

---

---

# The NEMES Gazette

Vol 06, No 069  
Jan-2002  
© 2002

The Newsletter of the New England Model Engineering Society

Ron Ginger, President, 17 Potter Road, Framingham, MA 01701, ronginger@rcn.com

Rob McDougall, Treasurer, 357 Crescent Street, Waltham, MA 02453, RCMcDougall@MediaOne.net

Kay Fisher, Editor, 80 Fryeville Road, Orange, MA 01364, Kay.Fisher@Compaq.com

Bill Brackett Event Editor 29 East Main St. Northborough MA 01532, wbracket@ultranet.com

Bob Neidorff, Publisher, 39 Stowell Road, Bedford, NH 03110, Neidorff@TI.com

---

Our next meeting is at 7:00 PM on Thursday  
3-Jan-2002 (first Thursday of every month) at  
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).

## This Months Contents

The Editor's Desk.....	1
The President's Corner .....	2
Steinel Mill Restoration .....	3
Random Ramblings .....	3
Minimizing Lathe Chatter (follow up).....	4
Wiring a New Shop .....	5
The Meeting .....	6
American Lathe Builders - book review .....	11
Treasurer's Report .....	12
BottleBob's Indicator Sweeper Tool.....	12
Sheet Metal Nibbler .....	12
Sea Stories .....	13
Metal Shapers.....	13
Calendar of Events .....	14
For Sale .....	15
Web Sites of Interest .....	15



## The Editor's Desk

By Kay R. Fisher

Please look at the mailing label on your Gazette this month. If you have NOT paid your 2002 dues, there will be a reminder of this on the label (if you've already paid, please disregard). If you don't owe 2002 dues, your label will not have any reminder on it. Please mail dues to our treasurer Rob McDougall (address in masthead).

Dave Robie informed me that the part for "Woink", the groan tube as described in the last Gazette, is available at "iparty" franchises and some similar party supply places. Describe a tube about 6" long that you shake and it makes noise. They sell it for 99 cents.

I received a great acquisition/rebuild story of an unusual milling machine from Joe Guidry from deep in the Bayou country of South Louisiana. Joe is currently working on a shaper we hope to show in a future shaper column.

The shaper column benefits this month from some sage advice from John G. Lawson that I found on the web. The input from our members and outside contributors just keeps getting better and better. We even have more sea stories. Don't quit now – keep it coming.

Kay



## The President's Corner

By Ron Ginger

### *Cabin Fever Trip*

Since this will be the last newsletter before we leave, I need to make just one short note here. I will have a letter to everyone registered for the trip with all the final details. I will pass these out at the January meeting to everyone I can find and drop the rest into the mail on the next day. If you think you are going on the trip and don't get a letter it means we don't really have your name on the list. You had better call me ASAP! And if you are going and don't have a room reservation at the Quality Inn (717) 273-6771 you had better do it fast - sleeping in the parking lot will not be fun.

### *Club Library*

Over the past few months we have received several donations of magazines. We have been a bit informal in passing these around, but I want to improve the circulation a bit. Since most of these, and Model Engineer in particular, often run serialized articles over several issues, I'd like to keep the magazines in reasonable sets. There is nothing worse than starting a nice article and then not having the next issue. I am looking for a set of boxes to hold about a years worth of each magazine. I will get these packaged together and the boxes labeled and inventoried.

Once they are ready we will have the library open at each meeting so members can borrow a box at a time. I hope to have this at least partly ready by January.

If you have one of the sets currently circulating please bring them to the January meeting so I can get them boxed and labeled.

I know I enjoy just browsing through these magazines, I am happy to see the club getting a

start at a library. It would sure be nice if we had someone that wanted to be the club Librarian to keep this up.

### *January Meeting*

This will be one of our "poster sessions" which we seem to run about twice a year. The idea is for **everyone** to bring in something. We spread the items around the tables and everyone gets a chance to wander around and see what's new. It's a good chance to meet and talk with our friends and see what everyone is working on. This is one of my favorite meeting formats.

There will be one item that I think you will find very interesting. Steve Peters is an avid fan of the Lego Mindstorms Robotic Invention kits. Steve and I talked about running a meeting around them, but it seems like it might be better to have more of a hands-on demo. Steve has agreed to bring in a Mindstorms robot and a laptop computer to show how they are programmed. If you think kids should learn to do things mechanical, you need to see what can be done with Mindstorms, a robotic invention kit with some amazing abilities. Steve will have this setup at one of the tables.

### *Club Show*

Our show date is the third Saturday in February the 16<sup>th</sup>. This is always a fun day, and we seem to be getting its operation pretty well under control. I will have some flyers printed for the January meeting. Please take a handful and pass them around at work, or drop one at your local library or wherever they might be useful.

Also start planning your exhibit. I'd like to see everyone have something in the show. I think it's important to show the wide range of our interest, so don't think of this as just a show of steam engine models.

As usual I expect several of our favorite vendors to come through with some good raffle prizes, and remember, you must be an exhibitor and you must be there when your name is called to win.

Ron

## Steinel Mill Restoration

By Joe Guidry

I purchased a Steinel mill from a retired machinist that had a home shop. The Steinel was made in West Germany. It has a tilting head, automatic cross slide, and coolant pump. It is an SV4 1000 - weighs in at 1,600 pounds and is 6½ feet tall. He bought it with over \$3,000.00 worth of tooling, and paid \$2,500.00 for everything.



Steinel Mill – After Rebuild Photo by Joe Guidry

The Steinel was very, very dirty but in good condition when I got it. The previous owner had painted everything, and I mean everything, gray. I could not see the numbers or the brass or the hand wheels. The complete tear down and reassembly was a 6 month job. I changed the motor, added new belts, had all the hand wheels re-chromed, and replaced the zerks, along with other things. I painted it grabber green. I was so proud of it that I did not want to use it. It is a machine tool I fell in love with.

Joe



## Random Ramblings

By Max ben-Aaron

### *Being a pack-rat pays off (part 2)*

by Boris Beizer

(This delightful essay is reproduced from a contribution to rec.crafts.metalworking (RCM) by the renowned Dr. Boris Beizer. It is always worth reading what he has to say, and this is no exception.

e-mail: [bbeizer@sprintmail.com](mailto:bbeizer@sprintmail.com)

Reprinted by permission of the author, copyright 2001, Boris Beizer.

Mb-A

### **The OCM Principle**

The OCM principle asserts that Open messes are messes and Closed messes are socially acceptable. If you get it out of sight, it isn't a mess. That's the principle I use for all tools.

All my tools are in drawers or cabinets. Now I admit that this forces some horizontality within each drawer, but if you can take it all in at a glance - by the principle of constancy, it isn't messy at all. So you must get as much as you can out of sight in cabinets and drawers. Pegboards are out. They are vertical - that's true - and therefore preferable to having tools all over the work surfaces -- but they are far too much in sight. Besides, I think that they work only for people who have very few tools and are trying to bolster their tool ego by making their meager cache of tools as visible as possible.

Anybody who can store most of their tools on peg boards doesn't have very many tools.

Open messes are okay as long as they are trumped by constancy - see next part. For example, my collets are arranged (vertically) in a collet rack and my quick-change tool holders horizontally on their racks, but in both cases, constancy trumps verticality and closure.

### **The Constancy Principle (CP)**

This is the most powerful principle of all. If it is constant it isn't a mess - It's the way I like to organize things.

The 2nd law of thermodynamics doesn't make value judgments about organization versus disorganization. Something is disorganized only if it isn't predictable. That's both thermodynamics and information theory (closely related principles at work). If that oily rag is ALWAYS to be found in the vice - it isn't mess - it is your (peculiar) organization. Most of us create messes because we violate the constancy principle. The tools wander around on their own. The nuts and things get mixed up -- etc. And we can no more than a stranger know where things are.

My favorite professor in graduate school was Cornelius Wyegant. It is to him that I owe the VHM principle. It was he who first taught me that horizontal messes are socially unacceptable while vertical messes (especially if they are out of sight) are more socially acceptable. Corny was the most outrageous horizontalist I have ever known. As the most senior professor in the school, he had the biggest office. A huge desk, several side tables, low cabinets all around the room, several chairs, and a huge leather couch. Every horizontal surface except his chair, the one guest chair and selected paths through the floor were filled with horizontal stacks of papers, books, journals - etc., in some places a high as three feet.

To the untutored eye, Corny's office was the greatest mess possible - but he was also the grand master of the Constancy Principle. Everything was always in the same place and he knew exactly where everything was. As a graduate advisor, he had to deal with 60 professors and 1200 students (U of P, Moore School of Electrical Engineering). I walked in one day for an appointment related to

transfer of credits from another university. Corny greeted me: "Ah yes. Beizer. About your application for transfer of credits - yes?" Whereupon he dove into a pile on his desk and pulled out my letter to him of two years earlier. Into another totally different pile on top of a cabinet to fetch a reply from some academic committee or another and into a third pile on the floor to retrieve a form that I had to fill out.

In the eight years I was there, he never failed. His application of the principle of constancy was so strong that it overcame horizontality and openness.

I hope that my fellow machinists can use these principles to advantage in organizing and controlling their pack-rat urges, to help explain to disgusted and disbelieving others (especially spouses who must be obeyed) why things are not really messy and/or to convert their socially unacceptable messes into messes that are socially acceptable.

### **Minimizing Lathe Chatter (follow up)**

By Bob Cookson

After reading Bob Neidorff's comments about single point lathe threading in the November 2001 Gazette, I thought that adding a few more facets concerning this type of machining would be helpful.

- ❖ Since Bob made reference to a Lathe Faceplate, it became apparent that he was talking about a fairly coarse thread. Although he did not mention the lathe size or the thread size, it could easily be 8 or 10 threads per inch and 1-1/8 to 3" or larger in diameter.
- ❖ Because single point hole threading is normally a forming operation (as opposed to a turning operation) the set-up requires maximum rigidity. It also requires minimum speed...even to start off with. Engaging and disengaging the Thread Dial can be done more easily at lower RPM's.
- ❖ I mentioned above that single point turning was a forming operation. It does not have to be. The tool set-up can be arranged to cause the tool to operate as a turning tool and not as

a forming tool. The advantage here is that there is 50 % less force on the cutting tool in turning than there is in forming. The disadvantage is that all of the wear is on one side of the tool.

❖ Here is the set-up;

Set the lathe compound at 29.5° (for a 60° thread) with respect to the centerline of the cross-slide. This means that the compound hand wheel will be on the other side of the Lathe Spindle centerline.

Set the boring bar where you want it in the usual way.

Bring the compound to about midrange in its travel. Using the cross-slide, bring the tool point to within .010" of the bore I.D. Lock the cross-slide gibs and adjust the compound gibs to maximum snugness.

From here on, the thread depth is adjusted **only** by the Compound. This causes the “V” shaped threading tool to cut only on its leading edge. This is the “turning type operation” referred to earlier.

Bob

## Wiring a New Shop

By Mike Boucher

A week or so ago, I asked a question about wiring a new shop. I got deluged with info, some of which I understand, others went over my head. When it comes down to actually getting it done, I'll have to make some decisions, but at least I've got something to go on.

I thought I would summarize the input but first I have to put in two caveats:

1. The “machine specific” requirements deal directly with my equipment. If you want a listing of what I've got for machines, let me know.
2. Local electric codes vary. Check with your town and a certified electrician before doing any work!

## Ballpark figures:

Figure 1HP is 10 amps at 110V or 5 amps at 220V.

## General Suggestions:

- Have a separate panel for shop.
- Get at least 100 amp service for the shop itself, 200 amp preferred (I've got to find out how much juice is actually coming into the house.)
- Have one main circuit breaker so you can turn off all machines in entire shop, so kids can't start a machine. Make it lockable!

## Shop Wiring:

- If possible, use 220V circuits everywhere except for lighting.
- Don't bother with less than 20 amp circuits.
- Use commercial grade outlets. They're not much more expensive than home grade outlets.
- Use 4 outlet boxes for 110V outlets, 2 on one circuit, 2 on another.
- Use “Home Run” rather than “daisy chain” wiring.
- Have twice as many 240V outlets as you think you need!
- Someone suggested having 1 box for every 4 feet of wall!
- Put outlets “high” on the wall, with room for workbenches underneath all of them.
- Put outlets in the ceiling or dropped from the ceiling for free standing machines.
- Leave a few “always hot” circuits for battery chargers and cordless hand-tool chargers.

## Lighting:

- Install lighting on 2 different circuits so that if one blows you still have some light.
- Use outlet boxes on the ceiling for lighting, not direct wired lights, and use a lot of boxes for flexibility.

- Use lighting fixtures with their own on-off switches for when you don't need all the lights on.

**Specific needs:**

- Lathe – 20 amps.
- Mill – 220V at 30 amp.
- Shaper/drill press – shared 20 amp.
- Bench grinder – 20 amp.
- 5 hp Air compressor – 220V at 30 amp.

**Future expansion:**

- Arc welder – 50 amp 220V circuit. Put this close to the exit, as you don't want to weld indoors!
- Surface grinder – 220V at 20 amp (to convert to 3 phase).
- Band saw – 110V at 20 amp.

**Arrangement:**

Put the machines “in the middle”, leave the walls for workbench and cabinets.

**Interesting ideas:**

- Run a few wires for speakers/phone lines.
- Install a secondary doorbell ringer for when no one is upstairs.
- Mount heavy-duty curtain rails on the ceiling so that lighting fixtures can move around.

A few people made comments about getting the equipment into the shop. The basement will be 1/3rd 2 car garage, 2/3rds shop, with a firewall in between the two. I've already told the contractor I want a double door (60" opening) so I can get the equipment in without having to remove walls.

I've also specified a steel beam instead of wood with a lot of columns. I should be able to attach a hoist to that if necessary.

Mike



**The Meeting**

By Max ben-Aaron

***The Meeting, 6 Dec, 2001***

The December meeting came to order a bit late, Ron Ginger presiding. He observed that the new PA system was still with us and that the speakers were mounted on stands.

The bus trip to Cabin Fever is in good shape and the hotel accommodations are all set. 41 reservations have been made on the bus, which has a capacity of 47.

The “junkyard wars” suggestion has fallen by the wayside even though Sherline volunteered to send a lathe and a mill, which could be sold at cost at the show, with Sherline absorbing the shipping cost. These things don't happen unless somebody will step up to the plate and do some organizing, and nobody did.

Ron observed that many of the show's attendees see the models on display, but have no idea how the parts are made. He expected the club to put on a good show as usual, and encouraged attending members to think about a means of closing this gap.

The January meeting will be, as it traditionally is, a “poster session” and “show and tell”. In addition, Steve Peters will give demonstrations of the Lego “Mindstorm” system.

Our annual show is scheduled for the third Saturday in February, which is the 16th. Because some of Errol Groff's students came to Rollie's annual get-together, it was suggested that we should have a student table. Errol was a bit

dubious about the prospect. Max ben-Aaron volunteered to sound out Minuteman Tech in Lexington and Shawsheen Tech in Billerica about the possibility of their participation.

Larry Keegan brought in a flyer from Parker Products, who have a huge supply of surplus (mostly electronics) in an old warehouse on Pierce St. in Reading MA, which formerly housed a pipe organ company. They are mostly wholesale, but he thought that they would not reject the odd retail customer. Call Harold Potter ahead of time at 781-944-8668. Larry passed around a 1 Farad capacitor in a surprisingly small package. When charged with a 1 1/2 volt battery, it ran a small motor for 3-5 minutes.

Before the meeting, Mike Boucher sold Club T-shirts. By a show of hands it was decided to go ahead and order some Club sweatshirts.

Mike also passed around a small crankshaft for a model steam engine, together with the tools and a fixture for machining it. He also showed a beautifully built "Cosmos" boiler and steam engine, made by the Ernst Plank Company in Nuremberg, Germany. He found it buried in a box of magazines at a flea market and told an amusing tale about its acquisition. [Editors note: Mike has updated his web site to include the Cosmos toy engine and details of his crankshaft machining fixture – see web sites at end of Gazette]

Don Strang brought in a copy of an article about the structure of the World Trade Towers that he copied from the MIT publication "Technology Review". He explained how the collapses occurred and said that the Empire State Building probably would not have collapsed under similar conditions because the steel structure in the Empire State Building was all hot-riveted together, whereas the frames of the World Trade Towers were welded.

He added that the books of photographs of English steam mill engines, which he had on order, arrived the day after the November meeting. Murphy's Law strikes again!

Dick Boucher brought in a Taper Hole Gauge to show and tell. "Now, when you find one at a flea market or swap-meet, you will know what it is" he said. He then told of a "strange connection" to the story about his son Mike's "Cosmos" model steam engine. While he was still a lowly (and poorly-paid) apprentice, his brother bought a Walesco model steam roller. He (Dick) coveted one like it, but could not afford it, so he decided to build his own. This led to the establishment of his own machine shop at home... Something must have rubbed off on Mike!

Rollie Gaucher brought in a bolt with a strange thread, from a Ford manifold. It looks like it should be 3/8 x 16 except that the thread has a square bottom. No, it is not a buttress thread either.

Henry Szostek missed the meeting because he flew to Barbados to welcome "his" crew in the transatlantic rowing race. They did not win, but are in the top 10. We expect an entertaining report at a future meeting.

Steve Lovely announced that the widow of Richard Seacord donated a stack of "Live Steam" magazines to the club. She has a 3/4 gauge 4-6-6 Boston & Albany locomotive for sale at \$4,000. Also, a 9" SouthBend lathe (virtually new) with much tooling for \$2,500. [See the "for sale" section at the end of the Gazette for details.]

Bob Neidorff was selling CDs and quickly sold out of all in hand. He will bring in more for the next meeting. [See the "for sale" section at the end for details.]

The speaker was Dave Piper who described the progress on the hull for his steam launch. Dave started by announcing, to applause, that his mentor, Ray Hasbrouck, had driven up from New York to hear his talk. Thanks Ray.

Take it away Dave

Mb-A

## *A Steam Launch*

By David Piper

What makes you want to build a steam launch? Well, if you have ever been in a sailboat, and enjoyed peacefully and silently sailing downwind, it might occur to you that it would be nice to have a boat that could silently sail upwind too. If you have also had a consuming passion for a live steam since you were 8 years old, the answer is a foregone conclusion: you have to build a steam launch.

I call her my “5:30 Sunday morning with a cup of coffee in my hand” boat.

After designing and building the engine, testing it under steam, and having the boiler well under way, it is time to think about the hull that the engine will go into. The first consideration is safety. The boat must be stable. The criterion was: Would I take my wife in it?

There are as many types of hulls as there are boating enthusiasts, so the choice of an appropriate hull was not easy. As a start, I decided that, for esthetics, it should have a fantail stern, plumb stem and a nice shear. For a hull that could be easily driven, it had to be long and narrow, with a beam of about 4 1/2 feet. The classic fantail launch.

The usual length/beam ratio is about 4 to 1 or 5 to 1. This might make it a bit “tender”. Tender means that the initial stability is low. When you get in the boat at first, she easily rocks side to side. If a boat is too tender, it can become uncomfortable or even dangerous. An example of a particularly tender vessel is a canoe. A canoe also has low ultimate stability. Ultimate stability is really the important point. It can be simplistically described as the resistance to capsize. The ultimate stability should be acceptable and it should move easily through the water.

The first hull that I saw that met these specifications was the “Rose”. I saw one about 2 years ago. Its hull was fiberglass, with an unacceptable twist in it. Since there is only one manufacturer, I decided against it, especially

because I thought it would be uncomfortably small and crowded.

After that, I visited some friends in New York. I saw two hulls that could have been candidates except that they were too big. This just about ruled out all the commercial options.

So it came down to this: I would have to design the hull I wanted. First problem: I am far from being a naval architect and I have never built a boat before. In addition, I wanted a boat that had been scientifically designed (i.e. engineered) to be simple, long, lean, and above all, stable and safe to sail.

I looked at a boat called “Panatella” in the book “Steam Boats and Modern Steam Launches”, but it offered nothing more than a sketch, not a complete design that one could build from.

Roland Evans gave me a set of lofted drawings. These became the basis of the boat I thought I would build. I added another criterion: My goal was to sail a boat, not work on one, so the boat had to be built using techniques and materials that resulted in very low maintenance

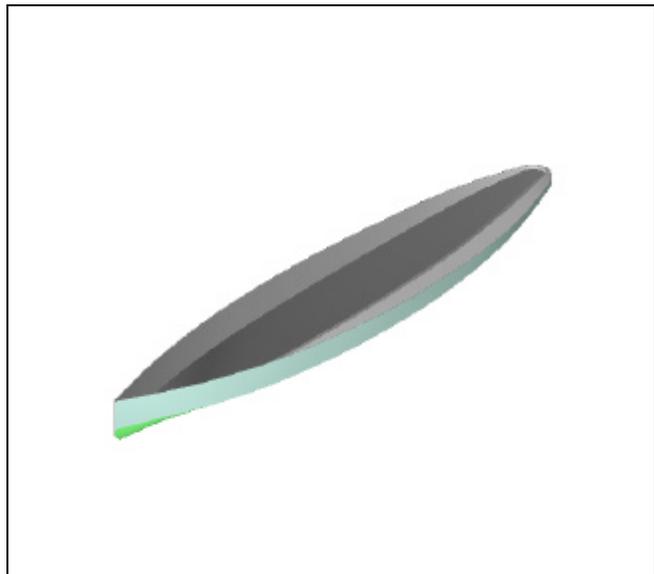
I had no alternative but to hit the books to learn a little about marine architecture. I bought a few dozen books and studied them. [List at end of article]. The most helpful were Weston Farmer's “From the Old Boat Shop” and Devlin's “Boat Building”.

The tool I used for drafting and design was a solid modeling package that I had on my computer. If I had not had it as part of my job I would not have gone out and got one, but since I already had it, I used it to calculate the displacement, weight and wetted surface of my design. These measurements and calculations are tedious at best if all you have is a 2D drawing, but the job can be done if you follow Albert Strange's method (1890 technology!)

As a man who uses high tech software all the time, a pencil and the gray matter between your ears is always Y2K compliant.

What I came up with seemed to be stable and strong, with a 4'6" beam. I thought this might

be a bit narrow, because the calculated ultimate stability would not support the weight of two adults on the rail. So I increased the beam to 5' and in so doing, doubled the ultimate stability.



Boat Design Graphics by David Piper

Starting with  $speed(knots) = 1.3\sqrt{L_{wl}}$  where  $L_{wl}$ , the waterline length, is the distance that the boat touches the water. We get  $speed = 1.3\sqrt{18.5} = 5.59 knots$ . Fast enough.

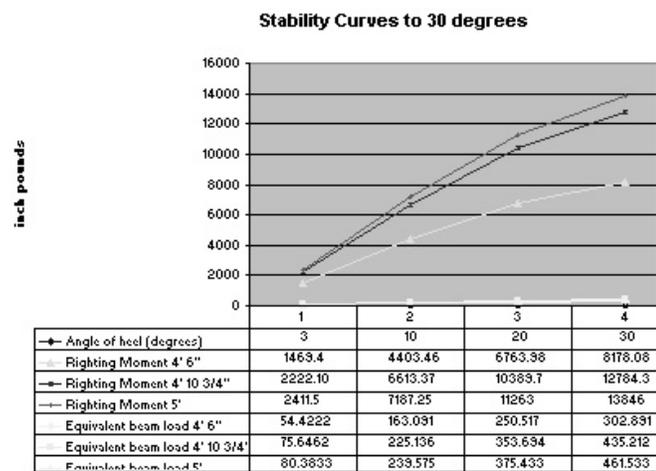


Figure 1 Excel Chart of Stability Chart by David Piper

I looked into the possibility of having a commercial boat builder do this hull. That option was prohibitively expensive.

But I truly had a bigger issue to address. To paraphrase Weston Farmer: "It is one thing to draw a boat, anyone can do that. But that is not

designing. Design is the application of judgment and science to achieve a specific result."

Boy that sounds self important! But my very real concern was - now that I have "run all these numbers" - now what. Are they correct? Did I meet my "specific result"? Remember I am just a simple Mechanical Engineer, not a Marine Architect, so my experience (and confidence) in these areas is very lacking! The question was still: Would I put my wife in it?

Well, the engineer in me went to work. To answer this problem, I followed Weston Farmers lead, I built a "tank model". My bathtub was the tank, so I scaled a model to be the largest one that would fit in the tub (1/8 scale). Farmer wrote that the weight of the model should be equal to the cube of the scale factor multiplied by the weight of the full-sized boat. So, calculating it out, a 1/8 model of a 2000 lb. boat should weigh 3.90 lbs. I got out the fish scale and added ballast to the model to achieve the correct weight and floated it in the tub. I had to shift the weight to trim the boat, and it behaved as the design said it should, including hanging 460 pounds of that ballast on the rail, and healing the boat 26 degrees! So the design was proved.

Weston (a licensed Marine Architect) **never** let a design off his board without building one of these models and testing it. **Good advice.** Make your mistakes with 3 sheets of balsa and some varnish!

When the model verified my calculations, the next step was full size lofting. Lofting is, simply put, drawing the boat, the **WHOLE** boat, full size. To do this you need a big drawing board! I bought some cheap plywood, painted it white and nailed it to the floor, and started drawing. That's how you answer the question "Does she love me?" If she does not object to nailing the plywood to the floor in the dinette, kitchen and dining room, she's a keeper!

The lofting serves to verify the detail design, full size. Lofting done, now its time to think about building. But where? Not enough room in my shop, or in my yard. The answer turned out to be a temporary structure called a bow-roof shed,

which I built in my father's yard. I got the plans from an outfit called Stimson Marine: <http://www.by-the-sea.com/stimsonmarine/bowroof.html> The plans are \$18 plus \$2 shipping and handling.



**Bow-Roof Shed** Photo by David Piper

It uses 1x3 strapping with 2x4 blocking between the pieces. It's a simple arch design, with the roof centerline about the same height as the base width of the building. You lay out the curve from the plans on a flat wood jig, screw down a few blocks to hold the shape and bend the strips, using sheetrock screws and wood glue to hold it together. It is incredibly strong.



**Bow-Roof Shed Interior** Photo by David Piper

With the shed built, the next task was to build a "strongback" - a full-sized, level, frame made of double 2x6s on which the boat would be built, upside down. A taut cable was used to ensure that the strongback was built straight and true. This cable was also used to set the frames plumb and square.



**Strongback** Photo by David Piper

The details of the hull frames are pretty self explanatory from the photos except to mention that I used Douglas fir (which is fine, but it splinters) and Meranti for the frames. I bought the lumber at "The Woodery Lumber Co." in Lunenburg MA. The Meranti is just as strong as Douglas fir, and is much nicer to work with.



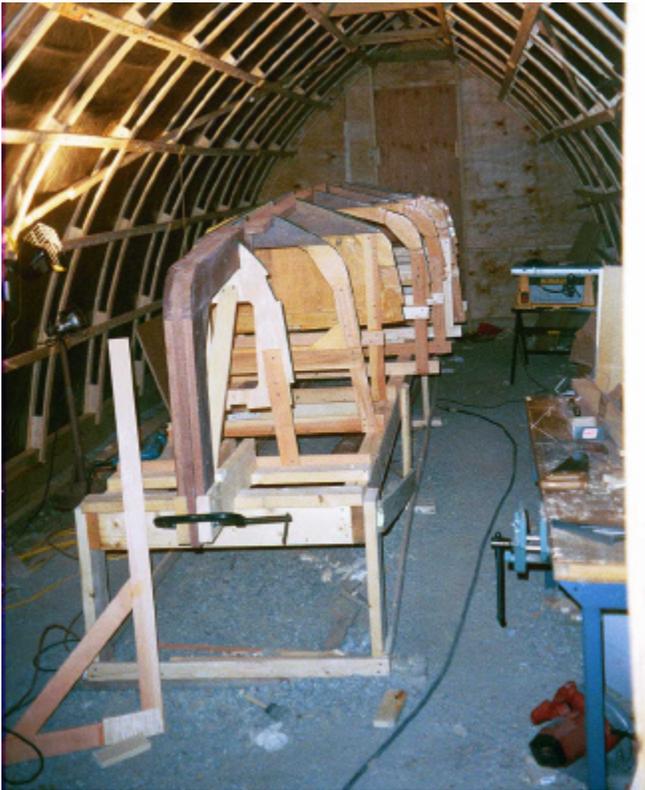
**Frame being constructed** Photo by David Piper

The epoxy I used was West System. It is expensive, but of very high quality. If you do what West System says, you always know what you're going to get. GOOD! One less thing to worry about.



**Frame on Strongback** Photo by David Piper

The hull is well on its way. I expect to have it done by mid summer. In the meantime, over the winter, I need to build pumps for the engine and to work on the boiler and prop skeg, rudder, get all the deck hardware...it never ends.



**Hull well underway** Photo by David Piper

The name of the boat will be "Rushforth". This was my mothers middle name, but it also conjures up a particular philosophy of how one should attempt to live their life. Rushforth and seize the day! Never let life stare you down.

She would have liked it.

Here's the book list and other key points of reference:

- "The Gougeon Brothers on Boat Construction"
- Weston Farmer: "From my old boat shop"
- Ian Nicolson: "Cold Moulded and Strip Planked Wood Boatbuilding"
- Thomas C Gillmer and Bruce Johnson: "Introduction to Naval Architecture"
- Cyrus Hamlin N.A.: "Preliminary Design of Boats and Ships"
- S. S. Rabl: "Ship and Aircraft Fairing and Development"
- Glen L Witt. N.A.: "Boatbuilding with Plywood"
- David Gerr: "The Elements of Boat Strength"
- Walter J Simmons: "Lines, Lofting and Half Models"
- Allan H Vaitses: "Lofting"
- Howard I Chapelle: "Yacht Designing and Planning"
- David Gerr: "The Propeller Handbook"
- Richard M. Mitchell: "The Steam Launch"
- "Albert Strange on Yacht Design, Construction, and Cruising"
- Samual Devlin: "Devlin's Boat Building"
- Reuel B. Parker: "The New Cold-Molded Boatbuilding"
- Reuel B. Parker: "The Sharpys Book"
- Howard I Chapelle: "Boatbuilding"
- Bill Durham: "Steamboats and Modern Steam Launches"
- Woodenboat magazine
- David Gerr: "The Nature of Boats"
- The International Steamboat Society: "The Steamboaters Handbook"

David

## American Lathe Builders - book review

The American Lathe Builders 1810-1910 by Kenneth L. Cope.

Reviewed By Alan Bugbee.

The author Kenneth L. Cope has been in the machine tool industry for over 40 years.

This is a directory of lathe manufacturers in the U.S. from 1810 to 1910. It describes 40 different lathes. Over 330 manufacturers are listed alphabetically, with woodcut illustrations and descriptions of most of them. More than 1,000 illustrations are taken from original catalogs and periodicals. They trace the development of American metal cutting lathes from the crude, hand built models of the early 19<sup>th</sup> century to the fast, powerful models introduced in the early 20<sup>th</sup> century for use with high speed steel cutting tools. Many early lathe accessories are shown.

I tabulated the states where these companies were located. 202 of them were in New England with Massachusetts leading the country by a wide margin with 129.

Over the years, I've owned Hende, Monarch, Rivett, Logan, and South Bend metal lathes, so I found this book very interesting. I plan to donate it to the NEMES library.

If you would like your own copy, it is published by:

Astragal Press  
P.O. Box 239  
Mendham, NJ 07945

It is 204 pages long and 8½" x 11", \$24.95 plus \$4.50 shipping.

Alan



### Treasurer's Report

By Rob McDougall

As of 11/30/2001

Balance as of 10/31/2001:	<b>\$2,834.38</b>
Interest Income	0.46
<b>Less</b>	
Gazette expense	-176.45
Front door security (October)	-50.00
Balance as of: 11/30/2001	<b>\$2,608.39</b>

December's statement will show a lot more activity with CD sales, T-shirt sales, bus trip payment and speaker stands. I have fallen a bit behind since I don't go to downtown Boston so often where I make the deposits at the bank.

Rob

### BottleBob's Indicator Sweeper Tool

With BottleBob's permission this month we feature his manual mill tramping tool. His web site is:

<http://home.earthlink.net/~bottlbob/>



Indicator Sweeper

Photon by BottleBob

This is an indicator sweeper I made from seeing a picture of a "Zero-it" in a catalog. I use this sweeper more often than any other indicator holder I have. It's normally semi permanently installed in a 40 taper holder. I later bought a real "Zero-it" and did not like it as well. So I would suggest if you want a good sweeper that you make your own.

Bottle Bob

### Sheet Metal Nibbler

By Howard Evers

I recently attended a trade show and saw a demonstration of a remarkable gadget made by "Bad Dog Tools" of Bristol, R.I.

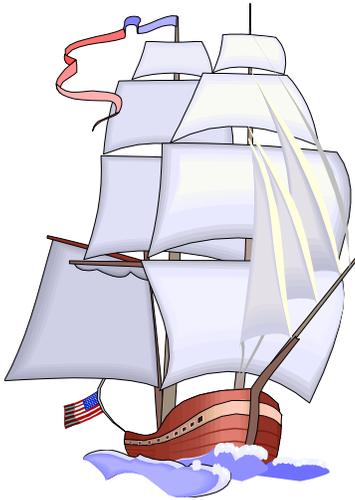
It is an attachment for a 3/8" drill that drives a hardened punch against an anvil, via an eccentric. There are 2 anvils (180° apart) and one punch. The device is held in the drill chuck, and can be supported by your left hand, while the right hand pushes the work (sheet metal) into the punch/anvil. You can nibble some fairly intricate shapes with it. You can also hold the work in a vice or other device, and "drive" the nibbler into the work. Both anvils are moveable thru 360°.

and the punch is guaranteed. If one end breaks, you use the other end while they send you a replacement! They also sell some clamps to hold the drill and the nibbler stationary, while you use both hands on the work. Quite a clever device and I think a lot of people would find it useful.

They also sell drill bit sets that are a bit pricey, but VERY impressive! They put a 1/8" drill in the chuck, drilled some steel, drilled some masonry, then drilled a 2x4 the long way, and forced the drill over to the side, so that the flutes were cutting a groove in the wood. The wood was smoking, the sawdust was flying, and the drill was unaffected! He then pulled the drill out of the wood, bounced it hard on some ceramic tile, and drilled it! The drills bits have Carbaloid tips.

I suggest that members visit their website at <http://www.baddogtools.com> and if enough people are interested, perhaps we could invite them to a meeting for a demonstration.

Howard

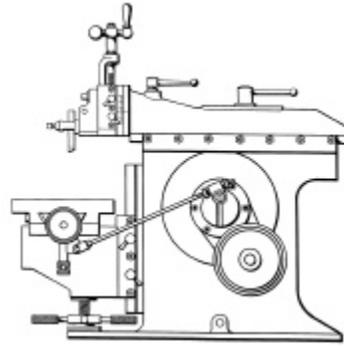


## Sea Stories

By Alan Bugbee

My great grandmother Abby Cox Ross was Captain Ross's second wife. His first wife died at age nineteen in Maricao. They caught a sea turtle and had it in a barrel on deck. She felt sorry for it and tried to feed it. It grabbed the food but also caught her hand. It wouldn't let go so one of the crew finally cut off its head. Her hand was badly damaged.

Alan



## Metal Shapers

By Kay R. Fisher

I found the following explanation of fitting a taper pin on a clapper box on the web in the Atlas shaper and milling machine users group on the yahoo groups.com site. The author John G. Lawson, (a well known gun writer for over a half century) has given me permission to reprint his procedure here with the following caveat: "These instructions apply ONLY to the Atlas 7" and Acorn 7" shapers". Having said that I must add that my old 9" shaper can benefit from this knowledge. So here is what John has to say about fitting taper pins into clapper boxes:

"I have fitted up a number of loose clappers successfully and I will set forth my method for those who may be interested.

"The taper pin is designed to be a tight (non-moving) fit on the mount sides and a loose (but shake-free) fit on the clapper. The nut on the end of the taper pin is 5/16"-18. There is an oil hole on top of the clapper that is usually overlooked. Every time you use your shaper you should put a few drops of oil in the oil hole, swing the clapper out and put a few drops of oil on both sides. It should swing free without any lift, shake or looseness.

"When the taper hole through the clapper wears oversize, or when the taper pin wears where it passes through the clapper, the obvious quick fix is to put a wrench on the nut and try to draw it in, making the clapper tighter. Do **NOT** do this! The pin is already tight on both sides of the mount. Reefing on the wrench handle usually breaks the nut off the end of the taper pin. If enough mayhem is indulged in, you may break part of the casting.

“The replacement taper pins will not tighten up a worn taper hole through the clapper. Besides a replacement taper pin, you will need a #8 taper pin reamer. These are reasonable from J&G. Actually, you may as well order a pair of Morse Taper reamers for your lathe's headstock and tailstock ram and spindle at the same time, if the sockets need a touchup. My reamers are imports from Spain and they work just fine.

“After removing the old taper pin, place the clapper back in alignment and carefully ream through the support and clapper. Take out minimal metal; you just want to clean up a worn taper hole through the clapper with the proper enlargement of the supports. Remove the reamer and clapper. Insert the reamer in the clapper and ream just a very slight amount; only enough for the clapper to move freely without shake when mounted. Tap the head of the taper pin lightly with a soft hammer to seat. Check clapper movement. **It must move freely without shake.** Tighten the nut in place. Do not reef on the nut; the taps with a hammer set the pin in place immovably. The nut is to keep the pin from backing out.

“Now, you have a clapper that will produce perfect cuts.

“If you can't obtain a replacement taper pin, buy a few #8 taper pins from your local screw and fastener supply. Bore a through hole in a short piece of 3/4" diameter drill rod. Insert the taper pin and tap in place with a soft hammer. Mount small end out in your lathe chuck. Turn the taper parallel with a carbide bit. Thread 5/16"-18 and cut off the excess. (Note that these taper pins come in various sizes; get the proper size for your needs.) You may want to change the position of the threads slightly.”

Thanks John for that great explanation.

Kay



## Calendar of Events

By Bill Brackett

Jan. 3 Thursday 7PM  
NEMES Monthly club meeting  
Waltham, MA  
Charles River Museum of Industry 781-893-5410

Jan 25-27  
Woodworking Show  
Eastern States Exposition  
West Springfield MA  
<http://www.thewoodworkingshows.com>

Jan 26-27 Cabin Fever Show  
Model Engineering Exhibition  
Leesport, PA  
Gary Schoenly 800-789-5068

Feb. 2-3 Amherst Railway Show  
Eastern States Expo  
<http://www.amherstrail.org>

Feb 7 Thursday 7PM  
NEMES Monthly club meeting  
Waltham, MA  
Charles River Museum of Industry 781-893-5410

Feb. 10 Ct. River Ant. Collectors  
Ice Harvest Day -Ely, VT  
Doug Driscoll 802-333-3243

Feb. 16, NEMES Show  
Charles River Museum of Industry-MA  
Call: Ron Ginger 508-877-8217

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



**For Sale**

### ***NEMES CDs***

NEMES Gazette CDs. The complete set of all Gazettes ever issued in Adobe Acrobat format. All Gazettes from Volume 49 May-2000 in Microsoft Word format also. The US Army's "Fundamentals of Machine Tools manual in Adobe Acrobat format. \$5.00 shipping included. Profits go to the club treasury.

Kay R. Fisher (address in masthead)

### ***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 (address in masthead)

### ***Loco, Lathe, etc. For Sale***

3/4 gauge 4-6-6 Boston & Albany locomotive for sale at \$4,000. A 9" SouthBend lathe (virtually new) with much tooling at \$2,500. Craftsman drill press and an old blacksmiths hand cranked drill press that mounts on the wall and had a geared downfeed.

Mrs. Richard Seacord (781)545-2059  
edickfromma@webtv.net

### ***Wanted***

Looking for a used S&W Model 41 or Ruger heavy bbl. .22 target pistol.

Howard Evers [hwevers@charter.net](mailto:hwevers@charter.net)  
(508)987-0654

### ***Wanted***

Clousing Coldchester lathe docs. 12x36 model 6300.

Craig Miller [mwip@rcn.com](mailto:mwip@rcn.com)  
(617) 926-2724

### ***Web Sites of Interest***

NEMES home page:

<http://www.naisp.net/users/fisher/nemes.html>

BottleBob's web site:

<http://home.earthlink.net/~bottlbob/>

Mike Bouchers home page:

<http://people.ne.mediaone.net/bandm3714/>

Bad Dog Tools sheet metal nibbler:

<http://www.baddogtools.com>

There's a bit of history about the Dyna-Jet model jet engine. The company makes fogging machines and according to their product classifications, some have pulse jet engines:

<http://www.dynafog.com/history.html>

7 photo galleries with turbine engines, steam engines, etc:

<http://geetel.net/~turbojer/index.htm>

Check out the following web site for info on paper railroad wheels:

<http://www.home.eznet.net/~kcupery/wheels.html>

It's part of this web site on paper boats:

<http://www.home.eznet.net/~kcupery/index.html>

MIT engineers review the structural failure of the Twin Towers:

<http://www.techreview.com/web/special/roush.asp>

Griff Wason Art and Illustration. There are some awesome 3D drawings and cutaways on this site.

<http://www.glwason.com/index2.html>

Animated Engines web site:

<http://www.keveney.com/Engines.html>

A modeling web site with IC and steam engines:

<http://www.glue-it.com>

Stimson Marine Bow-Roof Shed/Greenhouse:

<http://www.by-the-sea.com/stimsonmarine/bowroof.html>