



NAWCC NEWS

National Association of Watch and Clock Collectors
Atlanta Chapter 24
December, 2011

"What Makes A Fine Watch Fine" 1947 Hamilton Watch Company Video

by Tom Noesges

The program for the October, 2011 meeting of the Atlanta chapter featured the 20 minute video "What Makes A Fine Watch Fine – by The Hamilton Watch Company" The 1947 video captured the silent attention of the membership as we sat jaw-dropped at the innovations and techniques employed by this famous watch maker in the mid-20th century.

The Story Began - For hundreds of years a fine watch has been man's most prized possession and been a mark of distinction. It represented the integrity of the man who showed respect for another person's time.

The story told of the watch company: its building, factories, laboratories and the vast number of people in the assembly lines committed to their work with line managers supervising every step of the process. At the time, Hamilton heralded its craftsmanship as a pioneer in scientific research.

Into the Factory - Making a fine watch would begin with people chosen carefully for their skills – who have passed the rigid testing. It took years of training to make a new watchmaker even with the close supervision and guidance of an experienced watchmaker. The film told the story of sons following their fathers adding their youthful spirit to the profession. The tenure of many years of service was necessary to perfect the highest quality of work - employees gave 15, 20 and sometimes more than 50 years of service. Making a fine watch fine required fine people and modern equipment.

Precision Micro Parts and Accuracy - Unless you saw this video, you wouldn't believe the extremely small parts that were made in the 1940's. A screw as small as a speck of dust! Screws – so small they take a high power lens to even see them - were made one at a time on a screw machine. A small pillbox can hold 300,000 screws - representing a full years output of one of the precision screw machines.

Axles, called balance staffs, were made to tolerances of 1/10,000 of an inch. Accuracy was a religion at Hamilton Watch Company. To maintain their keen edge at drilling the almost invisible holes needed, technicians would practice drilling

holes through human hairs.

The scales used to measure materials were accurate enough to measure the weight of a human fingerprint or an eyelash.

Precision Materials –

The video shows the making of the special alloy Elinvar used in hairsprings. Elinvar was invented in the late 1890s by Charles Edouard Guillaume, (Winner of 1920 Nobel Prize in Physics) a Swiss physicist who also invented Invar, another alloy of nickel and iron, with a very low thermal expansion. The use of Elinvar eliminated the major cause of inaccuracy in watches and clocks.

Ordinary steels used in springs loses elasticity slightly as the temperature increases, so the balance wheel would oscillate more slowly back and forth, and the clock would lose time. A 1,000 pound production of Elinvar would yield only 25



Practice drilling holes in Human Hairs



Molten Elinvar

pounds of usable metal. One pound of completed Elinvar hairsprings would be worth \$1,000,000 in 1947 dollars! The Elinvar would be processed into a phenomenally small hairspring.

A 20-inch-long rod of Elinvar, about 1/2 inch in diameter, is turned, sledged, beaten and stretched until it's 60,000 times its original length, resulting in 20 miles of highly polished ribbon finer than a human hair.

Accuracy and Inspection – Using only a special electronic vibrator machine and the watch hairspring, the time keeping accuracy could be determined before the watch was even assembled.

Often watch parts were machined to tolerances of 1/10,000

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Modern Equipment



1,000 Inspections



Testing Future Employees



Measuring One Millionth Inch

Minutes of NAWCC Atlanta Meeting: October 2, 2011

- ◆ President George Waterhouse called the meeting to order following an electrifying auction led by Brooks Coleman.
- ◆ George Waterhouse asked for guests to introduce themselves: Robert Martin (Jae Martin's father) and Gaby Keen (Henry Newman's friend) introduced themselves
- ◆ Tom Noesges read the Minutes of the August 7, 2011 meeting. The Minutes were unanimously approved as read.
- ◆ Donna Kalinkiewicz gave the Treasurer's Report, including our account's beginning balance, receipts, expenses and ending balance.
- ◆ Old Business
 - ◆ Pete Schreiner gave an update on the State Historic Sites and the Governor's Mansion clocks. Essentially, no returns and the Mansion Clocks are running alright.
 - ◆ Bernie Tekippe gave a final report on the Mid-South Regional including the financials. This regional surpassed the previous conventions in profits. Much discussion took place with regard to changes for future conventions.
- ◆ New Business
 - ◆ A Great Gatsby's auction was announced by Warren Brook.
 - ◆ Our membership was challenged by George Waterhouse to come up with ideas that would let the "local people" know about our club.
 - ◆ Brooks Coleman announced that a gargantuan auction of 500 clocks will be held at Braxton's Auctioneering in Loganville, GA on March 1, 2012.
- ◆ Program
 - ◆ Jae Martin introduced Henry Newman's Show & Tell about the Pennsylvania Tallcase Clock Restoration and Tocks mishap. (see article).
 - ◆ Jae Martin introduced Ken Hogwood's Show & Tell about his circa 1835 French Carriage Clock. (see article).
 - ◆ Jae Martin introduced Donna Kalinkiewicz' Show & Tell about her French Skeleton Alarm Clock (see article).
 - ◆ Jae Martin introduced his own Show & Tell on the Emperor Grandfather clock (see article).
 - ◆ Jae Martin introduced our main program, "What Makes A Fine Watch Fine" by the Hamilton Watch Company, a 1947 video presentation. (see article). ■

"What Makes A Fine Watch Fine"

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inch: several as had to be precise as 1/100,000 inch and some as small as 1/1,000,000 inch.

Of the 2,000 operations that went into the making of a Hamilton watch, almost half were inspections. 20% of these inspections were double inspections – inspectors inspecting inspectors.

Using Food Items -

Bread dough was used throughout the factory to remove specs of dust and filings during the manufacturing process. Honey was used to hold the jewels together during the manufacturing process.

Frictionless - The jewels provided an essentially frictionless environment. The friction between moving parts in a Hamilton watch was so small that the power consumed to burn a single 25 watt light bulb for one hour is sufficient to power a fine watch for 4,000 years.

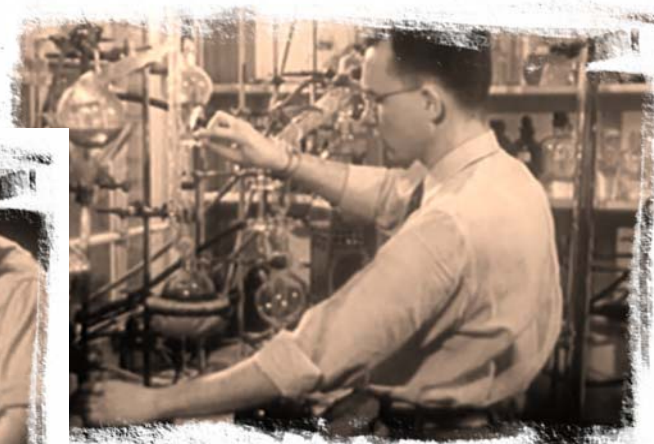
The point was made that the minimum of 17 jewels does not necessarily make a watch fine. A fine watch is the result of the design, planning, manufacture, fitting and assembly of every part that goes into the watch.

Hamilton used its own fine lubricants to further reduce friction. The video showed an oil refinery making lubricants that cost \$6,000 (1947 dollars) per gallon. Almost all of this oil was thrown away because during the oiling process any oil left over after two hours was just thrown out.

Time - It took nearly nine months to complete all of the work needed to make a really fine watch. It could take two years from conception to delivery of the first production watch. During

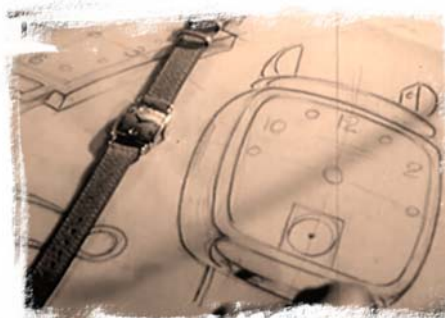


Kneading Bread Dough



Making \$6,000/gallon Oil in Hamilton's Laboratory

this time more than 100,000 man-hours of careful design, engineering and application of special skills went into a new movement and the creation of the precision tools needed to build it.



Design Integrity

Hamilton used many specialized instruments to check the performance of the watches. Hamilton's Magic Lantern time projector helped check the accuracy of tiny watches that

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"What Makes A Fine Watch Fine"

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have no second hand by projecting the hands on a screen. It took some of the world's finest instruments to make sure a fine watch was really fine.

The 1940's Ethic – "With the work of many hands, American production methods are making it possible for people in all walks of life to own fine watches. American craftsmanship, with American men and women, with the wisdom of experience working alongside the eager spirit of American youth with patience and skill and pioneering enthusiasm – all these produce the finest watches that human ingenuity can design."

Post Video Program – At the conclusion of the video, John Iacullo, John Cheves, Hans Rupf and Katherine Kittle fielded questions from our membership relating to the video and current methods and materials. For a copy of this fine video presentation, contact Tom Noesges at Thomas@Noesges.com. ■

Show & Tell

Changing Movements In An Emperor Grandfather Clock

Jae Martin brought his Emperor Grandfather Clock to show the membership the problems with this specific clock and describe the remedies. The solution Jae discussed was described in a handout he had copied from the August, 1995 issue of the NAWCC Bulletin. Jae showed how this Jauch movement arrived in his shop with a completely worn out movement. No practical amount of clean-

ing, polishing or re-bushing would restore the movement to reasonably good running condition. The solution described was to replace the movement with a Hermle #451-050H setup for a 94cm pendulum. At the time of this writing, Jauch movements have not been available for almost 20 years.

Jae described the problem, solution and a detailed process to make the Emperor Grandfather Clock viable. The solution should probably take less than two hours once all the materials are on hand. If you didn't receive a copy of the handout during the meeting, you can obtain the original article, with all of the details, from the NAWCC Bulletin August 1995 Vol. 37 No. 297 page 504. If you don't have this issue of the Bulletin, log onto NAWCC.org and paste: "http://nawcc.org/images/stories/1990/articles/1995/297/297_504.pdf" into your browser's URL. You can then download a PDF version of the original article.

Pennsylvania Tallcase Clock Henry Newman inherited his wonderful Pennsylvania Tallcase clock and fondly recalls growing up hearing the strike of the bell on its beautiful English Bellstrike movement. The movement was made in the 1700's. The case was built in 1829. The hand painted dial face is signed "Joseph Weifs, Northampton" and is in perfect condition. The cabinet maker's name, Adam Reed, is shown on the inside of the hood. A remark-

able fact which cannot be deduced from the pictures here, is that this hood merely sits on the waist of the clock – no pins, no screws to hold it in place. One day Henry's family feline, Tock, made a leap from the top of the clock and, at the same time, the hood made a dive for the very hard floor – landing in 1,000 pieces.

Perhaps, but many, many to be sure. Employing the expert skills of Fred Von, the hood was restored to its original condition.

Henry's father would be proud.

French Carriage Clock by Ken

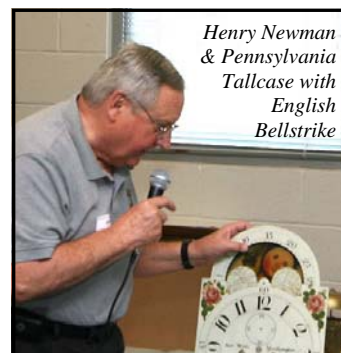
Hogwood

Made by Paul Garnier, Circa 1835-1840. The style is a one piece heavy cast Rococo design. The back door is hand engraved. The case is fire gilt gold (note: fire gilt was outlawed in France in 1850). The face is porcelain with trefoil gold hands. The back and dial plates are signed, "Paul Garnier HER Du ROI - Paris" and numbered 2499.

The movement is an 8 day time & strike with an hour repeat. It has the two plane frictional rest escapement,

known as a chaff-cutter. He patented this escapement in 1830.

This clock is all original, runs perfectly after 170 years, and is museum quality.



Henry Newman
& Pennsylvania
Tallcase with
English
Bellstrike



Ken Hogwood

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Show & Tell

(continued from page 3)

Miniature French Skeleton Alarm Clock

Donna Kalinkiewicz shared her brilliantly styled miniature French



Donna Kalinkiewicz &
French Skeleton
Alarm Clock



skeleton clock with the Chapter 24 members. The clock is an alarm clock, with its bell in its base. The clock is of superb quality. ■

Treasurer's Report By Donna Kalinkiewicz

Fifty-eight members attended our October, 2011 meeting. Our guests were Robert Martin, Jae Martin's father, and Gaby Keen, friend of Henry Newman.

We had a wonderful auction. John Slater gave the chapter a wonderful gift: many clocks from his collection, to be auctioned and the proceeds to be donated to Chapter 24. Thanks to John's generosity, we deposited \$1,030.00. Also deposited was \$50.50 from our 50/50 raffle and \$95.00 from membership renewal.

The Atlanta School of Horology also got a wonderful gift. Roger Kellogg donated his reproduction Seth Thomas #2 to be auctioned. The school received \$550.00. Thank you, Roger.

Please keep us informed of address, phone and email changes. If we don't have your right information, you just might miss something. ■



GROANER by George Waterhouse

Aligning his sense of humor with the coming Halloween season, George uttered: "Show me a watch made by an old witch and I'll show you a Time-Hex watch." ■



Up-Coming Programs & Presentations

PLEASE bring clocks, watches and other items of horological interest to share with your fellow members. Call Jae Martin (770) 813-8140 and tell him what you would like to bring. Don't be bashful or feel that you're endorsing the item. This is an opportunity to share your experience—small or great!

December 2011

Holiday Party. The December Atlanta Chapter 24 meeting will provide abundant food and traditional gala holiday festivities. All members and guests are encouraged to bring their entire families.

The club provides meat and drinks. If you can, please bring a dish to share. Not sure what to bring? Bring a food item from the list below based on the first letter of your last name:

Guests should bring only a large appetite.

A - E	Appetizers, dips, chips, pickles, olives
F - L	Bread, rolls, crackers
M - Sh	Desserts
Si - Z	Vegetables, salads, fruit

February 2012

Pendulum Waves - Bernie Tekippe will present a fascinating video and discussion on fifteen uncoupled simple pendulums of increasing lengths. They will dance together for us to produce visual traveling waves, standing waves, beating, and random motion. One might call this kinetic art, and the choreography of the dance of the pendulums is stunning! ■

April 2012

American Carriage Clocks – Trash or Treasure? This question will be answered by Ken Hogwood. Most authorities who have written books on carriage clocks do not give much credit or research time to American clocks. Are they justified, or have they overlooked the fact that some American-made carriage clocks were made with very high quality standards? At the meeting you will get the answer. Ken Hogwood will present the facts for you to judge. ■

That Time Of Year

*That time of year's come 'round again,
So we wish you all the best.*

*The joy that comes from knowing you
Makes us feel that we've been blessed.*

*So we'll share with you our feelings
At this special time of year:
May your holidays be a delight,
Filled with happiness and cheer.*

Happy Holidays!

Classified Section

This area is dedicated to advertising for Chapter 24 members. Of course, it's free

WANTED WANTED WANTED WANTED WANTED

⌚ One of the clocks from the Lapham-Patterson house in Thomasville needs a two vial mercury pendulum (not faux) for a French H&H (Japy Freres) movement. If you have this pendulum or even possibly know where one can be acquired, please contact: Pete Schreiner PGS3@Mindspring.com or call (404) 633-4772.

⌚ Two matching brass weights 4" long, 1.75" diameter, 3 to 3.25 lbs each for a Gustav Becker Vienna Regulator. Contact: Warren Brook at 678-777-3333.

⌚ Seeking a Fashion Calendar Clock - looking to acquire a #4 and #6 Contact: Gerald Siegel: gsiegel@knology.net or (706) 561-2264.



FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE

⌚ Howard figure 8's 6 thru 10 S.T.#11 D.D. wall all real beauties. Contact: William Byrd bbyrd1243@bellsouth.net.

SERVICES SERVICES SERVICES SERVICES SERVICES

⌚ Woodcarvings - new or replace to match -Classic carvings - rare woods - Contact: Fred Von - fredvon@windstream.net or fredvon59@yahoo.com or www.fredvonstudiosllc.com

If you would like to place an ad in this space for your items needed, services you offer or horological items for sale, contact Tom Noesges - email Thomas@Noesges.com or call (770) 262-0883.

Atlanta Guests and New Members

The members and officers of Atlanta Chapter 24 were tickled pink to have Gaby Keen and Robert Martin visit our club during October 2011. Please go out of your way to help these men feel at home here in Atlanta. Guests or new members having any questions about our chapter of the NAWCC, please contact any officer listed in this newsletter or Kathy or Warren Brook at warrenb104@aol.com. ■



Gaby Keen



Robert Martin

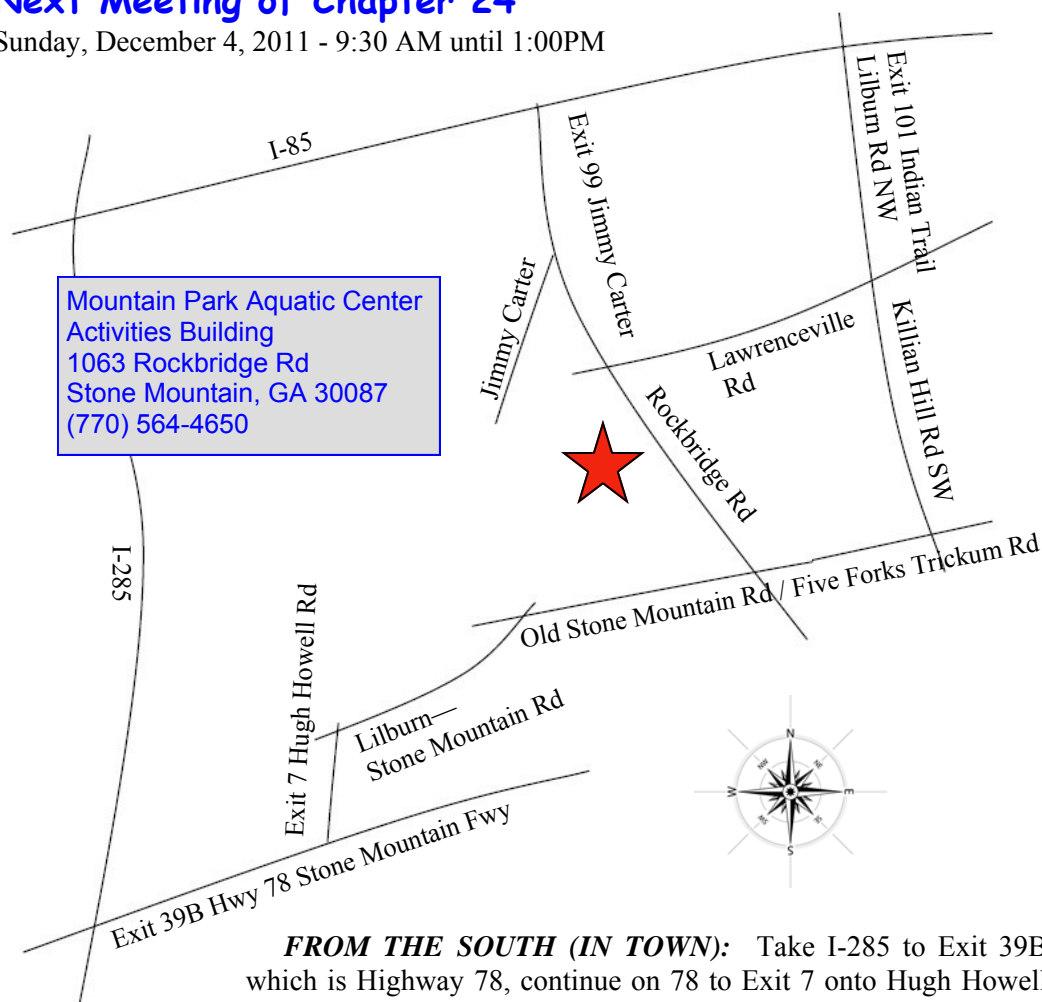
NAWCC Atlanta Chapter 24 Officers and Directors

George Waterhouse	President	ClockDoc35@yahoo.com	(770) 939-5799
Jae Martin	Vice-President	Info@clockgalleryinc.com	(770) 813-8140
Thomas M. Noesges, Jr.	Secretary	Thomas@Noesges.com	(770) 262-0883
Donna Kalinkiewicz	Treasurer	DMKTimes2@Att.net	(770) 321-1057
Christian H. Brown	Past President	Browncg@Bellsouth.net	(770) 962-7480
Brenda Wiggins	Director 2011	Brenda232@Comcast.net	(770) 979-5197
Peter G. Schreiner III	Director 2012	PGS3@Mindspring.com	(404) 633-4772
Robert Collom	Director 2013	RobertCollom@gmail.com	(770) 715-9957



Next Meeting of Chapter 24

Sunday, December 4, 2011 - 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 onto 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.

Thomas M. Noesges, Jr, Secretary
NAWCC Chapter 24
5211 Willow Creek Overlook
Woodstock, GA 30188

Membership paid through...

