

The **NEMES** NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

Gazette

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May Meeting

We will have a Zoom meeting in
May at 7 PM on May 1, 2025.

An invite is attached to this
Gazette.



We are now collecting dues for next year.

From the Treasurer

Members, as was mentioned in the President's Column last month, we are changing our management service provider from Capital Hill Management to Club Express. This process is moving forward but more slowly than anticipated. Because of this, invoices for membership renewal will be late this year and will have a new look as they will come directly from Club Express rather than Square.

Our relationship with Cap Hill was somewhat awkward although they did reliably distribute the Gazette and track membership and dues payments. We do expect a significant reduction in our annual expenses since Club Express will sponsor our host our web site, replacing Dream Host. Other changes for services for our club will be coming as well. We will try and keep the membership informed through the Gazette.

In the mean time, if you wish, feel free to send a check to:

Robert Goeller – for NEMES

34 Middlebury Lane

Beverly, MA 01915-1300

They will be recorded as received.

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 are some startup problems for a while.

I would like to propose some in- person meetings.

First 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.

Second 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.

Third Topic: Howard Gorin has negotiated a donation of my 1903 Universal Milling Machine to the Charles River Museum. I was over there last week, 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 June or early July, and will feature a live demonstration of a 1903 machine tool in action.

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

Riggers:

It turned out that there were some problems getting the machine out of my cellar and over to the Museum. It weighs about 2500 pounds, about the same as a Bridgeport. I had to get it out of my cellar, as the Boston Fire Department said that there was not enough space around the oil tank. After the Museum agreed to take the machine, the problem arose of finding a rigger to move it. The rigger recommended by Howard's rigger quoted \$8,000 to move it, and wanted the alley behind my house closed all day, which would require a police detail. In my business, this is called a "courtesy bid". They really don't want the job, but don't want to say "no", so they quote a high price. Obviously, they were out. O.B.Hill Motor Transport had done some work for the Museum, so I asked them. They looked at the job, but did not give me a quote.

This was getting serious. While Howard and I brought that machine into my cellar, that was 40

years ago, and we were both a lot stronger back then. We weren't going to be able to do it our age today.

I got on the *Practical Machinist* website. As luck would have it, somebody else had used a Boston area machinery mover and thought highly of them. The firm is "Sacco's Specialized Moving" in Wilmington, Phone (978) 657-0777, cell (617) 633-1018. The President is Joseph W. Sacco, email ioesacco@saccosinc.com. Website: www.saccosinc.com.

I sent them an email, they came and looked at the job, and the next day they emailed me a quote for \$3950, less than half the bid from the first rigger.

On the appointed moving day, they showed up promptly at the appointed start time of 7:00 AM, with a crew of 3 people and 2 trucks: a large, 3 axle ramp truck carrying a fork truck, and a box truck for the milling machine. I did not see much of the moving process, as I was in my car, waiting to move it for the street sweeper.

What they did was put a boom on the fork truck, get the milling machine on a pallet jack, and move it to the door. They reached in with the boom on the fork truck, attached slings to the machine, and hoisted it out of the cellar (a 3-foot lift), and put it in the box truck. They repeated the process for my 300-pound drill press. They then moved 5 boxes of milling machine accessories, and my 12-foot A-Frame ladder (for use in the Jackson room—it goes up to 22 feet).

Everything was delivered to the Museum before noon!

If you have a machine tool to move, give Sacco's a call.



From the Editor's
Desk
Bob Timmerman

Dick Boucher has retired as modelmaking correspondent. Here is his retirement email:

Bob, I am sorry but I am not going to be able to be contributing to the Gazette any longer. Age and some non life-threatening health problems like my knees being full of arthritis have kept me from spending a lot of time in the shop (and just spending the day on U-Tube in a chair) as in I haven't done any serious machine work in the last two months and am seriously thinking about starting to move some of the machines like the Hardinge chucker and the 10 EE on to new owners. Sorry. Dick B.

[Editor note: If Dick is willing to send his Hardinge Chucker and Monarch 10EE to new owners, he must be thinking seriously about retiring.]

Dick's place has been taken by John O'Brien, who runs the Revolution Makerspace here in Waltham. It will be a different column, But I am glad to have him.

Steve Earle contributes an occasional column on production machining. He runs a small production shop in Maine, where he turns out a line of parts for sporting rifles. He contributes regularly enough that I have promoted to a regular correspondent.

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.

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. I have also reserved the traditional last Saturday in February for the show. We will decide which day to have it at some later date.

Upcoming Events

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

Model Engineering Report

John O'Brien

April

Update

It is with mixed feelings I recently sold the CNC converted Little machine shop minimill model 3990.

The minimill was my second foray into machining. The first was a harbor freight minilathe (the aforementioned piece of sassafras from my earlier column). It wet my appetite but could hardly really do anything. The LMS 3990 was different. It was a capable little mill I could use to do some simple jobs. Upgrading it to CNC was my COVID project. I learned so much, from GCODE to TTL electronics levels to how to miswire and completely destroy servo drivers.

I ended up effectively building the CNC components twice. Once, bit by bit, off a kit I bought online, and a second time when I rebuilt it after I decided to use it at the makerspace. Here a demo I made when I first got [it working](#). The first build had a weird "clicking" issue that occurred before I reset all the servo drivers which I couldn't figure out, so to err on the safe side, I rebuilt it a second time around the Ethernet Smooth Stepper and a CNC4PC C82 - Dual Port Multifunction breakout board. In my mind I'd done everything right the second time, using high quality Thomson ball nuts and ball screws, three GeckoDrive G320x digital stepper servo drivers, a stronger gas spring to prevent "head drooping", and spindle control via CNC.



IMAGE 1

But subjected to more frequent use, the machine displayed issues. The gibs would constantly need fine tuning to remove play but still allow enough movement for the machine to have good tolerances. The set screw for the ball nut on the x-axis would loosen, causing the x-axis to fault. Eventually the x-axis wouldn't come out of fault, and I had to bring the machine out of service.

The makerspace recently got a grant, so I was lucky enough to get a new Tormach PCNC 440, making the CNC LMS 3990 spare. That and the fact that I couldn't figure out how to fix it meant the end of the line for the machine. The gentleman who bought it said he was just going to use the controller box (got a nice one for cheap because it had some cosmetic damage).

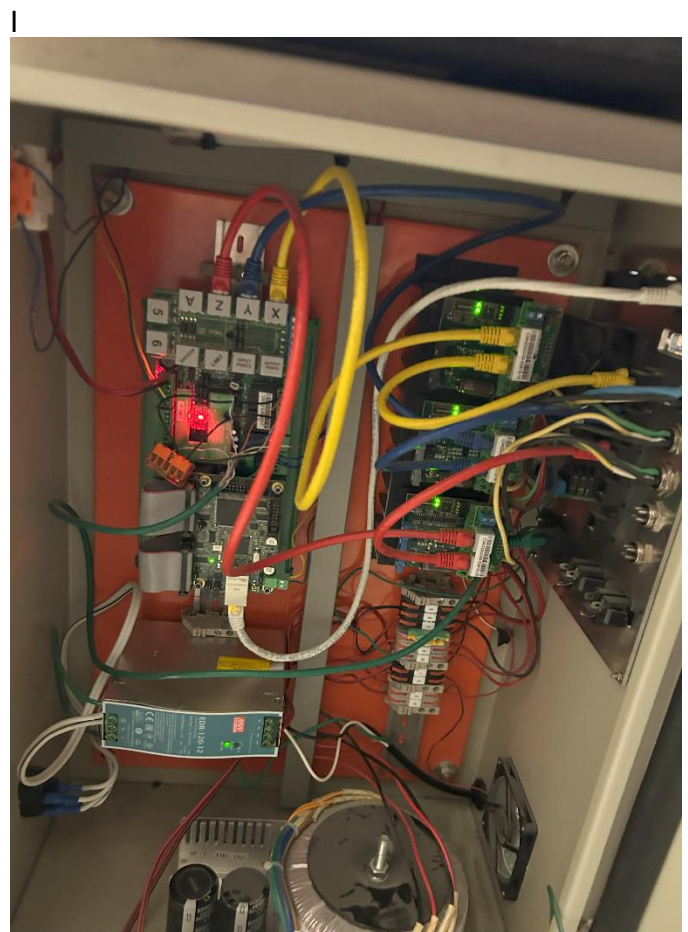


IMAGE 2

While I was disappointed that he wasn't going to fix and use the machine as is, I was happy that at least some parts of it might live on. The last I saw of it was when he slid it on a piece of plywood into the back of his truck and gently lay it down on its back to start its journey to a new home in New Hampshire.

Round Parts Don't Have to Be Lathe Parts

Steve Earle

Well, that title is true, but we do need to be semi-intelligent about it, especially if our grocery money comes from these activities. It doesn't pay to go screaming out of the "normal" box the first step out of the gate, unless you're in it just for the entertainment. Yes, you really can make a cube on a lathe (I've done it, just for fun) but it's not particularly worthwhile.

In my world of short-run parts, I'm often balancing between the cost of tooling vs. the cost of time. Making only 2 or 3 of something can be cost-prohibitive for the customer, unless they really want it and don't care how unpleasant the price becomes. But usually, we're talking about a dozen to a hundred of something. Then the thinking starts - how much tooling is on hand, how much do we need to buy, what can we make, how crazy do we want to get? Buying \$2000 worth of cutters for a probably non-repeat job doesn't sound very good. Maybe we do it somewhat the hard way and take a hit on the time. Or maybe we do peek outside the normal box and see what we can see.

Looking back at the title or premise, that round parts don't need to be lathe parts - I would always add, "But they should be looked at that way!" Nevertheless, here's a case where I stepped a little bit out of that box, and it worked fine. The part in question is a sliding sunshade for an old Lyman Alaskan telescopic sight. It's relatively simple and not super-critical dimensionally. First I chased down some steel tubing, so I didn't need to make the entire hole myself from a solid bar. Slightly more expensive than solid - yes. Time savings - also yes. We'll call that a wash and move on.



The outside of this part just needs to be pretty - it's the inside where all the business happens. The ID is clearance-bored slightly less than 1" diameter to about 2-1/4" deep, flat-bottom, from the outboard end. Beyond that it's bored smaller and more fussy, to the part's full 3" length. And in the middle of that more-fussy bore is an internal o-ring groove. I did do the outside, the primary bigger bore, and cutoff to length, in the lathe. It is theoretically possible to do the deeper bore and the o-ring groove, way down in that hole, in that first setup, but that didn't sound like much fun. Or the part could have been flipped around and lathe-bored and grooved to finish that other end.

Internal o-ring grooving cutters for lathe work can be gotten (not really expensive, but enough) or can be home-made (time, aggravation, and trial-and-error). This material had already shown itself to be on the gummy stringy side, and I wondered how many grooving tools I'd sacrifice before the parameters were all happy. But I did have on hand some 1/16" wide "keyway cutters", used for a couple of other jobs. So I decided to stand the part on end, in the small CNC mill, and mill the final bore and the o-ring groove.



Notice the sleeve around the part, in the 5C collet. This part has an odd OD; not inch, not metric, and it's bigger than 1". I could have had a custom collet made, or bored out a so-called emergency collet to that size, or stood it up in a chuck rather than in a

collet - all legitimate options. But I did have a 1-1/8" collet in the collection, and by a fortunate quirk of fate it had a sleeve in it - left over from some other job - that was exactly the right size!

While the part was there, I also used a "double-angle" cutter to mill little chamfers on all the edges - o-ring groove top and bottom, underside of that final bore, and OD and ID of the end. That saved any hand scraping, roto-peeling, or other deburring trouble.

One more odd thing to mention was checking the OD of that groove. It's not hyper-critical but it should at least be somewhat close - say within .002-.003" of correct. They make tools like the below picture (which I didn't have) or groove-measuring attachments for calipers (which I also didn't have). So I took a really cheap and simple approach. Knowing that a penny is pretty much exactly .750" diameter, I tried various gauge pins between the penny (in the groove) and the opposite inside of the part, until one was just right. With some quick math, that gave both the measurement of the original sample part and a way to verify what was being made.



There you have it - milling what would typically be a lathe part. Not a universal approach for all parts, but it worked well for this one. Gotta keep those metal chips (and the groceries) coming!

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.