



# The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

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## Gazette Staff

Editor Mike Boucher  
 Publisher Bob Neidorff  
 Events Editor Bill Brackett  
 Meeting Notes Max ben-Aaron

## NEMES officers

President Norm Jones  
 Vice Pres. Steve Cushman  
 Treasurer Rob McDougall  
 Secretary John Wasser  
 Director Mike Boucher

## NEMES web site

[www.NewEnglandModelEngineeringSociety.org](http://www.NewEnglandModelEngineeringSociety.org)

## Contact Addresses

Mike Boucher, Editor  
 10 Mays Field Rd  
 Lunenburg, MA 01462-1263  
[Mdbouch@hotmail.com](mailto:Mdbouch@hotmail.com)

Norm Jones, President  
 28 Locust Rd,  
 Chelmsford, MA 01824  
 (978) 256-9268

Rob McDougall, Treasurer  
 357 Crescent Street  
 Waltham, MA 02453  
[RCMcDougall@attbi.com](mailto:RCMcDougall@attbi.com)

Bob Neidorff, Publisher  
 39 Stowell Road  
 Bedford, NH 03110  
[Neidorff@ti.com](mailto:Neidorff@ti.com)

Bill Brackett, Event Editor  
 29 East Main St  
 Northborough MA 01532  
[wbracket@rcn.com](mailto:wbracket@rcn.com)



## Editor's Desk

Mike Boucher

Hi folks,

Hopefully, I'm only a few days away from the long awaited happy event, cutting the first metal in my new basement shop!

I've rewired my shaper, after having removed the motor during the move. I built a shelf over my workbench for the toolboxes and some books (and already completely cluttered the benchtop). I've set up some shelving (I still need more), and have actually started organizing all the stuff that was lying here and there all over the place.

My wife was both impressed and frightened that I filled one set of shelving with nothing but boxes of casting sets!

I've managed to get my milling machine almost completely set up, with the VFD, the hold down set, and a lamp all mounted on a "½ wall" next to the machine. The ½ wall is kind of interesting in that it hangs from the ceiling, not coming up from the floor.

Continued on Page 2

## Next Meeting

Thursday, April 1, 2004

7:00 PM. Meetings held at:  
 Charles River Museum of Industry  
 154 Moody Street  
 Waltham, Massachusetts

## Membership Info

Annual dues of \$25 (via checks made payable to "NEMES" and mailed to our Treasurer) for the calendar year are due by December 31st of the prior year.

Missing a Gazette? Send mail or email to our publisher.

Addresses are in the left column.

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The big problem with the milling machine is that the head doesn't want to tram up at all. The X axis (side to side) is right on, but it's out by about .004" in a 6" swing on the Y axis (front to back), and a Rockwell milling machine doesn't have any adjustment for that. All I can figure is that I'll either have to live with it for now, shimming the vise to correct the problem. In the future, I'll have to try to convince someone to help me scrape in the machine...

I've taken a few photos for my web site. Hopefully I'll get them scanned to put in the next gazette.

I have a commitment to build something for an O scale model railroad show in Hudson this coming Sunday, but hopefully next week I'll get the chance to cut some metal. I've already got a quick "first project" picked out, I have the plans and the stock. All I need is the time. But isn't that always the story?

C'ya  
Mike



## ***President's Corner***

Norm Jones

### ***The Meeting***

Our speaker for the April meeting will be John Nowak. John's talk will be about the craft of stone cutting. John will tell us about the history of stone cutting in New England, which began early in the seventeenth century.

He will be bringing a display of tools used in the craft, many of which are still used to this day. John will also give a demonstration on the use of these tools as well as some of the more modern techniques.

### ***Organization***

I find myself getting involved with a number of projects around the house these days. One of my major tasks deals with straightening out my workshop. I have an area adjacent to my shop that has been a "collecting" point for everything imaginable. The time has come to attack the problem head on. I have managed to remove everything in that area and am now in the process of erecting shelving to make things more orderly

and accessible. It is amazing, how many items that I have come across that have been missing for ages!

### ***Anticipation of Spring***

Even though the ground is once again covered with snow (storm of March 16-17), spring is just around the corner. April brings one of my favorite annual events, however I must admit that there are many such events in that category. The NAMES Model Engineering Expo in Southgate Michigan on April 24-25 is one of them. I look forward to the NAMES show as it represents the only opportunity to meet with many friends that I don't get to see anywhere else in my travels over the course of the year.

### ***Recording Secretary***

Max has asked that someone take notes at the April meeting in his absence. Hint! A tape recorder is handy in recalling details! Please see me on that evening (April 1). Thanks in advance.

See you on April 1<sup>st</sup>.

Norm



### ***The Meeting***

Max ben-Aaron

The March meeting was opened in the Jackson room of the CRMI by Venerable President Norm Jones by welcoming 4 new members. "We may have members who don't yet know much about metalworking. I myself did not know much so I took a course at the vocational high school. Back then it was an opportunity to use the machines at a very reasonable price. There was an instructor but no formal class. If you wanted, say, to cut a screw thread, he would show you how.

"We have, in this club, an incredible stock of knowledge and it would be a shame to see it die out. We need to inspire younger members to carry on.

"While I think about it, thanks to all who participated in making our annual show such a resounding success. Special thanks to the donors of our door prizes, Tool Shed (Waltham & Worcester), N.E. Brass, Wholesale Tool, Errol Groff and all the others who donated. And, last but not least, a big hand for our wonderful Ladies Auxiliary -- Bea Boucher, Sue Brackett, Lesley Jones and Cindy Schoppe, under the able leadership of Gail Martha. Thanks to the proceeds of the goody table, the club just about breaks even on the show.

Norm reported on his post-retirement vacation in Hawaii. Just up the road from the hotel, there was a laboratory -- the National Energy Laboratory of Hawaii. They are doing research on generating power from the 40 degree temperature differential between warm surface water and cold water from a depth of 2000 feet. They are planning to increase the depth to 3000 feet. Unfortunately, Norm did not manage to visit the lab. Norm said that this is his excuse to go back.

A tremendous hurricane devastated Hawaii in 1992. There was a T-shirt company near the beach and they were inundated. The water stained their fabric to a dirty reddish brown. A friend of the owner suggested that, instead of discarding the stained fabric, they make up T-shirts with the slogan Red Dirt T-Shirt Co. They tried it, and it was a hit. These days, they stain the fabric with a mixture of dirt and vinegar. They get \$20 a shirt.

At the Sadie Hawkins Antique Machine Meet, Norm met a physics teacher who said he had to come to the show to talk to you old fellows because you are the only ones who know anything about the machinery. Norm gave him the plans for Hero's Fountain and literature about other shows including the NEMES show.

### ***Show & Tell***

Frank Dorion found out that our tax-exempt charter was modeled on the charter of the Waushakum Live Steamers. Under this charter, we ought to file tax statements every year. Since we do not expect to have members donate valuable equipment to us (in return for a tax break), and because we don't have any hard assets, we ought to amend our charter to one that relieves us of the necessity of filing annual tax returns. This would not prevent us from altering

our constitution back again if we should ever need to. A motion was proposed and seconded for Frank to investigate further and report back. Motion carried unanimously.

Venerable President Emeritus Ron Ginger has 'convinced' the Boothbay Railway Village to have a model show. Tentative date is somewhere in September. Further details will be given at our next meeting.

Dick Boucher showed how to put on a shop apron. He also brought in his copy of Tabletop Machining and passed it around in case new members did not know about it. He bought his copy at a discount through a club group purchase. With all of our new members, perhaps it is time for another group purchase.

Rollie Gaucher brought in a shop apron designed by his famous father in the early 1960's. He demonstrated its virtues, including the easy-cleaning pouch, and suggested that we could have similar aprons made. If there was interest, a NEMES logo could be added to the top pocket. A good deal of interest was shown and Rollie is going to pursue the matter. He will provide more details, including a price, at a future meeting.

Dennis Nordin became interested in container gardening and has done some experimenting. He has come to the conclusion that the way to go is to use earth boxes which take the guesswork out of gardening by automatically providing the right amount of water through capillary action. You can find out all about it at

<http://www.earthbox.com>

### ***The Speaker***

Our speaker was Tom Jenette, owner of the Hudson Belting and Service Co. of Worcester, MA. The firm was founded before the Civil War, in 1854, as a harness shop. By 1929, it was a world-wide concern with stores in London, Paris and Tokyo. The stock-market crash in 1929 almost destroyed the company and the Jenette family bought the remains for \$600. Tom is the third generation to run the company and his son, the fourth generation is waiting in the wings. Next year, Tom will have been in the business thirty years.

Before and after the talk, Tom had a display of an amazing variety of belting material samples set out on a table.

The company is on the verge of acquiring the assets of the Riverside Belting Company and they will become a supplier as well as a distributor.

Most machinery for making leather belts from hides is about a hundred years old. The newest is fifty years old.

Today, there are extruded rubberized nylon and other synthetic materials with great tensile strength and long life. However leather still has advantages for belting. The leather belting business has been good for Hudson Belting.

Some of the advantages of leather belting are it has memory to it and it doesn't snap and break like some synthetics. It will slip and fall off, and it won't burn when the system locks up and the motor keeps going. Leather belting comes in single-ply, two-ply and three-ply. Single ply is for light applications. Three ply belt is about 1/2" thick.

Tom told a story about working with a leather belt. "I once had the misfortune to have to work on a three-ply belt, about 36 inches wide. A mill in Lowell had a water turbine that drove a generator. A company fitted a new belt, but the generator would not generate any power. The installer complained that it was slipping. "Well, tighten it up". They did and ran out of adjustment, but there was still no power. The belt had not been pre-shortened. A leather belt should be pre-shortened about 1 inch every 8 feet, to compensate for stretching. This belt was 100 feet long. I had to take 25 inches out of a 3-ply, 1/2" thick, 36 inch wide belt. Working on a leather belt like that in the field was not fun, but I was young and though it took 2 1/2 days, it was, in the long run, good experience. "

These days, single-ply leather 1" wide is \$1.75/foot. Three-ply is \$5.25/foot for 1" wide. So the price for that turbine belt would be \$5.25 x 36 x 100. With the business that Hudson has just acquired, they would be able to supply a belt like it if needed, because they now have a 36 inch press. The hides they get today average 3 1/2 to 4 feet long and 24"-30" wide. To get a 36" wide piece, you have to get what is referred to as a 'full block bent', the entire cow-hide right up the sides and over the spine and down the other side in one piece. You then take a center cut - 36".

A member of the audience asked about the crown on a pulley. For leather belting the pulleys must have a crown. In other words, the diameter in the

middle of the pulley face should be 1/8" greater than the diameter at the ends. That dimension is independent of the diameter of the pulley, whether it's 3 inches or 20 feet, 1/8" is all that's needed. Even pulleys for conveyor belts need a crown in the center. This keeps the center of the belt a bit tighter, and this helps it track.

When joining leather belts by gluing, the belt should be 'skived' - that is to say the pieces to be joined must have beveled edges where they are glued. An angle of about 45 degrees is about right. The thinner the belt, the less overlap needed. When the belt is run, the leading edge of the skived joint should be facing in the direction of travel. For belts that have to run around very small-diameter pulleys, the skiving is sometimes done at an angle of about 30 degrees to the belt edge. The alternative to joining the ends of the belt by gluing is to use alligator or clipper lacing. Clipper lacing became popular in the late 1930s or early 1940s. The advantage of a clipper is that the spindle does not need to come out to install the belt.

When Hudson makes up laminated belting, the adhesive they use is sheet acetate dipped in acetone. This dissolves the acetate so that it is almost like airplane glue. Then the joint belt is put in a hydraulic press at 2000 to 3000 pounds pressure. That is how they have been doing it since the 1940s. A good glue to use is contact cement. Barge cement (which Hudson sells) is highly recommended. Remember, the glue must be flexible, even after it has cured. It must flex when the belt is wrapped around pulley,. In the old days, hide glue was used. The surface must be well prepared - clean and roughed with a file card. Skiving can be done in the home workshop with a belt sander.

For a belt like that in a South Bend lathe, the belt should be taut with 1/3 of the adjustment range used. It should be loose enough to make changing easy yet allow for taking up stretch.

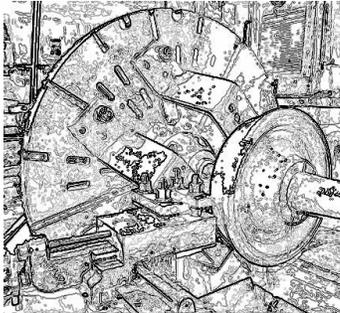
Hudson sells single ply, 1" x 5'-6' long belts for South Bend lathes every day for about \$15. South Bend asked \$85 for the same belt. If the lathe has bronze or babbitt bearings, do use a leather belt or neoprene. Neoprene is more expensive than leather. Also, neoprene is a petroleum-based so grease and oil can deteriorate it. Synthetics are very hard on

bearings because they need to be run with a lot of tension.

Hudson stocks round leather belting as well as urethane belting in two different hardnesses.

For V-belts, standard belts are the way to go, even though there are synthetic belts out there. Belts vary from batch to batch, so if you run belts in tandem, Hudson can make sure that they are exactly the same length.

*Max*



## ***NEMES Show Door Prizes***

Steve Cushman

While I've lost track of how many years we've been running a spring show, I know for certain that the show gets better every year. This year, we used both floors for the show and this worked very well. I also enjoyed seeing a number of new projects displayed this year.

Our door prize process is finally worked it out so that sign-up and record keeping are easy and accurate. The drawing technique we used this year also worked well.

Our regular commercial sponsors once again supplied us with a selection of prizes, and our fabulous members donated a great assortment of additional prizes. Thanks to everyone involved!

*Harvey Noel*

Watch Repair Video: Paul Huntington

*Bill Brackett*

Dial Indicator: Rich Puleo

*Larry Kegan*

Dial Indicator: Rolly Evans

*Errol Groff*

Clock: Dick Boucher

*Harold Holland*

Dial Indicator: Gene Martha

Dial Indicator: Steve Cushman

Dial Indicator: Rick Hubbard

Dial Indicator: Max Ben-Aaron

Dial Indicator: Henry Szostek

Dial Indicator: Jeff DelPappa

Dial Indicator: Ed Wlodyka

*Jim Paquette*

Planer Gauge: Ray Hasbrouck

1-2-3 Blocks: Al Goldberg

V Block Set: Dave Stickler

*Richard Sabol*

Sweatshirt: Nate Knight

Sweatshirt: Maria Cushman

*Tool Shed (Waltham)*

\$25 Gift Certificate: Bill Schoppe

*Tool Shed (Worcester)*

\$25 Gift Certificate: Russ Steeves

*New England Brass & Tool*

Dial Indicator: Ron Ginger

Dial Indicator: Cindy Schoppe

Dial Caliper: Tom Ritchie

Boring Bar Set: Bill Brackett

Keyless Chuck: Frank Stauffer

Drill Set: Walter Winship

Surface Stand: Ed Rogers

*Wholesale Tool*

Dial Indicator: John Kurdzionak

Dial Indicator: Errol Groff

Dial Indicator: Sam Sweeney

Dial Indicator: Jon Guilbert

Dial Indicator: Ernest Smith

Dial Indicator: Leslie Russell

Dial Indicator: Steve Peters

Dial Indicator: Gail Martha

*Home Shop Machinist*

1 year subscription: Bob McIlvaine

*Brothers Machinery*

\$300 Gift Certificate: Leslie Russell

Steve



## ***FIRST Robot Competition***

Dick Boucher

Words cannot express how much fun we had at the FIRST competition. To avoid a possible parking problem, we parked at my son Peter's house in West Manchester, and walked over the river and about a mile through downtown

Manchester to the Verizon arena. That was a good decision as there was a camping show going on in the exhibition hall across the street and the parking garage was full.

The floor of the arena was divided into the playing field and the pits. The playing field was about the length that a hockey rink is wide and about  $\frac{1}{4}$  that length in width. There was a raised platform, about 6 inches high with a set of small steps on each end, in the center of the playing field. The platform had two pole structures on it, to be used for goals for free shot balls. It also had a bar about 9 feet high in the middle, on a raised section about four inches higher than the rest of the platform. The ends of the platform are marked as red and blue goals.

There were three very large inflated balls set up in the playing field. Two were placed on a movable structure made from poles, much the same as the free shot goals, but were on casters so that they could be moved by the robots. The third was in the middle of the raised platform, under the chinning bar. There were also four smaller balls on posts on the sideline in the middle of the field, with a white line leading from the robots starting position to the center of the ball. "Free shot" balls about the size of basketballs, were in a rack above the operator's positions. The small basketball size balls for the free shots were blue in color and marked 5 points. The large balls were yellow and marked 2X and the small balls on the sideline were worth 10 points.

A team consisted of robots from two high schools, some "human elements" to control the joysticks, and more "human elements" to shoot the free shots. The "human elements" were members of the teams which built the robots.

This year, the game was for a "human element" to shoot balls into a ring of poles about a basketball free shot away. But, the team couldn't get balls until the robot did its job.

The robots started off in an autonomous mode for fifteen seconds. A robot would earn 10 points right off the bat if it could knock the ball off the sideline pedestal without any human control. That was the reason for the white line. If properly designed, the robot would sense this white line and go right to the sideline balls. If it succeeded in knocking the ball off the pedestal, the free shot basketballs for that team were released from the overhead rack. The robots were then under

human control, using the joysticks, and able to push the basketballs through a hole in the playing arena to the human free shot throwers. If the robot failed to release the free shot balls in the first fifteen seconds of play there was a delay of an additional 15 seconds before the free shot balls for that team were released.

After the free shots were made, the robot could place the ball marked 2X over the goal and double the score obtained from the free shot throwers. There were some really clever methods of holding the "doubler balls" employed by the different machines.

The last challenge was to have the robot grab the chinning bar and hoist itself up off the playing field, and remain hoisted for 30 seconds. This feat would earn the team 50 more points.

All this took place in a timed 2 minute round.

The event was run much the same as a drag race elimination, best of three rounds for winning and advancing. The best of three was a great system so that a small problem in a robot in one round didn't totally eliminate the team. The difference in the teams was quite dramatic and other than one tie, most of the rounds were won decisively in only two matches. However, the final round went the full three rounds. This was quite exciting.

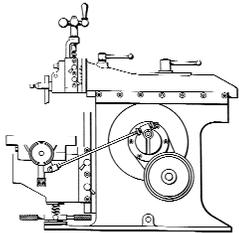
The actual event was really quite enjoyable to watch. The different thoughts that went into the design of the machines and what had been figured out to enable the robot to perform was very interesting to say the least. Some robots used an arm to pull themselves up on the chinning bar and one used a cable that detached from the arm after the arm had hooked the chinning bar. The fifty points for the chinning bar was a very important part of the event and the winning team had robots that could consistently hang from the chinning bar.

Attendees were free to roam through the pits and observe the machines first hand. During the actual playoff, the seats on that end of the arena were full of students from the attending schools, all dressed in school colors and loudly cheering their teams on as in any sports event.

Norm Jones from NEMES was working in a machine shop area where the teams could get some quick repair work done on a broken part from the robot. The shop area reminded me of the floor at Western Electric where I was sent to

repair a production machine. Time was a pressing factor and the machines hadn't been designed with any thought to maintenance. That feature gave a lot of headaches to the machine shop crew.

Dick



## ***Shaper Column***

Kay Fisher

### ***Shapers and Planers***

This is still the shaper column, but this month's article is about a planer. The difference is simple. A shaper holds the work stationary and moves the cutting tool (via the ram) over the work. A planer holds the cutting tool stationary and moves the work under it. Shapers typically vary in stroke length from 3 inches to 36 inches while planers more typically vary in stroke from 3 feet to 36 feet.

Because of the size, only the smallest planers ever get into private hands. The following acquisition story of a Pratt and Whitney 12 x 12 x 30 inch planer is from a past contributor to this column, Pete Verbree.

### ***Shapeaholic gets a Planer***

"Those home shop folks that have come to know me in the last few years realize that I have a problem. It seems at times that I should be standing up in a meeting and saying "My name is Peter and I am addicted to machines."

After my adventure rebuilding my Alba 1A shaper (see columns 26-30) a couple of years ago, I had the opportunity to visit NEMES member Frank Dorion at his home near Hartford, CT. Frank had been very helpful with information and support during the "Alba" project, and we had kept in touch since.

Frank had previously sent me some pictures of an old Pratt & Whitney planer he had acquired from another acquaintance and during the obligatory tour of his shop we stumbled across this sad looking machine in his storage shed. It was mostly all there, but mostly all rusty too.



Pratt and Whitney planer

Photo by Pete Verbree

Frank commented that it was on the "long term" project list, and that he hoped to get to it eventually. I commented that it was a nifty machine, and didn't make many other comments.

*That was in the fall of 2002.*

In the spring of 2003 I got email from a correspondent on the Yahoo shaper group, saying that a small planer was for sale in the Boston area for a reasonable price and that the owner was moving and unable to take it.

I sent this info to Frank knowing that this machine would fit into his growing collection of bench top sized machine tools.

I heard a little later that Frank did acquire this bench top sized planer and as the Pratt & Whitney planer was now surplus to his plans. He offered it to me if I was interested. What a stupid question!

*Clock ahead to fall 2003...*

I arranged some vacation time and set off for Connecticut, with a trailer in tow for a 14 hour drive. But what a drive! October in New England is beautiful. I traveled on the Massachusetts Turnpike from Albany, NY to Springfield, MA. in a blaze of autumn colors. Too bad I forgot my camera.

At Frank's place, after a session drooling over his new Wormwood Planer, we disassembled the Pratt & Whitney planer, and divided the load between the trailer and the truck. The planer weighs about 1800 pounds so we removed the table and the head frame, and placed that much in the truck, and put the bed in the trailer.

I left for home on a beautiful Sunday morning to retrace my path to Sudbury, Ontario. I was a little apprehensive about the border crossing, as placing a value on the planer was near impossible.

I need not have worried. When I rolled up to the customs booth, the lady asked, "What have you purchased while you were away?" I pointed to the rusty iron in the trailer. She asked, "What is that?" I explained that it was an antique metalworking planer, and that it was built before 1903 as far as I could tell. She just rolled her eyes upward and said "Have a nice day." The look on that lady's face told me that she must have someone like me at home! Off I went, much relieved.

The 14 hour drive home seemed much shorter than the drive down. The high of "acquiring another project" must have kept me going.

After getting the machine safely unloaded in my shop, I figured that some research was in order. The machine has a maker's plate that says "Pratt, Whitney and Co. Hartford CT."

I looked this up in Kenneth Cope's book: *American Planer, Shaper and Slotter Builders*. Mr. Cope indicates that Pratt & Whitney started in 1860 as Pratt, Whitney and Co, and was re-formed in 1869 as Pratt and Whitney Co. This enables me to date the machine as having been built before 1870.

I found another piece of information that is useful in dating the machine. In 1869 Francis Pratt was granted a patent for a change in the drive system (patent # 93903). My machine does not incorporate this change, another indication that this machine is pre 1870.

One last piece of information I have found on my planer is the #32 stamped in several places on the machine. Some discussion on a couple of internet news groups indicated that this number may be either a serial number or it may be a "work-in-progress number", that would have been used to keep closely fitted parts together for a given machine that was being built as part of a group of several machines being built at the same time. I have corresponded with several other P&W planer owners, but all have indicated that their machines are later than 1870.

With any luck, I should have the machine cutting metal in the near future, although "restoration" will take much longer.

If anyone knows anything more about this machine I would appreciate hearing from them, I can be contacted at: [shapeaholic@yahoo.ca](mailto:shapeaholic@yahoo.ca)

More pictures and information can be viewed at my webpage:

[www.angelfire.com/sc3/shapeaholic/index.html](http://www.angelfire.com/sc3/shapeaholic/index.html)

Thanks Pete for that contribution.

Keep sending me letters and email with questions and interesting shaper stories.

My mailing address is:

Kay R. Fisher  
101 N. 38<sup>th</sup> St. #129  
Mesa, AZ 85205

My e-mail address is:

[KayFisher@att.net](mailto:KayFisher@att.net)

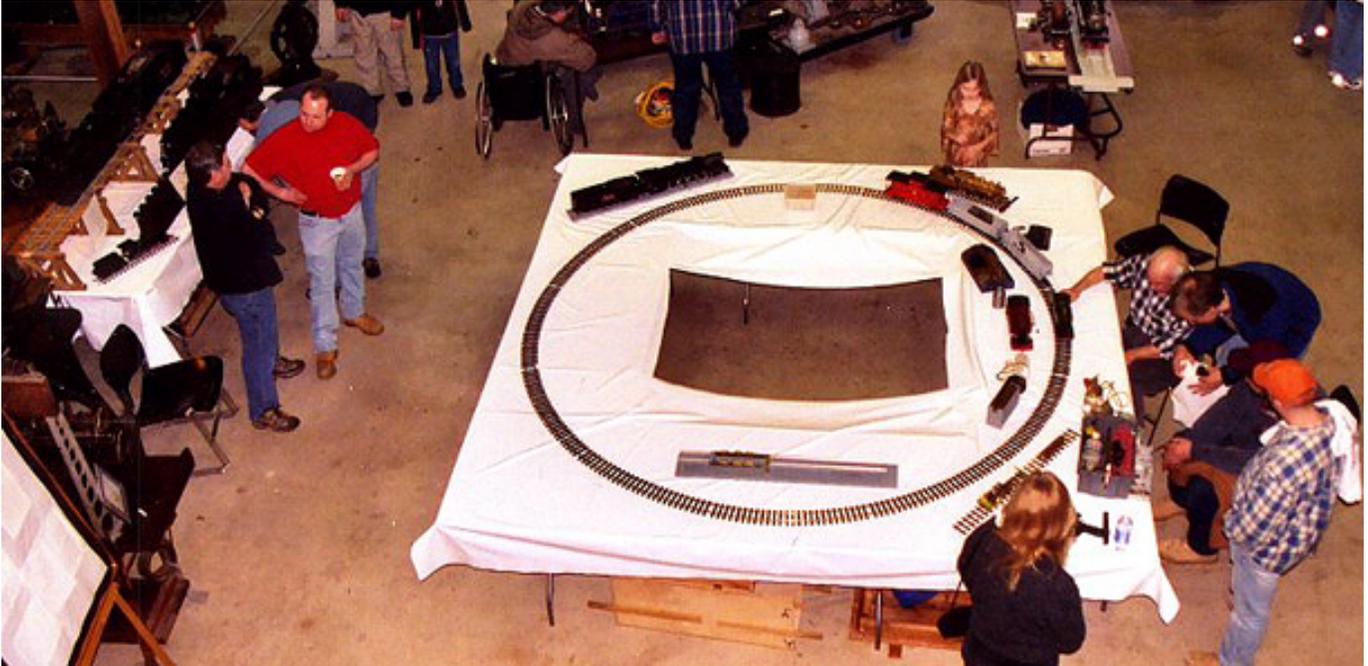
Kay

## ***NEMES Model Engineering Show***

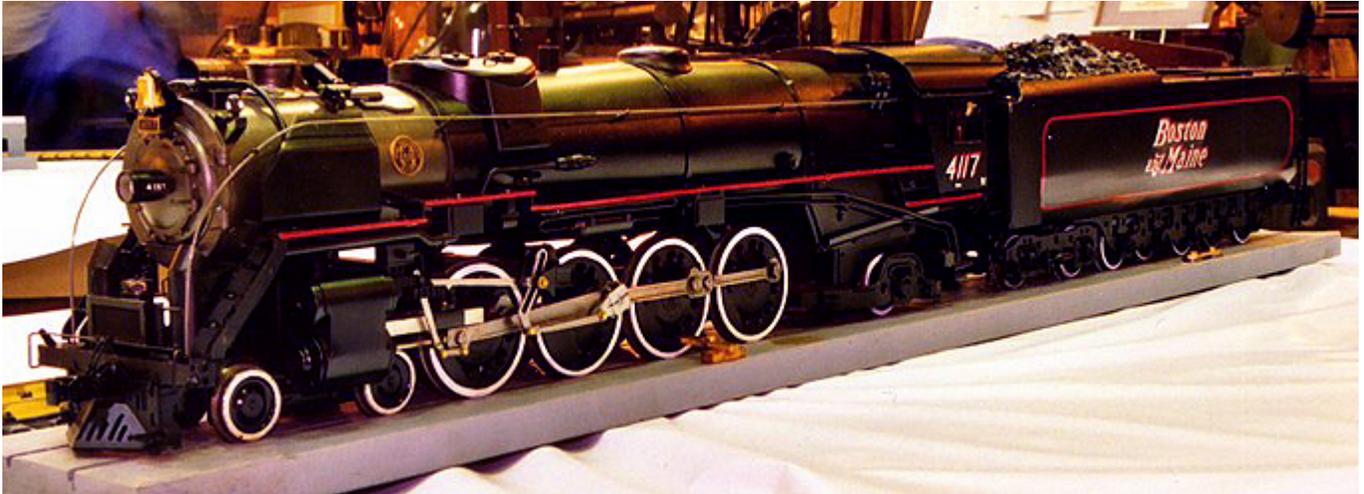
On February 21<sup>st</sup>, NEMES put on its annual show at the Charles River Museum of Industry. As usual, the membership put on a great show, showing a lot of interesting work to a good sized crowd of visitors.

One new element to the show was a display of live steam locomotives on the “main floor” of the museum. Dick Boucher organized this display, and it was well received by the Museum, the membership, and the public.

The display consisted of several completed locomotives on static display, several projects under construction, and a loop of 1.75” gauge track with radio-controlled steam engines running all day. Here’s what it looked like, looking down from above. ↓



← Here, Paul Huntington (L) chats with Max ben-Aaron (R) about his locomotive. The loco is a 1/32 scale model of a Boston and Maine R-1 class locomotive. Paul built it completely from scratch. Paul also had another locomotive frequently running around the track, and a 3<sup>rd</sup> on static display



↑ Here's a better look at Paul Huntington's magnificent B&M locomotive.

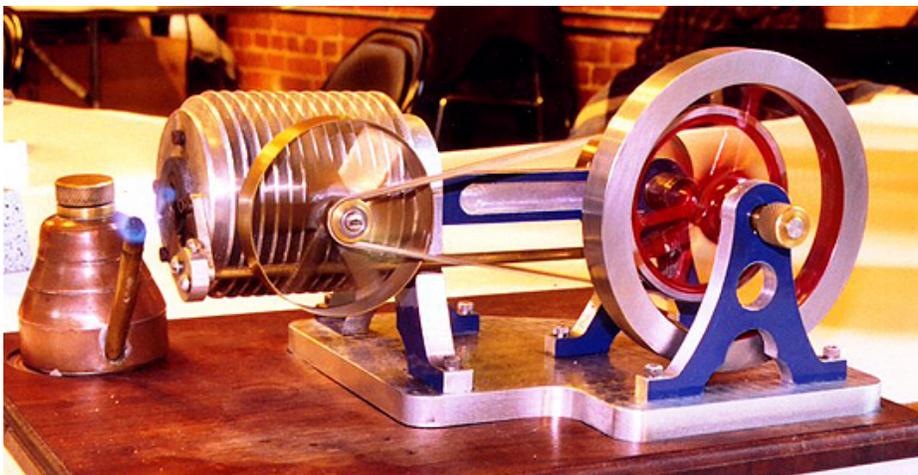
Jon Guilbert came down from Portsmouth, NH, to provide the loop of track and some trains to run on the loop. He also brought his beautiful 5" gauge "Simplex", renamed Joan. As almost all the tracks on this side of the Atlantic use 4.75" gauge instead of 5", Jon built a track in his yard so he can run the engine. Dick Boucher reports that the engine runs as good as it looks. ↓





← Ed Rogers starting one of his gas engines for some spectators

Phil Goodwin and Bill Schoppe trying to pretend they don't see me about to take a photo of them and their display... →



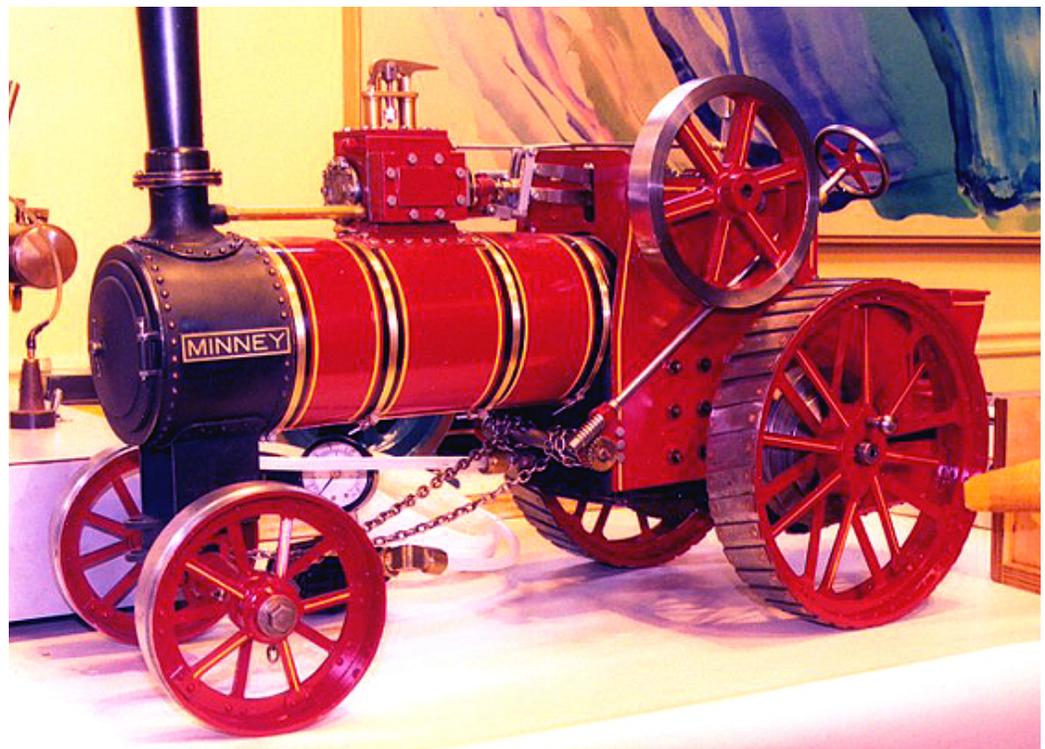
← I didn't get the name of the person who built this great little flamelicker, but it ran well all day.

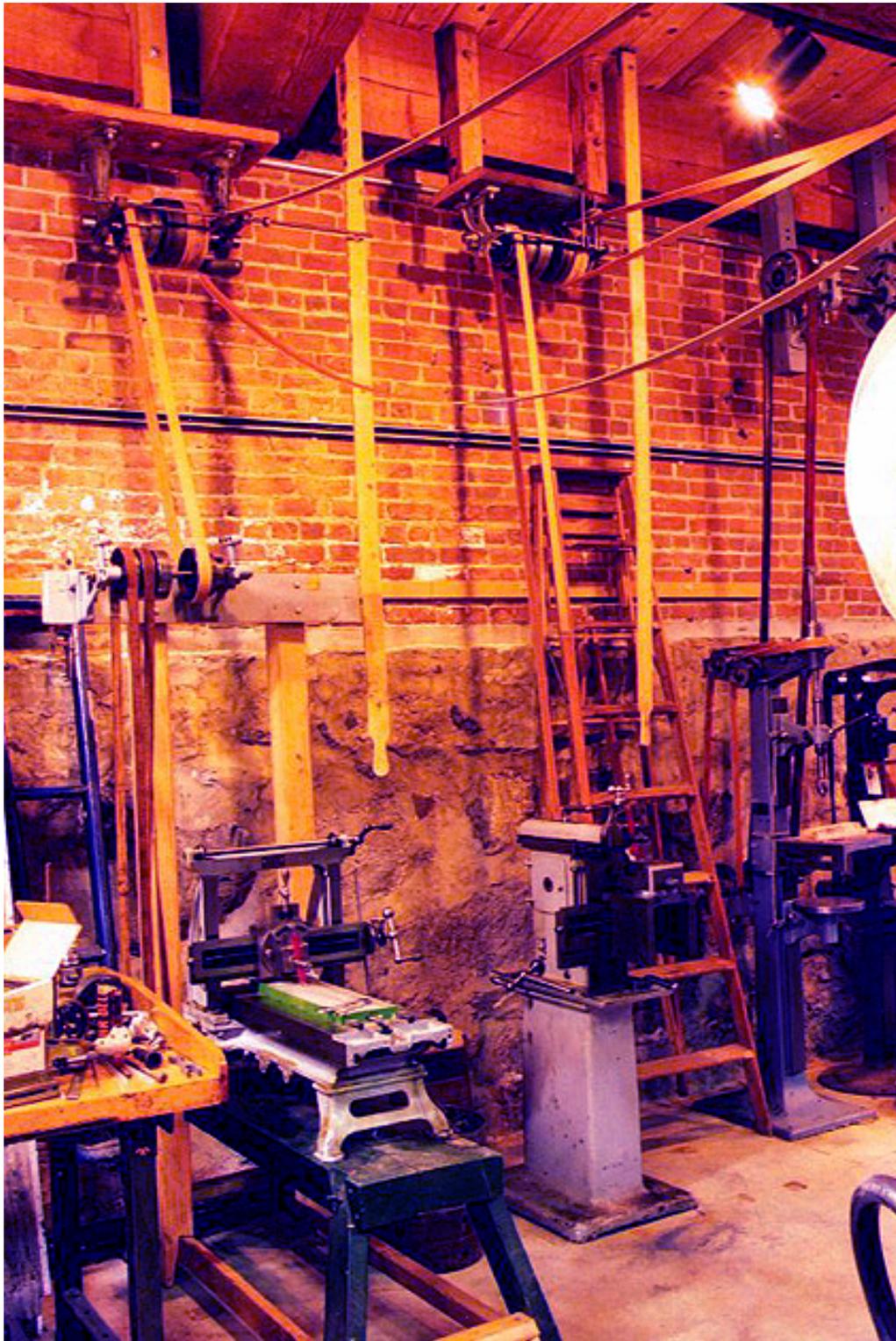


← The youngest NEMES member, Sam Sweeney, holds a ½ size Miser hot air engine. Rich Puleo and Todd Cahill were explaining to Sam how the engine works. The miser was running off the heat of Sam's hand.

Venerable President Emeritus Ron Ginger showed one of the things he's been working on during the cold Maine winter, his 120% version of the "Minnie" traction engine, the named changed to reflect that... →

Great paint job, Ron...





← Here's a photo of the Museum's belt driven shop that you've been reading about for the past six months or so.

Several NEMES members were instrumental in getting the shop set up, with Fred Widmer leading the charge.

There's still more work to be done on the shop. If you want to help, contact Fred or Max ben-Aaron.

All photos by Mike Boucher



# Treasurer's Report

Rob McDougall

As of 02/29/04

Based on the numbers, I would say this year was our biggest and best NEMES Show ever. Our ladies auxiliary did a fantastic job again, raising \$440. This more than covered the cost of the table rentals! Thank you, thank you, thank you!

Balance as of: 01/31/2004	<b>\$7,560.33</b>
Cabin Fever Dinner Rec.	19.75
Cabin Fever Bus Fare Ref..	-133.65
Dues Received for 2004	550.00
Interest Income	.58
Gazette Production Expenses for January and February	-323.48
NEMES Show Tables	-236.88
Balance as of: 02/29/2004	<b>\$7,436.65</b>

Rob



## For Sale

### Free Stepper Motor Driver ICs

I recently received a large number of surplus stepper motor driver ICs. These are dual full-bridge power drivers, part number L293N. They operate from any power supply voltage between 4.5V and 36V and can drive up to 1 amp continuous per winding.

These ICs are made for "bipolar" stepper motors, the kind with four wires. One IC drives one motor. These ICs do not have step logic inside. They are just power drivers in old-fashioned 16-lead DIPs.

You can view the data sheet for these ICs on the web at:

<http://www-s.ti.com/sc/ds/L293.pdf>

I hope to have a number of them available to give away at the April meeting. If you want some parts and can't make it to the meeting, please send me a note and I'll mail some to you.

Bob Neidorff  
[neidorff@ti.com](mailto:neidorff@ti.com)

[Editor's note: I usually understand the "for sale" submissions. I've got absolutely NO CLUE what Bob's giving away here! ☺]

### Lathes and Mills and Shapers (oh my!)

For sale, the following machines:

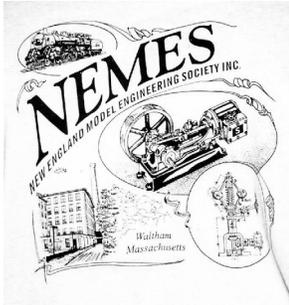
- Van Norman horizontal bench mill, 3.5 x 13 table, setup with handle for cutting keyways, some collets - \$250
- Atlas shaper on factory cast iron legs, choice of 2, \$400. Vise may be available.
- Antique bench lathe, 10 x 24, lcg, no name (says "the reliable lathe" on the brass gear chart), on steel shop made bench. - \$200
- Keller power hack saw. 12" blade, 5" throat. - \$150

Bob Hassett  
(860) 742 1640  
[bobspratt@aol.com](mailto:bobspratt@aol.com)

### Shaper Work CD

Put out in 1944 by the New York State education Department this 326 page manual is chock full of valuable tips and information on using the King of Machine tools....The Shaper. Covered is everything you need to know about the care and feeding of the shaper, use of the shaper, even how to sharpen tools for the shaper. Scanned and saved in Adobe Acrobat format. \$5.00 shipping included.

Errol Groff  
180 Middle Road  
Preston, CT 06365 8206  
[errol.groff@snet.net](mailto:errol.groff@snet.net)

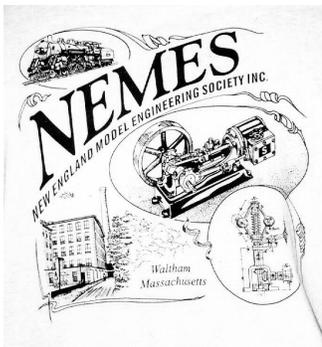


## NEMES clothing

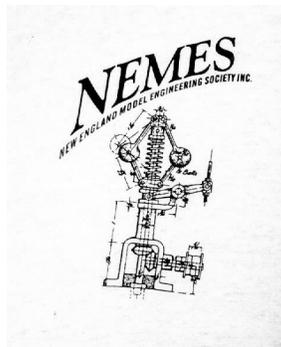
### NEMES Tee Shirts

NEMES tee shirts and sweat shirts are available in sizes from S to XXXL. The tee shirts are gray, short sleeve shirt, Hanes 50-50. You won't shrink this shirt! The sweat shirts are the same color, but long sleeve and a crew neck. Also 50-50, but these are by Lee. The sweat shirts are very comfortable!

Artwork by Richard Sabol, printed on front and back:



Rear



Front

### Prices:

	Tee Shirts	Sweat Shirts
S - L	\$12.00	\$22.00
XXL	\$14.00	\$24.00
XXXL	\$15.00	\$25.00

Add \$5 shipping and handling for the first tee shirt, \$1 for each additional shirt shipped to the same address. Sweat shirts are \$7 for shipping the first, and \$1.50 for each additional sweat shirt.

Profits go to the club treasury.

Mike Boucher  
10 May's Field Rd  
Lunenburg, MA 01462-1263  
[mdbouch@hotmail.com](mailto:mdbouch@hotmail.com)



## Upcoming Events

Bill Brackett

To add an event, please send a brief description, time, place and a contact person to call for further information to Bill Brackett at [wbracket@rcn.com](mailto:wbracket@rcn.com) or (508) 393-6290.

### Apr 1 - NEMES Monthly club meeting

7PM - Charles River Museum of Industry, Waltham, MA (781) 893-5410

### Apr 18 - MIT Flea Market

9AM-2PM. Albany Street Garage, corner of Albany and Main Streets in Cambridge, MA  
<http://web.mit.edu/w1mx/www/swapfest.html>

### Apr 18 - 11th Annual Contest fire-fighting robot contest.

11 am. Trinity College, Hartford, CT  
<http://www.trincoll.edu/events/robot/schedule.htm>

### Apr 24-25 - 15<sup>th</sup> annual NAMES Model Engineering Expo.

Southgate, Michigan.  
<http://www.modelengineeringsoc.com/>

### May 2 - NHPOTP engine show

RT 113, Dunstable, MA  
Robt Wilkie (207) 748-1092

### May 6 - NEMES Monthly club meeting

7PM - Charles River Museum of Industry, Waltham, MA (781) 893-5410

### May 16 - MIT Flea Market

9AM-2PM. Albany Street Garage, corner of Albany and Main Streets in Cambridge, MA  
<http://web.mit.edu/w1mx/www/swapfest.html>

### May 22 - Jim Paquette's open house

9:00 - 2:00. 114 High St. Uxbridge, MA  
Jim Paquette (508) 278-2203

### May 23 - Waushakum Steam Up Meet

Holliston, MA  
John Mentzer (508) 359-8794  
<http://www.Steamingpriest.com/WLS>

### **May 25-27 - EASTEC Exposition**

Eastern States Exposition Grounds, West Springfield, MA

[www.sme.org/eastec](http://www.sme.org/eastec)

### **May 29-30 - Gas Engine Show and Flea Market**

Route 10, between 93 and 142, Bernardston, MA  
Vickie Ovitt (413) 648-5215

### **May 30 - Fiddleheads, 4x4's, Emergency Vehicles & Antique Aeroplane Show**

Owls Head Transportation Museum, Owls Head, ME

<http://www.ohtm.org/>

### **May 30 to Oct 31 10:00-5:00**

American Precision Museum  
196 Main Street, Windsor, VT

<http://www.americanprecision.org>

Bill



## **Web Sites of Interest**

### **The Gizmologist's Lair**

This web site also calls itself the "Center for Research on Things You Shouldn't Try At Home."

This interesting site has a lot of interesting info. It covers topics like green sand casting, making your own green sand, simple things to do with a mini lathe, a change gear calculator, and building a 1/5-th scale tank out of plywood, drivable by a 5 year old.

<http://www.gizmology.net/index.htm>

### **E Machine Shop**

This company will use CNC to make your part, based on the plans you download to them. You'll have to download their CAD software (free) and I don't know what they charge, but might be worth a look for those incredibly hard-to-machine parts.

<http://www.emachineshop.com>

### **About Metals**

This site has information about all sorts of metals and a plethora of links to other sites and documents of interest.

<http://metals.about.com>

The person who sent me the link (sorry, forgot your name) said: "I was looking for a commodity price for Aluminum in 1998; they pointed me to the USGS which has all sorts of information along those lines. Then I clicked on "Welding" just out of curiosity, and among other things found a link to a 1993 US Army manual on welding which includes all sorts of useful information on metal compositions, how to identify them, and how they're tested."

### **4x6 Bandsaw FAQ**

This best description is provided by the web page itself:

"There is one inexpensive but extremely useful machine tool that is found in many home shops. These are often referred to on the Internet as "\$200 bandsaws" or "4x6 bandsaws" or "HF bandsaws" (this latter refers to Harbor Freight). Regardless of the name on the nameplate, all of these saws have identical castings, and differ from brand to brand only in minor cosmetic detail..."

"This FAQ is an incomplete attempt to pull together some of the more useful references which describe different aspects of this saw, and how it can be modified to be more useful or otherwise more desirable."

<http://www.tinyisland.com/4x6bsFAQ.html>

There is also a discussion group on Yahoo Groups dedicated to the 4x6 Bandsaw:

<http://groups.yahoo.com/group/4x6bandsaw/>

### **Eastec Exposition Registration**

Eastec is a machining trade show at the Eastern States Exposition Grounds in West Springfield Massachusetts on May 25-27. This is a great opportunity to see expensive equipment and new technology on display. Admission is free if you register in advance:

<http://www.sme.org/cgi-bin/esc-reg-attend.pl?eventid=000199>