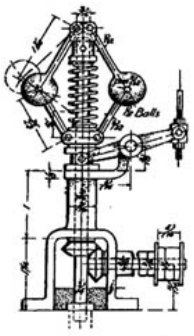

The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

No. 166 Feb. 2010

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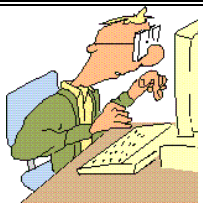


Editor's Desk

Frank Hills

Jump Off the Bridge, or Extend It?

Over the Christmas holiday I read a book on the history of flight. I have a thousand books and videos on the subject. It's my favorite pass time. But this book extended its comments to the history of the cold-war space race. Specifically, the different approaches the US and the Soviet Union took to developing space programs. Both sides needed to take bold strides, but the Soviets tended to extend known technologies to their limits. The US was more likely to jump and try something new at the beginning of every endeavor. Ultimately, it would be hard to say which technique worked more effectively. The Soviet Union made tremendous initial strides, but lost the race to the moon. The Soviets built the first space station and spent more time in it, but the US made one bigger and better designed. At least no one nearly died in it! How could a nation with the lead the Soviets had in rocket design suddenly fall so short? How could the US, with its seemingly unlimited drive and commitment start so badly?

–Continued on page 2

Next Meeting

Thursday, Feb. 4, 2010

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

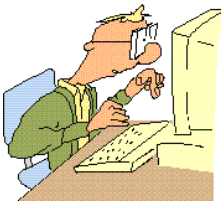
Membership Info

New members welcome! Annual dues are $25 (mail applications and/or dues checks, made payable to "NEMES", to our Treasurer Richard Koolish, see right) Annual dues are for the calendar year and are due by December 31st of the prior year (or with application).

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

Addresses are in the left column.

Contents



Editor's Desk

-continued from page 1

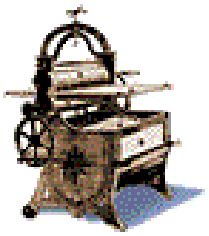
I think there's a lesson to be learned here. It isn't that one approach is better than the other. It's knowing what you're trying to accomplish that counts.

The Soviets were wise to spend time and effort expanding the German technology they had acquired at the end of WWII. Using this well developed vane, they gained a great deal of experience very quickly. Initially they built larger rockets simply by taking engines they knew worked and mounted many of them in one vehicle. Eventually it did become a bit ridiculous. Their early large orbital rockets were powered by as many as 32 small engines. The US took a different path and build much larger individual engines, but started doing so, perhaps, before they had the needed experience. The failure rate of the early US rockets was horrendous. A great deal of time was lost picking up the scattered pieces of their impatience. The Soviets extended the technology bridge too far. The US jumped before they were done building it. Both failed to see the shortcomings of their approaches.

Admittedly it has to be hard knowing when to make a shift in philosophy. After all, the Soviet rocket with 32 engines worked. The larger US engines, for a while, didn't. But the Soviets did eventually hit a wall using this technique. There was a limit to the rational of just adding more engines. Eventually, the US experience in building larger engines paid off with programs like the Saturn V. But they suffered numerous, time consuming failures attempting to move so fast and lagged behind the Soviets until they had properly recreated the wheel. Gains and shortfalls are the name of the game in technology. That's accepted. But I still have trouble seeing why both groups couldn't see there was a more logical way.

It seems to me that the shortcoming in both their approaches was the lack of defined goals. True, the Soviets did build on previous experience, but to what end? In terms of design, they didn't have one. Rather than setting a definable goal, say of building a reliable version of the V2 with which to experiment with staging, communications and guidance systems while they developed better, bigger, more efficient engines, they put all of their effort into exploiting ageing technology. The US went to the opposite extreme. Rather than solving one rocket's design problems before they moved on to the next, they simply started another program, building a new rocket with new problems. The US went through generations of underdeveloped vehicles before they build one with a reasonable reliability record. Neither group spent the time to decide what they were trying to accomplish before they started. Both fell into the trap, one way or another, of saying "let's do this" without asking why. The only goal each had at the time was to build them bigger before the other guy.

Next month, "High Tech Fibers".



NEMES Gazette Editorial Schedule

Issue	closing date for contributions
Mar. '10	Feb. 22, 2010
April '10	Mar. 22, 2010
May '10	June 21, 2010

President's Corner

Dick Boucher

The Meeting

Our speaker this month will be our own Bruce Murray who will speak on Power Measurements on a 2" Scale Burrell Traction Engine. Bruce has been building a double-crank compound steam engine and was interested in measuring the overall power of the engine as well as the work split between the high and low pressure cylinders. He installed pressure sensors in the cylinders and a displacement sensor on a piston rod. He also fitted a de Prony style brake to the engine to measure the

shaft power output. The output from these sensors went to a 4-channel digital data acquisition system on a PC. The talk will describe the instrumentation used and the interpretation of the results. A demonstration of the PC data acquisition system (but not the steam engine) will be set up for viewing and demonstration at the meeting. Those of us who had seen such equipment being built and used in the Model Engineer magazine over the years now have a chance to view the equipment in live action.

Miscellaneous Ramblings

Well finally, the bus trip to Cabin Fever is over. It is a large drain on Norm and myself but I guess we are gluttons for punishment. I want to thank Norm Jones for rounding up the suspects to take the trip and Dick Koolish for handling the money and paying the bills. I also want to thank Greg Young for helping one of our older members and all of you who went along for the trip and made it possible for everyone to travel by bus. We had thirty eight folks on the bus and it reduced the cost of the seat to $118 from the initial $150.

The show itself was great with many new miniature machines to view and spear one on to get back into the shop and get something new ready for our own show next month.

Speaking of our own show, I would ask everyone who arrives at the museum to help set up tables upstairs and not put anything on the tables until the table covering is in place.

That is about it for this month. The picture below is of my 3½ inch gauge railroad in the back yard. " Just remember that in the winter buried deep beneath the snow lies the seed that in the springtime with the sun becomes the rose"

Dick B.

Dues Are…Due?

2010 NEMES Membership
Please send the below form with a check for $25.00 made out to NEMES to:

Richard Koolish
212 Park Ave.
Arlington MA 02476

PLEASE PRINT NEATLY!

Name _____

Street _____

City _____

State _____ ZIP _____

Home Phone _____

Work Phone _____

email _____

Shop Safety

By DarwinAwards.com

Now here is a tale of excitement and … stupidity, courtesy of the Darwin Awards.

Mortar Fire

2009 Honorable Mention
Unconfirmed by Darwin

This moment of blissfully pure and unadulterated stupidity happened while I was managing a successful franchise exhaust shop a few years back. I had won a contract to build custom exhausts on a series of hot rods. Due to the exacting workmanship required, I did these jobs after hours when I wasn't distracted by customers and staff.

Tired and a bit bored one evening, I took a break, swigged some soda, and set the Coke can down on the pipe rack. It fell neatly into a length of exhaust pipe. This raised some intriguing possibilities. I wondered if a small acetylene explosion would launch a can from the pipe. As it happened, an acetylene set was ready to hand, and I proceeded unimpeded with my experiment.

I welded a plate over one end of the tube, and bored a small hole in the side, just above the plate. I dropped an empty can down the pipe and introduced some acetylene and oxygen though the hole. Test One went well. My trusy

Zippo ignited the gas and there was a loud pop--but the can launched a measly ten feet in the air.

Being a perfectionist, I knew I could do better. The empty can was slightly smaller than the 3" pipe, and much could be gained by wrapping the can to fit the pipe. Test Two was better. The pop was louder, and the can launched upward with enough force to dent the tin roof of the building.

At this point I realized that I could do some damage, so I moved my enterprise out back behind the shop before proceeding with Test Three. I carefully wrapped a full Coke can with a rag, oiled to reduce friction. I rammed it hard down the pipe, but could only get it down about one foot. I aimed the tube straight up (to maximize altitude) and filled the three remaining feet with oxygen and acetylene. I must confess that I experienced a brief flash of doubt, but I overcame it, knelt down a careful eighteen inches from the pipe, and lit the mortar.

The result was considerably more violent than the prior launches.

An extremely loud explosion and a searing flash of heat knocked me over. I caught a brief glimpse of a burning projectile disappearing at high velocity into the night sky. The recoil of the launch had driven the tube a foot into the ground, and the open end of the pipe sported a distinct bell shape. Luckily the pipe had held, and had not blown up in my face. Stunned, I staggered back into the shop and knocked over a six foot length of exhaust pipe. Instead of the usual crash, I heard nothing but a high-pitched buzzing. Break time was over. I carried on working.

Half an hour later I was surprised by two cops tapping me on the shoulder. They were a wee bit agitated, as they had been addressing me for awhile and thought I was ignoring them. After much shouting and several written messages, it became apparent that they were investigating a loud explosion heard behind the 20,000-litre propane tank at the gas station next door. The tank was ten feet away from my test site, behind a wooden fence!

The gas station had, of course, been evacuated. Due to my impaired hearing, I had failed to notice the four fire engines outside, and was blissfully unaware of the mayhem going on next door. Naturally enough, I denied any knowledge, but my burnt and deaf state didn't help my case. Then a curious cop followed the oxy-acetylene hoses outside...
The incident cost me a severe telling off by the cops and permanent hearing issues, but I count myself lucky. I must confess, though, sometimes I sit back and wonder... What was I thinking?

And where did that Coke can end up?

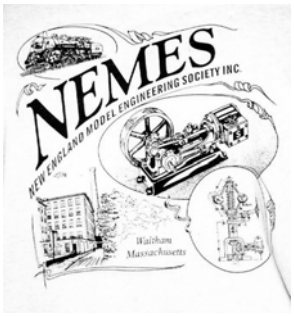
Reference: Personal Account by Dave

For Sale

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

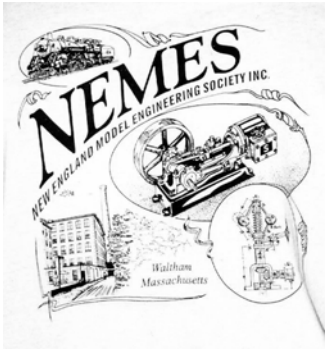


NEMES clothing

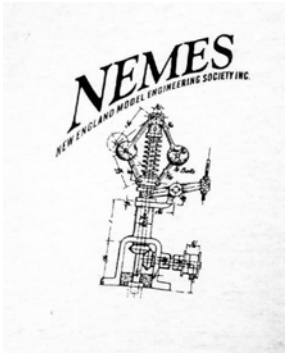
NEMES Tee Shirts

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



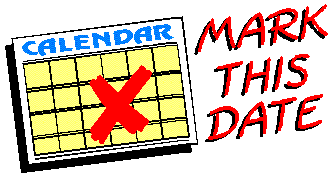
Front

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 thebracketts@verizon.net or (508) 393-6290.

Bill

Calendar of Events

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

Feb 20th 10AM-4PM
14th Annual NEMES Model Engineering Show
Charles River Museum of Industry
Waltham, MA 781-893-5410
http://www.neme-s.org

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

March 19th-20th 10AM-6PM 21st 10AM-4PM
Maine boat builders show
58 Fore St Portland ME
http://www.portlandcompany.com