

The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

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Editor's Desk

Mike Boucher

Hi folks,

In many ways, this is my favorite time of the year.

When I wake up in the morning, there is dew on the grass instead of frost, but there's a chill in the air. The days don't get too hot. The sky is a deep, clear blue, rather than the haze of the summer. Similarly, the nighttime sky is filled with stars, again, much clearer due to the lack of haze. The leaves are getting ready to turn. I'm hoping to get on a few more hikes before the snow flies.

Also, the Red Sox are in their annual pennant chase, and are in good shape to make the post season for the first time in a few years. The Patriots are just starting their season, and the Bruins have started training camp. It's a great time of year to be a sports fan!

With all that, it seems that most model engineers are getting geared up for the long winter "shop season", as the shows and events are

Next Meeting

Thursday, Oct 2, 2003

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

Membership Info

Annual dues of \$25 for the calendar year.

Please make checks payable to NEMES and send to our treasurer.

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

Addresses are in the left column.

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winding down. But there are still a LOT of shows going on. In this issue, you'll see photos of two recent shows, the Waushakum Live Steamers meet and the NEMES exhibit at the North Shore Antique Auto show.

This past weekend, I went up to Clark's Trading Post in Lincoln, NH, for their annual "Railroad Days". I saw four steam engines under steam, and got a cab ride in two of them.

One of the engines running, the former East Branch & Lincoln #5, a 2-4-2 tank engine, sat at the entrance of Loon Mountain ski area for years. A few years ago, Clark's made a trade. They got the #5 and Loon got a steam engine from Clark's collection. Over the next few years, #5 was restored by Dave Clark and his crew. This was the first time I was able to see this engine under steam, and it was well worth the trip. Maybe next month I'll include photos of this event.

In a few weeks is the annual "Yankee Steam Up" at the New England Museum of Wireless and Steam, in East Greenwich, RI. If you're at all interested in steam and haven't been to the museum, you owe it to yourself to make the trip down. Full size stationary steam engines will be operating, as well as a lot of models. Once again, I might have photos in a future issue.

In the meantime, I'm looking forward to not having to mow the lawn, and hopefully finishing up the work on my shop. I have a lot of projects that have been on hold for a few years, and I'm looking forward to getting the shop floor dirty with chips. I'm just trying to figure out how to not carry the chips into the rest of the house!

C'ya
Mike



President's Corner

Norm Jones

The Meeting

Our speaker for the October meeting will be our own Rollie Gaucher. Rollie's topic will be "Thread Restoration." I'll bet that every one of us can recall at least one situation that involves a broken tap or worse! Rollie will be highlighting some of

his experiences over the years and talk about the various methods with which he has overcome the problem. I am sure that this topic will generate a lot of discussion and that we will all go home the wiser!

Topsfield Auto Show Model Display

Thanks are once again in order to Ed Rogers for coordinating our participation in the North Shore Old Car Club's show at the Topsfield Fairgrounds on September 7th. The weather was great! I am sure that I can speak for those of us who participated in the show, that we had a very enjoyable day. The spectators at that show are always very enthusiastic about our various projects.

Museum Exhibit

The time is getting close to set up the display slated for the internet access ramp area within the museum. NEMES member projects are to be featured in this new exhibit area. Check with the coordinator, Fred Widmer, for what is needed to be part of our club's exhibition.

Model Engineering Exposition, Windsor Vermont

The 4th Annual Show is scheduled for November 1st and 2nd, to take place at the Windsor Community Center on Union St, the old High School. This is a new location for this years show. It's only about 500 feet from the American Precision Museum. Previous shows have attracted exhibitors from a number of states as well as Canada. I have attended all of their previous shows and am looking forward to attending this one as well. Pre-registration is requested by calling (802) 674-5781 or sending an email to info@americanprecision.org

See you on October 2nd.

Norm



The Meeting

Max ben-Aaron

Norm's Opening Remarks

Venerable President Norm Jones opened the September meeting on Thursday 4th in the Jackson Room of the Museum, our usual venue. Norm welcomed all new and old members.

Norm reminded the membership of our library, housed in a cabinet downstairs in the room adjacent to the Director's office. The library is open from 6 PM to 9 PM. Members are welcome to sign out (sign-out sheet in the cabinet) any material that they want and to return material, noting the return on the sign-out sheet. Please do not simply leave material in the meeting room, hoping that it will find its way back on its own.

Bill Schoppe had another heart attack. This time he was treated to a quadruple bypass. Norm met his granddaughter at the hospital and she said that he is doing just fine after the operation.

While thumbing through a 1987 issue of Modeltec magazine that someone left in the meeting room, Norm came across a picture of Walter Winship!

Norm had been invited to exhibit at the Middlesex County 4H Fair again. This time, his display was in a different spot, about 200 ft from the last time. The reactions of the little kids was amazing. One young gentleman, only four years old, listened carefully to the explanation of Hero's Fountain. Shortly thereafter, Norm heard him telling some grown-ups how it worked.

Due to the recent articles in the Gazette, Norm was quite interested in powder-coating techniques. On the way to the Rough and Tumble Engineers Antique Machinery Show in Kinzer, PA, he took a side trip to Eastwood, a supplier of products used in Auto Restoration

projects, to take a look at their powder coating equipment. Eastwood used to be based in Malvern PA, but they are now located in Pottstown, next to a Walmart.

They have a filler that is supposed to be good to 1000°F. A very small can is \$35 - sticker shock! They have another variety, only good to 500°F. A quart bottle of that is a mere \$20.

The powder coating process uses plastic powder to coat the workpiece. When the coated workpiece is put in an oven at 450°F, the powder melts and flows together. Norm decided to not invest in the equipment for the time being, thinking he would first like to see somebody actually using the equipment.

Norm had heard that Ron Ginger went to the Iron Fever show. He is reported as saying that he had a good time even though it was not as big as the Cabin Fever show last January, and that Gary Schoenly was quite happy with its debut. *[Editor's Note: See Ron's article in this issue]*

By the time you read this, The Granite State show will be over, as will the Cranberry Flywheelers.

Norm opened the floor for Show and Tell.

Dave Piper

Dave has a co-worker who inherited a German book about marine engineering from his grandfather. During lunchtime, they would spend time looking at the wonderful drawings of marine steam engines in it. The drawings are D and E sized prints, and Dave brought in a copy of one of a set of eight to show. This drawing is of an 8,000 HP reciprocating engine constructed for the USS Ohio, a battleship that was one of the Great White Fleet that Teddy Roosevelt sent on a goodwill tour around the world early in the last century. The prints seem to be completely redrawn, not mere copies of the original, with dimensions in metric and annotations in German.

The original plans called for the vessel to have two 5,000 HP engines, but, on news that Russia was building a bigger battleship, the plans were amended and the Ohio was lengthened by 60 feet and 8,000 HP engines were installed. Strange to say, the specifications for the Ohio in the US naval archives still show the original plans with 5,000 HP engines, but the German book has all of the updated details."

Fred Widmer

Fred announced that the Museum now plans to have the grand opening for model on November 6th. There is still time for NEMES members to nominate their models for display.

Errol Groff

Errol and his wife took a summer trip to Wisconsin. Inspired by a previous Gazette article on the Longaberger Basket factory, they took the tour. Errol said that it is very impressive. They also went through the Kohler plumbing plant in Kohler WI. They saw how they make toilets and sinks, and the foundry where they pour cast iron bathtubs at the rate of one every 30 seconds. It reminded him of a previous tour some years ago, of the factory where Gulfstream trailers were made -- raw aluminum coming in at one end and finished trailers extruded from the other.

Errol said that the NEMES website is alive and thriving and that members are encouraged to contribute.

Norm Jones added that Errol's remarks about the Kohler foundry reminded him of a camping trip they took many years ago, across the Mississippi River with their children. They visited the John Deere plant, toured the foundry and saw how combine harvesters were made.

Earle Rich

Earle brought in a 1905 book that is looking for a good home. (He found a volunteer to take it -- Mb-A) Listening to Norm talking about the 4-year-old and Hero's Fountain brought to mind another child he encountered recently. A fellow member of a Conservation Commission that Earle serves on remarked, during a conversation, that his 8 year-old daughter was interested in mechanical things. Earle told him to send her over to his shop. She came, and when she saw what was there, her eyes lit up like a pinball machine. It is very rewarding for Earle to be a mentor, and he urged every member to become a mentor, to ensure the continuation of our hobby.

Dick Boucher

Dick passed around a pattern for a model locomotive driving wheel, to illustrate the craftsmanship inherent in it.

Donald Hurter

The 20" x 5' Lodge & Shipley turret lathe mentioned in the last Gazette does have a 4-jaw chuck, but not a 3-jaw. It is 10 feet long overall. It can be seen at Kessler Machine Works Inc., 283 Neponset, Canton MA. 781-828-0881. It is free and up to you to move it.

Don recently visited two interesting shops: Barnard Waterjet Cutting Inc. and Microarc Welding Service Co, and brought some brochures from each. (I have one of each, if you did not see them at the meeting -- Mb-A).

Jigs and fixtures

The speaker this month was none other than Venerable President Norm Jones who generously divulged the secret techniques he uses to make his superb models.

A fixture can be defined as an auxiliary piece of equipment designed to facilitate the mounting of a workpiece so that the required machining operations can be performed. Sometimes it also serves to allow a workpiece to be transferred from machine to machine, keeping principal axes precisely located. They are especially useful to securely hold workpieces that otherwise would be very awkward to mount in any other way. What you need to do is to make a piece that mates with the workpiece, usually awkwardly-shaped, to create a compound structure that is easy to mount, align and locate precisely in one or more machines for the required machining operations. Also, inevitably, the equipment one has turns out to be limited in scope, (or our ambition to be overweening) so great ingenuity is needed to extend capabilities and achieve the desired results.

A jig is a device that holds, or supports, or is placed on the part to be machined so that it not only locates and holds the workpiece but also guides the cutting tool in its operation (example: a drill bushing).

The most important piece of apparatus is between the ears of the machinist that enables him to examine the part and the operations to be performed and to determine the order of operations and a suitable plan of attack to achieving this end. Careful thought is imperative, especially when machining oddly-shaped castings.

Norm's initial equipment was a 9" South Bend lathe and a mill-drill. His first kit was supplied by Paul Breitsch, a pioneer in supplying small model engine kits small enough to be made with modest equipment but large enough to be impressive.

His first attempt at making a fixture was one to hold a baseplate for a small model engine. The fixture was made from a slab of aluminum. He could have used jig-plate, but he was naive and assumed that the faces of plain plate were flat and parallel. First he milled the edges parallel and square and then he drilled and tapped a hole pattern to hold a right-angle plate. Despite its simplicity, this baseplate was an invaluable tool.

His next fixture was made to hold the body casting for the construction of a Mery engine .

It was used for:

- Facing the cylinder mounting surface
- Establishing the hole pattern for cylinder mounting
- Locating main bearings and maintaining perpendicularity to the bore
- Machining the timing gear mounting
- Locating fixtures on the casting
- Boring the cylinder to accept a sleeve
- Lapping the cylinder



Mery Engine fixture on lathe carriage Norm Jones photo

This fixture **was** made from jig plate, with both surfaces guaranteed flat and parallel. It was designed to fit on the carriage of a 9" South Bend, in place of the compound, with a couple of adjusting screws allowing it to rotate a bit for precise alignment. It was made from a long strip of jig plate, cut up into suitable pieces, then assembled together with dowel pins and large screws. This fixture also had a tapped hole pattern for mounting a right-angle plate. In addition to its use on the lathe carriage, it could

be clamped in the milling machine vise or be bolted to a right-angle plate.



Mery fixture in mill vice, at 45 deg Norm Jones photo

The body of the casting bolts onto the fixture on legs. The cheeks of the fixture were milled to maintain the body of the casting at the precise height necessary to bore out the cylinder. The fixture was used to line-bore the 7" long body and the cylinder, sitting on the lathe carriage, (see picture below) using a "between centers" boring bar.

This boring bar is another useful tool. It uses a lathe bit as the cutting tool, which can be adjusted with a 10-32 set screw, so each turn moves the bit by .03125". A similar set-up was used to lap the cylinder. *[Editors Note: I used a 4-40 or 5-40 set screw in mine, each turn moves the bit .025, a much easier number to deal with!]*



Using boring bar on Mery engine Norm Jones photo

When mounted in the milling machine, the fixture locates the flanges for mounting the intake and exhaust chambers. When used with a right-angle plate it also locates the main bearings to be bored dead perpendicular to the bore, to machine the

mounting surfaced for the timing gear, and to locate other features on the casting.

Norm also made a cylinder mandrel to run between centers on the lathe, to face the cylinder mounting face. The body was kept from turning by machined flats. This tool must be turned slowly, because the whole assembly is violently out of balance.

A small but useful fixture was a *centering plug*, a simple plug with a flange, used to provide location for a center that is concentric with the bore when establishing the hole pattern.

Another simple fixture solves a nasty problem of crankshaft flexure when machining it. Mounted on the throw, it temporarily converts the assembly into a more rigid structure making the machining easier.



Crankshaft fixture number 1 Norm Jones photo

An ancillary fixture allows a cast crankshaft to be mounted in the four-jaw chuck, holding the main shaft on the lathe axis at exactly the right distance for the throw. A hub on the fixture enables the fixture to be precisely located with a dial indicator.



Crankshaft fixture number 2 Norm Jones photo

For making piston rings, Norm used a Paul Breitsch type fixture that holds the ring between end plates that are held together with four screws. The ring is turned to rough dimensions and then

the slot is cut. The ring is then compressed with a hose clamp, then the plates are tightly clamped together. The compressed ring, so clamped, can be machined to the exact bore of the cylinder.



Piston Ring fixture, with ring blanks Norm Jones photo

To lap a shaft, Norm made an external lap from brass with a hole as close to the starting diameter of the shaft as possible. A slot and a compression support allow the lap to be tightened progressively as the shaft is lapped to the desired diameter and surface polish.

The internal lap for the cylinder is made from brass rod stock. Starting at the exact diameter of the bore, it is slotted, with the slot lot as long as possible. The slot doesn't have to be a perfect cut. Cutting by hand with a hacksaw is sufficient. A setscrew in the middle of the cut, perpendicular to the slot, and on one side only, is used to expand the lap. Only very small amounts can be polished out of the bore, but it is useful to get the bore to a consistent dimension and polished.

A die holder, holding a die exactly on the lathe axis and sliding along the axis is another very useful jig for getting the cut threads precisely aligned, preventing drunken threads.

Remarks from Max

Sundown Friday evening, September 26th marks the beginning of the real new year. I would like to take this opportunity to wish all members of NEMES (even those who are uncircumcised heathens) a happy, healthy and prosperous New Year.

Volunteer Needed!

Have you always wanted to be an author? Get your feet wet by becoming a NEMES meeting reporter. Good practice and expert assistance is just an e-mail or telephone call away. You could be the successor to Neville Shute, and become rich and famous! Don't delay. First come, first served. Volunteer now! See Max ben-Aaron at the next meeting.

Max



Ron's Ramblings

by Ron Ginger

I'm starting to feel retired. The house construction is mostly done. My wife still has a few yellow sticky notes around places that need a bit of trim or finish, but the big work is done. In August, I started to do some travel, and I've driven just over 4,600 miles since August 7.

I started out at 4:30AM on Thursday, August 7 headed to Iron Fever. I left early so I could get to Cornwall to see the furnace before they closed at 5:00PM. A kit for the Cornwall Blowing engine is available and I know several fellows that have built one, so I wanted to see the real engine.

The furnace is essentially as it was in the late 1800s. When it went out of production, the family that owned the land just closed the doors and left it alone. The state got it as a historic site and now runs it as a park. It is complete with the blowing pump, furnace and the steam engine. It is a very good place to visit, and a possible stop en-route to Cabin Fever someday.

On Friday morning I drove to Columbia PA, to visit the National Watch and Clock Collectors Museum, a very nicely done museum, with more clock cases on exhibit than clock works, but enjoyable. Of course there is a bookstore on site and I bought some more plans for projects.

On the way back to the Iron Fever site, I passed the Harley Davidson plant and recalled Errol talking about a tour, so I stopped. They run a nice 1-hour tour that goes through the stamping plant, and final assembly areas. It's well done

and nicely guided with a radio headset so you can hear the guide. It's well worth a visit, even if you are not a hog fan.

I spent all of Friday afternoon at the Iron Fever auction. About 500 items were sold, but nothing I really needed. It was fun to watch and was a chance to talk to lots of people. Rich Puleo snagged a nice sheet metal brake.

All of the usual vendors were on hand for the Iron Fever show on Saturday and Sunday, and a lot of the usual exhibitors. It was not as full at Cabin Fever, but Gary seemed happy and pointed out that the total attendance was more than the first Cabin Fever show. I set out a few models, but I spent most of the time walking around and talking to people. There were a few CNC guys from the Washington area, and a very nicely decorated Busker Organ that has inspired me to complete mine.

As I left the show on Sunday, I asked Gary if there was anything to see on my route north. He suggested the Millersburg Ferry across the Susquehanna River. This was a wooden ferry claiming to be the last wood double-paddlewheel ferry in operation. It took 4 cars at a time and looked right out of 1920: a nice break from Interstate roads.

Monday morning, I was in Williamsport, PA to visit the Grizzly Showroom, a huge showroom with just about every Grizzly machine on display. It was interesting to see it all. Most of it looked OK. I was impressed by their G3102 mill. This is a near copy of the Clausing Mill I have, and was very nicely finished. This mill is painted white instead of Grizzly green. It is part of their high-end line of tools. Its selling price of \$1695 is right about what one pays for a used Clausing.

I went on to Detroit, where I spent 5 days helping my brother build a major addition to his house. On Thursday, we had most of his roof torn off and were building a big dormer just as the great blackout hit. A neighbor had a broken generator that I was able to get working, so we got a roof back on his house. On Saturday afternoon I loaded the pickup and headed home, driving all night across New York, and was back in Maine by noon Sunday. After a week of heavy work in high heat and humidity, I should have been dead, but I felt great, and really enjoyed the ride. I have a GPS chart plotter mounted just above the rear

view mirror, so I can watch my progress as the miles roll by.

On Monday, I bought a boat I had been looking at, and spent a few days riding around the rivers and bays around here. Its good to be back on the water.

On Labor Day, we loaded up the fifth wheel and headed north. We drove over the new Confederation Bridge to Prince Edward Island, a 9-mile span across Northumberland Strait. It's a magnificent piece of engineering, with a nice visitor center and videos of the bridge construction; an amazing project, with all the bridge components built on shore, towed out and placed by an 8,000 metric-ton barge crane.

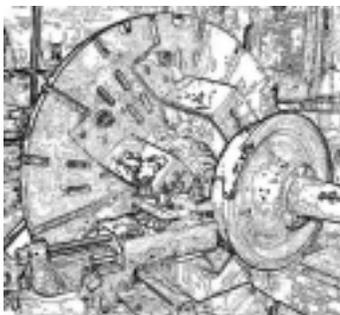
We toured all the usual sites on PEI, including the wind farm at North Cape. They have 8 big turbines in operation, and a 9th bigger unit that was due to go on-line the day after we visited.

We then headed out to Cape Bretton and toured Louisburg and the Cabot Trail. Louisburg is a recreation of the 1745 fort, complete with costumed actors. It was much larger than I expected and very interesting. There was a good exhibit showing the research and construction of the fort.

On the way back we found a steam-powered sawmill and water powered gristmill, both fully functional as Provincial parks. In each mill, a well-informed tour guide took us around and explained the operation. Both mills were in production right up to about 1950 and were made into parks before anything was lost.

So, in the past 4 weeks, I've driven over 4,600 miles, seen lots of interesting mechanical places, and really starting to get into the retired life. I may even get back to model building someday.

Ron



Museum Shop Update

Fred Widmer and
Max ben-Aaron

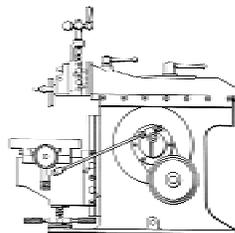
The Museum now plans to have the grand opening for models on November 6th.

Our magazines are being installed in new bookcases by Bradley Ross. Bill Brackett and Dick Boucher are well on their way to have the planer overhead drive belt assemblies done, ably assisted and supervised by Chief Artisan Fred Widmer. Bob Steele has been dividing his time between the Ford model T (which is starting to run really well) and the belt-driven motorcycle.

Max ben-Aaron has finished polishing up the engraving machine and, between bouts of exercising the surface grinder, is tuning up some of the Museum's collection of model steam engines which might be candidates for the model gallery.

Finbarr Murphy is continuing to put the big Wayne air compressor (now sparkling clean) into working order.

Fred and Max



Shaper Column

Kay Fisher

Voyage to Collect Shaper

Over time, I have observed that many people will buy a special lathe or milling machine or other significant machine tool at the drop of a hat if the price was right. Yet these same people are unwilling to hop in their car and drive a few hundred miles given the same opportunity. Years ago I came across an advertisement for a Myford lathe in Toledo Ohio. I phoned the owner and found it was still for sale. So I phoned my wife and asked permission, then called the fellow right back and said we'd be there in two days. We took off driving through snow, stayed at a couple of nice motels, and made quite an adventure of it. It was a trip we will never forget.

Similarly, there is only one car that you can order that has "Museum Delivery" as an option. For a few hundred extra dollars you can accept delivery of a brand new Chevrolet Corvette in the Corvette Museum in Bowling Green, Kentucky.

This is an adventure that hundreds of new Corvette owners have taken. Frequently fathers take their sons there as a bonding trip.

You are given a tour of the Corvette factory in Bowling Green then a tour of the Corvette museum. At the end of the museum tour, as you come around the last corner, there is a roped off area where your new Corvette is waiting for you. The staff gets you settled in and away you go out the door for your first long drive home.



1966 Corvette photo by Kay Fisher

The above picture was in Whidbey Island, Washington in about 1969. The Corvette was bought used and worth about \$2,000 at the time. My wife Pat is holding our baby daughter (Wendy) who is now 35 years old. It was a 327 cu. in. 350 hp.

The story that follows is from Richard Byron Peddie from Boulder Colorado:

"I returned last night to Boulder, CO, after a 4,000 mile round trip to pick up the South Bend 7" shaper from Lyons, New York.

A friend with a truck was gracious enough to offer to accompany me. We set out on July 15th, and made it to Omaha the first night. The second night we stayed in Toledo. On the third day we made it to Pine Grove Mills, PA, and visited Andy Lofquist - proprietor of Metal Lathe Accessories. Andy provides beautiful kits for accessories for the South Bend 9" lathe, although many are readily adaptable for other machines as well. Stopping at Andy's was a treat because his shop is so sparse and small, yet he manages to produce such lovely, intricate work. He is a true artist. I left quite a bit of money on the table, buying many of those kits I had been eyeballing for a while, and justifying it to myself that at least this way I was avoiding the UPS charges on 146 lbs. of iron castings!

After seeing Andy we pushed on to Horseheads, NY, and checked into a motel at about 2 a.m.

The next morning we made it to Lyons, NY, quite early, and loaded the shaper: It is gorgeous, with the original stand and vise, and very little wear. I am quite pleased with it.

So we headed through Buffalo and into Ontario, stopping briefly in Niagara Falls. We slept in Windsor, Ontario, that night, and crossed into Detroit the next morning, spending a chunk of the day at the Henry Ford Museum. We made it to Holland, MI, by nightfall.

We took the ferry from Ludington, MI, to Manitowoc, WI the next morning - a pleasant respite from driving - and then had lunch in Green Bay at an old railway depot converted into a microbrew pub. I bought a Bridgeport cherrying attachment from a guy in that area, and we visited the National Railway Museum nearby. We made it to Hudson, WI, by night.



South Bend Shaper photo by Richard Peddie

The next day I cracked open the paper only to find that a local Minneapolis technical school was liquidating some of their machine tools, and so that day was lost: I saw a Monarch lathe go for \$1,000, an Emco CNC turning center, complete, go for \$500, etc. I spent about \$190.00, picking up a couple of small annealing ovens and some abrasives. We spent the rest of the day at a friend's place where my fellow traveler picked up a molding bench. Now the truck was FULL!

The next morning we set off and made it to Rapid City, SD, and yesterday we dropped down past Mount Rushmore, etc., through Cheyenne, to home. The odometer showed just about 4,000 miles in 8 days as we arrived.



South Bend Shaper photo by Richard Peddie

Just an example of one guy pursuing his shaper...”

Thank you Richard for that great acquisition story and pictures.

The ferry across Lake Michigan that Richard took is actually state highway 10 “continued”. During the 1950s, old highway 10 was to the people of the northern states the equivalent of historic route 66 in the southwest. It went from Seattle Washington to Detroit Michigan. The ferry is large enough to also take several railroad cars!

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

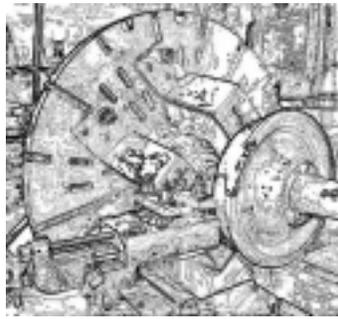
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Shop Hints

Compiled by
Mike Boucher

Drilling files

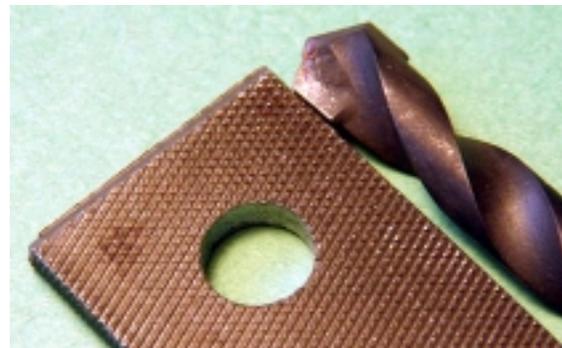
By Bob Beecroft

I had been home sick for week or so with shingles. I wasn't getting much done that I'd consider useful.

I did manage to get to the shop to try something - drilling through a file. A fellow that shows up at the annual Pasadena, CA International Model Show, each January, sells what he calls “super drills”. He drills through all sorts of stuff, the most difficult is a file.

Today, through boredom I suppose, I went to the shop and took out a new, garden variety 5/16” masonry drill and put it in the drill press. With my Clausing Variable Speed set to 400 RPM and a file in the vice, I proceeded to bore a hole right on through a file 3/16” thick with no problem.

The first try, I drilled through it near the tang end. Didn't seem very soft there, but then I went ahead and drilled another hole through the other end which I know is hard as the back of Superman's head. I didn't use any oil or any other lubricant. I might be well advised to use some sulfur based oil or other high-pressure lubricant. I'll give that a try next time I happen to need a hole in my file!



Drilled file

Bob Beecroft photo

Bob

Waushakum Live Steamers Annual Meet

By Mike Boucher. Photos by Bill Brackett and Mike Boucher

As mentioned in the previous Gazette, the weekend of August 22nd – 24th was the Waushakum Live Steamers annual meet. Waushakum is a private track on 12 acres of forested land in Holliston MA. The track gauges are 3 ½”, 4 ¾” and 7 ¼”, which equate to ¾” = 1 foot, 1” = 1 foot, and 1 ½” = 1 foot, respectively.

The two smaller gauges are on a “highline”, where the track is 28 inches off the ground on concrete and wood trestlework. The larger gauge is on the ground. The highline track is about 1700 feet long, and the ground line is about 4000 feet.

If you missed the meet, enjoy the photos, and remember that Waushakum has a meet the weekend before Labor Day every year!



↑ Here we see Pat Fahey crossing “Dimond Trestle” over the ground-line tracks. The engine is a 4 ¾” gauge model of one of the “Maine Two Footers”, 2 foot gauge prototypes which ran in rural Maine. Several of these engines survived to run at Edaville, in Carver, MA

The front of a 7 ½” gauge 4-4-0, built by Father Jay Finelli, of Tiverton, RI. The “Diamond” smokestack, which is so prominent, is typical of the wood-burning engines built during the American Civil War era. ↓





↑ For me, one of the highlights of the meet was seeing Ed Wooding's 1" model of a Pennsylvania Railroad T-1 class 4-4-4. The Pennsy experimented with a variety of wheel arrangements towards the end of steam. One of the more successful was the T-1. They built 2 for testing, and liked it enough to build 48 more, with minor modifications. This engine is unique in that while it has four cylinders, each pair powering two drive axles, it was a rigid frame. This was known as a "Duplex" arrangement.

This might be the most detailed model I've ever seen. Photos do not do it justice. It's about 10 feet long, and Ed estimates he's spent 17,000 hours on the model. It is still not in running condition, but it's 99% finished. This was the first time the engine visited Waushakum.

Another first time visitor was this distinctive engine, a 7 ½" gauge model of a Boston and Albany 4-6-6 tank engine. The prototype engine was used for commuter service around Boston, especially on what is now the MBTA Green Line to Riverside. The engine was built to operate in both directions. There is a cowcatcher at both ends.

This model was built by Fred Bouffard, of Long Island. He used a grand total of zero castings for the engine. (no, that's not a typo, even the spoked drive wheels were cut from solid stock.) ↓





← Here we see another distinctive locomotive, a model of a very early “Grasshopper” engine. The cylinders are mounted vertically at the rear of the engine, and operate the red levers visible on the top of the engine. The lever is pivoted at the front of the engine. The connecting rods to the wheels are in between. This means that the stroke of the cylinder is larger than the throw of the crankpin on the wheels.

The model was built by Bill Evans, of Montreal, QC. The engineer is Karen Boucher. This was the first time Karen got to run a steam locomotive, and I’m sure it won’t be the last!

Here we see George Dimond crossing the trestle named after him.



He is running a 3 ½” gauge model of a Canadian National 4-8-2, one of the six engines George built.

Behind George, you can see the three rails on the highline. Both 3 ½” and 4 ¾” gauge locomotives can run on the track, sharing one common rail.

The engine behind George is Joe Tanski’s 4 ¾” gauge 4-4-2.



Topsfield Auto Show Photos

By Mike Boucher. Photos by Bill Brackett

On Sunday, Sept 7th, we had our annual outing as guest of the North Shore Old Car Club, at the Topsfield Fairgrounds.

As can be seen by this photo, the crowd was pretty interested in what we were exhibiting! →



Norm's view from inside the tent as Rollie Gaucher talks about his Bentley Rotary engine ←



↑ Here's a view of the table before the crowd arrived. The engines are by Ed Rogers, the Concertina is Henry Szostek's, and the locomotive is Dick Boucher's. The people seated are Frank Stauffer, Bea Boucher, Norm Jones, and Dick Boucher.



← Frank Stauffer explaining the workings of his Ryder Ericsson hot air engine to some spectators.

Frank Stauffer, Ed Rogers, and Henry Szostek
 ↓ relaxing in the shade of our tent.





Humor

Understanding Engineers, Part 1

A pastor, a doctor and an engineer were waiting one morning for a particularly slow group of golfers. The engineer fumed, "What's with these guys? We must have been waiting for 15 minutes!"

The doctor chimed in, "I don't know, but I've never seen such ineptitude!"

The pastor said, "Hey, here comes the greens keeper. Let's have a word with him. Say, what's with that group ahead of us? They're rather slow, aren't they?"

The greenskeeper replied, "Oh, yes, that's a group of blind firefighters. They lost their sight saving our clubhouse from a fire last year, so we always let them play for free anytime."

The group was silent for a moment. The pastor said "That's so sad. I think I will say a special prayer for them tonight."

The doctor said, "Good idea. And I'm going to contact my ophthalmologist buddy and see if there's anything he can do for them."

The engineer said, "Why can't these guys play at night

Engineering Conversions

This was sent to the model engineering list by Randolph Lee. I had seen it out on the net before, so I'm assuming its in public domain.

Here are some handy engineering conversions I thought people would enjoy:

- 1 kilogram of falling figs: 1 Fig Newton
- 1 millionth of a fish: 1 microfiche
- 10 cards: 1 decacards
- 1000 cubic centimeters of wet socks: 1 literhosen
- 2000 mockingbirds: 2 kilomockingbirds
- 1 million bicycles: 2 megacycles

- 1 million microphones: 1 phone
- 453.6 graham crackers: 1 pound cake
- Basic unit of laryngitis: 1 hoarsepower
- 1000 aches: 1 kilohurts
- Half of a large intestine: 1 semicolon
- 16.5 feet in the Twilight Zone: 1 Rod Serling
- 14 miles of intravenous surgical tubing at Yale University Hospital: 1 I.V. League
- 365.25 days of drinking low-calorie beer because it's less filling: 1 lite year
- Time it takes to sail 220 yards at 1 nautical mile per hour: A Knot-furlong
- 2 monograms: 1 diagram
- 100 rations: 1 C-ration
- 10 rations: 1 decoration
- 1 trillion pins: 1 terrapin
- 1 millionth of a mouthwash: 1 microscope
- 4000 pounds of Chinese soup: 2 Won ton
- Ratio of an igloo's circumference to its diameter: Eskimo Pi
- Time between slipping on a peel and smacking the pavement: 1 bananosecond

Understanding Engineers, Part 2

An architect, an artist and an engineer were discussing whether it was better to spend time with the wife or a mistress.

The architect said he enjoyed time with his wife, building a solid foundation for an enduring relationship.

The artist said he enjoyed time with his mistress, because the passion and mystery he found there.

The engineer said, "I like both."

The architect and artist both say, "Both?"

The engineer says, "Yeah. If you have a wife and a mistress, they will each assume you are spending time with the other woman, and you can go to the lab and get some work done!"



For Sale

Shaper Work CD

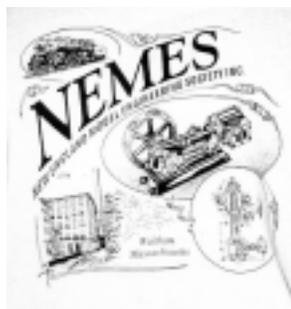
Put out in 1944 by the New York State education Department this 326 page manual is chock full of valuable tips and information on using the King of Machine tools....The Shaper. Covered is everything you need to know about the care and feeding of the shaper, use of the shaper, even how to sharpen tools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

\$1 Tool Sale!

The Tool Liquidation Center, in Hudson, NH, is having a \$1 sale on Saturday Oct. 11 and Monday Oct. 13 from 9pm to 6pm. Machinist tools are 50% off, and power tools are 10% off.

The Tool Liquidation Center
216 Center St (Route 111)
Hudson, NH



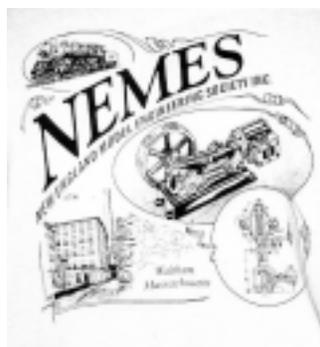
**NEMES
clothing**

NEMES Tee Shirts

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

Xtra-Large tee shirts are now **OUT OF STOCK!** If you're interested, let us know so we can judge if/when to reorder. All other sizes still available.

Artwork:



Rear



Front

Prices:

- S - L \$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
10 May's Field Rd
Lunenburg, MA 01462-1263
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 or (508) 393-6290.

Oct 2 - NEMES Monthly club meeting
7PM - Charles River Museum of Industry,
Waltham, MA (781) 893-5410

Oct 4 - The Original Yankee Steam Up
9AM - 4:00PM. New England Wireless and
Steam Museum, East Greenwich, RI.
<http://users.ids.net/~newsm/>

Oct 5 - Rollie Gaucher's Swap Meet
Noon to 5PM. 90 S. Spencer Rd.
Spencer MA (508) 885-2277

Oct 5 - Foreign Auto Festival

Owls Head Transportation Museum, Owls Head, ME

Oct 19 - MIT Flea Market

9AM-2PM Vassar St. Cambridge MA.
<http://web.mit.edu/w1mx/www/swapfest.html>

Oct 26 - The Great Fall Auction & Open House

Owls Head Transportation Museum, Owls Head, ME

Nov 1-2 - Fourth Annual Model Engineering Exhibition

American Precision Museum, Windsor, VT.
(802) 674-5781 www.americanprecision.org

Nov 6 - NEMES Monthly club meeting

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

Dec 4 - NEMES Monthly club meeting

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

Bill



Web Sites of Interest

Quick and dirty toolpost drill

Homemade drill to mount on your lathe toolpost. Very handy for drilling cross holes in round stock!

<http://terrapien.ru.ac.za/satrain/lathe/toolpostdrill.html>

Homebuilt DRO

Here's a guy who built his own DRO. This web page gives all the info you need to build your own, including the schematics of the electronics. He also seems to sell the etched PC board and front cover for the box.

<http://www.shumatech.com>

and click on "DRO-350".

Calibrated lathe leadscrew

Homebuilt version for a Myford ML7, gives precise measurement of the movement of the carriage.

<http://terrapien.ru.ac.za/satrain/lathe/leadscrew.html>

Live Steam in HO scale

Hornby, one of Britain's premier model railroad manufacturers, has announced an HO scale live steam engine. It is a model of the LNER A4 class 4-6-2, specifically "Mallard", the engine which still holds the world's speed record for steam locomotives

It runs on the normal electric current from the rails, much like your normal electric trains. The difference is that there is a flash boiler in the tender, the electricity provides the heat.

The amount of electricity sets one of four modes: Off, Simmer, Running Mode and Superheat. The superheater and whistle are both under the 'boiler' casing with a fair sized electric motor in the 'fire-box' - presumably this uses superimposed DC to control the valves for start/stop, reversing etc via the separate controller.

Estimated price is £500 pounds, or about \$800.

http://www.hornbyrailways.com/pages/livestm_live.aspx

Hardness Scale Conversions

Have you ever had a question about the interpretation of different hardness scales? Recently, Design News Magazine had a column where someone asked this very question. The columnist replied with this website, containing conversion tables between various Rockwell hardness scales, Brinell hardness scales, Vickers hardness, and others. It also has many links to other information on hardness and strength testing.

http://www.gordonengland.co.uk/hardness/hardness_conversion_1c.htm