



The NEMES

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

Gazette

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April Meeting

The April Meeting will be held at 7 PM in the conference room of the Charles River Museum, on Thursday evening, April 4, 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

The speaker will be John Wingle, who will be speaking on the Chevrolet Corvair. He is well versed in its beginnings and endings with lots in between. There are some really fun facts that go along with the car that many don't know, that he will include in his talk. He will speak a bit about the mechanical makeup of the cars. He does minor mechanics on them and knows the gist of the mechanical makeup.

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Club Business

Rich Baker

Dues. We are now collecting 2019 dues. Please bring your \$25 check to the March 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.]

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 restricted to members. Send any information to me at RWTimmerman@gmail.com

Some new listings have just arrived:

Atlas horizontal milling machine: It comes with a vise and the factory metal stand. It has a multi cycle multi voltage 3ph motor. It does not have the overarm support.

Van Norman horizontal bench milling machine: It is mounted on a wooden cabinet with a motor inside the cabinet. It comes with a vise. It is not set up for the overarm support. Antique

Atlas shaper: It has the factory metal stand and vise.

Delta shaper: It is on a wooden cabinet with drawers. Machine has a vise. It is the same as an AMMCO or a Rockwell shaper.

Pratt & Whitney Lathe: Overhead belt drive with loose change gears, It comes with some collets, the "Drive All" power unit, taper attachment, 3jaw ,4jaw, complete set of gears in original box and parts from another lathe. Seven feet long / 3 feet between centers. Purebred American gray cast iron. Probably did it's part to help win the Great war.

Email Bobspratt@aol.com for more info

Bob Hassett

From the
Editor's Desk



Bob
Timmerman

I would like to explain why this issue is a few days late. Many of you make models of real equipment, and make them out of metal or wood. In my day job, I make models of the performance of energy systems, combining data and equations, usually using large spreadsheets. Last Wednesday, I gave a paper at a technical conference in Boston. My work was an estimate of the amount of carbon dioxide saved by an innovative way to recycle power plant

waste heat to heat buildings. I was tied up with the conference, instead of doing the Gazette.

Several months ago, I ran an article about doing something that is supposed to be impossible. I want to make this a regular feature. Additional contributions are welcome.

Summary of March Meeting

There was a brief Poster Session, where members discussed their current projects, and, in the case of Dick Boucher, brought in an example of what he was working on. This will be a regular feature of future meetings

The speaker was Dave Fox of Bolton, MA - a collector/restorer of vintage products from the 19th and early 20th centuries. His talk featured a lot of hand and foot powered vacuum cleaners from the late 1800s to early 1900s. He will be loaning a number of them to the Museum for display in the former Charles River Public Internet Center area

Dick Boucher's *You Tube* Channel

NEMES own Dick Boucher now has his own *You Tube* channel, covering videos of various engine shows, and a few topics on machining that I have not seen anywhere else. The two videos I watched on machining were how to remove a broken center drill, and on a fixture (first developed by Rollie Gaucher) for centering work on a faceplate. The URL for the site is <https://www.youtube.com/channel/UCvlip2wqxZ0YvxzQ0FDqQJg>

Alternatively, you can go onto You Tube, and search for Richard Boucher Machine Shop.

Future NEMES Meetings

At the December meeting, Dan Eyring took over responsibility for programs, and begun 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

Recommendation for a vendor

I received the following e-mail from Leo Klos, and am printing it as I received it

Hi Bob,

Please publish a recommendation for a supplier I have just had exemplary service from

In this culture of poor supplier service, I have just had exemplary service from pegparts.com. Louisville, KY They sell flat belts and bearings. I needed to contact customer service.

They got back to me right away and shipped the parts I needed very promptly. Customer service could not have been more helpful.

Very Respectfully,

Leo Klos

[Editor's note: I went on their website, and found that the sell 1" wide fabric (not leather) belts for South Bend lathes, cut to length, with belt fasteners installed, at what appears to be a reasonable price.]

An Armillary Sundial for Amherst (NH) Village Center

Peter Sevier

About 20 months ago, the Amherst (NH) Garden Club asked me for ideas to improve the appearance of one of their civic gardens in the middle of the village. I am a member of a small team looking after this island

garden adjacent to a main road through the community, and I suggested a sundial for its 3-dimensional effect. We could have purchased a suitable sundial, but I believed that an armillary half-sphere type would look best in the civic garden setting, and that one of the size required would be expensive, and that I would therefore have to make it.

The half-sphere was fabricated from $\frac{3}{4}$ " X $\frac{3}{16}$ " in. cross-section mild-steel flat stock. One circle 14 inches in diameter was required, together with two half-circles with tangential extensions for securement to the sundial base, and for attachment of ornamentation. These parts were all shaped with a ring-roller purchased from Harbor Freight Tools. I was initially skeptical that this tool, at only \$60, would be capable of accurately forming such stiff pieces of steel, compared to most commercial ring-rollers at many times that price. The performance exceeded my expectations; the flat ends of the complete hoop met accurately and were joined by silver-brazing. The joint was so good that, from when surplus braze was filed off, the joint was almost invisible to the naked eye. The half-circles were joined to the complete circle by silver-brazing; brazing-alloy wire was flattened by hammering, and small pieces were held in the right-angled parts to be joined together and positioned with a clamp. When heated, the brazing alloy melted and made a joint which could not be seen from outside. I felt that this would be a better assembly technique for an armillary sundial in a civic garden than the traditional approach of using rivets, because it was more resistant to the ingress of water from rain, and consequent corrosion.

The gnomon consisted of a $\frac{1}{4}$ inch diameter brass rod which had the ends turned down to slightly-smaller diameter to fit into holes drilled through the steel hoop. The shadow cast by the sun fell on the equatorial half-circle, and traditionally this has attached to it a brass or copper strip with hours and minutes engraved on it, the calibration being from 6 o'clock in the morning to 6 o'clock in the evening. Hours are equidistant at 15 degree intervals, which is the great advantage of the armillary sphere over the flat-type sundial, which has to be calibrated for each latitude.

I wanted hour markers which were more interesting than a mark on a brass strip, and decided on 13 short brass cylinders with engraved Roman numerals, like

those on a clock dial. I have no experience at all in brass engraving, and needed help if possible with this task. At the next monthly meeting of the garden club I asked if anyone had the necessary engraving experience, or knew of someone who had it; the request was met with stony silence.

The solution was to engrave the numerals on the $\frac{7}{8}$ inch diameter brass hour markers with a small end-mill. The markers were held in a 4-jaw self-centering chuck on a rotary table, and the length of each cut controlled by the 3-axis read-out on the milling machine's X-Y position. Vertical cuts and their serifs such as I, II and III, were easy; V's and X's were cut by rotating the cylinder to the correct orientation by means of the turntable. The burrs from the milling machine were removed by rubbing on progressive SiC paper on a glass plate, down to 1500 grit. The cavities were then filled with black engravers wax, and each marker given a coat of acrylic lacquer for protection against the weather.

Brass half-circles were attached to the protruding ends of the rings for ornamentation and protection from the sharp edges. These were carefully brazed in position, avoiding melting of the half-ring. The outside ends of the gnomon were ornamented by the addition of turned brass half-spheres.

To protect the sundial from corrosion it was sprayed with acrylic lacquer; this will probably have to be renewed every year. A mounting hole was drilled in the correct position in the bottom half-circle, so that the gnomon was parallel to the Earth's axis of rotation.

The sundial was mounted at approximately waist-height on a rough granite pillar which rested on another large piece of granite on the ground, to reduce the unit loading on the soil which would result in the base sinking in. A hole was drilled in the top of the granite post to take a brass cylinder for mounting the sundial; this was drilled and tapped $\frac{1}{4}$ inch-26 BSF left-hand. The corresponding attachment bolt had a brass conical head with 3 holes at the base which fitted a ring spanner for tightening. It is hoped that this arrangement will deter-but not prevent-theft of the sundial.

Public acceptance of the armillary sundial in the civic garden in the middle of Amherst has been good, and during the summer it definitely enhanced the 3-dimensional appearance of the garden. I originally

wanted to remove it for the Winter, but was persuaded to leave it in place, because the garden club members wanted to see how it looked in snowy conditions.

During a recent stay at my sister's home in Marazion, Cornwall, UK, we decided that an armillary sphere sundial would be a worthwhile addition to the lovely garden at BosWorGy overlooking Mount's Bay. A near-neighbour in Marazion, seeing photographs of the sundial in Amherst, said that he had been looking for a unique gift for his elderly father's garden for quite some time, and this was the ideal present. Thus, it looks like 2 sundials will have to be made when I go to England this coming Summer. I have discussed this with the smith/welder that I use at Pencarn Forge in Canon's Town, Cornwall for my projects there, and he thinks that he can make them. There are new challenges; BosWorGy is very close to the sea, and it can be windy at times. The moist air is high in sea-salt, so carbon steel will quickly corrode away, and thus the sundial will have to be fabricated from a suitable stainless-steel alloy. Dan Harding does not possess a ring-roller, but has a cast-iron smith's cone for making hoops, so he thinks that he can do at least as good a job with it as I can do with a ring-roller. In addition, he is the best welder that I have ever come across. Watch this space.

Photos of the sundial in place



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. In particular, we need information on the Cranberry Flywheelers, down on the Cape.

April

28 Early Ford V-8 Club Flea Market & Car Show - Fitchburg Airport, Fitchburg, MA

28 Belltown Spring Show & Swap Haddam Neck Fairgrounds, 26 Quarry Hill Rd, Haddam Neck, CT

May

4-5 Connecticut Antique Machinery Spring Power Up, Rt. 7, Kent, CT

4-5 Zagray Spring Gas-Up & Swap Meet-Gas Up, Zagray Farm Museum, Rt. 85N, Colchester, CT

5 New Hampshire Power of the Past Rt. 113, Dunstable, MA

10-11 Rough & Tumble Spring Steam Up, Kinzer, PA

18 CMSGMA Workday 9am, Meeting 1pm at Clubhouse 524 East River St, Orange, MA

18 Scantic Valley Tractor & Machinery Show, Vernon CT

18-19 Blue Mountain Antique Gas, Steam Engine Assn. Swap/Flea Market, Jacktown Grove, 1229 Richmond Road, Bangor, PA

25 New York Steam Engine Flea Market & Pull, Gehan Rd., Canandaigua, NY

25-26 Bernardston Gas Engine Show & Flea Market, Pratt Field, 219 South Rd, Bernardston, MA

June

1-2 Granite State Spring Show - JR Bristol's, 80 Witches Spring Rd. Hollis NH 03049

5 CMSGMA Meeting 6:00 (Wed.), Club House, 524 E. River St. Orange, MA

8 Maine Antique Power Assn. Engine Show, Skowhegan Fairgrounds, Skowhegan, ME

8-9 Hudson Mohawk Chapter Pioneer Gas Engine Assn., Rt. 443 off R.30, Schoharie, NY

14-15 VT Gas & Steam Engine Assn. Brownington Show, Old Stone House Rd, Brownington, VT

15-16 Hudson Mohawk Chapter Pioneer Gas Engine Assn., Rt. 443 off R.30, Schoharie, NY

13-15 Coolspring Expo & Flea Market - Rt. 36, Coolspring, PA

29-30 CMSGMA 43rd Anniversary Engine-uity Show, 80 Airport St. Orange MA

July

6 Boothbay Railway Village, Boothbay, ME

10 CMSGMA BBQ 6pm (Wed.), Recap Meeting 7pm Clubhouse 524 River St, Orange, MA

20-21 Zagray Summer Show & Swap Meet, Zagray Farm Museum, Rt 85, Colchester, CT

19-21 Blue Mountain Summer Show, Jacktown Grove, 1229 Richmond Road, Bangor PA

20-21 Owls Head Transportation Museum, Owls Head, ME

26-28 Eliot Antique Tractor & Engine Show, Raitt Homestead Farm, Rt. 103, Eliot ME

Aug.

2-4 VT Gas & Steam Engine Assn Quechee, VT Show at Quechee Village, Rte 4

2-4 Northeast Rockbusters Antique Construction Equip Show Concord Sand and Gravel Concord/Pembroke NH

3-4 Owls Head Wings & Wheels Spectacular, Owls Head, ME (Main Event)

7-10 New York Steam Engine Assn. Annual Pageant of Steam Gehan Rd., Canandaigua NY

10-11 Straw Hollow Engine Works Show, Pine Ridge Farm, Cross St., Boylston MA

14-17 Rough & Tumble Thresherman's Reunion, Rt. 30, Kinzers PA

17 Western Mass Antique Tractor and Engine collector show Belchertown Ma Town Common [Jim:413-246-2813]

17-18 Mystic Seaport Museum, Mystic, CT, Antique Marine Engine Show – [Scott Noseworthy 860-572-5343]

24-25 Musterfield Farm Days, N. Sutton, NH [www.musterfieldfarm.com]

23-25 CRACK [Connecticut River Antique Collectors Klub], Ely, VT

Sept.

6-8 Dublin Show, Rte 101, Dublin NH

13-15 Tobacco Valley Flywheelers Show, Haddam Meadows State Pk, Rt 154, Haddam, CT

27-29 Connecticut Antique Machinery Assn. Rt. 7,

Oct

4-6 CMSGMA Fall Campout/Work weekend, Election of Officers Meeting 4pm (Sat.) Club House, 524 E. River St., Orange, MA

5 New England Wireless Yankee Steam-Up - East Greenwich, RI

6 Musterfield Farm Harvest Day, North Sutton, NH

5-6 Zagray Farm Fall Show & Swap Meet, Zagray Farm Museum, Rt 85N, Colchester CT

11-12 Rough & Tumble Harvest Show Rt. 30, Kinzers PA

19-20 Waters Farm Engine & Tractor Show - 53 Waters Rd, West Sutton, MA

17-19 Coolspring Fall Expo & Swap Meet Rt. 36, Coolspring PA

19-20 Blue Mountain Fall Harvest & sawmill Show, Jacktown Grove, 1229 Richmond Road, Bangor, PA

Nov.

No information on meetings

Dec.

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