

# The NEMES

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

# Gazette

No. 205

May 2013

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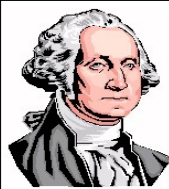
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## President's Corner

Dick Boucher

### The Meeting

I haven't gotten the final word on this month's speaker as I write this but I will arrange to have some entertainment for the meeting. I have had this entertainment on other occasions and it has been well met.

### Miscellaneous Ramblings

It was the big ramble this month! Despite the fact that even with many, many phone calls by Norm Jones it was just not possible to muster up enough ridership to hire a bus for the trip to York PA. I don't know if this was because of the change of date, as in a couple cases or just lack of interest in another show.

After much deliberation of whether I really wanted to go or not I finally decided (along with Bea) that I would drive to York myself in our new 6-passenger Dodge Grand Caravan with the "stow and go" seats. Now that is not bragging - it is pertinent to the story.

It seemed foolish to make the trip alone with my small display so I consulted Norm, my long time partner in running the organization, to see if he would like to ride down with us and he quickly jumped on the offer. With very little further persuasion we convinced Vern Eshbaugh and Dave Osier to join us. Serious consideration was made concerning the amount of space that would be taken up in the van by display material. Norm being the major user of the mentioned with the nice cases for his Merry gas engine, the Rider Erickson hot air pump to provide cooling water for the Merry and the cardboard box with his firing equipment. Dave and Vern travel light with Dave's Elbow engine traveling in the neat cardboard box with the red strap around it and Vern bringing along his tailstock die holder set, so all was settled as to the accommodation of

## Next Meeting

Thursday, May 2th, 2013

Charles River Museum of Industry  
154 Moody Street  
Waltham, Massachusetts

## Membership Info

New members welcome! Annual dues are \$25 (mail applications and/or dues checks, made payable to "NEMES", to our Treasurer David Baker) Annual dues are for the calendar year and are due by December 31<sup>st</sup> of the prior year (or with application).

Missing a Gazette? Send a US mail or email to our publisher. Contact addresses are in the left column.

## Issue Contributions Due

JUN	MAY 23, 2013
JUL	JUN 20, 2013
AUG	JUL 18, 2013

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things that could be taken, and, the “stow and go” seats go into a nice pit in the floor. Since the seats were up, my models, camera and laptop were easily stowed. The “Stow and Go” seats are great!

Bea and I left home about 6AM and picked up Norm and Vern at Norm’s house then continued along to the Roy Rogers, where the bus used to stop, to pick up Dave. The ride to York was totally uneventful other than a very severe rainstorm in the New York, New Jersey area. We did make a number of stops just to stretch and walk around a bit and we arrive at the Motel 6 at 5PM. Check in was a bit slow but there were only three of us to check in, so it wasn’t too bad. Next stop was the Toyota Arena to unload our exhibits and spend some time saying hello to old acquaintances. Then to the traditional Old Town Buffet for a nice evening of quiet relaxing dinning. Gene and Gail Martha and a couple who were friends of Vern’s joined us at the table and it was all quite congenial. After supper we adjourned to the motel for a night’s rest.

Saturday morning found us at the “Round The Clock Diner” for breakfast. I love those Belgian waffles. We got to the fairgrounds around 8AM and got set up in the New England Model Engineering Society area that founder Ron Ginger had reserved for us, got hooked to the air supply and were ready to go when the doors opened. We had a very respectable showing from members of the society and came fairly close to filling the space normally reserved for us. I got my fourth Shooting Star readout, a two axis for my Hardinge Chucker. Working at the school this spring I have learned to use a readout on a lathe and figure why let the fabulous spindle of the chucker just sit when I am not running a production job on it. The readout should make the lathe really versatile.

Saturday evening, Gary Shonely and some of the vendors arranged for us to have an evening meal and tour at the York Museum in downtown York. This is a great place to gather. Many thanks to the vendors who helped put the event on.

After returning to the motel we ventured to the “Round The Clock” again for coffee and dessert. I love that black raspberry cobbler with vanilla ice cream!!!!

Sunday morning found us back at the, you guessed it, “Round The Clock”. It was biscuits and gravy for me, almost as good as black raspberry cobbler and it sticks by me all day long. Again we got back to the show grounds around 8AM for another enjoyable day of talking, buying and learning from fellow craftsman.

We left the show around 3PM after the door prize drawing. I won the book Projects One and Vern hit the jackpot with a \$100 dollar gift certificate good at any show vendor. It didn’t take him long to spend it either.

So now we have to head home. I had shipped a couple of my items to the show with someone else, I will mention no names, and he had bought an excess of stuff and no longer had room for one of my pieces. Bea hit the Reading Outlet Stores with Terry Groff so she had extra material. Others visited vendors and purveyors of heavy, somewhat rusty and some like-new materials, so we really had to do a fancy packing of the van for the return trip.

The trip home was as uneventful as the trip down except for missing a couple of turns in Pennsylvania and in Connecticut which lost us a bit of time but other than that, all went well. Bea and I arrive home about Midnight.

After running the bus trip with Norm the past seven years, I must admit with that responsibility off my shoulder, I had a really good time this year. My traveling companions were great and I am all set to head out next year. Norm and I have agreed that there will be no more bus trips unless someone steps up and runs it. Both Norm and I will help someone get started but they will be the organizer.



## ***Bylaw Amendments***

Richard Baker

At the April NEMES Meeting, the club undertook several initiatives to change the way that the club operates. Two changes were proposed to the club bylaws, and the club voted to apply for 401(c)(3) Non-Profit Status with the US Internal Revenue Service.

**Bylaws.** The bylaws for NEMES can only be changed in November and in May, and then only after the proposed changes are first read in the previous meeting and then published in the NEMES Gazette. In the April meeting, two changes to the bylaws underwent the first reading. This article serves as the official publication of the changes.

Both Bylaw changes are proposed in order to help the club to recruit someone to run for the office of President. The first bylaw change instituted term limits on the Presidency and the second created a Program Chair officer. The bylaws read as follow:

1. Term Limit. Article III.A shall be amended to add a new sentence: “A person who has served two consecutive terms as President shall not be eligible to serve another term as President until at least one term has elapsed.”
2. Program Chair.
  - a. Article III.A shall be amended to add the “Program Chair” to the list of officers.
  - b. Article III.B shall be amended to add “Program Chair: Will create, publish and maintain a schedule of the speakers for the upcoming meetings. This included identifying and engaging speakers for future meetings.”
  - c. Article III.C shall be amended to update the number of officers, replacing “five (5)” with “six (6).”

In the May meeting, the two motions will be presented to the membership. Either motion may be amended by the membership if needed. An affirmative vote of two thirds of those in attendance is required to approve the change.

**Non-profit status.** At the April meeting, the club voted to apply for 501(c)(3) status with the Internal Revenue Service. When the club was formed, the Articles of Organization and the Bylaws included discussions of 501(c)(3) status. The changes approved in the last meeting authorized the Treasurer to take the steps necessary to obtain the 501(c)(3) status. This vote approved the changes necessary to conform with the current IRS rules.

First of all, the club approved a Conflict of Interest policy that generally states that the officers shall not vote on anything that affects money going to that officer. The full text of the new policy is on the NEMES website. This policy is required by IRS rules.

Second, the club approved spending up to \$500 to apply for the 501(c)(3) status. The IRS requires a \$400 payment, plus the cost of mailing, meaning that the final cost was \$406.

Finally, the approval granted the Treasurer permission to file the paperwork with the IRS. The application can be found on the NEMES website.

**NEMES Legal.** In addition, the members requested to see copies of the Articles of Incorporation and the Bylaws. Both of these documents have been uploaded to the NEMES website along with the 501(c)(3) application and the Conflict of Interest policy. Comments from the membership on any of these documents are welcome.

Please email:

[treasurer@neme-s.org](mailto:treasurer@neme-s.org) or [Richard\\_a\\_baker\\_jr@yahoo.com](mailto:Richard_a_baker_jr@yahoo.com).



Random ramblings

Ever since I was an engineering undergraduate, I have been hearing apocryphal stories about two competing laboratories — one in England and one in the US, during World War II — engaging in a competition in what was then the equivalent of nanotechnology. One of them, the English lab., say, was rumored to have drawn a length of extraordinarily fine wire and sent a piece of it to its counterpart in the US, who then drilled a hole crosswise in the piece of wire and sent it back. The English company is then supposed to have tapped the hole and sent it back to the US. The American laboratory was then alleged to have drilled a hole axially in the wire, which the British then tapped... This friendly rivalry went on until all possible permutations of boring, tapping and threading were exhausted.

I recently discovered that there once was a similar rivalry. According to American Machinist magazine (November 12, 1962, page 151), the US Superior Tube Company of Norristown PA produced a tube that was only 0.0014 inches in outside diameter - a record. Then, in 1962 Ackles and Pollock Ltd, Oldbury, England, displayed a tube with an OD of only 0.00073 inches.

National pride was at stake. Starting with a hollow tube of pure nickel, Superior drew it through dies until it had a tube only 0.00061 inches OD. To give you a better idea of just how small this is, a human hair measure somewhere between 0.002 and 0.003 inches in diameter. The American tube was only 0.00012 inches smaller in diameter than the one made by its British rival, but it was enough to set a new record.

These days engineers and scientists routinely deal with carbon nanotubes that make those tubes look gigantic.

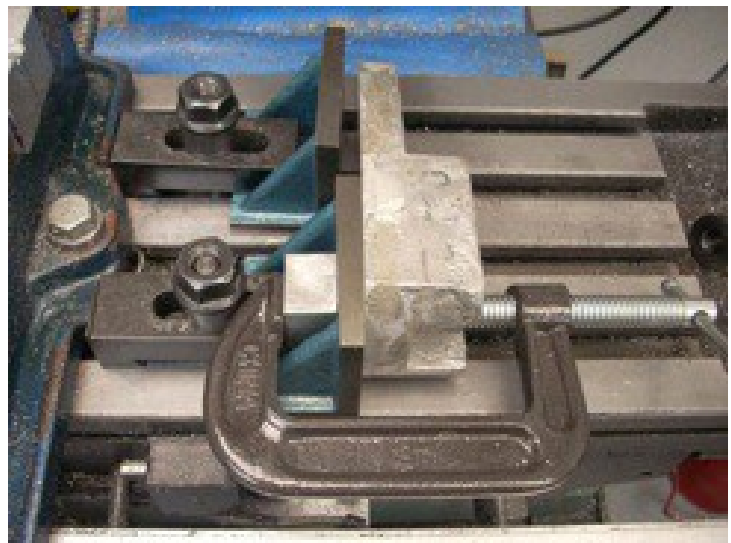


### R. G. Sparber's Gingery Shaper - Part 36

#### Machining and Fitting the Clapper Box (part 2 of 5)

Next Reference 1 secondary is placed down on the support blocks as you can see above and Reference 1 primary is cut, giving a nice flat Reference 1 primary surface.

If Reference 1 secondary was critical, turn the casting over again with Reference 1 primary again down on the support blocks and re-cut Reference 1 secondary.



Ref 2 Primary Setup

Photo by R. G. Sparber

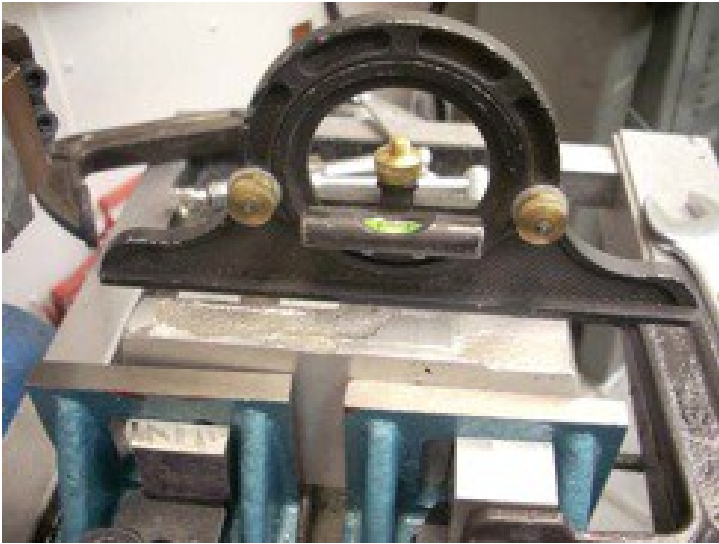
Reference 1 primary is now clamped to a knee and the second knee is secured to prevent any chance of rotation of the casting during milling. In preparation for cutting Ref 2, I set the top face roughly parallel to the table. Since the casting is not true, much depends on setting it by eye. However, it is still good to check with a level.

Reference 2 secondary will be perpendicular to Reference 1 primary within the accuracy of the knee. If more accuracy was needed, I could clamp a machinist square to the knee and use a DTI held in the spindle to read any error. Shims could then be added under the knee to bring the vertical surface of the knee closer to true.



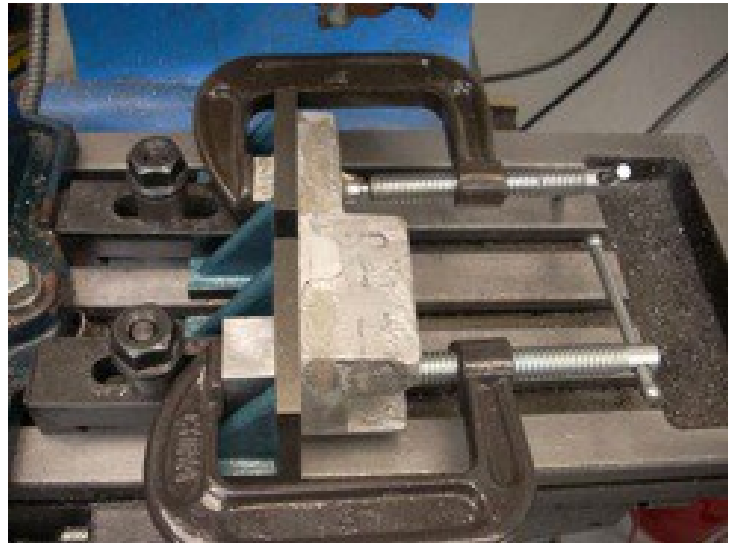
Zeroing Level Photo by R. G. Sparber

I used an adjustable level here because my mill is not perfectly level. The adjustable level was first set to show level when resting on the top of the knees.



Checking for Level Photo by R. G. Sparber

I then moved it over and placed it on the smoothest part of the casting. Reference 2 primary face was not touching the mill table. This permitted me to adjust the orientation of the casting in preparation for cutting Reference 2 secondary.



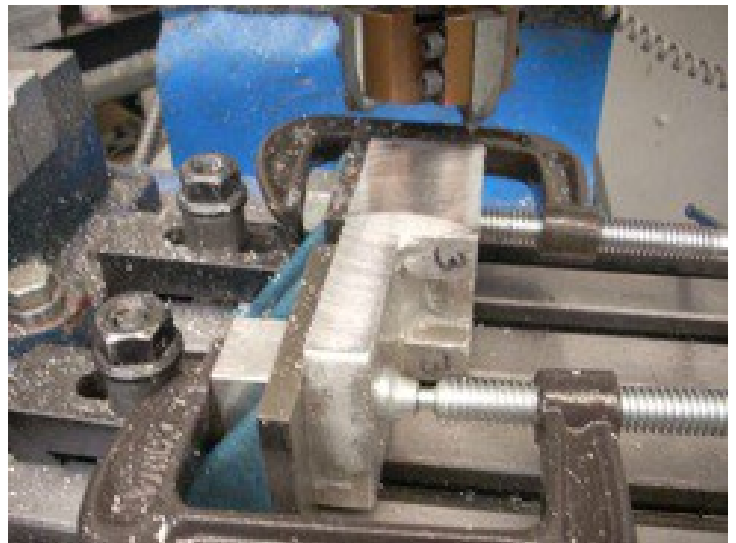
In Position Photo by R. G. Sparber

Once all looks close, C-clamps were tightened.



Ref 2 Primary Done Photo by R. G. Sparber

Reference 2 secondary has now been cut.



Ref 2 Secondary Cuts Photo by R. G. Sparber

Reference 2 primary is done next. Reference 2 secondary is resting on a parallel so that the shell mill does not hit the top



face of the knees. The casting is solidly supported at Reference 1 primary and Reference 2 secondary as I cut Reference 2 primary.



Cutting Ref 3 Photo by R. G. Sparber

Reference 3 primary will be side milled with a  $\frac{5}{8}$ " end mill. I'm using lots of WD-40 as my cutting fluid and taking 0.010" deep cuts to minimize bending of the end mill. My last pass is without any in-feed in order to minimize the deflection of the cutter.

Alternately, I could have put the casting on end with Reference 3 primary horizontal and used my shell mill. This would have avoided the side mill deflection error problem.

Note that the casting is in my vise's soft jaws so Reference 3 primary should be perpendicular to Reference 1 primary and 2 if there is no end mill deflection.



Pivot Block Cleanup Photo by R. G. Sparber

Next, I cleaned out the mess between the pivot blocks using a few passes with the end mill. I then side milled the left inside face. The thickness of this block was measured and the right inside face was cut to match the thickness. This was done just for looks. As long as the inside faces are vertical and parallel to each other, the clapper should move correctly.

As with the cutting of Reference 3 primary, I took light cuts, and the last pass was taken with no in-feed.

The only way I can think of to cut these inside vertical faces is with side milling. Now, IF I had my shaper operational, it could do a better job.

Stay Tuned for part 37 from R. G. Sparber next month.

Keep sending me email with questions and interesting shaper stories.

My email address is:

[KayPatFisher@gmail.com](mailto:KayPatFisher@gmail.com)



## **Editors Desk**

George Gallant

The Artisans' Asylum in conjunction with MatLab and Sparkfun recently held a robotics competition at the "Art at the Armory" in Summerville MA. Eight teams paid an entrance fee of \$300 and were given a package of parts and a week to construct a "working" combat robot.

The event organizers suspended a camera above the arena and broadcast the coordinates and orientation of each robot via an XBee radio link. Each robot had a flat board painted either red or green with a white stripe that was used to determine orientation taped to its top. Once placed in the arena, the robots were autonomous. A video screen projected the computer view on a wall for spectators to see what the robots saw.

Eight teams entered and all eight teams had a working machine. That to me indicated that the event organizers had really done a great job in preparing for the contest.

The overall game was a modified Sumo Wrestler contest wherein the robots strive to push the opponent out of the arena. To add a sense of realism, the contest was fashioned after the "Indiana Jones" movies.

Let me describe the arena. A large pit had been partitioned into 4 approximately equal sized bins. Above the pit there was a network narrow of roads/bridges upon which the robots traveled. In one of bins were a number of nasty looking venomous snakes while another contained 5 vote-hungry city councilors. The third and fourth bin contained 5 mothers each. Suspended from the ceiling was a vicious looking meat hook transport system, circa 1920, and suspended from the meat hooks were children who belonged to the fore-mentioned mothers. For ease of identification, children and mothers wore either green or red clothing.

The contest was a simple rescue and deliver the appropriate children to the appropriate mother while avoiding get pushed into the pit. Of course, robot X could get a child Y and that's when the crowd went wild. Into which of the bins to deposit the tot? Here's where artificial intelligence really kicked in. For example, why drop the little monster into the snake pit if the snakes were already feasting.

Points were gained for knocking your opponent out of the ring and the robot builders had to descend into the pit and extract their machines.

Needless to say, there were some minor glitches during the preliminary rounds that needed adjustment but the staff was quite adept. Some children ended up in the wrong bin but officials noted that was to be expected.

Bonus - the refreshment stand served beer during the intermissions.

Some awfully green kids were delivered to some awfully red mother but in the end, not one robot delivered a child to the politicians and the audience appreciated the gesture.

I am quite sure that this will become a reoccurring event. Some network TV producers were in attendance trying to get the organizers to sign up for a new reality show. One wanted to scale it down and use only babies, another want to use grandparents. I explained that Grandfathers do NOT ride on meat hooks!

Footnotes:

1. After the contest concluded, some spectators knocked down the barrier separating the politicians from the snakes. While most councilors had serious injuries, analysis showed bite marks contained human, not snake, venom.
2. Someone from the Cambridge PETA office filed a complaint about cruelty towards snakes.
3. Three children who had been placed in the wrong bin wanted to stay with the new mother.
4. Fathers thought the beer was a bonus.
5. Some teenagers actually stopped texting or playing video games for almost an hour.
6. Did I mention the beer? Mine was a Ganset.



**Upcoming Events**  
Bill Brackett

To add an event, please send a brief description, time, place and a contact person to call for further information to Bill Brackett at:

[thebracketts@verizon.net](mailto:thebracketts@verizon.net) or 508-393-6290.

May 4th Connecticut Antique Machinery Museum  
Spring Power Up  
Kent Ct. John Pawlowski President P.O. Box 1467  
New Milford, CT 06776  
[www.ctamachinery.com/SpringPowerUP2012.html](http://www.ctamachinery.com/SpringPowerUP2012.html)

May 5th NHPOTP engine show  
RT 113 Dunstable MA  
Robt Wilkie 207-748-1092

May 2nd Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry 781-893-5410  
Waltham, MA <http://www.neme-s.org>

May 19th Spring Steam-up  
Waushakum Live Steamers  
Holliston MA  
[www.waushakumlivesteamers.org/](http://www.waushakumlivesteamers.org/)

May 19th 9:00am The Flea at MIT  
Albany Street Garage at the corner of Albany and Main  
Streets in Cambridge <http://www.mitflea.com>

May 14-16 9:00-5:00  
EASTEC at Eastern States Expo  
West Springfield MA  
[www.sme.org/eastec](http://www.sme.org/eastec) 800-733-4763

May 25-26th Bernardston Show  
Rt 10 off Rt 91 Bernardston, MA  
Vickie Ovitt 413-648-5215

May 25th American Precision Museum opens  
[www.americanprecision.org](http://www.americanprecision.org)

June 6th Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry 781-893-5410  
Waltham, MA <http://www.neme-s.org>

June ?? call Wings and Wheels Open House  
The Collings Foundation  
137 Barton Road in Stow, MA Cost at gate: \$10 Adults  
[www.collingsfoundation.org/cf\\_OpenHouseEvents12.htm](http://www.collingsfoundation.org/cf_OpenHouseEvents12.htm)

June ?? Call Father's Day Meet  
Pioneer Valley Live Steamers  
Southwick MA.  
[www.pioneervalleylivesteamers.org/](http://www.pioneervalleylivesteamers.org/)

June 23th 11th Annual Van Brocklin Meet  
Waushakum Live Steamers  
Holliston MA  
[www.waushakumlivesteamers.org/](http://www.waushakumlivesteamers.org/)

June 16th 9:00am The Flea at MIT  
Albany Street Garage at the corner of Albany and Main  
Streets in Cambridge <http://www.mitflea.com>

June 29-30 Orange Show  
Orange Airport Orange MA  
[www.cmsgma.com](http://www.cmsgma.com)