

*The*  
**NEMES**  
 NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

# Gazette

No 290

August 2020

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### Gazette Staff

Editor Bob Timmerman

### NEMES officers

President Dan Eyring

Vice President Victor  
 ...Kozakevich

Treasurer Richard Baker

Secretary

Webmaster James  
 Scheffler III

NEMES web site

Webmaster James  
 Scheffler III

NEMES web site

<http://www.neme-s.org>

### Contact Addresses

Dan Eyring President  
[deyring2017@outlook.com](mailto:deyring2017@outlook.com)

Richard Baker: Treasurer  
[treasurer@neme-s.org](mailto:treasurer@neme-s.org)

Publisher  
[Publisher@neme-s.org](mailto:Publisher@neme-s.org)

Bob Timmerman: Editor  
[editor@neme-s.org](mailto:editor@neme-s.org)

Dan Eyring::Program  
[deyring2017@outlook.com](mailto:deyring2017@outlook.com)

### August Meeting

Due to the coronavirus pandemic, the August meeting will be held on line.

For details of how to get the on-line meeting, please see Dan's President's message.

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## Club Business

*Rich Baker*

Please see Bob Timmerman's Editor's page



### President's Corner Dan Eyring

#### All NEMES members

I hope you can join us for an on-line NEMES meeting on August 6<sup>th</sup>.

#### All NEMES Members

I hope you can join us for an on-line NEMES meeting on Thursday, August 6<sup>th</sup>.

Topics for the meeting include:

- Club business
- A new User Group for NEMES
- A discussion of how to make better use of Errol Groff's fantastic legacy – the NEMES website
- A visitor (or two)
- Show and Tell
- General discussion

The link below leads to a couple of short tutorials about how to join a Zoom meeting.

<https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-meeting>

And here is the zoom invitation. See you there!

Daniel Eyring is inviting you to a scheduled Zoom meeting.

Topic: Daniel Eyring's Zoom Meeting

Time: Aug 6, 2020 7:00 PM Eastern Time (US and Canada)

To Join the Zoom Meeting, click on the link below and follow the directions. You will be prompted to download and install the Zoom App.

<https://zoom.us/j/6229563584?pwd=eHVmSmdBWFE5ZDRQUVZBWHZJV0NtZz09>

Meeting ID: 622 956 3584

Password: 072169

Or dial in by phone using the following Toll Free number:

Toll-free number (serving all 50 states, the Caribbean, and Canada): 833-302-1536

Meeting ID: 622 956 3584

Password: 072169

New NEMES USER Group

**NEMES now has its own User Group on groups.io.**

To find it and join it, just paste the web address [NEMES@groups.io](mailto:NEMES@groups.io) in your browser. When you get there just click on the NEMES link in the groups list. Ask to join and it will tell you that you have to be approved for membership by the Group Moderator, namely me. This is the easiest form of security for the Group. I check my email several times a day

and should get around to approving you before the day is out.

I've made it pretty wide open, inviting anybody interested in model engineering. You can post messages and upload/download files and photos.

Give it a try and let me know what you think.



From the  
Editor's Desk

Bob  
Timmerman

Dick has kindly copied me in on weekly updates from the Sandy Hill Locomotive Works, where he is Chief Engineer/Master Mechanic/Lead Machinist. Dick has been sending weekly updates with photos. I hope people have been finding them as interesting as I have. In fact, due to lack of space (this Gazette is 16 pages long), I will be running Dick's last installment next month. If you like this type of content, thank Dick Boucher.

There are a number of small news items. See James Scheffler's comments on a Kay Fisher article in *Home Shop Machinist*.

For those fans of shapers or planers, or fans of large machinery, checkout Adam Booth's (Abom 79) Saturday Night Special # 315, July 25, where he acquires a Rockford 60 inch openside hydraulic shaper (or is it a planer). If you want a similar one, you will need a good foundation, as it weighs 15,000 pounds (that is 7 ½ tons)

## Future Events

Pretty much everything has been shut down because of coronavirus. If anybody has information on a meet, please send it to me, and I will publish it.

## Sighting by James Scheffler

R. James Scheffler to NEMES

Hey there, party-people! If you're like me, you're subscribed to basically any metalworking or model-engineering magazine you can find.

The most recent edition of "Home Shop Machinist" has an article from our own Kay Fisher, describing a Bridgeport rebuild; I knew that the article looked very familiar and indeed he mentions our website, so I did some poking around and found that indeed he'd written a version for us, as well:

<http://www.neme-s.org/shapers/bp.html>

Additionally, all the documentation resources he mentions in his article (and a whole lot more) are in fact archived on our site. they are not easy to find, but I believe we can make some strides to improve that before too long.

Cheers!

James Scheffler

## Reports from the Sandy Hill Locomotive Works

This is Dick Boucher's original introduction, and I am reprinting it here, as I think it is still relevant.

**June 7, 2020**

Hello fellow live steam model hobbyist and principals of the New England Model Engineering Society,

James (grandson), Norm, Jay and John. this is my usual Sunday afternoon progress report on work here in the Sandy Hill Locomotive works. Dan, Rich, Bob and James Scheffler I am sending this

along to you thinking it might be a way to get some interest back in the club if the fellows who have given up traveling to Waltham had a place to post pictures of their work and view other builders projects. To the new fellows on the list I am working on Cole's Models 2"scale Case steam tractor. For some time now I have been sending out pictures and a short description of the progress on the project to the first three listed having added John lately. Back in the early days of the Live Steam railroad hobby there were only a couple "meets" a year some as far away as Montreal Canada and Carl Purington started the "Traveling Locomotive Books" in which a hobbyist would attach a couple pictures of his work and forward the book to the next person on the list. Fortunately these books still exist and are repositioried at John K's museum in Beverly. At any rate my thought is we set up a formal place in our web site or someplace to create the "Traveling Hobby Machining Books" Your thoughts.

All for now, stay cool and stay healthy,

Richard L. Boucher  
Chief Engineer/Master Mechanic/ Lead Machinist  
Sandy Hill Locomotive Works

## Recent work

### Progress July 5,2020

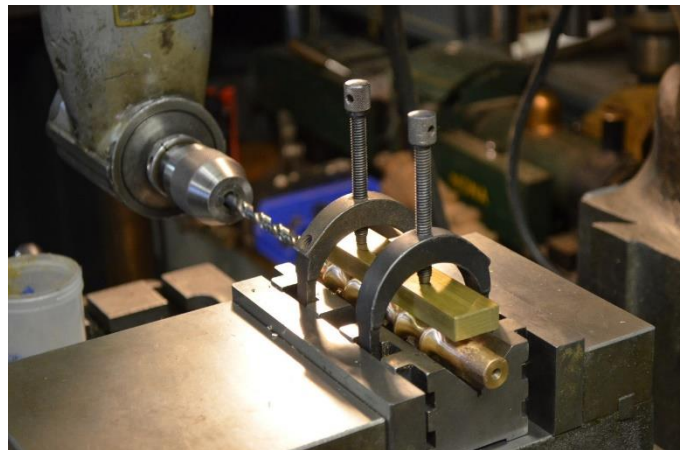
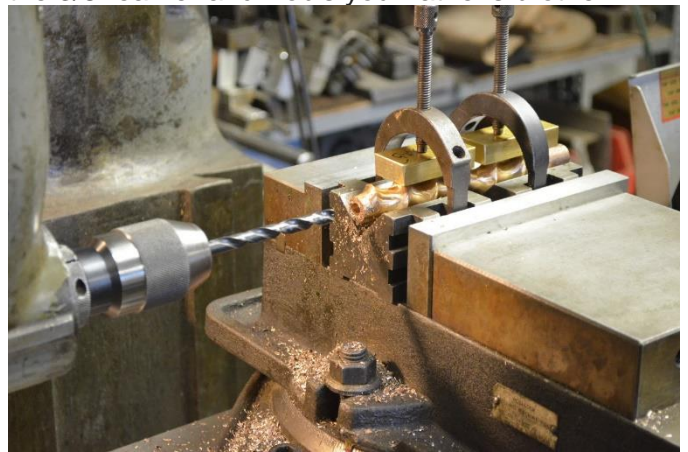
Good afternoon everyone,

It has been a quiet week here in the shop this week. Production has been rather lacking --but all the machines have been cleaned and oiled both way and bearings and a through sweeping of the shop floor took place and I spent a day just enjoying the place being neat and tidy. The last couple days have started to bring it back to that old state again.

Thursday Bea announced she would like to go to Mardens in Sanford Maine. Now Mardens has a lot of locations in Maine and originally she said Scarborough but then she realized it was Sanford so off we went. Now I hadn't to Sanford for more than half a century. The previous times I had gone was to see drag races, that is where they ran before some of the fellows I used to chum with got together and built New England Dragway. Should have continued to hang with that group. Anyhow

Mardens is like a Harbor Freight for women who quilt, a tremendous selection of quilting material of top quality, She came home very happy we even stopped at Yummies in Kittery and bought me some salted cashews.

So enough explaining why I didn't get a lot done this week on to the things I did accomplish. Pictures one and two are my horizontal drilling and boring setup in the oldest Bridgeport. I got the steering chain worm set up in the "V" blocks so the already existing center drilled holes were at the same plane with each other in both directions and drilled in from both sides half way. This worked great and the drill hit perfectly in the middle a quick run through with the 3/8 reamer and Bob's your father's brother.



Picture three shows the worm with a 3/8 piece of rill rod as a nice light press fit. Also in the picture is the end cap on the Quorn base with a few more holes drilled for mounting a cap on the other end.



July 12

Hi Guys,

Well the photo work is going a lot faster now as I get more used to downloading from camera renaming each photo, 1-2-3 etc, and resizing them to make the e-mail work.

[Editor's note: Dick's photo work is going along very well, there are 12 photos in just this the July 12 segment]

So it has been a long week here as far as making things is concerned. It has required a lot of time just trying to figure out just how to make the tooling to make the tooling to make the parts.

Photo 1 shows the dimensions for the tool bit [f]or cutting the worm gear and the hob to cut the worm wheel, Note all the compound angles.

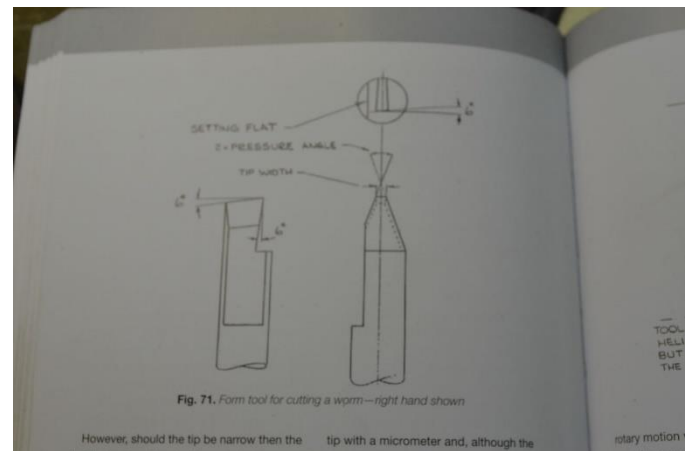
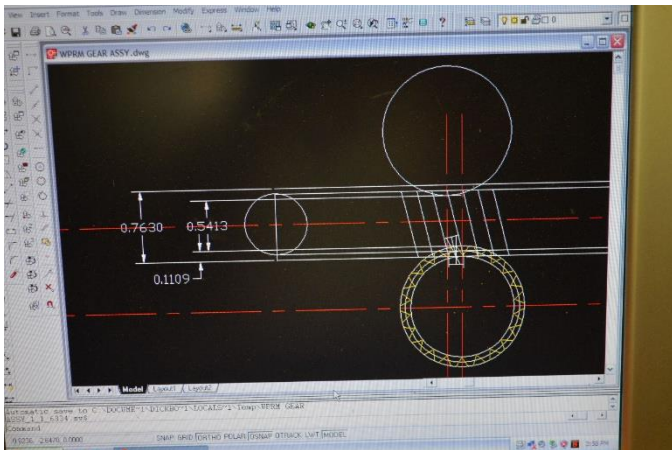


Photo 1

Photo 2 shows the setup with the spindex in a shaper vise with the spindex tipped up at the 22 degree angle and rotated over at the 6 degree clearance angle.



While I was sitting in the car at Mardens (the reason I included the trip in this note) I did some more studying on the worm gear needs for the steering of the tractor and when I got home spent some time on the computer drawing the design out, picture four,



and now it is time to take the short piece of drill rod with the red splash on it and make the hob for the worm wheel. If I figured everything correctly it should work if not it is back to the drawing board.

All for now,

Richard L. Boucher  
Chief Engineer/Master Mechanic/ Lead Machinist  
Sandy Hill Locomotive Works



Photo 2

The other side just required rotating the spindex to negative 6 degrees. Funny I had some clever way to be sure the tip was in the center of the tool bit but I have forgotten how I did that.

Photo 3 is basically the same setup with the spindex set at 6 degrees for the back rake on the top of the tool. The tool bit is a 3/8 shank for a broken end mill per the recommendation of the books author.



Photo 3

Photo 4 is the completed tool bit

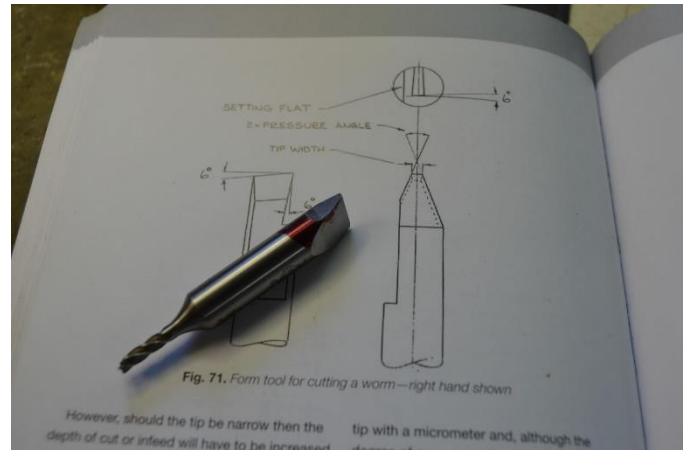


Photo 4

Photos 5 and 6 show cutting the worm wheel in the lathe. I used a 5-3/4 threads per inch setting on my quick change gearbox which gave me a .174 thousands lead for the worm for an 18 DP gear. Photo 5 shows the compound set at zero on the cross slide. I retracted the tool with the cross slide and advance the tool with the compound for a plunge cut of a couple thousands at a time. Patients is a venture. I also didn't undo the half nuts because even at the slowest speed on the lathe the engage dial was moving much to fast for this old guy to catch the proper number. the hob was turned in the same manner. Took a couple days the hob is made of drill rod.

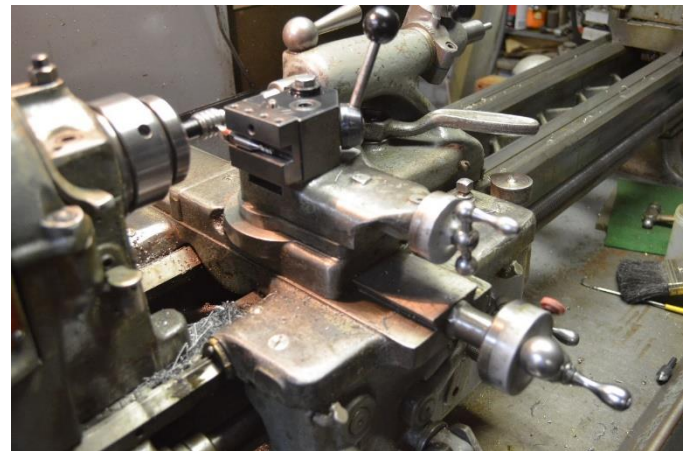


Photo 5



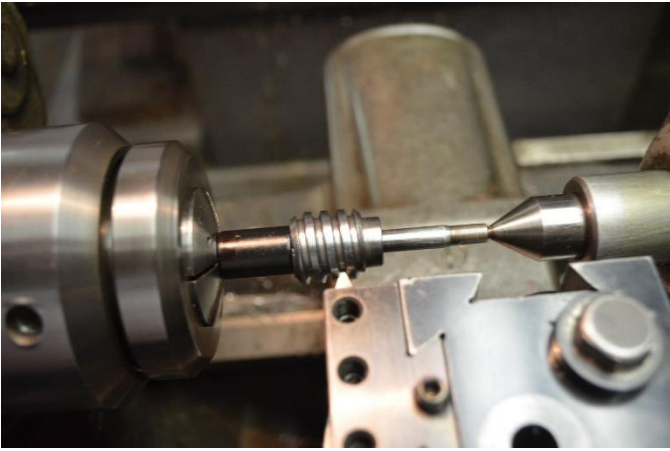


Photo 6

[No description of photo 7, but it looks like gashing the hob/]



Photo 7

Photo 8 is the hardened hob with the shaft it will run on and the 1/16 square key the will along with the hex shaft prevent it from slipping when it is cutting the worm wheel. Slipping gave me a lot of grief during the process.



Photo 8

Photo 9 is milling the 1/16 key way in the hob arbor the key way in the hob was done with a Minute Man broach. I did make a very amateurish error on the key way. I cut the first one a full .062 deep it should have been .032. Oh well what's a second key way among friends.



Photo 9

Photo 10 is some bits of brass I have found around the shop to make the worm wheel with. to save a lot of machining I will silver solder the shoulder into the wheel and hopefully next week I will be able to show you the finished gear set working in the bracket that mounts on the boiler.



Photo 10

And now for something completely different!! Photos 11 and 12 show son Peter and his friend modifying a set of custom Harley cylinders to give more clearance to the push rod tubes. After a couple suggestions on how to set the angles they had a good afternoon and Scott had a big grin on his face when he left.



Photo 11



Photo 12

Richard L. Boucher  
Chief Engineer/Master Mechanic/ Lead Machinist  
Sandy Hill Locomotive Works

## July 19 Update 1

Well it has been a quiet week here at the Sandy Hill Locomotive Works---Not!!! It was really rather exciting for me. After all the preparation and tooling building I actually hobbled the worm wheel for the steering gear on the Case tractor. Upon more studying in Ivan Law's book a couple things hit me. A worm wheel will engage in a spur gear of the same diametrical pitch if the worm is cantered over by the lead angle of the worm and a worm wheel should be gashed to make sure the hob has a path to follow. Photo 1 shows the setup for gashing (Ivan's words) the worm wheel. The dividing head is set at about 6 degree angle and an involute cutter for the 18 DP was used to get a good start on the teeth on the worm wheel. 18 DP was selected as the 5-3/4 TPI setting on my quick change gearbox gave a lead of .174 thou per revolution which according to Ivan's chart is 18 DP



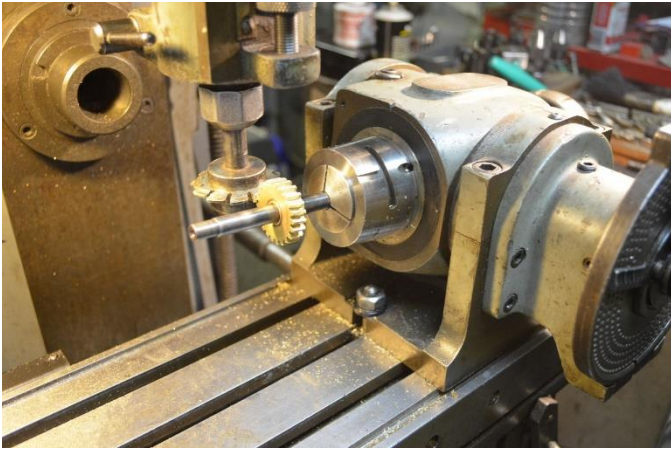


Photo 1

Photo 2 shows the actual hobbing in action. Since I can't show a video in the Gazette I have included a link to a worm wheel being hobbled in a lathe.

<https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DV3tl6KnYR1s&psig=AOvVaw3MPQLfTc pMpa67lc DjSK&ust=1595291551759000 &source=images&cd=vfe&ved=0CAIQjRxqFwoTCJ jI76XK2uoCFQAAAAAdAAAAABAD>



Photo 2

Photos 3 and 4 show the simple tooling I made up to hold the worm wheel while being hobbled, note the thrust bearings to reduce drag. I think this helped get such a nice finish on the worm wheel.

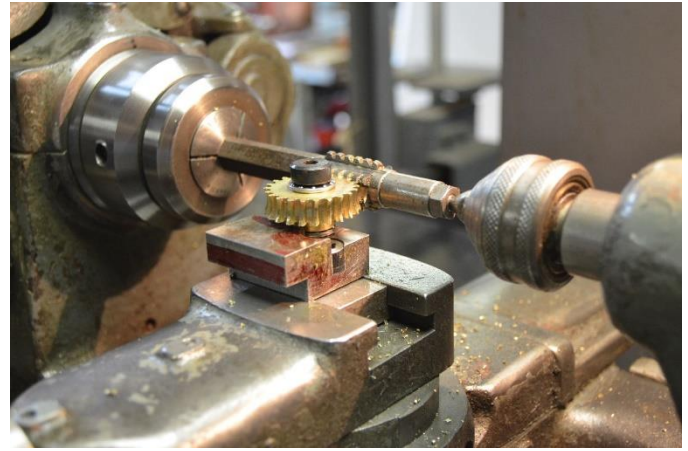


Photo 3 [Thrust bearing is barely visible under nut on top of the worm wheel]

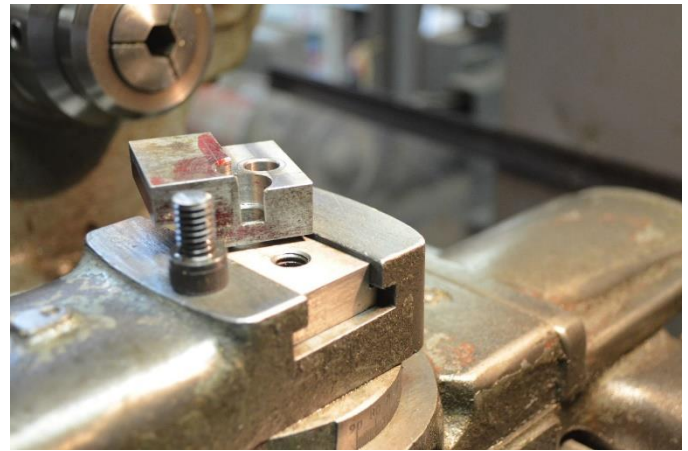


Photo 4

Photo 5 shows the worm and the worm wheel on the drawing of the steering gear.



Photo 5

About the only variance from the drawing is that the wheel in the drawing has 20 teeth and my wheel, to make it come out mathematically to the diameter required has 22 teeth.. The drawing had absolutely no information on the size of the gears the diametrical pitch of the gears not even a Boston Gear number. Back in the day one could buy some of the gears for the model from Cole's for \$602.00 in 2015 but I haven't been able to find any information on Coles' Power Models recently. I was able to get some castings from them to finish my Popcorn Engine with but that was a few years ago.

Well it is getting late and I am getting tired so I will send a part two to the weeks activity tomorrow.

Richard L. Boucher  
Chief Engineer/Master Mechanic/ Lead Machinist  
Sandy Hill Locomotive Works

## Part 2

Continuing on. Photo 6 shows the bracket that holds the worm and worm wheel on the boiler shell for the tractor. The tooling in the picture is almost 60 years old. I was very fortunate that in my apprenticeship the instructors gave us the iron castings for an angle plate and cube to machine and finish. The grid of tapped 10-32 holes are a great help in setting things up like the bracket in the picture. The little clamps were also an apprentice project and they are hardened as part of the instruction, The surface gauge is probably from that era also and the Last Word indicator though it has been back to Starrett a couple times to be rebuilt was also first purchased at that time. In the photo I am just getting the bracket casting indicated square to the cube for drilling and reaming the hole for the shaft for the worm.

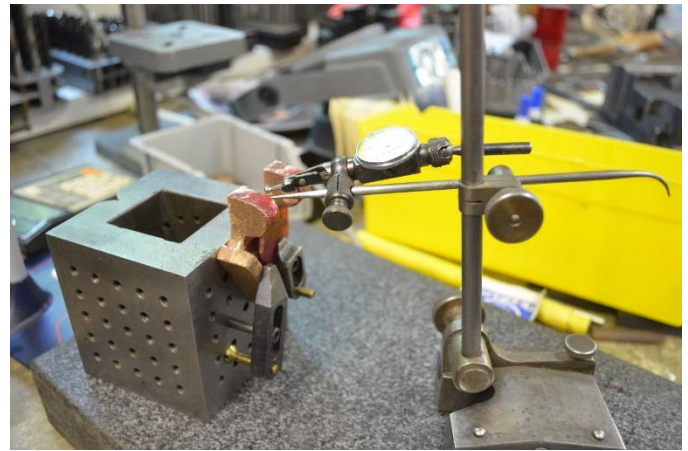


Photo 6

In Photo 7 I am laying out the location for the above mentioned hole. I do find that working to a layout helps minimize errors, if the dialed in location doesn't match the layout location I get a chance to figure out which is wrong.

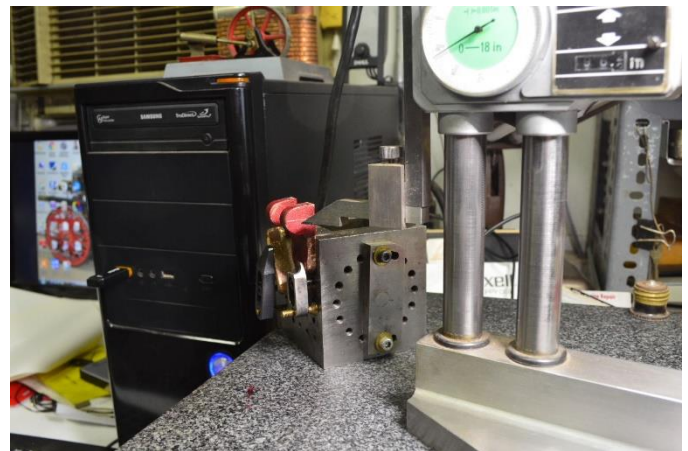


Photo 7

Photos 8 & 9 show the reaming of the hole for the worm wheel which was layed out by engaging the worm wheel with the worm and using a transfer punch to give me a location for the hole. Sorry for the poor focus but my eyes just aren't what they used to be I guess, the picture looked fine on the camera viewer.



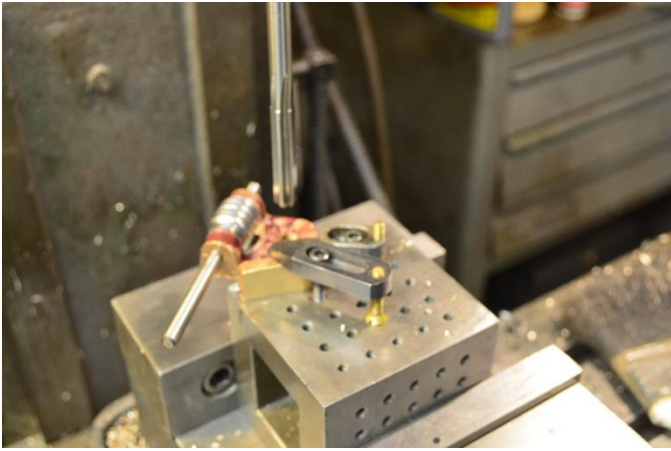


Photo 8

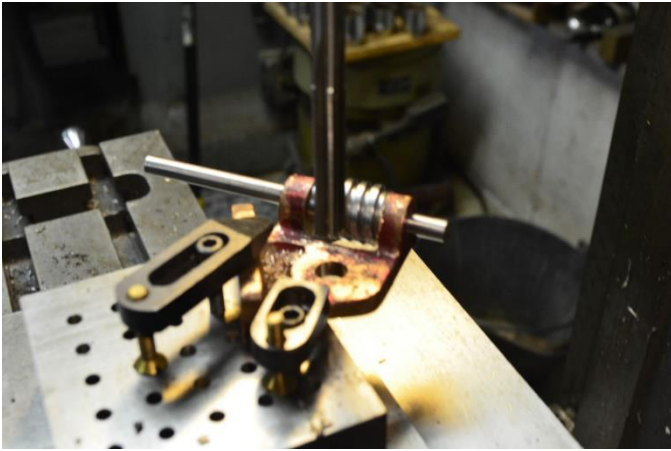


Photo 9

Photo 10 shows the setup for locating the brackets on the firebox of the tractor. Once again the cube and straps came in very handy as the bracket had to be a specific height from the bottom of the firebox the cube and an .092 shim provided that height and the angle had to allow the steering shaft to wind up at a specific point on the steel wings on the top of the firebox Photo 12 the cube also kept the shaft parallel to the base.



Photo 10

Photo 11 shows the chain worm setting in front of the firebox getting ready to be fit to the shaft and brackets

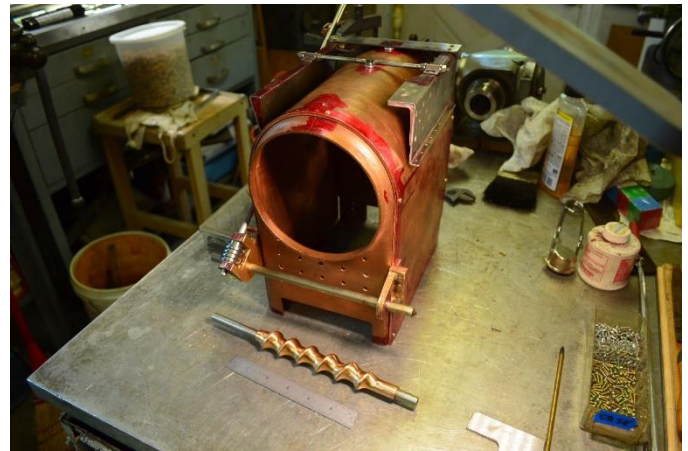


Photo 11

Next week that should all be done the gears pinned to the shafts and the necessary bracket to secure the steering shaft to the wing sheet in the open area in Photo 12 should be done.



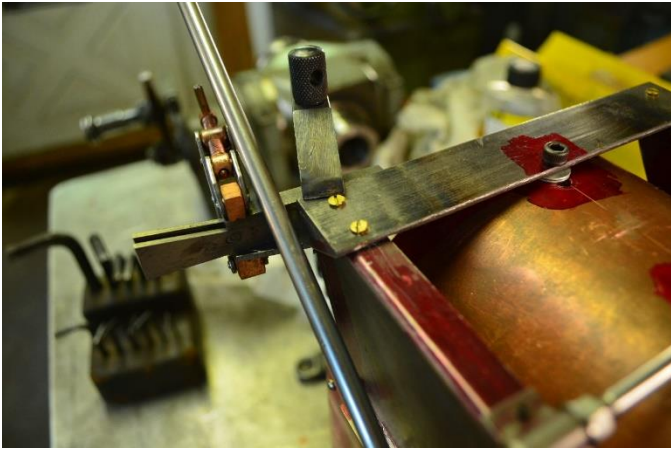


Photo 12

There is no specifications on this bracket on the drawings just a note saying one is necessary. It will probably be a silver soldered fabrication when I am done.

Now the Coles' catalog Number 26 with a price list dated 2015 says on page 5 and I quote ***"It is our opinion that the model maker should have had a great experience before commencing this project. The experienced model maker would have then accumulated enough stock usable for this project"*** I find I have to agree with them on this I would be swamped without the piles of stock I have accumulated over the years and having made many models and accumulating the expertise from my apprenticeship and years in the trade to be able to totally enjoy the little challenges that have come along so far in the construction of the model. One thing that has really worked out good is not finishing the boiler before attaching all the fittings to it, as you can see having the firebox without the boiler barrel attached worked out great for working on the steering gear.

One last thing this week, Mike's kids came over Friday and Ainsley worked on finishing a Pinewood Derby car she had started with her daddy and she got to use the milling machine, band saw and 1 inch belt sander. I am here to tell you all she is a professional. James got some lathe practice and made me some copper bushings for the tractor boiler so his work will be in the finished machine.

[July 26 edition in September Gazette]

## Write-up on how Dick Boucher prepares his articles

Sent as an email to the editor

Hi Bob,

I thought I would write a short article on my method for doing the submissions I have sent you for the gazette I hope it is helpful to get more input for the Gazette.

Bob surprised me with the full coverage in the Gazette of my adventures during the pandemic sheltering at home. Last month Jim Parquette and I had quite a bit of ink in the July Gazette. Jim's engine with the crankshaft from a scrap Maytag 82 gas engine and the Scotch Yoke rather than a cross head and my progress on the 2" scale Case tractor from Coles' Power Models. I thought I would write this short article on my method of getting things down on if you will paper though it is totally done on my computer.

First I take a lot of digital pictures while working on my project I use a Nikon D5100 camera and take the pictures "Raw" which is to say a very big 4928 x 3264 format. I then resize them to 1280 x 960 for e-mailing purposes in a file I call resize. Photos 1 and 2 show the original files.

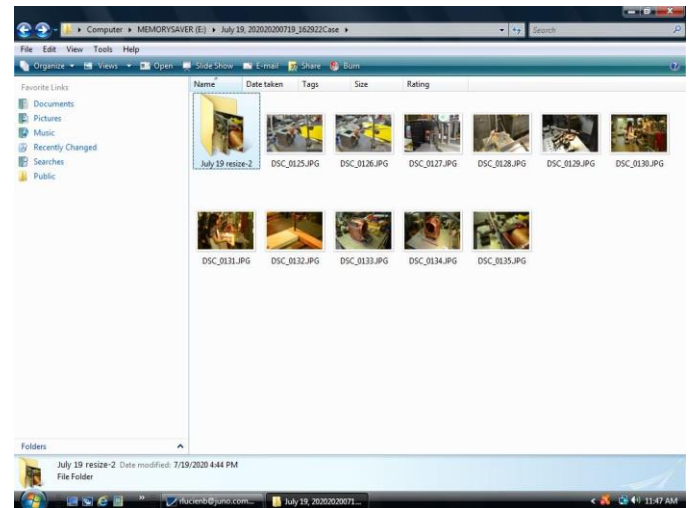


Photo 1

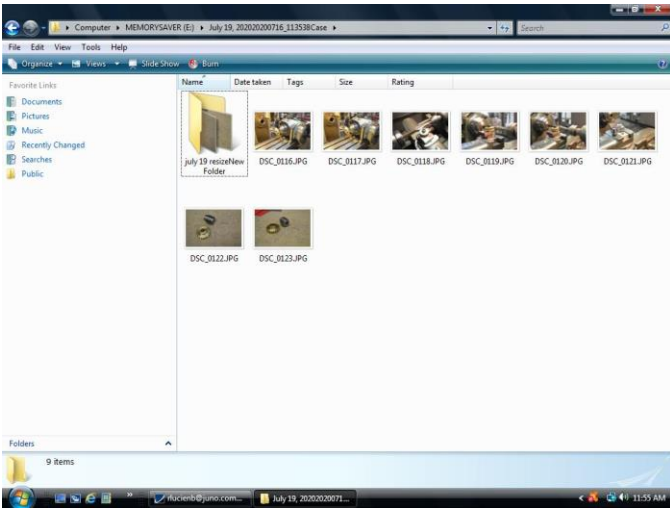


Photo 2

Photos 3 and 4 show my editing them down resizing them and renaming them from the original DSC ,jpg file names to Photo 1 and etc.

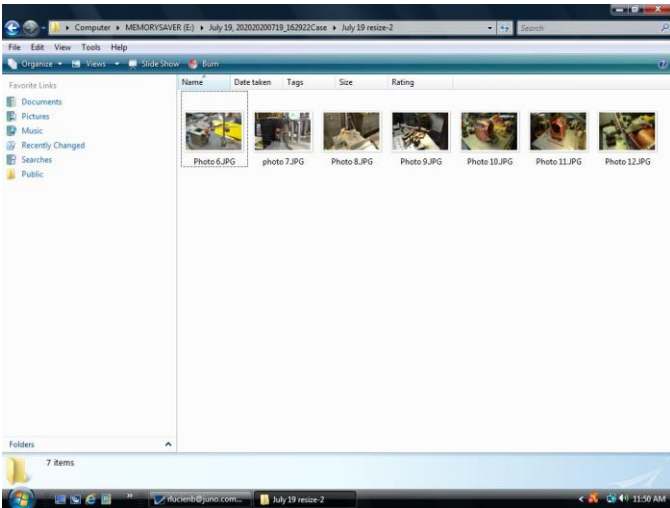


Photo 3

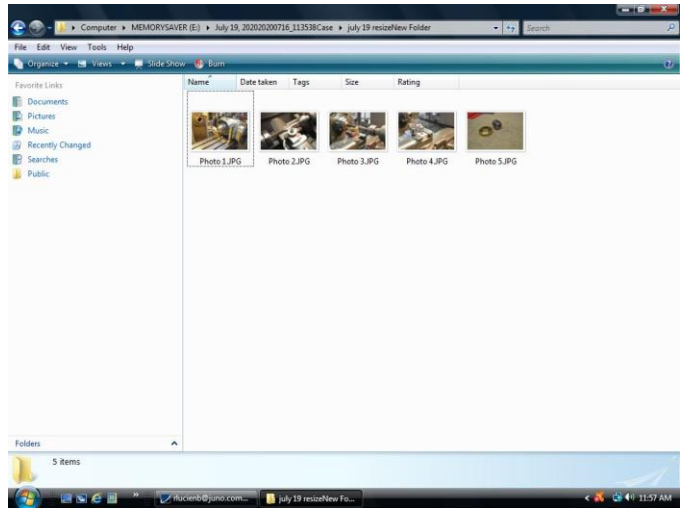


Photo 4

Now if any of you ever watch Keith Appleton on U-Tube you realize he uses voice over on his videos describing what he did rather than have the voice live as the video was taken, I use the same approach in the articles I attach a picture to the e-mail to Bob and write a description as to what the picture shows which does seem to give a continuity to my writing. Just a side note I do all this work on a thumb drive and don't loose the work in my vast file of pictures in my computer all of which are backed up on a separate hard drive.

So Since it looks like we will not be meeting in person for some time I encourage others who have a project going to submit articles of the work to Bob for inclusion in the Gazette so we can all have a sort of digital show and tell every month.

Richard L. Boucher  
 Chief Engineer/Master Mechanic/ Lead Machinist  
 Sandy Hill Locomotive Works

## USED MACHINES FOR SALE

Used Aamco Shaper

I have been helping a brother and sister clean out their aunts house. The late uncle had a little shop in the cellar. there was a cabinet lathe, an Atlas, an Aamco Shaper and a small southbend lathe.

I thought that this might be the place to offer the shaper for sale.. Its got its "War Finish" tags on it and appears to have hardly any hours on it... It's on its original oak cabinet, and has the rotary table and a dividing head. It is a Seven inch.

The only thing I haven't found for it is the spare bull gear, the others of these I have seen usually had one ...

I do have a herd of pictures of it. and some of the lathe ... I have found several of these online in the 1800 to 2300 range, and like I said this one has hardly any hours on it al all. we have run it and all it's features work... it can be run where it is, and might have to be moved to my location if the house hits the market... or some other dry place...I wasn't sure who to mail this to, so I haven't sent the pictures at this time...

In the meantime, I will do some documentation on the lathe. it does have a 3 and four jaw chuck. and a set of 3 j collets, but I haven't found the drawbar yet...

--

**"Wolf"Schlyczk**

[woolfey@gmail.com](mailto:woolfey@gmail.com)

Pictures below







End of shaper listing

Wonder if I could get an ad in the next NEMES Gazette for used equipment? I am in the process of moving and need to depart with a Brown & Sharp No. 2B surface grinder that I acquired years ago. I hate to scrap it but that is what it may come to if I cannot find someone to come pick it up. The table is off because I started taking it apart years ago but got stuck trying to get a gear out. I could not get it out or back in and that's where it sits. (have not tried since then) It has a 3 phase motor so I would be hard pressed to use it anyway if I ever did restore it. I expect to run an ad in other places for what ever I can get for it but if someone from NEMES wants it they can have it for just coming to pick it up. I live in Tiverton, RI just south of the border with Fall River, Ma. I am enclosing a couple of pictures but have more if you want me to sent them.

I am hard of hearing and do not answer the phone unless I know who is calling but leave a msg and I will call back.

Thanks,  
Gene Hennig  
(401) 624 - 7563

[ehennig@verizon.net](mailto:ehennig@verizon.net)



