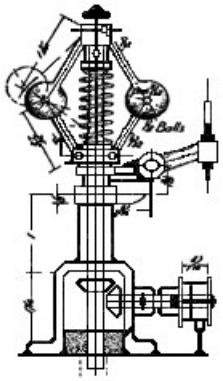

The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

No 281 November 2019

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November Meeting

The November Meeting will be held at 7 PM in the conference room of the Charles River Museum, on Thursday evening, November 7, 2019. The meeting room will be open at 6:30PM, so members can socialize before the meeting.

There will be a brief poster session, where members can discuss current projects, share experiences, and perhaps enlist the advice of NEMES members. Members are encouraged to bring current projects. to discuss

Our speaker will be Corey Mooney, who will speak on the subjects of 3-D printing and using 3D printed shapes as casting patterns. Mr. Corey has done 3D printing as an amateur using fused deposition modeling and had formed a variety of parts for telescopes and mounts.

Contents

Club Business

Rich Baker

Dues. We are now collecting 2019 dues. Please bring your $25 check to the November meeting, or you can try out our credit card system. Or mail me a check to Rich Baker, NEMES, 288 Middle Street, West Newbury, MA 01985.

See Rich Baker for the NEMES merchandise.

President's Corner
Dan Eyring

[Editor's note: As Dan is taking over responsibility for programs, he will not be writing a monthly column. I am keeping this space open in case he wants to do a column in the future.]

Report on October Meeting

Our speaker was Chris Fitch, who showed us videos of his kinetic sculptures, including an animated one of a bird about 8 feet tall. Several NEMES members asked if this could be displayed at the Model Engineering Show in February. Mr. Fitch expressed interest in displaying it. Howard Gorin was sufficiently interested that he volunteered to transport it to the Museum.

From the Editor's Desk
Bob Timmerman

Sadly, we have two obituaries this month. The first one , of George A LaGasse, should have been in the October Gazette, but did not get in due to your editor being preoccupied with a painting project on the outside of his house, which had to be done before bad weather set in.

December 7, 2PM 10th Annual NEMES HOLIDAY Dinner/Get Together
Essex, MA Woodman's Restaurant in Essex MA 121 Main St, Essex, MA.
No tickets or reservations. Just show up enjoy! (you may have reservations but come anyway)
www.woodmans.com

Obituaries:
George A. Lagasse of N. Chelmsford

George Albert Lagasse, 92, of N. Chelmsford, MA, died Thursday morning, August 29, 2019 at his daughter's home in Nashua, NH.

Born in Haverhill, MA, he was the son of the late Albert J. and Lillian P. (Everett) Lagasse. He graduated from Saint James High School in Haverhill with the class of 1944 and furthered his education by earning a certificate in electrical engineering.

George proudly served in the United States Army Air Corp during World War II. He reenlisted with the Air Force Reserves after his honorable discharge at the convenience of the government from the Army Air Corps.

A deeply curious and creative man, George began disassembling and inventing his own contraptions and devices at a young age with his siblings, stories of which have become a part of the Lagasse family mythology. His skill and resourcefulness led him to a successful career at Raytheon in Bedford, MA, where he worked as an electrical engineer for 43 years before retiring in 1991.

In his retirement, he continued to learn and share his enthusiasm for mechanics as a member of the *New England Model Engineering Society*.

Those close to him will fondly remember him as a craftsman who enjoyed spending time in his workshop, keeping up with the latest in engineering and technology, and sharing his insights with those he loved—whistling a tune all the while.

Mike Boucher

Mike Boucher, a founding member of NEMES, the Editor of the NEMES Gazette in the 2000's, and a frequent contributor to the Gazette passed away on October 5, after a long battle with cancer.

This picture of Mike and his adopted daughter was taken at the 2014 Model Engineering Show.

As a tribute to Mike, I am publishing a article he wrote for the Gazette #68, on how to get into the Live Steam hobby.

Introduction to Live Steam

By Mike Boucher

Or everything you always wanted to know about model steam locomotives but were too shy to ask

Scales and gauges First, an explanation of the difference between scale and gauge. Live steam locomotives come in different sizes. If the model loco is a model of a real one, the "scale" refers to the proportions between the model and the prototype e.g. a ½" scale loco is built such that every half-inch on the model represents a foot on the prototype. Gauge is the distance between the inside edge of the two rails, and therefore the working distance between the flanges on the wheels. For US standard gauge, that's 4'-8½", for the small trains running around at Edaville, it's 2 feet. The gauge is important if you want to run the loco on club tracks. If you want to build a loco with an oddball gauge, better be prepared to build your own track.

Common Scales and Gauges

Gauge 1 – 1¾" gauge. AKA "LGB" or "Garden Railways". Commercially available bolt-together kits from companies such as Aster, Accucraft, and Mammod. Prices for these kits range from $400 to $10,000, depending on a lot of factors. Also, casting sets are available from many manufacturers.

½" scale – 2.5" gauge. Smallest practical passenger-hauling size. Unfortunately, this is not a common scale anymore. There are private tracks here and there, but the only club that I know of with 2½" gauge track is the Pennsylvania Live Steamers, just outside of Philadelphia.

¾" scale – 3½" gauge. This is the largest "worldwide standard" for a particular scale. Everywhere you go in the world, you can find 3½" gauge tracks. This isn't true with any larger scale. The tracks are usually built on what is called a "highline", where the track is built on a bridge-like structure around 30" off the ground. The riders either sit sidesaddle on flat cars with their feet dangling down, or straddle the car and have footboards on both sides of the car. Not every club will have a highline, but many do. Some clubs and private tracks run 3½" gauge at ground level, but this can be uncomfortable

1" scale – 4¾" or 5" gauge. In the US and Canada, 1" scale is 4¾" gauge. In the UK, Australia, South Africa, 1" scale is 5" gauge. This can be a problem with commercial designs from the UK so you have to modify the designs to take the extra ¼" out between the frames. Tracks can be found on both a highline and at ground level, depending on club. This is the smallest gauge I feel comfortable running on the ground.

1½" scale – 7¼" or 7½" gauge. In the northeast US (New England, New York, Pennsylvania), the UK, Australia, and South Africa, 1½" scale is 7¼" gauge. In the rest of the US, it is 7½" gauge. This can, and will, cause problems if you decide on a particular gauge and then move to another part of the country. Despite this, I think that this is the most common scale. Very few clubs do not have a 1½" scale track. Some people call this "Hernia gauge", as the engines are usually too heavy to be lifted by one person. It is not unheard of for these engines to weigh close to 2000 pounds! Some enterprising souls have devised methods to be able to run the same locomotive on both tracks. All require the frames to be thin enough for 7¼" track, and the cylinders and valve gear wide enough for 7½" gauge. Some involve removable shims and sliding the wheels on the axles. The most inventive I've heard of is making cast wheels and steel tires, and threading both 8 tpi. A setscrew is used as a locking mechanism to keep them from rotating during operation. To change gauges, remove the setscrew, turn one revolution in the appropriate direction, and insert the setscrew. This moves each tire 1/8", for a total of ¼" difference. The threads must be oiled, and occasionally exercised to keep them from seizing.

Anything larger. Usually considered to be an "Amusement Park Train". Running, restored Cagney locomotives and other engines were commercially available in the early 1900s. There have been some new locomotives built, but no commercial designs that I know of. Few club tracks. Common gauges here are 12", 15" and 18".

Steaming Up

Let us suppose that you have an engine in good running order and that you have taken it down to the track for a run. Your first task is to prepare to start a fire in the boiler's firebox. You will need some implements to get the fire lit and steam up: charcoal briquettes, kerosene and matches. You will also need lubricating oil and steam cylinder oil, which is oil specially formulated to be carried into the cylinder along with the steam. Break up some charcoal briquettes in a can and let them soak them in kerosene while you fill the cylinder lubricators with cylinder oil. Oil every part that moves. Fill the tender and boiler with water, being careful not to overfill the boiler. Then fill the firebox with kerosene-soaked charcoal. While running, the exhaust steam from the cylinders goes to a blast pipe, which is arranged to create a vacuum in the smoke-box when the exhaust goes up the smokestack. The purpose of this vacuum is to draw air through the firebox to supply oxygen to the fire. Before steam is up, this vacuum must be artificially created by temporarily attaching a blower to the smokestack. These blowers are usually small electric motors with a fan attached. Mine was originally a small vacuum cleaner, which was modified by the original owner of the locomotive. Some people use venturi tubes, which are pieces of tubing bent in a J shape and inserted into the stack. An air compressor provides the blast, and this will have the same effect as the exhaust during running. Now that you are ready to steam up, light the fire with

a match and turn the blower on. Keep the firebox door shut, or you'll be pulling cold air across the fire instead of pulling air through the fire. As the charcoal is consumed, add coal to the fire, as appropriate. While you are waiting for the steam pressure to reach 40 psi, keep lubricating all moving parts. When 40 psi is attained, turn off the blower, turn on the steam blower and check the injectors and steam pump.

When the safety valves pop, you're ready to go.

A quick aside on coal: The different varieties of coal are soft coal (bituminous) and hard coal (anthracite). Anthracite burns very cleanly, producing almost no soot in the fire-tubes. Soft coal is dirtier, but easier to fire. With soft coal, a glowing red fire is what you want. With hard coal, a glowing red fire is a problem. You should add more coal before it gets to bright red. Anthracite also requires different grates, as more air is needed to keep the coal burning.

Running your Locomotive

The driver sits just behind the engine when running the loco. Just as with a full-size engine, he has to maintain a balance between the fire and the water level, which are the factors that determine the steam pressure. Enough steam, at working pressure, has to be continuously generated to keep the loco able to pull its load. While doing this balancing act, the driver has to keep an eye on the track to avoid other trains and to avoid running off the end of the track. If the track is on the ground, the driver's position may be awkward in the smaller gauges. If the track is raised (known as a highline track), the driver is able to sit comfortably on a flat car. Most locos can haul passengers as well as the driver.

Cleaning Up

When it is time to stop (usually all too soon) the engine must be cleaned. If possible, build the steam pressure up again and then drop the fire. Blow down the boiler (i.e. let all the steam out) while it is still hot. Some people prefer to blow down the boiler only part way, to remove any scale or minerals which boiled out of the water, and then fill the boiler to the top and letting it cool. The method of boiler construction is a factor in what technique you use. My locomotive is an all copper boiler, and I blow it down completely while still hot. Clean the running gear with kerosene and oil the cylinders with steam oil to prevent rust.

OK, Now I'm Excited!

Now that your appetite has been whetted, what do you need to do to participate in this exhilarating activity? First of all, join a club. There are two active clubs in this area, and one club that does not currently have a club track
.

Waushakum Live Steamers
P.O. Box 6034
Holliston, MA 01746

Pioneer Valley Live Steamers
108 Hillside Rd.
P.O. Box 105
Southwick, MA 01077

Charlton Railroad, in Charlton, MA. They have recently been evicted from their property, and are in the process of finding a new location. I don't have a contact address for them at this point…

Then, being a member of NEMES and a model maker, build yourself a loco. You start by choosing a design, which ought to embody the following characteristics:

Reasonable size. Able to pull the driver (and passengers?), but relatively easy to move.

Good size firebox. This makes it easier for a beginner to fire the engine. Some "beginners" engines have an impossibly small firebox, a sure recipe for frustration.

Proven design. There are two schools of thought here. The first is that if you build your dream engine first, you'll stay enthused and finish the thing. The other says to build a proven design, so other people will have already made the mistakes and you know the engine will run well when done. I prefer the second. A man who built 40 engines in the course of his life designed the engine I'm currently building, and I know of 5 engines built to this design.

Be forewarned. Building a live steam loco is a major undertaking, requiring hundreds of hours of workshop time. The simple ones can take 500 hours if you work quickly. Most will take 1000+ hours.

The numbers e.g. 2-4-0, 4-6-2 etc. (in the US they are always even numbers) that are usually

appended to loco descriptions, refer to the wheel arrangement. The first digit is the number of wheels on the leading bogie, the second digit is the number of driven wheels coupled together and the third is the number of wheels on the trailing bogie. Some configurations are also named, e.g. a 4-6-2 is called a “Pacific” and a 4-4-2 is an “Atlantic”. Sometimes there are more than three numbers; a 4- 8-8-2 for example has two sets of 4 driving wheels coupled together on each side. Here are some suggestions, suitable for building by a beginner

[Editor’s note: The photos did not copy from the stored PDF to Word, and are not copied. Readers wishing to see them can refer to the original article in the Gazette archives, Gazette # 68.]

The “Raritan” 2-4-0 · 3.5” gauge.

Proven design

Hundreds built

Easy to carry

Serialized in “Live Steam”

A construction book is available

Inexpensive castings, around $300 for the whole set.

Plans and castings are available from:
Tanski Model Engineering
8927 Notre dame Dr. Eden NY 14057-9534

Little Engines Pacific 4-6-2

4.75” gauge

Proven design

hundreds built

Good passenger hauler

Waushakum Club engine

Plans and castings are available from:
Locomotive Works/Little Engines
131 La Grande Ave
Moss Beach CA 94038

Fitchburg Northern 2-6-0

Proven design

many built

Inexpensive castings

Serialized in “Live Steam”

Small drivers - can be machined on 6” lathe

Plans and castings are available from:
Allen Models
5994 Cuesta Verde
Goleta CA 93117-1808

RESOURCES

NEMES (But you already know about us.)

“Live Steam” Magazine P.O.
Box 629
Traverse City, MI 49685-0629

“Modeltec” Magazine
P. O. Box 9
Avon, MN 56310

“Steam in the Garden” Magazine
P.O. Box 335
Newark Valley, NY 13811

Kozo Hiraokas books.
Kozo has designed and built several ¾” “geared” engines, a Shay, a Climax, and a Heisler, none of which require castings. His drawings are excellent, as are his techniques. Even if you don’t plan on building his engines, the books are worth having. Several NEMES members have built the Climax, Leslie Russell and Dave Bono to name two. Currently available are the books on the Shay and the Heisler. The Climax book is out of print but can be found occasionally on the used book market or Ebay. Each book is around $50. Soon to be published is a Pennsylvania 0-4-0, also in ¾” gauge. Available from:
Village Press
P.O. Box 629
Traverse City, MI 49685-0629

"So you want to build a live steam locomotive?" by Joe Foster Nelson. This book was originally published in the early 1970s, so it is a bit dated. It costs around $40. Also available from Village Press.

http://www.livesteaming.com
Excellent web site, lots of links to clubs, casting and equipment suppliers, and personal sites

Live steam mailing list. Talk to other live steamers by e-mail. Send an e-mail to Majordomo@loganact.com
with "subscribe livesteamers" as the text

Mike

Machinery for Sale/Wanted

As a service to members, we continue to put listings of machinery for sale or wanted by members in this space from time to time. The notices of machinery for sale are not restricted to NEMES members, as members will benefit from the widest possible exposure to information on used machinery. Requests for machinery wanted are generally restricted to members. Send any information to me at RWTimmerman@gmail.com

Wanted:

By Bruce Strong: I'm hard at work getting my catapult ready for the World's Championship Punkin Chunkin in Rantoul Illinois Nov. 1&2. This reminded me of NEMEs and they say it never hurts to ask. I'm working on a steampunk display for next year's Steamfest in Waltham and I am in for a model steam engine similar in power to a Wilesco D 10 steam engine, but that is outside of my budget. Could you ask if anyone has one that they would be willing to part with for a reasonable price (or even free) or direct me to an affordable kit?

Bruce Strong: thewebgod@iname.com

For Sale:

We received this from a Mr. Matthew Serra, who wants to sell a 6" x 18" Atlas (Craftsman) lathe.

He writes:". I'd like to get this out there for a $500 "no haggle" price. Typically, really junky ones seem to go for about that or more. Curious if you have a suggestion. Additionally, how do most people post their contact info? My email is matthew.a.serra@gmail.com, my mobile is 201.245.1557"

"Craftsman (Atlas) 6x18 lathe. Model 101.07301. Very good condition - all dials, wheels, etc are correct, handles not broken as you often see. One small (old) scratch in way - does not seem to affect carriage at all.
I purchased it from the original owner, who provided me with the original manuals & paperwork (not in photo, but included) in nice condition.
A number of accessories are included: desirable micrometer carriage stop, 4-jaw chuck, lantern tool post, 1/2 and 3/8" tailstock chucks, faceplate and lathe dog, change gears, headstock and tailstock dead centers, countershaft assembly, etc. Also included is an original 1/2 hp motor - although the "starter" circuit does not work (you need to manually move the motor off 0 rpm). A great hobby machine or for a collector, just did not quite fit my needs."

[Editor's note: sometimes motors that do not start only need a new starting capacitor, which is usually a $10 item at Grainger]

Attached are two pictures:

[Note: Mr. Serra did not include the tools in the rear of the picture in his listing, so I expect they are not included

Winnie Bush visits Charles River Museum

Some “old timers” may remember Walter Bush, who built the model engines in the display case in the small gallery by the steps leading to the library. On September 26, his widow, Winnie Bush, visited the Charles River Museum. Here are some pictures taken by Dick Koolish © Richard Koolish, 2019:

First picture is Winne Bush, and her Pastor, herb Taylor, in front of the display case housing the engines Walter built.

Winnie Bush with Bob Perry, Director of the Charles River Museum of Industry and Innovation

Winne Bush made a substantial gift to the Museum after her visit.

In honor of the Bush family, that gallery is now named the Walter and Winnie Bush gallery.

Future NEMES Meetings

At the December, 2018 meeting, Dan Eyring took over responsibility for programs, and began the effort to recruit a program committee, so that no one person would have to do all the work of programs. Anybody who wants to serve on the program committee, or has ideas for programs, please talk to Dan.

Here is a list of upcoming programs:

November 7
Corey Mooney will speak on using 3D printing to make patterns for castings

December 5
Topic is open, but possibly a Christmas Party / Poster Session

January 3
Bob Timmerman of NEMES will be speaking on "Steam Power: 1840s thru 1920s", going from Corliss Engines, thru high-speed engines and uniflow engines to steam turbines and early central stations. While this covers the same ground as Mr. Timmerman's Mill Talk in October, it will include much new material.

Anybody have topics for after January?

Future Events

Thanks to a lot of hard work by our President, Dan Eyring, we now have a list of future events. If you do not see your favorite show on the list, give the information to our webmaster, James Scheffler III, and he will put it on our website. We seem to be coming to the end of the show season. Does anybody have any new listings?

Nov.

No information on meetings

Dec.

1 CMSGMA Winter Snowball Chili Cookoff 9am - Noon Pot Luck, Meeting 1pm Club House, Orange, MA

December 7, 2PM 10th Annual NEMES HOLIDAY Dinner/Get Together
Essex, MA Woodman's Restaurant in Essex MA 121 Main St, Essex, MA.
No tickets or reservations. Just show up enjoy! (you may have reservations but come anyway)
www.woodmans.com