

# The NEMES Gazette

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## The Newsletter of the New England Model Engineering Society

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## The Editors Desk

Mike Boucher

Thanx to all who came up to me at the last meeting, or sent e-mails, with positive comments about my first Gazette. Praise is always welcome! ☺

Along with praise, constructive criticism is also welcome. Ron has often said that he thinks the Gazette is one of the most important benefits of membership. I want the Gazette to reflect what the membership wants in their newsletter. If you feel that there is something that needs improvement, let me know.

The Gazette keeps getting larger and larger. This issue could have easily been 20 pages. I had written a short article, and decided to wait until next month to make room for a great story from Max ben-Aaron and a long shaper column from Kay Fisher. Mind you, I'm not complaining, as a backlog of articles is much better than having nothing! What I do need is opinions from the membership (and the officers) as to how large we want the Gazette to be. 20 pages is great, but it's a lot

## Next Meeting

Thursday, April 4, 2002

The Charles River Museum of Industry  
154 Moody Street  
Waltham, Massachusetts

Annual dues of \$25 covers from Jan to Jan. Please make checks payable to NEMES and send to our treasurer. (Address in masthead).

Missing a Gazette? Send mail or email to our publisher. (Address in masthead).

of work to produce, a lot to read, and every page makes it more expensive to produce and mail. Suggestions?

One quick, important note for those of you who use e-mail, mediaone (actually AT&T) had unilaterally changed my e-mail address as of March 15, 2002. My new e-mail is [bandm3714@attbi.com](mailto:bandm3714@attbi.com), if you send an e-mail to the old mediaone address, I will not get it!

C'ya  
Mike



## Presidents Corner

Ron Ginger

Our speaker for April will be Fred Martin to talk about robotics. Fred worked at the MIT Media Lab for several years and was a major part of the project that led to the development of the Lego Robotic Invention Set.

In case you have not seen this, its a set of the usual Lego bricks that also include a large array of mechanical items like gears, pulleys, wheels, and racks. It also includes a microprocessor about the size of a cigarette pack that can be programmed to make the device a completely autonomous robot.

If you have wondered how the kids of today will learn to like mechanical work, this device will provide a large part of the answer.

### *February Show*

Our last newsletter went to print just before our show so we couldn't get a show report in it. It's old news now, but still worth a review. Our show this year was bigger and better

than ever. Museum attendance was nearly double previous years, with about 500 paid visitors. I was very pleased with all the 'stuff' on display and as in years past we showed an amazingly wide array of the talent and interest of our members.

And of course, our 'ladies auxiliary' did their usual fine job of refreshment, keeping everyone well fed and adding several hundred dollars to the club treasury.

I do think we need to solve the compressed air supply problem for the next show. Although it was good to see the ingenuity in hand pumps it is more interesting if the engines are running all the time. If anyone can find a source of a couple of dozen brass pipe valves, about 1/4" or 3/8" would be fine, we should grab them. The pipe or hose is fairly cheap and easy to find, but the valves and fittings are the expensive part.

Thanks to all that helped out. Again we had good help right from the first table setup to the last piece of trash hauled away. I've been involved in other groups that would have had to make assignments and twist arms for every item, but this group just seems to all pitch in and help do the job. I can't imagine a more helpful and fun bunch of guys to work with.

### *Library*

Our library continues to increase, and each month I see boxes of magazines return and change hands. It would be nice to have a librarian to keep a bit of a tab on the items. Remember, each meeting you may borrow a box or two of the magazines, just remember to bring them back so someone else can use them.

*Ron*



## The Meeting

Max ben-Aaron

The March meeting was chaired, as usual, by Venerable Founder Ron Ginger.

Errol Groff reported on web-sites, having volunteered to be web-master. A vote to have the Club acquire a web-site, and to leave it to Errol to negotiate for it was moved, seconded and approved. By now, Errol, after much discussion on the Net, will have chosen the site's URL. [Editors note: The new URL is up and running!

<http://newenglandmodelengineeringsociety.org/>]

Don Strang brought in "The Soho Engine Works", by Laurence Ince, a publication of the International Stationary Steam Engine Society (ISSES), which recounts the history of the company started by Boulton and Watt. If you wish to purchase a copy of this book, Don will be able to tell you how to arrange it.

Don also noted that there had been some discussion on the Net on the topic of drilling a hole accurately through the diameter of a shaft. He pointed out, with a model and a diagram that a conventionally sharpened drill bit has a point like a chisel that makes for difficulty in penetration and a tendency to wander unless it is started in a deep pop made with a center-punch. A drill bit that is four faceted penetrates more easily and will not wander, even if there is no pop-mark.

Don also made some comments about the use of a Variable Frequency Drive (VFD) to control a single phase motor. The VFD is normally used to convert from single phase to variable frequency three-phase power by rectifying the single phase power and synthesizing three phases. Single-phase motors often have an auxiliary capacitor and a starting winding, which are switched out with a centrifugal switch as soon as the motor is running. This arrangement relies on full line voltage being applied when starting. The VFD does not apply full voltage, but ramps up to reduce starting inrush current, and this causes starting problems if used to power a single phase motor.

Some Club member (who shall remain nameless) ordered a VCR tape "Advanced aspects of Machine Lathe Operation" by Rudy Kouhupt and the book "The Shop Wisdom of Philip Duclos", only to discover that he already owned both of them. He did the right thing to expiate his sin: he donated them to the Club, and they will now be available for members to borrow.

Frank Dorion described a problem that he is having with poured babbit bearings spalling, and he is open to suggestions as to how to cure the problem.

Mike Boucher announced that Club T-shirt sales have decreased to a trickle and that, as a result, he will not display them at meetings, but will still take orders. Club sweat-shirts will only be ordered if there is a real demand for at least 25.

Mike mentioned that on the Cabin Fever Bus, several members were playing with a "Rubic's Cube". Mike brought a partially disassembled cube to pass around, so members could see how they worked.

Mike also showed a chuck fitted with a new back-plate and described how the back-plate was made. He has fitted the chuck with a key that has a spring that prevents the key being left in the chuck. [*Editors note:* I didn't fit the spring to the chuck key, that's how it came from the factory. I thought it was a neat idea, so I brought it to show.]

### ***A Blacksmith on the USS Constitution***

The USS Constitution, the oldest warship of the US Navy and the oldest commissioned warship afloat in the world (HMS Victory is older, but is preserved in dry-dock), underwent a massive restoration from 1992 to 1996. Following the Sail Boston '92 "tall ships" event, Constitution was dry-docked for a comprehensive restoration.

The restoration returned her to her condition at the time of the War of 1812, when she gained her fame. The previous restorations had not been totally faithful to her original design, for a variety of reasons. This restoration used plans of Constitution's sister ship President, the only known plans for this class of vessels.

The restoration work started by stripping the ship: all rigging, guns, copper, caulking, ballast, and non-structural material was removed. To keep her hull from drying out while she was dry-docked, about 4 inches of water was kept in the dock at all times, and her hull below the waterline was draped with huge sheets of canvas to keep out the sun and keep in the moisture.

All deteriorated wood was replaced. Much of the new live oak was 'hurricane kill' from hurricane Hugo; teams were sent into the field after that storm, templates in hand. Pieces that fit the templates were shipped to Boston, where they were stored (some under water in the dry-dock). Extra live oak has

been laid in for future requirements. All internal braces, knees, etc. were replaced, including many knees and other structural members left out or improperly replaced during previous rebuilds.

Constitution was floated out of the dock in late 1995; rigging and fitting out work went on well into 1996. Sailmaking started in 1996 and stretched well into 1997, with the final sails going aboard just prior to her historic sail.

Steve Nichols, a welder and blacksmith was hired in 1992 while the Constitution's was in dry-dock, as blacksmith. The first task was to inspect all the metal rods/bolts/etc. in the hull and replace defective rods. Most of these 200 year old rods, some up to 6 feet long, were in excellent shape. Most of the metal fittings are original, but there was still a lot of work to be done. The job is ongoing.

The blacksmith's shop is very small - containing only the forge, an anvil, a post-vice and a 100-ton press. The forge burns coke. A power hammer would have been more appropriate, but the Navy thought that the piers could not stand the pounding that would ensue, so a press was provided instead.

The vessel received all new yards (spars), many made of glue-laminated boards instead of the 4 piece "built" spars used previously. This will prevent cracking and checking of the spars. She also received new rigging, new caulking, new copper, etc. All bulkheads, fancy work, etc. will be replaced or repaired as needed.

The sails are held on the yards by jackstays and irons and many new jackstays had to be forged. The are made from flat 1020 low-carbon steel, with the eye die-forged in the press and the rod progressively pressed into

square, octagonal and, finally, round sections.



*The die and a finished jackstay John Wasser photo*

All above-water fittings are made of low-carbon steel and underwater, copper is used. Copper is very ductile and forges easily.

The masts of the Constitution were originally single sticks of Maine or New Hampshire white pine, but by the time of the War of 1812 suitable single trees were no longer available and replacements were made of four pieces bound together by iron hoops.

Steve made two kinds of hoops - continuous forge-welded hoops and hoops held together by wedges. He described the process of rolling a hoop using the press, welding it into a ring, and heating the entire ring red-hot. The searing-hot rings were quickly moved into position on the mast, which was horizontal on the deck at the time, and cooled with fire-hoses. The rings contracted with such force that caulking from the interior of the mast was squeezed out like toothpaste. The whole process, from ring heating to placement to cooling took less time than the description.

Another of Steve's tasks was forging tools used in restoration and maintenance. A

reaping hook, which looks somewhat like a small sickle, is made of hardened and tempered drill rod, with one end flattened and bent into a hook and the other end upset to provide a surface for hammering. The end of the flat hook is sharpened and used to scrape out old caulking.



*Reaping Hook John Wasser photo*

New caulking has to be hammered in with a caulking iron. Steve made caulking irons from short lengths of flat stock, upsetting one end and rolling the other to increase the thickness, and fire-welding into a solid mass.

Asked about fire-welding, he explained that two pieces of clean red-hot steel, liberally fluxed with borax, when hammered together, fuse at their interface and weld together. Fire welding is perhaps the oldest form of welding.

Steve is also forging cutlass blades for the crew, in the original pattern.

*Max*



## **The USS Constitution – "Old Ironsides"**

Max ben-Aaron

*Mike Boucher Photo*

In 1794, President George Washington assented to Congress's 'laying the foundation of our infant navy' by building six frigates. Frigates, rigged with square sails on all three masts, were lighter and faster than great ships of the line.

The design was entrusted to a Philadelphian, Joshua Humphreys, whose strategy was to build ships that were bigger than standard frigates of the time, with heavier armament to overpower them, yet fleet enough to escape adversaries with superior firepower. Constitution and her sisters were formidable opponents even for some ships of the line.

Built in Boston by Col. George Claghorn, at Edmond Hartt's Shipyard, Boston, close to the spot where she is now docked, the Constitution was launched and christened on Oct. 21, 1797. Her cost, \$302,718 (1797 dollars) must have seemed, in those days, as extravagant as we find the cost of a supercarrier or nuclear submarine today.

Constitution's crew of some 450 (including 55 Marines and 30 boys) could set her spread of 42,710 sq. ft. of sail (nearly an acre) on three masts, in mere minutes. In a fair wind this cloud of canvas could drive the superfrigate at the remarkable speed, for a warship, of 14 knots, (15 mph, 24km/hour).

204 feet long (62.16 meters, billet head to taffrail) -- 175 feet at waterline (53.32 meters) -- she has a beam of 43.5 feet (13.25 meters) and displaces 2,200 tons. Her foremast is 198 feet (60.33 meters) high and the mainmast and mizzenmasts are 220 feet (67.03 meters) and 172.5 feet (52.56 meters) respectively.

She was armed with thirty-two 24-pounder long guns, twenty 32-pounder carronades and two 24-pounder bow chasers.

Made from more than 1,500 trees, with timbers felled from Maine to Georgia and armed with cannons cast in Rhode Island and copper fastenings provided by Paul Revere, the vessel was truly a national ship.

See "Web Sites of Interest" for some interesting pages about the U.S.S. Constitution.

*Max*



## **NEMES February Show Prize Winners**

Steve Cushman

I think we had a GREAT show this year. We had great weather, lots of exhibitors, lots of attendees and everyone seemed to have a terrific time.

We had a large selection of door prizes for the attendees, and many thanks are in order to each of the donors.

Our procedure for the drawings did not work out as planned resulting in Ron and I implementing an ad-hoc procedure which worked out fairly well. My record keeping does seem to have gotten slightly confused in that I lost track of the winner of the tap drill set from New England Brass & Tool. My apologies to both the donor and the winner.

Congratulations to all those who won!

### *Brothers Machinery*

- \$300 Gift Certificate: Richard Perreault

### *LS Starrett*

- Combination Square: David Bono
- Micrometer: Alan Bugbee
- Dial Caliper: Ed Rogers

### *Tool Shed (Waltham)*

- \$25 Gift Certificate: Bob Neidorff

### *Tool Shed (Worcester)*

- \$25 Gift Certificate: Larry Keegan

### *New England Brass & Tool*

- Mini Micrometer: Rob McDougall
- Dial Indicator: Tom Patterson
- Tap Drill Set: Please identify yourself!
- Dial Caliper: Fred Jaggi
- 2.5" Bench Vise: Steve Cushman
- Dial Gauge Stand: Rolly Evans
- Dial-A-Drill Set: Dick Koolish

### *Wholesale Tool*

- Dial Indicator: Bob McIlvaine
- Dial Indicator: Gene Martha
- Dial Indicator: Ed Wlodyka
- Dial Indicator: Rich Puleo
- Dial Indicator: Henry Szostek
- Dial Indicator: Walter Winship
- Dial Indicator: Kay Fisher
- Dial Indicator: Todd Cahill
- Dial Indicator: Ron Ginger
- Dial Indicator: Norm Jones

### *Richard Sabol*

- Sweatshirt: Dick Boucher
- Sweatshirt: Tom Ritchie

### *Harvey Noel*

- Watch Repair Video: Geoffry Brown

### *Kay Fisher*

- Turbo Cad: Stephen Lovely

### *Anonymous*

- Lufkin Caliper & blade: Bill Yerazonis



## **Book Reviews**

*The Soho Engine Works*, by Laurence Ince. A publication of the International Stationary Steam Engine Society (ISSES). Review by Max ben-Aaron

After James Watt invented the separate condenser for the steam engine, he eventually teamed up with Matthew Boulton and the Soho Manufactory came into being in Birmingham to build steam engines. This book is a detailed history of the Soho manufactory, from 1796 to 1895.

At the time the workshop was founded, William Wilkinson was one of the very few able to cast and bore the large cylinders need for contemporary steam engines. His Bersham Ironworks was in the process of disintegrating and the first task the new company had to address was to set up their own foundry and learn how to bore the cylinders. The boring mill was a constant source of problems because 'the motion was not steady'.

The problems with the boring mill were not solved until William Murdock invented the lead screw.

For me, the problems with the work-force was the most interesting chapter. The company was very paternalistic and established an 'Insurance Society', to which workers had to contribute. An incapacitated contributing worker could collect sick pay (scaled according to his weekly earnings). The funds

of the society were augmented by fines levied for 'lax behavior in the workplace'.

In 1802 there were fifty four men and boys employed in the factory. The company had great difficulty keeping skilled workmen. When they were sent out to help erect the engines, they were tempted to stay as supervisors and maintain the engines. James Watt Jr. once complained of a worker: "Robert Kendrick also had the folly to run away with an Ale-house Girl..."

There are many photographs and drawings of the factory, the machinery and some of the engines they built. In many cases, the walls of the factory were actually part of the machine. That may be why some of the old mills were built so substantially.

When the business went into liquidation, W.H. Darlington was the manager and it is due to his efforts (assisted by his two sons Seymour and Courtney, and helped by Samuel Timmins and George Tangye) that the vast range of historical documents and Watt artifacts were preserved.

The book includes a list of all engines built between 1796 and 1895. I looked in vain for any mention of the designers of any of the engines, an odd omission, I thought.

*Max*



## **Blacksmithing - A Memoir**

Max ben-Aaron

Listening to Steve Nichols tell about shrinking iron hoops on the masts of the Constitution

reminded me of an incident in Johannesburg, where I was living, the mid-thirties, when I was about 7 or 8 years old.

A blacksmith, who had escaped, somehow, from the then Soviet Union, had set up a forge in a back yard near where I lived. His hair, as I recall, was a particularly violent shade of red, almost orange, and he spoke no English.

One day, I watched enthralled, as he made a wooden cart-wheel. The memory is still vivid today, 65 years later.

The wheel was modular - a pre-formed wooden hub, spokes and massive wooden felloes that made up the rim. I remember being very puzzled by the spokes. Although I had never seen a lathe, I could envision how round spokes could be turned, but I was baffled by the oval cross-section of the spokes he used. As I recall, they looked machine-made, but I have since come to believe that a skilled craftsman could easily make such spokes out of square stock, using a plane and a spokeshave and have then so uniform that they look machine-made.

As I watched, the blacksmith measured the circumference of the wheel, then cut a length of flat steel (using the hardie in the anvil) to match, for the tire. (Of course, at the time, I did not know what a hardie was.)

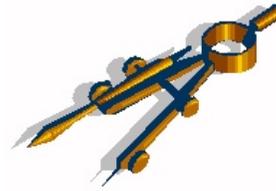
He 'rolled' the steel into a hoop on the anvil with his hammer and then heated the ends in the forge and welded them together to make a hoop. The hoop was turned in the forge until it was red hot all over and then put in place on the wheel and buckets of water were poured over it as the felloes burnt and charred. When the smoke cleared, there was a finished wagon wheel.

I remember noticing at the time that the hub was not in the same plane as the rim (although it would never have occurred to me, at the time, to use that exact phraseology). I learned much later that there was a good reason for it the conical conformation of the spokes. If they were all in the same plane and the cart were travelling along a canted trail, say, the axial component of the force of gravity, downwards along the tilted axle, would tend to push the hub and spokes outwards, and the wheel would tend to disintegrate. By having the spokes form a conical shape, (coned inwards), those axial forces would to try to flatten the spoke assembly and the resultant force would press the spokes ever more firmly outwards into the felloes (with the steel tire keeping it all together) and the wheel, instead of weakening, would become ever stronger.

The blacksmith shop disappeared soon after, a victim of the zoning laws, I think. That was a shame as far as I was concerned, because I think I learned more in that one hour than I learned in the whole next year in school.

Besides being a blacksmith, he was a farrier too. (The two trades are different). Before he was evicted, I also remember seeing him shoe a horse. He used a rasp to prepare the hoof and then he made a horse-shoe from scratch, forging the red-hot steel on his anvil to fit the hoof. The shoe was checked against the hoof while it was red hot and I can still remember the smell of burning hoof. I was amazed that the horse did not seem to feel any pain. The shoe was nailed in place, still hot, and again I could not understand why the horse did not complain. I now know that the hoof is just an enlarged toenail and there are no nerves in it. (I now wonder: Is there an etymological connection between the two meanings of the word 'nail'?)

*Max*



## CAD for the Home Shop

Bob "Mac" MacIlvaine

This time I'll start off with some CAD news from the internet. It appears that PTC is making ProE, their solid modeling package, available for download at the following URL: <http://www.ptc.com/products/desktop/> It appears to be a fully functional copy, but, you have get a new authorization code every 6 months. This is a very powerful, industry strength, 3D package. It is also pretty advanced, so be forewarned.

Larry Twaits brought his laptop to the show with some interesting designs he was working on for laying out gear cutters. While he had some particular questions, one dealt with placing some geometry and not finding a command to perform the operation. As it turns out there is a command, but it's not obvious in its use. Geoffrey Brown pointed out that he'd do the operation with standard drafting techniques and not bother to look for the command. Geoffrey's comments are quite relevant. Nothing says you have to throw out all those drafting techniques you already know. I clinched a sale with the US Navy once, by bisecting an angle on a cad system using plain old compass techniques.

Speaking of bisecting angles, there's plenty more to do with lines. For instance, on many occasions it is useful to have a line go from a point to infinity. That's where the *ray* command comes in handy.

*Ray* has several options:

- Horizontal draws the ray parallel to the x-axis.

- Vertical draws the ray parallel to the y-axis.
- Angle draws the ray at the specified angle from a point you select.
- Bisect draws the ray bisecting the angle between two entities or points you specify.
- Parallel draws the ray parallel to an existing entity.

The companion to *ray* is *infinite*. While *ray* starts at a particular point and extends to infinity in only one direction, *infinite* has the same options but extends to infinity in both directions.

The icons for these are grouped with the line command. When you click the *line* icon:



the rest of the icons will appear in a



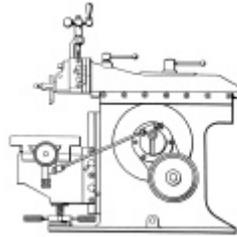
drop down. The *ray* icon is:



*infinite* is: . Add some random geometry and give the various options a try. Remember, the first point you choose will be the origin of the ray or infinite line. If you don't choose any of the options, the next point will be the direction the ray extends from the first point. With the *bisect* option, the first point is the origin of the ray, as usual, but you'll have to select two additional points or pieces of geometry to determine the angle that is to be bisected. Remember to use snaps to select these points accurately.

If you have questions about the things we've covered so far or about CAD in general feel free to contact me. My email is [suemacs@empire.net](mailto:suemacs@empire.net)

Mac



## Shaper Column

Kay Fisher

### *Pete Verbree's Alba 1A – Part 1*

This story about the acquisition and reconditioning of an Alba 1A shaper comes to us via the World Wide Web with Pete Verbree's kind permission to publish.

### *Shapeaholic meets Alba*

By Pete Verbree (aka Shapeaholic)

I love old machines! I admire the skill and imagination of the people who designed and built them. I appreciate the feel of good workmanship in my hands.

Like many other amateur machinists the only way I am going to be able to enjoy these machines is to buy older obsolete equipment that no longer fills a niche in today's world of computer controlled production. I have had a number of mature machines since this addiction took hold of my life, some nicer than others, but all an experience!

I started with a South Bend 9"x20" model that I bought from a dealer in Montreal. I progressed to a 13" South Bend, bought from that same dealer a couple of years later. Then came another 9" South Bend that was in need of much TLC, then my first shaper, a 7" Atlas bought from an auction. Much cleaning, adjusting, and learning along the way. Another 9" South Bend lathe came into my life by way of trade for the 13" South Bend.

I sold the lot! Got into commercial woodworking for a while, but the addiction remained. I rebuilt a heavy Poitras 12"

surface planer to try to ease the need but, but .... I had to have a, a...LATHE!

I bought an import 11"x36". That helped, but not quite! I bought a mill/drill. Still not the same! The only solace I could find was at the controls of a friend's South Bend 10K. That imported iron just can't compare to the craftsmanship of older industrial iron.

Then it happened! Our family decided to move to another city. All of my equipment was sold to help finance this move, and I was forced to go cold turkey for three long years!

Roll the clock ahead to spring 2000.

Two moves later and prosperity reigns again. (Kind of) I raised enough money to buy a nice 9x36 South Bend model "A" lathe, and an Atlas shaper. The shaper was a rust brown lump but rub, scrub, paint and adjust made for much enjoyment. Life is good! But that old feeling was coming over me again. The South Bend and the Atlas were helping but I needed "another machine"!

Through a friend I found a small mill/drill. Very utilitarian, but all I had to do was plug it in. I needed more!

Clock ahead to October 2001.

I was attending a training course in Hamilton Ontario for a few days, and for relaxation in my hotel room I perused the local buy-and-sell paper. One never knows when a bargain might be found. There it was! Lurking in the want ads! "For sale 10 inch Alba stroke shaper \$100.00".

Now this got my attention! Could this be the proverbial "used sparingly by loving original owner" machine that we all dream of? I called! Yes - he still had it, yes - it was fairly complete, no - no vise or motor.

Two hours drive away. Darn too far I'd never make class in the morning if I go! Oh well, I'll call again when I get home, and see if he still has it! Well I did call again, and he did still have it.

So after a brief discussion (read much begging and hand wringing) with my financial advisor (read loving wife) who extracted several promises of good behavior ("This better be the last time"), I was off to claim my prize, only 6 hours drive in each direction, I'll be home by supper!

This is where my story really begins.

I met "Alba" in a dimly lit barn in Wingham Ontario in early November. At first look she seemed a bit rough but substantially together. Rose-colored glasses firmly installed.

I turned the power input shaft, things moved, a little stiffly but hey for \$100 what do you want?

I looked around a bit more. Hum, a piece broken out of the cross slide. Not too bad, I can fix that!

Man she's dirty! That's OK, I enjoy cleaning and adjusting, and I get to know my equipment that way. Where is the motor? "Didn't come with one", was the answer, "last guy who owned it was a Mennonite, he ran it on a line shaft".

Well I didn't drive 6 hours to go home with an empty truck so I paid the gent and he helped load with his forklift.

Six hours there in an empty truck equals seven hours home with an 800lb machine in the back - so I didn't make supper.

I arrived home to a joyous but skeptical welcome. "How are you going to get that huge thing out of the truck by yourself?" "I'll rent an engine hoist in the morning - no problem" (more skepticism).

Well I did rent a big hoist the next morning, and set "Alba" down gently on the workshop floor, aided only by the engine hoist, smoke, mirrors, and much trepidation! I brought back the rented hoist on my way to buy a couple gallons of Varsol and a new brush, as was dictated by a closer look in my well lit shop.

Armed with a new pair of rubber gloves, two gallons of Varsol, and new brush, with only fear and common sense to hold me back, I headed out to get better acquainted with "Alba."



*Alba Shaper "Before" photo by Pete Verbree*

Now before I had made that second phone call on this machine, I had surfed the Internet to find out what I could about this machine.

From several sources I figured out that she was:

- English by birth
- Probably over the age of 30
- Well respected by those who have known her.

I also emailed Kay Fisher to ask what he knew. He didn't have much to offer, but encouraged me and introduced me to a gentleman named Frank Dorion who owned a 10" Alba!

Frank sent me an email with some info on his machine and offered to send me a copy of the manual. Yee Haw! What a bonus! You'll see why later!

Next month, reconditioning begins.

*Pete*

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

My mailing address is:

Kay R. Fisher  
80 Fryeville Road  
Orange, MA 01364

My email address is:

[Kay.Fisher@Compaq.com](mailto:Kay.Fisher@Compaq.com)

*Kay*



## Sea Stories

Alan Bugbee

My great-grandmother and her husband Captain William Ross went ashore in China. My great-grandmother was in their hotel room when she heard a knock on the door. She opened it, but there was no one there. A voice said, "Hello". She looked down and there was a mynah bird. She was so entranced with the bird and its ability to talk that they bought it and brought it back to the ship.

The bird learned to imitate my grandfathers voice and could cry "Mother come here". My great-grandmother was never sure whether it was the bird or my grandfather and would rush to see what was the matter. The bird would laugh when she got there.

One day, at sea, during a storm the mynah bird got out of the cabin and was swept away by the wind. The last thing they heard was the bird crying "Mother come here".

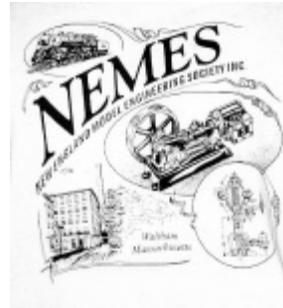
Alan



## Treasurers Report

Rob McDougall

As previously announced, Rob is on Vacation in Australia this month! Stay tuned next month for the next report.

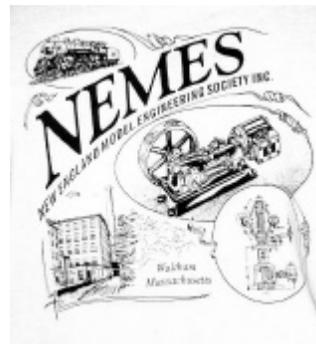


## NEMES clothing

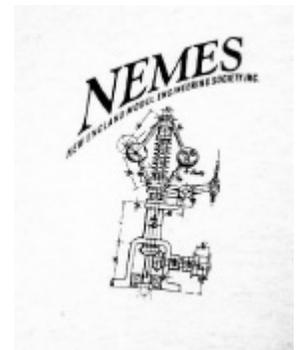
### NEMES Tee Shirts

NEMES tee shirts are available in sizes from S to XXXL. Gray short sleeve shirt, Hanes 50-50, you won't shrink this shirt! Artwork by Richard Sabol, printed on front and back.

Artwork:



Rear



Front

Prices:

S, M, L, XL \$12.00

XXL \$14.00

XXXL \$15.00

Add \$5 shipping and handling for the first shirt, \$1 for each additional shirt shipped to the same address

Profits go to the club treasury.

Mike Boucher  
295 River St  
Waltham, MA 02453-6007  
[Bandm3714@attbi.com](mailto:Bandm3714@attbi.com)

## *NEMES Sweatshirts*

Last month, I had said we were placing a sweatshirt order after the March meeting, based on pre-orders. That didn't happen, as we only had four people put their names on the list.

After the meeting, a few more people said they wanted one. As of the time this issue went to press, we have 10 orders, and that's still not enough. I'm looking for a minimum order of 20-25 sweatshirts. If you want one, let me know!

We do not have a firm price on the sweatshirts, as we don't have a firm quantity. Expect the price to be between \$20 and \$25 per sweatshirt, XXL and XXXL will probably be \$2 or \$3 extra, just like the tee shirts

Like the tee shirts, profits will go to the club treasury.

Mike Boucher  
295 River St  
Waltham, MA 02453-6007  
[Bandm3714@attbi.com](mailto:Bandm3714@attbi.com)



**For Sale**

## *Metalworking Books on CDs*

I found three old books and three new books on the web. All are in the public domain and had good information on using and maintaining metalworking tools. The old books are high-resolution scans, so they take up a lot of bytes. It took me hours to download them from the web, so the best way to make them available is by CD-ROM. Here are the titles on this CD-ROM:

- Modern Machine Shop Practice Vol I, Joshua Rose 1887
- Modern Machine Shop Practice Vol II, Joshua Rose 1887
- The Advanced Machinist by William Rogers 1903
- Machinery Repairman - US Navy 1993
- Fundamentals of Machine Tools - US Army 1996
- Welding Theory and Applications - US Army 1993

\$5.00 shipping included. Profits go to the club treasury.

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

## *Tooling For Sale*

- **Milling Machine 5"x15"**: Small Bridgeport head mounted on an old (late 1800s) horizontal milling machine. Factory dials on knee and 5" axis, Travadial on 15" axis.

4" swivel vise, small boring head, and 3 collets (3/8, 7/16, 1/2): \$650.00

- **Boring Head** 2" R8 shank: Criterion clone from Taiwan with 9 carbide tipped 1/2" shank boring tools: \$40.00
- **Magnetic Chuck** 5"x10" micro fine pole pitch (~0.5mm iron poles with ~0.5mm brass spacers): \$300.00
- **Rotary Phase Converter**, 10HP: \$650.00

Ken Braun  
eves. (978) 486-0142



## Upcoming Events

Bill Brackett

**April 4 Thursday 7PM**

**NEMES Monthly club meeting**

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

**April 27-28 - N.A.M.E.S. Show**

Southgate, Michigan

<http://www.modelengineeringsoc.com>

**May 2 Thursday 7PM**

**NEMES Monthly club meeting**

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

**May 5 - Dunstable engine show**

Dunstable Ma. Jay Wilkie (207) 748-1092

**May 18 - Jim Paquette's open house**

114 High St Uxbridge, MA (508) 278-2203

**May 18-19 - Cranberry Flywheelers**

**Engine Show**

Edaville RR, S. Carver, MA David Moore  
(508) 697 5445

**May 21-23 EASTEC**

**Eastern States Exposition Grounds**

West Springfield

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

[editors note: An early registration form is included in this gazette. If you're thinking of going, use it. Its free to register in advance, and \$50 at the door.]

**May 25-26 - Bernardston Engine Show**

Rt 10 off RT91, Bernardston, Ma

Vickie Ovitt (413) 648 5215

**May 26 Fiddleheads & 4x4s Spring Festival**

Owls Head Transportation Museum, Owls Head, ME <http://www.ohtm.org/>

**May 27 - Oct 31 10AM 5PM**

**American Precision Museum**

Windsor Vermont

<http://www.americanprecision.org/Default2.html>

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@ultranet.com](mailto:wbracket@ultranet.com) or (508) 393-6290.

Bill



## Web Sites of Interest

**U.S.S. Constitution**

<http://www.usconstitution.navy.mil/>

<http://www.hazegray.org/features/sail200/> .

## The "Hilsch" Vortex Tube

With nothing more than a few pieces of plumbing and a source of compressed air, you can build a remarkably simple device for attaining moderately low temperatures

<http://www.visi.com/~darus/hilsch/>

## Animated Engines

Animated images of different types of gas, steam, and stirling engines.

<http://home.earthlink.net/~mkeveney/Engines.html>

# Eastec Registration Form

### Register Now. It's FREE!

Register on-line at [www.sme.org/eastec](http://www.sme.org/eastec) by May 3, 2002 (enter Web Code 2). You'll receive your show badge by mail. Photocopy this registration form for your team. Save \$50 per registration and time on site.

FREE Show Registration with this form ends **May 3, 2002!**

**Registration Deadline: May 3, 2002**

- **SME Members:** On-site registration is **FREE** with your valid SME member card.
- **FREE** show registration with this form if received by **May 3, 2002**.
- After **May 3, 2002**, bring this form on-site; pay the show registration fee of **\$50**.
- Forms received after **May 3, 2002**, will not be processed.

**ON-LINE:** [www.sme.org/eastec](http://www.sme.org/eastec)

Enter **Web Code 2** when completing the on-line form.

**FAX:** (301) 694-5124

**MAIL:** EASTEC 2002  
ExpoExchange, LLC  
P.O. Box 3918  
Frederick, MD 21705

*You will receive a confirmation within 5 business days of receipt of your completed registration form. If you register on-line or via fax, DO NOT mail this form. No one under 18 years of age admitted.*

CODE:   96

**Please Print — One Form per Person**

A  Mr. B  Ms.

Name \_\_\_\_\_

Title \_\_\_\_\_

**BUSINESS ADDRESS REQUIRED:**

Company \_\_\_\_\_

Division \_\_\_\_\_

Address \_\_\_\_\_

Mail Stop \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Postal Code/Country \_\_\_\_\_

Phone ( ) \_\_\_\_\_

Fax ( ) \_\_\_\_\_

E-mail \_\_\_\_\_

Yes, send me information on related products/events.

1. Check your **ONE** primary job function:

- |  |  |
|--|--|
| 1 <input type="checkbox"/> Job Shop Owner            | 6 <input type="checkbox"/> Product Design, R&D |
| 2 <input type="checkbox"/> Corporate Executive       | 7 <input type="checkbox"/> Factory Automation  |
| 3 <input type="checkbox"/> Manufacturing Production  | 8 <input type="checkbox"/> Purchasing          |
| 4 <input type="checkbox"/> Manufacturing Engineering | 9 <input type="checkbox"/> Other               |
| 5 <input type="checkbox"/> Quality Assurance/Control |  |

2. Check the number of employees at your facility:

- |                                       |   |
|---------------------------------------|---|
| <input type="checkbox"/> Less than 20 | 4 <input type="checkbox"/> 250-499        |
| 1 <input type="checkbox"/> 20-49      | 5 <input type="checkbox"/> 500-999        |
| 2 <input type="checkbox"/> 50-99      | 6 <input type="checkbox"/> 1,000-2,499    |
| 3 <input type="checkbox"/> 100-249    | 7 <input type="checkbox"/> 2,500 and Over |

3. Indicate the technologies you plan to evaluate at the show:

- |   |  |
|---|--|
| A <input type="checkbox"/> Assembly Equipment             | N <input type="checkbox"/> Job Shop Services           |
| B <input type="checkbox"/> CAD/CAM Systems                | O <input type="checkbox"/> Laser/Plasma Cutting        |
| C <input type="checkbox"/> Cleaning Systems               | P <input type="checkbox"/> Lathes/Turning & Boring     |
| D <input type="checkbox"/> Conveyors/Material Handling    | Q <input type="checkbox"/> Machining Centers           |
| E <input type="checkbox"/> Coolants & Lubricants          | R <input type="checkbox"/> Metal Cutting Saws          |
| F <input type="checkbox"/> Cutting Tools                  | S <input type="checkbox"/> Milling Machines            |
| G <input type="checkbox"/> Deburring/Surface Conditioning | T <input type="checkbox"/> Moldmaking                  |
| H <input type="checkbox"/> Drilling/Tapping               | U <input type="checkbox"/> NC/CNC/DNC                  |
| I <input type="checkbox"/> EDM                            | V <input type="checkbox"/> Quality Measurement Systems |
| J <input type="checkbox"/> Factory Automation             | W <input type="checkbox"/> Robotics                    |
| K <input type="checkbox"/> Flexible Mfg. Systems/Cells    | X <input type="checkbox"/> Safety/Ergonomics           |
| L <input type="checkbox"/> Forming & Fabricating          | Y <input type="checkbox"/> Screw Machines              |
| M <input type="checkbox"/> Grinding/Abrasives             | Z <input type="checkbox"/> Workholding                 |

4. Indicate your department's total budget for Machine Tools & Metalworking Technologies during the next 12 months:

- |  |  |
|--|--|
| A <input type="checkbox"/> Up to \$20,000        | E <input type="checkbox"/> \$500,001 - \$1,000,000   |
| B <input type="checkbox"/> \$20,001 - \$50,000   | F <input type="checkbox"/> \$1,000,001 - \$5,000,000 |
| C <input type="checkbox"/> \$50,001 - \$200,000  | G <input type="checkbox"/> Over \$5,000,000          |
| D <input type="checkbox"/> \$200,001 - \$500,000 |  |

5. Classify your company:

- |  |   |
|--|---|
| O <input type="checkbox"/> Original Equipment Manufacturer | S <input type="checkbox"/> Contract Manufacturer/Job Shop |
|  | N <input type="checkbox"/> Neither                        |

Please send/continue to send **MANUFACTURING ENGINEERING** free of charge:

Yes  No

Signature \_\_\_\_\_

Date \_\_\_\_\_



Please call (800) 733-4763 should you require special assistance.