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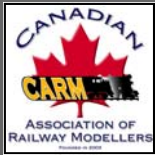


SPRING 2014 ISSUE #47

RAILFANNING COWL UNITS IN THUNDER BAY SITE OF THE 2014 CARM CONVENTION



a quarterly publication of the "Canadian Association of Railway Modellers"



THE CANADIAN ASSOCIATION OF RAILWAY MODELLERS

Founded October 15, 2003
Founding Members: John Johnston, Peter Moffett,
David King, Lex Parker

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FRONT COVER

PHOTO TOP BY GERALD HARPER: CP 9011 SD40-2F on 23rd October 2010 heads eastward past the Marina Park viewing area. This viewing area is a short walk from the convention hotel and has picnic tables etc as well as a spectacular view in the other direction of the bay and islands and ships when not watching trains.

PHOTO BOTTOM BY GERALD HARPER: CN 5559 SD60F mid town Thunder Bay yard waiting for return empties train to prairies 30th April 2012



observation platform john johnston: editor

WHAT HAPPENED TO THE CALENDAR?

For the last half dozen or so years, David King has done sterling work in putting together a calendar for all of us to enjoy, month by month. To accomplish this he utilized his skills with Photoshop, but most importantly, he relied on the photographs that you the membership sent in to him. This year he didn't receive enough photos to put a calendar together. All is not lost however. There is still the potential to put together an 18 month calendar for the last half of this year and all of next year. **What is required is photographs of either the prototype or models.** If you have a photograph you would like to see displayed please forward them to David at calendar@caorm.org. See the Ad below for specifics.

DESIGNING A PAPER MILL FOR THE GRAND TRUNK SOUTHERN: USING THE INTERNET FOR RESEARCH

As you are aware from my prior ramblings I had re-

searched several lines in the US Northeast to create a prototype for my freelanced Grand Trunk Southern. It had come down to the Buffalo, Rochester & Pittsburgh, or the Lehigh Valley. I finally decided on the Lehigh Valley because it would give my fictitious line a clear run from New York to Chicago utilizing the Grand Trunk Southern, the CN line from Fort Erie to Windsor, and the Grand Trunk Western. Moreover, the back story is grounded in some sense of reality since in 1965 the Interstate Commerce Commission had ordered the majority owner of the Lehigh Valley, the Pennsylvania Railroad, to sell it as a condition of the ICC's approval of the Penn Central merger. Pennsy approached C&O and N&W, but both rejected the overtures and the Lehigh Valley would eventually enter bankruptcy in 1972 and be included in Conrail in 1976, though much of its trackage would be abandoned. In my modeling scenario, Canadian National through its US subsidiary Grand Trunk Corporation has entered the fray and purchased the Lehigh in 1966. Why would Canadian National take the plunge. Three reasons. One, in 1965 the Canadian Government de-regulated railroads, almost 15 years ahead of their US counterparts giving the railroads more freedom to make these types of decisions. Two, there had been a major increase in the amount of cross border trade between the United States and Canada, particularly in automobiles and automobile parts. Grand Trunk Western had the largest share of the auto industry

A Call for Image Submissions for the 2014/15 CARM Calendar

If you have an image that you would like to submit to us for use in the 2014 CARM calendar please read the following. We need 6 high quality images of prototype scenes and 6 high quality images of model railroad scenes. These images need to be in sharp focus for most of the image, well light, well composed and of interest. Images should have a minimum resolution of 2000 pixels in width and 1300 pixels in height, landscape format. You do not need to edit the image as we would prefer to edit the image ourselves as to maximize the image for the printer. To submit an image for consideration follow these steps.

Submit a small JPG image (less then 100kb in size) for consideration

Obtain all of the information about the image including:

Location

Date

Photographer

Camera stats

Owner of items in the scene

description of scene

Once accepted send the large file as a JPG, RAW, TIFF, etc.

Send your submissions to calendar@caorm.org

in the Detroit area but was only realizing short hauls on most of the traffic. Three, of the three Grand Trunk Corporation properties, GTW, DW&P, and CV, only the DW&P was turning a profit and subsidizing the other two. CN management had ordered GT to make any changes necessary to improve their profitability.

In researching the Lehigh Valley, I purchased several Morning Sun books and in one of them saw a reference, but few photographs of a paper mill at Mehoopany, Pennsylvania. How to find out more?

I started by Googling the Lehigh Valley Railroad which led me to a website, which can be found at <http://www.anthraciterailroads.org/lvrrmodeler/>. On this website is information about the operations of the Lehigh including a Chart of Online Shippers and the Traffic Generated for the years 1969 through 1972. In 1972 the P&G mill at Mehoopany generated 24,687 carloads of traffic. That is 67 cars a day if they operated every day of the year. It is a huge mill. Unfortunately, there are no photos of the mill on the website.

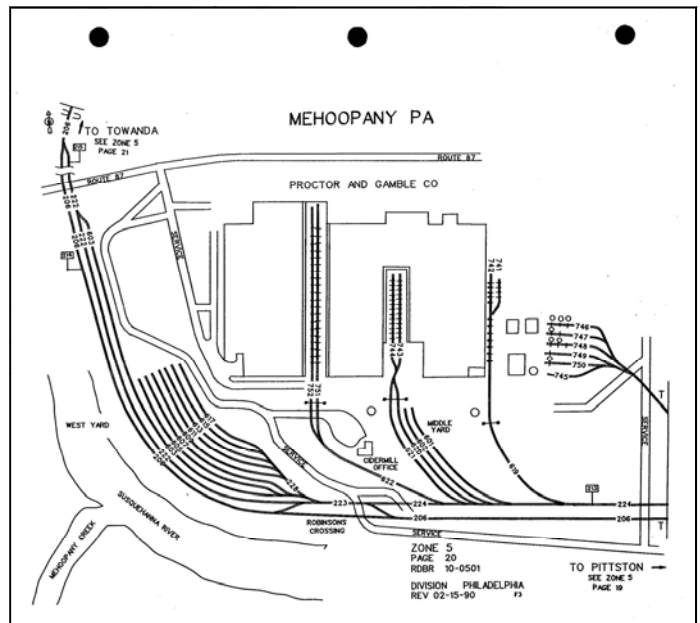
My next stop was a site called Penn Pilot. This is a website run by the University of Pennsylvania and has both Satellite, and Birds Eye view photos of much of the world, as well as historical aerial photos of Pennsylvania. This site can be found at <http://www.pennpilot.psu.edu/> Knowing that I wanted to look at Mehoopany, it was easy to find the mill. Here is a sample of the view that this site gives you.



As you can see in the aerial photo, the plant is built right along the Susquehanna River, with the large plant train yard following the river's contour.

The aerial gave me a good sense of the track plan as it existed currently, however, the breakthrough came when I was perusing back issues of Model Railroad Hobbyist and columnist Mike Rose talked about Conrail ZTS

(Zone Track Spot) Plans and a site that had archived them. That site is: <http://www.multimodalways.org/archives/rrs/rrs.html>. These ZTS plans show not only the track structure, but also the buildings, and a description of what each tracks purpose was. Here is the ZTS plan for the Procter and Gamble Mehoopany mill.



The description on the next page told me exactly what each track was used for.

The other important factor for me was that this mill relied completely on pulp for its raw material. It's a personnel preference but I really didn't want to get into woodchip hoppers and another loads east, empties west problem.

I have a pretty good idea how paper mills work but there was one problem which I did find perplexing. The aerial photographs showed covered hoppers in the

yard. I knew the mill produced Pampers Diapers, Bounty Paper Towels, and Charmin Toilet Paper, which were shipped in clean boxcars. Pulp arrived in single door 40 foot boxcars, mostly from Brazil through the port of Philadelphia, but on my layout from Northern Ontario. Tank cars hauled in chemicals and perfume and hauled away waste sludge. Yes, they used perfume to give those diapers that fresh smell. But, what were those covered hoppers for? The breakthrough came at the

ZONE 05	Rev 08/01/93
PAGE 20	
05 206 00 00	Lehigh - Secondary - Tk.
05 222 00 00	West - of - Robinson
05 223 00 00	Robinson's - Crossing
05 224 00 00	East - of - Robinson
05 228 00 00	West - Yd. Lead
05 601 00 00	Mehoopany - Middle - Yd. #1 - Stub
05 602 00 00	Mehoopany - Middle - Yd. #2 - Stub
05 603 00 00	Mehoopany - West - Yd. Tk.#3
05 605 00 00	Mehoopany - West - Yd. Tk.#5
05 607 00 00	Mehoopany - West - Yd. Tk.#7
05 609 00 00	Mehoopany - West - Yd. Tk.#9
05 611 00 00	Mehoopany - West - Yd. Tk.#11
05 613 00 00	Mehoopany - West - Yd. Tk.#13
05 615 00 00	Mehoopany - West - Yd. Tk.#15
05 617 00 00	Mehoopany - West - Yd. Tk.#17
05 619 00 00	A & B - Leader
05 620 00 00	C & D - Leader
05 621 00 00	C & D - Runaround
05 622 00 00	K & L - Leader
05 741 01 04	Procter & Gamble - Stock Prep - A
05 742 01 12	Procter & Gamble - Stock Prep - B
05 743 01 13	Procter & Gamble - Whse. C
05 744 01 13	Procter & Gamble - Whse. D
05 745 99 99	Procter & Gamble - Sludge
05 746 01 03	Procter & Gamble - Tank Farm - F
05 747 01 02	Procter & Gamble - Tank Farm - G
05 748 01 03	Procter & Gamble - Tank Farm - H
05 749 01 01	Procter & Gamble - Tank Farm - I
05 750 01 01	Procter & Gamble - Tank Farm - J
05 751 01 20	Procter & Gamble - Whse. K
05 752 01 20	Procter & Gamble - Whse. L

Port Hope Convention when I had a chance to talk to Mike McGrattan of Rapido Trains who used to work in the paper industry. Talc, said Mike, it is a common ingredient in paper production.

The Internet had provided me with all the data I needed. Now it was time to fit this monster of a mill into the 2 foot by 10 foot area that I had set aside for the paper mill. The mill had two yards, only one of which shows on the diagram I have posted in The Canadian, and east yard and a west yard. I would only have room for one. The plant had two warehouses entrances, both double tracked and I wanted to retain both of those. There was a pulp track which would have to be retained. The tank farm on the prototype is 6 tracks wide. I retained one track for the talc, and two chemical tracks.

The prototype tracks are at 90 degrees to the mainline, however, with only 2 feet to work with in depth, I had to settle on my tracks going back at about a 30 degree angle.

This overview shows the track as it is currently installed.



The mill yard, the East Yard is just around the corner in the upper left of the photo above and can be seen in the photo below. You will notice that one of the four yard tracks is separated from the others. The top three tracks



in the photo are for empty and loaded product cars, empty and loaded pulp cars, and talc hoppers. The fourth and separated track is for the chemical tank cars which are kept at a distance from the others.

The next step in my design process was to rough up some buildings from old cardboard that I had laying around to see how the structures would fit into the scene. Even though the plant covers a very large land area, the buildings are not very high. For that reason I wanted to make sure that they would fit in and that the trackwork would not overwhelm them. Much of the area to the right of the buildings will be occupied by a tank farm, settling ponds and lots and lots of piping.



Having used a prototype mill for the basis of my planning I feel very comfortable with the track layout that I now have. More importantly I had found some very useful tools for planning on other parts of the layout.

The Conrail ZTS (Zone Track Spot) plans cover the entire Conrail system from the heart of Chicago to Pittsburgh and its steel mills, to Buffalo and its grain elevators, New Jersey, and its port and harbours and everywhere in between. Granted they are hundreds upon hundreds of pages, but are fascinating to leaf through. You could name almost any industry that you wanted to model and it was located somewhere on the Conrail system. The ZTS Plans give you a good understanding of not only the layout of tracks but what each was used for, from which you can extrapolate where cars would be spotted.

I have two other small towns on the layout and used ZTS Plans of actual towns as the inspiration for the design of those.

Building the Paper Mill is still a few months ahead of me as I finish installing track, wiring, installing switch machines and the myriad of things that go into building a layout. When I do, however, I will start a series on the mills construction and perhaps we can learn a few things together as this major scratchbuilding project proceeds.

John Johnston, Editor



William Waithe, Peter Hughes, and Carl Kinzinger ponder their car orders.

Toronto Chapter:

The planned operating session at the HO Model Engineers Society (HOMES) club layout was held on a very cold evening in November. Although the numbers were reduced due to the weather and the distance, those who attended spent an enjoyable evening. Things were fairly quiet during the holidays. An operating session was held on 11 January at Willie's N scale CN Weston Subdivision layout. Six members attended and we all had a good time with our switch lists and the session was a success in spite of the CTC rail traffic controller (WW) messing things up.

Promotion for CARM at several train shows for the Spring is being planned. The Lakeshore Model Railroaders Association's annual Flea Market is back in Toronto after a few years in Milton and our chapter, along with the Credit Valley chapter will have tables side by side with banners and the CV's working module in April to

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promote CARM membership.

On Tuesday, 11 February we will meet at City Hall where Stephen Gardiner of the Toronto Railway Historical Association will present a talk entitled "Restoration Activities at the Toronto Railway Museum" and John Hinbest of our chapter will present a talk entitled "Diesels over the Years". Other activities for the Spring session are being planned.

This is the last year of my and Joan's mandates (as Chair and Secretary respectively), so we will be looking to our members for new leadership to take over in June.

Golden Horseshoe Chapter:

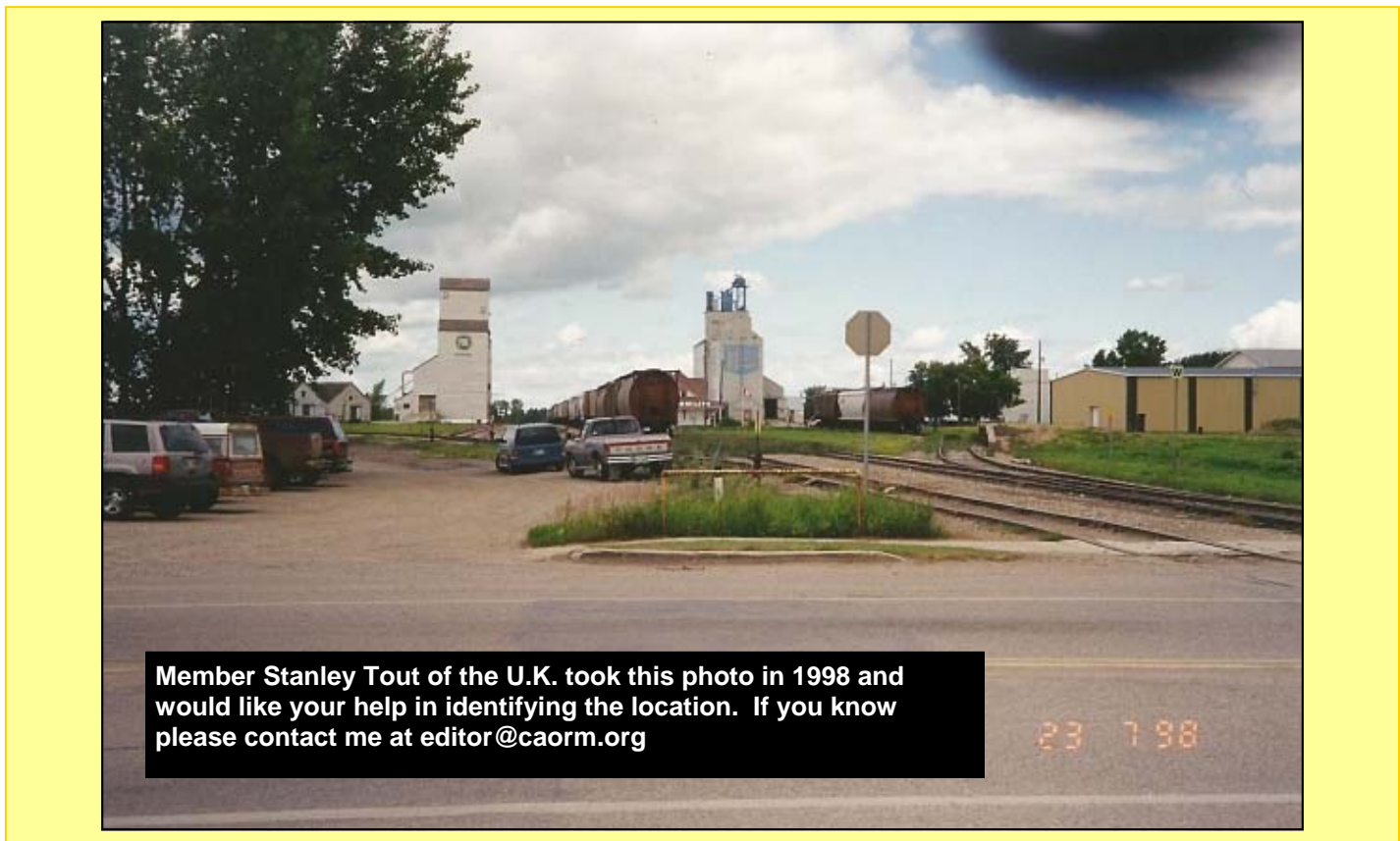
The next Golden Horseshoe Chapter meeting will take place at the Royal Canadian legion, Dundas, Ontario on Saturday April 26, 2014. This will be our Annual General Meeting and Election of Officers will take place. If you are interested in holding office as Chair of the Chapter, or Secretary Treasurer, please submit your name to Tom Allan and the position(s) for which you wish to run.

David King will be continuing with his electronic clinic and will be doing a track occupancy detector circuit. This is used to trigger the flasher board that we made at the first part of electronics last April.

We will have layouts on display from 9:30 a.m. to 11:00 a.m. Meetings start at 11:30 a.m. Admission \$2, guests welcome. For information contact Tom Allan at thomaseallan@shaw.ca



Peter and Carl operate in the yard



Member Stanley Tout of the U.K. took this photo in 1998 and would like your help in identifying the location. If you know please contact me at editor@caorm.org

HOW TO FIND INEXPENSIVE SPEAKERS FOR DCC SOUND INSTALLS by John Hinbest

I received my first DCC sound decoder as a present. On opening the package I found the decoder but no speakers. It took about 15 minutes to figure out how the 9 pin jct connector works (a web site photo helped). I looked on the Internet for speakers and found the size that I needed (about 1 inch) from the DCC makers site. I then checked on a wholesaler's web site and the speakers were selling for about ten dollars each. On my way to the hobby shop, I stopped in at a dollar store. On the shelf with the ear buds and smartphone accessories I found a set of headphones for two dollars (I needed two speakers for this locomotive). Since headphones are designed for a full range of frequencies they can handle the sounds required for a DCC sound install. The headphones I purchased are *Electra headphones h4poa1*. After taking the headphones apart with a flat screw driver and wire cutters I now have two speakers that fit well in my HO locomotive as shown in the photo below.



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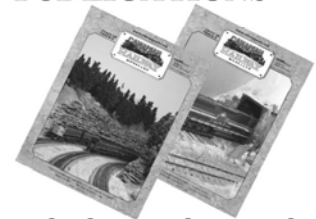
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PUBLICATION SCHEDULE FOR *THE CANADIAN*

The Canadian is published four times per year.
Submission by authors or Chapters should be submitted
by the following dates.

Spring Issue: February 1 Summer Issue: May 1
Fall Issue: August 1 Winter Issue: November 1

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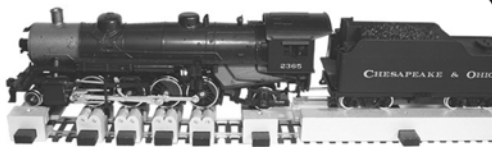
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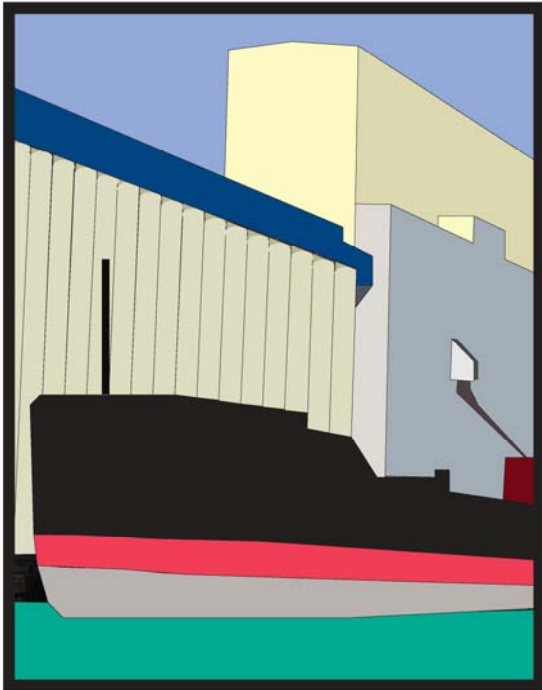
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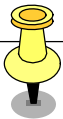
C A R M CONVENTION
THUNDER BAY



SEPT 30, OCT 1 & 2,
2014

About the Convention

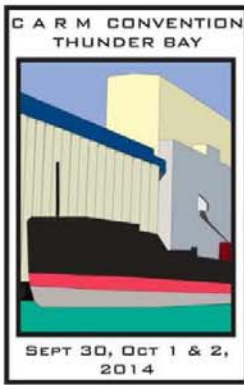
We invite you to join us at *Rails to the Lakehead*, the CARM, national convention for 2014 being held in Thunder Bay, Ontario at the Prince Arthur Waterfront Hotel. There will be 3 days of railroad activities including clinics, prototype tours and railfanning. Planning is well underway and our line up of confirmed prototype and layout tours is going to be one of the best tours experiences of all our conventions. Clinics will also feature an impressive line up of speakers. Finally in another first for CARM the convention will be held in one of the classic railway hotels of Canada. Plan your attendance to coincide with a railfanning experience across some of the most spectacular railroad scenery in Canada at the height of the fall colours.



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Rails to the Lakehead

The Canadian Railway Convention

www.caorm.org

Sept. 30, Oct. 1-2, 2014

The Prince Arthur Waterfront Hotel and Suites
17 N. Cumberland St.
Thunder Bay Ontario

Registration Form: Part 1: General Information

First Name: _____ Last Name: _____

Address: _____ CARM Membership #(optional): _____

City: _____ Province/State _____

Postal/Zip Code: _____ Country: _____

Phone Number: () _____ Email Address: _____

Mobile Phone Number: () _____

Part 2: Primary Registrant:

Tag Name (First & Last): _____ (postmarked by August 1, 2014) \$ 60.00 _____

(after date of August 1, 2014) \$ 80.00 _____

Note: Preferred rate only postmarked by **August 1, 2014**

Part 3: Additional Registrants (Must be immediate family & same address only please)

Tag Name (First & Last): _____ (postmarked by August 1, 2014) \$ 15.00 _____

(after date of August 1, 2014) \$ 20.00 _____

Tag Name (First & Last): _____ (postmarked by August 1, 2014) \$ 15.00 _____

(after date of August 1, 2014) \$ 20.00 _____

Part 4: Tours (postmarked before Sept. 15th)

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**Tour C: RICHARDSON INTERNATIONAL GRAIN
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Tour Preference: 1. ___ 2. ___ 3. ___ (Put tour letter in order of most preferred[1])

Registration Form Details:

Please fill out all information located on the Registration Form

Part 1. If you have an Email address please include this information as it is our preferred method of contact when sending out registration confirmations and other information. If an Email address is not included or is invalid information will be sent by 'snail mail'.

Mobile phone is not required, but useful in case we need to contact you during the convention.

In **Part 2** please complete the name to be shown on your name badge.

In **Part 3** please add any additional registrations for other members of your immediate family that live at the same address.

In **Part 4** please indicate if you want to purchase any of the 3 tours being offered. After you have chosen your tours, please indicate at the bottom of the section your preferred tours, as some tours may fill up quickly and we are trying to make sure tours are available for all convention participants.

Note that the Richardson Grain Elevator tour is limited to 20 participants

In **Part 5**, you can purchase Banquet tickets. Please note any special dietary requirements and we will advise the catering staff accordingly.

In **Part 6**, please place your order – cut off date 1st August 2014. No additional shirts will be available at the convention. The committee cannot give assurance as to the fit of the stated sizes.

In **Part 7** please indicate in some detail items you are bringing for display. A secure area will be provided but we need to know how much space is required.

Finally please complete **Part 8** and mail the registration form and your cheque in Canadian or American funds payable to **Canadian Railway Convention** to the address on the Registration form. Don't delay – do it NOW. It will take just as long to complete if you procrastinate!!

Convention Cancellation Policy

Cancellations must be postdated by August 30th, 2014 for a full refund, by Sept. 15th, 2014 for a full refund minus any food / convention wear. There will be NO REFUNDS after Sept. 21st, 2014. Any refunds will be issued after the convention.

Latest Information

Since this is written in March 2014 things can, and doubtless will, change! All changes will be posted to the convention web site at www.caorm.org.

Please direct enquiries about registration to:

Walter Reid at registrar@caorm.org or the convention committee at convention@caorm.org.



Photo by Gerald Harper: Grain elevator, now disused, in Port William. Located on the river, which is no longer deep enough for the ships in use today.

ACCOMODATIONS

The Convention Hotel will be the Prince Arthur Hotel. Built in 1911 by the Canadian Northern Railway it became part of the Canadian National hotel chain after the nationalisation in 1917 and has continued to this day as one of the elegant "railway" hotels gracing all the important railway cities of Canada. The hotel overlooks the Canadian Northern Port Arthur station, the CN and CP mainline tracks and Lake Superior on the east side, while to the west one emerges right into the heart of the northern commercial district of Thunder Bay, convenient to shopping, restaurants and the casino.

Located at 17 North Cumberland Street, the hotel itself has an interesting history. Over a century ago, the idea for a Canadian Northern Railway hotel came up during a poker game between several big players travelling in a private rail car to Winnipeg. John James Carrick, the Mayor of Port Arthur, and Sir William Mackenzie, President of the Canadian Northern, and Sir Donald Mann, wielded the cards around the table and bet on a winner when they made a deal resulting the erection of the Prince Arthur Hotel in 1910. It's a wonderful story and it would be even better if there was any proof it was true. Unfortunately, Carrick's story was told for the first time in 1962 when he was 89 years old.

The Prince Arthur Hotel officially opened march 14, 1911 at a cost of \$850,000. It was described as one of the best furnished and appointed hotels on the continent. Today the Prince Arthur can be described as the only hotel in Thunder Bay that can offer a spectacular view of the Sleeping Giant. As tales of old are spun, one can enjoy the hotel's recent updates. It's newer interior meets the needs of both corporate and traveling clientele without compromising its century old charm.

One event held at the hotel stands out above all others. Meeting at the hotel in 1921 the Great War Veterans Association of Canada made the decision to adopt the *Poppy* as a remembrance of those who died. On November 11, 1921, *Poppies*, were distributed in Canada for the first time.

Rooms at the convention rate of \$90.00 Cdn. per night will be available until Monday, 15 September 2014. For information on the hotel and to book rooms, see the website: <http://www.princearthur.on.ca/> and go to accommodations. When booking, cite code number 184141 and CARM to obtain the convention rate.

A list of other hotels, motels, camp grounds and trailer parks will be provided in *The Canadian* closer to the Convention dates.

CLINICS CONFIRMED CLINICIANS

Bill Skrepichuk, "An Overview of CPR Construction 1883-85 along the North Shore of Lake Superior"

The presentation includes an Image rich account of the section between the Nepigon River and Pic River highlighting major Bridge works, Cuts Curves and Tunnels, Quarries, work Camps, and others.

Ed Freeman, "Port Arthur's iron mining past"

A review of the impact upon Port Arthur of railway construction and iron mining.

Gerald Harper, "Thunder Bay area railway bridges - something for everyone"

The rugged terrain of the north shore of Lake Superior combined with the deltaic environment of Thunder Bay has created the topographic environments for every conceivable style of engineered railway bridge. From high trestles to bascules and swing bridges this presentation will highlight the why's and where's of these bridges and provide insights on what and how to model.

William Waithe, "The CN Weston Subdivision : Modelling freight operations of an urban industrial area"

A brief description of the subdivision as it was in the past and as it was in 2000 when we began operations will be followed by a description of the (proto-freelance) layout and how its design was retro-fitted to simulate the prototype.

Gerry Dube, "Scenery made easy with natural products."

Mike Walton, "Prototypical British Operation on the Lostock Junction Railway."

Windermere is a terminal station in England's Lake District. In the summer of 1953, a weekday's operation started at 5:10 a.m. with the arrival of the 23:05 from London Euston. At the end of the day (23:05 p.m.) 20 trains had arrived, been reversed and sent back down the line. On the "OO" gauge Lostock Junction Railway, these operations are replicated at a model of Windermere Station. There are mainly passenger trains but two goods trains arrive daily to be

MODEL RAILWAY SHIPBUILDING: PART II DETAILING THE SHIP SURROUNDINGS

TEXT & IMAGES BY TED RAFUSE



In a previous issue of *The Canadian* the article 'Model Railway Shipbuilding' appeared. While the construction of the vessel was challenging and satisfying, once the ship was docked, the setting required enhancement for a visually stimulating diorama. From a modelling perspective, creating that stimulating diorama creates a challenge.

Details, details, details are the absolute necessity to render a convincing miniaturization. What follows is my description of adding some of those details. My effort was not intended to create a museum quality rendition; rather my satisfaction lay within what was acceptable to the layout parameters of my modelling.

Before starting this description, there is one suggestion that is true for any modelling project. If you start to tire, or if you start to make mistakes, or if other irritations create frustrations, that is a signal to remove yourself from the project. Do something else – cut the grass, shovel the snow, watch your favourite sports team on television, take your partner to the cinema. Suspend your modelling to avoid greater frustration and mistakes.

The Apron Counterweight

Many years ago, on a previous layout, an apron and counterweight apparatus were constructed. The apron did not suite the current situation but the apron lifting and lowering mechanism did. No photographs in my possession clearly revealed the entire counterweight apparatus in Cobourg so such could not be used for reference.

Several images did however reveal certain significant aspects of the original equipment. Research began

PHOTO ABOVE: A view of the completed scene with an Ontario boat at its berth. This is not a representation of what was rather it is a scene of modeler's license. The boat is adjacent to the station and the turntable denoting a part of the terminal facilities at Cobourg harbour. (The electrical switch panel was put in long before the room became a layout room. The subsequent ship location made any image of this area impossible to capture without the switch panel. In hindsight, poor planning!) The harbour becomes a busy place when a passenger train arrives at the station and the boat is about to board passengers for a cross lake excursion. While not historically accurate with regards to actual location perspective, this layout diorama completes a vital segment of my model Cobourg & Peterborough Railway layout.

with a view to modeler's license. Several magazines and booklets were consulted as well as volumes focusing on railway car ferry topics. With this information floating in my imagination, a plan, without blueprints or sketches, evolved. At this point in time all the details of construction have evaporated so what follows is a recreation of that project.

In order to ensure a square and flat surface all assembly was performed on a glass surface. This ensured a perfectly flat, durable surface that is easy to clean of excess glue.

The primary material used in the counterweight sub assembly was 12" x 12" scale strip wood. These strips were 'aged' using solvent gray paint. (Now I would use a solution of methyl hydrate and several drops of

India ink, the quantity of the latter will determine the degree of weathering.

All required lengths were pre-cut so as to be ready for assembly. Four base pieces were cut 14½ feet long for use as the base for the upright columns. Next eight columns were cut each 17 feet long. Fourteen support spacers 4 feet long were the next pieces cut. Ten 'tops' were cut to a length of 7 feet. Four 20 foot long timbers to be used as braces were then cut. All cut ends were touched up with paint at this stage.

Assembly started with the layout of each base and support and this was repeated for a total of four pieces. Using two bases 14 feet long, glue a 4 foot spacer to each end, 2½ feet in from each end such that both base units are joined. On the inward side of the base unit add a second set of 4 foot support spacers leaving a scale one foot between each pair of glued spacers. This will provide two column bases.

To each base unit, glue eight 17 foot columns between the spacers on the base. At the top of each set of columns glue one 7 foot top timber. Atop each top timber, glue a 4 foot support spacer at each end and one in the middle. Next three cap timbers of 7 foot length were glued across the top of the column assembly commencing with the first timber centred and the two outside timbers flush with the outside of the columns. This should leave a small 'air' gap between these cross timbers.

Using the same weathering technique as above, a fifty foot strip of 6" by 6" lumber was prepared to be used as tie bracers. This strip was then cut with four pieces 7 feet long and four pieces 5 feet long. To each column assembly, on the side away from the apron, glue one 7 foot tie bracer so that the bottom of the brace is eight feet from the bottom of the base.

The 12" by 12" support braces were next glued in place. These will require some angled cutting and perhaps some sanding. The support braces are angled through the pairs of support columns in the following manner. The base of the support brace is six feet from the column base and positioned on the side away from the apron. The bottom of this base required cutting/sanding so that when positioned between the columns it rested on the column support brace. The top of this timber was also cut/sanded such that a flat surface at the top of the brace supported the top of the column cross brace. Trial and error testing, and sanding, brought these support braces to their appropriate length and angle.

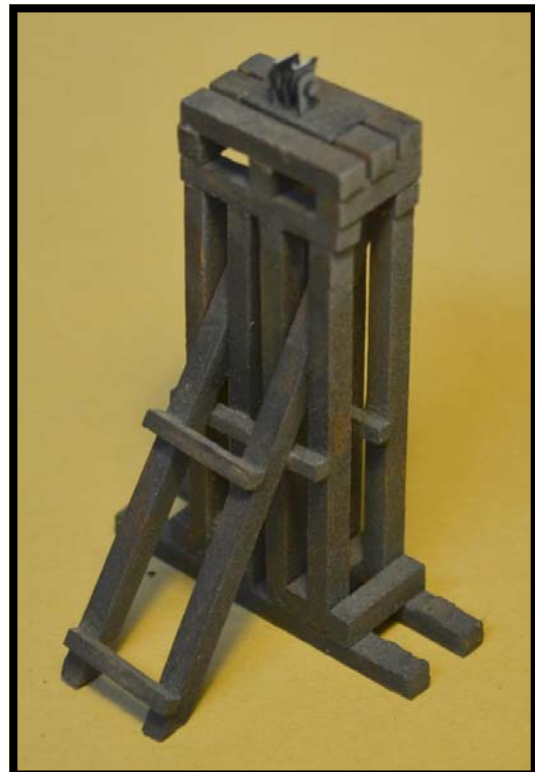
The pivoting counterweight mechanism was the next sub assembly focus. Most of this assembly was made from styrene sheet. The exact thickness of styrene used is not recalled but most likely was .015, perhaps .020. Since appearance not scale reproduction was the essence, either thickness will suffice. You may wish to paint these parts as you build them.

The pivot arm is 20 feet long by 2 feet high at ei-



PHOTO ABOVE: The two major components of the apron assembly are illustrated above. On the left is the arm link sub assembly: attached on the right end is the steel barrel counterweight while on the opposite end is the link to the bottom of the apron. When the arm is pivoted, the link and the counterweight move in opposite directions. On the right is the timber sub assembly that supports the link, arm and counterweight sub assembly.

PHOTO BELOW: This view of the support sub assembly demonstrates the varied parts of cut and angled timber used in construction. On top are the metal links that when attached to the pivot to the arm will allow the latter to pivot thereby moving the apron vertically.



ther end. To add interest (frustration?) the arm is not a rectangle. Thirteen feet from the end that will be linked to the counterweight the height is 3 feet rising ½ foot from a centre line. Two of these shapes are required.

A piece of styrene strip the same thickness as the arm but one foot wide was glued to the top and ends of the arm. A shorter similar strip was added to the bottom of the arm leaving a gap of two feet at each end to allow for the swinging link attachment.

Stiffeners of the same strip styrene but cut in half lengthwise were glued to the arm. On each side, one stiffener was added where the arm is at its greatest bottom to top and the second set was added 6 feet from the counterweight end.

A pivot made from sheet and strip styrene for the arm that rests on the top of the support columns came next. For each arm a pivot base was made from scale 15" by .020 styrene cut 3 feet long. This was attached to the bottom of the counterweight arm and positioned to the outside of the longer stiffener. Two shorter pieces were cut to length and placed on top of this base to bring the sub assembly even with the bottom arm stiffener. Using a piece of 12" by .020 strip styrene two lengths 1½ feet long was cut. These were then cut diagonally to create two triangles. A set of two triangle stiffeners was glued to the pivot base and the side of the arm. This was repeated on the opposite side on the second arm.

The counterweight was made from 5/16" styrene tube cut a scale 12 feet long. To each end a slightly larger diameter of sheet styrene was glued. Once the glue was dry the edges were filed to the same diameter as the tube. Using sheet styrene a triangle 2¼ feet long by 1¾ feet high was cut. Measuring up from the base the top ¼ foot of the triangle was cut leaving a short top feature parallel to the bottom. Glue this truncated triangle to one end of the counterweight tube.

A .030 or .035 hole (I don't recall what size was originally used) was drilled in the top of the triangle to accommodate a segment of styrene rod. Two strips of .020 styrene were cut 5 feet long to create the hanger. Using a pin vise with drill and holding these two hangers together a hole was opened trough the end of both pieces.

Intricate delicate work came next. The end of a small blade screwdriver was heated and then touched against the end of the styrene rod. This melted the end of the rod creating a 'rivet.' The rod/rivet was pushed through one of the hangers, through the counterweight triangle, and through the second hanger. The rod was cut to a sufficient length to be heat treated in the manner described above to create the second rivet head. Be sure to leave sufficient length to the rod to allow the hangers and the counterweight to move freely after the second 'rivet' is created.

Drill a similar hole in the arm about one foot in from the counter weight end and one foot above the



PHOTO ABOVE: The timber support column as viewed from the interior, track side. On top is the linkage that will allow the arm to move. Three 'metal' support braces are glued to a floor plate. Two additional plates will be 'welded' to the base of the arm. This arrangement is base, arm, base, arm and base. Through all five pieces a 'metal' rod is located. A 'rivet' assembly at each end of the rod assures all components remain in place.



PHOTO ABOVE: This view is a close-up of the arm subassembly. Despite the black colour the details can be noticed. Note the base plate and its two support triangles that will be 'welded' to two of the fingers on the top of the support column. Also are the axles and 'rivet' assembly at the top of the apron link and the counterweight. The same axle and rivet component appears on the top of the counterweight.

base. In a similar manner as above, create a sandwich using the counterweight arm and the two hangers and create another rivet assembly.

At the opposite end of the counterweight arm drill a similarly placed hole. Cut two styrene strips a scale 50 feet long. Cut a third strip 45 feet long. Glue a sandwich of these strips together leaving the inside strip three feet short of the end. At this end, drill a hole through the two outer strips. Attach this assembly to the counterweight arm in the same rivet manner. This assembly is the link to the underside of the apron that allows the apron to be raised or lowered. On my model these linkages simply drape down beside the apron and disappear from sight.

Next the base of the pivot assembly that sits atop the column was constructed. A 2' by 4' base was cut from sheet styrene. All following pieces were cut from 2" by 12" strip styrene. For each pivot assembly five pieces of strip styrene 1½ feet long were cut. A hole was drilled through one end of each piece of cut styrene. Once again make a rivet end from styrene rod. Thread the five pieces of strip styrene onto the rod, cut the rod to length, and form the second rivet head.

Using glue very sparingly attach segments 2 and 4 of this sub assembly to the bottom pivot plate on the counterweight arm assembly. When dry, glue segments 1, 3 and 5 to the column base plate. When all was dried

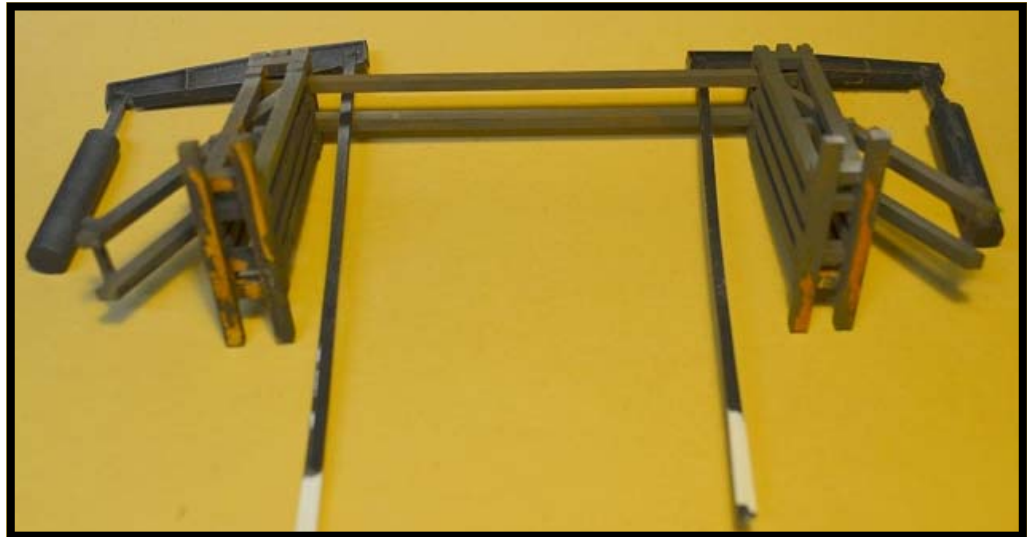


PHOTO ABOVE: The assembled components of the apron counterweight structure are visible in this photograph. Time and patience are required to complete all the parts of this apparatus due to some of the moving parts.

PHOTO BELOW: The construction of the actual apron/bridge is not described in the article, but a close scrutiny of this image reveals that a flat surface, two segments of track and some strip wood are the essential components of this structure. The lowering and raising sub assemblies are in place on the layout. The ferry structure is absent so that the apron arrangements are more clearly visible.



the base plate was 'Gooed', centred, to the top of the column tie timbers.

The distance between the two columns depends upon the width of the apron. In this situation, two pieces of 12" square timber 41 feet long were cut. These timbers slip between the two spaces atop the column structure. This provided 33 feet between the column bases, sufficient to allow their placement on dry land and to allow the apron to move, theoretically.

The Berth

For a change of construction, the wooden buffer berth became the focus of activity as the second requirement involved in the diorama. A trip to a hobby store resulted in the purchase of 18 pieces of scale 3" x 12" strip lumber measuring a true 24" long. A mixture of India ink and methyl hydrate stain 'weathered' the strips. These were then set aside.

Creating the curve to accept the shape of the ship's hull came next. The boat was placed on .040 styrene sheet of appropriate length. The hull's shape, approximately 18 inches long, was traced with a pencil. A second straight line was marked one full inch from the first line resulting in a one inch wide strip to the outside of the hull line. This curved shape was then cut. Similarly a second shape was located from the opposite side of the ship.

Using the same sheet styrene, two rectangular 3/4 inch wide strips were cut the length of each contoured curve part above, approximately 18 inches. You should have two pieces in total. (Remember which side is the side that will be against the hull!!)

The rectangular strip and the curved strip were glued together using liquid cement so that the joint was hidden beneath what became the top portion of the L shaped berth subassembly. One side had added pieces of sheet styrene added as stiffeners. Experience suggested that once the wood strips were added to the subassembly the stiffeners were not required so they were not added to the second side.

A Northwest Short Line Chopper was used to cut multiple pieces of weathered strip wood to 9 scale feet in length. These 'boards' were cut from weathered strip wood as described earlier. Commencing at one end, these 'boards' were affixed to the plastic side of the berth sub assembly using 'Goo.' Each board is flush with the bottom of the sub assembly to allow several feet to project above the L shaped frame work. Boards were attached until the entire sub assembly was lined with wood. The opposite side was similarly completed.

A strip of 8 inch square timber was glued to the land side of the berth timbers a scale 15" above the 'floor' of the buffer boards. As a final weathering, the top cut ends were brushed with the weathering mixture to blend those portions to the side weathering.



PHOTO ABOVE: In order to determine the curve required for the ferry berth 'bumper', the boat was placed on a sheet of .040 styrene and the curve of the hull traced. Once the curve was traced, the line was cut leaving about one inch of material to the land side of the curve. The two curved pieces that will provide the 'berth' curve are visible on either side of the ship.



PHOTO ABOVE: A strip of styrene to be used as the wall was glued to the underside edge of the curved berth segment. The resulting L shaped assembly was braced with triangular styrene stiffeners.



PHOTO ABOVE: Once the berth formers were complete with the wood bumping timbers glued in place, the sub assembly was affixed to the layout. (The metal shape on the right is a weight used to hold the assembly in place until the glue dried.)

The berth sub assemblies were affixed to the layout base with carpenter's glue leaving a gap of about 1½ scale foot between the buffer planks and the hull of the vessel. This allowed for the appearance of a wooden bumper strip that ran along each side of the hull a foot or so above the water line. This bumper feature was not modelled. This gives the appearance that the ship is not touching the top side of the berth when the ship's bumper actually was in contact with the berth sides.

Passenger Platform

The final sub assembly associated with the ship 'diorama' was the construction of the passenger loading platform. All aspects of this structure were arbitrary. My knowledge of civil engineering is grossly minimal. What follows might make a professional engineer cringe but from my modelling perspective the finished product appears appropriate. The actual loading platform altered in configuration over time so the simplest in appearance was selected to more or less be representative on the layout.

Primary consideration was to use on hand strip wood. All strip wood was weathered as necessary for construction use. The raised platform was built to 20 by 12 scale feet. (In retrospect for appearance it should have been 30 scale feet in length.) A perimeter frame was formed using 2 x 8 foot strip wood. The four pieces were butt glued together using white glue. The frame cross pieces were cut 11½ feet long to create the 20 by 12 foot box. Multiple 2 x 6 floor planks were glued in place.

With the platform upside down, four 6 inch square by 22 foot posts were placed in each corner and glued perpendicular to the platform frame. Using 2 x 8 inch strip wood, stringers were added to the interior side of the posts along the long sides. Using 6 x 6 inch strip wood, diagonal braces with ends cut at a 45 degree angle, were added to each post for stability.

Two 2 x 8 inch stingers were centred longitudinally along the underside of the platform a scale 6 inches apart. Five posts were added to the underside of the platform. One was positioned midway the length of the platform and between the two additional centre stringers just affixed. One post was glued evenly spaced along each exterior side. All these posts were braced with 6 by 6 inch strip wood as described earlier.

Despite the height of the passenger platform no sway bracing was discerned in any of the available images. This model was not an attempt to replicate what was, rather it was intended to create a sense of what was. For visual interest, various sway braces were added to stabilize the posts. The accompanying image (s) best illustrate the location of these 2 by 6 inch sway braces.

By deduction from an image, the safety railing on the platform was quite high, about four feet. Fourteen posts 5 feet high were cut to begin construction of the

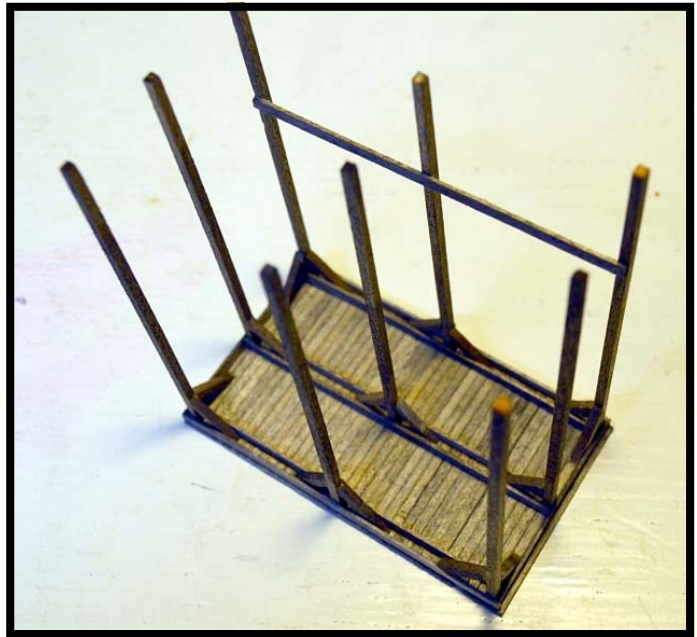


PHOTO ABOVE: Illustrated in this image are several features of the passenger platform underside. Visible are the inside longitudinal stringers into which were set the 6 by 6 inch square angled braces. At this stage only one interior longitudinal brace has been attached to one lower side of the platform posts.



PHOTO ABOVE: The stained/weathered platform floor has been yellow glued to the box frame. The angled post braces are clearly evident. The stain/wash of India ink and methyl hydrate enhances the grain effect of the lumber and timber in this illustration. This weathering method is only applicable to a porous surface such as stripwood.

platform safety railing. For ease of construction these were glued to the exterior of the platform frame.

The first railing constructed runs the full length of the platform's land side. All posts were glued to the edge of the platform such that four feet was above the floor. The end posts were glued in place about 6 inches in from the end. Two intermediate posts spaced equally distant were added next. Once dry, two pieces of 1 by 6 inch by 21 foot 'kick' or 'knee' rails were added to the posts, equally spaced top to bottom. The extra length allowed about a scale 9 to 10 inches of extra board

length to protrude at each end.

On the harbour end of the platform three posts were glued in place in a similar format. Similar kick rails were glued in place, one end butting up against the kick rails previously installed. When the glue was dry, the excess rail was cut/sanded to make a clean joint in these rails.

Along the ship side and adjacent to the harbour side two posts were glued in place such that they were about two feet apart. Kick rails were affixed. A gap of eight feet was left along this side and then 3 posts were glued in place on the rest of the ship side of the platform. Once again two kick rails were added. When all the posts and kick rails were in place cap rails of 1 by 6 inch strip wood were cut to length and glued in place so that the inner edge of the cap rail was even with the inner edge of the post.

Affixed to the passenger platform in an unknown manner was a loading ramp or gangplank which led from the passenger platform towards the side of the ship. To replicate this feature a second floor box, 3 x 8 foot in dimension, was constructed using 2 x 6" planks to create the box. Once the box was built, four 4 x 4 posts each 4 feet long were glued to the inside of each corner flush with the bottom of the ramp. (These will support hand rails.) The floor was then glued in position using 2 x 6 inch planks.

This unit appeared to have one side attached to the passenger platform. On the ship side, this platform was held upright in position by two 6 by 6 inch posts connected with a single 2 by 6 inch sway brace. This loading ramp projected about one foot beyond the bumping boards.

Two 1 by 6 inch boards were evenly spaced between the posts on each short end of this gangplank. A scale 1 by 6 inch piece of lumber was glued on top of the posts to complete the safety railing.

To protect passengers prior to loading and unloading a moveable gate was constructed. The frame was made from scale 2 by 4 inch lumber to a dimension of 42 by 102 inches. A centre post was positioned and two diagonal kick braces of 1 by 6 inch strip wood were added. The gate was situated on the platform so as to block the opening between the gangplank and the platform. The concept was that this gate was moved out of the way when passengers were embarking and disembarking the boat. All cut ends were touched up with stain.



PHOTO ABOVE RIGHT: The railing structure has been added to the top of the platform. The opening at the front provides the access to the deck of the boat. The opening at the left rear will be the opening from the staircase to the platform. The knee/safety rails have not been cut to their final length pending the construction of the staircase.

PHOTO CENTRE RIGHT: This image provides information with regards to the placement of various members of the sway braces. The nearest opening in the rail is designed to accept the top stair of the staircase while the far opening will provide access to the ship's promenade deck.

PHOTO BELOW RIGHT: The platform sub assembly is complete in this image which also depicts the safety gate in place to prevent a passenger fall between the platform and the ship.



A wooden walkway leading to the steps and the platform was next constructed. Stained 1 x 6 inch planks were glued to three 28 feet long stained 2 by 8 inch stringers.

The stairs are long and some mental debate occurred as to whether or not to build a landing half way to the platform. The earliest available image did not reveal such a landing. Rather than unnecessarily complicate construction this idea was dropped from consideration.

The staircase was not entirely scratch built. Rusty Stumps stair stringers with tread pieces, kit # D3002, eased this subassembly. Visit their website to observe this kit and its features. All wood was stained prior to gluing.

For the staircase, three stair stringers of 30 treads each were used. As the steps to be constructed measured six feet in width, the steps included in the Rusty Stumps package were not used. Instead stained 2 by 8 inch by 6 foot treads were cut and glued in place. The bottom of the staircase was glued to one end of the walkway; the top of the staircase was glued to the raised platform.

Staircase railings were the last item to be constructed to complete the ferry boat 'diorama.' Posts were made from 4 inch square strip wood, top railings and 'knee' braces from 2 by 4 inch strip wood, all stained.

A post and beam structure was made to support the staircase. Two separate 6 by 6 inch supports were made. The first post and beam structure has a beam of 5 feet supported by two 15 foot long posts glued to each end of the beam. A second post and beam support, a 5 foot beam supported by two 9 foot long posts was glued to each end. Each of these structures was stayed with two 2 by 6 inch sway braces.

These two support structures were glued vertically in place beneath the staircase. When the glue was set, additional 1 by 6 inch sway braces were added to secure

the two post and beam supports together to create a rectangular unit.

Ten staircase posts were made from 4 inch square strip wood cut to 42 inch length. These were glued in place on top of the treads more or less equally spaced along the staircase, five per side. Once the posts were set two lengths of 2 by 4 inch strip wood for the cap rail were cut 30 feet long and glued to the top of the posts with overhang at both top and bottom. Once dry, the excess material was cut to the appropriate length. Two additional pieces of 2 by 4 inch strip wood 26 feet long for the knee/safety brace were cut. These were glued to the outside of the railing structure.

With all the sub assemblies completed, glued together and placed on the layout, landscaping began. Beach sand, dyed saw dust, lichen and Woodland Scenics turf and foliage in several colours and textures were glued into place at the ferry dock. One final detailing exercise remained.

People. Lots of people. People of all shapes and sizes. People in summer hued clothing. People walking and standing and watching. People were added to enliven the rail car ferry scene. The variety of people were primarily provided by several Woodland Scenics packages as well as from the 'parts' box of persons of unknown origin.

My Cobourg & Peterborough Railway now has a unique rail-marine ferry interchange creating diversity to layout operations.

PHOTO BELOW: The passenger loading platform with the three major sub assemblies glued in place. While perhaps not true to civil engineering concepts or practices, for this model application it nonetheless provides a visually interesting and stimulating composition. The length of the completed facility measures sixty-six scale feet.



MODEL DISPLAY BY GERALD HARPER AT THE COPETOWN SHOW 2014



Gerald's model will be incorporated in his modular On30 layout representing the Phoenix mining camp in BC in the 1930s. The Knob Hill Mining Company processes copper and gold ore by crushing, grinding, then flotation before the concentrate is shipped to a third party smelter. The plant is built up a hillside with ore arriving from the mine at the top and using gravity to assist material flow wherever possible. The whole building, machinery, fittings etc are scratch built and have similarities to the historic mill building at Britannia Beach, near Vancouver, which is the only similar type of plant still standing.

