year. Inside the door on the operating instructions it informed the owner that, replacement batteries were available at about 10c?

The movement is driven by a solenoid which activates about every 5 minutes and drives a ratchet wheel which through just one extra gear drives the escape wheel and center wheel at the same time. There is a friction spring on the center wheel so the minute hand does not flop loosely. The pinions are halve lantern style, only one side of the lantern pinion, looks like a round comb, The escapement is a pinwheel escapement with an aluminum escapewheel (steel pins), and a flat copper pallet. The name on the dial “Wallace and Tiernan at Belleville” was not familiar and I decided to do some research into the company's history



The founders of the company are not exactly household names and yet their accomplishments are compared to Edison and Ford. They were totally opposite characters. Wallace was reserved and most at home in his laboratory, didn't smoke, drink or like to travel, Tiernan did all that and was known to hunt and play golf.

Charles F. Wallace born 1885 never earned a college degree but had a fascination with gadgets, especially electronic ones. He studied scientific books and became the inventive genius of the company.

Martin F. Tiernan worked his way through the University of Rochester and then studied sanitation at the Manchester Institute of Technology, he focused on the companies business interests.

These two unemployed engineers in 1911 pooled their savings and ventured into the water treatment equipment market. Not exactly a clock company.

The company had no horological roots as its main focus was safe drinking water. Epidemics of typhoid fever, cholera and other water borne diseases were common at the beginning of the twentieth century and the company developed a safe and reliable way to add chlorine gas to drinking water.

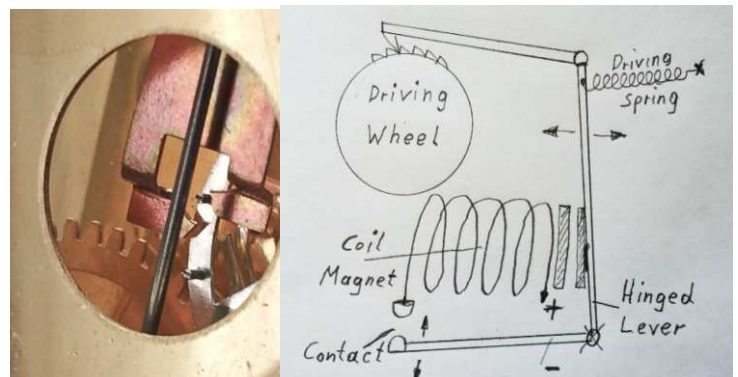
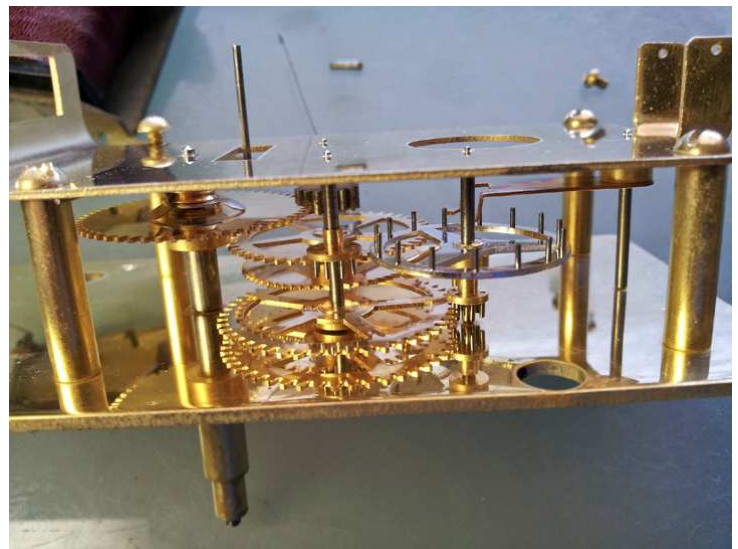
It did not always start out right. One of the first installations at McKernam Drill Works sprung a leak and was literally thrown out the window when the chlorine vapors from the setup rusted all the tools overnight. A redesign solved the problem and in July 1913 a direct feed machine was installed in Bernardsville, NJ. In September 1914, 23 installations were installed in eighteen different cities. The company supplied water treatment equipment to the armed forces during the first and second world wars. Part of the development process was a

Chloro Clock; a device for metering small amounts of chlorine solution in industrial and swimming pool applications. Wallace designed an extremely accurate clockwork mechanism to control the equipment. In 1924, either Wallace or Tiernan saw an opportunity for a new line of business. clocks. “The Wallace Electric Clock.”

After researching three years and testing 30 models in the laboratory at high speed to give them the equivalent of 50 years of wear two thousand clocks were produced. Unfortunately, one year after the introduction, the stock market crashed in October 1929 .

W & T survived quite well with a virtual monopoly in the chlorination business but with many competitors and availability of inexpensive synchronous motor clocks. The Wallace Electric Clock was removed from sale in 1931.

A unique little clock for the enthusiast. ■



Horology Trivia

by Giorgio Perissinotto



Ship's Bell and Ship's Clocks

Though today we tend to think of a marine clock as an instrument to tell time while on a vessel floating in water—and thus excluding a pendulum—or a brass timepiece that adorns a wall in a study or a country club, we should be aware that the “eight bells” associated with such instruments were only secondarily used to tell the time. A ship's bell was just that: a bell.

The ringing of a ship's bell indicates the time aboard a ship and hence regulates the sailors' duty watches. The bell itself is usually made of brass or bronze and normally has the ship's name engraved or cast on it. The ship's cook traditionally had had the job of shining the ship's bell.

Unlike civil clock bells, the strikes of the bell do not accord to the number of the hour. Instead, there are eight bells, one for each half-hour of a four-hour watch. In the age of sailing, watches were timed with a 30-minute hourglass. Bells would be struck every time the glass was turned, and in a pattern of pairs for easier counting, with any odd bells at the end of the sequence.

"On-watch" shifts generally are from four or six hours duration. During the sailing-ship era before the development of mechanical clocks, the passage of each watch was determined using an hourglass through which slowly flowed fine particles of sand.

Every 30 minutes, the hourglass would be rotated in order to begin counting the elapsed time once again. Each time the glass was turned, the ship's bell was struck a specific number of rings. All aboard would instantly know the time by counting the number of bell rings sounded.

The following is an example of bell time: Beginning at noon is 8 bells; 12:30 p.m. is 1 bell; 1 p.m. is 2 bells; 1:30 p.m. is 3 bells; 2 p.m. is 4 bells; 2:30 p.m. is 5 bells; 3 p.m. is 6 bells; 3:30 p.m. is 7 bells; and 4 p.m. is 8 bells (the end of a four-hour watch).

The four-hour, eight-bell series is repeated six times throughout a 24-hour day. The watches are assigned specific names. Beginning at noon, the sequential watches, in order, are: first watch, middle watch, morning watch, forenoon watch, afternoon watch, first dog watch, and last dog watch. Dog watches are so called because they occur during the often unpleasant, dark and frequently wet nighttime.

Unlike today, where almost every crew member possesses a space-age timepiece on his or her wrist, a crew member standing shipboard watch in earlier times could only know the time by listening to the ship's bells to learn how long he had been on watch and how long it would be before the next watch person would come up on-deck to relieve him or her.

If the strikes of the bell were an even number it was on-the-hour; if an odd number of strikes it was on-the-half-hour. But the crew member also needed to be aware whether the time was a.m. or p.m.

As maritime clocks developed over the years, the same bell pattern was incorporated into both mechanical as well as the later electric clocks, which were powered by battery or the ship's power electrical system.

"Eight bells" can also be a way of saying that a sailor's watch is over, for instance, in his or her obituary, as a nautical euphemism for "finished."

At midnight on New Year's Eve sixteen bells would be struck – eight bells for the old year and eight bells for the new.

But when it comes to having the exact time on a ship in order to establish its position, a reliable and precise timepiece had to be developed: The Marine Chronometer. The subject of a future column.

Material for this column was obtained from several sources, including the Internet, as well as from a column from the Santa Barbara News Press written by Bob Kieding, to whom we are grateful ■

The Chapter 190 Mart Is Back!!

by Ralph Napolitano

After a three year hiatus, Chapter 190 will again be hosting the *Seaside Watch & Clock Show* at Santa Rosa Hall at the Ventura County Fairgrounds on Sunday, April 13, 2014. This will be the 2nd time our chapter will be holding the mart at the Ventura County Fairgrounds. In 2012, the mart was cancelled due to the National Convention in Pasadena. There was no 2013 mart scheduled at all. However, we are hoping to again serve our membership, as well as reach out to the general public, by offering a pleasant venue to buy & sell watches and clocks.

We are expecting to have 75-80, 8' tables of clock & watch sellers, as well as some jewelry vendors. The mart is scheduled to open at 9:30 AM and close at 3 PM. Sellers will be allowed to start setting up at 9 AM.

We again will have door prizes. We also plan on having an evaluation table, which would allow those in attendance to bring any personal clock and/or watch for evaluation by one of our experienced members. The evaluation table will not be a place to buy or sell clocks or watches, but rather a place for the public to get an honest assessment of their watch or clock. I think this is a wonderful service to the general public, and hopefully an interest in horology and our club. Thanks in advance to those who will volunteer at the evaluation table.

There will be ample \$5 parking available at the Fairgrounds. The Fairgrounds usually provides a food vendor behind Santa Rosa Hall for those interested in a snack or lunch.

Peter Racette



Peter Joined Chapter 190 in 2013 and wasted no time getting involved. He completed the two day introductory workshop and went on to complete the FSW101 clock training workshop and is enrolled in the FSW200 workshop that will be given in January. Here is his story.

"I was born and raised in Minneapolis, Minnesota where I developed a profound hatred of snow and mosquitoes. My first interest in clocks originated from watching the clock in the classroom as it inched toward 3:15...quitting time!

Upon graduation from high school, I joined the Army. After 8 years, I quit the Army and joined the Navy. There I received excellent training in electronics, specializing in satellite communications and control. After 6 years in the Navy, I got a real job doing the same thing for 10 times the pay.

Also in the navy, I met the most fascinating person on earth and married her. I can tell she has infinite patience because she's put up with me for 32 years. We have one son who is serving our country in the Marines.

My real interest in mechanical clocks is an interesting story involving my wife's older sister. She married a sailor but had the marriage annulled. One of the wedding presents she wanted to get rid of was a nice ship's bell clock. She re-gifted it to me but it stopped working. I took it apart and actually got it to work! Ever since then I've had a fascination with old and unusual clocks. A few I've actually gotten to work. That ship's bell clock is still on the wall striking away!"

We welcome Peter to our club, another person with remarkable talents. I would say he is joining the most amazing group of people that I have ever had the pleasure of being a part of. Being a Minnesota native, I can really relate to his hatred of snow and mosquitoes. ■



Dave Coatsworth's program "Railroad Time"



Jim Chamberlain examining Dave Perez's steam engine.



Looking for bargains from estate sale tools

EDUCATIONAL OPPORTUNITIES

The following workshops are scheduled for 2014:

Attention! by demand, we have added a second workshop FSW 200 workshop for January 17th-20th

My personal favorite workshop that everyone, including watch collectors, should take is the Field Suitcase Workshop FSW 200 "Fundamental Skills for Clock Repair & Lathe Preparation". Sometime referred to as "The Metals Workshop", it is offered January 17th-20th & January 24-27, 2014. Ray Marsolek will be the instructor with Lex Rooker assisting for both workshops. There is no prerequisite for this workshop except for fundamental clock repair knowledge. If you have interest in this workshop please contact coordinator Tom Ferkel (661) 775 1652 or email tferkel@gmail.com.

Chapter 190 will continue to offer the "Introduction to Antique Clock Collecting & Repair & Maintenance" workshop. This 2 day workshop is open to members, friends, and the public. The only prerequisite for this workshop is "Interest & Curiosity" in mechanical clocks. All tools, movements, and knowledge are supplied. The date for this 4th workshop will be set in early 2014. For information contact Mike Schmidt, phone 805 988-1764

or e-mail eaglecreekclocks@msn.com

A FSW 301 Beginning Pocket Watch Workshop is scheduled for April 25-28. This 4 day workshop will be instructed by Ferdinand Geitner. The coordinator for this workshop is Chris Manzione. For further information contact Chris email manzione@verizon5.net

A FSW 101 Beginning Clock Repair workshop will be scheduled soon in 2014. If you have interest in this workshop or any other contact Mike Schmidt email [Eagle Creek Clocks @msn.com](mailto:EagleCreekClocks@msn.com)



Congratulations to all the students who recently completed the FSW104 four day workshop "Introduction to Weight and Fusee Driven Clocks". The smiles left to right and standing are Bob Thomas, Chris Martin, Assistant Instructor Lex Rooker, Jim Rineholt, Rodney Baker (completing a make up for the FSW102), and workshop Coordinator Frank Huttlinger, seated is Ron Maricich and everyone's favorite "Instructor" Ray Marsolek.

The **January** Chapter 190 Meeting
is Jan 19, 2014

Sellers may start setting up at 11:30

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

The Meeting starts at 1:15

"The American Reverse Fusee Clock"

Presented by Bill Robinson

These are seldom seen and even less understood American clocks. Come to Bills program and learn about these clocks.

Next meeting is:
February 16, 2014

This Month's Mini-Workshop

At 10:30AM

The opening subject will be "*Pivot Polishing.*" The workshop will be led by George Antinarelli. This is a round table discussion where everyone gets to join in and learn. Feel free to bring your clocks that are giving you problems. Don't let a clock baffle you, let our experts confuse you instead

THE WORKSHOPS ARE ALWAYS FREE!

If there is a topic that you would like to learn about, just mention it at the workshop. We are always looking for good topics for our workshops.

Welcome New Member



Jerry Treiman
from Woodland Hills



CLASSIFIED PAGE

This page is dedicated to advertising for Chapter 190 members. It is, of course, free to members.

SERVICES OFFERED

The Montecito Clock Gallery

Restoration, repair, sales of clocks and watches.
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Now located at 1187 Coast Village road, unit 10a
Montecito (one block from old site)
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The Clock Gallery

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Serving Ventura County and More . . .
Expert Repair - Service - Restoration
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Complete Watch Service Center

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Sales and Restoration of both new and antique clocks. Repair of all types of mechanical clocks.

Loren Miller proprietor.

4255 E. Main St., No. 15, Ventura, Ca. 93003

(Located in Firehouse Plaza at Main St. and Telephone Rd)

Monday through Saturday 10:00 to 6:00 pm.

Tel. 805-650-8800

FOR SALE

WATCH REPAIR TOOLS & MORE!

I will have a huge selection of watch repair tools and other items from my latest estate buy at the Chapter 190 meeting.

Dave Coatsworth
dave@daveswatchparts.com



MicroSet Timers for Clocks and Watches

Precision electronic timing tools for clock and watch repair with many unique features. Prices start at \$250. Full information is on the website:

www.WatchTimer.com

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Santa Barbara, CA 93110
(805) 687-5116

WANTED

URGENTLY NEEDED, VISIBLE ESCAPEMENT MOVEMENT

French type-platform escapement (no pendulum)

Winding hole spacing of 38.9 mm, (1.53")

Repairable, other details available on request.

Bob Reichel, welchdoc@yahoo.com **Ph: 1-206-364-7374**

- Chronometer -

Hamilton 21 Marine Chronometer in running condition, with inner box and gimbals; outer box not essential.

Please contact: Giorgio Perissinotto

E-mail: **giorgio@spanport.ucsb.edu**

Antique French 2 or 3 dial calendar clocks.

Antique English 2 or 3 gear-train skeleton clock.

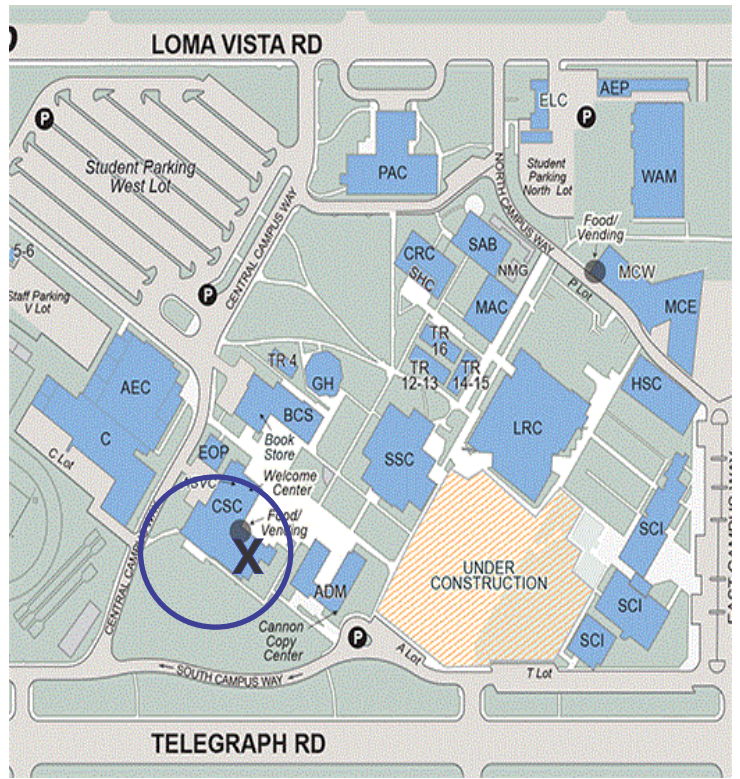
Loren Miller, **Pacific Coast Clocks**

4255 E. Main St., No. 15, Ventura, Ca.

Located in Firehouse Plaza (Main St. & Telephone Rd.)

Tel. 805-650-8800

The Chapter 190 meetings are held the third Sunday of each month. (No meeting in December)
 We will meet in the Campus Student Center (CSC) on the Ventura College campus. The CSC is located in building "B", east of the gym and



Jan - Feb, 2014 Issue

NEXT MEETINGS

JAN 19

FEB MEETING

FEB 16



If Undeliverable return To:
 17738 Superior St. Unit 21
 Northridge, CA 91325

Chrono Times

Ventura/Santa Barbara Chapter 190 of the National Association of Watch and Clock Collectors

Seaside ANTIQUE CLOCK, WATCH & JEWELRY Show



**SUNDAY
APRIL 13**

9:30a.m. to 3:00

- Open to the public
- Hundreds of Antique Clocks and Watches on display and for sale
- Antique & Vintage Jewelry and small collectibles
- Many great door prizes
- Amtrak station within very short walking distance
- Plenty of close parking (\$5 per vehicle)

While you are here, visit and enjoy the many attractions Ventura has to offer, including:

- Ventura Harbor Village & it's many shops & restaurants
- Whale watching, Island Wild Flower & Harbor Cruises
- Ventura County Wine trail Tours
- Mission San Buenaventura
- Ventura Pier



Ventura County Fairgrounds at Seaside Park • Santa Rosa Hall
10 W. Harbor Blvd. • Ventura, CA 93001



**FREE
Evaluations**

Bring your watch or clock
to our evaluation table,
learn it's history and
condition!

(Limit: one item
per guest)

Questions? Call (805) 509-2530
or email: ralphnapolitano@hotmail.com

Detailed information: www.nawcc-ch190.com

(Sellers must be NAWCC Members- Registration form on back)

ADMISSION:
(DAY OF EVENT)

\$10.00

PUBLIC WELCOME!
Children FREE

Seaside ANTIQUE CLOCK, WATCH & JEWELRY Show

IMPORTANT SELLER INFORMATION

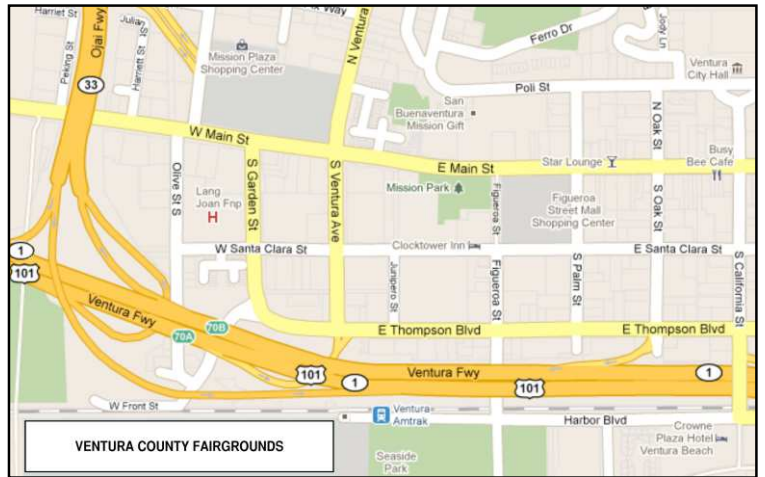
PRE-REGISTRATION TABLE RESERVATION DEADLINE: APRIL 9 • EVENT DATE: APRIL 13, 2014

- Eighty - 8 foot tables available for sellers
- Special parking reserved for sellers only
- Spacious area for unloading and loading
- Sellers may set up beginning at 8:30 A.M.
- Mart opens to members and public at 9:30 A.M. Closes at 3:00 P.M.
- Carts available for your use in moving items
- Helpers to aid with unloading, if needed
- Only wall tables have electricity option, and it is available for an additional fee
- Wi-Fi access
- Consignment Table & Silent Auction
- Evaluation Event promises to draw new faces!
- All clock and watch sellers must be NAWCC members in good standing to sell clocks and watches.
- To increase public and whole family attendance we have invited a small number of jewelry, collectable and confectionary sellers to participate at this event.
- We are allowing sellers to bring antique collectables other than horology items. All collectables must fit on the table. (No garage sale items.) At least 60% of seller's items must be horology related.

DIRECTIONS:

From Los Angeles: From the Ventura Freeway (Highway 101) northbound, take the Seaward Ave. exit or the California Street exit. Turn left towards the ocean to Harbor Blvd., turn right on Harbor and continue until you reach The Ventura County Fairgrounds at the corner of Harbor and Figueroa.

From Santa Barbara: From the Ventura Freeway (Highway 101) southbound, take the Seaward Ave. exit, make an immediate right on Harbor Blvd. and proceed to Ventura County Fairgrounds at Seaside Park.



VENTURA VISITORS & CONVENTION BUREAU: www.ventura-usa.com
 VENTURA COUNTY FAIRGROUNDS website: www.venturacountyfair.com
 AMTRAK website: www.amtrak.com
 NAWCC Chapter 190 website: www.nawcc-ch190.com

*****SELLERS REGISTRATION FORM*****

NOTE: The NAWCC, its officers and members of Ventura Chapter 190 are not responsible for any loss, injury, or tort during the event. California State tax laws apply to this event. California requires dealers and sellers that sell more than two times in a twelve month period to have a valid California sellers permit. These may be obtained free of charge from any California Board of Equalization office

THIS FORM MUST BE RECEIVED WITH PAYMENT BY April 9

Please mail this form with payment to:
NAWCC Chapter 190
C/O Ralph Napolitano
PO Box 3438
Camarillo, CA 93011
(Questions? Call 805 509-2530
or E-mail: ralphnapolitano@hotmail.com

Member: _____ NAWCC # _____

Address: _____ City: _____

State: _____ Zip: _____ Phone: _____

E-Mail: _____

	QTY	@	TOTAL
Pre-Admission <small>Day of event: \$10</small>	_____	\$8 =	_____
Mart Tables (8 ft)	_____	\$20 =	_____
Mart Wall Tables (8 ft)	_____	\$25 =	_____
Electricity (Wall Tables Only)	_____	\$18 =	_____

(Your E-Mail address will be kept in strict confidence.)

I sell primarily: Watches Clocks

Total Enclosed: \$
(PAYABLE TO: NAWCC Chapter 190)



CHAPTER 190 of the NAWCC
VENTURA AND SANTA BARBARA COUNTIES

2014 Renewal Time

Dear Chapter 190 Member:

It is time to renew your 2014 membership in Chapter 190. Many good things are happening in our club and you may want to provide continuing support for our effort and be a part of the enjoyment of a great hobby. We offer a good time for all at our meetings on the 3rd. Sunday of the month.

The membership fee will include spouses and other immediate family members and, of course, the bi-monthly issues of the Chrono Times. Please fill in the short form included and send it with your check for \$25.00 payable to Chapter 190 NAWCC to me at the address below

You can also catch me at the next meeting and save the postage; cash or check accepted and receipt provided.

Ernie Jenson
Director of Membership

Please print clearly

Date _____

Name: (First) _____ (Last) _____

fill in below if there has been a change:

Phone: _____ Street Address: _____ City: _____ State: _____ Zip: _____

email _____

Chapter dues run from January 1st to December 31st, 2014. Annual dues are \$25.00.

Please make checks payable to: Chapter 190 NAWCC

Mail this form & check to: Ernie Jenson
25 Norma Court
Camarillo, CA 93010

January 30 through February 1, 2014 Greater Los Angeles Regional

Pasadena Convention Center • 300 E. Green St. Pasadena, CA 91101
HOSTED BY: SAN FERNANDO VALLEY CHAPTER 75 & WESTERN ELECTRIC CHAPTER 133

The General Public will be admitted to the Mart area on Saturday!

THE EXHIBIT WILL FEATURE "California Clocks & Watches"
The Exhibit and Programs are Free and open to anyone.

SCHEDULE

Thursday, Jan 30

5 - 7 pm *Pre-Registration and Packet pickup.*

6 - 8 pm *Mart Table Setup.*

Friday, Jan 31

8:00 am *Registration*

7:45 am Program I "Railroad Time"

Presented by: Dave Coatsworth

9:00 am *Mart Opens*

12:00 noon *ITR Chapter 175*

2:00 pm Program II "IBM, Clocks"

Presented by: Alan Bloore

4:30 pm *400 day Chapter 168*

6:00 pm *Mart Closes*

Saturday, Feb 1

7:45 am Program III "American Reverse Fusee" *Presented by: Bill Robinson*

9:00 am *Registration*

9:00 am *Mart opens*

11:00 am Ch 173 (Horo. Tools) meeting

2:00 pm Program IV "How to access NAWCC offers online" *Presented by: Steve Humphrey*

3:00 pm *Mart Closes*

4 - 5 pm *Mart room breakdown.*

7:00 pm *Banquet*

Convention Rate
\$139
Single or Double

Host Hotel:

(Contiguous with Convention Center)

Sheraton Pasadena

303 E. Cordova St.

Use Local Reservations at:

626-449-4000

Pasadena Inn (.4 mile)

400 South Arroyo Parkway

626-795-8401

LODGING

Vagabond Inn (.7 mile)

1203 East Colorado Blvd

626-449-3170

Westway Inn (1.6 mile)

1599 East Colorado Blvd

626-304-9678

Reserve early, the Sheraton will only hold NAWCC discounted block of rooms till Jan 15, 2014

Website: www.GLAR2014.com

E-mail inquires: cstdennis@earthlink.net

Chairman: Jim Chamberlain • (805) 495-5349

IMPORTANT STUFF!

Tables reserved by groups must be received in the same envelope. Badges & tables are not transferable. Registrations received before January 17, 2014 will be acknowledged. **No Refunds after this date.** Fire code regulations preclude extensions of your table space into aisles or doorways. **No more than two sellers per first table, one seller per each additional table.** The NAWCC, its officers, and members of the Greater Los Angeles Regional are not responsible for any loss, injury, or tort during the meeting. Valid NAWCC membership card required for entrance except Saturday. NAWCC Convention protocol, rules and California State tax laws apply to this convention. Only horological items allowed in Mart room.

Please Print Clearly

TABLE HOLDER NOTE: A California occasional sale form BOE-410-D must be presented before entering the mart. Go to our website and download the form and fill in the information. **www.GLAR2014.com**

Pre-Registration Ends January 17, 2014

ITEM	QTY	PRICE	TOTAL
<i>Pre-registration</i> (On site registration \$40) <i>Minors under 18 are free</i>	_____	@ \$35	_____
<i>Mart Tables</i>	_____	@ \$60	_____
<i>Wall Tables</i>	_____	@ \$65	_____
<i>3 Day Vendor Parking</i>	_____	@ \$45	_____
<i>Electricity (per hookup)</i> (Wall Tables ONLY)	_____	@ \$25	_____
<i>Banquet</i>	_____	@ \$35	_____

TOTAL ENCLOSED

Member: _____ NAWCC# _____

Address _____ City _____

State _____ Zip _____ Phone _____

E-mail: _____

Family Members _____
(Spouse and minor children)

Other NAWCC members _____ # _____
(Include NAWCC #)

Special request: _____

For Sellers: I sell primarily Watches Clocks

Mail application & Check to:

Greater LA Regional

P.O. Box 352

Harvard, MA 01451

Make checks payable to: GREATER LA REGIONAL