
The NEMES Gazette

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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 on March 6, 1997
at the Museum, 154 Moody Street Waltham, Ma.**

From The Editor's Desk:

Spring is fast approaching, and with it will come all sorts of engine shows and other events of interest to Model Engineers. I'd like to be able to print up a list of what's scheduled for the coming months around the New England area, but I need the info to print. If you have info on the upcoming seasons events, please let me know so I can get them into the Gazette.

Joe Masciovecchio has had to resign as our treasurer because of a new opportunity at his work that will keep him away from most of our meetings. Good luck with the new position Joe, and we'll miss you at the meetings.

We finally had the long awaited talk by a Loctite representative, and judging from the questions we all enjoyed it. I know that I tried my sample of the green shaft retainer out and am pleased with how well it worked. Next time I visit MSC I think I'll buy some. So, Thank you Jerry Bruening for coming out and giving us a talk on Loctite's terrific line of products.

Our first New England Model Engineering Show was a big success. I sure had a good time, and everyone else I talked to did too. A quick count shows there were 43 exhibitors, about 20 IC engines, and almost 50 steam engines.

See you all next Thursday night. -- scl

The Founders Corner by Ron Ginger

It has been a very interesting month for ME adventures.

On February 1 I went to the new Cabin Fever Expo in Reading PA, with 3 friends. It was a very good show, about a dozen commercial vendors and at least 30 or 40 model makers. Among the more amazing models was a Rolls-Royce Merlin, V12, at about 1/8 scale. A cylinder bore just over 1/2". Amazing piece of work, about 90% complete.

At the meeting I talked with Rudy Kouhopt, the author of many articles and a couple books from Village Press. He is very interested in coming to our meeting as a speaker. I will see Rudy again at the NAMES show in April, and will work out the details for a future meeting.

Then when Thursday rolled around, it was our monthly meeting and the long awaited "man from Loctite". Although the start was a bit hectic, with the other event in the museum, we did have a fine Show and Tell program, and I hope you all enjoyed that session as much as I did. I know I learned some useful facts about the products. After the meeting I received a letter, and a box of Loctite handbooks to hand out at the next meeting.

Then it was our show, and that was just a tremendous day for me. I was very pleased to see all the projects you guys brought in, and amazed at the breadth of activity. It was very satisfying, after all my arm-twisting to get people to the show to see such a good turnout. Everyone I talked to was equally pleased, and all wanted to know when we could do it again- someone even asked me if we could do them several times a year.

Not only was the show successful for exhibits, but the club wound up covering all its expenses for table rental and the coffee, and wound up making a few dollars. We also signed up 12 new members, and got another 10 or so 'trial members' that will get a couple newsletters. Several of the new members are from quite a distance out, so they will likely just be reading our newsletter. Welcome new members.

TREASURER At the last meeting Joe Masciovecchio, our treasurer, announced he would have to resign, as he has a new supervisory job that will require some second shift work. I'm very sorry to lose Joe, and take this time to thank him for his effort in helping to get this group started. He has turned over to me all the funds, and a good accounting of all past activity.

So, now we need a new treasurer. Any volunteers?

This change also means there is a chance for new errors to creep back into our mailing list, so check your label and let me know at the meeting if there are errors. If your label has a red spot on it, it means you are getting a free sample copy. If you like it, the dues for the remainder of this year (to June) are just \$10. I will be collecting at the meeting.

Bus Tour This is just about the last time you are going to hear me push this topic!. I believe you all will have received a letter from me looking for a few more to join this trip. I'm writing the newsletter column the same day I mailed the letters, so I don't know how it will all work out. I do have until the 10th of March to make the payment to the bus company, so there is still time to sign up for this. I know it will be a great experience.

March Meeting I have asked Roland Evans to be our main speaker. Rollie has built 2 big steamboats, the last one a 39ft welded aluminum hull with a beautiful Lowe compound engine. Rollie did everything himself. I'm sure this will be a great talk.

We also need a few show and tell speakers. After the show I know there is a lot of great work being done out there, so come on guys, lets drag some of it in here and share with your club members! There will be a signup sheet near the door, please sign up.

April Meeting Hard to believe, but April will mark our first anniversary meeting. I would like to make that meeting a more informal session. We will try to arrange for a bit more refreshment than normal, maybe even a bottle or two of wine and some other goodies. I'd like to have just a show and tell session, and then a chance to talk. How about if everyone brings in a 'conversation piece' that night?

I need to leave some room in this newsletter for Steve, so I'll wrap it up here. See you all on March 6.

-- Ron Ginger

Calendar of Events

Thursday March 6, 1997 – NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Thursday April 6, 1997 – NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Thursday thru Sunday, April 24 to April 27, 1997 – Big Bus Trip to the NEMES show in Wyandotte Michigan, with a side trip to spend a day at the Henry Ford Museum

Thursday May 1, 1997 – NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

Thursday June 5, 1997 – NEMES MEETING at the Charles River Museum of Industry, 154 Moody Street, Waltham, Ma 02154, telephone 617-893-5410

The Meeting, February 6, 1997

We started the February meeting downstairs in a nice room while a special event that had hired the Museum until eight PM finished up. Ron Ginger got the meeting going as usual with a few announcements. First off was one that I have mixed feelings about. Joe Masciovechio has resigned as treasurer, which is too bad. The good side of it is that he resigned because he had a chance for a promotion that will have him working nights so he won't usually be able to make the meetings. Good luck with your new position Joe, and we'll miss you. Ron will be the temporary treasurer, but we need someone to take the job on a more permanent basis.

Since we are doing memberships from June to June rather than trying to keep track of when each member joined and when they need to pay their dues again, we decided that from now till June if you want to join the dues will only be \$10, not \$20. Then in June everyone will have to pay \$20 in dues for the time until the next June.

Ron and a couple of other folks rode down to Reading, Pa. to the Cabin Fever Expo. They had a good time and saw some interesting models. There was a Merlin V-12 model with a 9/16 inch bore 90% complete. You never know what you're going to run into at one of these shows.

Things were going along well for our show, Max had 28 spaces reserved, John Wasser had the equipment lined up for an air supply to the tables so steam engines could run, Roland had lined up some vinyl to cover the tables, and a coffee and donut table had been arranged. Dick Boucher suggested that if your engine was a dribbler when you ran it that you get a cookie sheet to go under to help keep the tables clean. The Museum provide flyers for us to take and pass out.

Max would like to get another material buy organized, but this time he'd like to get the money first so that he can make sure that all the people who sign up for a share are able to get theirs. Last time not everyone who had signed up was here when the material arrived and since Max needed the money so he could pay for it all he had to let some of it go to people who hadn't signed up for any but were there with the money to pay for it. Last time there was no 1 1/2 free machining

steel available, so that seems like a logical choice for the next group buy, along with some durabar cast iron perhaps.

Earl Rich from Mount Vernon New Hampshire was first in the show and tell portion of the meeting. It was his first time at a NEMES meeting. He works at a company that grows sapphire crystals. One of the major applications for them is in the windows of supermarket scanners. He brought a bunch of scrap pieces in and passed them out. He also had offered a free sample of it to anyone who sent him an SASE via the internet and was surprised to only get 15 requests. They grow it in thin ribbons, then polish both sides to get the familiar scanner window shape. You can cut it like glass, but since sapphire is so hard you need a diamond point to scribe the line before you break it. I'm not sure what I'll do with my piece, but it sure is neat to have lying around.

Hal Robinson is making a micro milling machine. The table is a microscope stage, spring loaded against a couple of enormous micrometer barrels that came off an electron microscope and read directly in ten thousandths of an inch. The spindle is belt driven. He'll probably make camera parts or small instrument parts using it. He's not really sure what he's going to make on it, if he knew it'd be finished by now. He's looking for a suitably sized milling vice to use with it, so if you have a source for a milling vice that opens to about a half inch let him know about it.

Herb Cotterly brought in a Wall 4 cylinder gas engine. He got it from a friend, who had inherited it when his brother passed away and was about to throw it out. Herb says there is a lesson there, make a list of all your good stuff so that when you are gone it won't get thrown out but will go to a good home. Without something to go by, your heirs may send all your good stuff to the dump because they have no idea what it is. The engine was only a part of all the good stuff he got for free.

It has 4 spark plugs and a distributor, a water pump, and an oil pump that gets the oil from a wet sump. When he got it it was only about 30% completed, so he had quite a bit of work to do to get it running. It was started by Herb Cook. He used cyanoacrylate glue to hold the cam lobes in place while he made sure that the timing was right, then he pinned them to the shaft when he knew that they were correct. Originally it had a 3 volt model airplane ignition coil, but that didn't do it so now he's got a 12 volt gel cell and uses a car coil. Originally the head casting leaked into a combustion chamber. He made a new head gasket out of heavy duty aluminum foil for cooking turkeys, folded with 3M spray adhesive, and switched from head bolts to studs so he could torque the head down tight and now the

head is a good fit. It took him about six months to get it into the shape we saw it in. He says he got a lot of good advice on the project from Ed Rogers. It came with two D size drawings with fractional dimensions.

Cooling water is held in a tank made from an ordinary quart can. It takes the place of a radiator, with the centrifugal water pump circulating water from the tank through the engine and back to the tank. The sump holds a couple of ounces of oil. Since the engine runs rough without a load, he added a piston with some felt on it for resistance to provide a load and it smooths it out. It uses an updraft carburetor with a cork float and shutoff. The shutoff gave him a lot of trouble because it wouldn't shut off, but he has gone to a valve with two non-matching tapers in it and it shuts off nicely.

To start it he uses a rubber cup on an electric drill, held against the rounded end of the crank (this is much like the way that lot's of folks start their model airplanes.) It started nicely, responded well to the throttle, ran for a minute or so till Herb shut it off, and earned a nice round of applause from the crowd.

Don Strang reminded us of the Rainy Day Bookshop in Fitzwilliam NH, he says its his favorite bookstore for model engineering sorts of books and he hates to tell people about it, but figures he has to since it's such a great place. He also had some literature from HJJ Screw Holders. They make screw holding screwdrivers that Don says really work and don't drop the screws before you get them into the hole. He had the parts from his finished drill sharpener. He has now sharpened all his number drills from 1 to 60 with 4 facet points. When he had them all sharpened he drilled holes and measured the hole diameters. (He has a set of tapered hole gauges that read the diameter of a hole directly.) All of them, except the #8, came out within a mil of the nominal size. He got a different #8 drill, sharpened it, and it was well within spec also. So, with a set of normal grade drills carefully sharpened, he was able to get better performance in terms of hole size than is specified for the best grade of drills. Once again, you'd be surprised how bad your drills are when you get good sharp ones -- even if you're comparing them to good, new, made in the USA drills.

Wayne Singer has some surplus chairs he got from his work. He offered them at \$15 and says he might be able to get more if there's interest.

After the break we moved upstairs to the bingo room for the long awaited talk by Jerry Bruening, an Adhesives and Sealants Engineer from the North American Group of Loctite Corporation. His territory covers the Boston - Worcester - Springfield area. When Ron first proposed a model engineering society

one of the things he said we might be able to do is to get speakers from industry. Loctite was the first company on almost everyones list, and Jerry's talk was worth waiting for. The samples didn't hurt either.

Loctite was recently bought by Henkle from Germany, but will remain a separate entity. Loctite Corporation started in the 1950's when a mechanic bought the rights to the basic chemistry from DuPont and figured out how to put it in a bottle so it wouldn't immediately cure up. He figured out how to do it and the first aneorbic thread locker was born. Now Loctite has products in five of the twelve basic adhesive chemistries that they do well.

Most Loctite products contain very little solvent. Anaerobic adhesives cure with the absence of air and in the presence of an "active" metal. Brass is the fastest metal for curing, while stainless steel will take much longer to cure. The primers for aneorbic adhesives contain copper ions in a solvent. In any kind of bonding the cleaner the better, so the solvent in the primer is useful as it helps clean grease out of the joint.

Loctite brand thread lockers are color-coded. Purple is low viscosity and low strength. It's good for things like eyeglass screws and other tiny fasteners. Blue is removable. 242 was the number for it, now 243 is available. It's the best of the 242 formulas, doesn't need to be shaken, and doesn't need primer. (242 had different formulations in different countries because of different laws and such on the materials that were in it.) Red is permanent. Heat it up to 450 degrees F for 5 minutes to get it apart. Be careful with 290 thread locker, it will wick into most anything and can sieze up bearings and such if it gets into them. Heat will speed the cure, but don't exceed the -65 to 350 degree F temperature range. Don't use too much, a 50 ml bottle can put 3000 3/4 bolts together - less is better with thread locker.

In general, the thinner the gap the better the bond. The retaining compounds have different additives than the thread lockers. In general, 609 will handle 80% of you jobs. A slip fit with Loctite is stronger than a press fit as the parts are glued together.

660 Quick Metal is a non-metallic compound that is good for building up chewed keyways and such. Use a primer to kick it over, heat it up to get it apart when you have to take it apart again.

Form in place gasket is good to 300 F, high temp version to 400 F. It won't disperse in oil, so be careful not to leave a bunch of it on the inside of your assembly.

Jerry had a lot to say, and besides the samples and the handouts, he left a copy of the complete applications handbook for the NEMES library. Don't forget, "Loctite" is a registered trademark of Loctite Corporation, Hartford, Conn 06106.

TIPS AND TECHNIQUES by Ed Kingsley

First, a correction to last month's column. I mistakenly referred to Center Drills and Starting Drills as two different things. They are the same thing. What I meant to differentiate between was Combination Drills & Countersinks (a single tool) and Centering (or) Starting Drills (the same tool). Sorry for the confusion. As promised, I did bring a diverse selection of drills with me to the last meeting, but with all of the other things going on, an opportunity to present them never seemed to happen. I will bring them, again, to the March meeting. If you have an unusual drill, or two, bring them along. Does anyone else besides me think that the room we started out in last month would make a great regular meeting space?

GROUP BUY OF CAST IRON AND LARGE DIAMETER FREE MACHINING STEEL

I contacted Peterson's Steel in Worcester, and got the following quotes for large diameter 12L14 (free machining) steel round and square bars, and =91Continuous Cast', Cast Iron round and square bars. The 12L14 is the same material as Max bought and Art chopped up, last month, but in square and larger diameter round sizes. The Cast Iron is T2, Continuous Cast, Grey Iron, with excellent machining and wear resistant properties. The prices shown are close, but approximate, and may need to be adjusted slightly up or down, depending on the total amount of material we purchase. Slightly larger pieces may have to be purchased in order to assure the =91finished' length required, after cutting.

12L14 (round)

| | |
|-----|---------------|
| 1.5 | \$5.30 / foot |
| 2.0 | 7.45 |
| 2.5 | 11.59 |
| 3.0 | 16.81 |
| 3.5 | 22.14 |
| 4.0 | 28.78 |

12L14 (square)

| | |
|-------|---------------|
| 1/2 | \$1.27 / foot |
| 3/4 | 2.58 |
| 1 1/4 | 6.07 |
| 1 1/2 | 8.25 |

| Cast Iron (round) | |
|---------------------------|----------------|
| 1 | \$4.03 / foot |
| 2 | 8.75 |
| 3 | 17.43 |
| 4 | 31.44 |
| 6 | 66.56 |
| Cast Iron (square) | |
| 3 | \$21.61 / foot |
| 4 1/4 | 41.33 |
| 6 1/4 | 84.38 |

Prices are indicated for a 12 length of each size, but smaller pieces may be purchased. There is a \$10 minimum charged for EACH size of EACH material purchased! Peterson's does not have 12L14 square stock in 1 x 1 (hence the 1 1/4). The Cast Iron rounds are +.005, -.000, and the Cast Iron squares will 'finish' to 2=2E8, 4 and 6 respectively.

Max ben-Aaron has volunteered to pick up the order (within reason), but someone with the proper equipment is needed to saw it up. Volunteers are encouraged to contact Max, Ron, Steve or myself, prior to the meeting, if possible. The 'buy', once again, is contingent on there being someone(s) able and willing to do the cutting. Other sizes are possible. Bring your requirements, and your money. Max would like to have the full amount of the purchase with him when he goes to pick it up. He also mentioned something to me about sending all of us a postcard from Bermuda, whatever that means. He's such a kidder ...

Don't forget the Tool Shed and the Admiral Metals Thursday afternoon Yard Sale.

The New England Model Engineering Show, February 15, 1997

When I got to the show I was so overwhelmed I figured I couldn't possibly manage to report on it, there was so much there to see. About 2:30 I decided I should go around and try to at least get a quick list of who had brought things to show just so I'd have a sort of a record of our first show. Unfortunately, some folks had already left by then so My list may not be complete. If I've left someone out inadvertently, let me know and I'll try to complete my record of who was exhibiting. I'm going to start in the back corner and work around the room.

Erroll Groff had the MasterCam cadcam package running on a computer with an overhead projector running throughout the whole show, showing tool paths and the process of generating a program to machine a part. He also had a display showing the process of

making a prototype rollon container with an oval roller rather than a round one. Some of the parts were cast, and others were machined.

I had some aluminum foundry items, including sacrificial Styrofoam patterns.

Herb Cotterly had his Wall 4 engine, a Cole Hit and Miss model, a Brown Jr Jr, and a Stuart 10 steam engine and it's boiler with a gasoline blowtorch type burner.

Ed Rogers had his Ford V8 project, a 1/3 scale Peerless Windmill Engine, a 4 valve 1 cylinder engine from an old casting set, and a Wall 1 cylinder.

Dan Purcell had the Ortec Digital Positioner.

Gene Martha had and engine stand for a model airplane engine, a toolpost grinder, boring bar holder, rib making machines for model airplane ribs, and a Bantam 19 engine with a titanium piston in it that he'd made.

Paul Gauffin and Howard Evers shared a table. Paul had some incredible miniature firearms that he deals in. Howard had pictures of the Aamco 7" shaper that he has fixed up, and a power feed for a mill table. He also had a boring head with a tailstock taper so he can turn tapers without moving the tailstock over.

Pat Clark had a beautiful model of a self propelled steam fire engine. Unfortunately he had left by the time I started taking notes so I don't have the details.

Roland and Arthur Gaucher had an incredible collection on their table. A ball turning attachment for the lathe, and the infinite thread attachment. A hit and miss engine, muzzle loading cannon, steam mill engine, oscillating steam engine, steam engine from a launch, model Aloris toolpost with tool holders. Out in front was a ball bearing escapement clock. The Bentley BR2 was there, along with the wooden model of it that shows how it works. Every time Roland started the Bentley up the entire crowd would surge over to get a good look.

Roland Evans had patterns from a 3 x 5 x 4 steam engine and the castings from them. He also had a boiler and steam engine, with a hand pump for boiler feed water. The collapsible form used to shape the top of the boiler was there too, along with a tool for laying out the dimensions for steam engine valves.

Henry Szostek had an assortment of cannons, carriages, and the drawings for making canons.

Wayne and Justin Singer had Phil Duclos's 6-cycle oddball engine, a 1/3 scale VW engine project, and the 1 1/2" scale Climax project.

Howard Gorin had his 7 1/4" gauge B&M K8 Consolidated project. It's going to be a big engine.

Mike Boucher had his B&M 4-6-2 number 3714, a wooden beam engine, 2 small oscillators that he kept in his pocket, a Stuart #1, and a mill engine.

Dick Boucher had two locomotives. His Simplex project and a vertical boilered chain drive unit. He also had a hot air engine, his miniature drill press, and a collet set he had made.

Al Hubbard had stationary engines, 4 Stuart and one Boucher. (No relation to Dick and Mike.) Harold Holand had a display of the model bolts and supplies he makes and offers for sale and a model steamroller.

Fred Jaggi had a grasshopper engine connected to a dynamo and a 4-4-0 English Tank engine in O gauge that burns alcohol.

Jim Cumming had a "Georgina" over crank engine, lot's of interesting pictures of his various models and projects, and a not quite finished steam engine that is for a 22 ft launch.

Ron Ginger had a Sherline Mill and Lathe on display, along with his SRC drill sharpener, George Thomas bending rolls, a 4-cylinder gas engine, a sterling engine, a Stuart steam engine, and his Mini Traction engine project.

Edward Mann had a lathe tool post he had made in with Ron's display.

Art Corman had a 2-cylinder steam engine built to one of Ray Hasbrouck's designs.

Don Strang had his finished 4-facet drill sharpener running most of the day. He also had a rotary table, an adjustable angle plate, and a ME Beam Engine project.

Jim Chetwynd Sr. had a Duclos tool grinder.

Max ben-Aaron had some tool posts he had made for his lathe and some parts for the Huff & Puff engine.

Bob LaVertue had a Barrel Organ.

Leslie Russell had his modified Mini Traction Engine. He added a governor.

Paul Budlong had a steamroller, an Elmer's Engine, a Tiny Power mill engine, and Rudy's HSM Cement Mixer.

George LaGasse had a horizontal mill engine.

Mathew Longwood had an oscillating steam engine.

Norm Jones had a miser project, three books of pictures. (Wynadotte Show, London Show, and construction pictures.) 1/4 scale Ryder Ericson hot air engine, 1/3 scale Associated Handy Man, and a PM Research Hor Mill Engine.

Dick Cushing had a whole assortment of Kinetic Devices, a Coomber Engine with a piston that rotated inside a cam ring, a stirling cycle engine, a Municipal Water Pumping Station, with a hor. mill engine, driving a pump, a dynamo, and a fountain in the park. He also had the feed water pump and water level control that he uses in the boiler that powers his exhibit at outside shows.

Dave Stickler had 4 engines. A Tiny Power AJAX, a Stuart Beam Engine, Tubal Cain's Mary beam engine, and NDC-1 designed by Paul Jacobs.

Ray Hasbrouck had a radio controlled steam launch, a V-4 single acting marine engine with a single lever control, and a two-cylinder double acting trunk engine of 1861 from the SS Xantho. The Xantho sank off Australia in 1872.

Kay Fisher had a model tug project, scratch built from plans. It has 28 portholes in it that were the motivation for him buying his first lathe.

Richard Sabol had a nice limited edition print for sale, from a pencil sketch he had done, two flame licker engines, and a Coles Power Model project.

Larry Twaits had his Quorn set up and sharpening during the show, as well as an Associated Handyman model and an old model steam engine.

Robert M Barrett had a magnetic levitation photocell motor and videos on solar power and replacing his ham radio tower.

They had left by the time I started taking notes, but Gary and Jared Schoenly were up from Reading Pa with a hit and miss engine. They put on the Cabin Fever Expo, next years will be Jan 31 and Feb 1, 1998 so put it on your calendar.

Dave Robie and John Wasser were the two volunteers who helped keep things moving during the show and the cleanup after. John deserves our thanks for

getting the air supply for the show organized and set up.

Bea Boucher, Pat Fisher, and Gail Martha took care of the refreshments. They did a good job, provided a lot of good munchies and coffee throughout the day, and even made money doing it. All in all, it was a great first show. Everyone had a lot of fun, and there were a lot of visitors beyond just the club members. We even signed up a bunch of new members. So, time to pick a date for next year!

Places to Visit

There is an exhibition of machine sculptures by Arthur Ganson at the MIT Museum. It will be a long-term exhibit, so if you are in Cambridge you might consider stopping in for a look at the exhibit. The museum is at 265 Mass Ave, across from the Necco Cany Factory. It's open Tuesday to Sunday from noon till five.

Admission is \$3 Adults, \$1 for children, seniors, and students. Call 617-253-4444. The brochure I have has some very intriguing pictures.

Classified

Howard Evers (508-978-0654) would like to talk with the individual(s) who made a model or miniature micrometer. Would also like to locate a rigger or millwright (Proff. Or part time) capable of moving machinery into a basement. Any recommendations (or warnings)? For trade: I have a very good to excellent Palmgren 8" rotary table w/"X" & "Y". Would like to trade for similar table w/rotary motion only. Howard Evers @ 508-987-0654

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c/o Stephen C. Lovely

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