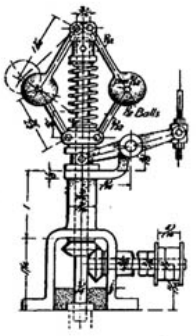

The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

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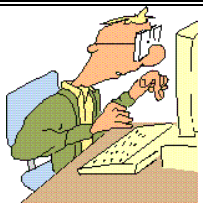


Editor's Desk

Victor Kozakevich

Hi folks,

Based on the fact that the students have left Cambridge, it must be vacation season. So, if any club members are lucky enough to combine a family trip with a side visit to a place with machinist or technology interest, the rest of us might like to hear about it. And if you send out picture postcards of steam engines, at least your friends at NEMES will understand.

Recently at a local watch club meeting, I had a chance to look at a rare "crystal plate" Waltham pocket watch. The factory took standard watches and replaced the back plate with a sheet of rock crystal fitted with ruby jewels (bushings). The gears seem to float . A rare and remarkable piece of workmanship for its day, and probably still difficult to replicate, even with current technology. But don't let that stop you from trying!

Vic

Next Meeting

Thursday, July 1, 2004

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

Membership Info

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

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

Addresses are in the left column.

Contents

President's Corner

Norm Jones

The Meeting

The July meeting will feature one of our semi-annual "Poster Sessions". It will be an informal get together where everyone is encouraged to bring in something that they are working on. It's a great opportunity to get assistance on a particular problem or just show off your latest project. The thought has always been, that attendance might be down at meetings that occur around the holidays and that we would not schedule a speaker for those meetings. It has been my observation over the years, that attendance does not go down and that these meetings are indeed very popular.

Library Item

A request was made at the last meeting for whoever has Rudy Kouhoupt's Video on Advanced Machining Techniques to please return it, as there are other members who would like to borrow it.

Dave Dearborn's Show

I traveled north to Dave Dearborn's Antique Machinery Show on Saturday June 5th. This show proves the point that it doesn't have to be a huge event to be great. Dave's show is held in his yard right on the old Route 3 in West Campton New Hampshire. He provides a steam table for those individuals who would like to operate their steam engines on the real thing! Somehow I missed seeing Russ Steeves steam engine in operation. He and Les Russell were running it earlier in the day. The engine is about to be installed in Russ's steam boat which is now under construction. One can get caught up in conversation so easily, "where does the time go"!

I was fortunate to be able to go for a ride in a Stanley Steamer in the afternoon and also for an extended twilight ride in Dave's 1909 Jackson touring car right after the, not to be missed pot luck supper that is an annual feature on Saturday evening. Another great show. Thanks Dave!

See you on July 1st

Norm

The Meeting

Max ben-Aaron

Venerable President Norm Jones opened the June meeting in the Jackson Room at the Museum by welcoming new members. Since this is the month of June, our constitution calls for elections. A motion was made and seconded to re-elect the current slate of officers and passed unanimously.

In past meetings, Frank Doiron brought to our attention that the articles of incorporation that we have filed with the State require us to file a statement annually. Since we do not expect to inherit or own property of great value, we need to modify the articles to relieve us of the necessity to file annually. A motion was made and passed to give Frank the authority to take any steps necessary to have the articles amended, and passed unanimously.

Geoff Brown donated a box of books to the Club library when he left to take up an academic position, with the proviso that we make a donation to the Museum reflecting the value of the books.
A consensus was reached that a fair valuation was $150. A motion was made and seconded that the Treasurer be authorized to make a $150 donation to the Museum, and passed unanimously.

Show & Tell

Mike Boucher
A group of railroad speeder enthusiasts would be meeting at the Hobo Railroad the first weekend of June for their annual trip down the tracks to Wiers Beach, NH. Railroad speeders are two axle motorized cars, usually just big enough to hold two people comfortably, or four people somewhat uncomfortably. They're powered by one or 2 cylinder engines, and the most well known manufacturer was Fairmont. It people were going to be in the Lincoln or Laconia area, they should try to look for them...

Larry Keegan was in Cleveland (or was it Cincinnati?) and he visited a museum in the old Union Railroad Terminal. He described the Museum and recommended it highly to anybody who happened to be in Cleveland.

Denis Norden had, in the past described an interesting and fool-proof method of doing container gardening. He expanded on his previous remarks and offered interested members a sample of the fabric needed to implement the process. Several members availed themselves of his offer after the meeting.

There was some discussion (and some authoritative remarks by Dick Koolish on safe viewing) on the upcoming transit of Venus.

The Carl West Show

The speaker for the evening was Carl West. In the Gazette announcement, Carl was billed as an armor maker, and I thought we were going to hear all about how to make armor, a suitable topic for metalworkers. Instead, what we got was a performance which was a work of art in its own right. Afterwards, as he was wrapping up the public address system, Ed Borgeson remarked that he wished that we had arranged to tape Carl's delivery. I had to agree, especially since I knew that it would be very difficult, if not impossible to capture the flavor of the show for this report.

Most of us are very dignified and do not show much emotion. Doug White, who was on old friend of Carl's brought his daughters, Gwen and Fiona, and their unreserved giggles and screams of delight were a well deserved tribute to Carl's artistry as a performer. . Doug has known Carl for over 20 years through the SCA, but had lost track of him until recently. Carl had once given Doug some steel tor Gwen for a science fair project on rust preventatives, so she already knew him, albeit indirectly

Carl, aka Frydherick Eysenkopf (Frederick Ironhead) of the Barony of Carolingia, (Heraldic insignia: Per chevron inverted azure and sable, a chevron inverted cotised and in dexter chief a cinquefoil Or) is a member of the Society for Creative Anachronism, a fellowship of people who are enamoured of the culture of the Middle Ages in Europe. In particular, he participates in armored combat in which the combatants fight each other with huge swords, made of rattan. The rattan swords and staves used are not usually enough to produce serious damage, but a blow from the can hurt enough that you want to be protected against it -- with armor. As a further level of protection against bruises, much of the armor has internal padding.

The martial rules of the society specify the requirements for protection of the target area. the area in which blows may legitimately be struck. The Manual of arms defines the "Target Area" as:

Torso: All of the body (excluding the head and arms) above the points of the hips including the groin, shoulder blades and the area between the neck and the shoulders will be considered part of the torso.
Face: the area between the chin and the middle of the forehead and between the ear openings.
Head: The whole head and neck except the face as defined above.
Thighs: The leg from one inch above the top of the knee to a line even with the bottom of the hip socket.
Hips: Area between the bottom of the hip socket to the point of the hip (iliac crest).
Shoulder: From the point of the shoulder down to a line even with the top of the underarm.
Arms: From the shoulder to one inch above the wrist.
Blows that land outside the legal target areas shall not be counted. Fighters may not intentionally strike areas outside the legal target areas.

Carl donned all his armor and explained how he gradually made armor to complete his ensemble.

He demonstrated, with vivid commentary, which blows were legal and which were not.

The plate armor is made by cold-forming. A hollow is cut into a block of wood and the steel is formed by hammering it into the hollow in the block. 20 gauge steel plate is mostly used. The hammer has a flat face, the edges rounded. Armor includes gauntlets, pauldrons (on shoulders), hauberks, grieves on legs and, of, course, helms.

Being used in (simulated) combat, plate armor has to be articulated to allow movement. Medieval armorers figured out how to make ingenious hinges for most joints but some areas were too difficult to do with rigid pieces (the groin region between the hauberk and the leg armor, for instance) so chain mail had to be employed. Carl does not use a shield.

As an aside, if you are interested in making chain mail, the trick is to wind a doubled strand of wire around the arbor. Then when you make a longitudinal cut to separate the links, they will not need to be opened, saving a step/link.

During combat there are Marshals who supervise the fight. If, for example, a blow is truck against your right arm, such that, in real combat, you would have lost the use of the arm, but still be able to fight, it is then incumbent ton you to continue fighting, if you can, with your left arm. All warriors are honor-bound to observe the rules of combat; if you are struck in a vulnerable area you have to react as though it had been a real blow on the battlefield.
Some of the rules are:
An effective blow to the arm above the wrist will disable the arm. The arm shall then be considered useless to the fighter, and may not be used for either offense or defense.
An effective blow to the leg above the knee will disable the leg. The fighter must then fight kneeling, sitting, or standing upon the foot of the uninjured leg.
Combatants in a tournament can participate in single combat or in teams of two or more. Teams rehearse ensemble tactics.

The members in attendance, I am sure, will fondly remember Carl's performance for many years to come. Well done, Carl!

For more information:
http://www.sca.org
http://lists.gnu.org/mailman/listinfo/carolingia-fighting

Max

Treasurer's Report

Rob McDougall

As of 5/31/2004

Balance as of: 4/30//2004	**$7,910.94**
Interest Income	.67
Gazette Production Expense	-170.42
Guest Speaker Fee	-50.00
Balance as of: 531/2004	**$7,691.19**

Special note: I would like to thank Jim Paquette for his generous contribution to the club following his annual swap meet in

Uxbridge. (The deposit should show up in next month's report.)

Also, the club made a contribution to the Museum this month in the amount of $150 to honor Jeff Brown who generously donated over 2 dozen excellent Model Engineering books to the club library.

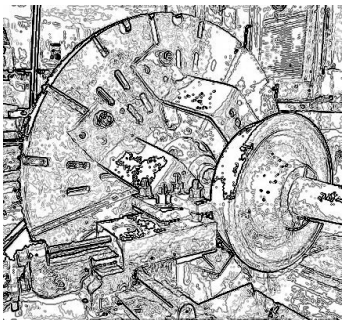
Next month's report will be delayed until the following month due to your Treasurer disappearing to the other side of the earth for the month of July. But I'll be back.

Thanks to all who voted for me to be re-elected Treasurer again this year at last month's Annual Meeting. It was a hard fought campaign with much hand ringing about the outcome on my part. Fortunately I squeaked through once again without too many people noticing.

All my opponents will have an opportunity again next year.

Rob McDougall, Treasurer

Rob



Making Tools

Just a couple of years ago I don't think I knew what a shaper was, but through my association with NEMES, albeit a far one, I got to know a bit about shapers. About two months ago I finally got to see my first one in person, and to see and hear one running. Seeing and hearing one in person was the final push... I just *had* to have one.

Well, I bought a shaper this past month. Because of a lucky string of trades, I located one nearby. It's a little 7" AMMCO, and it runs like a top. No doubt, I'll go through it for some spit'n'polish, but it's just fine as it is, too. Came with the original motor, original vise, cast cages covering the belt on one side, and the mechanism on the other. It even came with a decent stand. The only thing it really must have is a replacement electrical cord, and that will go on today.

I spent a little time doing some research, and thanks again to NEMES members, came up with the right stuff, and right away. Kay Fisher sent me a file with the manual for the machine (doesn't say AMMCO on it, but rather says Delta-Milwaukee). There are several others manufactured that are identical or nearly so, that could use this same manual, such as the AMMCO and Rockwell).

The Shaper Group on Yahoo netted a design for my first tool for the machine, a #39 size (an Armstrong #) for 7"-10" shapers. The drawing came from Art Volz, which can be found on the Yahoo Shaper Group site at http://groups.yahoo.com/group/Metal_Shapers/files/ under holder1.jpg and holder2.jpg. Art is working on a book on shapers, along with another of his engineering cronies. They are shooting for sometime next year for a publication date. Of course he asked about Kay Fisher, and was he still involved with NEMES, and I told him that's where I got the manual on the machine. Art was already aware of Kay's recent Arizona move. He also mentioned that both he and Kay own 1937 Lewis 10" Shapers. Interestingly, the two differ significantly; Art says "Kay's is the very early version with square ram slideways. About 1937 these were changed to V-ways as mine has."

Art also noted that the Armstrong Brothers might churn in their graves...the design is borrowed (my term) from their 1901 patent. His design does vary in some ways, and the modification I did even more so. From 103 years ago, I don't think there's likely patent infringement suit forthcoming. You can see the original patent drawings, specifications and claims at www.uspto.gov. First hit *Search*, then *Patent Number Search*, then type in *675,184*, and it'll come up. You can no longer print copies for free, as was the case some time ago. They are $3.00 now, but worth every cent if you want to have the documentation.

I modified the shaper tool design as supplied by Art slightly; I made a slot 3/8 wide by about .150 deep about .750 long in the round part. This added quite a bit of area for the silver to hold, with no big fillets on the outside. I filed one end of the tool shank to fit the rounded end left by the milling cutter, then silver-brazed it together. Any number of other methods of attachment would work as well. One might even choose to mill the entire thing from barstock, I suppose. I considered TIG, but chose to silver-braze instead. The slots across the face to index the 1/4" tool were cut after it was brazed together. It's been quite a while since the last bike frame I built was done, and I've not silver-brazed anything much in quite some time. Still, the job came out pretty fair on the first attempt. The 'finish' is simply a quick run through the abrasive cabinet using glass-bead to clean things up.

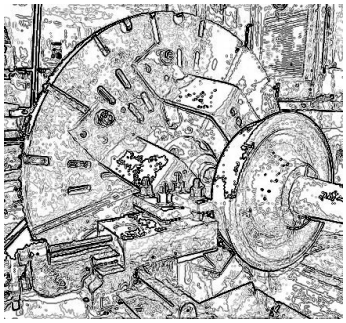
Art noted about the addition of the slot: "Silver brazing, if the mating surfaces fit close and are clean, gives a very strong bond--about 70,000 psi tensile if I remember correctly--and a really good looking joint as well." Not shown in the photos, but the far end of the tang on mine has a .500 radius...it was a virtually perfect fit and would have been very strong. I did the slot change more to make it really easy to jig it up for brazing...like*no* jig, as it self-aligning and all I had to do was flux it, hold it, heat it, and let-in the silver. Basically, I'm lazy, and the slot made things easier for me. Still, more area is added strength, but a properly done joint either way is more than strong enough.

I hope you are all staying warm and spending a load of time in your shops.

Your West Coast NEMES rep,

Bob Beecroft

Bill



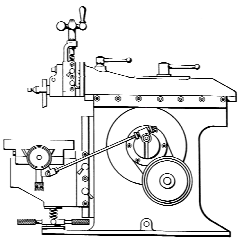
Shop Hints

When I changed the headstock bearings in my Logan lathe a number of years ago I used two lamps with 100 watt light bulbs aimed at the headstock casting at the bearing locations. This supplied enough heat to expand the headstock enough to slide the spindle with bearings out of the casting. I then removed the old bearings in the bench press and placed the new bearing on the previously mentioned light bulb and heated it enough to expand it so that it slipped on the spindle with no force applied to the bearings.

I then heated the headstock casting again and slipped the spindle with the new bearings in again with no forcing of the new bearings.

I use the light bulb method when ever I am using a bearing that is a press fit on a shaft. You have to be ready to move fast because the heat quickly transfers out of the bearing into the shaft and use a good glove as the bearing is uncomfortably warm.

Dick Boucher



Shaper Column

Kay Fisher

Bridgeport Mill

By Kay R. Fisher
Part 2 of 3

Turret Finished **photo by Kay Fisher**

Turret and Ram Installed **photo by Kay Fisher**

Saddle

I cleaned and finished the saddle before I scraped it. After scraping it I decided to install a one-shot lube system. In the end I had to sand and paint again to repair nicks and scratches from handling.

Saddle Before **photo by Kay Fisher**

Saddle with Bondo **photo by Kay Fisher**

One Shot Lube System

Refer to the Shop Hints column in the NEMES Gazette December 2003 issue (Vol. 08 No. 092) for details on the one shot lube that I installed and the installation process.

Feed Nuts

The backlash in the feed screws was bad. I wasn't too concerned about accuracy because I intended to install digital readout. However I just couldn't bear to put it back together without making some attempt to reduce backlash.

Feed Nut Bracket **photo by Kay Fisher**

The feed nuts are both enclosed in the feed nut bracket. Like all fittings on this Bridgeport, they came out quite simply. This machine had apparently been in a greasy environment all of its 57 years. There is an important oil passage from the top of the feed nut bracket through both the longitudinal feed nut and the cross feed nut. You should remove both feed nuts and clean this out thoroughly.

There is a slit almost completely through the feed nuts as shown in the pictures below. This is the way the nuts come from the Bridgeport factory and they are installed while they are still in one piece.

Feed Nut **photo by Kay Fisher**

If you attempt to adjust them you will just get frustrated. They have to be removed first and cut through the rest of the way with a hack saw. Then reinstall them in the feed nut bracket and adjust out as much backlash as possible. When doing this make sure you test the full travel of the feed screw because your screw will be more worn at the center then at the ends. If you get it nice and tight in the center, it will bind when you traverse the table towards either end.

Feed Nut Bracket in Knee **photo by Kay Fisher**

I wish I had split my feed nuts when the table was out – but I didn't. I had the entire table back together before I decided I really wanted to split the nuts. It is possible to remove them with the feed nut bracket in place. The above photo shows the view looking at the feed nut bracket through the front of the knee.

Table

I hand-scraped the table's dovetail ways in Massachusetts but didn't install it on the saddle until months later in Arizona. Sure enough it was

binding a little bit on the ends. I rigged up a measuring device and attempted to take the warp out of the ways. After 4 or 5 more scraping passes, it moved smoothly all the way across the longitudinal axis.

Table Before **photo by Kay Fisher**

I did more work on the table that is covered in the previously mentioned article on the one-shot lube system.

Table with Spotting **photo by Kay Fisher**

After mounting the table, I scraped the top, just to have it look nice.

Table After **photo by Kay Fisher**

Knuckle

The knuckle allows the head to be angled in both planes. This was a simple refinishing operation.

Knuckle Before **photo by Kay Fisher**

Knuckle After Cleanup **photo by Kay Fisher**

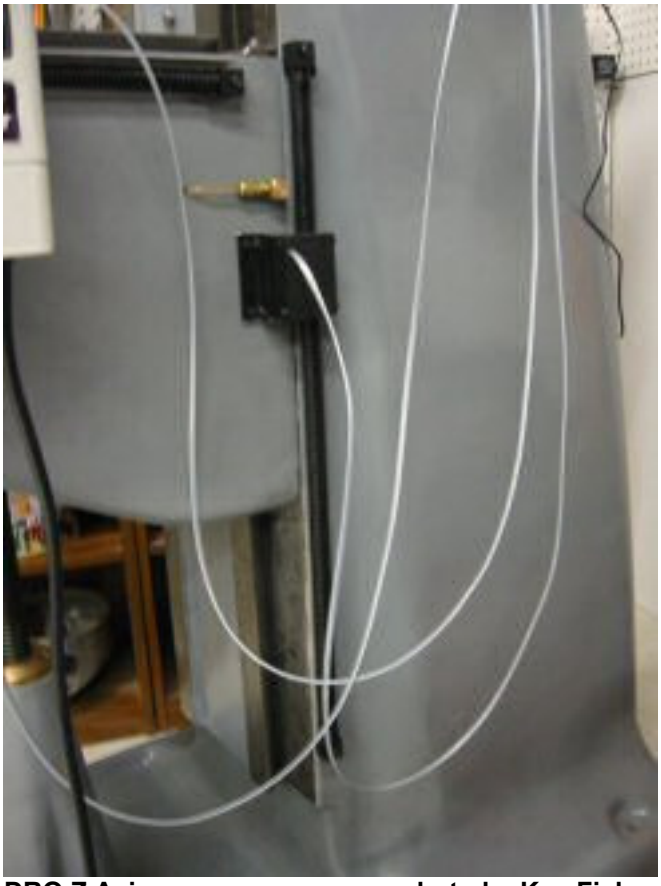
Knuckle in Bondo **photo by Kay Fisher**

Knuckle Done **photo by Kay Fisher**

Digital Readout (DRO)

I installed a Shooting Star DRO on my previous Clausing milling machine. It worked well for me, so I ordered a new one for the Bridgeport. The real test of a vendor is how they handle problems. My first control unit had one defective button and the folks at Shooting Star sent me a whole new one very quickly.

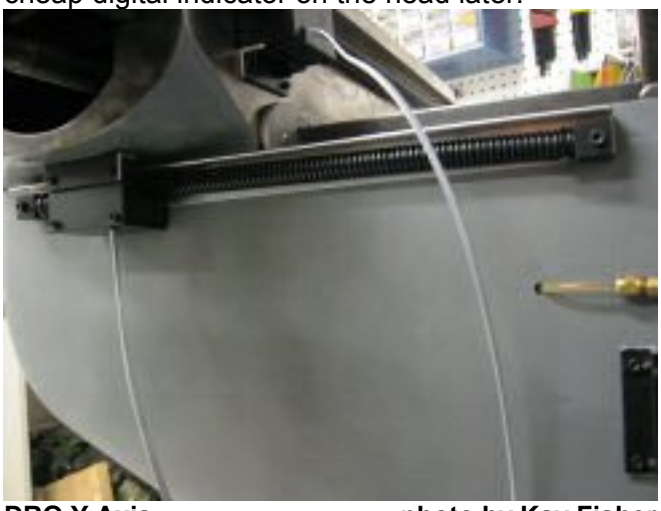
Shooting Star Technology
52023 Yale Rd.
Rosedale, B.C.
Canada VOX 1XO
(800) 772-6322
http://www.star-techno.com/



DRO Z Axis **photo by Kay Fisher**

One advantage of the Shooting Star system is that you can cut each scale to the exact length required. By comparison, DROs using glass scales can be cut, but cutting the scale voids the warranty.

For this machine, I bought a three-axis DRO. Some people put the third axis on the head. I chose to put it on the column. I plan to install a cheap digital indicator on the head later.



DRO Y Axis **photo by Kay Fisher**

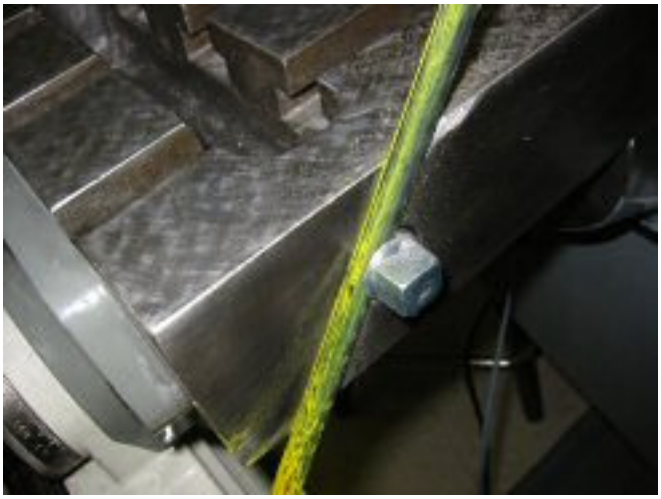
The DRO installation was straightforward and much easier than the installation on my Clausing mill.

DRO X Axis **photo by Kay Fisher**

On the backside of the table there were two large coolant system drain holes. I plugged these before installing the X-axis. They were ½ inch NPT so I bought a couple of plugs at the local hardware store. They only went in a couple of turns so I tapped the holes deeper. To avoid the cost of a tap I turned a cheap plug into a tap by grinding a slot in it. I installed the plugs and sawed the ends off. Then I filed the stubs flush to the table.

Plumbing Plug Tap **photo by Kay Fisher**

Cutting Head Off Plug **photo by Kay Fisher**



Cutting Head off Plug 2 **photo by Kay Fisher**

Filing Plug **photo by Kay Fisher**

Finished Plug **photo by Kay Fisher**

DRO Mounted **photo by Kay Fisher**

Power X

The installation of the power X feed has already been covered in the Shop Hints column in the NEMES Gazette February 2004 issue (Vol. 08 No. 094).

M-Head

I didn't take the M-Head completely apart because the previous owner had recently replaced the bearings.

M-Head Before **photo by Kay Fisher**

I didn't dare drive out the pin to remove the quill feed worm.

M-Head Before 2 **photo by Kay Fisher**

I'd like to have new fiber washers on the quill clutch but I don't know where I could obtain them and I'm not sure I can remove the pin stopping the quill feed worm without damaging the head.

Bare M-Head Before **photo by Kay Fisher**

The clutch works but I have to really tighten the clutch knob to engage it without some slipping. There might be some spray to clean the fiber washer/clutch and cause better engagement. Any suggestions?

Bare M-Head Before 2 **photo by Kay Fisher**

One tricky thing about removing the head was removing the big aluminum belt housing. I took out the only bolt that holds it on but it wouldn't budge. On advice of a friend I hammered a big screwdriver into the slot and voila – it slid off easily.

M-Head with Bondo **photo by Kay Fisher**

I did take out the clock spring. It was quite frustrating to get it back into the hole and hook it on the shaft. If your spring is not broken, leave it alone.

M-Head with Bondo 2 **photo by Kay Fisher**

Next is explanation of the process of disassembling the M-Head. Part numbers mentioned below are from the manual available on CD mentioned earlier.
Remove the motor. Remove the belt guard housing (18). Remove the micrometer screw (66) by first removing the set screw (68) on the bottom right and the brass plug (67) behind it – then screw it out the bottom. The micrometer nut (60) and micrometer lock nut (62) will come out at this time. You have to spin them all the way off the top of the micrometer screw as you remove it.

M-Head in Bondo **photo by Kay Fisher**

M-Head in Bondo 2 **photo by Kay Fisher**

Remove the micrometer stop (56) that is attached to the quill with a large Allen screw. Remove the quill lock bolt handle (65), then the quill lock bolt (64), then the quill lock sleeve, drilled (63).

M-Head Painted **photo by Kay Fisher**

Now you can crank the quill up past the top stop and remove the brass quill skirt (29) – carefully! Mine is not brass? Now you can crank the quill all the way down and out of the head. Last, remove the quill lock sleeve (69), taped from the bottom of the hole.

M-Head Painted 2 **photo by Kay Fisher**

Reverse the steps for reassembly but before you insert the quill, crank the clock spring 3.5 turns with the long rack feed handle.

M-Head Reassembled photo by Kay Fisher

M-Head Reassembled 2 photo by Kay Fisher

M-Head Quick Adjusting Nut photo by Kay Fisher

I ordered a Quick Adjusting Quill Nut from ENCO for $24.95. Everybody sells them. In the High Quality Tools catalogue they are called the Educated Nut. It seems very well made and I am happy with my purchase. I used to crank the "slow" adjusting quill nut on my old Clausing back and forth till I was blue in the face. This should be a nice change.

M-Head Installed photo by Kay Fisher

Quill Worm Feed Hand Wheel photo by Kay Fisher

My mailing address is:
Kay R. Fisher
101 N. 38th St. #129
Mesa, AZ 85205
My e-mail address is:
KayFisher@att.net
Kay

For Sale

Lathe

I have a Monarch Model A 14" lathe that I need to find a new home for as I'm cleaning up to move. It's a flat belt machine that I believe dates from sometime back near World War I

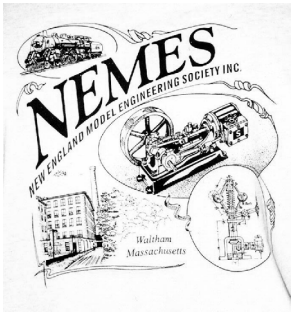
I can be reached at 508-473-8621 or by email at scl@qu.to

Stephen C. Lovely

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

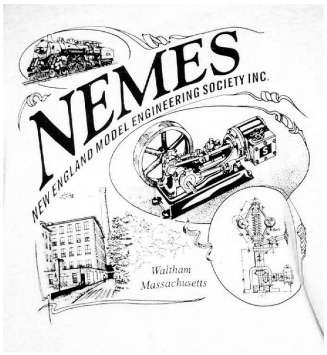


NEMES clothing

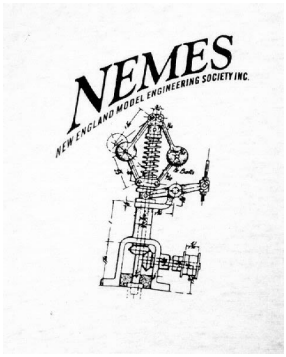
NEMES Tee Shirts

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

Artwork by Richard Sabol, printed on front and back:



Rear



Front

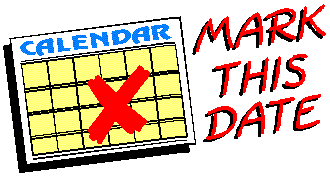
Prices:

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

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

Profits go to the club treasury.

Mike Boucher
10 May's Field Rd
Lunenburg, MA 01462-1263
mdbouch@hotmail.com



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.

July 1st NEMES Monthly club meeting

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

July 3-4 Antique Engine Meet

Boothbay Railway village
Boothbay, ME
www.railwayvillage.org

July 3-4 The Fabulous '50s, Sensational '60s & Antique Aeroplane Show
Owls Head Transportation Museum
http://www.ohtm.org/

July 11 Pepperall MA show
Town field Rt 111 Kim spaulding 978-433-5540

July 16-17 Cranberry Flywheeler's Swap Meet
Shurtleff's Old Mill Lot on East St.
Middleboro, MA Dick Shurtleff 508-866-3109

July 18th Sun 9AM MIT Swapfest
Albany Street Garage
corner of Albany and Main Streets in Cambridge
http://web.mit.edu/w1mx/www/swapfest.html

July 24-25 Raitt Homestead Farm show
Rt 103 Eliot, ME Lisa Raitt 207-748-3303

July 24-25 13th Annual International Submarine Regatta
Johnston, Rhode Island
http://www.subcommittee.com/Events

July 24-25 Trucks, Tractors, Commercial Vehicles & Antique Aeroplane Show
Owls Head Transportation Museum
http://www.ohtm.org/

Aug 5th NEMES Monthly club meeting
7PM- Charles River Museum of Industry 781-
Waltham, MA 893-5410

Aug 7-8 Scribner's Mill Show
Harrison, ME John Hatch 207-563-6455

Aug 7-8 2nd Iron Fever Expo
York Fairgrounds, York PA
Grary and Jared Schoenly 1-800-789-5068

August 7-8 30th Annual Transportation Festival & Aerobatics Spectacular
Owls Head Transportation Museum
http://www.ohtm.org/

Aug 14-15 Straw Hollow Show
Boyleston MA at Pine Ridge Farm

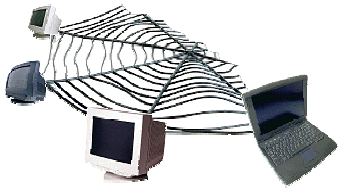
Aug 21-22 Mystic Seaport Antique Marine Expo
Mystic CT Geo King 860-572-0711

Aug 15th Sun 9AM MIT Swapfest
Albany Street Garage
corner of Albany and Main Streets in Cambridge
http://web.mit.edu/w1mx/www/swapfest.html

August 21 27th Annual New England Auto Auction
Owls Head Transportation Museum
http://www.ohtm.org/

Aug 27-29 Waushakum 34 Annual weekend
Holliston, MA
John Mentzer 508-359-8794
http://Steamingpriest.com/wls

August 29 Vintage Motorcycle Meet & Antique Aeroplane Show
Owls Head Transportation Museum
http://www.ohtm.org/



Web Sites of Interest

This guy built a model of Babbage's difference engine (a mechanical computer) using only Meccano parts (the British equivalent of an Erector set)

http://www.meccano.us/difference_engines/rde_1/