



# The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

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## Editor's Desk

Frank Hills

### You'll Drown in That Thing!

Ideas are the foundation of technological development. But how many times have good ideas died under the weight of old concepts and even older ideas? Submarines are a case in point. The level and quantity of technology contained in one modern submarine has been compared to that required to put a man on the moon. But initially, men had to die in these contraptions to get those in authority, those making the decisions about what submarines should be, how they should be built, and how they should be used, to change their ideas. The age of the modern submarine started out bogged down by outdated doctrines, poor planning, and outright disdain on the part of those who should have been at the forefront of their development. Many an Admiral called submarines "ungentlemanly and cowardly devices" but were forced by circumstances to entertain the idea of using them. Not desiring to be involved themselves, they cast such projects down to lower ranking officers with little or no experience

—Continued on page 2

## Next Meeting

Thursday, Nov 6, 2008

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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### Editor's Desk

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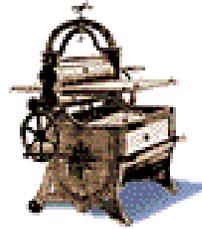
. . These lower ranking officers were forced by their own inexperience, to follow old established rules for naval construction and technique. Early modern submarines were of riveted construction, used gasoline or paraffin fueled engines and had little or no ventilation to protect the crews from dangerous fumes. Fires were the most common killers of early sub crews. Drowning was the next

Of course, the Admirals in charge shouted "We told you so!" when early experiments ended in the tragic deaths of many crews, but the momentum behind the development of the submarine lay more in the proven successes of pioneers like Holland and the need to prevent massive naval battles like those that, in the past, had seen entire fleets destroyed. There were new ways to overcome the problems caused by obsolete techniques, and liked or disliked, they had to be tried. Welding had not even been used in surface ships yet, so new was the technology, but construction of the pressure hulls of these early subs proved difficult to seal with rivets alone. Riveted construction was soon backed up by welding the seams over. No one would trust a weld for structural joining until later repairs found that welds held when the rivet didn't! Engine development came slowly. Gasoline engines were well developed, but were accompanied by explosive fumes. Paraffin engines were far safer, but provided less power and the smoke they generated was visible for miles. Steam, though tried again and again, was a useless exercise. The answer was the diesel, but it was relatively new, and not well understood. Submarine needs forced vast, rapid improvements in diesel technology, as well as the sciences of controlling high pressure gases, hydraulic mechanisms, electrical systems, and battery chemistry and design, all because of the submarine.

But finally, it worked. The submarine, the most complex and advanced machine built by man to date, was ready to prove itself. Though tactics would continue to see improvement, it would be the submarine, not the airplane or the

tank, that would make the most impression on modern warfare. With it, the Germans would make the powerful British navy tremble. The allies would counter with their submarines and annihilate the German navy and starve the country of raw materials and into surrender. Today, the submarine continues to be the most complex compilation of machinery in the world.

Next month, "How to Make a Computer Chip With a Handsaw.



### NEMES Gazette Editorial Schedule

<u>Issue</u>	<u>closing date for contributions</u>
Nov.'08	Oct. 20, 2008
Dec. '08	Nov. 21, 2008
Jan '09	Dec 19, 2008



### President's Corner

Dick Boucher

#### *Before I say anything...*

I have to apologize to the resident *Junk Yard Wars* star and the consummate *Punkin Chuckin* member of our society for inadvertently not mentioning his stellar effort on behalf of the museum at the *Innovations of Yesteryear* presentation last month. Jeff Del Papa had his ballista set up right beside where I was displayed. That is probably why, when I was reviewing the members in attendance, my mind missed his display. It was great and it gave a lot of youngsters hands-on in the show. Jeff was heaving chunks of ice into the river with his ancient siege machine. After a blast of a warning horn, a tug on the trigger rope produced a loud slap as the ropes released their tension on the flinging arm and the chunk of ice sailed gracefully almost to the opposite bank of the river. It was lots of fun.



## ***The Meeting***

Bill Gerber is a retired engineer with an interest in the transportation canals built to open our nation up to trade in the decades following the American Revolution; and which served until the coming of the railroads, and a few until the Great Depression. A member of several canal societies, Bill serves as VP of both the American Canal Society and the Middlesex Canal Association.

In researching the Middlesex Canal and the canals of the Merrimack River, Bill discovered, contrary to the conclusions of earlier historians (that steam was tried on the Middlesex Canal, but was unsuccessful abandoned) there was, in fact, a progressive and quite successful effort, over more than a decade (ca 1810 to 1823), to develop steam towboats for use on the Merrimack and other east coast rivers.

Over the decade, at least nine boats were constructed which employed three types of "engines" and variations thereof. Bill's talk will recap this development effort and provide insight, to the extent found, into the details of the boats and the engines they used.

## ***Miscellaneous Ramblings***

The 2<sup>nd</sup> annual Steam Muster at the Essex Boatbuilding Museum was another great venue for our members to display their models. The day started chilly and cloudy but by the time the public arrived, the clouds had cleared and the sun was shedding its warmth on us. There was a very good attendance from the public and we all had a good amount of interest in our displays and lots of conversation about our projects.

The January meeting will fall on New Years Day, so we will have to discuss whether we will have a meeting at the next meeting. With the thought in mind that we will not meet in January, it is time to start planning the annual trip to Cabin Fever. The dates of the show this year are January 17<sup>th</sup> & 18<sup>th</sup> and as usual we need at least 30 folks to travel on the bus to keep individual passage reasonable. I have a price for the bus and if enough interest is shown in the trip I will continue to investigate a motel and have the information for the December meeting or earlier on our Yahoo list. As in past years the bus will leave the riverside "T" station on Friday morning and return Sunday evening.

Dick B.



## ***Shop Tips***

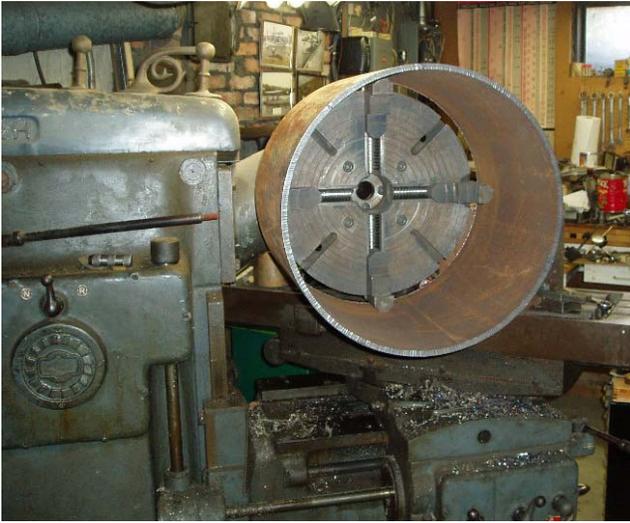
### ***Making Do With What You Have*** *By Rollie Gaucher*

I started making a boiler for the Stanley reproduction car I'm building. It requires an eighteen-inch diameter boiler. I picked up an eighteen inch A-106 seamless shell from the pipe shop and needed to trim the ends square and cut a welding bevel on each end.

The largest lathe in my shop is a sixteen-inch swing, and I have a large sixteen inch four jar chuck.

Pondering the problem I decided to make an adapter for the sixteen-inch chuck to fit my big forty taper Arno universal mill, and turn the head horizontal to the table to use the mill as a lathe to turn the ends. The four jaws of the chuck will extend out well beyond the inside diameter of the eighteen inch shell I needed to turn and the mill will run down to twenty RPM for turning speed. It worked out well.

I also found a company in New York that could supply the three eights SA-516 plate for the heads and CNC the required holes right from my CAD drawings so I E-mailed my CAD file and got my heads all drilled, they did a beautiful job.



## *Dues Are...Due?*

Yes folks, it's that time of year again! NEMES dues for 2009 are \$25.00 Please send a check made out to NEMES to:

Richard Koolish  
212 Park Ave.  
Arlington MA 02476

PLEASE PRINT NEATLY AND IN ENGLISH!

Mr. Koolish is an intelligent man, but he doesn't read Sanskrit!

Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ ZIP \_\_\_\_\_

Phone \_\_\_\_\_

Email \_\_\_\_\_

## ***Attention! Attention! Steam Man has been saved!***

Thanks to all of those who made their desire for Steam Man to continue known...except to the guy who said he'd have to start beating his wife if he didn't have Steam Man to read! Also!! Thanks to all of you who have begun contributing. This Stuff is great and exactly what this publication is all about!





## ***The Steam Man of the Prairies***

BY EDWARDS ELLIS,

### **CHAPTER IX.**

#### **THE STEAM MAN AS A HUNTER.**

AT this juncture the trapper whispered that the Indians were again stealing around them. Johnny's first proceeding was to pull the whistle wide open, awaking the stillness of the night by a hideous, prolonged screech.

Then, letting on the steam, the man made a bound forward, and the next moment was careering over the prairie like a demon of darkness, its horrid whistle giving forth almost one continual yell, such as no American Indian has ever been able to imitate.

When they had gone a few hundred yards, Johnny again slackened the speed, for there was great risk in going at this tremendous rate, where all was entire blank darkness, and there was no telling into what danger they might run. At the speed at which they were going they would have bounded into a river before they could have checked themselves.

"Yer furgot one thing," said Baldy, when they had considerably moderated their gait, and were using great caution.

"What is that?"

"Yer oughter had a lamp in front, so we could travel at night, jist as well as day."

"You are right; I don't see how I came to forget that. We could have frightened the Indians more completely, and there would have been some consolation in traveling at such a time."

"Is it too late yet?"

"Couldn't do it without going back to St. Louis."

"Thunderation! I didn't mean that. Go ahead."

"Such a lamp or head-light as the locomotives use would cost several hundred dollars, although I could have made one nearly as good for much less. Such a thing in the center of a man's forehead, and the whistle at the end of his nose, would give him quite an impressive appearance."

"Yer must do it, too, some day— My God!"

The boy instantly checked their progress, as the trapper uttered his exclamation; but quickly as it was done, it was none too soon, for another long step and the steam man would have gone down an embankment, twenty feet high, into a roaring river at the base. As it was, both made rather a hurried leap to the ground, and ran to the front to see whether there was not danger of his going down.

But fortunately he stood firm.

"I declare that was a narrow escape!" exclaimed the boy as he gazed down the cavernous darkness, looking doubly frightful in the gloom of the night.

"Skulp me if that wouldn't have been almost as bad as staying among the red-skins," replied the trapper. "How are we goin' to get him out of this?"

"We've got to shove him back ourselves."

"Can't we reverse him?"

"No; he isn't gotten up on that principle."

By great labor they managed to make him retrograde a few steps, so that he could be made to shy enough to leave the dangerous vicinity, and once more started upon the broad firm prairie.

"Do you suppose these Indians are following us?" inquired the boy.

"No fear of it."

"Then we may as well stay here."

The fires were drawn again, everything made right, and the two disposed themselves again for spending the night in slumber.

No disturbance occurred, and both slept soundly until broad daylight. The trapper's first proceeding upon awakening was to scan the prairie in every direction in quest of danger. He was not a little amused to see a dozen or so mounted Indians about a third of a mile to the west. They had reined up on the plain, and were evidently scanning the strange object, with a great deal of wonder, mixed with some-fear.

"Do you think they will attack us?" inquired the boy, who could not suppress his trepidation at the

sight of the warlike savages, on their gayly-caparisoned horses, drawn up in such startling array.

“Ef thar war any danger of that, we could stop ‘em by ‘tacking ‘em.

“Jest fire up and start toward ‘em, and see how quick they will scatter.”

The advice was acted upon on the instant, although it was with no little misgiving on the part of the engineer.

All the time that the “firing up” process was under way the savages sat as motionless as statues upon their horses. Had they understood the real nature of the “animal,” it cannot be supposed that they would have hesitated for a moment to charge down upon it and demolish it entirely.

But it was a *terra incognita*, clothed with a terror such as no array of enemies could wear, and they preferred to keep at a goodly distance from it.

“Now, suppose they do not run?” remarked Johnny, rather doubtfully, as he hesitated whether to start ahead or not.

“What if they don’t? Can’t we run another way? But yer needn’t fear. Jist try it on.”

Steam was let on as rapidly as possible, and the momentum gathering quickly, it was soon speeding over the prairie at a tremendous rate, straight toward the savages.

The latter remained motionless a few moments, before they realized that it was coming after them, and then, wheeling about, they ran as though all the legions of darkness were after them.

“Shall I keep it up?” shouted Johnny in the ear of the hunter.

“Yas; give ‘em such a skear that they won’t be able to git over it ag’in in all thar lives.”

There is some fun in chasing a foe, when you know that he is really afraid of you, and will keep running without any thought of turning at bay, and the dwarf put the steam man to the very highest notch of speed that was safe, even at the slight risk of throwing both the occupants out.

The prairie was harder and nearer level than any over which they had passed since starting, so that nothing was in the way of preventing the richest kind of sport.

“Are we gaining?” inquired Johnny, his eyes glowing with excitement.

“Gaining? Thar never was a red-skin that had such a chase in all the world. Ef they don’t git out the way mighty soon, we’ll run over ‘em all.”

They were, in truth, rapidly overhauling the red-skins, who were about as much terrified as it was possible for a mortal to be, and still live.

To increase their fears, the boy kept up a constant shrieking of his whistle. If there had been any other contrivance or means at his command, it is possible the red-skins would have tumbled off their horses and died; for they were bearing almost all the fright, terror and horror that can possibly be concentrated into a single person.

Finding there was no escape by means of the speed of their horses, the Indians sensibly did what the trapper had prophesied they would do at first.

They “scattered,” all diverging over the prairie. As it was impossible for the steam man to overtake all of these, of course, this expedient secured the safety of the majority.

Neither Baldy nor the boy were disposed to give up the sport in this manner; so, they singled out a single “noble red-man,” who was pursuing nearly the same direction as they were, and they headed straight for him.

The poor wretch, when he saw that he was the object of the monster’s pursuit, seemed to become frantic with terror. Rising on his horse’s back, he leaned forward until it looked as though there was danger of going over his head altogether. Then, whooping and shrieking to his terrified horse, that was already straining every nerve, he pounded his heels in its sides, vainly urging it to still greater speed.

In the mean time, the steam man was gaining steadily upon him, while to add variety to the scene, Johnny kept up the unearthly shrieking of the nose-whistle of the giant. It was difficult to tell which sounded the most hideously in this strange chase.

The remaining Indians had improved their advantage to the utmost. Fearful that their dreadful enemy might change its mind and single them out, they kept up their tearing flight, all regardless of the great extremity to which their companion was reduced, until finally they disappeared in the distance.

A short distance only separated pursuer and pursued, when the latter, realizing that there was no escape in flight, headed toward the river, which was a short distance on the right.

This saved him. When with a howl, horse and rider thundered over the bank and disappeared, the steam man could not follow him. He was compelled to give up the chase and draw off.

A few days later, without further noteworthy incident, the steam man reached Wolf Ravine, being received in the manner narrated at the beginning of this story.



***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 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.

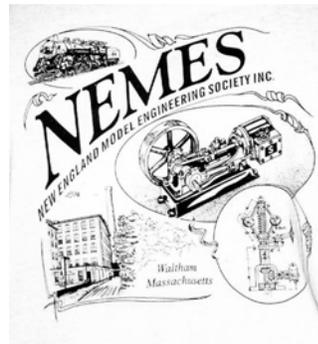
Contact Rollie Gaucher 508-885-2277



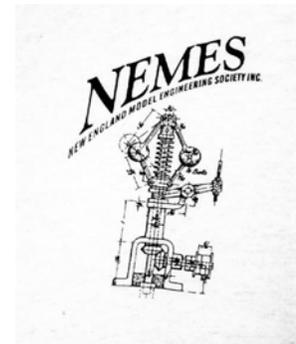
***NEMES Tee Shirts***

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  
10 May's Field Rd  
Lunenburg, MA 01462-1263  
[mdbouch@hotmail.com](mailto: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 [thebracketts@verizon.net](mailto:thebracketts@verizon.net) or (508) 393-6290.

*Bill*

Nov 2<sup>nd</sup> The Great Fall Auction  
Owls Head Transportation Museum Owls ME  
<http://www.ohm.org/>

Nov 6<sup>th</sup> Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry  
Waltham, MA  
<http://www.neme-s.org>  
781-893-5410

Dec 4<sup>th</sup> Thursday 7PM  
NEMES Monthly club meeting  
Charles River Museum of Industry  
Waltham, MA  
<http://www.neme-s.org>  
781-893-5410



## Web Sites of Interest

### Unusual Projects

Visit this website to see some ideas for unique projects: <http://www.hacknmod.com> The website title is "Amazingly Cool Hacks, Mods, and DIY Projects", and it lives up to its name. Categories include: Airsoft and Gun, Audio, Car, DIY Free Energy, Internet, Laser, LEDs and Light, Robots.

### Cobalt, Steel, and Carbide Bandsaw Blades

Saw Systems, Inc. <http://www.sawsystemsinc.com> (Twinsburg, Ohio) makes bandsaw blades to order from quite a few different materials, including common carbon steel, bimetal HSS, bimetal cobalt steel, and carbide-tipped steel.

### Information on Gears, Sprockets, and Belts

Omni Gear has assembled a wealth of information on gears, belts and sprockets and made it all available on their website: <http://www.omnigear.us/TechnicalGearInfo.aspx>

### Tin Can Sterling Engine Plans

Darryl Boyd is a Sterling Engine enthusiast. He has assembled a number of sterling engine plans on his website. These aren't "period reproductions" or "beautiful models" but instead easy-to-make engines falling into the general category "Tin Can" Sterling Engines. <http://boydhouse.com/stirling/index.html>

### Beautiful Miniature Engine Models

If you want to see superb work in miniature engines, visit John Bentley's website: <http://www.modelengines.info/> You won't see tin cans here but you will see some awesome models.

### More Beautiful Work in Miniature

The Internet Craftsmanship Museum is a website showcasing some of the finest models and reproductions. <http://www.craftsmanshipmuseum.com> I am particularly taken by Barry J. Jordan's miniature tools, including his 1/14 scale Bridgeport Mill.

### Interesting Shop Projects

The CNC Cookbook website has some very helpful information on CNC, but also some good ideas for projects for your shop. <http://www.cnccookbook.com/CCCookbook.htm>  
<http://www.cnccookbook.com/CCWishListFutures.htm>