



THE WCR PRESS

VOLUNTEER & STAFF EDITION



Issue No. 4 - Tuesday, April 28, 2020

FOURTH EDITION

Welcome back to our Fourth Edition. Behind the scenes we are planning for not only when our trains can begin to operate again but to implement a plan where our passengers and visitors feel safe travelling with us.

Through the WCR Press we hope to stay in touch with our volunteers, neighbours and partners during the temporary shut down and showcase the initiatives being undertaken that are required to keep the WCR operating in a safe fashion.

We enjoy providing a brief history of our heritage operating rail collection as well as other railway operations in the area over the years.

If you have questions that we can address in future issues, please do not hesitate to get in touch.



6593 in our new colours heading south over the Conestogo River bridge in the summer of 2019.

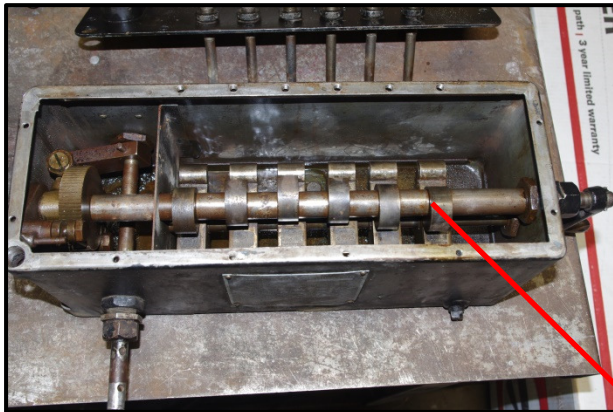
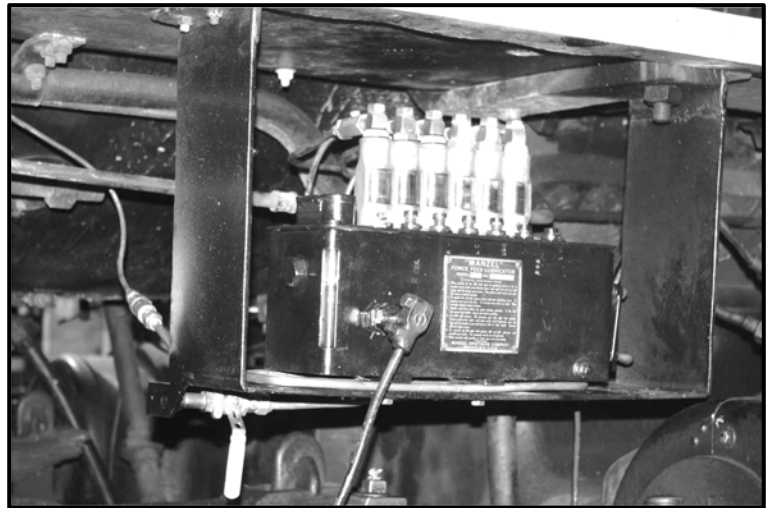
Steam Locomotive No. 9 Lubricators – Dave Banks

Steam Locomotive No. 9 has 2 lubricators to lubricate critical components when the locomotive is running. One is a mechanical lubricator to provide lubrication to the valve chests & cylinders and the bottom slide bar of the crosshead. The other is in the cab, a hydrostatic lubricator to provide lubrication to the air compressor.

Mechanical Lubricator

This lubricator is not the original and was fitted sometime during its rebuild. It is located just behind the cylinder on the engineer's side of the locomotive.

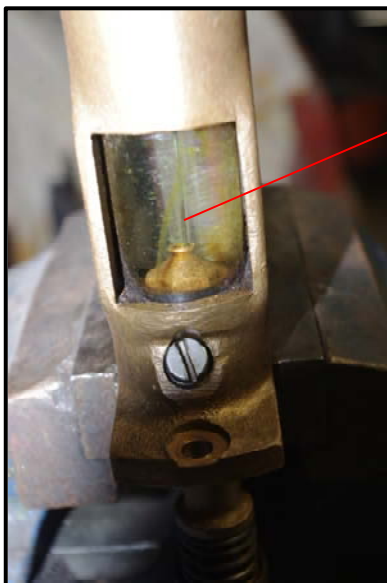
It is driven by a linkage off the valve gear. It has six individual lubricators, 4 feed the valve chests & cylinders on each side of the locomotive and the other 2 feed lubricant to the bottom slide of the crosshead on each side.



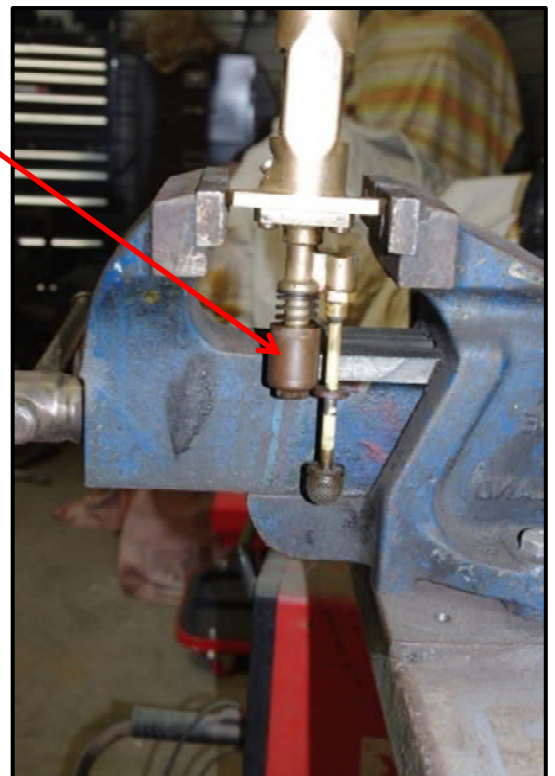
Plunger

Cam

Looking inside the reservoir we can see the ratchet drive mechanism and the six cams that operate the plungers of the individual lubricators.



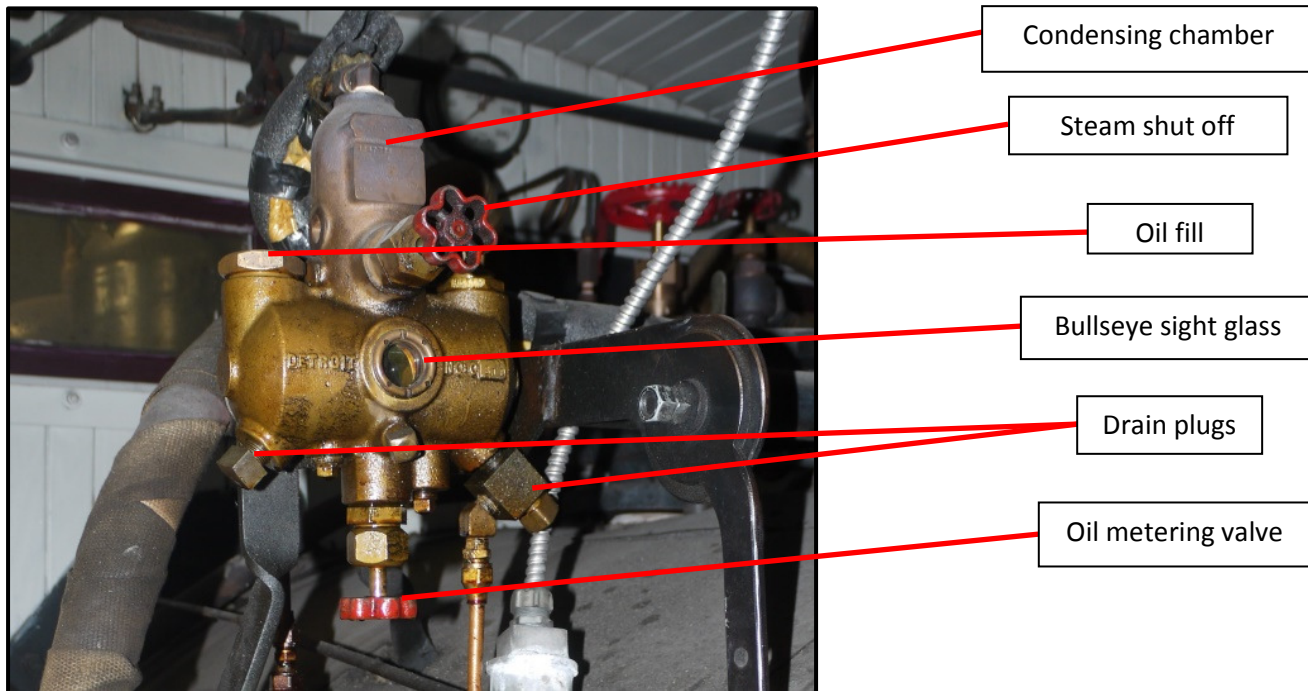
Thin wire that a drop of oil travels up to exit



This is one of the six sight glasses. They are filled with glycerin, very viscous, the pump on each stroke puts a drop of oil into the bottom chamber and it then travels up the wire to exit into the lubrication line. Each one of the six can be adjusted to the amount of oil delivered.

Hydrostatic Lubricator

The locomotive has a second lubricator to provide lubrication for the air compressor. This lubricator is located in the cab on the fireman's side and he is responsible to ensure it is filled before each run and set to deliver the required amount of lubricant. This like the mechanical lubricator uses heavy steam oil.



So how does it work, there are no moving parts on this one.

Steam comes from the main steam turret on top of the boiler. The steam enters the condensing chamber where it condenses to hot water. The main cast gunmetal body has two chambers, one if full of water and the other the lubricating oil. The bullseye sight glass is full of water, the metering valve is opened, and a drop of oil enters the bullseye due to the hydrostatic pressure of the water. Oil is lighter than water, so it floats to the top and exits into the steam line where it emulsifies with the steam on its way to lubricate the steam side of the air compressor. Very simple but works well. The fireman sets the metering valve to allow one drop of oil every 30 seconds.

WCR History – The Waterloo Spur From Its Beginnings to Now – *Matthew Whitely*

The former Canadian National Waterloo Spur is well known for many things. Since its opening, the line has seen everything from steam hauled passenger service, to trains serving long-gone flour mills and even light rail transit!

The Waterloo Spur was built in 1891 by the Waterloo Junction Railway (WJR) to provide rail service to towns in the Woolwich area. The line was originally planned to go to Drayton, but for financial reasons, this section of the line was not completed. Instead, the line was built to the town of Elmira and was named the Elmira Branch.



Original GTR Waterloo Station



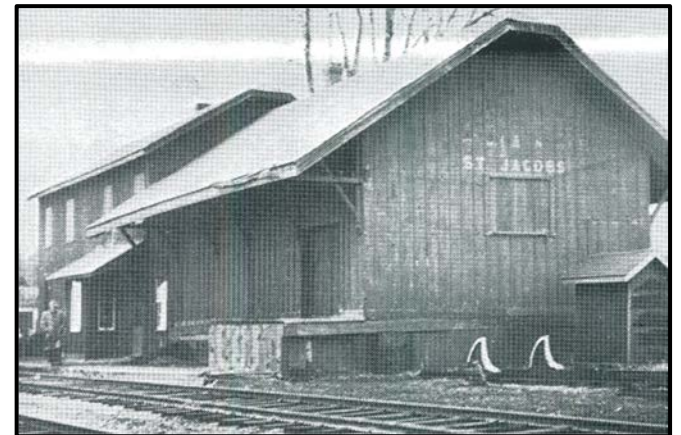
Current Waterloo Station in the early part of the last century with the daily passenger train to St. Jacobs and Elmira at the platform.

Although the track going to Elmira was not completed, the first trains began operating on the line between Berlin (Kitchener) and St. Jacobs to provide rail service to E.W.B. Snider, who shipped flooring materials for export. During construction, the line was purchased by the Grand Trunk Railway.

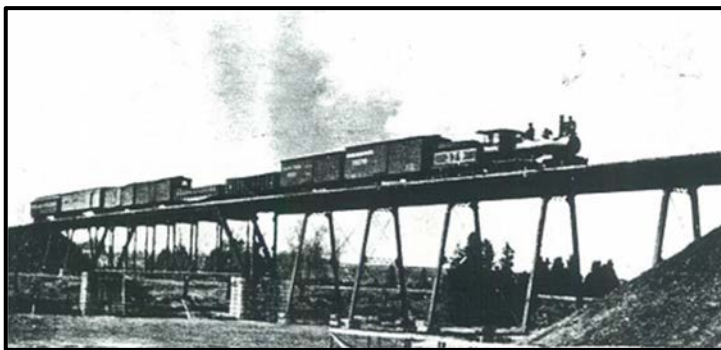
Stations were built in downtown Waterloo, as well as in the villages of St. Jacobs and Elmira. A two-stall roundhouse and turntable were also built in Elmira, as well as a warehouse and coal shed in St. Jacobs. A contract signed with Woolwich Township stated that the new line and all railway facilities (e.g. stations) had to be completed by December 1, 1891. In addition, the railway was required to operate one train a day (passenger or freight) on every lawful day of the year.

On November 27, 1891, the Elmira Branch was officially completed and opened with a special 12-car train. Passengers aboard the special train included several GTR executives and operated from the northern end of the line at Elmira, to the city of Berlin (Kitchener).

When the Elmira Branch was first opened, train service was operated several times a week. Trains were restricted to 15 mph on the line due to the numerous bridges and curves. Depending upon events taking place in the City of York (Toronto), ridership would increase or decrease. At the peak of operations, the line saw six passenger and three freight trains a day.



The long-ago demolished St. Jacobs Station from two different views.



Train on the Conestogo River bridge in 1892. Note the foundations for the current bridge under construction.

In 1923, the Grand Trunk became part of Canadian National Railways. The Elmira Branch became part of CN's Waterloo Subdivision which extended south of Kitchener (renamed in 1916 from Berlin) to Galt.

In the mid 1930s, passenger service was discontinued on the line and trains were operated as mixed freights. A mixed freight is a train which consists of both passenger and freight equipment.

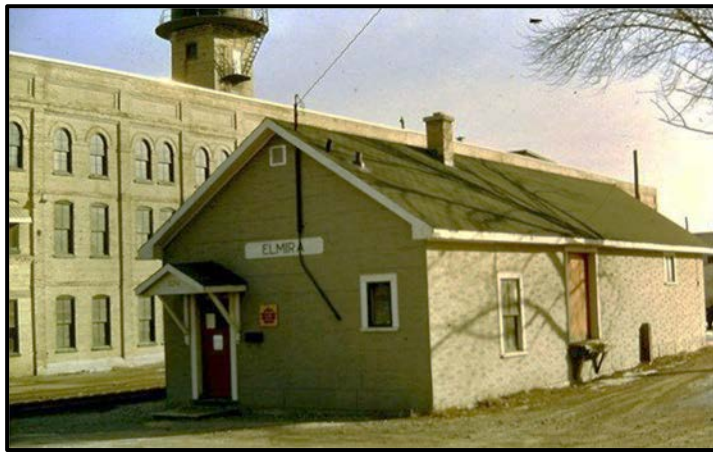
Train wreck on the Waterloo Spur in September of 1902 at a place between what is now Randall Drive & Farmer's Market Rd.



Mixed freight trains were common on smaller branch lines where full passenger trains were not needed. Passenger service eventually ended on the line and the line became used for solely freight service.



Early Grand Truck Railway Elmira Station



Last CN structure serving Elmira

Between April 1973 and October 1974, the line was renamed to the CN Waterloo Spur from Subdivision. During the 1990's CN corporately started to lease on a long-term basis various secondary main lines throughout their system.

In that group was the Guelph Sub which runs from Georgetown to London through Guelph, Kitchener and Stratford. The Waterloo Spur connects with the Guelph Sub mainline at Ahrens Street in Kitchener.

In 1998 CN entered into a 20-year lease of the Guelph Sub with Rail America (later purchased by Genesee & Wyoming Railroad) who set up the Goderich Exeter Railway Company (GEXR) to provide service on the Guelph Sub.



GEXR 2210 passes by the old Waterloo Station heading south the Kitchener in March 2011



GEXR 2210 passes over the Martin Creek bridge in Woolwich Township heading south in March 2011

As part of that lease with CN, the GEXR provided freight service on the Waterloo Spur to the various customers in Waterloo, St. Jacobs & Elmira.

On July 31, 1995, the line was purchased by the Region of Waterloo. The line retained its previous name and continued to operate solely as a freight line until 1997, when a new tourist train arrived.

GEXR 2236 passes WCR 1556 at the Uptown Waterloo Station in March 2011



The Waterloo St. Jacobs Railway (WSJR) began operations on July 12, 1997 using two former VIA FP9 locomotives and several ex-VIA passenger cars. WSJR operated from Uptown Waterloo to north of St. Jacobs and at times Elmira.

The WSJR also built a replica station in Uptown Waterloo, where their excursions began. In 2000, the WSJR ceased operations and the equipment was sold to various railways and organizations.



Waterloo St. Jacobs Railway Passenger Train

In 2007, the Southern Ontario Locomotive Restoration Society, a registered not-for-profit, relocated its St. Thomas Central Railway heritage tourist operation from St. Thomas to the Waterloo Spur establishing the Waterloo Central Railway (WCR). The WCR is a licensed shortline railway under the provincial Shortline Railways Act.

WCR trains originated at the Uptown Waterloo station formerly used by WSJR. In 2015, the Region of Waterloo's began construction of the new ION LRT system on that portion the Waterloo Spur which the WCR used from Uptown Waterloo to Northfield Drive in Waterloo.



Uptown Waterloo Station & original WCR Diesel Locomotive No. 1556



Original WCR Diesel Locomotive 1556, passenger train and No. 9 in 2007

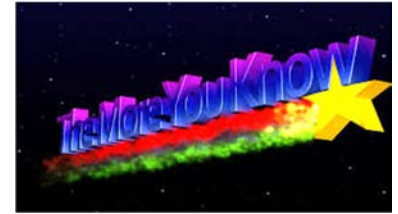
WCR moved its passenger service north and trains began operating between the St. Jacobs Farmers' Market and the town of Elmira. Following the completion of the ION LRT system, the WCR opened our new platform at Northfield Drive in Waterloo directly across the street from the Northfield Drive ION station to provide a direct connection that would allow passengers to take a railed vehicle from Kitchener to Elmira for the first time in over 80 years.

In November of 2018 CN took back the leased Guelph Sub from the GEXR and now is the freight service provider on the Waterloo Spur.



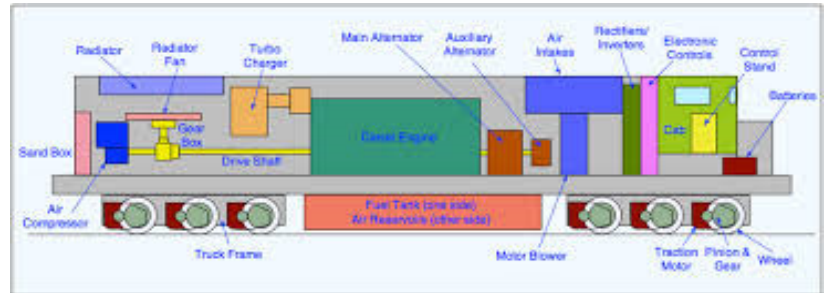
And Now You Know – Second Edition - Norm Gelinas

I'd like to share with you some of the questions I have been asked over the years about railroading and diesel locomotives.



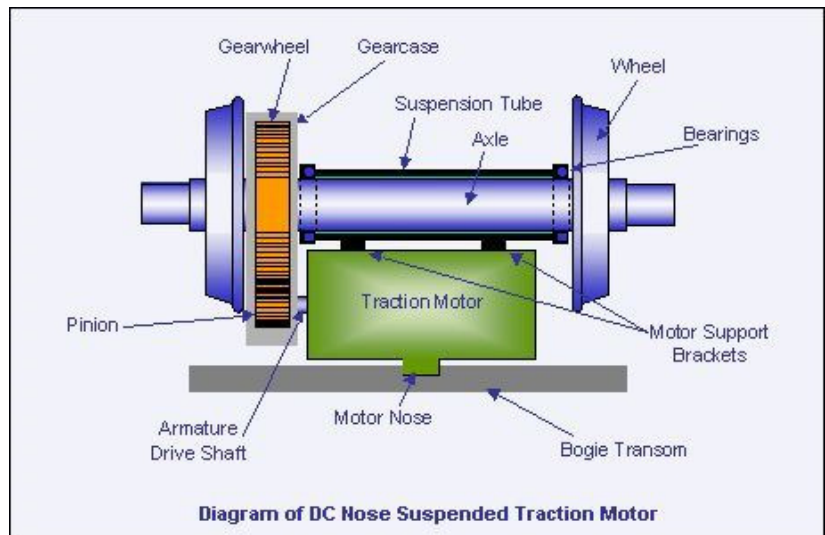
1. **What is a diesel locomotive?**
2. **How does it work?**
3. **How much does it weigh?**
4. **What can it do?**
5. **Does it have a steering wheel?**

1. **The diesel-electric locomotive principle** is quite simple really; the diesel engine is the heart of the system that drives the following: main generator, air compressor, fans and blowers, fuel, water and oil pumps.



2. **How does it all work?** Well, when the engine is running, it drives a main generator, which delivers electricity (current) to electrical motors mounted on the wheel axles. These motors are referred to as traction motors and have a pinion gear pressed on to one end of the motor.

The wheels have a much larger gear pressed on to them and is referred to as the bull gear. The pinion gear meshes with the bull gear and is in positive constant contact at all times. When the locomotive engineer opens the throttle, an electrical message is sent to the traction motors to start working.



The pinion, which is engaged with the bull gear, begins to turn. Because the four traction motors are connected and synchronized to the four pair of wheels, they receive this message at the same time, and the wheels start turning.

3. **How much does it weigh?** One WCR 4-axle locomotive weighs approximately 100 tons or 200,000 pounds.
4. **What can it do?** Well, in the beginning it was the common workhorse that produced the horsepower, replaced by the mighty steam engine that eventually was driven to the scrap pile by the more efficient and powerful diesel electric locomotive. To this day engineering and physics measure and rate all locomotives in terms of horsepower. Most Class I locomotives today are rated at 4300-4400 hp. One WCR locomotive by comparison is rated at 1000 hp. Very powerful, efficient and dependable workhorses with the ability to transport and deliver freight and passengers on a steel highway all across the land!
5. **Does it have a steering wheel? Keep reading!**

DID YOU KNOW?

What is one of the world's largest locomotives?

In the early 2000's GE Transport started building the AC traction 6000HP diesel electric locomotive. The locomotive weighs in at approximately 430,000lbs. or over 200 tons. CPR purchased the smaller GE version, same size locomotive, but with only 4400HP. I had a few occasions to ride and work on these locomotives before my retirement, which was not only exhilarating but also overwhelming. The fuel tank capacity is 5500 gals. In comparison, one of our WCR locomotive fuel tank capacity is 8000 gallons. Three of these locomotives coupled together are capable of pulling over 10,000 ft. trains.



GE AC6000CW Demonstrator

Union Pacific Railroad, one of the largest Class1 railroads in the U.S. are experimenting and running trains that are 15,000 feet in length, carrying anywhere from 200 to 300 railcars, powered by a consist of three or four of the world's most powerful units. If you think about it that's almost three miles long. We're all going to have a long wait at railway crossings

TRACTIVE EFFORT

When the locomotive engineer opens the throttle to move his train, physics takes over. Mechanical energy is converted to electrical energy and this energy referred to as Tractive Effort is measured in pound force (lb./F). A 4400-hp locomotive on level track would have a starting Tractive Effort of 188,000lb/F. Another term you will hear me talk about later is adhesion, what is basically wheel to rail contact. This will be discussed in more detail next edition.

REMEMBRANCE DAY

Canadian Pacific (CP) unveiled five specially painted locomotives last year on Remembrance Day in Canada and Veteran's Day in the U.S. honoring the armed forces. The five locomotives were painted in five different colors and patterns that the Canadian and U.S. Military applied to tanks, planes and warships.



STEERING WHEELS

So, about this steering wheel thing. I have been asked on more than one occasion if locomotives have a steering wheel. Once a schoolteacher friend of mine asked if she could bring her class for a tour of the shop to see the locomotives. She asked me if they had a steering wheel so when all the kids climbed aboard the locomotive and started asking the same question I knew where it was coming from. I think they were all a little disappointed with not seeing a steering wheel and that the answer was **NO! locomotives do not have steering wheels**, but they enjoyed ringing the bell and pulling the cord for a short toot!

AND NOW YOU KNOW.

Passenger Coach 1437 Restoration Update – *Kim Martin*

The passenger coach car No. 1437 was built in December of 1923 by the Canadian Car and Foundry, based in Montreal Quebec.

The car was used extensively by Canadian Pacific Railway and was retired from active service in 1970. It served several functions, as a work train service car and then as a secondary coach on the Dominion Atlantic Railway before being sold in 1981 to National

Museum of Science and Technology. Southern Ontario Locomotive Restoration Society (SOLRS) obtained the car in April of 2000 saving this historical beauty from the scrap bucket. The vehicle is 90 ft long and weighs in at 60 tons.

Of specific interest to railway buffs is that this style of coach was the pattern used for the movie Polar Express® from a sister vehicle in the California State Railway Museum in Sacramento California. One must only watch this film to see the potential for restoration and fall under the spell of “I Believe”.



The vehicle is a classic passenger coach from the golden age of train travel and was initially deployed as a second-class car with high volume seating (88). Each set of bench seats was associated with a window and was easily reversible to change the seating configuration based on the current need. Bench seating all facing in the same direction or sets of bench seats facing each other.

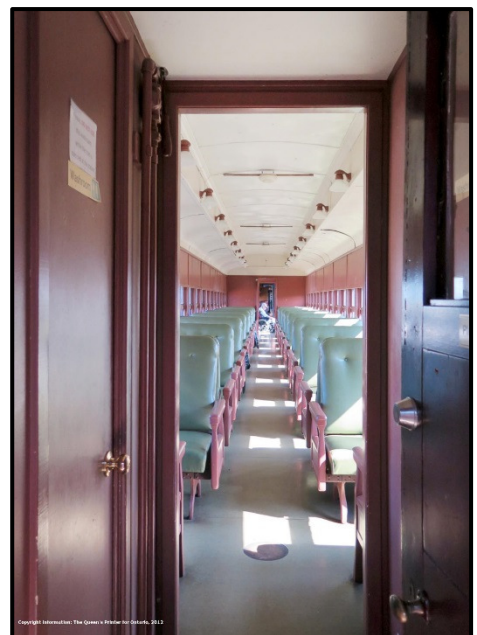
This vehicle had been modified over the years away from its initial configuration and a vestibule was added that housed hinged windows for stand-up observation. This vehicle has been used extensively on Waterloo Central and has seen a lot of wear and tear. A decision to return the vehicle to the original configuration was

made and an evaluation of the work needed was undertaken. Jim Arnott is the prime mover and project manager for this restoration and has a wealth of knowledge at his fingertips.

The most obvious modification would be the removal of the hinged windows and upgrading of the current sash style windows to more thermally friendly ones, this would return 1437 to its original classic coach car vestments. The addition of in-car heating to replace the obsolete steam lines, that were the original heating method was to be considered as well as a means of providing cooling during the summer.

Upon examination of historical records, the cooling method originally employed in this car was vents in the ceiling that were shuttered for cold weather and opened in warm weather to create a draft between the open windows and the ceiling vents.

It was decided that we should return to this historical cooling method and as a side benefit, several of the vent screens could be used for the audio system without interfering with the car look and feel as an historical vehicle.





Upon initial examination it was noted that the roof of 1437 was in a condition that indicated major repairs could be needed.

To fully examine the structure, the internal ceiling was removed, and three separate areas were identified as being problematic and needing internal reconstruction.

However, the root cause needed to be determined and an examination of the roof from above indicated the root cause was simple and easily repairable. The entire roof did not have to be replaced only patched in 4 places and a replacement of the roofline ridge.

The ridgeline was the root cause of the damaged internal structure. A plan was drawn up and estimates of work required was made.

The replacement of the windows was taking place under the supervision of our Honorary Master Carpenter, Brian Ray and the initial frames were produced.

A team of workers cleared out and placed into storage all the seating. The walls were then stripped of their coverings to clearly expose the window mechanism.

During the initial strip-down of the ceiling, the lighting system was removed and after a little investigation the **“UGLY”** maroon painted lights were exposed to be brass fixtures painted ugly maroon.

Needless to say,... one obsessive compulsive individual started to clean them up and with the help of Maria Mouradian (who became a sandblasting devotee) the 22 lamps were sandblasted and brushed and painted. A single finished unit was powder coated to display the finished product.



Enter COVID-19 and all work had to be halted on all our restoration projects. An aggressive timeline to return 1437 to service had to be abandoned and the joy of returning this jewel to operational service must be delayed. However, in the immortal words of Winston Churchill, **“We will never surrender”**.

Rest assured once we are able to get back to work, plans and scheming will continue to return this classic lady to the glory she so richly deserves.

Volunteer Updates

Our Volunteers are the backbone of the organization and without whom we could not operate. Each Edition will provide a few photos of our valued volunteers as an introduction.



*Victor Menhennet
Trainman*



*Grant Scheifele
Master Painter*



*Brian Raye
Master Carpenter*

On The Spur



CN Extra 3208 East takes their train orders on the hoop from long time day shift Operator Norm Perrault at the Kitchener Station. Later in the day on the trip home to Stratford they will head north on the Waterloo Spur to switch out St. Jacobs and Elmira. February 1972



Prior to heading home to Stratford, CN Extra 3208 West heads north to St. Jacobs and Elmira having just left the Guelph Sub and is shown crossing over Breithaupt and Ahrens Streets in Kitchener. February 1972



CN 3726 heading north to St. Jacobs and Elmira at the Guelph Sub switch to the Waterloo Spur. March 1972



*CN 5509 heading north to St. Jacobs and Elmira approaching the Waterloo Station in March of 1975.
Note the changes and the tracks no longer there.*



GEXR 2210 heading back from Elmira with one tanker passing through Waterloo Towne Square prior to the construction of the ION LRT – about to cross over King Street and through the buildings – March 19, 2011

Local Railway Retrospective

The Grand River Railway (CPR) day job from Preston with SW1200RS 8162 in the old tuscan and grey colour scheme, departs Kitchener for home heading south to the spring switch at Mill Street in Kitchener. They are entering the joint section with CN that runs to Hayward Ave in Kitchener which was and still is known as the South Jct. The track they are coming off is no longer there and is now a section of the Iron Horse Trail. Joe Hauser is the Locomotive Engineer.



COVID-19 Operational Update

We continue to monitor the Emergency Directives issued by the Province of Ontario and will remain temporarily closed until at least mid-May or as otherwise directed by the Province of Ontario and/or the Provincial and Regional Health Unit. It is in mid-May the Province will review the Emergency Directive, but they have said schools will remain closed until the end of May. It is reasonable to assume that regardless of the final determination regarding the Emergency Directive we will not be operating during the month of May in its entirety.

We are working on a plan for not only a Safe Seating Plan but also new and improved cleaning protocols during each train trip as well as before the next train day. We completely support all efforts to flatten the curve and anything that leads to a safer society for all of us.

On behalf of the Board of Directors of SOLRS and the WCR Management Team we hope you and your family's are safe and healthy during this time of uncertainty and thank you for your continuing interest. We look forward to the time when this is a memory and we are all doing again what we love and enjoy.

This issue compiled by Greg McDonnell, Dave Banks, Norm Gelinas, Kim Martin, Matthew Whitely and Peter McGough with special assistance from Victor Menhennet, Irvon Weber and Russ Deacon.

Southern Ontario Locomotive Restoration Society

- President – Norm Etheridge
- Vice-President – Dave Banks
- Secretary – John Vieth
- Director – Aaron Schnarr
- Director – Irvon Weber
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Waterloo Central Railway

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- Assistant General Manager – Greg McDonnell
- Marketing & Communications Manager – Beverly Brenneman
- Shop Foreman, Scheduling & Volunteer Coordinator – Matthew Schilling
- Steam Team Manager – Irvon Weber
- Assistant Steam Team Manager – Dave Banks
- Manager of Safety Systems – Kim Martin
- Manager of Training – Dave Banks
- Assistant Manager of Training – Russ Deacon
- Ticketing & Customer Service – Anna Schnarr
- Accounts Payable & Bookkeeping – Claudia Dauria
- Systems Analysis – Ebu Siren
- Honourary Chief Mechanical Officer – Norm Gelinas
- Honourary Master Painter – Grant Scheifele
- Honourary Master Carpenter – Brian Ray



OUR ORGANIZATION

The Waterloo Central Railway is owned and operated by the Southern Ontario Locomotive Restoration Society; a non-profit charitable organization made up of largely volunteers dedicated to the preservation, restoration, and operation of vintage & historic railway equipment. The Waterloo Central Railway is a licensed shortline railway under Shortline Railway Act of Ontario.