

The Bytown Times

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SEPTEMBER MEETING HIGHLIGHTS



Daniel Burgoyne presents Ray Springer a certificate of recognition for his leadership of the Phoenix Project.

Over 45 members and guests attended the meeting on a beautiful day in September.

Simplicity

There were two presentations at the meeting. First, Paul Devey and Paul Williams displayed the Clayton Boyer Simplicity Wooden clock which the two Paul's, along with Kevin Chapman, made using a laser cutter. Paul Devey spoke about the use of new technology for creating clockwork. He reminded us of the many new concepts introduced by Breguet, Harrison, Daniels and Seth Thomas. He also covered the difficulties in untangling the CAD drawings provided by Boyer to present the parts in a way that they could be machined by the laser cutter. Paul Williams spoke of some of the technical difficulties in using the laser cutter. For example, the cutter does not cut straight holes so they had to be manually bored and then bushings inserted. The team did not use two weights for power like the Boyer design, so the clock runs only seven hours. However, that too will be addressed!

The Phoenix Project

The second presentation was by Ray Springer who described the two year project to resurrect the fire damaged Twiss clock that had graced the Rideau Hall Cottage, home of the Secretary to the Governor General of Canada. The work was far more complicated and intricate than anticipated. With the hood and dial gone, the movement itself was considered "toasty" at best. Parts were extremely difficult to find and many of the existing heavily damaged wheels had to be

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The "Two Paul's" wood works clock with wheels and dial made with a laser cutter

**Our next meeting will be held
November 22, 2015 at 1:00 PM
Ottawa Citizen Building,
1101 Baxter Road**

Presentation

**What's Different About
Canadian Clocks?**

Special Guest: Jim Connell

Show and Tell

**Items starting with the letters
J, K, and L**



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SEPTEMBER MEETING HIGHLIGHTS (CONT'D)

cleaned and repaired given the lack of replacements. Replacing bushings was a particular issue as ivory bushes are no longer possible. Jon Ruhland provided the solution with the shoulder bone of a pig - acquired from a local butcher shop!

All of the replacement parts, including the complete hood made by Jordan Renaud, were made using the traditional tools that would have been available to the Twiss family. This in itself proved a challenge and a credit to the Twiss brothers for managing the production in the early 1800's. The dial was painted by Ray's sister Cheryl as no other member of the team was willing to attempt that part of the restoration. The colour matching on the case was a struggle but the result is a seamless transition from the old case bottom to the new hood. Pin striping was a worry until a pin striping tool was found on eBay. That tool allowed the team to complete the task in about twenty minutes.

The job was very successful. In a timed test, the clock was out only one and a half minutes in seven day period. In the end, all the work was well worth it as the clock was presented at the NAWCC National Convention and took a first place ribbon for a wood works clock restoration, a first place ribbon for the dial painting and a second place award for a chapter project. Daniel Burgoyne presented Ray and Cheryl each with a certificate of recognition for their work on the project. John and Jordan were not able to attend the meeting but will receive their awards at a later date (See page 5).

Show and Tell

For Show and Tell, Jim Anderson presented two carriage clocks, the most striking being an Ansonia clock decorated with glass "jewels" on the case.

J. P. Tourigny presented a seven jewel Swiss Gallet pocket watch timer from the 1930's. One interesting feature was a compartment built into the movement to hold spare parts! He also showed a Gruen Verithin watch with a curved case back.

Finally, Allan Symons presented a craft-made clock based on a Snider clock movement and dial.



J.P.'s Gruen Verithin

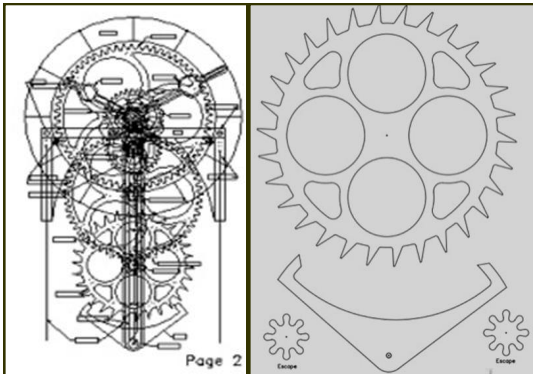


A New Member?

The youngest yet!



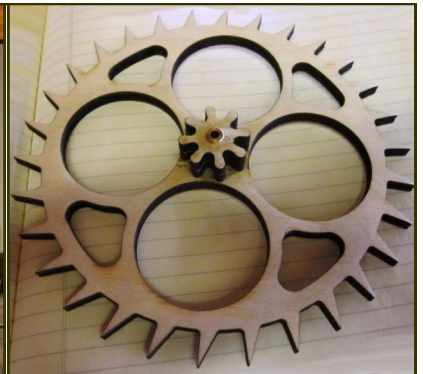
SEPTEMBER MEETING PHOTOS



Untangling the Simplicity CAD Drawings



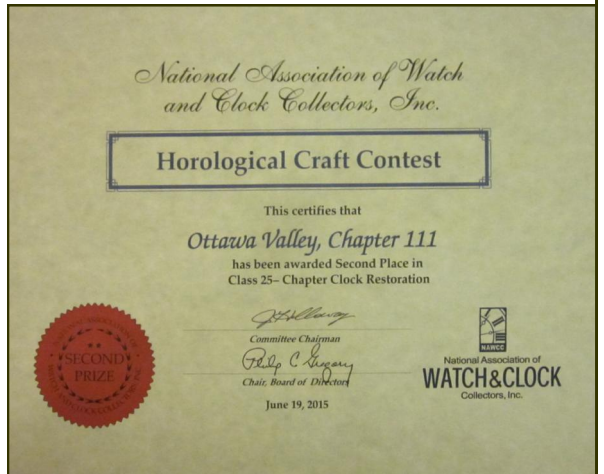
Paul Devey (L) and Paul Williams



The brass bushings applied



Daniel Burgoyne presents Cheryl Springer with a certificate of recognition for her first-place award for her painted Twiss clock dial



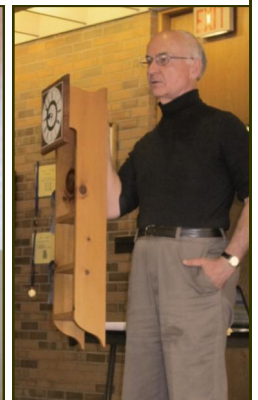
NAWCC Craft Competition award for the Phoenix Project Twiss Clock Restoration



J. P. Tourigny's Gallet timer with the Spare Parts compartment



Jim Anderson's Ansonia



Allan Symon's Snider Craft clock

Some items For Sale at the meeting!

(Yes, that is a Pequegnat Brandon at far right)



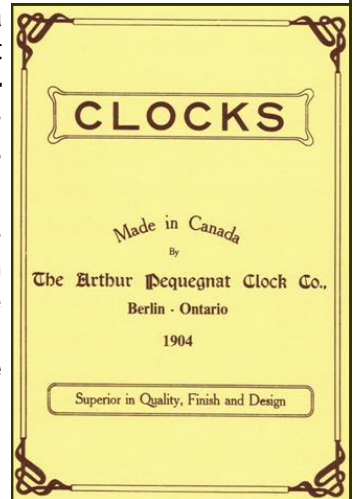
CLOCK MUSEUM NEWS

The Pequegnat Clock Company of Canada (1984-1997)

A Brief Company History.

No, this column is *not* about The Arthur Pequegnat Clock Company that operated a long time ago in Berlin / Kitchener, Ontario 1904-1941. The *title* company was set up by one of Arthur's great grandsons, **Paul Pequegnat**, in 1984 in **Manotick, Ontario** (southeast of Ottawa). He made faithful reproductions of eight original Pequegnat wall models and twelve mantel models. The choices were shown on his Price List.

Posted in The Pequegnat Room at the museum is a brief biography of Paul's interesting careers written by his wife Anne. He started as a newspaper reporter in Kitchener, became an accredited film photographer with the CBC, and was the chief cameraman at CBC Ottawa television. He then went freelance with his own company called Paul Pequegnat Productions. For years he travelled all over the world, including the Arctic, Russia and Viet Nam, producing films for the CBC, BBC, ABC and CBS television networks. Finally, after a long career, he "retired" in 1984 to make copies of his great grandfather's clocks!



Undated Paul Pequegnat catalogue "1904" front cover.

The Company Catalogue and Price List.

Scans of the undated catalogue's front cover and Introduction page are shown. The front, inside front, and inside back cover pages are almost identical to Arthur's first catalogue from 1904. The back cover has Paul's own company's name and contact details. He included four pages devoted to the history of the original company. The museum's web site (www.canclockmuseum.ca) now has a separate Gallery for The Pequegnat Clock Company of Canada. Included there are the 1993 Price List and pictures of the seven of Paul's display models now in the museum's collection. You will also find a poem written by Paul (seen here on page 5).

Paul's customers would first select the clock style from the display models in his home and then choose the wood for the case. The options were oak, mahogany, and walnut, the latter at higher cost. And he provided three options for the wood finish: Colonial, Heritage, and Mission (the Price List described them), hand-rubbed to low, medium or high lustre. The case would then be custom-built by Paul and a German spring-driven Hermle pendulum movement was installed to complete the clock.

Paul made his own cases and used German movements. Note the contrast with the original Pequegnat clocks, where Arthur's factory made the *movements* that were then installed in wood cases manufactured for him for almost twenty years by the furniture factories in Berlin/Kitchener. Arthur's own case factory was in production by 1920 for another twenty years.

Examples of Paul's Reproduction Clocks.

Two of the seven models in the museum's collection of Paul's clocks were donated by Anne and the other five were purchased in 2015 from a collector who had earlier bought them from her. Six are reproductions of Pequegnat original catalogued models (Tokio, Barrie, Peterboro, Montreal, Brandon, and Woodstock), but the Colonial Westminster wall clock is Paul's own design with a birds-eye maple wood case, a three-spring chimes movement, and two fake weights. Shown



The Peterboro Display model and the Hermle Movement (No. 1589)

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CLOCK MUSEUM NEWS (CONT'D)

INTRODUCTION

The clocks illustrated in this booklet are replicas of some of the many models listed in the 1904 catalogue of The Arthur Pequegnat Clock Company, Berlin, Ontario, Canada. The cover of this booklet is itself a reproduction of the cover of that 1904 catalogue.

These clocks are reproductions of a few of the original Pequegnat Clocks and are as exact a replica as is possible to manufacture today. Some concessions were necessary, such as the use of German mechanical clock movements of the highest quality, but the tradition of using the finest solid hardwoods in the handcrafted cases, the careful fitment of hardware and the beauty of the hand rubbed finishes has been faithfully followed.

We are proud to carry on a tradition of fine craftsmanship, always using the very best of materials, and invite you to join us and help maintain a fine heritage of Canadian Clockmaking. To have a Pequegnat Clock in your home is a pleasure and we are certain that it will become a family heirloom to be handed down to coming generations. We have an original Pequegnat "Brandon" model in our home, built at the start of production in 1902, that is still running accurately and happily. This "Brandon" has had no major repairs, just periodic cleaning and oiling of the movement, and will probably be still running, with proper care, 100 years from now, and more.

We would like to think that our "New Pequegnat Clocks" will be equal to that fine performance.

All clocks illustrated in this catalogue are custom built to your order. Re: Type of wood for case; depth and tone of stain used, if any; gloss or lustre of final hand rubbed finish desired; etc. This custom handcrafting necessitates a 20% deposit at the time of ordering, as a commitment, and requires 6 to 8 weeks for completion, depending on the model selected.

These clocks are all available for your inspection at the address shown below, we will be proud to show them to you and pleased to answer your questions.



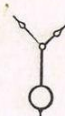
The Pequegnat Clock Company
of Canada
5628 South River Drive,
Manotick, Ontario
K4M 1J4

Paul Pequegnat

613-692-4137



BRANDON display model
(mahogany, No. 1890).



The Pequegnat Clock Company
of Canada
5628 South River Drive,
Manotick, Ontario
K4A 2N0

MODEL: PETERBORO
NO: 1589

This clock is guaranteed for five years if used well and not abused.

ALWAYS remove the pendulum before moving clock or serious damage can result.

Level the clock for perfect running.
To gain time raise the pendulum bob.
To go slower, lower.

The company label, PETERBORO model,
No. 1589

here are the PETERBORO display model, with its label and movement, and the BRANDON model.

All but the Woodstock have Paul's company label on the back, each with the model typed in but a different serial (?)

number. Unfortunately, Anne has no information about the unusual typed-in numbers on the labels.

The Introduction page 1 from the catalogue

Paul's great skill as a cabinet maker is clearly evident in these display models. Sadly, there is no record of how many custom clocks he made (perhaps one hundred?) and sold to his customers during the thirteen year production period up to the end of his life in mid 1997.

Allan Symons, Curator, Canadian Clock Museum

CLOCK MAGIC

(a poem written by Paul Pequegnat)

If made by a Craftsman, with skill in his fingers,
A clock can be more than gears, wood and ringers.

If assembled with care, and love for his art,
Clockmakers make Magic, and give a clock heart.

Fine clocks ask for little, your companions through life,
They ring-in the good times, they're with you through strife.

Their face always pleasant, their songs a delight,
The tick-tock of their heart, a comfort at night.

The key that you wind, to keep that heart beating,
May one day be turned, by grandchildren awaiting.

Some winding, some care, some cleaning, some oil,
Three hundred years it can run, and not call it toil.

If you should forget, and don't wind your clocks,
And their heart fails, and their pendulum balks.

Don't be alarmed, Clock Magic's at play,
They still tell the right time, twice every day!!!

PHOENIX PROJECT TEAM AWARDS



John Ruhland and Jordan Renaud, key members of the Twiss tall case clock restoration project team, were unable to attend the September meeting to receive their certificates of recognition. Ray Springer and Allan Symons made sure they received their awards!!

There will be an important vote at the November meeting. The chapter holds an auction at the January Meeting and the Annual Picnic. Should there be a mart at those gatherings as well? **You can only have a voice in this decision if you attend the meeting!!**

HOROLOGICAL HINTS AND HOW-TO'S

Comparative Analysis of Chime Mainsprings

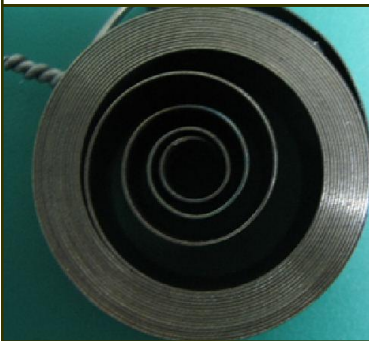


The owners of an English chiming clock needed to replace a broken mainspring and asked for an analysis of two potential replacement springs to determine which would be the most suitable choice.

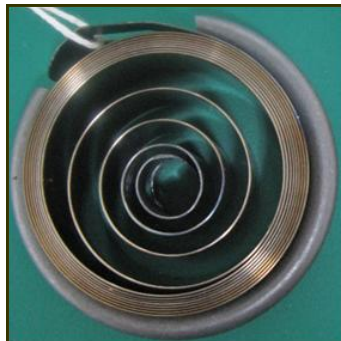
The clock was overhauled prior to testing in order to correct wear in the movement and damage in the chime train. Luckily for testing purposes, the barrels in this clock can be removed without movement disassembly making it much easier to install and uninstall the springs multiple times. The next task was to determine correct mainspring dimensions. Measurements were taken from both the broken mainspring and the barrel just in case the broken spring was not original. There are several important dimensions to be considered when dealing with barrels which are barrel inside height, inside diameter, winding arbor diameter, spring thickness and length. It was determined that for this barrel, the target spring dimensions are: .9062" (29/32") x .20" x 64" or (23mm x .50mm x 1600mm).

In an ideal world, the replacement mainspring would have the exact same dimensions but this is not always the case and a compromise is usually required. In this case, the first compromise became the height dimension. The closest commercially available spring with a 23mm height had a spring which was considered too weak for a chime train and was therefore discounted. A narrower spring would be used as it is preferable to play with the height than the thickness.

The best contenders for testing were the following springs. Both springs were too long and required adjustments as will be discussed.



Number 1: Old Stock Spring



Number 2: New Spring

Test spring number 1 (on the left) is an unused old stock mainspring with a loop end. The dimensions were .8750 (7/8)" x .0195" x 98" or 22.2mm x .495mm x 2489mm. The loop end was converted to hole end after reducing the length.

Test spring number 2 on the right, is a new hole end spring. Dimensions were .8661 x .020" x 86" or 22.0mm x .50mm x 2200mm.

Since both springs were only a fraction narrower than the required width, they were considered safe for this dimension as they allowed only a minimal increase in

side play and no chance of spring distortion.

The thickness dimension has the greatest impact on torque. It is important for barrel and spring calculations to be accurate as the thickness affects performance, subsequent length calculations and the number of turns the barrel will make between windings. The test springs had slight variations in thickness which meant that the lengths would be different. The correct length is one which allows all the coils to flex from wound to unwound (except for the anchored ends).

The logical step was to perform a calculation which would determine the correct mainspring length for the barrel in question. A short spring will not run a train for the allotted time but neither will a spring which is too long because it will not release all of its stored energy. A longer spring means that the outer coils are not being used and restrict the unwinding of the active coils.

The following formula can be used to find mainspring length:

$$L = \frac{\pi \times (D^2 - d^2)}{8 \times T}$$

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HOROLOGICAL HINTS AND HOW-TO'S

The key to using the formula is:

- L = Length of the mainspring
- D = Inside diameter of the spring barrel
- d = Diameter of winding arbor inside the spring barrel
- T = Thickness of the mainspring
- $\pi = 3.1416$

Results

Both springs ran the chime train for eight days however, they did not perform equally. The old-stock mainspring ran for a longer period but more importantly, the rate at which the hammers struck the chime rods was more natural and pleasing to the ears. The new spring chimed at a rate which was too fast for a Westminster chime and which only became normal on the fifth day. Yet both springs are considered to be correct according to traditional mathematical calculations. The new spring has the same thickness as the broken spring but obviously it exerts a greater force. So, why is spring # 1 less stiff than the new spring when they are practically the same thickness? Stiffness is in proportion to the cube of the thickness. The formula to determine the cube of spring # 1 is $.495 \times .495 \times .495 = .121$. Applying this formula reveals that spring # 1 exerts a force that is only 97% of that for spring # 2. The reduced strength is sufficient to produce satisfying results without increasing the load on the train.

Several authors have commented on spring stiffness over the years and the common suggestion is that replacement springs should be slightly thinner (by not more than .002") to compensate for the force exerted by contemporary mainsprings produced as a result of modern manufacturing processes.

It will come as no surprise that the winner of this contest was old-stock spring # 1. The owners of this antique clock were less impressed by formulas and calculations than results that could be appreciated and were very happy to retain the chime that they had long been accustomed to.

Dan Hudon

NEW MEMBERS



Corrie Pijl

David O'Connor

Meet Corrie Pijl and David O'Connor, two of the three new members who joined us at the September meeting. David Duffy also joined, but this wretched scribe managed to let him escape without having his picture taken. Next time, David!

Gary Fox

NOVEMBER MEETING—SPECIAL GUEST



At the November meeting, we will be showing the DVD presentation "**What's Different About Canadian Clocks**", a great video developed and narrated by Jim Connell.

Since his first purchase of a mantle clock in 1965, Jim amassed a large collection of clocks of all types with an emphasis on those with a Canadian origin. As his collection and knowledge grew, Jim prepared and presented numerous articles, talks and displays on Canadian clocks and their history. He is the respected author of the *Charlton Standard Catalogue of Canadian Clocks* and he co-authored *Early Canadian Timekeepers* and *The Canada and Hamilton Clock Companies* with Jane Varkaris. Jim has served as President of the Toronto Chapter and also served as a Director of the NAWCC from 1987 to 1991.

Jim will join us at the meeting to answer questions following his video presentation. Don't miss this opportunity to meet Jim and pose the questions you have always wanted to ask about Canadian Clocks!



MONTREAL WATCH AND CLOCK SHOW

The two Montreal chapters combined to hold an open meeting on Sunday October 18 with an excellent Mart. There was a fabulous selection of clocks and watches for sale, along with some tools and books. There was a gorgeous Pequegnat Woodstock on sale for \$2000—a very good price.



Six Ottawa Chapter regulars attended in addition to me—Pete and Judy Graham, Kevin West, Jan Selles, Paul Devey, and Ray Springer. Our Chapter had a table and there were some fast sales on the items put out on display. The crowd and the number of tables were the best I have seen at this show in years.

Sandwiches, doughnuts, coffee and pop were on sale, so the only reason to leave might have been to go to the bank across the street to get more cash! Congratulations to the organizers for a fabulous day and job well done!



EDITOR'S CORNER

We have a great meeting planned for November and hope every chapter member can be there.

What's Different About Canadian Clocks is an excellent presentation which I saw at the Toronto Invitational in May this year. We are in for a great treat with Jim Connell in attendance at our meeting to answer questions!

There will be an important vote about the question of whether to have a Mart on the two occasions a year when we hold an Auction. There are merits on both sides of the issue so be sure to attend to hear the options, voice your point of view and vote!

As usual, this newsletter is better for the contributions of many members, including Allan Symons, Dan Hudon, (both of their articles are invaluable), Paul Williams, and Paul Devey (whose photos grace these pages) and our own President, Daniel Burgoyne who writes for every issue. Thanks to you all!

Gary Fox

PRESIDENT'S CORNER

The fall is a time of intense activity, both for me professionally and for the Club. In addition to having the September and November meetings, the Wine and Cheese is now held during the fall on a Sunday afternoon, making it even more popular. The main training activities, the clock repair course offered by Dan Hudon, is also taking place in the fall. Some members have asked for a little more active winter and here comes the notion of workshops, which would be held in member's home, as a way to continue the more hands-on side of the hobby. A number of other clubs also adopted this format and it seems popular with the folks who love to tinker on clocks (yours truly included). All it takes is 3-4 people interested to get it going so stay tuned for more details.

Finally, as was discussed at the September meeting, the exec is proposing to ask you, the members, to confirm by vote whether Marts and Auctions will continue to be held on the January meeting and at the summer picnic. The proposal would be to eliminate Marts only during those two events in order to allow everyone a fair and equal chance to obtain what is for sale. For the other meeting dates, Marts would continue as in the past. You will be receiving more details on this by email before the November meeting when the vote will be held.

Daniel Burgoyne