



# NAWCC NEWS

National Association of Watch and Clock Collectors  
Atlanta Chapter 24  
October, 2009

**A Simple Regulator** with an Isochronous Combination of Pendulum and Escapement. Bernard Tekippe FNAWCC described his successful invention in the 30 minute presentation to our membership during our August 2, 2009 meeting.

In the seventeenth and eighteenth centuries, great improvements were made in timekeeping by fitting clocks with temperature-compensated pendulums. However, two problems related to pendulum swing amplitude continued to plague clockmakers: (1) Circular Error, in which the pendulum swings slower as it swings farther, and (2) Escapement Error, in which the clock driving the pendulum causes variation in pendulum speed.



Bernie Tekippe lecturing with Simple Regulator

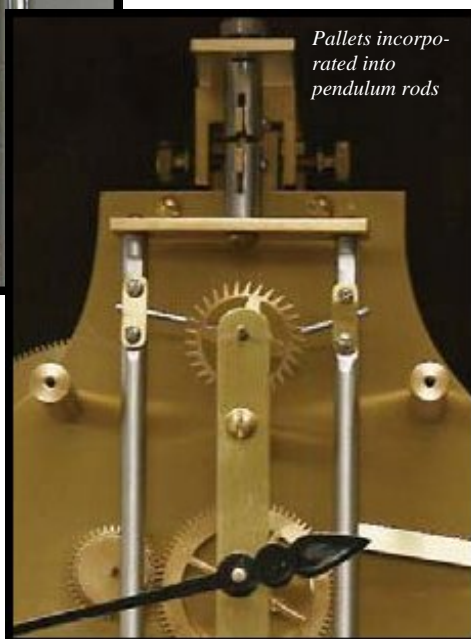
Today the electronic clock timer can measure the time of a single pendulum swing to one millionth (0.000001) of a second, permitting analysis and opportunities to correct (or offset) these errors. This facilitated the design of the Simple Regulator.

For as long as there have been clockmakers, there have been regulators; they were simply the best timekeepers the clockmaker could make or buy to time the other clocks that came to them. In 1890, the typical regulator had a deadbeat escapement, was wound once a week and had a

daily variation of about 0.1 second.

German clockmaker Sigmund Riefler improved on this regulator in 1897 by replacing mercury compensation with invar, placing the clock in a vacuum chamber, and improvising an electric system to wind the clock every 30 seconds. Until 1950, about half the regulators in the world's major observatories were Riefler model D clocks. At the time, Riefler sold several models of his clock. The Riefler model A, in a dustproof wall case, with a variation of 0.03 to 0.06 seconds/day and the model D, in a vacuum chamber, guaranteed to vary only 0.01 to 0.03 seconds/day were the highest precision.

Since 1981, NAWCC Atlanta Chapter 24 members have worked to improve the accuracy of the 1897 regulator. The improvements made were: (1) changes in the gear train, (2) a carefully adjusted invar pendulum, and (3) a change in the escapement to address circular and escapement error. In testing the Tekippe clock for 12 weeks in a grandfather case, the Average Daily Variation (ADV) was 0.008 second/day (i.e. 2.92 seconds/year) - comparable to the Riefler Model D. - with no jewelers, no electric winding, no vacuum chamber, and minimal parts.



This ADV=0.008 seconds/day was accomplished in the Tekippe clock using only three wheels: a one-minute, a half-hour and a 12-hour wheel. Its train with brass bearings is more efficient than the jeweled wheel trains of previous regulators, which used more wheels and pinions with more leaves. Tekippe runs on only five pounds a month which is less than most jeweled regulators. The pendulum is made of invar, steel, and brass, and is designed to oscillate once per second. It is composed of a top portion connected to the pendulum suspension spring and incorporates the pallets, and a bottom portion to which the bob is mounted. The escapement design transfers energy while minimizing disturbance of pendulum motion. This

## Minutes of NAWCC Atlanta Meeting: August 2, 2009

- President Chris Brown called the meeting to order following a lively auction led by Brooks Coleman.
- Chris Brown asked for introductions of new attendees. Guests Vince Seiwert and Wyatt Veal introduced themselves.
- Tom Noesges read the Minutes of the June 7<sup>th</sup> meeting. Chris Brown called for approval of the Minutes. A motion to approve the Minutes was made, seconded and the Minutes were unanimously approved as read.
- Donna Kalinkiewicz gave the Treasurer's Report, including our account's beginning balance, receipts, expenses paid and ending balance.
- Old Business
  - ◆ Tom Noesges reported on the Field Suitcase Workshop status. He stated that the "F200 Lathe Preparation" class planned for September 11<sup>th</sup> was full. The "F201 Beginning Lathe" scheduled for December 4<sup>th</sup> 2009 remained open. Also, as a result of our membership poll during our June 2009 meeting, we will be scheduling F301 "Introduction to Basic Watch Repair...The American Pocket Watch" and F401 "Reverse Glass Painting" classes for first quarter 2010.
- New Business
  - ◆ Brooks Coleman announced that in August Atlanta Chapter 24 is celebrating the 52<sup>nd</sup> year of its charter in the NAWCC. Our club is in the process of gathering historical documents and artifacts for a display to commemorate our 52 years.
  - ◆ Chris Martin stated that because the State of Georgia's budget dollars are down, the state will be divesting its interest in its historic clocks. This means operations will be turned over to local government—city, county, etc.. When the turnover is complete, the curator will work with our chapter's Historic Sites Committee to identify and repair these clocks.
  - ◆ George Waterhouse asked for and received club approval to pay \$105.00 for a French movement to replace a quartz movement in one of the clocks in the Governor's Mansion.
- Program
  - ◆ Warren Brook was introduced and gave a talk on his Early Bird Clocks (see article in this publication).
  - ◆ George Waterhouse introduced Bernie Tekippe and his Simple Regulator (see article in this publication).

### A Simple Regulator (continued from page 1)

clock contains two variations from the usual designs: (1) pallets are mounted on the pendulum and the escape wheel teeth push the pallets and the pendulum directly and (2) a modification to reduce the errors associated with change in the amplitude of pendulum oscillation. This is a complex error, involving impulses before and after center, and frictions before and after center.

The Tekippe Simple Regulator varies only 0.008 second/day, about one fifth of the best amount ever attained by any regulator previously. The concepts of the Tekippe Simple Regulator using fewer gears with higher ratios and a pendulum with a small oscillation driven directly by the escape wheel can be the beginning for future developments and more experiments to exploit the precision time interval measurement techniques now available. ■



Warren Brook

### Show & Tell Early Bird

Warren Brook explained how attending professionally-run sales paid off when he showed the Atlanta members his beautiful C. 1862 E. Ingraham and Co. iconic clock the 8-day Grecian. He purchased the Grecian for a fraction of its value. By appearance, the dial on the Grecian was original. Warren also displayed and described his acquisi-

tion of an Annular clock C. 1960 remake from Swiss, ImHof 8-day Nite Clock. The ImHof was made the same size as its C. 1880 French counterpart, with the addition of a modern lever movement plus a minute dial above the hours. The "globe" is in two pieces. The estate sale where the Imhof was purchased had it priced at \$20.00. Not knowing the value of such a clock, Warren offered \$2.00 and bought himself a clock that, he



E. Ingraham Grecian



Imhof Annular

later found out, sold for \$550.00 in 2002. It's been said "Better lucky than smart." The third clock Warren presented was a C. 1845 Brewster & Ingraham Beehive Shelf clock. This clock featured a painted metal dial and an etched glass tablet. Both appeared original. ■



Brewster & Ingraham  
Beehive



## Treasurer's Report

By Donna Kalinkiewicz, Treasurer, Chapter 24

Fifty-four members attended our August meeting. Thirteen members have not renewed for 2008. Check your newsletter label; if it says 2008, your membership has expired. Any members unsure of their Dues Status should call Donna at 770-321-1057 or email Donna at dmktimes2@comcast.net.

George Waterhouse announced that a movement was found that would fit in the French clock at the Governor's mansion. The membership voted to purchase this movement at a price of \$105. A check was sent to Brian Comier on August 14, 2009.

Chapter 24 sent a contribution for the 2009 Mid-South Regional in the amount of \$150.00. We asked that \$100.00 be used for door prizes and \$50.00 be used for food. ■

## Up-Coming Programs & Presentations

### OCTOBER

**Reverse Glass Painting** - Rick Mangum, Blue Ribbon winner of two consecutive Nationals for reverse painting and a Blue Ribbon winner for stenciling, will show some of his beautiful work and how he puts it all down on glass!

**Benjamin Franklin's Clock** - Roger Kellogg will be showing our members his four hour dial plate and explaining its use in telling time.

**Doggie Time** - Donna Kalinkiewicz will present her novelty "Dog" clock with its rolling time-keeping eyes and explaining this dog's history. This one is "truly cute."

**ImHof Novelty & Gilbert Time & Strike** - Henry Newman will show you how his ImHof monk rings a bell on the hour. Additionally, Henry is bringing his C. 1869 Gilbert in its special patented case for your enjoyment.

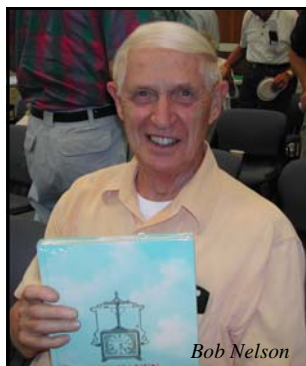
**Watch Focus Military Timepieces** - The Watch Focus Group will be displaying military timepieces during the meeting. Members, including clock folks, having examples are urged to bring them to the meeting. Please prepare a small card for each piece describing and explaining the significance of the piece. ■

### DECEMBER

**Food & Friendship for Folks** - Be ready for our annual Atlanta hospitality at our Holiday Party. ■

**FREE STUFF** Our Door Prize at our August 2nd meeting was won by Bob Nelson. Bob won Tran Duy Ly's book, *New Haven Clocks*. Enjoy Bob!

Each member and guest will have a chance to win another Tran Duy Ly book during our October meeting. Be there to win. ■



## New Members & Guests

During our August meeting, we were honored by the presence of guests Wyatt Veal and Vince Seiwert. Please make these folks feel welcome. Take time and get to know them to find out just how you can help them to enjoy our club as much as you do. ■



## Members Only - Classified Section



If you want a FREE posting, contact Tom Noesges at Thomas@Noesges.com or call (770) 262-0883.

## Chapter Educational Opportunities



### F200 Fundamental Skills Class of September 11, 2009

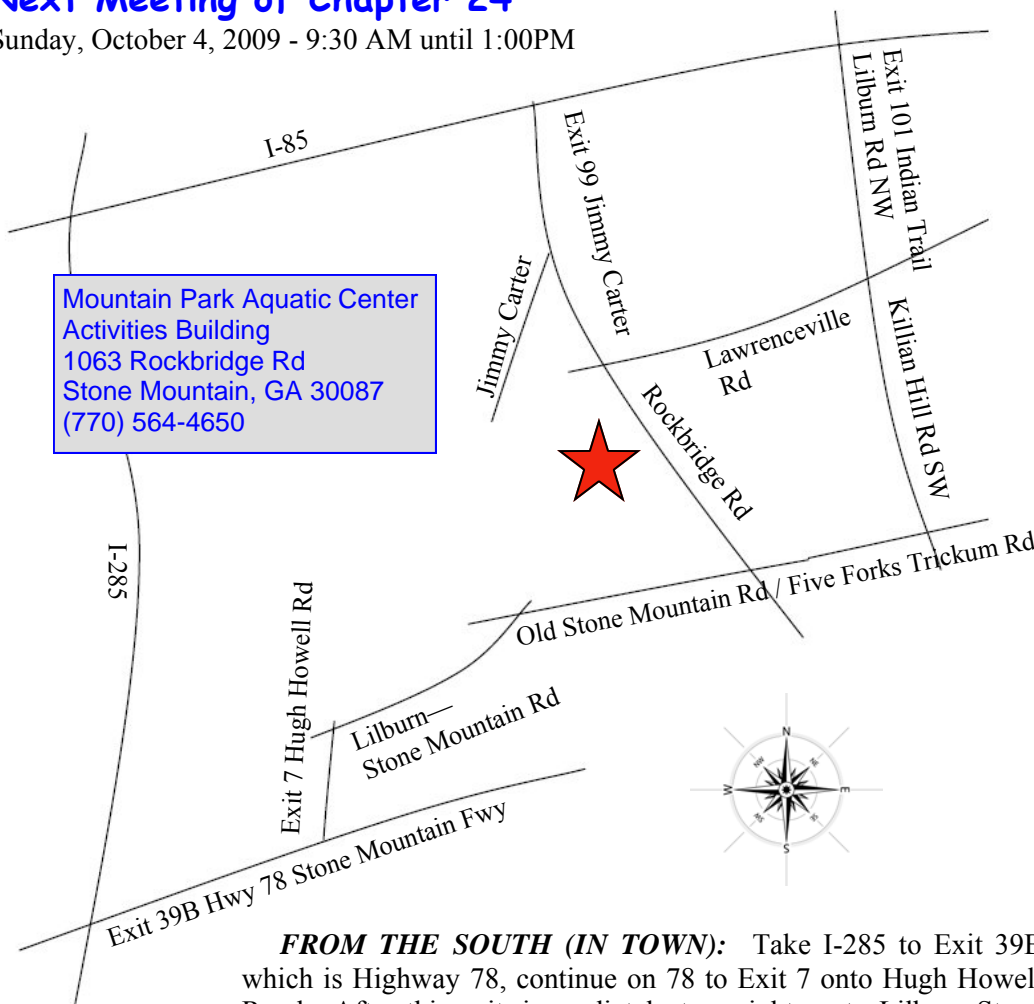
Back: Mike Rosenberg, Billy Johnston, Hugh Weaver, Chris Brown, Joe Orr, Hans Rupf, Willy Bilger. Front: Bill Knaak, Katherine Kittle, Donna Kalinkiewicz, Joel Dunipace (FSW Instructor)

**Field Suitcase Workshops** If you are interested in any of the classes below, contact Tom Noesges at Thomas@Noesges.com or call (770) 262-0883.

CLASS DESCRIPTION	DATE
F201 Lathe I Skills for Clock Repair Course Instructor: Joel Dunipace	Dec. 4-7, 2009
F401 Reverse Glass Painting Course Instructor: Phil Gregory	Jan. 8-11, 2010
F101 Introduction to Basic Time & Strike...The American Kitchen Clock Course Instructor: Joel Dunipace	Feb. 5-8, 2010
F200 Fundamental Skills for Clock Repair & Lathe Preparation Course Instructor: Joel Dunipace	Mar. 12-15, 2010
F301 Introduction Basic Pocket Watch Repair...American Pocket Watch Course Instructor: Lehr Dircks	Mar. 19-22, 2010
F202 Lathe II for Clock Repair Course Instructor: Joel Dunipace	Apr. 23-26, 2010

## Next Meeting of Chapter 24

Sunday, October 4, 2009 - 9:30 AM until 1:00PM



**FROM THE SOUTH (IN TOWN):** Take I-285 to Exit 39B which is Highway 78, continue on 78 to Exit 7 onto Hugh Howell Road. After this exit, immediately turn right on to Lilburn-Stone Mountain Road. After 0.2 mile, turn right onto Old Stone Mountain Road. Continue to the intersection of Rockbridge and Five Forks Trickum. Turn left on Rockbridge Rd. The Aquatic Center is two blocks north on left.

The Atlanta Chapter of the NAWCC typically meets the first Sunday of February, April, June, August, October and December. As part of the Mid-South group, it also sponsors the regional meeting in Chattanooga on Labor Day weekend each year, in rotation with the Alabama and Tennessee chapters.

**FROM THE NORTH-WEST:** Take the I-85 east exit from I-285. Exit 99 and turn right on Jimmy Carter (Hwy 140). Continue and bear left onto Rockbridge Rd. Aquatic Center will be on right—two blocks before Five Forks Trickum Rd.

**FROM CUMMING / HALL COUNTY:** Take Exit 101 Indian Trail / Lilburn Rd NW off southbound I-85. As you cross Hwy 29 Lawrenceville Rd, Indian Trail becomes Killian Hill Rd. Turn right onto Five Forks Trickum Rd. Turn right onto Rockbridge Rd. Aquatic Center is two blocks north on left.

**Tom Noesges, Secretary**  
**Chapter 24, NAWCC**  
**5211 Willow Creek Overlook**  
**Woodstock, GA 30188**

Membership paid through...