# The Yardmaster

**Southwestern Michigan Division**

February 2023
Website: www.ncr-div9.com

**HOT OFF THE PRESS: Rich Mahaney has been elected NCR President effective April 1st.**

**!!!!!!!!!!! Way to go Rich!!!!!!!!!!!**


**These are non-train related special events in February.**
Ground Hog's Day 2/2,
Super Bowl on 2/12,
Valentine's Day on 2/14 &
President's Day on 2/20.

**Ground Hog's Day**
According to legend, the groundhog first emerges from hibernation. If it is a sunny day and the groundhog sees its shadow, six more weeks of wintry weather are predicted.
Let's hope for a cloudy day.


February 14, a day when it was traditional to send a card, often anonymously, to a person one is romantically involved with or attracted to:

**Super Bowl- LVII (57)**

Nothing else to Say!

**President's Day**

**Abe & George**

## From the Desk of the Superintendent

Greetings fellow Division 9 members
First, I'd to extend my congratulations to our new North Central Region President Rich Mahaney. Rich has been a tireless worker promoting and organizing events within the NMRA. Our ability to have zoom presentations has provided us with clinician's with varied topics. A thank you to all who have shared their talents and abilities to further model railroading. I've been busy installing benchwork the last three days roughly 90% of which is done. I have a partition wall to install once that is done the remaining benchwork can be completed. Followed by installing 2" foamboard.

Picture of Garry's train room

## Achievement Program:

Anyone interested in the Achievement Program, may want to take a look at the article in the February issue of NMRA magazine. Starting on page 26. Cinthia Priest outlines the process that she is undertaking to become an MMR during 2023.
For more information on becoming an MMR you can access a lot of information on the NMRA.org website, under the Education Tab. Or you can just contact the Division 9 AP Coordinator Dorman Wilson for more information.
N8YNW@charter.net

## February Membership Meeting Information

The February 2023 membership meeting will be on **Saturday, February 18th** at **The Colonial Kitchen Pancake House**, 330 N. Drake Rd., Kalamazoo. The back room is reserved beginning at **nine o'clock** for an informal breakfast. The Colonial Kitchen is in the same building as AT&T and Art Van's Pure Sleep on the east side of Drake Road in the block south of Main Street. The restaurant faces south in that building.

**Submissions:** Please send articles, news items, inquiries, photos and comments to the Editor of **The Yardmaster, Alan Bau** alanwbau@gmail.com , **by the 1st of the month** for inclusion in the current month's edition.

## Editor's Comments

We are in the process of making some additions to the Yardmaster Newsletter.

- Jim Glenn has agreed to write articles on conducting Op Sessions.
- Frank Zajac has agreed to provide updates on the happenings at the Kalamazoo Historical Society Model Railroad Club.
- We are looking for someone from the Sturgis Model Railroad Club to provide updates for their club.
- To allow our members to get to know each other a little better, we are wanting members to write a brief biography along with an update on their layout.

- The locomotive picture above will appear between articles on the same page.
- A "For Sale" section has been added for anyone to advertise train items they would like to sell.
- A "Question of the Month" has also been added, where the readers are asked to respond to questions covering a wide-range of topics.

We welcome your submissions on anything pertaining to model railroading. Send your articles to alanwbau@gmail.com. If you want it to appear in the next issue, your submission needs to be sent to me no later than the 29th of the month.
We are always looking for ways to improve this publication so any comments, suggestions, ideas, etc. that you have, please forward them to alanwbau@gmail.com.

I want to thank everyone that is in some way connected to the success of the Yardmaster Newsletter. We can't do this without your input and submission of questions, comments, etc.
Alan Bau
Yardmaster Newsletter Editor

## Upcoming Division Nine Membership Meetings & Events:

| Presenter | Date | Location | Presentation Subject |
|---|---|---|---|
| Rich Mahaney | February 18th | Colonial Kitchen | "Big Pipes" dealing with Modeling Details |
| Dave Vinci | March 18th | Colonial Kitchen | Some Thoughts on Yard Design for Model Railroads |
| Ralph Moxley | April 15th | Colonial Kitchen | TBD |
| Casey Fisher &<br><br>Dale & Deb Killarney | May 20th | 305 Hyde Circle Dr., Plainwell<br><br>34228 N. Brookwood Gobles | Layout Tours<br><br>We may stop for lunch at the Club Car |
| Maynard Mitchell | June 17th | 4228 Fawn Ct, Battle Creek, MI | Layout Tours |
| No Meeting Scheduled | July & August | | |

## Upcoming Train Shows

To encourage our members to support local area train shows the following shows are within reasonable driving distance from Kalamazoo.

| Dates | Event Name | Location |
|---|---|---|
| February 5 | SS Simon & Jude Railroadiana Show | Westland Mi. - SS Simone & Jude Parish Hall |
| February 18 | Ann Arbor MR Club 53rd Annual Train Show & Sale (2 days) | Saline Middle School, 7190 N. Maple Rd. Saline, Mi. 48176 |
| February 26 | Michigan City Train Show | Laporte County Fairgrounds Community Building, Laporte, In |
| March 18 | Elkhart Model Railroad Clubs 17th Annual Train Show | Claywood Event Center 13924 N 1100 W- Napanee, In. |
| **April 1** | **KMRHS Spring Swap Meet** | **Kalamazoo County Fairgrounds** |
| April 15 | Greater Grand Rapids Spring Train Show | Wyoming, MI. HSB, Inc. |
| April 26 | Muskegon Railroad Historical Society Model RR and Hobby Expo | Cardinal Elementary School, 2310 Marquette Ave. Muskegon, MI. |

## January Membership Meeting

Bill Neale presented a clinic on "Upgrading and Refreshing (or what I did during Covid Shutdown)". Anyone that was unable to attend missed a terrific presentation. The following are three slides from Bill's presentation for anyone that was unable to capture the information during the meeting.

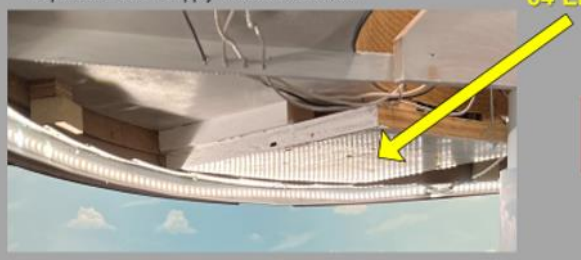
### Recommended LED Light Strips

**"Environmental Lights"** (Beam Angle 120 degrees)

**4000K-CC2835HE-80-10-10m**
- **80 LEDs** per foot light strip reel $99 per 16 ft. CRI: 80+ Brightness: 395 lumens/foot
- Used for the yard where more intensity was desired.

**4000K-2835PL-64-10-5m** **(4000K-2835PL-120-10-5m → Even better CRI)**
- **64 LEDs** per foot light strip reel $75 per 16 ft. CRI: 80+ Brightness: 240 lumens/foot
- Used out in the "country".

Separate Power Supply Needed $20-$30

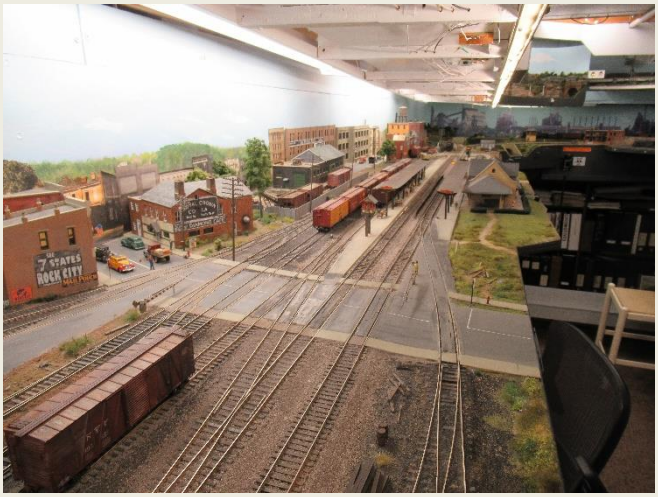



**Credit:** Phil Monat who does this professionally for Broadway, via Bill Darnaby

### Cleaner – Greener Layout

**Air Cleaner** – Winix Model **C535**
- **3-Stage True HEPA Air Purifier**
- **15" W x 10" D x 21" H**
- **Cleaning Rates:**
  - 1,740 sq ft in 1 hour
  - 870 sq ft in 30 minutes,
  - 580 sq ft in 20 minutes,
  - 435 sq ft in 15 minutes
- **Light Sensing** – *turns off when the room goes dark*
- **Cost less than $130**


The following pictures from Bill Neale's layout were taken by Rich Mahaney.




MINGO JCT
MINGO ENGINE HOUSE


W. VA | OHIO


WEIRTON

## Division 9 Officers

| | | |
|---|---|---|
| Superintendent | - Garry Johnson | elecsprk@gmail.com |
| Assistant Superintendent | - Joel Pyard | pyardj@comcast.net |
| Paymaster | - Bob Lawrence | robertlawrence44@msn.com |
| Scribe & Newsletter Editor | - Alan Bau | alanwbau@gmail.com |
| Trustee | - Doug Van Meter | vanmeterda@gmail.com |
| Trustee | - Casey Bartman | Casey@GR-MI.com |

## Question of the Month

In an effort to get your feedback on a wide range of issues, we will be asking you to respond to a series of questions in each issue. Your feedback is important to us in making the Yardmaster and Division 9 in alignment with what the members want.

**Question:** Do you actually read yardmaster?
Please send your response to alanwbau@gmail.com.
The overall results will be published in the next issue.

## Thought you May be Interested?

A few days after Christmas I was in the check-out line at Menards, when I saw a young boy about 10. He was clutching an arm full of Lionel Train Tracks. I asked him if he had a train at home. As he replied I could see the twinkle in his eyes and a big grin on his face, when he told me that he got one for Christmas. His dad told me that he would be a 3rd generation modeler. It was nice to see a young man excited about going home to play with his new trains. Brings back fond memories.

## NMRA Dispatch

Everybody should have received an email a few days ago introducing the NMRA Interchange. "The Interchange will provide an online space for our members to collaborate, learn, exchange ideas and information, and much more!"

I don't know all of the details, but this could be a promising program. If you did not receive this email and would like to read about this new program, send me an email and I will forward a copy to you. alanwbau@gmail.com
**The Yardmaster** is the newsletter published monthly by Division 9, North Central Region of the National Model Railroad Association.

# Membership Meeting Minutes
## NMRA NCR Division 9
## January 21, 2023
## Membership Meeting
## Location – Colonial Inn - Kalamazoo

**Attendance:**
**In-person -** Garry Johnson, Darla Johnson (Guest), Alan Bau, Joel Pyard, Bob Lawrence, Bob Provot, Jim Fankhauser, Bob Kline, Rich Mahaney, Casey Bartman, Frank Zajac,
**Zoom -** Dave Vinci, Bill Neale (Clinic Presenter)

Call to Order by Garry Johnson 9:3AM

**Officer Reports:**
**Superintendent:** Garry Johnson updated everyone on the status of his model railroad.
**Assistant Superintendent:** Joel Pyard had nothing new to report.
**Scribe:** Alan Bau reported on some changes taking place in the Yardmaster Newsletter, particularly some of the new features written by Division 9 Members.

**Old Business:**
Nothing to discuss on old business.

**New Business:** Rich Mahaney provided an update to the meeting schedule through June 2023 also indicating that the NMRA National Convention will be held in Novi, MI. in 2025 and the 2023 NCR Convention will be held in Ft. Wayne.

Rich also mentioned that he is running for the North Central Region President's position.

There being no other business to discuss Casey Bartman moved that the meeting be adjourned, seconded by Garry Johnson and approved by the members.

Meeting was adjourned 10:27 AM.

February Meeting will be held at the Colonial Kitchen on 2/18/2023. The presenter will be Rich Mahaney who will speak on "Big Pipes" dealing with Modeling Details.

Bill Neale then presented his clinic on "Upgrading and Refreshing" (or what I did during Covid Shutdown), which was enjoyed by all in attendance.

Alan Bau
Division 9 Scribe

# Ask Dave – February – 2023

Rich Mahaney asked, "How did he do the research and planning to build the wonderful steel mill on his railroad layout?"

I suppose it started with the availability of the Walther's Blast Furnace kit. Being a fan of the Pennsylvania Railroad, heavy industry was always on my modeling agenda and the Blast furnace kit was, I thought, the place to start. Before I started assembly, I felt that I needed to know how steel is made.

The NMRA published a book by Dean Freitag on just that subject. It is a great overview and covers the basics, but I was left with more questions related to the era I model which is the 1920s.

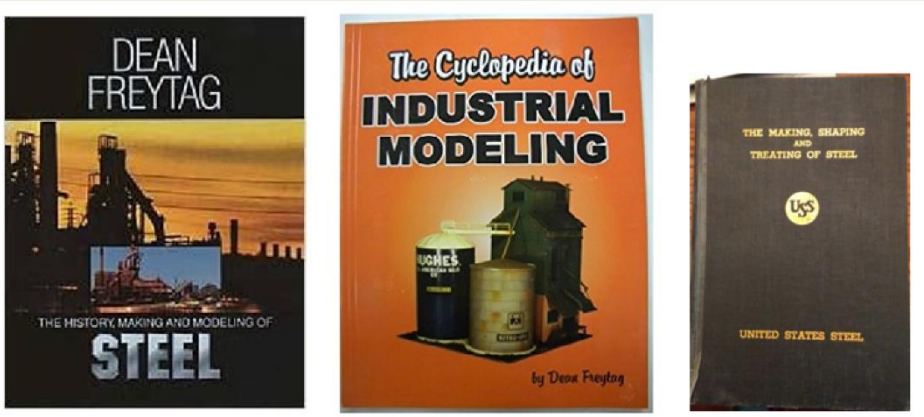



**Figure 1** - Reference books I started with. The book on the left is published by the NMRA, the center book is available through Plastruct, and the US Steel book I found on eBay.

I found another book published by United States Steel called "The making, shaping, and Treating of Steel". This tome covers making steel from soup to nuts in more detail than you probably need but it has most of the answers (**Figure 1**). Then I went online and looked for photos of the prototype and there is a lot out there! I also found some blueprints for full size HO scale blast furnaces and other structures by Mike Rabbit who has since passed away unfortunately. These drawings and other resources led to the discovery that the piping in the Walther kit was somewhat incorrect for my time period. But I'm getting ahead of myself.

I also found some helpful video CDs From Prairie Works. Super detailing Walther's Blast Furnace part I and Part II and Super detailing Walther's Coke Ovens. These are well done and worth the $25 asking price. Contact: http://www.prairieworks.com/steel-mill-modeling.html

The on-line research has continued and I eventually filled a 2-inch thick 8 ½ x 11" notebook with notes and reference material, kit instructions, plus some of the stuff (mostly photos) I found on-line. There is a SIG that focuses on Steel, The Steel Mill Modelers Special Interest Group and a lot of good information can be found there. http://smmsig.org

Planning for what to model came down to selective compressing a steel mill to an L shaped space 6 ft by 6ft off the end of the main yard. I could have filled my entire basement with a steel mill, so what to keep? I settled on the blast furnace, an Open-hearth building, an ingot stripper building, an office building and a powerhouse and warehouse. I used a fiction that there was a slab mill out of sight on the property. All of this so I could have in-coming iron ore, limestone, scrap

steel, and coke. Out-going would be cast iron, steel ingots, steel slabs, steel billets, some liquid steel in hot metal cars (maybe).

I built the Blast furnace kit pretty much following the directions and it looked pretty much like the Walther's kit box (**Figure 2**). About the time I was just about finished, a couple of things altered my progress.

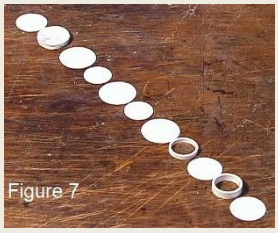

First, I was fortunate to spend a day with Dean Freitag and see his layout that included all the steel structures he was famous for. That visit was like a crash course in industrial modeling. One of the things he gave me was a list of parts I should order from Plastruct to properly detail the Blast Furnace. Many of these items have been incorporated in subsequent releases of the Walther's kit. Mostly stairways, ladders, and handrails.

Second, I received the drawings by Mike Rabbit which showed the details of the Blast furnace plumbing. So, I set about improving the plumbing and incorporating many of the things I learned. Now the furnace looked like this (**Figure 3**).

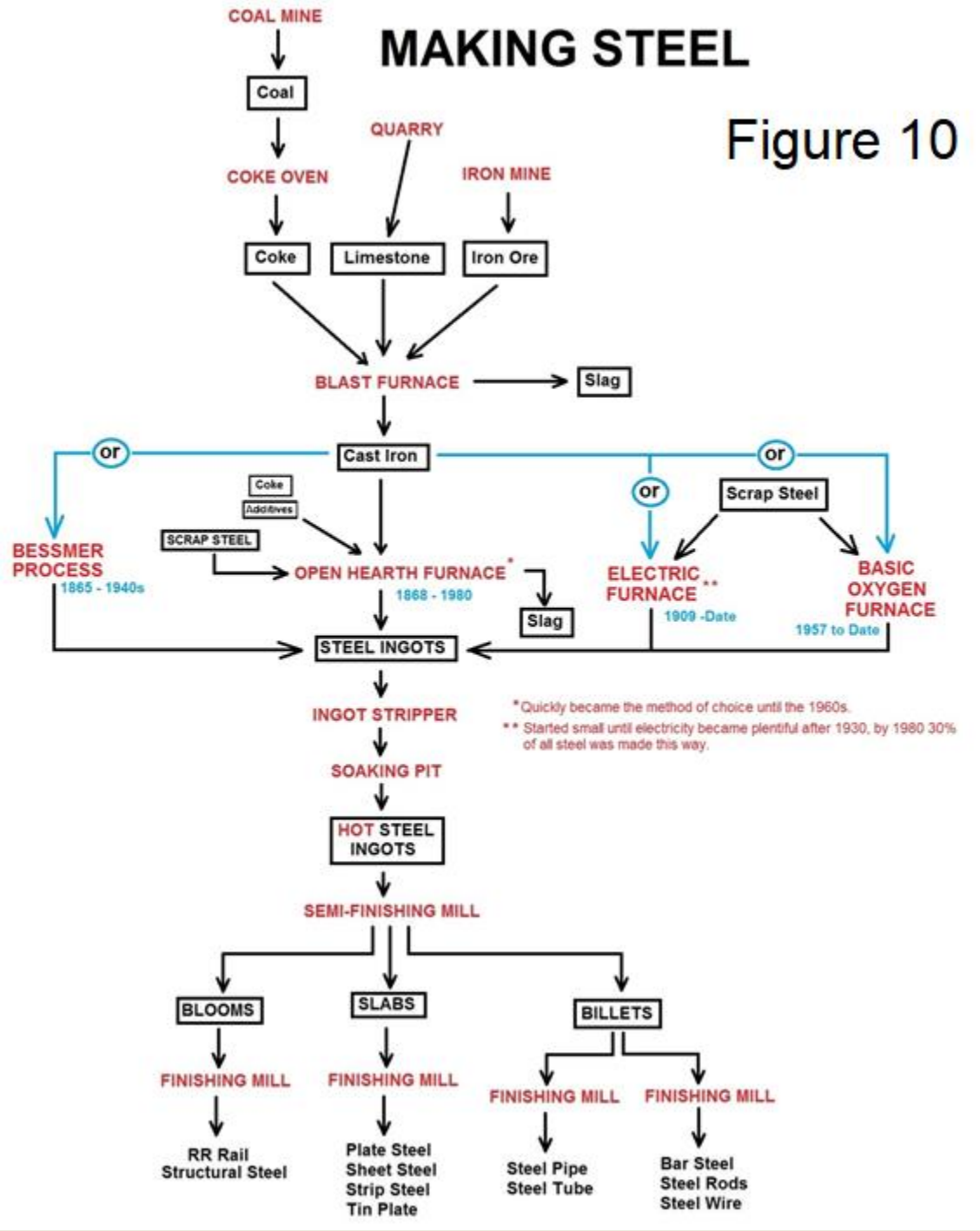

Third, I realized that the Walther's blast furnace was undersized for a more modern furnace but just the right size for a 1915 era one. The downside was that the top works would have to be re-built. So, lots of Plastruct and Evergreen parts later the furnace now looks like this (**Figure 4**). The Downcomer tubing I assembled with 5 minute epoxy as this was the butyrate tubing from Plastruct and I found the epoxy worked best. One part of the downcomer came out too horizontal but it's a learning curve. The Prairie Works videos show how to scratch build the big valves used on the furnaces and where to place them. These details are not included in the Walther's kit. I think it's worth the added trouble to include these details. Here's a close-up

photo of the Blast furnace plumbing (**Figure 5**). It looks more complicated than it is and believe me, you can build this. Tubing from Evergreen and Plastruct, Sheet plastic and structural shapes from both and you can build what you need. Just as an example, here are some photos from Prairie Works of their Goggle Valve (**Figure 6-8**): With the photos and the video, they take you right through the construction and if you follow the instructions, you will amaze yourself with what you've built. The amount of detail you can add is almost limitless. The reference books listed above will give you all manner of ideas to include in your mill. There is also lots of information on-line, all you have to do is "Google it" as the younger folks say. I followed a similar process to create the Open Hearth building and the Ingot stripping building (**Figure 9**). If you have the space, you can add the other Walther's kits like the Rolling mill and the Basic Oxygen furnace. There are also Bessemer converters available, or you can scratch build your own. Once you learn how steel is made and shaped, all you have to do is decide what to build, what to leave out, and where to place it. Here's the flow of materials and how steel is made (Figure






10): Now you know some of the questions to ask. I found the subject fascinating and a never-ending learning experience.



**For Sale Items** – this is a new feature, where members can list train items they wish to sell. Please include a description of the item(s); a picture if one is available; price and contact information. If you wish your item(s) to be listed in the upcoming newsletter, you need to submit them along with needed information no later than the 25th of the month.

**Items offered for sale by Bill Lauritsen**
Greetings model train fans, l somehow acquired duplicates of the books listed below. Valued from $25 to $15 each l am asking $10 each. My email is bookmasterwc@gmail.com and let me know what you are interested in. Thank you.

Also looking for CNW, GN, or NP items.

- Toy Train layouts for small spaces
- Model railroaders guide to industries #2
- Best of industries
- Steam and diesel locomotive servicing terminals
- Realistic animation, lighting, and sound
- Model railroaders guide to industries #4
- How to build realistic model railroad scenery (special only $6.00)

Happy modeling

**Bill Lauritsen's Layout Update**

Like Rich M. I have been building the bench work for an O gauge layout in my train area.
This room is not just for trains, so the bench work is specialized. I have the walls done, painted blue, and the background mural up. The foam is on some of my benchwork, and l will be putting down track shortly. The initial shape is L and will be joined to a C shape track plan later. Room size is 35 x 12. Time frame is late 60s and steam power will still be around as backup motive power or excursions. Didn't want to miss out on having steamers running. There is a 16' yard along one wall and this joins an 8 x 12 L shape layout area. Height is running 48 to 50" from floor. More rugged terrain will be in phase two area. Construction is with 2 x 4 and 2 x 6 lumber and 3/4 plywood top. It is strong enough for me to be on top and not have it fail. Buildings are under construction off site of the benchwork so as to make use of the time l have between other activities.
This will make populating the layout easier and will happen after the roads are painted in.
Inventory of rolling stock is already at hand as is the motive power. These are still safely packed in boxes ready to run.
Currently, l am patching a wall and will prime that before repainting that area. Then two-piece shelf units will be installed to hold excess rolling stock or engines. This project continues to evolve and keeps me busy with the many facets that need to be completed before you have a finished train layout.

**Tank Car Specification Plate/Qualification Stencil Information and Types of Tank Cars**

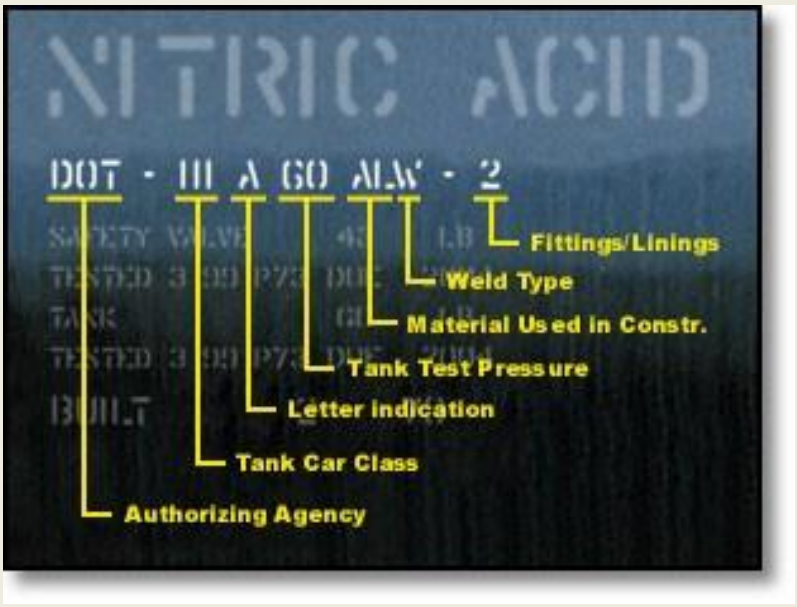
By Rich Mahaney

One of the interesting things to look at on tank cars is the "Specification Plate" (also none as the Qualification Stencil) information. This information will tell you about the type tank car per the Department of Transportation (DOT) designs and specifications, type of pressure release system, about valves and fittings design, pressure ratings and other things. As a hazmat technician, there are certain things I look for and need to look for if I responded to a derailment.

PHOTO 1. The tank car specifications are on the right side of the tank car, as you look at the tank car from the side. The other letters and numbers on the left side are known as the "reporting marks". There will also be information on the left side of the tank car that is required by the DOT. The tank car will also have information that is required to be listed by the tank car builder. Regulations are also generated in Canada, by an organization called "Transport Canada", they will be marked on the tank car as "TC".


PHOTOs 2 and 3. The DOT tank car specifications and type is normally listed above the "specifications plate". As examples: DOT 111, AAR 211, DOT 111-1232, DOT 117, DOT 117R, DOT 115, are known as "low pressure/no pressure, general service" tank cars. DOT 112, DOT 105, DOT 120, DOT 114 are known as "pressure" tank cars. This line of information also lists other design criteria, pressure testing data, some code information relating to couplers, head shields (protects the ends of the tank cars), tank insulation and if a jacket covers the tank and insulation, material of construction and welding. There also be a "W" listing with a number (1 through 7) on low pressure tank cars relating to fittings, linings and other design features or accessories. This will relate to the type of service the tank car is in or the needs of the tank car related to the products it transports. There are W1 through W7 designs.

(Photo # 3 is on the next page)



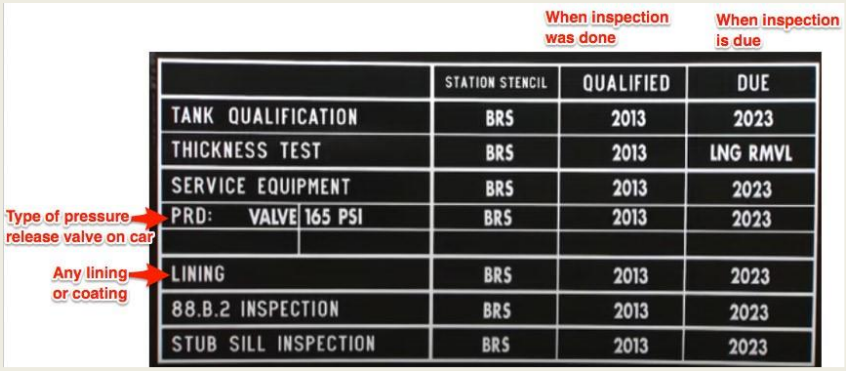




PHOTO 4. Tank cars normally will have some type of a release system to reduce the pressure in the tank car to help prevent the tank car tank from failing or blowing up due to pressure build up (from either internal or external sources). The tank car will use a spring loaded system called a "pressure release device or PRD" or a "vent". On the PRD, the spring keeps the device closed until it reaches its "opening pressure". The vent is designed to "break, open or fail" when a certain internal pressure is reached. As you look at the specification plate photos you will see where the pressure reducing device is listed a PRD or a vent, the operating pressure and testing dates. I have seen tank cars with no release system and they are marked "none" where the release system would be listed.

PHOTO 5. In this photo, you will see this tank car is listed as a DOT 111 A 100 W1 above the qualification stencil information. This means the tank car is a low pressure/general service tank car (DOT 111). The "A" means it has "shelf couplers", which all tank cars are required to have. The 100 is the tank "test pressure". The W1 indicates the tank car has certain design features and equipment required for the service it is in and the products it transports. It could also relate to the equipment that it has to get the product into and out of the tank car. The pressure release device is set for 75psi.


PHOTO 6. In this photo you see the tank car is a DOT 111 A 100 W1 also. The PRD is rated for 165psi. in a future discussion we can discuss how the tank car is designed to fail at 100psi, the pressure relief device is designed to open at 165psi. You would think the manufacturer would want the PRD to open before the tank car tank failed.

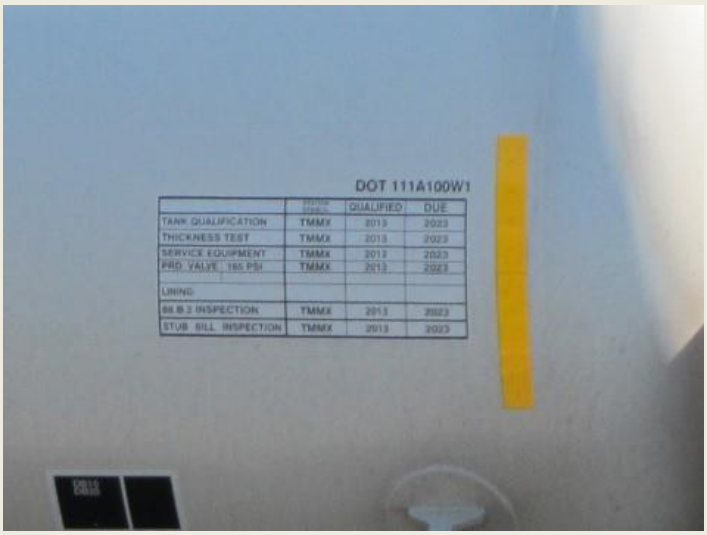


PHOTO 7. In this photo you see the tank car is a DOT111 S 60 AL W2. The pressure reducing device is a vent that is rated to open at 80psi. The "S" means it has shelf couplers and "head shields" protecting the ends of the tank car from punctures. The AL means it has an aluminum tank and the tank has a tank test pressure rating of 60psi. The W2 means the tank car has certain features and equipment.

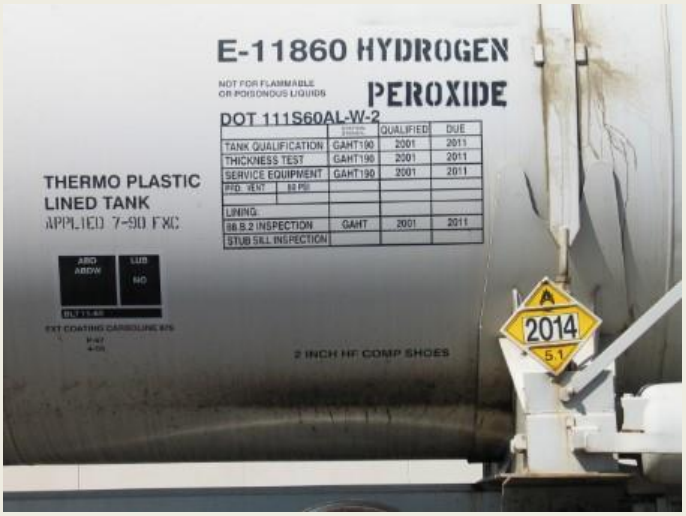



PHOTO 8. This photo shows you a tank car that is a DOT 112 J 340 W. This would be a "pressure" tank car. The "J" means it has shelf couplers, head shields, fire resistant insulation around the product tank and a jacket over the top of the tank and the insulation. The tank test pressure is 340psi and the "W" means it has "welded" construction. The tank car has a spring loaded pressure relief device that is designed to operate at 280.5psi.

PHOTO 9. This photo of tank car specifications shows a tank car that is a DOT 114 T 340 W. The 114 tank car is in the "pressure" tank car family. The "T" stands for "thermal spray on insulation", plus shelf couplers and head shields. For a time period, pressure tank cars were sprayed with a fire resistant material to protect them from fire and flame impingement and did not have a jacket installed on them. This is not very common anymore. There were problems with this insulation material communing off, leaving the tank without fire/flame protection. The pressure relief device is set for 280.5psi.


PHOTO 10. This photo shows a DOT 117 J 100 W1 rated tank car. This is one of the newly designed tank cars to transport flammable liquids in a low pressure/general service tank car. The pressure relief device is set for 75psi. When 20 or more of these tank cars are in a train, the train is known as a "HHFT" for "high-hazard flammable train". This is all ties to the problems, derailments and fires with crude oil and denatured alcohol in tank cars. DOT 117 is a low pressure tank car. The "J" indicates shelf couplers, insulation, and a jacket around the tank. The 100 is the tank test pressure in psi. W1 would be for its valves, possible lining and fittings.

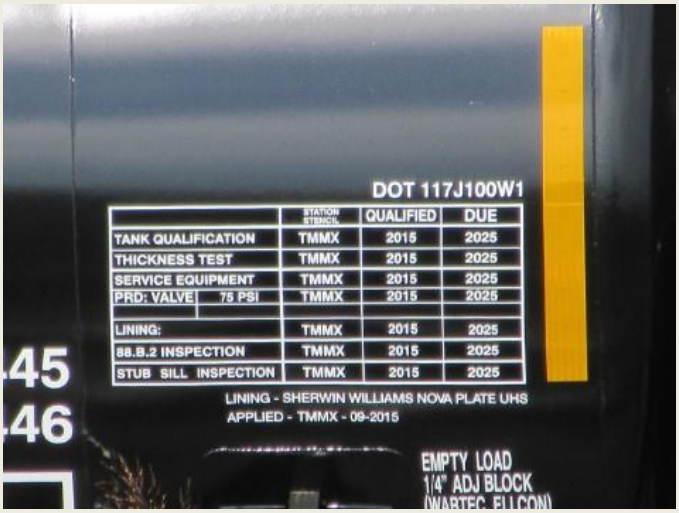


PHOTO 11. This photo "by Ed Chapman" shows a DOT 120 J 200 W tank car. I know you can't read the writing, but I thought I would include the image anyway. The DOT 120 is the next generation of tank cars for flammable liquid transportation. It is thought of as a low pressure/general service tank car with pressure tank car designs, but it is included in the "pressure" tank car family.

PHOTO 12. This photo shows a tank car that is in "cryogenic" service (very cold products) that is transporting refrigerated liquid called ethylene. The specification says DOT 113 D 120 W. Cryogenic cars come as DOT 113 or AAR 204 tank cars. The "D" means the tank car is authorized for loading at minus 155 degrees F. The 120 is the tank test pressure and the "W" is for welded construction. The tank car has a safety release device (PRD) rated for 75psi and a rupture disc which is rated to open at 114psi.

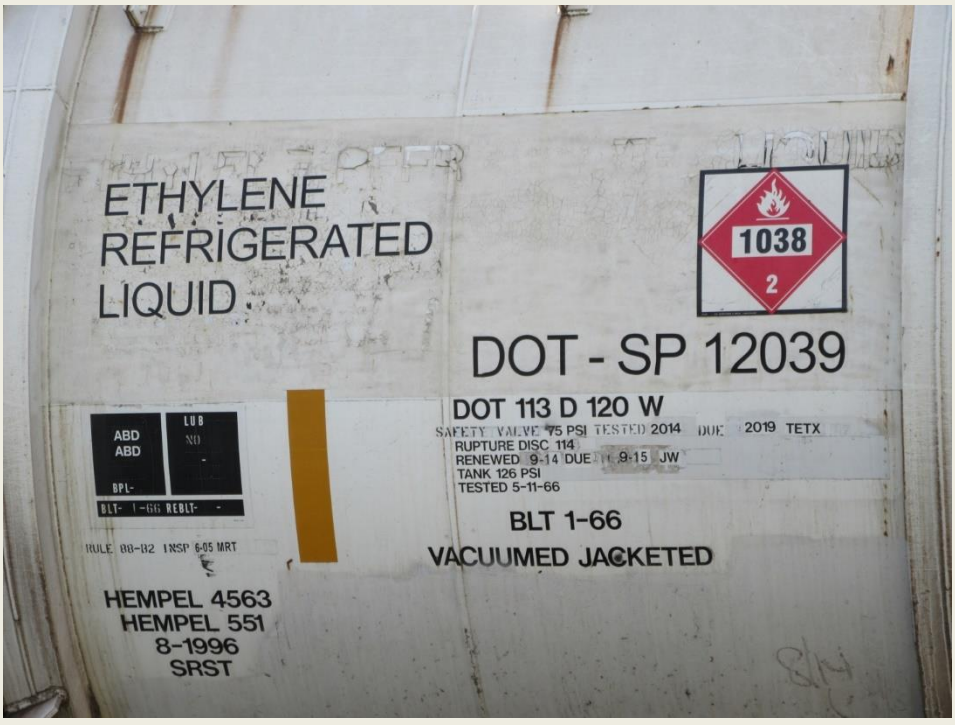
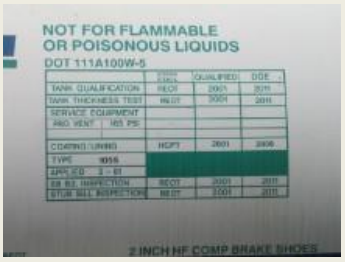


PHOTO 13. This photo shows another cryogenic tank car that is a DOT 113 C 120 W. The "C" means authorized for loading at minus 260 degrees F. The tank has a test pressure of 120psi and is of welded construction. This tank car also has a safety released device set for 120psi and a rupture disc set to fail or break open at 120psi.


PHOTO 14. This photo shows a tank car with the AAR 211 A 100 W1 specifications. This 211 tank car is similar to a DOT 111, but has some differences. A lot of these tank cars transport Class 9 materials (miscellaneous hazards) and combustible liquids (liquids with a flash point over 141 degrees F) The "A" means it has shelf couplers and no head shields, insulation, or a jacket. And it has W1 listing.

PHOTO 15. The group of photos show the letters "A, S, T and J" that are used as a spacer letter (but is really called a "Delimiter Letter") which have a meaning to describe the tank cars features, that I have already mentioned. "A" means shelf couplers only (required on all tank cars), S means that it also comes with shelf couplers and full head shield on the ends of the tank car. A tank car cannot get the "S" rating with a head shield that only goes up only "half way" up on the ends. The "T" means shelf couplers, full head shields, fire resistant insulation, and a metal tank jacket over the insulation.







PHOTOS 16 and 17. I have mentioned the "W" for equipment and other features on the low pressure tank cars. There are categories of W1 through W7. In these photos you can see the W listings of 1 though 7, except W4, I have never found a W4 tank car to photograph yet. In a future story we can look more at the W1 though W7 equipment and features.




PHOTO 18. Tank cars with W2 and W5 designations transport "corrosive liquids" (acids/bases).

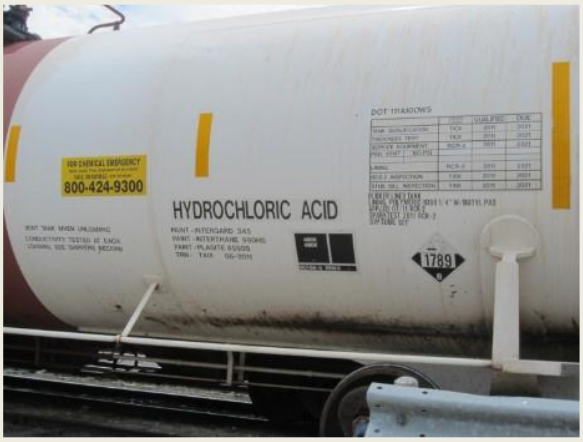



PHOTO 19. Also on the tank car you will find the "built date". This is important if you are modeling a specific date or time period. A few years ago, I went through all of my model railroad cars and looked at all of the "built dates". I model the GN RY in 1959, so I got rid of every model railroad car built in 1960 or beyond (unless there was something unique, special or I really liked the car). There were about 300 model railroad cars that fit into this category, they all got sold off, but I have since replaced the cars with cars that were built in 1959 or before. I thought it was a good way to reduce my model railroad car collection.

This is the second part of a series of tank car related stories for the Division 9 newsletter.