



The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

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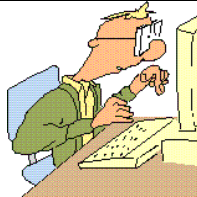
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Editor's Desk

Victor Kozakevich

One of the great things about America is the spirit of invention, that get-up-and-do-it attitude that has made us an object of admiration by folks around the world. But you never know where that spirit might take things. On the evening news a few weeks ago, they mentioned a story about Duke University graduate and software engineer John Cornwell, who invented the beer launching fridge. His eureka moment came after repeated trips to the kitchen, when he exclaimed: "What if instead of ME going to get the BEER, the BEER came to ME?"

Combining a mini-fridge, a mechanical throwing arm with an electric motor to wind the launch spring, and some electronics, he has invented perhaps the last thing you'll need, so you never, ever, have to leave the couch. Controlled by a car's remote key, this beverage ballista can toss a 12 ounce across the room with uncanny accuracy. Well, after a few rounds, you may need to get up...

If you'd like to know more about the launcher, see the story & video link at: www.duke.edu/~jwc13/beerlauncher.html

Next Meeting

Thursday, Apr. 5, 2007

7:00 PM. Meetings held at:
Charles River Museum of Industry
154 Moody Street
Waltham, Massachusetts

Note: We are meeting in the Appleton Room this month. The Appleton Room entrance is to the left of the main museum entrance.

Membership Info

Annual dues of \$25 (via checks made payable to "NEMES" and mailed to our membership secretary) for the calendar year are due by December 31st of the prior year.

Missing a Gazette? Send mail or email to our publisher.

Addresses are in the left column.

Contents

Editor's Desk.....	1
President's Corner.....	2
The Meeting	2
Cabin Fever Error! Bookmark not defined.	
Shaper ColumnError! Bookmark not defin	
NEMES Gazette Editorial Schedule	8
NEMES Mailing List.....	8
Shop Tips.....	4
Treasurer's ReportError! Bookmark not d	
For Sale.....	8
NEMES clothing	9
Upcoming Events.....	10



President's Corner

Dick Boucher

The Meeting

For this month's meeting, the Jackson Room is occupied, so we are meeting in the Appleton Room. The Appleton Room entrance is to the left of the main museum entrance.

At this month's meeting, we will be treated to two guest speakers from our own organization. Past president Ron Ginger, who is always pushing the envelope in his pursuit of model building, will enlighten us on some of the methods he has discovered that will not work when laying up a model boat hull in fiberglass. Ron was working on a model of the boat he sailed from Canada to Booth Bay and was pushing the limits when he discovered these things. It is always enlightening to see others failures and understand why they failed when working in new fields.

The second speaker will be Herb Cotterly. I first met Herb 25 years ago at the now defunct model airplane flying field in Rowley MA. Herb is a master model builder with a very large area of interest from very large to park flyer radio controlled airplanes, to boats. Remember his mahogany Chris Craft with the Connley V8 engine, to model gas engines. He will give us some tips on methods used to build the model of his full size cabin cruiser he had at our February show. I am positive it will be a great evening.

Miscellaneous Ramblings

In reading over a couple back issues of the Gazette, I found a couple articles that may have had a connection to television programs I happened to see. Last month in Vic's column, he mentioned a Russian T34 tank that had been recovered from a lake in Estonia. I believe that either the History Channel or Discovery had a program on that subject. The other thing of

interest was that back in November 2005, our guest speaker was Dr. James Phillips. Dr. Phillips was working on an instrument for measuring gravity. An episode of MythBusters, always fun to watch two guys with what seems like unlimited funds playing around with milling machines and lathes, was busting a myth about Internet devices that were claimed to be anti-gravity. In the process of busting the myth they had a device for measuring gravity.

I recently found an interesting web site in the successor magazine to Strictly IC, Model Engine Builder. www.engine-museum.com shows a number of display cases at Terminal 3 at the Sky Harbor Airport in Phoenix AZ filled with a vast array of miniature internal combustion engines.

See you April 5

Dick B.



The Meeting

Todd Cahill

President Dick Boucher began the meeting with a thank you to all that helped make our 11th annual show a success: Gayle Martha, Sue Bracket, Leslie Jones, and Bea Boucher for handling the food table, Bill Lopoulas for putting together the air manifold, and Frank Dorian for collecting and organizing the door prizes. Also, for directing the placement of the tables, a thank you to Steve Cushman. The show brought in 450 spectators and about 50 exhibitors.

Norm Jones had several announcements. A model supply company called Precision Scale Model Engineering (PSME) contacted him with a catalog for the club. Larry Milo runs the company mostly as a mail order supplier but

also tends a booth at The Grafton Flea Market. PSME offers over 25,000 items particular to the model-making industry, from gears and servos to small machinery to plastic and metal raw material. PSME is located in Milford, MA (508) 478 3148 www.psmescale.com. I've personally known Larry for over 15 years. Not only does he offer many hard-to-find items but with a background in combustion engineering has offered me engineering advice as well. I don't know of anywhere else that I can purchase an item such as a 0-80 tap on a Sunday morning either.

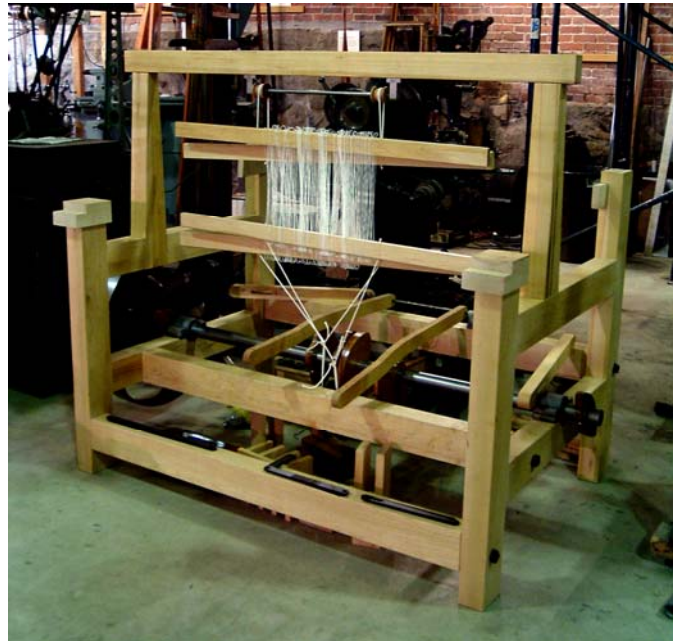
Norm also informed us of the purchase of an 11-ton Wright Steam Engine by Jay Leno. There is a video of this engine on www.jaylenosgarage.com/video/index.shtml. The engine was originally in the Henry Ford Museum but was auctioned off in the early 1990s. It had been in a private collection in Pennsylvania. Too bad Jay Leno, being from this area, wasn't enticed into saving one of the Holley triple expansion engines that were recently scrapped in Chestnut Hill.

Last, Norm notified us of the upcoming FIRST robotics competition in Manchester, NH, started by renowned inventor, Dean Kamen. Norm made a few of us jealous by telling of an evening he was able to spend at Kamen's House/museum at a dinner party to celebrate the First competition.

John Bottoms expressed interest in running the Metze Orient automobile downstairs, perhaps at the NEMES annual show. Howard Gorin brought in a miniature brass and rosewood rabbit plane that he did some pattern work for and Dick wrapped up show and tell with the door prize he won, a handy little scribe built by prolific model locomotive builder William Van Brocklin.

The speaker for the evening was Garland O'Connell. Garland has been drawing with the Solidworks 3D computer drafting program, for the museum volunteers to

build the Lowell loom replica now underway. In the process, he has also delved into the early history of the textile industry in this country.



In 1812, Lowell traveled to England trying to recoup from illness he suffered in the States. In Scotland, he ran into Nathan Appleton, originally from Waltham. After observing some of the mills in England, Lowell decided that cloth making would be a good business to get into upon returning to the U.S. At the time, U.S. industries were suffering from unfair trade restrictions with England. The war of 1812 changed that and put industrialists like Lowell in a position to be extremely successful.

In 1813, Lowell attracted \$100,000 from the Boston Brahmins to purchase a defunct paper mill on the Charles River in Waltham and start his textile mill. \$100,000 in today's dollars equaled \$14 million, making Lowell's the largest corporation by far at the time. Paul Moody was hired to build the machinery for their enterprise and in 1814 the first equipment was running and in 1815 they produced 4,000 yards of cloth. Three years later, a second mill was built and 250,000 yards of cloth were produced. In 1819, 2 more mills were built and production was increased to half a million yards during the following year.

Why was Lowell so successful? Lowell essentially started the first vertically integrated company. Everything, from raw cotton to finished cloth, happened under one roof. All of the technology that Lowell used was in use elsewhere but never all together. During the War of 1812, Lowell had no competition from Britain, and in 1816, Lowell appealed to congress and a tariff was imposed on British cloth. Lowell could sell his cloth for \$0.25 a yard whereas British cloth sold for \$0.61 a yard.

What happened under that one roof? Five things occur to the cotton: The cotton is picked from the plant and the seeds get picked from the cotton, a terribly nasty job done by hand until Eli Whitney invented the Cotton Gin. Carding the cotton involves straightening the fibers with a wire comb. Spinning the cotton is just that, producing thread. Warping the threads groups them in rows on a loom and finally, weaving the threads produces the finished cloth.

The Waltham site was the only place within 20 miles of Boston to have sufficient water head to power a mill such as Lowell's. There was 12 feet of head on the Charles at this point. However, in 1822 this head proved insufficient and with an additional investment of \$2.5 million (the equivalent of \$500 million today) Lowell moved his business to The Merrimack River site in the town named after him.

Little is known about the original loom being constructed by the museum today. The frame is made of hard rock maple whereas the original may have been made of white oak. At the time, threads were woven wet to prevent breakage and possibly fires, which may have been the reason for using white oak. The copy will be belt driven whereas the original may have been either belt or gear driven. Maintaining proper tension on the threads was very important to prevent the threads from breaking. Lowell's loom achieved this by wrapping the warp around

a beam. A year into the project has resulted in an impressive heavy wooden frame with pedals and cams and pulleys. Garland predicts the work will progress quickly in the coming months. We all await and applaud the efforts of all involved in this important project.

Todd



Shop Tips

Product Review – Neiko Digital Laser Tachometer

My brother just bought me a gift, a Neiko electronic tachometer. With it, I can quickly find out the spindle speed of my lathe, grinder, any motor and any other rotating thing in the shop.

I already have a digital strobe that freezes motion and reads out the flashing rate. The strobe can also be used to measure speed, but it takes some twiddling to get it at the same rate as the shaft, and you have to be careful that you don't lock to a multiple of the speed. By comparison, the Neiko is simpler, faster, and just as accurate.

To use the Neiko, you put a reflective marker on a shaft, turn on the motor, point the unit at the shaft, push a button, and directly read RPM on a large LCD. This unit shines a 1/2" red spot on the shaft and measures the speed of the light pulses reflected back. It's very easy to align the red spot on the reflective marker.



Neiko Laser Tachometer on 0.1" Graph Paper

The Neiko fits nicely in one hand. It runs on three AA batteries, which were included with my unit. It also comes with enough self-adhesive reflective tape for 30 shafts. The instructions are very simple. Cut a piece of reflective tape 12mm (approx. 1/2") long, stick it to the shaft, turn on the motor, push the measure button, move the tachometer until the red beam is right on the shaft, and read the speed on the display.

They say that it reads to 99,999 RPM. I used it on a few different tools in the shop but never tried it above 3600 RPM. Every time, it worked well. I found that the reflective tape wouldn't stick to a 1/2" diameter shaft on its own because of the tight curvature, but I could hold it to small shafts with Scotch tape. It held on its own on 2" diameter and larger shafts.

I was able to measure speed easily from any distance between 1 and 6 feet away. However, it is easier to position the spot on the shaft if the unit is closer to the shaft. Aiming the small spot from 6' away was required a steady hand.

If the shaft is particularly shiny, the reflective tape may not work. Instead, they advise you to cover most of the shaft with black tape, such as electrical tape, so there is only one shiny spot exposed. This also worked for me, but I got the best results with electrical tape covering most of the shaft and a small piece of reflective tape where there was no electrical tape.



A Patch of Reflective Tape on a Lathe Chuck



Using Electrical Tape on a Shiny Shaft



Reading Lathe Speed From 18" Away

The tachometer has two buttons. The TEST button turns on the laser and reads present speed. The MEM button shows you stored minimum and maximum speed. The memory feature could be helpful to tell you how much the motor slows when you put it under load.

For slowly turning shafts, they recommend putting two or more pieces of reflective tape on the shaft and then dividing the displayed speed by the number of pieces of tape.

This tachometer is inexpensive, but works well and has been useful. If you have any variable speed tools, you'll really appreciate it. I don't know where my brother bought it, but I see the same unit and similar ones for sale on ebay from a few different dealers for under \$30 including shipping. You can find them by using this web search link:

<http://search.ebay.com/laser-tachometer>

-Bob Neidorff

And now, something you probably already know. - Editor

Why I became a Machinist

I looked at a lot of different jobs and here is what I found out about machinists:

-When machinists go hunting, they generally get bigger deer than most folks. When they go fishing, they generally catch so many fish that their arms get tired from reeling them in.

-Machinists tend to be better looking than the average. This means they have better social lives than almost anybody else. Some folks from a university did a study and found that machinists get lucky about 43 times as often as most folks. At least that's what I heard.

-Machinists almost always have better-looking spouses, smarter kids, greener lawns, redder roses, and generally seem to have fewer weeds in the garden. Their cars seem to run a little faster and use a little less gas. Things generally seem to work better for a machinist than they do for the rest of the world.

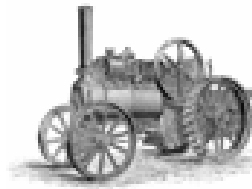
-Machinists do things that no one else can do. They live and excel in a world where things too small to see make a big difference. They possess special skills and unique knowledge.

-Machinists do real work in a world full of made-up stuff. Machinists make real things like cars and tools and a better America.

-Machinists tend to be more honest, better friends, and slightly better adjusted than the world in general. It comes from making a career in a professional world of exact specifications and real deadlines. It seems to show in their character.

-Machinists just generally seem to be clearly superior human beings, which is why I am a machinist. That, and all the good jobs were taken.

Original source unknown. Taken from the rec.crafts.metalworking newsgroup on the internet.



NEMES Model Show

The 2007 annual show marked another success for NEMES. Everybody seemed to have fun, exhibitors and attendees alike. Certainly the range and quality of the exhibits impressed us all.

Part of the fun, of course, is the exhibitor door prizes. Once again we were fortunate to have a number of generous door prize donors. The lucky exhibitors whose names were drawn had a great time choosing among the available door prizes. Our thanks to the door prize donors for their support. The names of the donors and the prize winners are listed below:

2007 NEMES Show Door Prize Winners

<u>Donors</u>	<u>Winners</u>
Tool Shed (Waltham): \$25 Gift Certificate	Joel Peck
Tool Shed (Worcester): \$25 Gift Certificate	Todd Cahill
Brothers Machinery: \$300 Gift Certificate	Norm Jones
New England Brass & Tool: Mini-vise w/revolving base Mini-vise w/integral clamp Mini-vise w/bench clamp Quick-grip drill press vise Dial caliper Set A-Z drills in index Ball-bearing keyless chuck	Daniel Noyes Dave Perreault Norm Jones Phil Goodwin Richard Sabol Wendell Lewis Bill Lopoulos
Wholesale Tool: Delta 17-905 drill press Mortising Attachment ViseGrip set –locking pliers & pipe wrench ViseGrip set –locking pliers & pipe wrench ViseGrip set –locking pliers & pipe wrench 2" spring clamp set	John Rex Steve Cushman Dick Koolish Rollie Gaucher Joe Ng

Home Shop Machinist:
 Book – Shop Wisdom
of Frank McLean Jeff Del Papa

Steve Peters / Jerry Howell:
 Set of Jerry Howell
 “Miser” Sterling Engine
 plans with a “Hard-to-
 find” materials kit Jonathan Bosworth

Dick Boucher:
 Starrett 827A edge finder Dave Piper

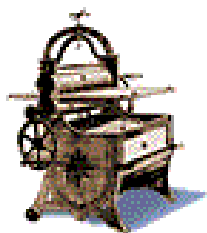
Frank Dorion:
 Four 1/4” solid carbide
 end mills Fred Jaggi

Richard Sabol:
 Poster – Horse Team Larry Twaits
 Poster – 2 Men & Engine Mike Boucher

Gene Martha:
 3/8” Drill Chuck John Gilbert

Ed Wlodyka:
 De-soldering Iron Gene Martha

Fred Jaggi:
 Bill Van Broklyn mini-
 height gage Dick Boucher



***NEMES Gazette
 Editorial Schedule
 2006***

Here are the closing dates for Gazette written contributions in the coming months:

<u>Issue</u>	<u>closing date for contributions</u>
May '07	April 20, 2007
June '07	May 25, 2007
July '07	June 22, 2007
August '07	July 20, 2007
September '07	August 24, 2007



***NEMES Mailing
 List***

Send an email to
nemes-subscribe@yahoo.com
 and mention subscribe on the subject line and in the
 body of the message.



For Sale

Magazine back issues

Modeltec Magazine
 -119 Issues July 1984 to June 2002
 Live Steam
 -12 Issues November 2002 to February 2004
 \$100 for all
 Contact:
 Ed Wlodyka
 Ashland, MA 01721
 508-881-1637

Hurco CNC mill

HURCO KM3-1M CNC MILLING MACHINE
 SERIAL # 8003015
 220V, 3-phase machine has not been wired to run
 since it's last move. Presently in my garage, but ran
 2 years ago at Gem Welding. Need to sell and
 currently asking \$1000.00 to move it quickly.
 Machine has seen little work since 1991 and is in
 good condition. Located in Wilmington.
 Unai Garabieta
ugathome@comcast.net

Shaper Work CD

Put out in 1944 by the New York State education Department this 326 page manual is chock full of valuable tips and information on using the King of Machine tools....The Shaper. Covered is everything you need to know about the care and feeding of the shaper, use of the shaper, even how to sharpen tools for the shaper. Scanned and saved in Adobe Acrobat format. The CD now has a lot more info on it, and the price has increased accordingly. \$10.00, shipping included.

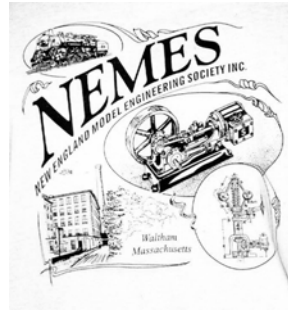
Errol Groff
180 Middle Road
Preston, CT 06365 8206
errol.groff@snet.net

NEMES Shop Apron



Look your best in the shop! The NEMES shop apron keeps clothes clean while holding essential measuring tools in the front pockets. The custom strap design keeps weight off your neck and easily ties at the side. The apron is washable blue denim with an embroidered NEMES logo on top pocket.

Contact Rollie Gaucher 508-885-2277

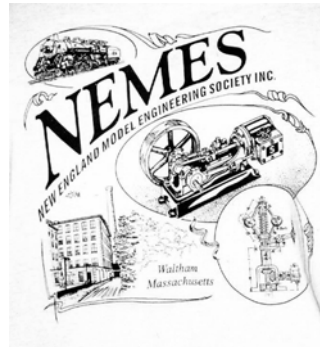


NEMES clothing

NEMES Tee Shirts

NEMES tee shirts and sweat shirts are available in sizes from S to XXXL. The tee shirts are gray, short sleeve shirt, Hanes 50-50. You won't shrink this shirt! The sweat shirts are the same color, but long sleeve and a crew neck. Also 50-50, but these are by Lee. The sweat shirts are very comfortable!

Artwork by Richard Sabol, printed on front and back:



Rear



Front

Prices:

	Tee Shirts	Sweat Shirts
S - L	\$12.00	\$22.00
XXL	\$14.00	\$24.00
XXXL	\$15.00	\$25.00

Add \$5 shipping and handling for the first tee shirt, \$1 for each additional shirt shipped to the same address. Sweat shirts are \$7 for shipping the first, and \$1.50 for each additional sweat shirt.

Profits go to the club treasury.

Mike Boucher
10 May's Field Rd
Lunenburg, MA 01462-1263
mdbouch@hotmail.com



**MARK
THIS
DATE**

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 or (508) 393-6290.

Bill

April 5th Thursday 7PM
NEMES Monthly club meeting
Charles River Museum of Industry 781-893-5410
Waltham, MA
<http://www.neme-s.org>

April 15th 9:00am The Flea at MIT
Albany Street Garage at the corner of Albany and Main Streets in Cambridge
<http://web.mit.edu/w1mx/www/swapfest.shtml>

April 21st -22nd NAMES Expo
Toldeo, OH
<http://www.modelengineeringsoc.com>

May 3rd Thursday 7PM
NEMES Monthly club meeting
Charles River Museum of Industry 781-893-5410
Waltham, MA
<http://www.neme-s.org>

May 5th Connecticut Antique Machinery Museum
Spring Power Up
Kent Ct. John Pawlowski President P.O. Box 1467, New Milford, CT 06776
<http://www.ctamachinery.com/>

May 6th NHPOTP engine show
RT 113 Dunstable MA
Robt Wilkie 207-748-1092

May 20, 2007 Steam-up
Waushakum Live Steamers
Holliston MA
<http://www.steaminpriest.com/wls>

May 20 9:00am The Flea at MIT
Albany Street Garage at the corner of Albany and Main Streets in Cambridge
<http://web.mit.edu/w1mx/www/swapfest.shtml>

May 22-23 9:00-5:00 and 24 9:00-3:00
EASTEC at Eastern States Expo
West Springfield MA
800-733-4763
<http://www.sme.org/eastec>

May 26-27 Bernardston Show
Rt 10 off Rt 91 Bernardston, MA
Vickie Ovitt 413-648-5215

May 26 American Precision Museum opens
<http://www.americanprecision.org/>

May 27th Kids' Wheels, Vintage Cars & Antique Aeroplane Show
Owls Head Transportation Museum Owls ME
<http://www.ohtm.org/>