

# The NEMES Gazette

Vol 2 No 5  
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*The Newsletter of the New England Model Engineering Society,  
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**Our Next Meeting is at 7:00 PM September 4th,  
1997 at the Museum, 154 Moody Street, Waltham  
Ma.**

## **From the Editor's Desk:**

I received a note this morning from Mrs. Francis Cote informing us that her husband, Francis V. Cote, who was a member of NEMES, passed away on July 26, 1997. She asked me to let the members know. I would like to extend our sympathy to her for her loss and hope that it is a long time before I have to report another member passing away.

This issue is going to be out ahead of the normal schedule. I'm going to be busy for the next couple of weeks and don't want to worry about getting it out. It also means that hopefully it'll get out before some of the events mentioned at the meeting happen, and it's going to get printed out before Ron get's his Founders Corner column to me for this month.

I'm going to have time for even less proofreading than normal, so I'll apologize for any mistakes now. See you all the 4th.. -- scl

## **Calendar of Events**

Thursday September 4, 1997 -- NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

13 September, 1997, Original Yankee Steamup at the New England Wireless and Steam Museum. 9:00 AM to 4:00 PM Admission \$5, No charge for exhibitors.

Thursday October 2, 1997 -- NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Saturday, October 4, 1997 -- STEAM EXPO at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Saturday Feb 21, 1998 -- Second Annual NEW ENGLAND MODEL ENGINEERING SHOW at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

## **The Meeting, August 7, 1997**

Ron got the meeting started as 7:05. To start with he had some bad news about the refreshment break in the middle of the meeting. Jay Stryker, who had been doing such a good job with it has had a job change and will no longer be near enough to make all the meetings. So, without a new volunteer there won't be any refreshments.

Ron got called out of town and only got back on Tuesday before the meeting. He could easily have had to stay a couple of more days, and then we would have had to have someone to run the meeting. Which brings us around to ORGANIZATION again. We need a second to run the meetings, or to give Ron a night off when he's got laryngitis or whatever. A couple of folks to take care of scheduling the programs for the meetings out so we know what the program will be more than a month at a time. Ron has done a wonderful job with the programs, but he needs some support to keep coming up with good programs month after month. We also need a charter. Most folks don't seem all that interested in it, so hopefully at the September meeting we'll have a charter to vote on.

It's time to start thinking about the next show, which we'll be holding October 4th. The Fire Marshall says that we impressed him enough with our ability to run a safe show that we don't need to contact him again for this show. We'll have an outside area for airplane engines and such that can't be run indoors. We need one air compressor committed to being there for the show. We'll rent tables again and use table covering left over from the last show.

This year there won't be a big Steam Expo as in past years for the Museum's Fall event, It'll be pretty much our models and a few stationary steam engines outside. Ron has flyers to pass out, this show is not just for us it's for anyone who wants to come and have a good time. We've got two more meetings before the show, September and then the October meeting which will be just a couple days before the show.

August 23 and 24 is the Mystic Seaport Antique Marine Engine Show. The will be outboards, one lung inboards, etc. The indoor model area will have both compressed air and steam lines for running models. The Surviving East Coast Liberty Ship (Jer-

emia Brown?) will be in New London during the show. The crew will be visiting the show Saturday and will have a special tour of the ship Saturday evening for registered exhibitors only. It is not a flea-market and selling is discouraged. However, on Sunday morning there will be a fleamarket for exhibitors before the show opens to the public. This should be a terrific weekend for everyone. Advanced registration for exhibitors is required.

Paul Gauffin has come up with a great sounding opportunity for NEMES members. The Union Twist Drill Company in Athol shut down in 1982 or so in the middle of a labor dispute. Most of the dealer type items have been picked over long since, but there still a lot of material in there. On August 16th at 9:00 AM a group from NEMES will be able to enter the plant and go through the odds and ends that are left until Noon, when the superintendent will tell you how much for your stuff, you pay cash, and it's yours. 1400 people used to work there, so it's a big place. Unfortunately by the time this goes out it'll probably be too late for anyone who doesn't already know about it to go, but I'm hoping that it will be a success and we'll be able to do it again. Take Rt 2 to Rt 32 North, then left onto Rt 2A. Down the hill to Union Twist, which now has big sign on the roof that says "L P Athol." If you come to Starrett you've gone to far, it's the complex just before Starrett. You can get in at 9:00 AM, 9:15 will probably be too late.

Don Strang had an article on bearing failures for people to look at during the break if they were interested.

He also had managed to come up with another book from the Harvard Business School Series, this on on the Whitin Tool Co in Whitinsville Mass. The book covers the period from 1838 to 1948. They originally made textile machinery. In WWII they built Magnetos for B-24s and made most of the auxilliary steam engines that went into the liberty ships. Don says that the Whitin book is much more entertaining than the Saco Lowell book he mentioned last month.

Why Joblocks wring together has been a favorite topic for a long time, since about the 1870s when Whitworth first was able to make surfaces flat and smooth enough to do it. Don passed around pictures of 2 200 pound weights hanging from a Joblock rung to the bottom of another Joblock. Back a little before WWI it was determined that the liquid film trapped in the gap between the two blocks provided the force holding the two blocks together. If the surfaces are carefully cleaned with alcohol and dried, the two blocks won't wring together. Adding a film of water by breathing on them, or of oil by rubbing them on the skin will replenish the surface film and they will

wring again. Don has tried wringing grade B blocks together and gets 7-8 pounds of tension between them, which is barely more than can be accounted for by atmospheric pressure pushing against the vacuum between the blocks. To get them to wring strongly together he suspects that you would need AA blocks, which are practically as good as the references in the Bureau of Standards. Johanson went into business with Henry Ford in the 1920s to produce his blocks. Last month he had a photocopy of some material on Johanson that he had photocopied out of a rare book that he had obtained by interlibrary loan. It's been misplaced and he'd like to get it back. If you come across it please bring it to a meeting and get it back to Don.

Parting off on the lathe is always a popular subject, and Don reports that it is once again being discussed in Model Engineer. George Thomas said it was a spindle stability problem. The front toolpost caused the spindle to ride up in it's bearings, causing chatter which leads to all sorts of problems when parting off. To counter this problem Thomas advocates a rear toolpost with a downward facing parting tool. Another reason for the rear toolpost is that gravity helps the chips get out of the way before they jam things up.

Another school of thought from the magazine says that the forces in parting from a front toolpost push the cross slide down and loosen the gibs so that the tool can pull in and grab. The rear toolpost doesn't loosen the gibs, so the tool can't grab as easily.

The hinge point that the tool rotates around is believed to be the most significant item by others. A normal tool holder has the hinge point below the cutting edge. When the forces on the cutter cause it to deflect it rotates around the hinge point. With the hinge point below the cutting edge it will move closer to the center of the part, digging in. With the hinge point above the cutting edge it will rotate away from the center of the part, reducing the cutting force so the tool won't dig in. For a rear mounted tool post the effect is opposite for a normal tool post, with the cutting forces tending to lift the tool and swing it away from the center of the part. Bob Barrett pointed out that putting the tool upside down in the front toolpost and running the lathe backwards has the same effect as using a rear toolpost. Don then pointed out that if you do this with a chuck on a threaded spindle nose you'd better be real careful.

George Thomas was convinced that the spindle was the the primary problem in parting off, but Don feels it's more closely related to chatter.

A bigger, heavier, stiffer lathe has less problems with chatter and also has less problems parting off.

Don would like to know what people's ideas are to cut chatter. He'd like to be able to use form tools but finds that they tend to chatter except for small ones. Henry Szostek says that eliminating chatter is easy. Speed it up and push the tool in harder till it stops chattering. Works every time unless something breaks first.

Don also had some nifty formulas on how to calculate the depths of V threads, but I didn't get them down, hopefully I'll get them from him another time and can include them along with the rest of the package he put together on V threads.

We'd seen bits and pieces of Norm Jones's Mizer engine before, but it was running in all its glory at the meeting from the temperature difference between the room and the tray of ice cubes it was sitting on. He first got it running a couple nights before the meeting, and reports that it wasn't too hard to get it to run. Balancing it was the hard part. The graphite piston got stuck in the cast iron cylinder when he left them together and the room cooled down. He was worried about how to get them apart without busting something, but when he got it apart so he could get at the piston to push it the heat from his hand warmed things up enough that it unfroze and came right out. He then used 1200 grit sandpaper to adjust the piston fit by turning it over for a while then taking the piston out and sanding off the polished spots. This is Norm's third hot air engine. He got "Low Temperature Differential Sterling Cycle Engines" at NAMES in Michigan and is starting to read it now. He says it's got some good looking projects in it.

Doug White said that he had to bring his latest project in because it's the first one he's finished since NEMES started that didn't immediately get bolted into something way to big and heavy to bring to a meeting. It is a Dilbert inspired pellet machine, complete with a "TAKE PELLETT" placard and the inspirational Dilbert cartoon on the case. It's powered by a radio controlled doorbell from home depot to ring the bell and to provide the signal to a standard 10V doorbell solenoid to work the mechanism. It worked great, but when he put the 18 M&Ms into the chute above the feed mechanism the weight on the slide was enough to jam it. After polishing and fine tuning it now works quite nicely, ringing the bell and dumping the pellet into the cup to reward the well conditioned engineer for solving another problem. It was a big hit, and is a perfect going away present for an engineer trading the cubicle maze for medical school and a new set of problems.

John Wasser came across a flyer for the Saugus Iron Works, and suggested it might be a good

NEMES field trip. It's in Saugus on Winter St. Paul Gauffin has been. He says it's interesting but not very model engineering oriented. Howard Gorin says that about twice a year they have a blacksmith convention there and that that's the time we should go. John is going to look into what they might have coming up for special events and will get back to us. Kay Fisher had a Wooden Tool box that he brought in to show us. Counting the UPS shipping it only cost him \$60.45. They come in two sizes. Call 1-800-888-3006. Kay had the large one, item G7-12747.

Kay also is proposing that the EDM that was serialized in HSM over the last couple of years might be a good joint project. In keeping with that, and the fact that its available for a prepublication special price, he contacted the publisher about buying a bunch in one order for everyone in the club who might want a copy. They were agreeable, and if he could get 10 or more copies at the same time the cost should be down at about \$10 each. When I put my name on the list I was about number 15. Vernon Eshbaugh has done a bunch of the work towards building one and has collected all the parts. He says that it should be buildable for well under \$100 in parts and that Robert Langlois was very helpful to him when he asked questions via email. Ron says that a club he used to be in acted as a bookseller with a publisher of boating books and was able to get members good prices on books by placing bulk orders. Somebody pointed out that unlike the steel and iron orders we just went through the books don't need to be sawed up before they're distributed.

Henry brought another piece for his Junak Motorcycle in. The air cleaner he had was a plain metal elbow with a filter element on one end and a carburetor on the other end. It was ugly, and NOISY. He decided to make a fiberglass replacement as another in his series of one to one scale model projects. He started by carving the shape in styrofoam, then covering it with fiberglass cloth and epoxy. Don't try it with polyester resin as it'll dissolve the foam. For one end he had a piece of 14 mil SS sheet pressed into a shallow dome shape. The compound curve stiffened it up nicely. The other end he formed into a very shallow top hat sort of a shape with a piece of Lexan for the center of the die and a washer shaped piece of aluminum for the outer rim. It was painted flat black and looked very nice.

John Wasser has the old valves from the club air manifold and the plugs to keep them from leaking for sale now that the new ball valves are in place. The valves are \$3 each and the plugs are \$.50 each. See John if you're interested.

Howard Evers needs a 1 by 10 tap to chase some threads. It's a normal V thread, but is 10 per inch not the typical 8.

Someone who's name I missed had an interesting thread gauge he'd picked up at a flea market. It had plain holes down on side to be used to get the diameter of a thread and tapped holes down the other side to tell you what the thread pitch was.

Somebody brought in a tabloid full of Machinery Ads that caught a lot of attention. It was "Metal Workers Market Place" published by Punch Press twice a month. The address is Punch Press, Box 127, 100 Chicogo Ave., Lost Springs, Ks 66859. It's \$15 a year 3rd class mail or \$35 a year 1st class mail. The phone is 1-800-255-0114 and the fax is 913-983-4398.

When things are passed around at a meetin, please try to make sure that they go all the way around. I've had reports that some folks have been disappointed not to see some of the things passed around.

### **Tips And Techniques**

**by Ed Kingsley**

#### **UPS & DOWNERS**

I had the misfortune of ordering some needed parts from Reid Corporation, on the 29th of July. On Aug. 5th, UPS said they were, "Somewhere in MA". As of 12 Aug., I am still eagerly awaiting their arrival. I stopped by the NH office of ENCO, on Tues. Aug. 5th. I was the only customer in the place and no one was answering the phones. They'd ring twice and stop. The explanation was that their computers were down and all calls were being routed to Chicago. I asked about the strike and was told that they had, "stopped shipping". Hmmm, would anyone be able to tell?

I spoke to MSC the following day, and they weren't having much better luck than ENCO in getting anything shipped. I trust, by the time you're reading this, it will all be history, and my (and your) parts will have finally arrived. (!)

#### **TOOL DRAWER LINER MATERIAL**

I found another source, besides Sears and MSC, for the nice "knobbly," soft plastic, drawer-liner material I passed around at the meeting a few months ago. I was in a hardware store in Laconia, NH, and they had the stuff in three forms, a 12" x 6' roll, an 18" x 6' roll and a 24" x 48" sheet. It's called "ToolMate", and the manufacturer is American Non-Slip Products, Inc., Alpharetta, GA. I picked up a roll of the 12" x 6', for \$4.89.

I also picked-up some of the rug underlayment material which several people mentioned at that meeting. While it is similar, it's only 1/2 as thick and a rather

unappetizing shade of beige. For now, I'm sticking with the fat, black stuff; it's been specifically designed to hold and cushion tools. The other stuff - who

knows (?) And besides, it's beige ...

Story of the Roman Empire: "Vini, Vidi, Velcro" ..... "I came, I saw, I stuck around"

#### **THE UP'S AND DOWN'S OF A DRILL PRESS TABLE**

I bought my Rockwell, 6 X 6 drill press, about 15 years ago, but I didn't have the extra money, at the time, to add the geared, table-raising device. (which cost 22% of the price of the press!) I thought, reasonably, that with 6" quill travel, I wouldn't need to raise or lower it that often anyway, right?

Besides, the table doesn't weigh all that much - by itself, but I tend to load it up with fixtures and heavy vices and it's amazing how fast (and hard) it can drop to the bottom of the column with just another 40 pounds of stuff on it!

The solution I recently adopted is a \$39, long travel, 3 ton, hydraulic jack from Harbor Freight. It has 20 1/2 inches of piston travel and stands 23 1/2" high in the lowered position. It sits up about 4" from the floor on the base of the drill press and contacts the bottom of the table about 4" below the top. This permits the surface of the table to be positioned anywhere between about 32" and 52" from the floor, quickly and EASILY. It takes up very little space, can be quickly swung out of the way, and is ready and willing to moonlight for any other lifting need.

#### **METRIC TAP DRILL SIZES**

Here's a quick reference for those of you who've had no more luck than I've had finding recommended tap drill sizes for Metric Screws and Bolts.

The "Rule of Thumb" is to SUBTRACT THE PITCH FROM THE DIAMETER, e.g., for a "5 mm x .8" thread, you subtract .8 from 5 =3D USE a 4.2 mm tap drill. This works, but you might also care about the depth of thread you're getting.

Here's the lowdown from Greenfield Tap and Die. The % of thread depth is "The Probable Depth of Thread", and assumes an 'average' deviation in the size of the hole you've drilled.

Size/Pitch	% of Thd	Tap Drill
3 x .5 ....	70	#40
	68	2.5 mm
	64	#39
4 x .7 ....	81	#30
	77	3.3 mm
5 x .8 ...	77	4.2 mm
	75	#19
6 x 1 ...	84	#10
	79	# 9
	77	5 mm
	73	# 8
8 x 1.25 ...	80	6.7 mm
	77	17/64" or "H"
	74	6.8 mm
10 x 1.5 ...	82	8.4 mm
	80	"Q"
	77	8.5 mm
12 x 1.75 ...	79	10.2 mm
	76	"Y"
	74	13/32"

-- Ed Kingsley

**Classified**

FS: Atlas 6" lathe, includes Jacobs 3 jaw chuck, misc. centers, misc. tooling, full set of change gears, jack shaft, motor, new set of half nuts, extra rack. In fair condition. \$600 Contact Bob McIlvaine, phone: 603-673-5861 email: mac@adra.com

I have a couple of new DAREX 1/2"-3/4" chucks for the M series drill sharpeners which could either go for trade or about 75% of current sale price.. Steven Cushman 617-784-8703.

**Aug-1997 Treasurers Report**

Previous balance -----	\$1776.61
Dues Deposits -----	40.00
Service Charge (Jun)-----	-2.66
Interest -----	0.02
Service Charge (July)-----	-3.00
Newsletter postage (2 months) ---	-125.72
Dues Deposits -----	380.00
New balance -----	2068.25

Respectfully  
Kay R. Fisher

**Letters**

To all:

Sorry I missed the August meeting but I was just back from Wisconsin that afternoon and didn't have the oomph to drive to Boston that same night.

Alert!! September 27 and 28 is the annual Connecticut Machinery Association extravaganza in Kent Ct. It is held at the Sloane-Stanley Museum grounds on Route 7 north of Kent and south of Cornwall Bridge. Probably the best way for someone from the Boston area to get there would be to take the Mass Pike west till you reach the route 7 junction and go south till you find it. Hours are 10AM to 4PM each day. Contact names are Robert Hungerford 203 227 1697 or Josh Reynolds 860 868 0283.

Errol Groff

High their:

Would you mind putting this commercial in the Gazette for me? TIA

Max ben-Aaron

FOR SALE: Waldrich Siegen engine lathe.

Center height 64" (5'4") Spindle drive 210 hp

Center distance 540" (45')

Speed range .2 to 35rpm Turn diameter 108" (9')

Rapid traverse 80"/min

Swing diameter 128" (10' 8")

Chuck diameter 120" (10')

Max. workpiece 100 tons (metric)

Supported 120 tons (metric)

Live tailstock, extra slides, steady rests, tailstock

chuck Tracer - two axis, taper cutting, digital read-

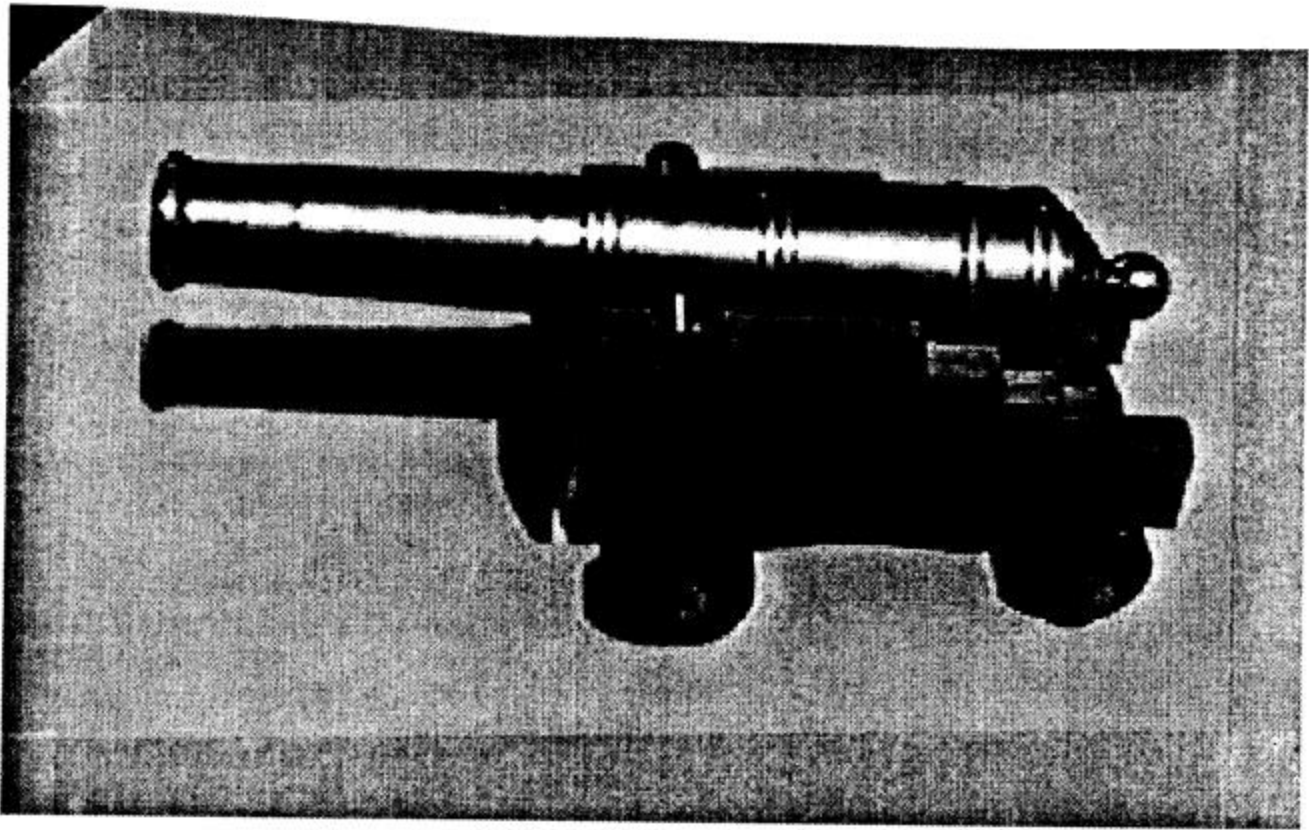
outs, chip conveyor spare parts, full documentation.

Bedways are excellent.

Machine is in outstanding condition and capable of performing under power for serious potential buyers.

*Max assures me that this lathe is real and is for sale, but that since I asked how much it was I obviously couldn't afford it. If you can, get in touch with Max who says that he will merely be the broker if he finds a buyer.*

Thanks to Dave Allen for this picture of Jay Stryker's model cannon taken at the July meeting's poster session.



# *The NEMES Gazette*

c/o Stephen C. Lovely

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newsletter of The New England Model Engineering Society