

# The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

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## Editor's Desk

Victor Kozakevich

I was cleaning out some old magazines last week and came across an article regarding people who collect stuff, for reasons understood only to themselves. The author lived in New Mexico, and from having been there, I know there is lots of space to store things. In addition to the minor items like lengths of I-beams, he had rescued a Champion post drill from the recycling center. Clearly, I was reading about a potential NEMES member.

To deal with the significant other, he explained they were not in the same danger as the Collyer brothers of New York, who collected in their apartment a dismantled model T, 14 pianos, and a pile of newspapers which eventually toppled and crushed them.

The artist Picasso was a dedicated collector, creating his art not despite the chaos, but from it. It was only a matter of assembling the parts artistically.

As we all know, the stuff collected has a use somewhere down the road, and clearly someone with no imagination would fail to grasp that. Or as I explain it, if no one collected junk, we wouldn't have antiques.

## Next Meeting

Thursday, March 2, 2006

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***

Norm Jones

### **The Meeting**

Our speaker for the March meeting will be Stan Grayson. In a presentation entitled "Engines Afloat, from early days to D-Day", writer Stan Grayson will discuss some of the key breakthroughs in the development of the internal combustion engine and the men behind them. The focus is on marine engines and the talk is illustrated by slides.

After receiving his Master's degree in English from Penn State, Stan was drafted and served in Vietnam. Subsequently, he pursued a career in writing. He is the author of four books on internal combustion engine history with an approach that combines the personal stories of key inventors and executives with the technical background. Stan also has written several books on boats and sailing as well as many magazine articles. Stan started his own publishing company, Devereux Books, in 1994 but continues to contribute articles to such magazines as *WoodenBoat*. He is also a longtime model railroader (HO scale) and recently completed a radio-controlled tugboat.

### **Winter Getaway**

Leslie and I boarded a flight to Tampa on February 3<sup>rd</sup> with the hope of escaping some of the cold New England weather. As it turned out, the next eleven days in Florida would not be much warmer than back home. We even had to scrape some ice off the windshield of our rental car on the day before returning home.

Windy conditions on Sunday, February 12<sup>th</sup> necessitated a change in the plans to go for a ride on Clarence and Gayle Myers' steamboat "The Lady Gayle". Clarence and Gayle suggested that we might enjoy a visit to the Austin Carriage Museum in Weirsdale, Florida. I really had no idea what to expect! I generally consult the AAA tour book to find activities that might be of interest. This one was not listed. We

were pleasantly surprised with what we saw. Although the museum is only twenty years old, Gloria Austin has a collection of carriages from all over America as well as Europe that is truly remarkable. We were not allowed to take photographs of the carriages but their web site: <http://www.austincarriagemuseum.com> has a picture of a carriage that once belonged to Franz Joseph of Austria. This restoration was done in Belgium by eighty artisans over a period of two years. The other 170 carriages in the collection are equally as impressive. We were sorry to miss the steamboat ride, but were happy to have seen such a wonderful collection of carriages. Well, here we are back home again, and believe it or not, the temperature in Chelmsford is about the same as Tampa!

See you on March 2<sup>nd</sup>.

*Norm*



### ***The Meeting***

Max ben-Aaron

The speaker at the February meeting was Rich Selah of Stannah Stairlifts, who discussed engineering aspects of the chairlifts that his company markets.

The Stannah Company has been in business in England for over 140 years and is still being run by the sixth generation of the family of the founder. The parent company makes and services many kinds of lifts: <http://www.stannah.com> They have installed more than 250,000 stairlifts worldwide. In the US, Stannah has been virtually synonymous with in-home stair lifts for most of the fifteen years that they have been marketing their products. I would bet that every member of NEMES has seen their TV advertisements. Now I understand why the lady in the ad has an English accent!

If an older person in a two-level home has difficulty climbing stairs and would like to continue living at home, a chairlift becomes an attractive option. Because this option is less expensive than placing the individual in a facility which provides care for the elderly, often, more care than they need, many countries now provide stairlifts in their social services.

Originally, the chairlifts used AC motors and chain drives, which were awkward, difficult to control and needed trailing cables. The models now being marketed are second-generation, and much improved. They use DC motors, powered by a pair of 12-volt rechargeable batteries which allow the stairlift to operate even during a power outage. The chairs are driven by a pinion engaging with a rack which is part of the rail structure supporting the chair. The rails stand on legs, which attach to the stair treads, not to the wall, making installation easier and less expensive (no structural modifications needed). Trailing cables are not needed. In their extreme positions, either up or down, the lifts plug into power receptacles to keep the batteries fully charged.

A low-pressure joystick, one mounted on each arm of the chair, operates the stairlift. Remote wireless controls fitted at both ends of the staircase also permit the chair to be moved as needed. For example, a user downstairs can command a chair to come down. This same remote control can turn the chair into a commodity-lift, so parcels can be sent up or down as needed without having to be carried.

For safety, the chair will move only while the joystick is pushed. Also for safety, the chairs have sturdy armrests, a key switch, folding footrests, a retractable lap-belt, five or more sensors that instantaneously stop the stairlift if they sense any obstruction, and swivel levers that allow the seat to be turned to face onto the top landing. Every stairlift also incorporates a brake to prevent the chair from running away.

Stannah markets stair-lifts for three uses:

- straight stairs, indoors
- curved stairs, indoors
- outdoors.



The straight stairlifts are based on an aluminum extrusion with a rack (see picture), mounted to the steps. The arms of the chair and the footrests are linked. Raising the arms folds up the footrest.

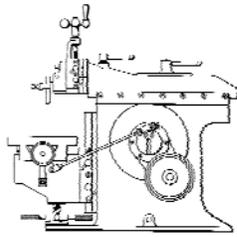
Stairlifts for curved stairs are supported and guided by curved rails, formed of bent tubes, custom-made to the geometry of the stairs. To determine the shape of the supporting rails, "targets" and markers are laid on the stairs and an automatic camera takes pictures that are analyzed by computer to calculate the geometry of the stairs. From this, another computer program calculates the commands that need to be sent to a numerically-controlled machine to have the tubes bent to the exact shape required for the chair to move smoothly up and down while maintaining the horizontal orientation of the chair seat. The same program also calculates the curved path that the rack segments must have for constant pinion engagement. The assembly is then welded together. The versatility of the design and the manufacturing system enables the user to choose which side of the staircase works best and where the lift starts and finishes. The rail stands on legs attaching to the stair treads (no wall attachments) and the program calculates the appropriate angles for the leg bases to compensate for structural anomalies, so construction modifications are not required.



Outdoor stairlifts are similar to the indoor straight lifts and are designed to work reliably in all kinds of weather conditions: sunshine, rain or snow, in temperatures ranging from 23°F to 105°F. The power supply is carefully protected from the elements.

Rich is to be congratulated on a comprehensive, careful presentation. I left with the impression (correct, I am sure) that the Stannah chairlifts are well-engineered and well-constructed products, supported by a stable competent organization. Thank you, Rich.

*Max*



## ***Shaper Column***

Kay Fisher

### ***Ludwig Gack Shaper Part 5***

This month we will finish our story of Ludwig Siegfried Schmidt's Gack Shaper. I have never considered using my shaper as a grinding jig but here is a clever look at this use of a shaper.

#### **Grinding**

Most grinding rests on cheap bench grinders look like this. Good enough for freehand work, but not for reproducible angles on lathe tools.



**Simple Grinder**

**Photo by Siegfried Schmidt**

Whenever you reach the stage of grinding thread or cut off tools, an adjustable grinding rest that gives a stable position is necessary. Since the grinding rest from the machine is of weak, flexible sheet metal, it excludes itself as a place to attach an angled guide.

The first measure is to add a stable base. A few pieces of angle iron, welded together to support a small worktable that is linked to the grinders base helps a lot. To this small table, angled guides for the tools are fastened down. Here, the side angle is chosen via exchange of the tool rest.



**Grinding Rest** Photo by Siegfried Schmidt

In the next picture, you see a rest made of two angled aluminum profiles. They can be turned and set to any height. Also, the two angles can be set to a third angle via a slotted hole.



**Aluminum Profiles** Photo by Siegfried Schmidt

With this rest, reproducible angles are easily obtained. For fast setup, a few triangles are milled out of plastic to be used as set up jig.



**Grinding Angle** Photo by Siegfried Schmidt

Tool rests with a set angle are very handy. In the picture, 3° is used. It's easier to grind when the angles are fixed automatically. It's worth the effort to grind a few for the most often used angles. This is best done in pairs. Then it's possible to hold the tool down with a clamp while grinding the angle.

The grinding rest has proven very useful up to now but if I were to do it again, I would increase table size drastically.

In the meantime, as I set my mind, I would go for a complete, pivoting table for both discs. A nice mod can be found at Kay Fisher's shaper column 42 which was printed in the December 2004 Gazette and can be found on-line at:

[www.neme-s.org/shapers/columns/shaper\\_column\\_42.html](http://www.neme-s.org/shapers/columns/shaper_column_42.html)

The advantage here is to be able to grind straight angles on the side of the wheel. For more details, read there.



**Shaper Grinding** Photo by Siegfried Schmidt

Even tool grinding is possible on the shaper. Cutting forces towards the sides of the work piece are much smaller on a shaper than on a mill, which helps a lot with delicate or hard to grip parts.

Despite all jigs and aids, manual grinding is a matter of practice. To grind angles and flats by machine takes more time and effort, unless you have a machine made for this job.



**Grinding Close-up** Photo by Siegfried Schmidt

The shaper is ideal for such tasks. The tool head is exchanged for a high-speed grinder and it's instantly possible to grind planes in any angle.

The machine takes care of the three axes (XYZ) and one angle, the second and the third angle can be set via the dividing head and an angle fixture.

With this equipment, grinding a tool is no hassle. Even form tools are no problem. Grinding takes longer, but heat is drastically reduced."

Thank you Siegfried for that great story and thank you Andreas for the translation into English.

Keep sending me email with questions and interesting shaper stories. My email address is:

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

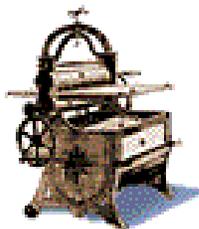
Kay



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

Richard Koolish

|                                |          |
|--------------------------------|----------|
| Balance as of January 16, 2006 | 8773.47  |
| Gazette printing               | -157.38  |
| Speakers fee                   | - 50.00  |
| 18 memberships @ \$25.00       | +450.00  |
| 1 paid bus trip seat           | +110.00  |
| Sale of 2 aprons               | + 40.00  |
| Bus trip expenses and refunds  | -692.20  |
| able rental for show           | -284.13  |
| Balance as of Feb. 17, 2006    | 8189.76  |
| Final bus trip accounting      |          |
| 31 paid seats at \$95.00       | +2945.00 |
| Bus contract                   | -2835.00 |
| Postage, etc.                  | -17.20   |
| Driver tip                     | -100.00  |
|                                | -----    |
| Cost to club                   | -7.20    |



## ***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        | 3/24/2006                             |
| May          | 4/21/2006                             |
| June         | 5/19/2006                             |
| July         | 6/23/2006                             |
| August       | 7/21/2006                             |
| September    | 8/25/2006                             |



## Shop Tips

Bob Beecroft offers his design for a homebuilt table saw blade indicator. The circular blade of a table saw needs to be exactly parallel to the miter slot to prevent jamming and burning the wood as it exits the blade. Slight misalignment shows up as a “zing” sound when you finish a cut. Mark one blade tooth with a felt tip marker, measure at the rear, then rotate to the front for a second measurement. The adjustments are made by loosening the trunnion mounts and sliding to one side or the other. Then adjust the fence to be parallel to the miter slot. A micro-adjustable trunnion bracket is available at [http://www.in-lineindustries.com/saw\\_pals.html](http://www.in-lineindustries.com/saw_pals.html) More alignment info at [http://www.thewoodshop.20m.com/calibrate\\_sled1.htm](http://www.thewoodshop.20m.com/calibrate_sled1.htm)

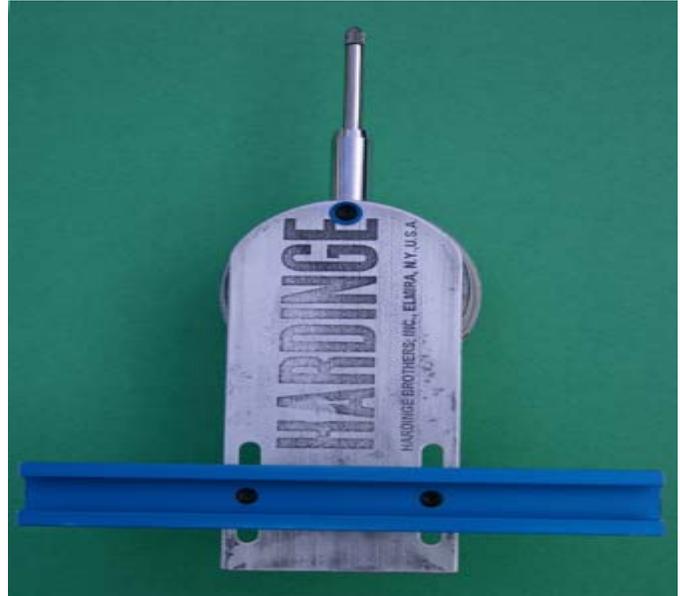


**Topside: Ready to work on the Powermatic**

### Sawblade Indicator      Bob Beecroft

A better indicator was in order for the new-to-me Powermatic Model 66 three-phase, five-horse cabinet saw. I thought it was time to upgrade from an indicator glued to a stick of wood. With my old contractor’s saw, realigning the blade was a very frequent occurrence when trying to do any kind of reasonably accurate work. With the Powermatic, this new gage will likely get little use!

It gives simple, one time adjustment for most any saw. It now sports leather washers under the AHCS & steel washers to prevent marring.



**Bottom side: material leftover from first attempts to do etched plates for machine restoration. Neat process, but that’s a different story. It now sports a little plastic foot (simulated here) for a slider on the end of the plate, near the ‘E’**

This Powermatic should be up to the task for anything I may want to do in wood from here on out. [TheAeroSmith@adelphia.net](mailto:TheAeroSmith@adelphia.net)



## NEMES SHOW

Steve Cushman

It seems to me that again our spring show was even better than last year.

The third year of having parts of the show on both floors seems to have smoothed out some of the details, and having the larger capacity air compressor working helps a lot.

Our door prize process keeps getting refined from year to year. This year’s preprinted tickets and the table numbers further smoothed the process.

Here are a few photos from the show:



**Herb Cotterly & Ed Rogers's displays**



**Todd Cahill's engine display**



**Ron Ginger's display**



**Dave Stickler and his engines**

Our regular commercial sponsors once again supplied us with a selection of prizes and our fabulous members donated a great assortment of additional prizes.

Thanks to everyone involved.

Tool Shed (Waltham)

\$25 Gift Certificate: Maria Cushman

Tool Shed (Worcester)

\$25 Gift Certificate: Sue Brackett

Home Shop Machinist

1 year subscription: Ernie Smith

New England Brass & Tool

Dial Caliper: Norm Jones

Keyless Chuck: Todd Cahill

Drill Set: Rollie Gaucher

5" Precision Square: Tom Richie

Wholesale Tool

Wall Chart: Sven Emilson

Wall Chart: Herb Cotterly

Wall Chart: S Howard Bailey

Wall Chart: Richard Sabol

Wall Chart: Beatrice Boucher

Wall Chart: Gene Martha

Wrench Set: Dave Bono

Ultrasonic Parts Cleaner: John Rex

Drill Doctor: Steve Cushman

Brothers Machinery

\$300 Gift Certificate: Henry Szostek

Harvey Noel

Watch Repair Video: Rich Puleo

Books: Henry Szostek, Ron Ginger,  
Les Russell

Errol Groff

Clock: Harvey Noel  
PM Research Book: Gail Martha  
Coles Catalog: Dick Koolish

Dave Bono

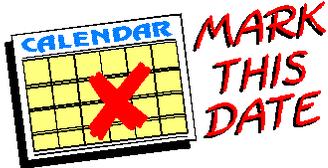
Torch: Dick Boucher

Richard Sabol

Mug Set: Cindy Schoppe

Leon Schiff

Micrometer: Ed Wyldoka



## *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](mailto:wbracket@rcn.com) or (508) 393-6290.

*Bill*

March 2<sup>nd</sup> Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry  
Waltham, MA 781-893-5410

March 2<sup>nd</sup> 10AM-5:30PM, March 3<sup>rd</sup> 8AM-5PM  
and March 4<sup>th</sup> 8AM-4:30PM  
2006 FIRST Robotics Competition Regional  
Events  
Verizon Wireless Arena, 555 Elm Street  
Manchester, NH  
<http://www.baesystemsfirst.org/regional/schedule.htm>

April 6<sup>th</sup> Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry  
Waltham, MA 781-893-5410

April 16<sup>th</sup> 9:00am The Flea at MIT  
Albany Street Garage at the corner of Albany  
and Main Streets in Cambridge  
<http://whereis.mit.edu/map-jpg?selection=P13&Parking=go>  
<http://web.mit.edu/miters/www/home.html>

April 22-23 NAMES Expo  
Toldeo, OH  
[www.modelengineeringsoc.com](http://www.modelengineeringsoc.com)



## *Web Sites of Interest*

Sign up for the NEMES mailing list at:  
<http://groups.yahoo.com/group/nemes>

Learn how to use electromagnetic energy to shrink coins by as much as 30%.  
<http://205.243.100.155/frames/shrinkergallery.html>

If anyone is disappointed about missing Detroit due to relocation of NAMES, click on "The Classic Tour" to see downtown Detroit's faded architectural treasures; some reborn, demolished, or about to be.  
<http://detroityes.com/index.html>



## *For Sale*

### *Free Magazines at Charles River Museum library*

The museum library is willing to part with several shelves of magazines. Among the titles are Model Engineer (1950's), Steam Ships, CQ, plus several others. Check with Bob Howatt on Thursday mornings at the museum library.

### *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 clothing***

### ***NEMES Shop Apron***



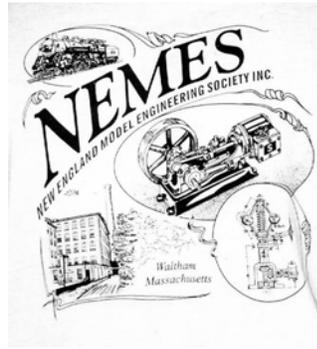
Look your best in the shop! The NEMES shop apron keeps clothes clean while holding essential measuring tools in the front pockets. The custom strap design keeps weight off your neck and easily ties at the side. The apron is washable blue denim with an embroidered NEMES logo on top pocket.

Contact Rollie Gaucher 508-885-2277

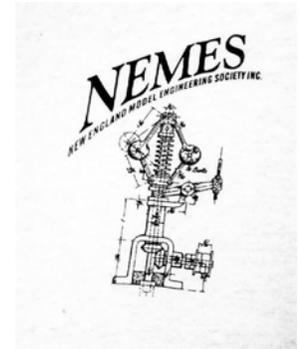
### ***NEMES Tee Shirts***

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  
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[mdbouch@hotmail.com](mailto:mdbouch@hotmail.com)