

The
NEMES
NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

Gazette

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NEMES officers

President Bob Timmerman
Vice President Dick Koolish
Treasurer Robert Goeller
Secretary Victor
...Kozakevich

NEMES web site
<http://www.neme-s.org>

NEMES Staff

Gazette Editor
Bob Timmerman

Modelmaking Correspondent
Dick Boucher

Webmaster Pro Tem
Dick Koolish

Contact Addresses

Treasurer
treasurer@neme-s.org
Publisher
Publisher@neme-s.org
Bob Timmerman: Editor
editor@neme-s.org

President
Robert Timmerman
RWTimmerman@gmail.com

December Meeting

We will have a Zoom meeting in December at 7 PM on December 5, 2024.

An invite will be sent attached to this Gazette.

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Club Business

We are now collecting dues for next year.

NEMES Dues are now due for the year. Dues are \$25.00. Make checks payable to NEMES, and send them to our treasurer,
Rob Goeller
34 Middlebury Lane
Beverly, MA 01915

[Note from the President] NEMES is now billing members, you can pay with a credit card, as I did.

From the Treasurer:

To members who have tried to e-mail me using our published treasurer's e-mail address: Our e-mail address has been the target of an exorbitant number of spam e-mails from all sorts of people and organizations marketing their products and services. The number of these e-mails is so large (hundreds in the course of only a week) that it is almost impossible for me to find e-mails from members. I apologize to those who have tried to contact me without response, I did not see your e-mail. [President's note: mine too!]

Unfortunately, our current e-mail server does not provide a function to block these unwanted e-mails. We are working to alleviate this problem. However, in the mean time, it is unlikely I will be able to respond to member's e-mails. You can write to me as needed, if I see your e-mail I will respond but the current reality is that it is unlikely that I will see said e-mail. If you need to contact me, best to use the US Postal Service at the address in the introductory column.

On another subject, many members have mailed their dues checks to the Charles River Museum, rather than directly to me. Unfortunately, these checks, many from early 2023, were only recently forwarded to me and many are too old to be

deposited. Any checks that I cannot deposit, I will return to the member. If you have recently sent a check to the Museum, please let me know via standard US Postal Service (not e-mail) and we will watch the Museum's mail for these checks.

When we have alleviated the e-mail problem, I will let you know in a future Gazette.

APPAREL: Please check out the NEMES Aprons, T-Shirts, Denim Shirts and Sweat Shirts. We are happy to ship any of this clothing directly to your home.

Orders should go to our Treasurer, Rob Goeller. His address is in the opposite column.



President's Corner
Bob Timmerman

We are in the process of switching to Club Express. There may be some startup problems for a while.

Your President has had some health adventures in November, as well. I was in my bathrobe and too springy bedroom slippers making breakfast. While I was minding my own business getting my oatmeal out of the microwave, I tripped on a rough spot in the floor, and fell on my side. I am still a little weak, and it took the Fire Department to help me up. The first time I went to the bathroom, I found blood in my urine, which is scary. [I found out later that it is common enough that there is a medical term for it.] A second call went out to 911, and the ambulance took me to the emergency room, where I was examined, x-rayed, and sent to the hospital for a 2 day stay.

I am OK now, but I have a rotator cuff injury to my shoulder, caused by overuse of a previously injured shoulder. Fortunately it is responding to physical therapy, and I expect to be fully OK in about a month.

Enough about me. I would like to propose some in-person meetings.

First topic: Revive the NEMES tradition of a December Clam Lunch at Woodman's. I propose we gather for lunch at Woodman's on Saturday, December 7 at noon, for lunch. We will do this as we have done in the past: an informal gathering, we will just show up individually, and not make a group reservation.

Second topic: a group lunch at a different type of restaurant in the late Spring or very early Summer. We could meet at the Chateau in Waltham for traditional food, or, there is a pretty good Chinese restaurant in Waltham that could handle a group of up to about 20 people in mid-afternoon. At that time of year, the days are long enough that a 3 PM meal would still have people home before dark.

Third Topic: One of our museum volunteers, Roger Wiegand, is a very skilled woodworker. Some people may be aware that he has restored an antique Fairgrounds Organ, and displays it at the Steampunk Festival, among other places. Now he and some other friends are building a group of pipe organs. Pipe organ building is *precision* woodworking. I was surprised to learn that he is doing all the cutting, even of small parts, with a 10 inch table saw. He has offered to give a talk on this, but wants to give the talk in his shop in the barn behind his house in Wayland. With our low turnout at meetings, I do not want to schedule a talk and only have 4 people show up. So, people who are interested in this topic, please contact me, at my email address. If we get more than about 6 or 8 people interested, I will approach Roger.

Fourth Topic: Howard Gorin has negotiated a donation of my 1903 Universal Milling Machine to the Charles River Museum. I was over there today, and found a space for it. I will take about a month for the rigger to be available to move it, and another month or so to get it installed, and some minor repairs made. After then, I will give a talk on "What you can do on a Universal Milling Machine that you can't do on a Bridgeport. That talk will be at the Museum, probably in late March or early April, and will feature a live demonstration of a 1903 machine took in action.

Members are invited to make suggestions for in-person meetings. Help with the meetings would always be appreciated.



From the Editor's
Desk
Bob Timmerman

Dick Boucher emails me to say his camera will not download the pictures for his article for this month. There will be no contribution from Dick this month. We hope he gets his camera problems fixed in time for next month's article.

We do have two articles from Steve Earle, and a question from a man in Canada about lubrication on an Ames vertical milling machine. If anybody can help this gentleman out, please email him. I will include his email address with his question.

We sometime get complaints from members that a NEMES event conflicts with some other event. Usually, we do not even know about the other event. Please let me know of other events, and I will publish such details as I have in the Gazette.

Upcoming NEMES Event

December 7, 2024
Annual NEMES holiday luncheon at Woodman's in Essex. I am bringing back an old tradition.

Date of 2025 NEMES Model Engineering Show

The 2025 NEMES Model Engineering Show will be on March 15, 2025. This is later than we wanted, but the first two weekends in March were taken.

Date of 2026 NEMES Model Engineering Show

We have reserved the first weekend in March, 2026 for the NEMES Model Engineering Show. This puts the show out of the way of big snowstorms, which usually come in February.

Upcoming Events

I have been receiving notices from the Owls Head Museum up in Maine. Keep an eye on their website as well.

Equipment Free/for Sale

I am downsizing my shop, and have two items on this list this month, with more to follow:

National Cylinder Gas “Sureweld” arc welder.

This looks like a rebadged Miller “Thunderbolt”. This is about 50 years old, still works, but is AC only; it will not run a 6010 rod, but will run a 6011 rod very well. I am selling this to NEMES members for \$45 (it will be 55 on Craig’s List. If you want a power cable, I can sell you a length of 4 conductor # 6 for \$15 (\$20 on Craig’s List). This is about what I would get at the scrapyard. I used this for my theater lighting work, so it is 4 conductor (2 hot wires, neutral, and ground), while the welder only needs 3 conductors, 2 hot + ground. You will have to change some plugs to match the plug on the welder.

Workbench Material

I am giving away some old maple bowling alley wood that Howard Gorin salvaged.

This is made up of strips of rock maple, roughly 3” wide x 1” thick, set on edge, so the overall thickness is about 3” The width of the slabs is about 3 feet, x 8 feet to 10 feet long. I have about 6 of them, but will need some help getting access to them. Here is a picture of a bench I made out of one such slab, after I cleaned off the old varnish and slapped on a coat of urethane.



This raw material is in my cellar, free for the taking. There is some stuff stored on top of the slabs, and the slabs are heavy, so two people will be needed to pick up the material, both to move the stuff on top of the slabs, and to handle the slabs.

Reports from the Sandy Hill Locomotive Works

Nothing this month, as Dick’s camera cannot download pictures for his article.

Question on Ames milling machine

Andrew Batory <abatory@gmail.com>
to editor

Hello,
I hope you recognize by the subject line that this email is about an AMES milling machine and it is not spam.

I have two AMES milling machines; one is a vertical mill and the other horizontal. I am hoping you can help me out with a question I have about the vertical mill. Perhaps you can pose the question at one of your monthly meetings or put the question in your newsletter. I sure would appreciate it.

Here is a photo of my modest machine shop/corner showing the vertical mill. The other photo is regarding my question. The photo shows the top of the mill spindle housing. There is a screw. The screw can only be meant for lubrication. The question I have is what kind of lubrication - grease or oil and maybe the kind? I unscrewed the screw. You can see the roller bearing housing and the inside is completely dry, so no clue if it is oil or grease. For sure I will not run it that way.

My workshop is pretty small and basic but almost all of it is good quality - mostly British and American, some German and Austrian, a bit of import. The AMES mill was made in Waltham, Massachusetts, I would think sometime in the 1920's through 1940's. Horizontal ones come up for sale on ebay every once in a while. I've only ever seen one vertical one and I bought it.

Can you please acknowledge that you read my email, otherwise I will send you a letter by post (Canada Post is on strike!).

Thanks,
Andrew Batory

Andrew's email is at the top of his letter. Reply directly to him so he has an answer, and cc me so I can put your answer in the files.

He encloses two pictures:



The first one is his shop, with his Ames mills, and Myford lathe:



The second is the screw in question. Is it for oil or grease?

How to hold something by its ID

Steve Earle

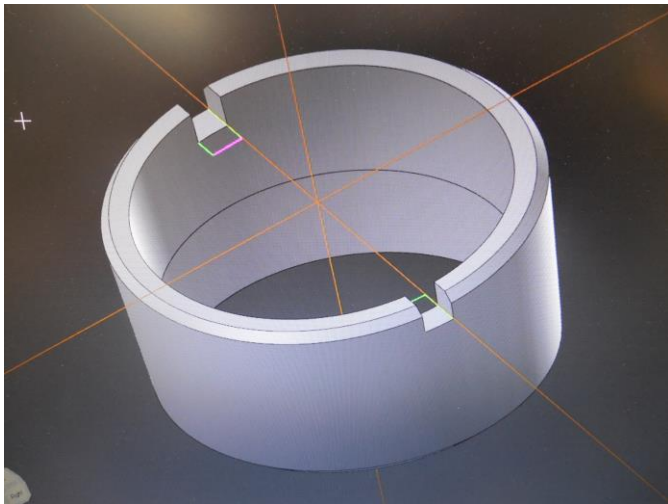
A frequent issue I have is holding parts from their inside or ID. At first glance this seems quite easy – there are expanding arbors or mandrels that exist, even 5C “internal” collet-like things, and of course you could make your own expanding doohicky as well. In my experience, most of these work moderately well, but they all seem to suffer two significant drawbacks. First is that they may not be particularly quick for production-type work (5C version excepted), and second (far more significant) is that most of them expand angularly instead of linearly. In other words, they bell outward rather than maintaining side parallelism. This can affect concentricity, position, and gripping security.

The simple and classic home-grown approach is to turn your arbor, drill and tap it for a small tapered pipe plug, then slit it so that it expands as the pipe plug is wound inward. And truthfully this mostly works. Except that there is very little “feel” for the clamping force, and the permissible range of

clamping is small, unless you're willing to live with the part only being gripped by one end. It also seems that the pipe plug method can go significantly non-concentric because of weird threads, maybe uneven side pressures on the threads, who knows. What I do recall is loading a part 2 or 3 times until it ran true, and I can't live like that!

The arbors that use a tapered drawbolt of sorts to expand them don't seem to suffer from pipe thread maladies, but the ones I've seen still expand by bellng outward. I was looking for something that would maintain concentricity and parallel sides within a fairly wide range of diameters, and be quick and repeatable when doing semi-production quantities. Maybe this sort of thing can be bought, but A) I like figuring out and making fixtures, and B) I'm cheap.

I had to make some lens-holding rings, brass, about .825" OD and fully threaded 48 TPI on the outside. Then they needed little drive notches milled on one end. I wasn't at all happy with grabbing it from the OD and possibly squashing the peaks of the threads. And it's got less than 1/16" sidewalls, so acceptable OD clamping would be iffy at best.



The pictures below explain it best. Made a steel arbor, with a tapered nose, taking a mating internally-tapered brass ring. The final OD of the brass ring was turned before it was split, while it was screwed onto the male taper of the arbor. Since the workpiece has an internal step, it can locate and seat on the first straight (steel) diameter below the taper. And it works pretty well. Here's the "except"... In hindsight, I would have made the taper more self-releasing. Even greased up, it doesn't quite want to

let go, but giving the workpiece a couple gentle taps with a little plastic hammer pops it right loose.





A previously-made version of this internal arbor, for a different part, doesn't have that releasing problem. See two pics below. But in that case, I had enough along-axis length to put a loctited-on steel ring under the screw head, so the screw can both push and pull. That one does work great, in fact. The lens ring pictured above didn't allow me enough freeboard to do that easily, without losing too much of that thin brass split ring.



Shop Hints
Steve Earle

Shop little things... Some of this is more related to production or repetitive work, but it can apply to all. In no particular order!

Always use a work stop (vise stop) in the mill. Even if it's for just a one-piece junky part. Because no sooner will you take the part out of the vise, then you'll realize that the hole you drilled is too small, or something like that, and you'll wish you could just put it back in – in the same location!

If your milling setup has two different clamping functions (say a lever-closer 5C indexer being held in a vise), find some way to disable one or at least notice when you're grabbing the wrong one. Take the vise handle off and put it on the bench, rubber-band a shop rag onto the "wrong" handle or lever, anything so you won't release the wrong one in the heat of battle.

If your workpiece is in some way symmetrical or nearly so, mark one corner or one end somehow. A prick-punch mark if that's acceptable, or a Sharpie marker swipe, maybe a "zero" (0) stamped on a fixture corner, etc. Anything to avoid holding it and saying to yourself, "Duh, um, which was the top left?"

During setup and trial for multiple parts, almost inevitably there will be a few that are out of

tolerance or otherwise no good. Save them as setup parts for the next operation, assuming they are functional enough at least for that. But mark them! A big old red marker works great. And when you're done with the job, pitch those red-marked setup parts irretrievably away.

Related to the above, sometimes I miss the scrap barrel when tossing away some small junk part, and it crawls under a bench or something. I always assume that any parts I find on the floor are junk. If it wasn't junk, I would have crawled myself after it at the time it ran away.

Pictures are so quick and easy these days – take pictures of setups. You'll run into a similar problem in a year or so, and then you can refer back to what you did previously. Even if it's not quite the same, it will start a train of thought that may lead to a solution.

Those pictures, and write-ups to go with them, can go into a word doc or similar computer storage system. I don't know how I ever functioned without doing that. It has saved numerous hours of mental lack-of-recall and digging thru drawers, when that job comes around again. In that document, go into details. What drawer is the fixture in, and in what toolbox? How much did the stock cost? Who did you get it from? Make note of unusual things – long lead times, unusually short cutter life, ways to maybe improve next time, etc. And make sure that those computer files are backed up in some way. Cloud, paid backup service, removable drive, whatever.

Pictures also help to identify fixtures, 5 years after you've forgotten what they are. Get an electric buzzing engraving pencil and write what it is, right on the fixture.

When single-pointing an external thread, NEVER use a nut as a thread gauge. Nut threads are oversized so they will fit. The nicer you make your thread to fit that nut, the more wrong it will be. I saw people do this multiple times when I had a "real" job, and it always drove me nuts. (Ha ha...) If you don't have thread pitch measuring tools, at least use a tapped hole as your thread gauge. That will ensure that the thread will actually fit into a tapped hole, and the looser nut will be perfectly OK too.

If you have weird cutting tools in your shop, mark them – or the package they are in – somehow. In

particular, left-hand taps, odd (but close to normal) pitch taps, and non-standard tolerance taps, can be offenders. From experience, I can tell you that a CNC mill will run an 8-36 left hand tap in a right-hand fashion, and not care at all. The only one who will care is you. Or in that case, me.

Cutting tools can be expensive, so take care of them. Keep endmills in their original tubes or packages, so they don't chip each other rolling around in a drawer. HSS is less susceptible than carbide, but good handling and storage will benefit both. I like to leave virgin tools unmarked, lightly used get marked on the pkg with just a short dash, more used - a squiggle, very used but OK for roughing, two squiggles, and beyond that they get tossed. That way I don't over or under-use a cutter. No sense using a spanky new one for a hack job, then not have a new one when nicer is required.

Don't pile tools and stuff on your milling machine table, unless the table is protected. A shop rag is adequate. The table is a precision surface, so treat it that way. A vise (or any other thing) should be set down on that table as gently as possible. If someone is helping you load that 18" rotary table, make sure they know how to do "gently" as well.

Until next time!

Zoom Meeting Link

The meeting link is in the blue box. You can just barely see Zoom meetings. You have to push both “control”, and click your mouse to follow the link.

Meeting ID: 620 919 9191

Passcode: 4F5F4b

One tap mobile

+13052241968,,6209199191#,,,,*676622# US

+13092053325,,6209199191#,,,,*676622# US



ZOOM MEETINGS

Push control key and click mouse to follow link in blue box.