

# The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

No. 131

March 2007

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## Editor's Desk

Victor Kozakevich

A friend recently sent an email about a WWII tank recovered from a lake in Estonia. What was especially interesting was the remarkable level of preservation, and that they later got it running.

In 2000, a man named Igor Sedunov visited a village in Estonia and heard a story from 1944 about tank tracks leading into a lake and bubbles later rising. He got a diving club to locate the tank, and then hired a really big bulldozer to pull out the 30 ton vehicle.

What emerged after a six hour struggle was a Russian T34 tank bearing German markings, evidence of its capture and use during the German occupation. The tank had been under 30 feet of water and 10 feet of mud, depriving the steel of oxygen, and leaving it completely preserved.

A website with still pictures and video <http://www.diving.ee/articles/art035.html> has several clips, with one titled "Engine Original". Watch the 500 HP aluminum diesel engine with injectors out, being turned over by the starter. The white mist blowing out is the water that entered the cylinders 56 years before.

More at <http://englishrussia.com/?p=299>

## Next Meeting

Thursday, Mar. 1, 2007

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 membership secretary) for the calendar year are due by December 31<sup>st</sup> of the prior year.

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

Addresses are in the left column.

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

Dick Boucher

training and the hunker-down winter building season is rapidly coming to a close to be followed by the various engine shows that many of you attend. I can only hope some of you were able to accomplish more in the shop this winter than me.

See you March 1<sup>st</sup>.

*Dick B.*

### **The Meeting**

This month we will hear from Garland O'Connell, who has been presenting the plans being for constructing the replica Lowell loom on the first floor. Garland will bring us up to date on its progress and how much more is needed to complete it. More importantly, he will give us a history of the City of Waltham and the loom followed by how the design of the loom fits into that history and what it looks like in Solid Works. I hope you can join us for this informative evening.



### ***The Meeting***

Todd Cahill

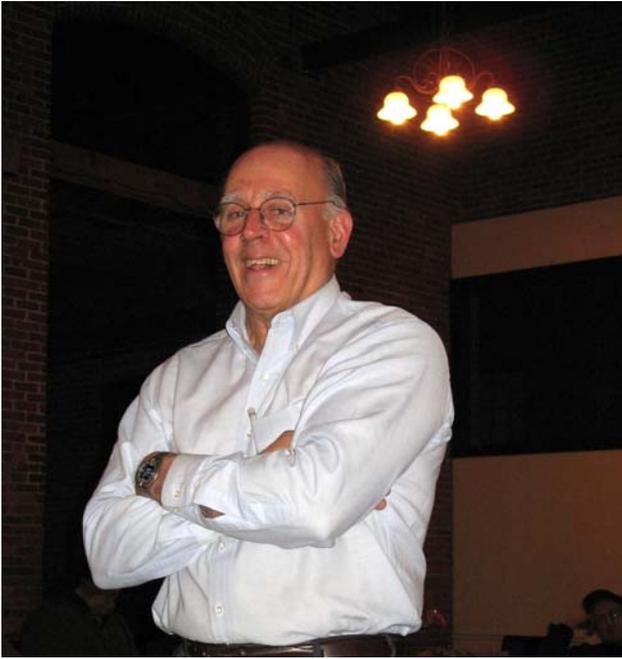
### **The Show**

Our show last Saturday was a great success. Many thanks to all who participated by bringing in their models and a special thanks to Steve Cushman for his direction in setting up the hall and to the fellows who listened to him and helped get the hall ready. We ordered five additional tables this year and the space was well used. I also want to thank Frank Dorian for getting the great selection of door prizes and running that raffle, with special thanks to everyone who donated to that cause. I also want to thank the Charles River Museum of Industry for the use of the facility and to Fred Widmer for his help during the day with various needs. And last but not least a very special thanks to the wonderful ladies, under the direction and guidance of Gail Martha, who ran the extremely successful lunch area. Their effort not only sees to it that we have food on hand during the day but their work provides enough capital to the club that the expenses of the show are more than met. Also, we had some new members join at the show. I look forward to greeting them at future meetings.

Venerable President Dick Boucher opened the February meeting with a thank you to all who helped make the bus trip to Cabin Fever a success, namely Dick Koolish for handling the money and Norm Jones for his assistance and advice. Member Dave Piper announced that he was in the midst of making a set of metric transposition gears for his lathe and would make 5 sets, offering the extras for sale at a reasonable cost. Vice President Frank Dorian had on display a Cole or blacksmith drill. These drills, being hand cranked, could be used anywhere such as in a farmer's field and could drill a hole in any number of materials. It feeds automatically. Errol Groff made a request to buy a video editing program so that the videos of models, engines, and our field trips to mechanical and industrial sites could be presented on the NEMES website. Dick wrapped up the intro with a call for more members to step up and present more show and tell items. Perhaps you would like to present a project being worked on or an interesting machine tool accessory.

### **Miscellaneous Ramblings**

Not much to ramble on about this month except to ponder the fact that the Red Sox are at spring



Dick then introduced our speaker for the evening, Reese Dill, with a story about racing steam tractors in the rain at Dave Dearborn's antique engine meet. However, this was not the subject to be presented. In addition to owning a half scale Rumely steam tractor, Reese also owns and flies vintage airplanes. Reese's passion for flying began with flying a glider around the Sugarbush area in Vermont. It became an addiction when Reese found himself spending most weekends in the summer gliding in the Vermont air and driving the highways between Boston and Sugarbush. In order to decrease the amount of time spent on the ground, Reese began shopping for a plane...with an engine...and what an engine he found, a Rolls Royce engine, surrounded by a derelict little stunt plane appropriately called a Chipmunk. Reese saw it in a field and thought, "There's a plane in need of a father." And so, what began was an extensive restoration job to get the plane looking and flying beautifully. It was also the beginning of a steady increase in fuel expenditure, although Reese claimed that, once restored, the Chipmunk could get as good gas mileage as that of a car. Reese ended up selling the plane to an airline pilot who purchased it sight unseen and had it sent down south. After half a year Reese found himself with sellers remorse and called the new owner who unfortunately informed Reese that the plane had gone on one last flight, by itself, in

the winds of a tornado and was completely destroyed.

Reese's next plane was a World War II AT-6 trainer. A trainer plane would have been used to teach pilots formation and maneuvers. It would have been the last plane the military pilots would have flown before heading overseas. The plane has an average speed of 160 mph but could reach 200 mph. Its fuel consumption is an average of 42 gallons/hour but can reach as much as a phenomenal 1 gallon a minute when pushed. This isn't regular automobile gasoline and can cost very much more, making a Sunday flight out a very expensive excursion.



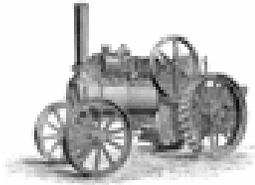
In 1988 Reese flew out to Oshkosh, Wisconsin to celebrate the 50<sup>th</sup> anniversary of the design of the plane. Coming into Oshkosh, Reese flew in formation with 62 other AT-6s, a dynamic entrance, indeed. He was joined by over 100 other AT-6s some of which were flown by military pilots who served in World War Two. As part of the diamond anniversary of the AT-6, Reese flew in a diamond formation coming ever so close to the plane in front of him.

Reese then told of a plane that he bought with a group of partners, an L-4 from the 1940s. On the D-Day invasion, most of the pictures taken from the air were from L-4s. It was primarily used for observation. However, the need for speed made them modernize to a 1950s vintage P-28. This was found "in the bone yard" and had to go through extensive restoration. As electronics was in its infancy, it was full of servos and relays. Reese used to fly it to New Jersey to practice with a group of other flyers. Standard practice when flying past New York City in a small aircraft is to fly along the

Hudson staying below 1100 ft, and high enough to clear the bridges, of course.

Reese followed up his talk and slide show with video from various air shows he has participated in.

Todd



## *Cabin Fever*

In January I wrote in this space that the Cabin Fever trip was on. Well, it has come and gone and is now only a memory, but a great memory and I look forward to organizing a trip again next year.



I want to thank Dick Koolish for the great job he did collecting the checks and keeping me informed on the progress of the subscriptions. That was a major help to me with the organization. I also want to thank Norm Jones for all his guidance during the trip. With his help we managed to avoid any great glitches like going to the wrong place or the most feared, forgetting somebody at a stop.

The show itself is truly amazing. Two very large halls filled with an almost magical amount of models of almost anything mechanical you can imagine; from Gattling guns and machine guns to a steam engine in a small cheese box with a

sliding lid that the builder must open with a pair of tweezers. The engine inside does operate and in order to see it you must use a magnifying glass. It will likely be involved in the Sherline competition at NAMES so you will probably hear more about it.

The boat folks had a very large pond to use and there were all versions of radio-controlled steam and electric boats and submarines in operation all weekend. One fellow had a model of Jules Verne's Nautilus that was about five feet long and weighing 80 pounds. He had covered the saw-tooth effects with pieces of Tygon tubing. I made notice of it and he said he had to do that because he hit the side of the tank one year and drained the pond. At the other end of that hall is a large "G" gauge railroad setup with a large number of live steam engines doing a great job of demonstrating this part of the hobby. One of them was even fired with coal.

In the hall we were in there was an area set up with all manner of CNC machines and software and controllers.

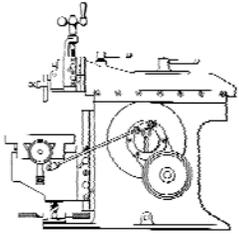
It is also a great time to meet and talk to the major players of the hobby who have published articles and plans for all of us to increase our knowledge, and have a wonderful time getting to know the fellows from our own group that much better.

Our Ron Ginger was one of the seminar speakers. Ron's subject was on CNC in the hobby. Our group did very well on the door prize department with Clive Dalby's name being drawn first. Norm Jones, Ray Hasbrouck and I were also winners.

Our traveling was totally uneventful with no bad weather to speak of as soon as we reached Connecticut on the way out. We also had no delays.

If the current trend of bringing more home than we went with continues, we may have to start drawing lots to see who can bring something down. But I must admit we have very discerning shoppers and what was brought home was truly great.

Dick Boucher



## ***Shaper Column***

Kay Fisher

### ***Shaper Documentation (part 4 of 4)***

#### **Books:**

#### **Scraping Books**

If you want to return a shaper to "factory new" specifications and excellent accuracy, you may have to do some scraping of the machined surfaces. I believe that hand scraping is something everyone who rebuilds an old machine should learn. If you are lucky enough that your machine does not need scraping then you might want to do decorative scraping on the table and some other shaper parts. I have attended a club scraping seminar, read 3 books about scraping, and watched one video about scraping. Here are some reference books that may help.



**Morgan Book**

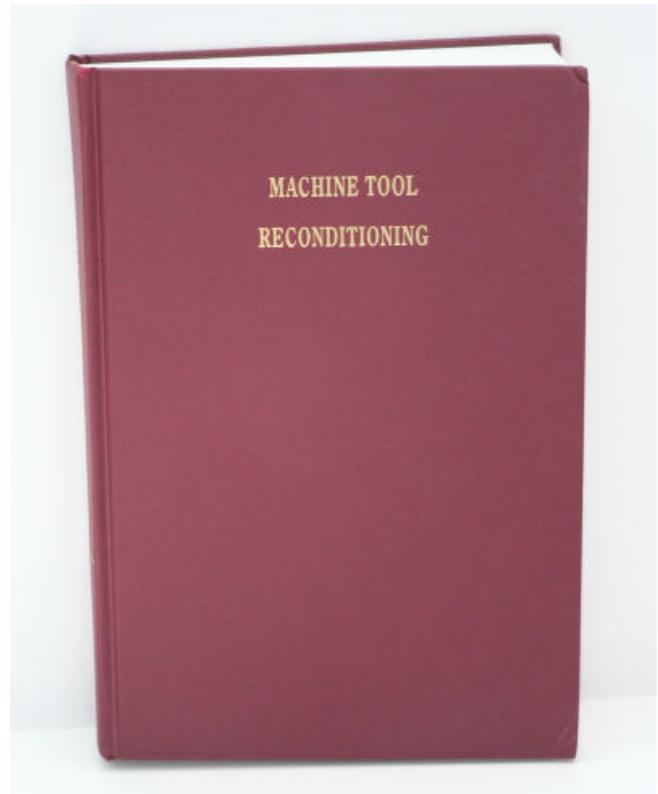
**Photo by Kay Fisher**

**Basic Scraping Modern Methods by Michael Morgan.** This book compliments Michael Morgan's video. The book is 170+ pages with 120+ photos and illustrations. I think the book

is a good, easy read on scraping. If you need to learn how to hand scrape, this book is for you. It is available for \$45 on-line at:

<http://www.machinerepair.com>

*{Publisher's note: This website is alive, but e-mail for orders comes back as undeliverable. I believe that the book and video are no longer available.}*



**Connelly Book**

**Photo by Kay Fisher**

**Machine Tool Reconditioning by E. F. Connelly** is the definitive reference to scraping. This is a long, detailed book - not something you will read in front of a warm fire – unless your goal is to take a long winter's nap. But if you must scrape then you may want to invest the time and money in this book. \$92.95 plus \$6.75 shipping and handling from:

Machine Tool Publications

935 Holley Ave.

St. Paul Park, Minnesota 55071

<http://www.MachineToolPublications.com>



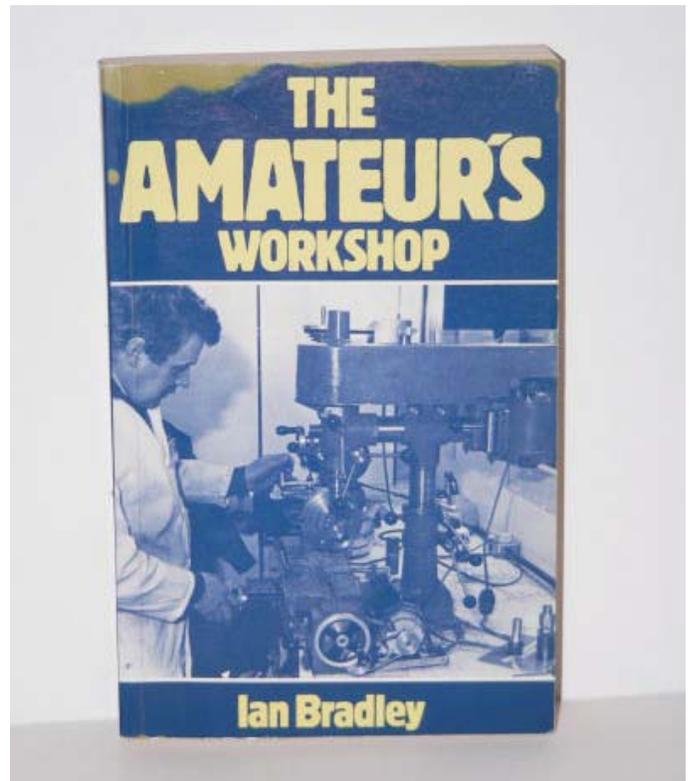
Secrets Booklet

Photo by Kay Fisher

**Secrets of Hand Scraping** is the smallest and most inexpensive booklet on scraping that I have found. If you are considering scraping a surface to restore a shaper, you might want to look at this small (15 pages) inexpensive booklet. Although an expert on scraping may dismiss this minor treatment of the subject, it exposes you to scraping without the investment in time or money needed for the above reference. If you are already ordering publications from Lindsay – what the heck – include this in the order. It used to be \$3.00 plus shipping. Lindsay has a new title called “Learning the lost art of hand scraping” that is 48 pages long (part number 23225) for \$4.95 plus shipping. I believe this replaces the “Secrets” book described above. Available from Lindsay Publications Inc. (See above)

**Out of Print Books**

**The Shaping Machine** by Ian Bradley was first published in 1973. It has drawings and photos of a somewhat more sophisticated, but purely mechanical, downfeed mechanism for a 7-inch shaper. I have seen this book on the web for \$75 to \$191. That’s out of my range – I’ve bought shapers cheaper than that.



Bradley Book

Photo by Kay Fisher

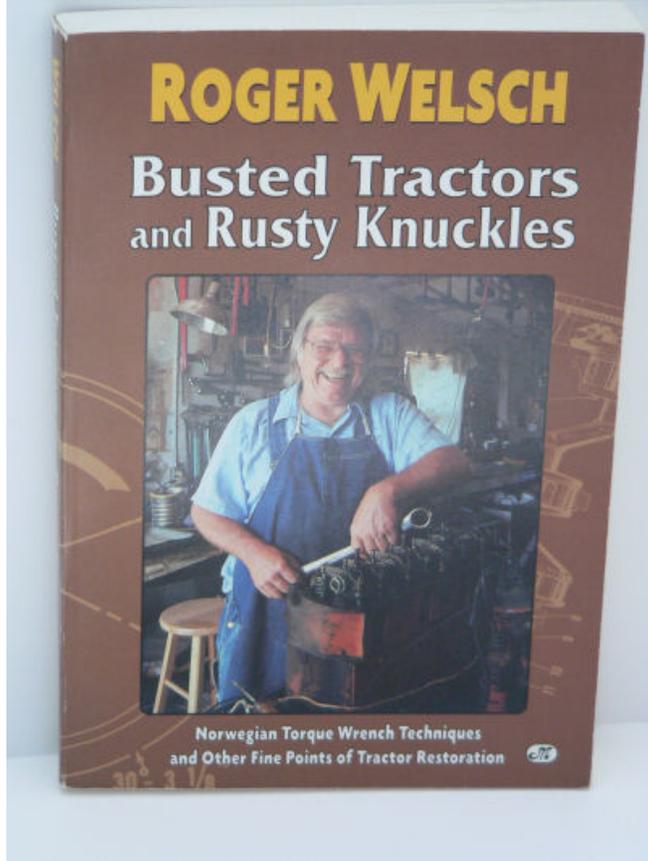
**The Amateur’s Workshop** by Ian Bradley ISBN 0-85242-482-5. This book only has one short chapter on shapers (5 pages) but it is very good. A friend recommended this as a good beginner’s book for starting amateur machine work. I agree. If you’re new to metalworking, this book will teach you more, in less time, than any other single book.

Although they are in England, they are only a phone call away! It is worth a phone call just to get their catalogue. If you have difficulties calling England, ask your operator for help. I have found that you can usually save a lot of money on books and material from England as opposed to paying a local distributor extra. I believe the shipping on this book (from England) was less than \$10.00 American.

It used to be available for £8.95(\$16.90 American) plus shipping but it apparently now out of print. I would be remiss if I did not recommend books available from:

Tee Publishing  
 The Fosse, Fosse Way  
 Radford Semele, Leamington Spa  
 Warwickshire, CV311XN  
 England  
 phone (011)44-1926-614101  
<http://www.teepublishing.co.uk>

**One Last Book Recommendation**



**Welsch Book**

**Photo by Kay Fisher**

**Busted Tractors and Rusty Knuckles** by **Roger Welsch** ISBN 0-7603-0301-0. This book has nothing to do with shapers but it has everything to do with taking on and completing large projects such as rebuilding a shaper, building a shaper kit, or building a shaper from scratch. If you're hobby work is anything like mine, you have to admit to some spells of procrastination. I got some good ideas for self motivation from this book. As they used to say about the old dime store romance books - it's a quick read. Here is a quote from the inside cover – "A case study in tractor restoration day by day, mistake by mistake, disaster by disaster, scar by scar". \$8.97. Available from:

Motorbooks International  
 729 Prospect Ave.  
 P.O. Box 1  
 Osceola, WI 54020-0001  
<http://www.motorbooks.com>  
<http://www.micrord.com/rogerwelsch>

**Summary**

Order Rudy's video, purchase both Shaper books from Lindsay Publications, and subscribe to either Home Shop Machinist or Machinist's Workshop.

Your best resource would be a friend who has a shaper. If you don't have such a friend – join a nearby club. If you don't have a nearby club – join ours – the New England Model Engineering Society (NEMES). Currently we have over 125 members and meet on the first Thursday of every month at the Charles River Museum of Industry at 154 Moody Street, Waltham Massachusetts. We have several members from out of state who seldom attend a meeting and a few who join just for the club newsletter (the NEMES Gazette). Dues are \$25.00 per year from January 1 to December 31. In addition to the newsletter, they sometimes have group purchases and occasional professional speakers at the meetings. The club has also organized bus trips to the NAMES show in Wyonette Michigan and to the Cabin Fever Expo in Reading Pennsylvania.

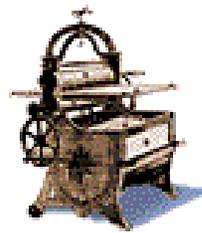
<http://www.neme-s.org>

Keep sending me email with questions and interesting shaper stories.

My email address is:

[KayPatFisher@Yahoo.com](mailto:KayPatFisher@Yahoo.com)

Kay



***NEMES Gazette  
 Editorial Schedule  
 2006***

Here are the closing dates for Gazette written contributions in the coming months:

<u>Issue</u>	<u>closing date for contributions</u>
April 2007	March 23, 2007
May 2007	April 20, 2007
June 2007	May 25, 2007
July 2007	June 22, 2007
August 2007	July 20, 2007



## ***NEMES Mailing List***

Send an email to [nemes-subscribe@yahoogroups.com](mailto:nemes-subscribe@yahoogroups.com) and mention subscribe on the subject line and in the body of the message.



## ***Shop Tips***

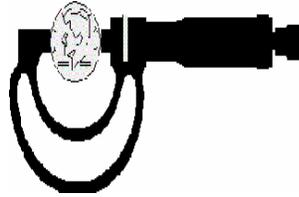
The following request appeared on the NEMES mailing list and several responses were offered. The comments are reprinted as a service to the membership.

*At a meeting a couple of years ago someone mentioned a water-jet cutting service operating out of a garage in Northfield. Anyone have contact info?*

Daryl Plantinga, Apex Machine, 610 Quaker Street, Northbridge, MA 01534  
Phone 508-234-1360, FAX 508-234-1336  
If those who contact Daryl mention they were referred through NEMES, he might be encouraged to come and speak to the group. (submitted by Bill Brackett)

We just had some copper gaskets cut for the air compressor on the steam locomotive in Conway. They were done by Strong & Weiland in Hampden Maine. That's the town next to Bangor. Nice guys, good service.  
<http://www.swiwaterjet.com/>  
(Submitted by Ron Ginger)

Not exactly local for you, nor a garage operation, but Rockford Waterjet has done some work for us.  
<http://www.rockfordwaterjetcutting.com/>  
(Submitted by Scott S. Logan)



## ***Treasurer's Report***

Balance as of December 18, 2006	7174.27
Bus company payment	-2835.00
November Gazette	- 125.00
January Gazette	- 139.62
February Gazette	- 181.12
Show table rental	- 324.81
1 bus trip refund	- 110.00
Speakers fee	- 50.00
Air hose	- 49.72
Bus trip expenses and Member refunds	-865.20
35 bus trip payments	+3850.00
78 memberships	+1950.00
1 sweat shirt sold	+ 36.00
Balance as of February 15, 2007	8329.80



## ***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. The CD now has a lot more info on it, and the price has increased accordingly. \$10.00, shipping included.

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

## NEMES Shop Apron

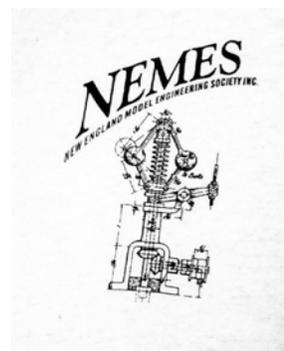


Look your best in the shop! The NEMES shop apron keeps clothes clean while holding essential measuring tools in the front pockets. The custom strap design keeps weight off your neck and easily ties at the side. The apron is washable blue denim with an embroidered NEMES logo on top pocket.

Contact Rollie Gaucher 508-885-2277



Rear



Front

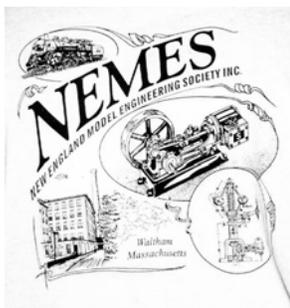
Prices:

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

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

Profits go to the club treasury.

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



## NEMES clothing

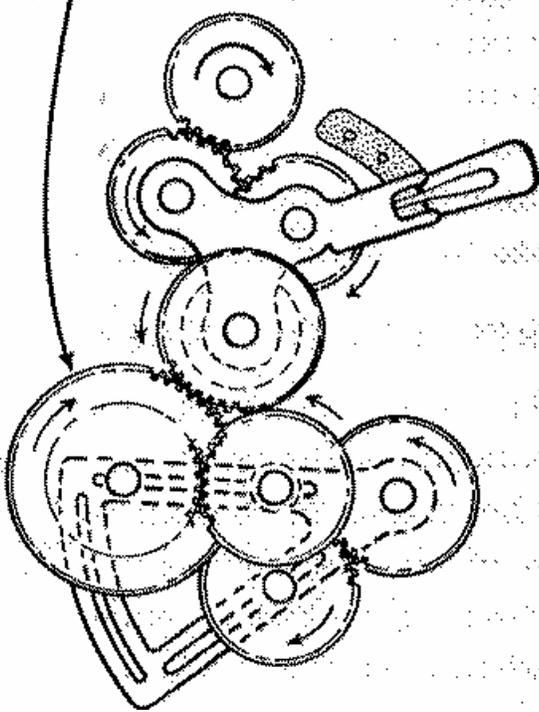
### NEMES Tee Shirts

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:

## ***Metric Threading Gears For Sale***

37/47 tooth transposition gear pair ONLY. These MUST be coupled with appropriate gears to obtain the metric thread desired. Other gears or gearboxes are required to cut metric threads. Every lathe is different. Check before you buy!



I am currently making transposition gears to fit my lathe ( a 12" Logan). I am selling (4) sets. I will make the gears available for inspection and sale to NEMES members only. They consist of two gears: (1) 47 tooth gear and (1) 37 tooth gear for a ratio of 1.2702, or .02% error (A Lead error of approximately 0.0024" /FOOT) I chose this ratio as it will fit within my change wheel guards. They will be 5/8" bore, 14 1/2° pressure angle and 16 pitch. They will have (one) 5/32 (.156) keyway. The OD of the gears are 3.063 and 2.438 and both gears will be nominally 5/8" wide. See chart for suggested mounting. Gear Material will be 12L14 steel which will suit the occasional use found in a home shop well if well lubricated. It will also allow easy modification if required to fit another make But your gears must be the same pitch and pressure angle. (Check YOUR lathe gears before YOU buy!!!!!!)

Some of the *lathe suppliers* want \$150 or more for a set! One wants \$460 for a 127/100 set. Neither MSC nor McMaster carries this ratio

Price: \$60 / set for NEMES MEMBERS. First come, first served. CASH. Members Contact: David Piper (978)-534-0239 before March 9<sup>th</sup> After that they go to the public. Once they go, they're gone.



## ***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 [thebracketts@verizon.net](mailto:thebracketts@verizon.net) or (508) 393-6290.

*Bill*

March 1<sup>st</sup> Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry  
Waltham, MA  
781-893-5410  
<http://www.neme-s.org>

March 1<sup>st</sup> – 3<sup>rd</sup> FIRST Robotics Competition  
Verizon Wireless Area  
555 Elm Street  
Manchester, NH  
<http://www.baesystemsfirst.org/regional/when.htm>

April 5<sup>th</sup> Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry  
Waltham, MA  
781-893-5410  
<http://www.neme-s.org>

April 15<sup>th</sup> 9:00am The Flea at MIT  
Albany Street Garage at the corner of  
Albany and Main Streets in Cambridge  
<http://web.mit.edu/w1mx/www/swapfest.shtml>

April 21<sup>st</sup> -22<sup>nd</sup> NAMES Expo  
Toldeo, OH  
<http://www.modelengineeringsoc.com>