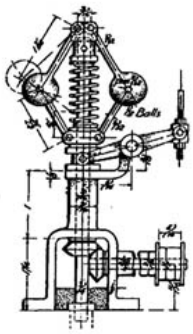
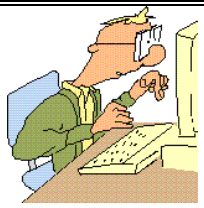


The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

Vol. 08 No. 094 Feb 2004



Editor's Desk

Mike Boucher

Hi folks,

The other day I was attempting to get my shop slightly more organized, and I came across a bag which could be described as "memory lane" or "bragging rights", depending on your point of view. What was in the bag was a collection of about 25 "exhibitor plaques" from various engine shows and model engineering exhibits.

If you don't know what I'm talking about, you've probably seen them before. They're small brass plaques, about 2" x 3", usually printed, but sometimes engraved, recognizing the fact that the individual had brought an exhibit of some form to a show.

The vast majority of them were from the Granite State Gas and Steam Engine Associate (GSG&SEA), whose shows I've been displaying at since 1985, with only a couple years missing.

Also were plaques from the Central Mass show in Orange from the early

Continued on Page 2

Next Meeting

Thursday, Feb 5, 2004

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

Membership Info

Annual dues of $25 for the calendar year.

Please make checks payable to NEMES and send to our treasurer.

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

Addresses are in the left column.

Contents

1990s, a few from Edaville's engine meet, one from the "Great Steam Expo" the Museum put on in 1996, several years from the New Hampshire Power of the Past Collectors, and 3 years worth of Cabin Fever shows. (One Cabin Fever plaque is missing. I have to try to find that one somewhere!)

It just reminded me of how long I've been involved in this hobby, and all the friendships I've made.

But it also got me thinking as to how many members have these but never show them off. I'm thinking of making a display board, showing all these plaques, in time for our show.

Now that our show is fairly well established, might we consider having some plaques made? It's too late to get them made this year, unless we wanted to pay twice as much for a rush order, but there's always next years show. I went to one website and getting 50 plaques would cost around $75 for one color printing, which I thought was very reasonable.

Something to think about for next year…

C'y*a*
Mike

President's Corner

Norm Jones

The Meeting

Our speaker for the February meeting will be our own George Gallant. George will be talking about making printed circuit boards at home. The process includes: schematic capture, PC board layout, image creation, image transfer, etching, drilling and soldering. The end product will be a 3" x 3" logic board capable of controlling an electro-mechanical device such as: a lamp, motor, or solenoid using common home shop tools and public domain software.

Vacation

Some of you may be aware that I am about to retire from my daytime career as a mechanical engineer with BAE Systems. My retired friends tell me that, very shortly I will discover that all that "extra time" just disappears!

There is no doubt in my mind that I have enough "casting sets" to keep me going for quite a while in the shop, not to mention all of the full size antique engine restoration projects that have been on the back burner.

I have been travelling the Antique Machinery Show circuit for many years, and now see an opportunity to take in some of the shows that are farther away. Consequently I may be among the missing from time to time. One such occurrence will be this coming meeting. Not having gone on a "vacation" for a quite a while, I thought that the transition from work to retirement might be a good time to do so. Mike Boucher will be running the February meeting in my absence.

I will be back in time for our Model Engineering Show on February 21st.

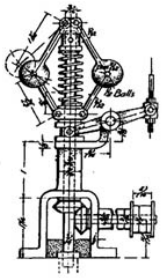
NEMES Model Engineering Show

I am composing this copy while anticipating the Cabin Fever trip this coming weekend. Participation in the various model engineering shows can be quite rewarding. They present an opportunity to: display various projects (complete or in progress), converse with people with similar interests, and inspire individuals to become involved in a very rewarding pastime.

Please plan on joining with us on Saturday February 21st at the museum. Setup time will be 8:00 AM. The show is open to the public from 10:00 AM to 4:00 PM.

See you at the show

Norm



NEMES Show door prizes

By Steve Cushman

As I write this, it's New Year's Day and our 2004 show is fast approaching. As I always do at this time of year, I am canvassing the organizations that have supported us in the past, soliciting new supporters and searching for door prizes for our show.

Unfortunately, in today's economy, commercial donors are not as readily available as they were a

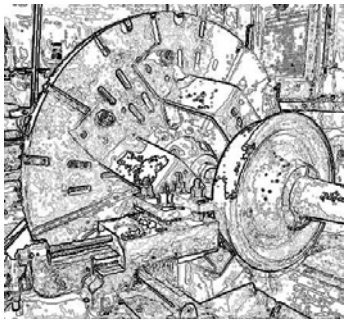
few years ago and prizes are harder to come by. Our members themselves have contributed many of the prizes we've awarded over the years.

Today, I'm going to spend some time in the shop, looking for some item that would make a good prize, perhaps a tool I no longer use or a fixture I could duplicate as a prize.

I'd like to encourage other members to do the same. Prizes need not be new and need not be in pristine condition.

If you are going to make a contribution, please let me know in advance so I can have the appropriate documentation ready.

Steve



Shop Hints

Compiled by
Mike Boucher

Drilling Hardened Steel

By Jim Paquette

Did you ever need to punch a hole through a piece of hardened steel and didn't have a carbide drill? I just go down to the local hardware store and buy a masonry drill. They do an amazingly good job on hardened steel. You have to keep the feed pressure low and you may have to re-sharpen them if the hole is deep. They won't hold size as well as a twist drill but for many applications they are more than adequate.

Jim

Bridgeport Mill – Power X Feed

By Kay R. Fisher

X-Axis Power Table Feeds on milling machines are like DROs. To quote our NEMES founder Ron Ginger: "Once you have one you wonder how you ever got along without it before."

One of the reasons I wanted my old Round Ram M-Head Bridgeport was because it was the smallest Bridgeport milling machine ever made. Another aspect that made it desirable to me was the fact that it had the short (32 inch) table. Unfortunately it also had the original Bridgeport longitudinal power feed assembly that extended the length of the table another 4 inches from a stock 32-inch table. I figured the short Bridgeport with the small table would just fit in my basement where my old Clausing 8520 used to sit.

Bridgeport Power Feed **Photo by Kay Fisher**

This massive and heavy assembly also came with no motor. I didn't care because I never intended to keep it anyway. Fortunately for me Dave Mahoney (my friend and fellow member of NEMES) wanted the parts inside the old power feed and was willing to trade me a much-needed belt housing and put new bearings in it. My old belt housing was usable but had some cosmetic problems.

I had a Harbor Freight power feed that I had installed on my Clausing for years and liked it a lot. It was difficult to install on the Clausing because the unit was designed to fit a Bridgeport. I knew I would have to work some magic because the power drive is designed to replace the manual crank and not the large heavy Bridgeport longitudinal power feed assembly. But I was able to succeed on the Clausing so I figured I could succeed on the Bridgeport. I sold the Clausing with the drive installed and ordered a new one from Harbor Freight for $179 – item number 34237-6ACA. This is their lowest powered unit; it has 135 ft. lbs. of torque.

Harbor Freight
3491 Mission Oaks Blvd.
Camarillo, CA 93011-6010
1-800-423-2567
http://www.harborfreight.com

Custom Bushing **Photo by Kay Fisher**

The custom bushing (the left item in the above photo) was the only part I had to manufacture. The item on the right was the bearing race that came with the power drive. The bushing inside diameter is for a sliding fit over the longitudinal feed screw. The large outside diameter was some random scrap diameter. This is only needed to give a shoulder to the smaller end, which is a sliding fit with the supplied bearing race.

Bushing and Bearing Race **Photo by Kay Fisher**

Bushing and Race Slid Home **Photo by Kay Fisher**

The length of the bushing was such that the end result of the placement of the new bearing race was in line with the end of the roller bearing in the power drive as shown in the next two photos.

Power Feed Mounted **Photo by Kay Fisher**

Bearing Aligned with Race **Photo by Kay Fisher**

At this point in time I had a mounted power drive, but needed to add two keyways, like the original shaft except closer in.

Feed Screw with Dial **Photo by Kay Fisher**

In the photo above, I mounted the brass bevel gear, dial, and dial lock nut so that I could make a mark on the shaft with a felt tip pen to determine where I would cut the first keyway.

First Keyway Cut **Photo by Kay Fisher**

I cut the keyways with a cutting wheel on a Dremel tool. It was crude but it worked. I would have liked to cut it with my mill but I sold my Clausing and had to get my Bridgeport running before I could do any milling.

Ball Crank Handle Mounted **Photo by Kay Fisher**

Next I mounted the ball crank handle so that I could again mark the location with a felt tip pen and cut the next keyway.

And now the moment of truth… I finally cut the end of the feed screw off with my hacksaw. There is no turning back now!

Shorter Feed Screw **Photo by Kay Fisher**

If I had a lathe large enough to handle the long feed screw, I would have used it to cut the threads. I didn't, so instead I cut threads the hard way.

Filing Feed Screw **Photo by Kay Fisher**

I filed the end of the longitudinal feed screw down by hand until the outside diameter was appropriate for cutting threads for the nut that holds on the ball crank handle. I used a machinist clamp for a file guide. I would take 10 strokes with a file then rotate the handle 40 thousands on the left dial then take another 10 strokes then rotate… All the while I kept checking the diameter with a micrometer. As I approached the desired diameter I took less strokes and rotated the handle 20 thousands per filing cycle.

Feed Screw Filed for Threads **Photo by Kay Fisher**

To thread the end I simply used a manual die and was very careful.

Threading Completed **Photo by Kay Fisher**

Below is a picture of the completed installation. When you put the nut on the shaft this is the first time you will actually compress the bevel gear against the gear in the power feed assembly. At this time you will have to add the supplied washer/shims as appropriate to get a nice freely moving mechanism. Not enough shims and the handle will take considerable force to turn and the gear will make bad sounds. Too many shims and the gear will feel really loose with too much backlash. This also adjusts the spacing that you see between power feed casting and the indicator dial. Note that the black spacer between the brass bevel gear and the handle is supplied with the power drive kit and is necessary for the handle to clear the power unit below it.

Completed **Photo by Kay Fisher**

Limit Switches Installed **Photo by Kay Fisher**

Installing the limit switches was simple. Just bolt them in place. It was a lot harder on the Clausing.

My Bridgeport is still a work in progress but I am getting there!

Kay

Treasurer's Report

Rob McDougall

Once again, if you haven't paid your dues, that will be reflected on the mailing label, and this will be your last Gazette. If you paid your dues and the label indicates you haven't, contact me.

As of 12/31/03

Balance as of: 11/30/03	**$5,157.05**
Cabin Fever Dinner Rec.	19.00
Cabin Fever Bus Fare Rec.	825.00
Donation	20.00
Dues Received for 2004	1,300.00
Sweat Shirts Rec.	874.00
Interest Income	.44
Less	
Prepaid Cabin Fever Dinner	-615.04
Prepaid Cabin Fever Bus	-2,295.00
Gazette expense	-207.37
Guest Speaker Honorarium	-80.00
Balance as of: 12/31/03	**$4,998.08**

Rob

Ron's Ramblings

By Ron Ginger

After my trip to Nova Scotia in September, I decided to trade in my truck for one with a bigger engine. I found a Victory Red Chevy 4x4 with a 5.6L V8 and I was hooked. To test the new truck, with the trailer, I headed off to my daughter's house in Grafton, MA in time to make the October NEMES meeting, the Rhode Island Steam Up and Rollie's open house. The new truck performed well, and I'm like a kid with a new toy as I drive around in my Red truck.

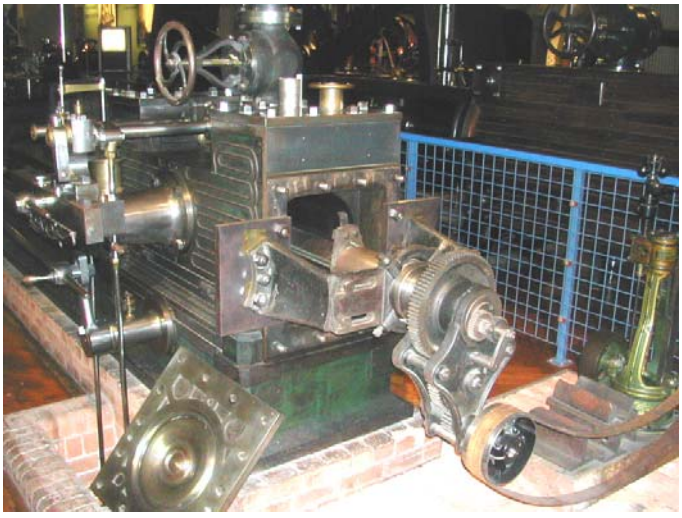
The first gathering of a Maine group of NEMES guys was held at Jim Lea's shop in Rockport, ME. About 8 guys came, and we all got a good look at Jim's incredibly tidy clock shop. For December we gathered at my shop, less tidy, but it did give me an excuse to clean up a bit. We plan to

continue the shop visits on the first Saturdays of the month.

In November, we headed off to Detroit to help host a party for my dads 90th birthday. My daughter and family took Amtrak from Worcester to Toledo, OH, an 18-hour ride. My 5-year-old grandson enjoyed the train ride, and my daughter thought it was better than 12 hours in a car with two kids. I drove to Toledo to meet their 6:00 AM arrival and then for the 11:45 PM departure. Not the best travel schedule, but there is only one train per day on this run. The birthday party was great.

While in Detroit, I managed to get over to the Henry Ford Museum for a few hours. They have been modernizing the displays and thinning out the collection. I was at first troubled by this, but in fact the car display is now rather well done. There is a "walk though history" with many important displays and several video screens. It gives a good view of automotive history, and includes many non-Ford cars.

The stationary engine display seems to be still intact. Maybe the great weight of these engines makes them too expensive to move. One interesting display has a large Corliss engine with its head and piston removed and a portable boring machine in place, as it would be used to re-bore on-site. I'm not sure that many people understood, but I thought it was a nice display. I took several photos. It might be a nice way to display a model someday.



Boring head at Henry Ford Museum Photo by Ron Ginger

They also have a glass 'ribbon machine' that automated the blowing of light bulbs. A video player runs a continuous show of a similar machine in action with a narration by an old fellow that actually ran the machine. That was part of an extensive Automation display.

So, it's no longer the old Henry Ford Museum I visited as a kid, but it's still open and I guess that's the most important thing.

I made a new record run on the way home - 893 miles in 15 hours, with only a couple of quick pit stops.

I've been working a good deal on my Minnie traction engine. I painted it today. It should be back together and operating, at least on compressed air, for Cabin Fever. I made a few boiler fittings that required some small silver soldering with some threaded parts. I tried using the 'White out' fluid to mask off areas I did not want to get solder on, and it worked very well. The tiny brush in the cap of the bottle let me apply the stuff very precisely, and it held up to the heat fine. It also cleaned off easily.

Visitors to Maine are always welcome. You should find me in the shop most of the time now.

Ron

For Sale

Radial Engine Plans

FREE plans for a 5-cylinder gas powered radial engine.

The designer has put them in the public domain, and they're freely available for downloading off the Internet. These plans were drawn using CAD and at least one engine has already been built to the plans. There are 36 pages of drawings.

They can be found at the "R and R Engines" discussion group at http://groups.yahoo.com. First join the group, then go to the files section, and download the "Forest Edwards Radial 5" PDF file. If you're on a modem, it might take a while, as it's a 1.6M file.

I'm sure there will be other sources to download the file, so if you don't want to join Yahoo groups, do a web search and you may find it elsewhere.

I downloaded the file and printed the plans. I don't know if I'll ever build the engine, but the plans are worth having.

Derbyshire Micromill

I have a Derbyshire "micromill" which needs a good home. It is disassembled but all the parts are present. As is, it is set up as a horizontal mill, with a lever feed on the X-axis and a lead screw on the Y. It uses the standard 8mm WW type collets, although none are included with the mill. There is one cutter arbor with it.

When reassembled, it resides on a heavy cast iron base, which has an integral coolant tank. The coolant pump is there; belt driven off the countershaft, which is also there, and not disassembled. No motor.

You could put it back together on your kitchen table!

It can be seen in Plympton, MA, or in Hingham, MA by prior arrangement.

Asking $100.

Steve Earle

ssmugwump@earthlink.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. $5.00 shipping included.

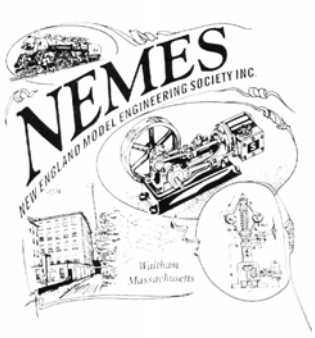
Errol Groff
180 Middle Road
Preston, CT 06365 8206
errol.groff@snet.net

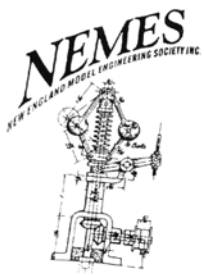
NEMES clothing

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 sweatshirts are the same color, but long sleeve and a crew neck. Also 50-50, but these are by Lee. The sweatshirts are very comfortable!

Artwork by Richard Sabol, printed on front and back:





Rear Front

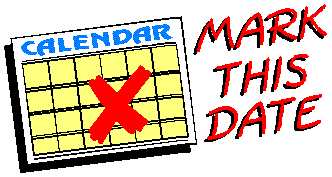
Prices:

	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



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 wbracket@rcn.com or (508) 393-6290.

Feb 5 - NEMES Monthly club meeting

7PM - Charles River Museum of Industry, Waltham, MA (781) 893-5410

Feb 7-8 - Amherst Railway Society

Model Railroad show at the Big E, Springfield, MA
http://www.amherstrail.org

Feb 21 - 8th Annual NEMES Model show

Charles River Museum of Industry, Waltham, MA (781) 893-5410

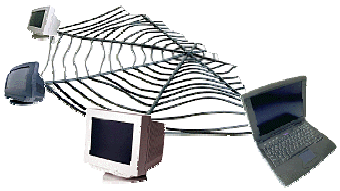
March 4 - NEMES Monthly club meeting

7PM - Charles River Museum of Industry, Waltham, MA (781) 893-5410

March 4-6 - 2004 FIRST Robotics Competition Regional Events

Verizon Wireless Arena, Manchester, NH
http://www.usfirst.org/robotics/2004/rgevents.htm

Bill



Web Sites of Interest

Homemade propane burners

Here's an interesting web page on homemade propane burners for Live Steam engines. It's a great example of a "step by step" web page.

http://www.ggls.org/MartyBurners/index.html

[Editor's Note: propane is dangerous. Use your own good judgement before following anything described in that article!]

Shop air lines

An spray gun company produced this page showing their suggestions for plumbing air lines in a shop.

http://www.sharpe1.com/dr-pipe.htm

Unusual steam engines

Follow this link to a bunch of interesting steam powered railroad locomotives. Some we might consider normal, like the Shay and Climax, but others are truly bizarre. Also find interesting stuff here, such as a mechanism to have pivoting driven axles, but maintaining constant length drive rods (the Klein-Lindner system link)

http://www.dself.dsl.pipex.com/MUSEUM/LOCOLOCO/locoloco.htm

[Important: Case is important for this URL!, if MUSEUM and LOCOLOCO aren't capitalized, you won't get there.]

Model "Deltic" engine.

Here's a pretty amazing model of an 18-cylinder "Deltic" engine under construction. It's basically three v-6 engines merged together. There are three crankshafts, each at the point of an equilateral triangle, and each cylinder has a pair of opposing pistons.

http://www.craftsmanshipmuseum.com/Tomlinson.htm

The home URL is pretty interesting as well, but I know that's been published here before.

Practical Machinist Forums

This link is not a mailing list or a chat room, but a collection of Internet forums. Once you sign up, you can post a question or a response just like a mailing list, but you have to go to the site to read the postings.

They have lots of different forums, including CNC, antique machinery, EDM, and about specific machines. There's also a "for sale" section.

It's an interesting place to ask questions and exchange information with other machinists, both hobby and professional.

http://www.practicalmachinst.com