

The NEMES Gazette

Vol 1 No 3
July, 1996

*The Newsletter of the New England Model Engineering Society,
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From the Editor's Desk:

This issue is going to be mailed out to the entire mailing list, to remind you that the normal meeting day for July is a holiday, so we are going to meet on the second Thursday of the month, July 11th. We've finally reached the stage where we're organized enough to not only know how much we need to charge for dues, but to have a treasurer you can give the money to. Joe Masciovechio, our treasurer, has asked me to let you know that he'll be ready to start collecting dues at the July meeting, and he'd prefer a check for \$20 made out to "NEMES" rather than cash.

A new feature this month is the "Founder's Corner" by Ron Ginger. He sent me an article for this month's newsletter, and said he'd like to put something in the newsletter on a regular basis. He also said that we needed to come up with a name for his column. I couldn't call it the Presidents corner, because we haven't had an election, but he's definitely our founder, so for now it's the Founder's Corner. If he wants to change it it'll have a new name next month.

Life and Work keep me too busy and I haven't had enough time to get all the new events I have for the fall into this issue, but I NEED MATERIAL. Please send something in. The August meeting will be on the first, only three weeks after the July meeting, so there won't be much time after the next meeting to get me material for the next issue. We're going to try to get the Gazette out in the mail every month in time to remind you about the next meeting, but mark your calendar anyway just in case we slip up and don't get it in the mail on time!

Founder's Corner:

Organization: We are on our way toward becoming organized. We have a treasurer, Joe Masciovechio. We have briefly worked out a simple budget, based on dues of \$20 per year. We see the money being spent about like this.

Newsletter printing \$25 Newsletter Postage \$32 Meeting refreshments \$15 For 12 meetings a year this will add up to \$864.

If we invite a non-commercial speaker for our meeting, I think it is fair that we pay him a small amount to cover expenses of driving to the meeting, and maybe a nice dinner for his effort. I would think \$50 would be a minimum for this, and we might want to pay 6 or 8 speakers per year. This would add to about \$400 per year.

To get this group started, I spent \$112 on postage, \$34.25 printing, and \$45 for Village Press mailing list, for a total of \$191.25. The collection can at the first meetings has paid for the refreshments and the postage for the second meeting notice I mailed. Our mailing list now has 87 names, I assume we will likely have about 70 dues paid members, so we should have a total income of \$1400 per year.

Show and tell: I believe this may well become the favorite part of our meetings. We have now had several interesting talks, and I hope you are starting to see the format. We do need a few items each meeting, and we need to get the timing a bit better- show and tell should be about 5 or 6 minutes each. Longer talks should be "main event" speaker.

I think Joes talk at the last meeting is a good model for what show and tell should be. He described a recent project, since it was too big to bring in he had a photo, then he described a part he was trying to make and the problem he had, and got several suggestions from the group. This is exactly what I'd like to see in the S&T section.

July Meeting remember, the date is shifted to July 11 because of the holiday. As usual we need a few show items. Our speaker will be Paul Budlong who is building a model steam roller from plans first published in LIVE STEAM magazine. This is a model I have looked at building, so I'm anxious to hear this talk.

Future Meetings. We need speaker volunteers for meetings!. A suggestion has been made that we plan a series of themes for meetings, then look for suitable speakers. I really need help in this area. It would be ideal if we can get a 'program committee' of 3 or 4 guys to help plan and arrange speakers. If there is any chance you can help with this, please see me at the meeting.

Resources:

I didn't get much new this month. At the meeting it came up that the third Sunday of the month there is a Flea Market at MIT that often has good stuff, but that's all I have on it so far. If you've got the details let me know and I'll get it in here. If you've got a good source for "stuff", books, machinery, or whatever that hasn't been listed here yet, let me know and I'll print it for the rest of the members.

Calendar of Events:

I'm only listing a couple of new ones this month, the ones that would be over by the time the next issue comes out., Next month I'll try to put out a complete calendar again. Thanks to those who supplied me new events this past month. Keep them coming. It looks like there's an interesting event just about every weekend for the rest of the summer, and some weekends you have to choose because there's more than one.

July 6,7 Boothbay Me. Railway Village Antique Engine Meet. 207-633-4727

July 11, 1996 NEMES meeting!

July 20,21 Vermont Steam and Gas Engine Assn. Show, Gaysville, VT. call Pat Warren 1-802-436-2371

August 1, 1996NEMES meeting!

The June 6, 1996 Meeting.

Ron Ginger talked for a few minutes to get the meeting going. He introduced Joe Masciovecchio, who has agreed to be our treasurer.

Ron would like someone to head a program committee. He can continue to run the meetings, he'd like to get a program committee formed to take care of lining up the themes and speaker for the meetings.

Don Strang was the first person to talk during the show and tell section of the meeting. He reported that Home Shop Machinist has hired an electrical engineer to check out the electrical projects they publish to be sure that they are complete and correct enough to actually build from the published material.

He showed a Rivett-Dock threading tool. It has 10 teeth on a wheel that ratchets from one tooth to the next in 10 passes to cut the thread. Each pass is made the full width of the thread, with each tooth on the wheel cutting deeper and narrower until the thread is full depth. He only has one cutting wheel for it and is looking for more.

Jay Stryker reports that his steam engine projects are all on the back burner for now, and brought in his current project, a small brass cannon. It started when he found the brass barrel at a flea market for \$3.00. After a while he decided that he should either finish it up like he'd planned when he bought it or get rid of it. Since it's too good to get rid of he's finishing it. He talked about the problems of getting the wooden parts of the carriage correct, since they are all at specific angles in order to support the gun when it is aimed and fired. I had always thought that they were essentially squared up boxes with wheels on the bottom with a couple of semi-circles cut out of the top to support the trunnions, but there's a lot more to it than that.

He also suggested that machining precision parts out of wood for a project such as a gun carriage is a good way to teach kids. You can make a precision part out of a hardwood such as walnut, and if they make a mistake it's not as hard on the machinery as if they were making a part out of steel.

I was quite surprised when right after Jay gave us a talk on what he was going through in researching the proper way to build a gun carriage for the non-firing version he was building, Henry Szostek got up with a finished cannon that he had made. It's a model of a British Naval Gun owned by a friend of his, Bill Saltonstall. The barrel modeled by Henry was captured from the British at the Battle of New Orleans in the War of 1812. Mr. Saltonstall's ancestors used it aboard a family ship for a number of years after that. It's a particularly good barrel to model since one time when the ship was in a British port a British Marine noticed the crest on the barrel and announced he'd be right back with reinforcements to reclaim it as Crown Property. While he was off to get the reinforcements there was a quick trip below to fetch the hammer and chisels and the crest was quickly removed. The Saltonstalls got to keep the gun, and Henry has an authentic model of a British Naval Gun without all the trouble involved in duplicating the Royal Crest that is normally found on such guns. The carriage was built from plans he got a long time ago at Bliss marine. Since the guns had to line up

with the gun ports in the ship, the carriage height and the wheel diameter were specified to fit the ship the gun was being built for.

In Massachusetts the fire chief is the person to see for permission to fire a cannon in a town. Henry educated many a fire chief back in the Bicentennial when he was part of a group that travelled with an old 3 1/2" bore Bronze tube that was 5 feet long and weighed 800 pounds. It fired a pound of powder at a time.

He uses a gun drill that he got cheap for drilling the bore, and suggests sandpaper on a broomstick to clean up the tooling marks. Don't use a pilot hole, the center of the drill acts as a limit on the feed and keeps things from grabbing. A gun drill is a single fluted tool, about 3/4 of a circle, brazed to the end of a tube with a flute rolled into it to match the drill. The chips get blown out by the oil pumped up the tube and out the drill at 1000 psi. The hole is made in one pass. If you are going to ream the hole after drilling, fill it with grease first. The grease gets pushed out as the reamer goes in and carries the chips out with it. It's also easier to get a true hole down the center of the barrel if you spin the barrel and hold the drill stationary.

Gun barrels are cast solid, then the hole is bored. They solidify from the outside in, and then the impurities and voids that might be present in the last of the metal to solidify are removed when the bore is drilled. They used to do it with the barrel vertical so the chips would fall out.

DONT LET THE TRUNNIONS INTERFERE WITH THE BORE, it makes a weak point in the barrel. Henry has had barrels fail in the proof firing because of the trunnions. He now screws them into blind threaded holes using a hex on the end to screw them in tight, then cuts off the hex.

For getting the wooden cheeks of the carriage to line up properly he makes three soft jaws with the correct angles, clamps up the wood, and mills the top flat.

If firing a cannon, use black powder only. At about 35000 psi the burning of black powder is inhibited, and the burning slows so the pressure doesn't go up much further. Smokeless powder is just the opposite, as the pressure goes up it burns faster and the pressure spikes. So, NO SMOKELESS POWDER

The biggest cannon models that Henry ever built was a pair of them 30 inches long. He started to build them for fun, but then someone came by who wanted to buy them. He didn't want to sell them, so he quoted them at \$5000. He promptly had a \$1000 deposit, and all the fun was out of it, so they languished under the bench partially done for quite a while. After a while it occurred to him that he had \$5000 under the bench, and called to see if they were still wanted. They were, even with the cost overrun that put them up to \$6000 for the pair. Henry finished them up, collected the money, and after considerable thought decided to do the sensible thing with the money. He spent six weeks touring the South Pacific.

The man who bought the two thirty inchers collects cannons. He also travels the world on business, looking for cannons everywhere he goes. He told Henry that his are the best. The conclusion is obvious, Henry makes the best muzzleloading cannons in the world.

Joe Masciovecchio (our new treasurer) showed a picture of a Logan Lathe that he spent about three months restoring - it was too heavy to bring in person.

He is now working on getting a 1937 Delta Bandsaw restored so he can use it. He had an inner bearing race that he had made on his lathe, and had questions about getting it hardened. This led to a discussion of hardening in general, and the suggestion that when you have a sample of known steel, label it and leave it in a rack by the grinder. Then when you have an unknown you have some known samples to compare it too. (Be sure to use a clean wheel for spark testing, or you won't know if the sparks you see are from the sample or the crud left from the last thing you ground.)

Howard Gorin is working to help restore the Nobscott, a 210 foot steam powered ship. It's currently in drydock in Charlestown, and the Friends Of the Nobscott have three million dollars in Federal Funding over the next three years to get it back into service. It was built in 1925 in Bath Maine. The ship has been abused, but they still have most of the engine and a prop. The rest of the machinery is gone. Howard had drawings for the cylinder heads for the 1250 HP engine. He is making patterns for them, and had a somewhat cryptic drawing for them. The low pressure cylinder is enormous, and he is looking for a lathe that will swing the almost three foot diameter pattern he is going to make. If you have a lathe big enough and want to help, let him know.

After a 15 minute break, Larry Twaits talked about scraping. He hired someone to come in and do his mill. The guy had a power scraper and the job came out well, with the mill in much better shape after it was done. Larry decided to try to improve his lathe himself. He made his own scraper by brazing a carbide blank onto the end of a piece of steel. He passed around a piece of cast iron that he had milled on both sides. One side he'd spent about a half hour scraping. He put spotting compound on a small surface plate and rubbed the two sides of the iron piece, and it was apparent that the scraped side was flatter than the side that had only been milled. He took two mils off the bottom of the saddle of his lathe, then scraped it using the far right end of the bed as a reference. When he was done he did some work to get the aprons and the lead screws and such to line up correctly. It's a lot better than before he started, but he suspects that the work he did getting the parts to line up correctly after he was done scraping might have been as much a part of the improvement as the scraping. He is now impressed that scraping is hard work, and says that if the bed of the lathe is bad scraping the saddle isn't going to help.

Letters to the Editor:

June 16, 1996

Dear NEMES Gazette,

Thought this may come under the heading of "Food For Thought"

I notice that a lot of people like to point out the clever ways of using their lathe to do jobs that most people would consider to be better suited for a mill. Some time ago I worked with an older tool maker that said he could GENERATE spherical balls and sockets on a Bridgeport. This is a job that I think everyone would agree is better suited for a lathe or,

only possible on a lathe. Well, you can cut spherical balls and sockets on a Bridgeport! Why would anyone want to do this? Don't know. Anyway this is how.

First, you need a rotary table and an adjustable boring head. Tilt the head as shown in the sketches. Set the quill travel limit to position the tool on the stop line shown in the sketch. (center of sphere) With the tool making an orbit around the part on the "stop line" you will get an accurate reading on your boring head. To reduce the size of the spherical ball, DO NOT MOVE the X, Y, or Z AXIS ON THE MILL. Retract the quill and with the spindle stopped, adjust the boring head to take more material off the ball. Turn the spindle on and advance the quill to its travel limit (tool on the stop line) then turn the rotary table through at least 360 degrees. Repeat the process as required. The spherical socket poses more problems. For this the boring head is used with the tool pointing in the normal direction for a boring head. The problem here is that retracting the quill is a NO NO. And I don't see any way to machine a cup where the curvature of the cup is more than 180 degrees. To take more material out of the cup (increase it's diameter) drop the table on the Z axis some known amount. With the spindle stopped, adjust the boring head. Turn the spindle back on and raise the table back to its original position. Then turn the rotary table through at least 360 degrees. If you try to retract the quill instead of lowering the table, you will end up with a cylindrical notch exiting the spherical cup at whatever angle you tipped the head to. On second thought, there is a way to generate a cup with a curvature greater than 180 degrees. But you will need a boring head that can change diameter while rotating. They do make these things (or they did) for cutting snap ring grooves in parts you can't rotate on a non-cnc mill. That could be another letter. Anyway I thought this might interest someone.

What do I do for a living? Used to be a certified TIG welder who also did machine work.

These days I run a CAD system and do drafting and machine design work for Ingersoll-Rand.

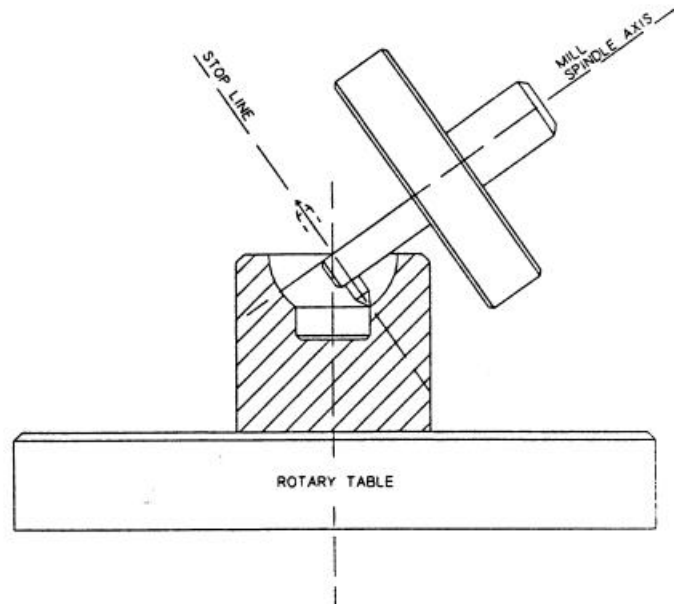
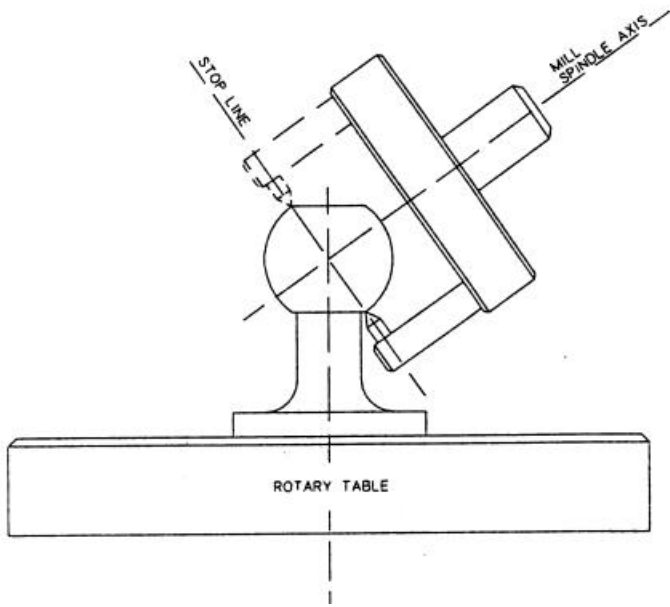
Yours truly, Scott Stoner STONEMAN48@AOL.COM

Thanks for a great letter. The drawing are on the next page.

Dave Stickler sent me a couple of interesting brochures. It's too late to make the June 13th meeting of the B&M 494 Restoration Committee, but it's not too late to get involved or to find out more. You can write to B&M Locomotive No. 494 Restoration Project, PO BOX 1215, White River JCT, Vermont 05001 or call Will at 802-296-3012 or Chuck at 603-643-9080

Classified Ads:

9" South Bend Precision Lathe on South Bend Cabinet base, quick change gears, 4 1/2 ft bed, Buck Bros. 3 jaw chuck, 4 jaw chuck, face plate, many tool holders, BB live center, Jacobs tailstock chuck, South Bend Steady Rest. \$1100. L.V. Klos, 289 High St. Newburyport. work 508-282-2628, home 508-465-1960



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