

Volume 43 Number 1

MONTICELLO RAILWAY MUSUEM Where "I've Been Working On the Railroad" Becomes a Reality

May-June 2010



#### THE 2010 SEASON HAS BEGUN!!!

The Monticello Railway Museum has entered another season of operations and extends an invitation to come out and ride or participate in making it happen.

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## OBSERVATION PLATFORM



## Updates for 2010 John Scuitto, President

It is hard to believe but by the time our members read this, we are already halfway through the 2010 operating season. Thank you to all our volunteers who make our operating part of the museum a success. Elsewhere you will read an article on crew training. Safety and crew training are our priorities at the museum. Additionally, we always are in need of train crew to staff regular weekend runs but also the growing list of mid-week charters. In addition to train crew, volunteer opportunities exist in the exhibit cars and Nelson's Crossing depot. Volunteers are always needed and welcome at the museum.

3<sup>rd</sup> of July was another successful event and Railroad Days, Ghost Train and Polar Express are literally just weeks away. If you are interested in volunteering for any of these events, please contact Bill Crisp, Donna McClure or Ron Kempke. We particularly need volunteers preparing for Ghost Train and Polar Express. If you have additional questions or concerns about volunteering at the museum, please see one of the event chairs or Syl or myself.

#401 is ever closer to running and dining car #4112 is progressing. Wabash coach #1827 should be arriving at the museum in the near future. This 56-seat coach will have some maintenance done on the water system for the two bathrooms and may be painted prior to 2010 Polar Express. However, the dining car finishes may wait until after Polar Express due to the amount of work to be accomplished elsewhere on various projects. Business car Wabash #6 has been shown to numerous visitors and groups and continues to amaze our visitors with the overall condition and presentation of the car. Thanks to Stan Rankin and his crew who continue to work on the details and make this our showpiece car of the collection.

Our current goal is to have the new car barn #2 built by Railroad Days and the first siding completed by winter (to store the regular train indoors). Although the building will be up, the other two sidings will be completed over the winter or spring of 2011. A few remaining details remain on a land trade with adjacent property owner prior to beginning site work. Once completed, this building will house up to 15-passenger cars. The car barn may be used for various indoor displays for 2010 Railroad Days

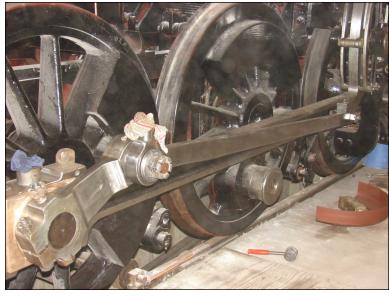
I am continually asked why certain projects seem to be behind schedule (#401, dining car, painting various equipment, etc.) The main reason is we need additional volunteers to work not only in the shop but to fill regular operating crew positions in addition to donation of funds to facilitate the various projects. Shop volunteers have lost several weekends this year that normally would have been used to work on various projects because the priority was to staff and run trains. Your participation can make the difference. Your involvement can make it become a reality. Take a Saturday or a Sunday and come out to the museum to not only see the accomplishments made to date, but evaluate what you can do to help make a project a completed reality.



#### THE BACK SHOP

By Kent McClure

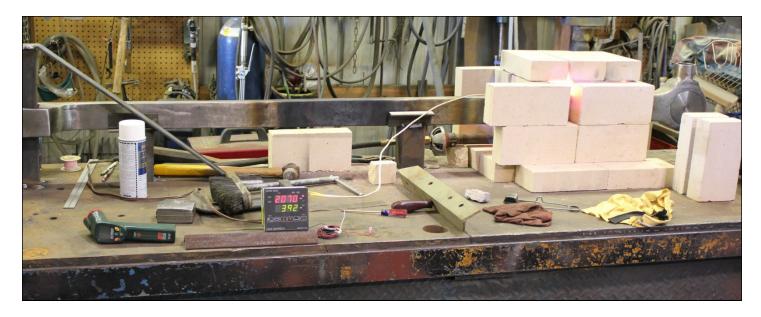
This past winter/spring has seen much progress on steam locomotive #401. The boiler insulation and jacket has been completed for the most part, with only the knuckle on the back head needing completion, and work on this is ongoing. The wood lining in the cab is mostly complete and painted. The running gear is nearly done, with crossheads, pistons and piston rods reapplied, main and eccentric rods applied, and valve timing completed. The steam chests have also been reassembled, and cylinder head covers have been fabricated.



**Above:** The eccentric rod, (with a rag setting on top of it; located on the outside of the drive rod) has been shortened and now back in place. **Below;** The makeshift furnace shrinks the rod's length, using a method that was standard procedure in the steam era.

The valve timing found valve stems to be slightly long, which was easily cor-

rected, and not unexpected as they were replaced in this rebuild, at which time they were made slightly long in case the original lengths were not correct. We discovered the eccentric crank on the right side was slightly out of place, (5/32" as measured at the foot of the link) requiring rotating the crank slightly on the pin, and re-drilling/reaming the fitted bolt which locates the crank in the proper position. In checking the eccentric rod lengths, we found the right eccentric rod to be 9/16" long, and the left to be 5/16" long. These are LARGE errors, which caused much re-checking of everything to confirm the error. In the end, the numbers were indeed correct, requiring us to shorten the eccentric rods to correct the errors. This required building an oven of firebrick on the welding bench, building an arrangement of supports to hold the eccentric rod and to anchor it. We then heated a portion of the rods, one at a time, to about 2000 deg. F., and allowed them to soak at that temperature for about 1 hour. We rigged up a 100 lb. hammer that was swung from the ceiling, and used to strike the end of the rod, upsetting the metal in



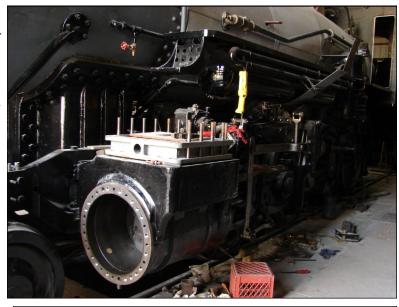
To measure your progress when doing this, you use a long trammel that spans the heated area of the rod, well out into the cool area of the rod. Before heating, the trammels are used to make a proof mark on the rod, which is then center punched, to use as a confirmation after the rod cools. After the rod has been brought to temperature, and has soaked for the necessary amount of time to reach the same temperature through the core of the rod, another mark is made with the trammels. This mark too is center punched. Then, measuring from this mark, another mark is punched in the rod the distance needed to shorten (or lengthen, as the case may be), so one only has to hold the trammel up to the marks to gauge progress. Then, the hammering commences with a convenient mass. It takes a number of blows to upset that amount of metal, and in the case of the right side, it required two heating/cooling sessions to get us where we needed to be. Both turned out to be very close to where they should be.

Another project that preceded the cylinder heads being installed, was the fact a number of the studs that fasten the cylinder head to the cylinder, had been drilled through into the steam ports at the tops of the cylinders. This required drilling and tapping these holes to a tapered boiler stud size, so they would seal steam tight when applied. Many of the other holes were not tapped straight, and the holes were just plain out of position in relation to the holes in the cylinder heads. One wonders how the thing stayed together in the first place. We made drill bushings to fit the cylinder head holes, and re-drilled and tapped a large number of holes to bring the holes straight, and in line in relation to the heads. This made it possible to apply the heads with all the stude in place. (When we took it apart, we had to remove most of the studs to get the heads off...) We also found a number of cracks in the right side

head. The cracks were vee'ed out, and welded up prior to that head being applied. It appears the cracks were caused by trying to stop leaks caused not by the head/cylinder joint, but by stud holes being drilled into steam ports.

The electrical system is now being worked on, which will see conduit installed in the cab, and out to the headlight, backup light, class lights, stack light, and where otherwise required. Much remains to be done, but we are pushing to have 401 running for Railroad Days 2010, and all help on this project is welcome.

Steam locomotive #191 was



**Above;** Progress is being made with the installation of stud bolts on top of the cylinder. **Below:** Wood lining has been installed inside the cab wall/ceiling.





repainted late this spring/early summer by Alex Kaper of Mahomet, as his Eagle Scout badge project. He, his father Jeff, and his brother organized and arranged the help of fellow scouts and parents to scrape, sand, prime, finish coat and trim out the entire locomotive and tender. This has been a very welcome improvement, and as soon as the lettering is reapplied, the locomotive will be placed back on display.

Left; Locomotive 191 is sporting new paint due to the efforts of volunteer Alex Kaper organizing family and a group of scouts to scrape and paint.. Below; The Interior of the Rock Island coach has made a dramatic transition in appearance with new upholstery. Below Left; Service Mater employees are cleaning the interior of Wabash Office Car #6.



This past spring saw the re-upholstering of the seats in Rock Island coach #2541, as well as the car receiving an interior washing, and cleaning/repainting of seat frame parts. The floor of the car also received a new coat of paint.

This spring also saw the cleaning of the exterior and interior of Wabash Office car #6. The interior cleaning, including upholstery and carpeting, was provided free of charge by Service Master of Champaign, this work arranged by Stan Rankin. MRM staff pressure washed the exterior/roof and trucks, removing quite a bit of grime, particularly from the trucks. We also built a DC power supply for the car, allowing us to plug the car into 240V single phase service, and run the 30v DC electrical system on the car. The electrical system does indeed work,



and has allowed more detail work to be undertaken inside the car. We also found, while cleaning, original Wabash blue paint under a cover plate on the blind end door. Some of this paint was flaking off, so a large piece was carefully removed, attached to a piece of cardboard, buffed out to remove the oxidized surface and expose fresh pigments. This piece was then sent to the DuPont color lab by our paint supplier for an accurate match. Early this summer, Service Master returned to MRM to strip, clean, and re-seal/wax the floors in coaches 2612 and 2920. Neither of these cars have had this done since they've been here, and were in desperate

need of a professional cleaning. 2920 required three men scrubbing for about four hours to get the original flooring and seat bases clean. Hopefully we will now be able to keep them looking good with some regular sweeping/mopping

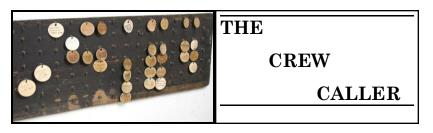
Work continues on IC diner #4112. This car saw much of the hallway floor replaced this past winter/spring, as well as floor heaters installed and tested. The overhead heat and duct boots were installed this past winter, and put in operation allowing the car to be heated while work progressed. This past spring, leak testing commenced on the air conditioning system. This turned out to be more involved than we had hoped, finding a number of leaks which had to be attended to. This system should be serviceable shortly, allowing work to continue inside the car in air conditioned comfort. In May, the spring fling crew put much body filler on the exterior, with a small amount yet to be applied, then another coat of primer prior to final filling/ sanding. The interior hallway and dining room ceiling were also finish coated with paint. New wall covering has been ordered, and will be installed this summer. There is still much to be done to this car to prepare it for Polar Express, so all help on it is much appreciated

**Below Left:** Work continues to refurbish the interior of the diner. **Below Right:** The exterior body of the diner is receiving extensive work to restore the car to operable service.





IC SD40 #6071 arrived this spring, after being generously donated by Canadian National Railroad. The locomotive was delivered without traction motors, so it is not currently operational. We have however, run the prime mover to test it and other systems, finding them all in good order. To make it operational will require about \$48,000.00 worth of traction motor combos, something that will have to wait for funds to be raised. This locomotive is very significant, being built in 1964, on an SD35 frame, as a test bed for the then new 645 engine. The locomotive spent a number of years in testing, a good part of it on the Santa Fe, wearing a "stealth" blue and yellow paint scheme with no lettering, except for its number at the time, #434. This locomotive became the prototype for the SD40 line of EMD locomotives, of which over 5000 would be built by EMD. The SD40 model became the backbone of many class one carrier's locomotive fleets. 6071 would eventually be purchased from EMD by the Gulf, Mobile & Ohio, where it wore the number 950. It then became ICG 6071 with the IC/GM&O merger, and over time worn all the paint schemes the IC has used after that merger. 6071 has been washed, and we are working on replacing the stolen number boards and horns, after which the locomotive will be placed on display .



# Interested in Volunteering In Train Service? TRAIN SERVICE TRAINING PROGRAM

The Monticello Railway Museum is an operating museum staffed by volunteers who donate countless hours towards restoration and operations. Each member contributes a talent they enjoy doing, and the public appreciates. These talents can range from the simple task of keeping the grounds in a neat appearance, to the more skilled areas of machining, welding, woodworking and other trades.

One aspect of the museum is the operation of the demonstration railroad. This is the collective skills of a train and engine crew working together, in a safe, professional manner which provides for a memorable train ride to our guests. The train crew consists of car attendant, flagman, conductor, fireman and engineer, all individuals with various skills, but the same interest of serving in train service. Perhaps you always wanted to be part of a train crew but the opportunities were just not there, or your choice of career path was not railroad related. If you have the interest to pursue this opportunity, maybe we can help!

As a member of the Monticello Railway Museum, you are qualified to become an active volunteer and with training, you can pursue that long sought desire to be a "railroader". Due to Federal Railroad Administration rules, insurance regulations and museum policy, a program is in place to train an individual for a train service position. In part these positions involve training for safety oriented procedures and conduct, which is governed by a Book of Rules, timetable, and an annual mandatory exam. Because of the aforementioned, the safety of the passenger, and the natural inherited dangers of railroading, undertaking this training should be done only by those willing to invest the determination and time necessary to become proficient. All participants' must successfully complete all the steps necessary to become qualified for their desired position as no exceptions can be made. For those volunteers with previous railroad experience, determinations of qualifications will be made on a case by case basis. A form will be provided to you to keep track of your hours of training. This form will be part of your permanent training file as well as documenting required hours of training.

#### Minimum age requirements:

Car Attendant		determined on a case by case basis.	
Student brakemen	15	Qualified brakemen	16
Student flagmen/conduct	or 16	Qualified flagmen/conductors	18
Student firemen	18	Qualified Firemen/Enginemen	18

A separate program covers engine service on steam locomotives.

#### CAR ATTENDANT

The requirements of the car attendant are limited in scope and responsibility. Insurance regulations require the presence of a museum member on any occupied car to be attentive. to the passenger's safety. The attendant, working under the direction of the conductor, is assigned

to a car and not only serves as an ambassador to the passenger, but is also watchful for any action that can endanger themselves and taking polite, but corrective action. The attendant also assists in the boarding of passengers, and the ticket lift. This position does not require training, but good public relation skills are most helpful.

#### **BRAKEMAN**

Please note that this is a progressive promotion system, beginning with student brakemen and ends with Qualified Engineer. To begin the training program, the trainee will be required to fill out a form for the training department to provide contact information and obtain (purchase through gift shop) a current Museum timetable, Rule Book, and a Basics of Air brakes book. These books will familiarize the student with railroad rules, safety procedures and basic air brake functions.

The entry level training of student brakeman will work with a qualified crew member for a minimum of six days in train service, which will afford the oppor-



tunity to observe and participate in train operations. This will be accomplished on the regularly scheduled trains that operate on weekends. In addition to working the demonstration train, one of the six days must be spent doing general switching to become more familiar with handling switches, connecting air hoses, hand signals and safety practices. After completion of training, the instructor and trainmen with whom you have been working with will verify that you are qualified to advance. The rules test will then be administered at a mutually agreeable time. The trainee will also have to attend and pass the annual rules class held in March which is designed to refresh everyone's memory prior to our operating season. This class is open to any member who may wish to attend. Although at this point you will be "marked up" as a qualified

brakeman and will be requested or "called" for train service, there is still much to learn, and one should continue to study the methods of others. Once promoted to position of brakeman, the student must work a minimum of 24 days before advancing to the position of student flagman/conductor.

#### FLAGMAN - CONDUCTOR

Student flagmen/conductors are required to work with a qualified flagman/conductor for a minimum of two days on the regularly scheduled trains. The student will familiarize themselves with the responsibilities of operating the train over the territory, the duties of the conductor, i. e., preparation of required forms (time slip, ticket accounting). It is also noted that good public relations skills will further advance your success. The trainee must again successfully pass an examination at which time they may be "marked up" as a qualified flagman/conductor.



#### THE TELEA DOAKE

#### ENGINE SERVICE

The aforementioned has covered requirements for train service and the following will outline training to obtain the position of locomotive engineer. In order to begin training in engine service, the trainee must first be qualified as a conductor. As a conductor, the individual will have developed the skills necessary to understand what and how train operations are performed. With this skill mastered, the entry level into engine service is the position of student fireman-diesel. Student firemen are required to work two days in the shop with mechanical department personnel for the purpose of learning the basic functions of the diesel locomotive. Note: These two days can be satisfied with any time previously worked in the program; provided those days are documented. On completion of the mandatory two day-training, the student will be "marked up" as a qualified fireman. Firemen must work a *minimum* of 10 days as a qualified fireman-, and pass the required exam, before being promoted to the position of student engineer

Under Federal Railway Administration rules governed by 49CFR Part 240, "Qualification and Certification of Locomotive Engineers" trainee will be required to submit forms (which are provide to the trainee by the museum) to the National Drivers registry, as well as to any former railroad employer, for the purpose of checking your driving record, and in the case of previous railroad service, your certification records from that road, if any. Once a favorable response has been received, the trainee will be scheduled for training. The student engineer is required to work a *minimum* of 30 days with a qualified engineer on an operating locomotive in either train or general service. After completion of the training with a qualified engineer, the Supervisor of Locomotive Engineers (SLE) will ride with the student engineer for at least one trip to make a determination of the student's ability to properly handle the operation of the locomotive and be in compliance with operating, safety, and radio rules. After successful completion of this training the student engineer will be required

to take the written engineer's exam. As with all exams, on successful completion, the student will be considered qualified and "marked up" as an engineer.

What does it take to be a qualified member of the train crew? An interest, determination, and pride to be part of a unique opportunity of railroading afforded to very few people. While it may appear to "take forever" to become qualified, the reward of success of obtaining the position of a long sought dream is well worth the time and effort. Remember, while we may not run trains as fast or as far as major carriers, our equipment is just as heavy and unforgiving of mistakes. In fact, in many ways, our equipment is much more varied than that found on today's railroads, and will take more time to become familiar with. However, one should not become discouraged. It should be pointed out, on major railroads, becoming qualified as a conductor can take between 6 months to a year, working nearly every day. For the major railroad, a student engineer one can expect to spend another minimum of six months in training, if not a year, before being qualified. Again, this is working nearly every day. We hope you will avail yourself of the opportunity should this be something you have always wanted to do, as your help will be sincerely appreciated. Welcome to the MRM and ALLLL...AABBOOOOOARDDD!!!

### "GIRL'S JUST WANNA HAVE FUN"











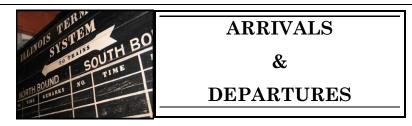




## MONTICELLO RAILWAY MUSEUM P O BOX 401

**MONTICELLO, ILLINOIS 61856** 

#### THE NEWSLETTER OF THE MONTICELLO RAILWAY MUSEUM



#### INTRODUCING THE CELEBRATION COACH

- MRM is now offering the opportunity to reserve a coach for private charter during weekend train operations at reduced rates. Call MRM at 877-762-9011 or call Judy Jenkins, Marketing & Sales Coordinator, (217) 972-0078 for details or reservations.
- Railroad Days September 19th & 20th: Come ride our vintage passenger and freight trains on the former Illinois Central and Illinois Terminal trackage.
- <u>Ghost Train</u> October 23d-24th-25th 30th-31st: ALL ages can enjoy a train ride through Camp Creek Hollow with a stop at Cemetery Road... but only the BRAVE should check out our Haunted Boxcar!
- <u>The Polar Express<sup>TM</sup></u> November 27th-28th and December 4th-5th: Read along with the story as the train makes its round-trip journey to the North Pole.
- Lunch on the Train With Santa December 5th-6th A train ride and lunch with Santa!!