
HIGH BALL

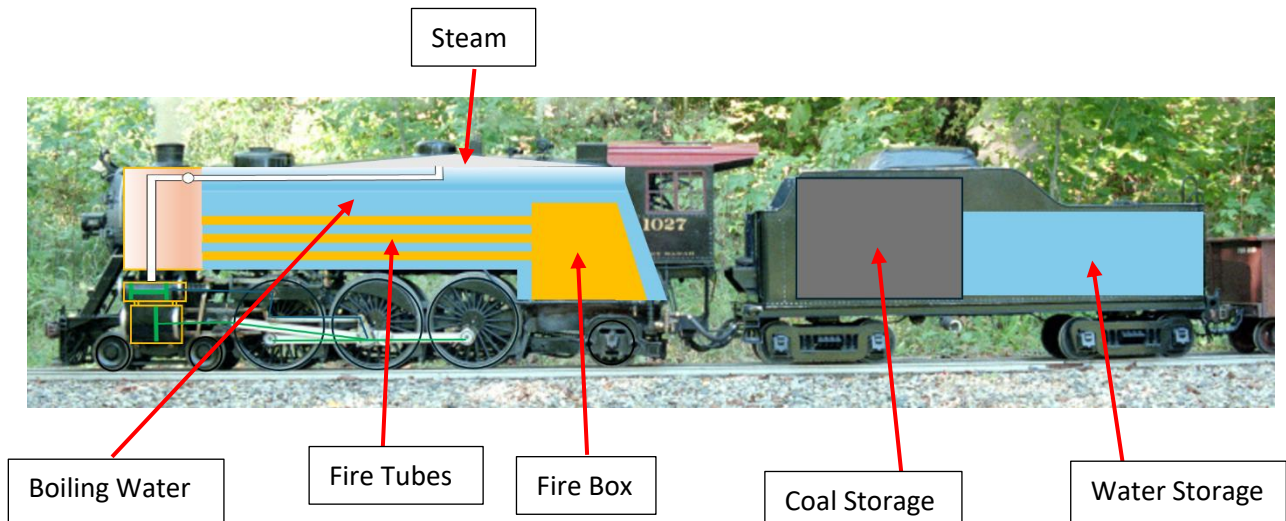
A Publication for the Mid-Michigan Railroad Club
February 2024



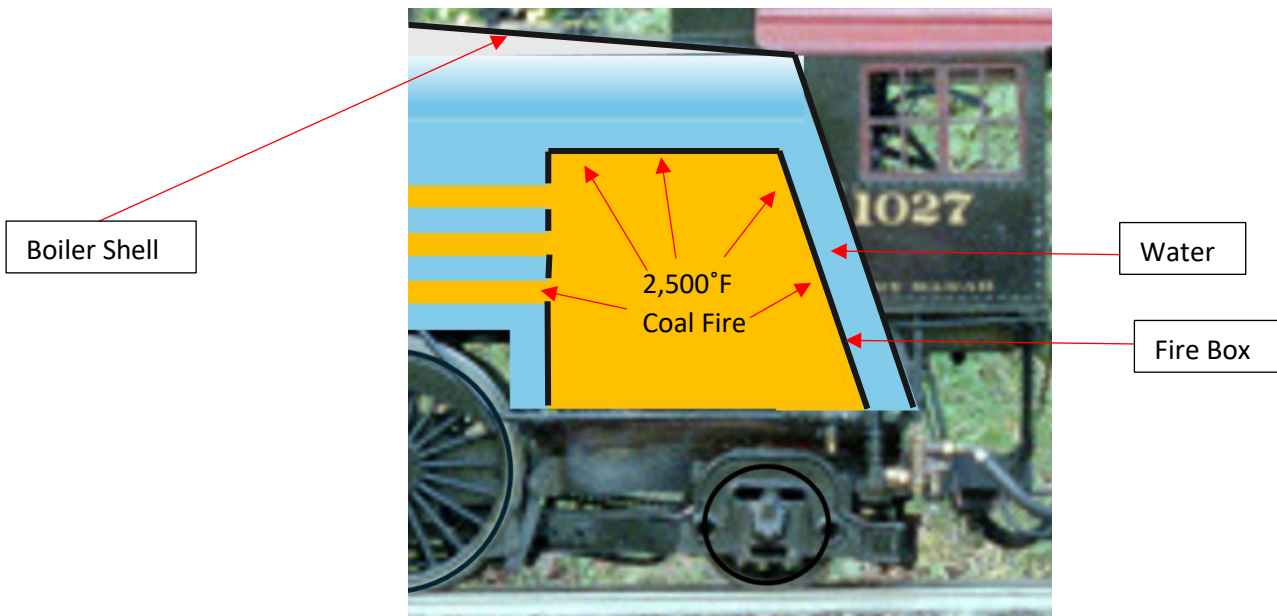
How Does a Steam Locomotive Work?



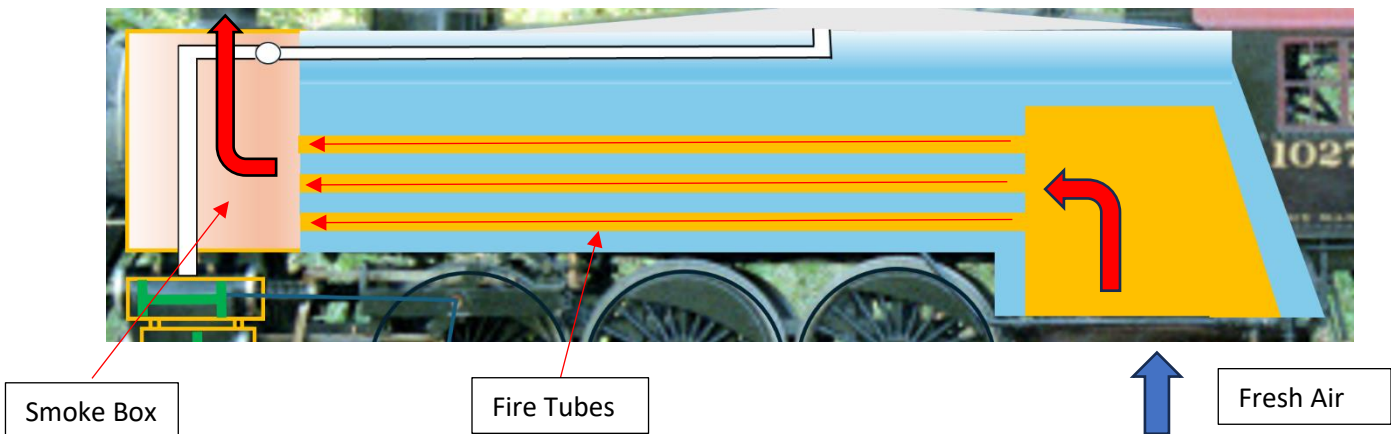
A steam locomotive is often referred to as a steam engine. A steam locomotive however is the combination of a steam engine and a boiler. The boiler converts energy stored in a fuel source to usable energy in the form of pressurized steam. The steam transfers the energy from the boiler to the steam engine where it is converted to a mechanical motion.



The process begins in the fire box fuel where a fuel is burned. Surrounding the fire box on the top and four sides is the boiler shell. The boiler shell creates a double wall and surrounds the fire box with water.

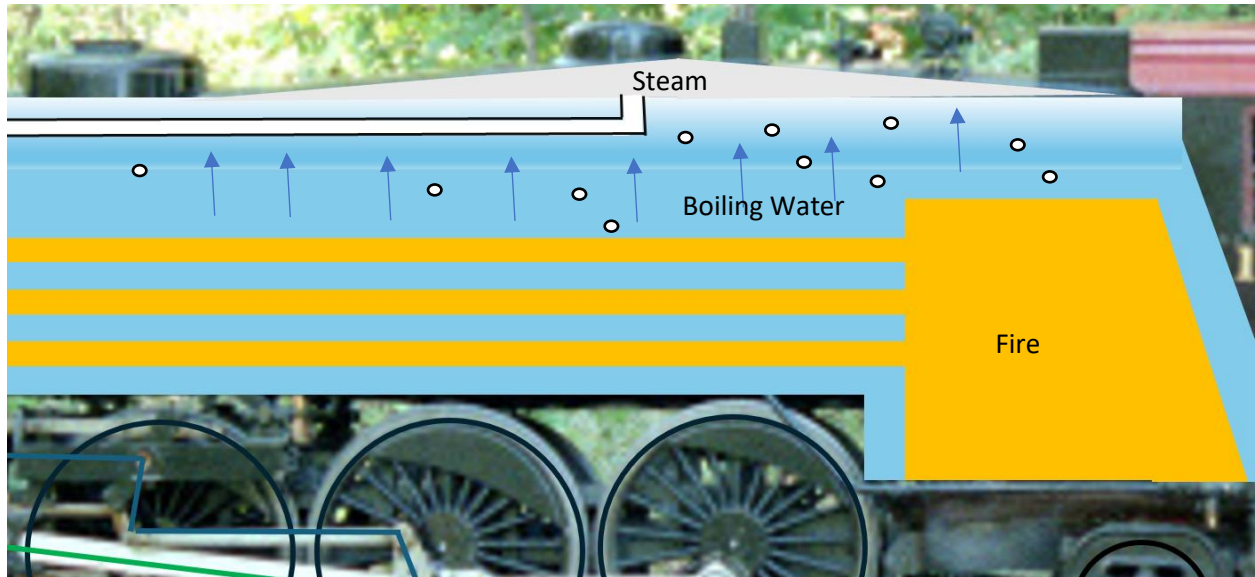


Coal was the most common steam locomotive fuel. In the west fuel oils were also used as the fuel source due to the lack of suitable coal deposits. The locomotive pictured in this example is coal fired. As the coal burns energy is transferred from the burning coal to the firebox sheets by the hot gasses within the firebox and radiant heat from the incandescent flames. A coal fire can burn as hot as 2,500°F. Thermal energy moves from the high potential (fire) to the lower potential (cooler) firebox sheets. As the fire box sheets are heated energy continues to move to the cooler water.

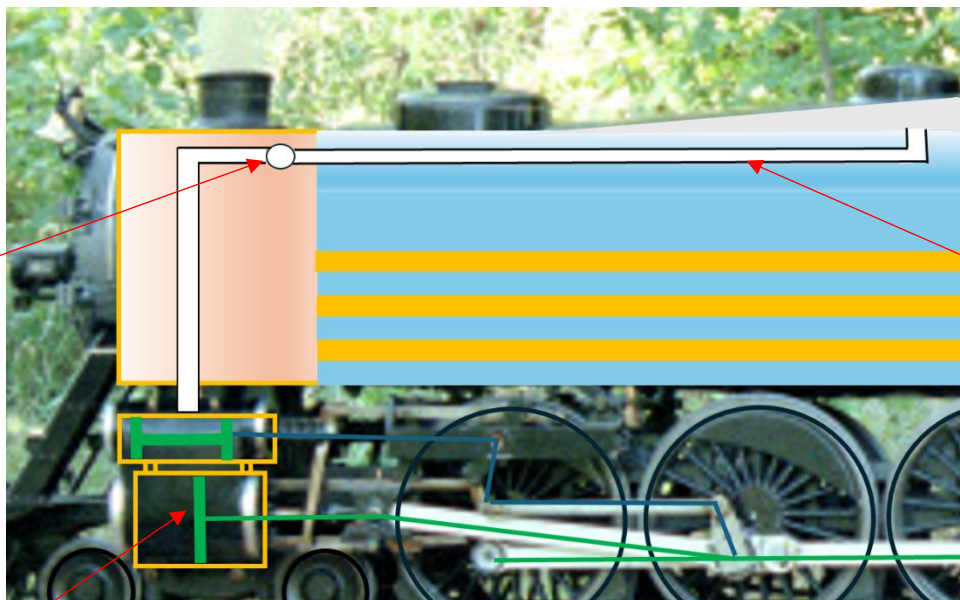


Hot gasses move from the fire box through fire tubes. The fire tubes are surrounded by water and the heat transfer from hot gasses into the water continues. At the left side in the figure above the hot gasses pass into the smoke box and exhaust upward out the smoke stack.

Heat transferred through the firebox and tubes heats the water. Water temperature will rise to the boiling point then remain steady while additional energy transferred into the water converts the liquid into gaseous steam. Water boiling on a stove for example does not get hotter if the burner is turned up, it boils faster. When water is boiled on stove the water vapor is released into the atmosphere. In a boiler the steam is contained in a small space above the water.



As more and more molecules crowd into the steam space the pressure inside the boiler increases. Model boilers often operate at 100PSI. A full size locomotive might operate at 250PSI. When pressure inside the boiler increases more energy is required to convert the water to a gas causing the boiling point to rise. Boiling water on a stove will be roughly 212°F at sea level. The boiling point of water in a boiler at 100PSI will be roughly 338°F.



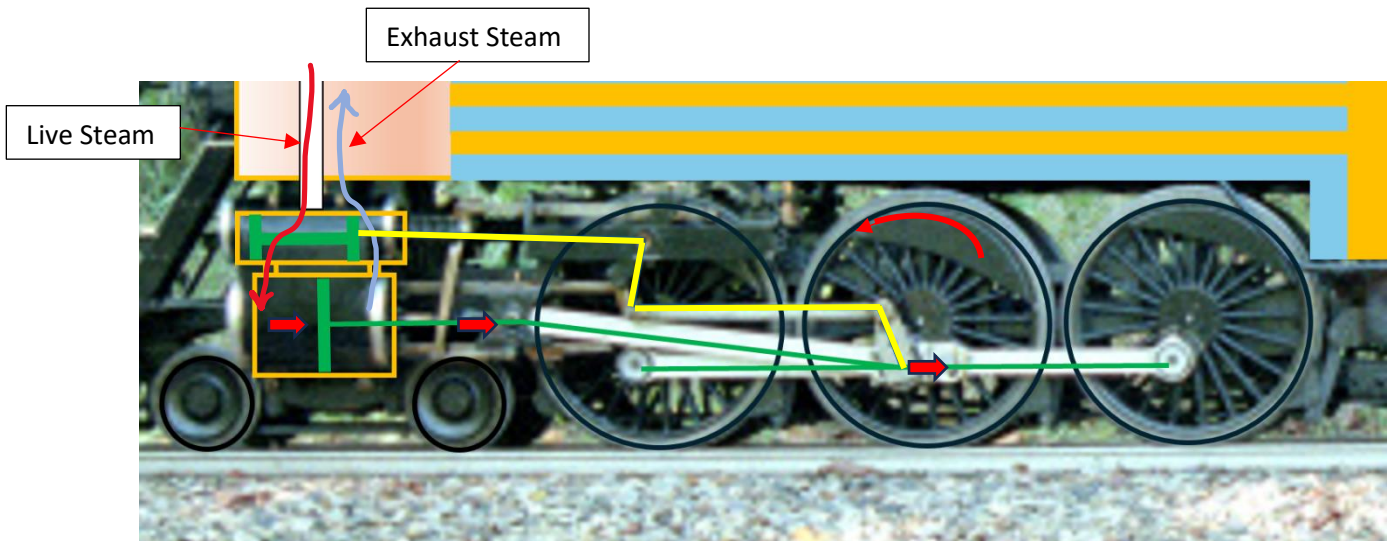
Throttle. A valve the engineer uses to control the amount of steam sent to the engine.

Dry Pipe. Carries steam from the boiler to the steam engine.

Piston. Converts the steam pressure to a mechanical motion.

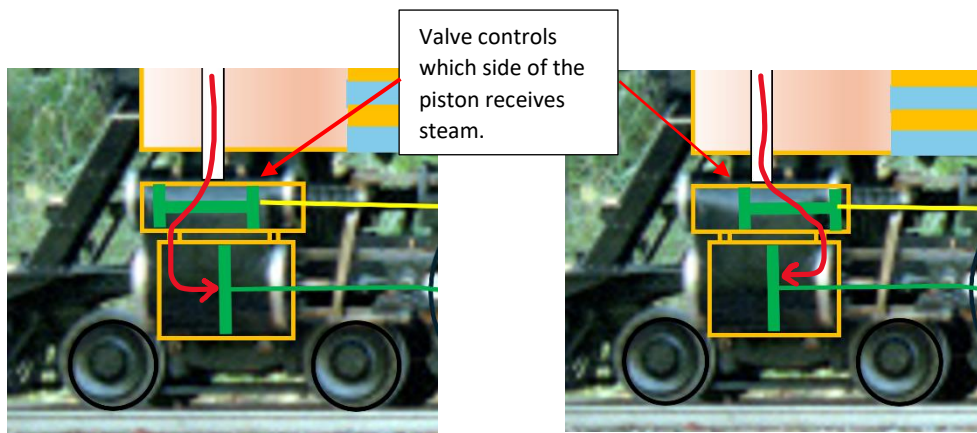
Near the top of the boiler the dry pipe collects steam from the boiler and carries it toward the cylinders of the steam engine. The engineer uses a valve called the throttle to vary the amount of steam sent to the cylinder to control the speed of the train.

When steam reaches the engine it presses against the piston. Imagine the piston as the pedal on a bicycle. You press down on the pedal the sprocket on the bike rotates. The piston in the steam engine presses backward and forward pushing and pulling a series of rods connecting the wheels. This causes the wheels to rotate and move the locomotive down the track.



As the piston moves left to right it pushes the green rods to the right causing the wheels to rotate. When the piston reaches the end of its travel the steam must be reversed so the piston will pull against the rods.

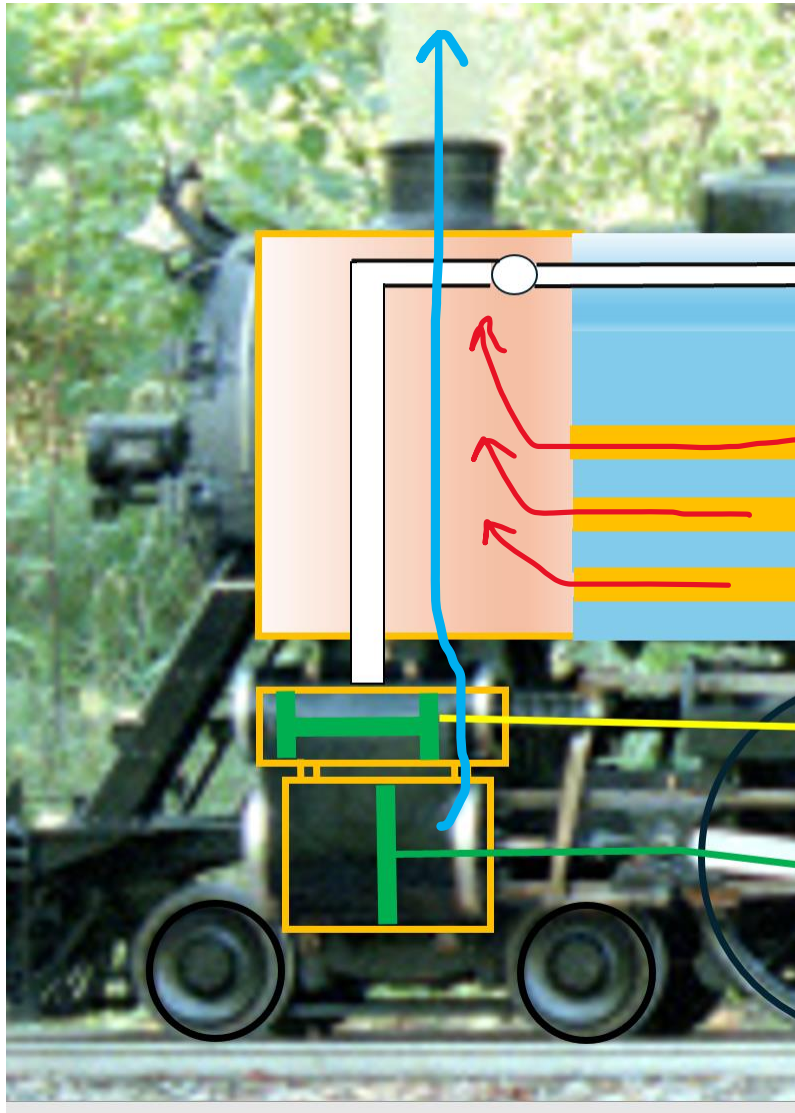
In the figure above a second set of yellow rods move a valve back and forth. As the piston reaches the end of its stroke the valve automatically shifts to reverse the steam flow.



Steam pushes piston to the right.

Steam pushes the piston to the left

The exhaust steam follows a passage through the cylinder block to a nozzle below the smoke stack. The chuff chuff a steam locomotive makes is steam exhausting as the piston changes direction. The jet of steam passing through the smoke box drawing gasses from the fire up and out of the smoke box creating a slight vacuum. The vacuum draws air through the firebox. The faster a locomotive runs the more steam is exhausted up the stack, increasing the vacuum and fanning the fire causing more steam to be created in the boiler.



With the locomotive running down the track the water in the boiler needs to be replaced. Next month we will look at two common devices, pumps and the Injector.

Mid Michigan Railroad Club, Inc.

Business Meeting Minutes

Saturday February 3, 2024

Held at the American Legion Post 275, Battle Creek, Michigan

(A big “Thank You” to Pat Kinney and the American Legion for letting us meet here).

Meeting was called to order at 10:16 A.M. by President Rod Pitman.

17 people were in attendance.

PRESIDENT’S REPORT

- Rod mentioned that we had a fairly successful run season last year for just coming out of the pandemic.
- Per Rod our 2024 run schedule is correct on our website but DO NOT use the printed Cornwell’s schedule. It is not correct.
- We have added Saturday March 30 as our first run date. This is Cornwell’s Easter Egg Hunt and last year’s event was well attended by the public.
- The Calhoun County Fair display was a big success and very worthwhile in Rod’s opinion. However, if we participate again this year, we will definitely need MORE VOLUNTEERS to be present during that week. Rod feels it is important that we have people on site during the fair to talk to the public. Chris and Ted spent most of the time there but that is too much to ask of just two people.
- The club is in good shape as far as materials needed to complete our current ongoing projects. Rod feels that barring any unforeseen expenses, and other than purchasing new ballast for track, we should not have to spend any large sums of money on projects this year.
- The new pavilion needs to be finished. The framework has been erected. We still need to install the used steel panels on the roof and hook up the electrical line to the structure.
- The old pavilion, which is now our riding car and lawn maintenance storage building, still needs Lexan (clear) panels installed along the top of the ends and sides to let natural sunlight in.
- Rod stated that this year we need to have as our NUMBER ONE PRIORITY the maintenance, and any repair needed, of all our existing mainline trackage. We can replace individual ties here and there BUT there are complete track panels that may need to be replaced. Some sections of our mainline is original to the club. We have a good supply of new wood ties on hand as well as a large quantity of plastic ties that we purchased last year from an individual in Indiana.

- Steve Morris and Dan Bockheim have been busy making 590 new steel rail joiners. That's enough to do 147 track joints!!! We were completely out. Thanks guys!!!
- The only thing we lack currently is a ballast pile. Steve has a contact who has a truck that will deliver if for free if we can source the ballast. Mike Schmitzer mentioned that we need to prepare the site next to the tiple for ballast. He and Steve will visit Hoffman Brothers Construction in Battle Creek to see if they might be willing to donate any material such as concrete blocks or barriers for a perimeter wall. Pat Kinney mentioned that we do have a few full- sized railroad ties that also could be used as walls.
- Rod announced that we WILL NOT be laying track up the newest grade (up and over the hill closest to the campground) that Blaine Cornwell excavated for us recently. It is just too steep of a grade. Dan Bockheim has a great solution though. Dan said if we can move an old decayed tree stump and some brush from the hillside downgrade of the tunnel then we can install a switch from the existing mainline and head off into the woods.
- Rod said we will stake out a new route further south into the woods and see if Blaine can use his bulldozer to clear a path for us. We will use new plastic ties on any new track going out into the woods.
- Pat Kinney has been working with a metal shop in Battle Creek to fabricate new switch throws. We are currently out of switch throws and have several switches that need them. They are looking to make about 20 for us. He will keep us posted on their progress.
- Rod mentioned that Steve Morris is willing to build a couple more T-Style riding cars for club use. We can use the trucks we already bought from Matt Karn to put under them.
- Rod asked that we do not use Jim Triemstra's green riding car. It needs work and is not available for use until further notice.
- Rod would like us to consider coming up with a new letterhead design for official club correspondence. We do have one however Rod feels we should redesign it.
- We need to constantly be aware of ways to increase our advertising of the club to the general public. It was suggested that maybe we could put signs up at major intersections near our club. Pat Kinney mentioned that we have a tri-fold brochure in the works.
- There is a spare wood trestle bent that needs to be installed on the north end of the existing long wooden trestle.
- Rod would like to see us come up with an overall master plan for our future block signaling project. Pat Patton has taken the lead on this project so far, donating signal masts, installing concrete bases and designing a 3D printed signal head. Tim Childs has offered input on wiring and control. Thanks guys. We just need to see how it will all fit in to future bi-directional running and car card operations. Signals will be an exciting addition to our track operations providing another layer of safety. And they look cool!!
- The bridge decks are still in need of a coat of weather sealer.
- We need to come up with a financial budget. Mike S. asked if the board members present today, as well as any interested club members, could stay after the business meeting was over to work on it. The answer was "yes".

- Possible By-Laws change: Since the weather can be unpredictable in January, Rod suggested that we change the By-Laws to hold the first business meeting of each year to “in the first quarter” rather than how it stands now “in January”. A motion was seconded and approved to do this. Rod stressed that the first meeting should be held as soon as practical if it cannot be held in January for any reason.

VICE PRESIDENT’S REPORT

- Pat Kinney welcomed everyone to the American Legion Post. They serve a pancake breakfast to the general public every second Saturday of the month starting at 8:00 a.m. as well as sloppy joe dinners every Wednesday night starting at 4:00 p.m. All are welcome to attend.
- Pat has a contact who will cut down the three dead poplar trees across from the depot for \$200 per tree. However, the club would be responsible for disposing of the trees once they are cut down. Steve made a motion to approve. Seconded by many. Voted on and approved.
- The Military Vehicle Preservation Association will meet at Cornwell’s the first weekend in May. This is a run weekend for us as well. Pat will make spaghetti dinner on Saturday night.

TREASURER’S REPORT

- If anyone has an “In Kind” donation they want to make to the club please give Chris Morris or Margie Kipp a receipt so the club can keep track of the item. This helps us in future budgeting cycles to see where the club would have had to possibly purchase something instead of receiving it as a donation.
- Chris reminded everyone of the importance of turning in receipts on anything purchased for the club.
- The club has approximately \$7,000 in savings after expenses last year.
- Chris thanked Margie Kipp for working closely with her on bringing the club’s financial records up to date on the computer. Margie has over 35 years of accounting experience working for a large C.P.A. firm. Chris said she is willing to continue being the club Treasurer IF Margie will continue to maintain the books and help her with other duties that may be required. Margie agreed to do so. Chris and Rod then appointed Margie to continue to assist Chris in this capacity.

SECRETARY’S REPORT

- Some of our members do not have email access so they cannot view the High Ball Newsletter electronically in order to read the business meeting minutes. Ted H. suggested our Grand Elk caboose as a good location for this club record and everyone agreed. I will create a file of business meeting minutes to be housed in the caboose going forward.

FACEBOOK AND SOCIAL MEDIA

- Tina could not be with us today so her husband Brett gave us an update on Facebook and Social Media.
- The club's Facebook site has received a large amount of "Likes" recently. There seems to be a lot of interest in learning what we are doing via Facebook and social media.
- Tina would like to gather photos, information, diagrams, etc. showing how the various types of locomotives we use work internally. Pat Patton is currently putting something together on steam locomotives but we need to also show gas powered as well as electric powered units. If anyone wants to help her with this project she would very much appreciate it.
- Social media is a great way to get our name out there and reach lots of people. Let Tina know if you have any ideas, photos, etc. regarding the club that she can post.

SAFETY OFFICER'S REPORT

- Ted Hentchel reiterated the importance of making track repairs to the existing mainline, especially the south curves in the woods. He mentioned, and we all agreed, that any new track built in the woods (including any possible track expansion) be laid with plastic rather than wood ties. Any track that is in a shaded area never fully dries out so the use of plastic ties in these areas is helpful.
- Ted brought up the fact that stressing and enforcing safety is more than a one-person job. He indicated that he would like to be able to appoint any member(s) as "deputy safety officers". Mike Schmitzer volunteered to be a deputy safety officer.

PLEASE NOTE: It is up to EVERY MEMBER to remain alert and proactive to the cause of safe operation and good personal conduct at ALL TIMES. This is a club rule and expectation. Unsafe train handling and/or poor personal conduct cannot be tolerated at the club. Please speak up if anything is amiss as far as safety and/or conduct is concerned and remember to do so respectfully and calmly to all parties involved. Safety is our NUMBER ONE PRIORITY and should never be taken for granted.

Rod asked if there was any other business before we go to election of officers.

Dan Bockheim asked if we considered running more Saturdays, and not so many Sundays, as we previously discussed in a past business meeting. Rod said we are more or less confined to running whenever Cornwell's has an event going on which typically occur on both days.

ELECTION OF OFFICERS

- The following officer's terms were up for election/re-election: President, Corresponding Secretary and Safety/Personal Conduct Officer.
- Office of President. Rod Pitman was nominated by Steve Morris. Rod agreed to run again. Nobody else offered their candidacy so Rod was re-elected unanimously by voice vote.
- Corresponding Secretary. Mike Schmitzer volunteered to be Secretary for another term. Seeing nobody else's nomination for this position Mike was re-elected unanimously by voice vote.
- Safety/ Personal Conduct Officer. Ted Hentchel was unopposed but did say he would like to be able to appoint other members as "Deputy Safety Officers". Ted was re-elected to this position.

Motion was made and seconded to adjourn the Business Meeting at 11:20 A.M.

All of the officers, as well as some of the members in attendance, agreed to stay longer to create and approve a 2024 Budget.

President Rod Pitman, Vice President Pat Kinney, Treasurer Chris Morris, and Treasurer's Assistant Margie Kipp sat down to create a budget for 2024. It was subsequently approved by voice acclamation of all members present.

That concluded the official club business for February 3, 2024.

Respectfully submitted,

Mike Schmitzer
Corresponding Secretary
Mid Michigan Railroad Club

2024 Run Schedule

March 31

April Saturday Work Days (weather permitting)

May 4-5, 11-12, 18-19 Arts & Crafts Show

June 8-9

July 6-7, 20-21

August 3-4, 17-18

September 14-15, 21-22 Flea Market and Antiques Show

October 5-6, 12-13, 19-20, 26-27

2024 Dues are due.

Annual dues are due. Please send them to Chris Morris 421 N Shelton St. Charlotte MI 48813-1224.

MMRC Facebook Page

Facebook Likes and Followers have increased quite a bit in the last 10 months (38% growth rate in Likes, and 52% in Followers). Many people use social media and we want to continue to leverage that. Looking for four volunteers at a minimum who run a train on the MMRC to share more about how their engine works (and some pictures of the internal workings along with the exterior of the engine). Goal is to increase knowledge to the public and retain interest on how trains operate. Would love a steam, electric, gas, hybrid. Contact Tina Pritchard, Membership Secretary if you can help.

Obituaries

Richard P. Mueller Jr. passed away peacefully on January 6th, 2024, at 3:36 PM in Gulfport, MS, with his family at his side. Richard P. Mueller Jr. was born on May 15th of 1949 in Lakewood, Ohio. At an early age, Richard developed a love for creating model layouts and collecting model trains.

William (Rob) Pepper, 71, of Andrews IN, passed away at 4:50 pm Monday, January 29, 2024 at his residence. Rob was born on June 26, 1952 in Detroit, MI. He was a member of Tri-State Locomotives where he served as Vice President and and past member of the MidMichigan Railroad Club.

Officers

President	Rod Pitman 269-720-0396 rrhotcold@aol.com
Vice President	Pat Kinney 269-753-4177 patk1977@aol.com
Treasurer	Chris Morris 517-543-8279 cm61654@gmail.com
Membership Secretary	Tina Pritchard tina@bretina.net
Corresponding Secretary	Mike Schmitzer 269-274-4366 mstrains@att.net
Safety	Ted Hentchel 269- 945-7628 tedhentchel@yahoo.com