



The Mount Vernon NMRA Clinic



Nick Muff on 3D Printing



July 15, 2024 Highlights

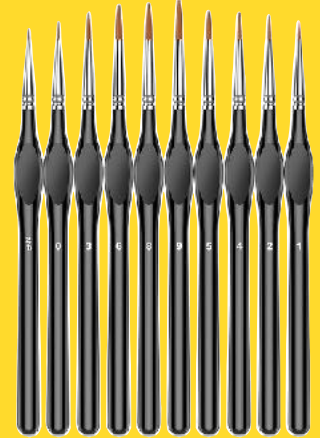
Early attendees gathered for the July 15th clinic which featured a presentation on 3D printing by Nick Muff. By the time Nick got his presentation “rolling” some late arriving members had “rolled” in to take advantages of his expertise.

Regular Clinic Host **Al Carter** was not able to attend nor run the clinic due to some last minute scheduling conflicts with his Internet service provider following his recent move to a new home. WSMRC President and All Around Good Guy **Steve McCartt** filled in for **Al** and though he did not quite do justice to the normal witty, intellectual banter clinicians are use to it was, at least, not a “train wreck.” Hopefully **Al** will be back on the grid by the upcoming Clinic on August 19th.

One aspect of the clinic that does not get enough mention is the “Free Table” that is offered at each meeting. Clinicians bring in everything from magazines and books to scenery materials and tools to trains and rolling stock. **Levi Reyes, John Bayer and Mark Malmkar** look over the offerings for this month. If you have model train supplies you aren’t using consider bringing them in.

Next Month: Speaking of the August Clinic, the subject will be on Airbrushing and will be offered by Mark Malmkar. There is even a good chance that it might be a hands on experience if all the right equipment can be procured for the event. Keep your fingers crossed.

Tool Time:



Nick Muff kicked off tool time by bringing in some, as he described them, “tiny, tiny brushes with big, big handles,” that he got from fellow model railroader **Bob Kipper** of Bellingham who used them to paint his own figures. “I’m not brave enough to do that,” said Nick, “But I found them very useful in detailing other things, besides figures. Normally it’s a hard thing to hold them.” Here is the [Amazon link](#).

Next Nick brought out a box of straight pins that he says he uses for putting doorknobs

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New and Improved Tool Time



Ron Nelson was back espousing the benefits of his PSA (Pressure Sensitive Adhesive). This is not your normal glue but is a “film” of adhesive material that one presses into place, then peels back the backing, leaving a very thin layer of adhesive. Great for a lot of tasks, like applying roofing shingles and tar paper, etc. One brand is made by 3M and available on Amazon, among other places.



Ron confessed that the main reason he brought in the adhesive again was that, “the roll I have is still 10 inches across and I was trying to get rid of some of it. I have had it for years, kept it in the dark, sealed up and it still works great.” Ron generously offered a box of samples that he said were free for the taking. Thanks Ron.



Mark Malmkar put a twist on ToolTime when he asked for help in finding either some Rust-Oleum “Dead Flat” spray paint or a suitable replacement. “I used up the last of what I had on hand, and started looking for dead flat. I went to every hardware store and lumberyard in Oak Harbor and couldn’t find it.” Mark said he came early to the clinic and spent two hours in the Mount Vernon area and still couldn’t find any available. **Nick** suggested a substitute Tamiya TS-80 Flat Clear Lacquer Spray Paint. Mark said that he is probably going to have to rely on the internet to get one or the other. “I have been using dead flat on tons of things and I like it.” He emphasized, “It works great, no film around the decals and I even spray over my weathered chawks with it and it seals the weathered chawks. David Sherwood admitted that he had trouble finding as well it so he ordered a case online which comes with around nine cans.

Tool Time: Continued



on his structures. “I am a fan of that,” he pointed out, “Tiny little details, just a few, will help to trick people into thinking there’s more.” Nick says he paints the head black, cuts it, snips it short, sticks it through a hole and ‘voila’ instant doorknob.



Here is a shot of one of **Nick’s** buildings sporting one of the aforementioned doorknobs. Pretty realistic.

Modeler's Showcase



1. **Nick Muff's** modeled a "specific house in Decatur, Arkansas," Nick explained, "That's where the telephone exchange was back when they had an operator." Wait, is that Ernestine played by Lily Tomlin from Laugh In fame in the upstairs window?

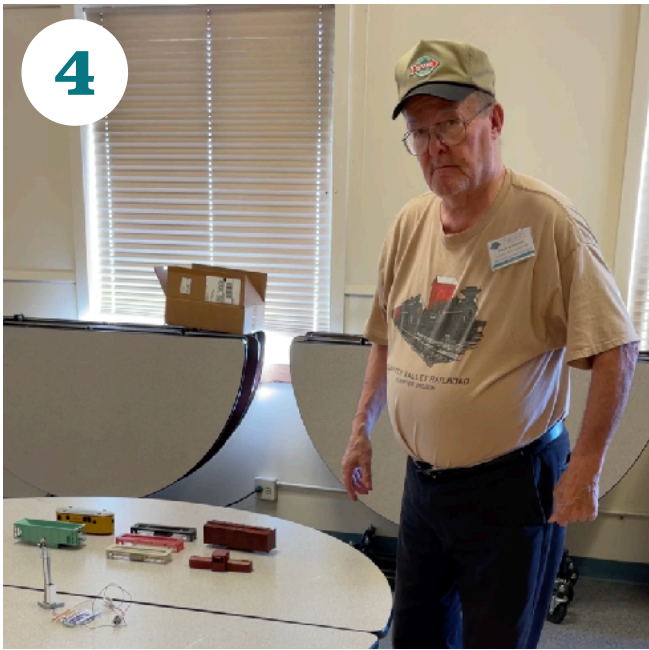
2. **Nick** also brought in the Hotel Gravette which was located in Gravette, Arkansas complete with detailed interiors and lighting of course. Gravette was established in the late 1800s as part of the expansion of the St. Louis and San Francisco Railway.



3. **Nick** explained how he created the hotel sign to look like it was lit by individual bulbs. "I 3D printed the sign bracket probably two millimeters thick," he began, "Then I laser cut cardboard with little the little tiny holes in it and put LEDs inside. It's as close as you can get in HO to having the look of individual light bulbs."

Modeler's Showcase Continued

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4. **Paul Vaughn** brought in an impressive array of 3D printed rolling stock featuring a center cab with three separate lengths of frames. His other pieces included an East Broad Top side dump hopper, a 40' boxcar, and a railcar trailer that has been painted and decaled. Paul has been using a 3D printer for five years or more.

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5. **Ron Nelson** showed off a scratch built brass semaphore. "I don't have a means to set the flag in the right position for green, red and yellow," **Ron** indicated, "So I put a little white square box that has foam in it that allows me right now to put it at different settings." He also pointed out that it was a lot of work and that he has been struggling with the task of painting brass. Who hasn't?

Speaking of brass, **John O'Connell** presented a dilemma to the group. "I am trying to attach two pieces of brass to each other," **John** stated "I can't solder it, so what is the best adhesive to use for that?" Quite a number of suggestions were offered. **Nick Muff** suggested super glue and **Ron Nelson** pointed out not to use too much of it though and to have good smooth finishes on the surfaces. **John** confessed that he wasn't able to "get the good smooth finish though." Tom Moore pointed out that the best thing might be epoxy and several others chimed in that that might indeed be the best solution. "I have had good luck with epoxy, not on brass," claimed **Mark Malmkar**, "But on other weird stuff." **Ron** said to try roughing up the surface a little and make sure to keep oils off the surface. "Don't touch it with your fingers," he advised "I clean stuff with acetone and alcohol afterwards." This kind of help and advice is what makes coming to the clinic worthwhile.

The Mount Vernon clinics for April and May are now public on the 4dPNR YouTube channel.

Here are the links:

[April: Don Jones Lighting Passenger Cars](#)

[May: Bob Stafford Burlington Northern Coal Trains](#)

Main Event

Nick Muff on 3D Printing

“The first thing I saw was a tutorial on what looks like a fly wheel,” Nick Muff noted as how he began his foray into the world of 3D printing, “It has holes in it, it has a rim around it, it has a hole in the center, a shaft hole, and a key way. I thought well if I can draw that, I can probably draw just about any mechanical thing, which turned out to be true.” So despite trepidation about adding another “hobby” to his already full plate, Nick dove into 3D printing and hasn’t looked back.

There are five basic steps to 3D printing according to Nick.

1. Concept: What is the object that you want.
2. Design: Creating the object in a graphics program and then exporting it to an .STL file.
3. Formatting: Loading that file into Print Format>Cutting>Machine File
4. Printing: The actual rendition of the object
5. Post Processing: Cleaning and preparing the object.

Nick pointed out that you don’t necessarily have design your own product as there are numerous places to find what you might be looking for. Here is a short list from Nick’s presentation:

[Shapeways](#)

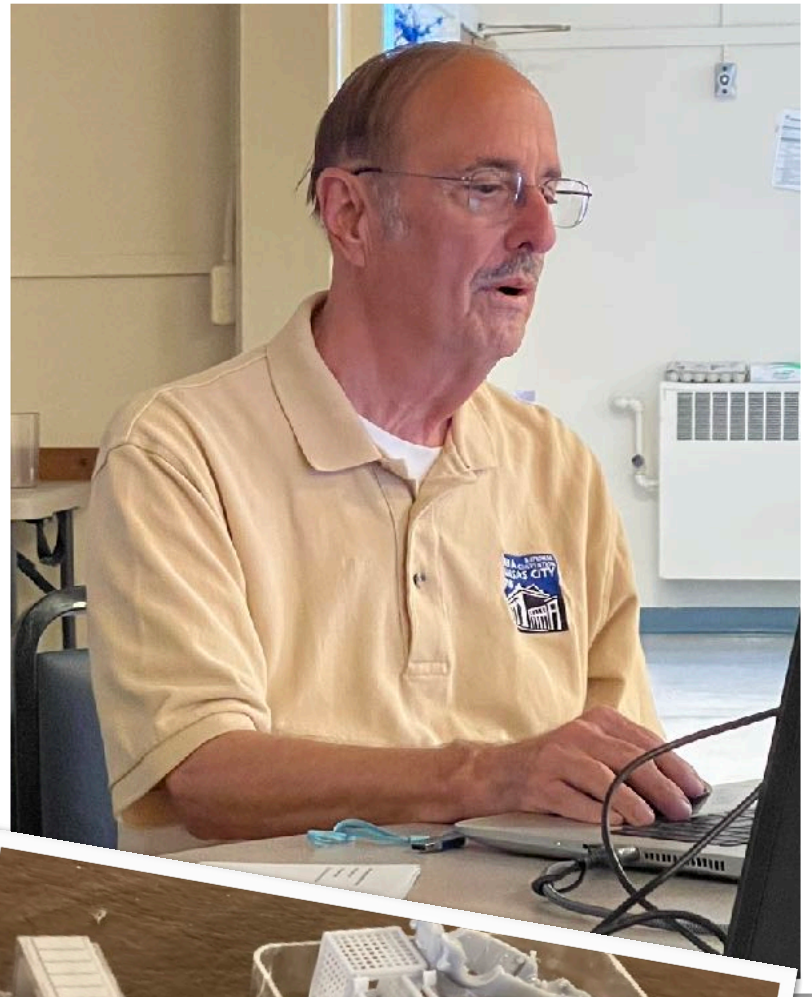
[Thingiverse](#)

[Luke Towan’s Boulder Creek Railroad](#)

[Google Search for Free .STL files](#)

[Use SketchUp to create your own designs](#)

Nick admitted that he did rely on a company that makes cypress trees because creating the “knees” of the cypress trees for his swamp was giving him difficulty. “My daughter found this Chinese college student who makes money by doing drawings for 3D printing,” Nick explained, “So I took his drawings, paid him, and printed them. I can draw things like gears,” Nick confessed, “but I can’t draw a person or a horse.”



Main Event

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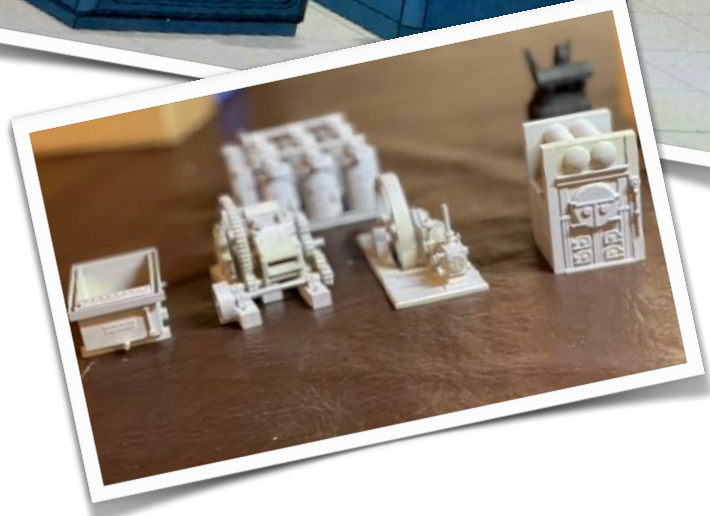
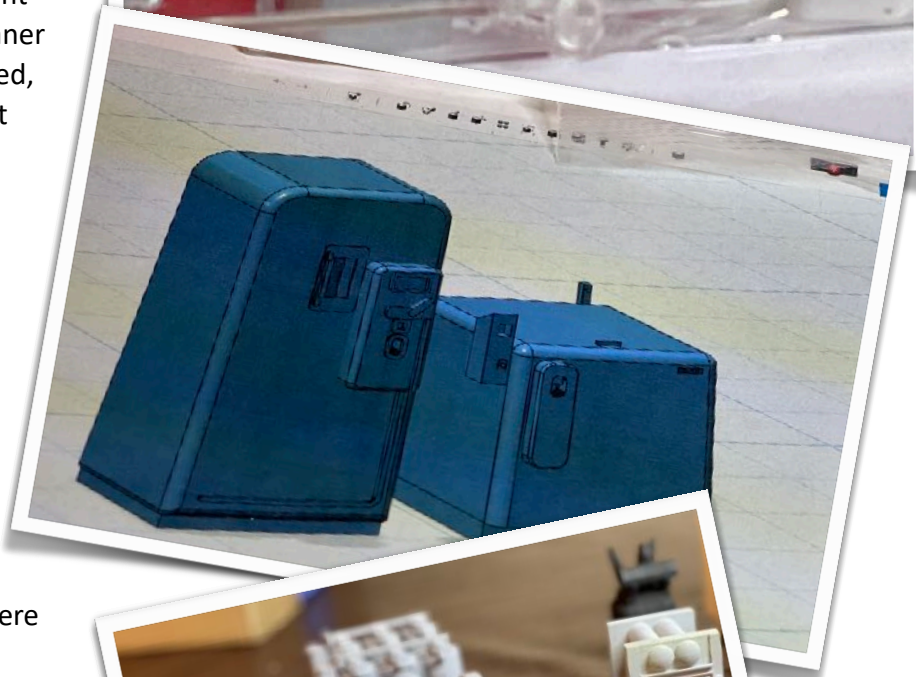
A big plus from Nick's presentation was the free soda pop vending machines that he had designed, printed and painted that he brought in for attendees to take home. "I drew an upright version and a chest version," he said, "and it's a simple matter to print 30 of them." Nick pointed out that once you get the drawing completed you can copy and paste as many as you like and even reduce or enlarge them to accommodate different scales.

One of the issues with 3D printing is getting the object off of the printer. "Either you can't get the print to stick to the surface or you can't get off when you're done," Nick complained, "So I have it put a 'raft' first by printing a flat piece and then printing the rest of it on top of that. And by adjusting the printing speed and heat, it creates a weakness between the model and the raft so that when it comes out you can peel the raft off."

The two main styles of 3D printers Nick uses are filament and resin printers. He said that filament printers are lower resolution, but produce cleaner finished products and that resin is more detailed, but requires a lot of cleaning up and more post processing. Filament as well as Resin printers start at around \$200 or higher. Both printers should use flash cards or thumb drives as opposed to USB cables as any "jiggling" of the cables could interrupt the process.

Resin printing increases the detail significantly Nick explained, but that it requires much more care and attention to printing because of the membrane that the printer uses. "You have to be careful," he warned, "to remove any loose print pieces in the tray before you print again because if there are any loose print pieces you will crush them against the membrane and damage it." Cleaning involves placing the printed piece into alcohol and brushing it to remove any uncured resin from the print.

Nick finished the presentation with some examples of his and other people's 3D prints and a question and answer session. Here is a link to the entire presentation on [YouTube](#)



Last Page: Wrapping up the final details.

Coming Down the Track

August 19, Mt Vernon

Clinic on Airbrushing

September 14, Alger

WSMRC Open House

September 16, Mt Vernon

Clinic on Dead Rail

October 5-6 Lynden

Lynden Train Show.

October 12, Alger

WSMRC Open House



John Bayer is now a bonafide clinician as witnessed by his brand spanking new official Name Tag. Hooray John!

The Laugh Track



Clever building idea found on Pinterest on a page called [Funny Model Railway Buildings](#). Pinterest is a great place to find all kinds of Model Railroad ideas.

Schedule Change Reminder: The Mount Vernon clinic will be shifting to a schedule of March through November, effective now. The clinic will still be held on the 3rd Monday of those months, at 7:00 pm at the Mount Vernon Senior Center. Driving to and from the clinic is easier during spring/summer/fall months and we won't have to venture out in the darkest days of winter to go to the clinic.

SPONSORSHIP:

The Mount Vernon NMRA clinic is one of several clinics sponsored by the Fourth Division, Pacific Northwest Region, National Model Railroad Association. We meet on the 3rd Monday at 7:00 pm at the Mount Vernon Senior Center, 1401 Cleveland Street. No meetings during the winter months (December, January, February). Membership in the NMRA is **NOT** required to attend our clinic. For more info on joining the NMRA, see: www.nmra.org/membership. Or see **Al Carter** for a membership application. Remember, if you are unsure, there is a one-time 9-month Rail Pass trial membership for only \$19.95.

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4TH DIVISION ZOOM LAYOUT TOURS

Courtesy of Cliff Aaker

You can expect a regular layout tour the second Saturday of each month at 10:00 AM. The Zoom link will be posted on the [Grab Iron](#).

One of the best clinic options is the meetings put on by the [NMRA 4th Division](#). Some of these are also Zoom Meetings.

The 4th division also provide a youtube archive of past Layout tours and clinic videos you can access at www.youtube.com/c/4dprMovies

You can also visit the NMRA youtube channel <https://www.youtube.com/channel/UChw-7-1FWB5zOgTM0ZVY-Yw>

Note: Membership in the NMRA is not required to view Zoom meetings or on line clinics.