



# The Interchange

Ottawa Valley Associated Railroaders—OVAR

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## Modelling a Pulp and Paper Mill

By Tom Patterson

### Introduction

Although the recent practise of consolidation and rationalization has reduced the number of pulp and paper mills in Canada, no one would deny that these large and complex industries are one of the defining elements of our country's industrial landscape. They exist in every province, and the transport of their raw material and products is serious business for our railways (see Photo 1).

Oddly enough, examples of this kind of industry are not common on the model railways that I have come across. When I looked into building a model of a pulp and paper mill for my layout, I began to realize why. First, pulp and paper mills are huge, and it is not easy to capture the immensity of this industry in a relatively modest model railway setting (see Photo 2).

Second, the appearance of these mills varies significantly with period, technology and the variety and type of products produced. In fact, a single plant might be devoted to producing only wood pulp, for use in other plants. Or a plant might be dedicated to producing specific paper end products, such as newsprint or tissue paper. Other facilities contain both the pulp and paper operations. This explains why some mills have logs and piles of wood chips on their property and others do not. So, it is difficult to find a standard set of structures that say "pulp and paper mill".

Third, consider mill complexity. In order to render a credible appearance as a pulp and/or paper mill, a model must contain a web of pipes and conduits of various sizes, interconnected between the individual buildings and tanks of the mill. They carry steam, distillate, pulp slurry, chemicals, to name a few examples. Just knowing what sorts of piping is required is a sufficient challenge, to say nothing

of their actual construction (see Photo 3 on page 7).

Given these daunting factors, how are we best to approach the inclusion of an industry of this sort in the limited space of our layouts? A good starting point is to determine how the mill fits into your overall layout design and purpose. For example, are you looking for an engaging variety of switching operations and cars types, or is the model being included to help portray a part of a diverse transportation territory and to fit into a broader layout traffic pattern?

For the former case, maximizing the number and variety of mill operations would be important. A pulping operation may be best, because you would probably want to include:

- box cars for inbound recycled paper and for outbound wood pulp;
- flat cars for pulp wood;
- wood chip cars;
- tank or hopper cars for fuel; and
- a variety of tank cars for inbound (and potentially, outbound) chemicals.

Greater diversity could be obtained  
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Photo 1: This view of the inbound and outbound tracks at the Howe Sound mill illustrates the predominate kind and volume of freight cars used, namely box and tank cars. For this mill, all inbound and outbound traffic travelled by water. Wood chips are ferried by barge.



Photo 2: It is very difficult to encompass an entire mill in one photograph. This "far-away" view of the south end of the Celgar mill at Castlegar, BC, is an attempt to do so.

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and much more

## From the Editor

Another OVAR season draws to a close with our June dinner. This is when we pause to celebrate a special model railroader with the McEwen award. I congratulate the (as yet unknown to me) winner.

This year we also undertake our biennial renewal with the election of a new executive to carry on OVAR's business. I wish the new executive good luck and success as the organization sails into its second half century.

This issue of *The Interchange* is my last as editor. I have enjoyed the opportunity to serve the organization and you as members. The enthusiasm and support of the readers—even when the editor makes mistakes—has been a source of great satisfaction over the last three years. I thank you all, with a special nod to the executive members with whom I have worked.

I need also to thank Graham Stremes for his hard work and expertise as the official display photographer and photo editor for *The Interchange* during my term as editor. As Graham says, we have made a pretty good team. It has been my privilege to work with him. I look forward to continuing our conversations when we are out of harness.

Finally, I thank my ever-vigilant proofreader, who kept me from more egregious errors.

Now it is time for someone else to take the reins of *The Interchange*. The newsletter has been part of OVAR since the beginning. It is much bigger than any one person. I have many esteemed predecessors I hope to have many esteemed successors. I wish them luck and look forward to seeing their efforts in print.

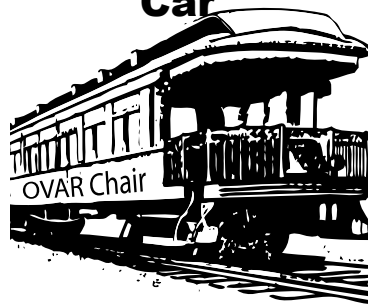
—John Manson

### Correction

The picture of Bill Erwin's model in April issue is Elijah Roth & Sons in HO, not Harvey's Hardware in S scale.

### May Dinner Attendance—148

## From the Private Car



### End of the Subdivision

This is my last "From the Private Car" column. I did not tire of the job; I have really enjoyed my ride as OVAR Chairman and the fellowship of the OVAR executive. I will miss the view from the private car and eventually my assured place in the buffet line. However, I feel that OVAR benefits from changes of chairmen. Thus, after two years on "my sub-division" we have reached milepost 0.0 of the next subdivision. I wish the next OVAR Chairman great success and much fun.

We certainly had an exciting 50<sup>th</sup> anniversary year. We owe many thanks to all who made this last year a special anniversary year. Not only did we enjoy special guest presenters and a wonderful Anniversary Dinner, but also all the nice extras that will become OVAR legacy, such as the OVAR banner, the station names for calling the buffets and better microphones so we can hear presenters better.

The Display has experienced ups and downs. I encourage all OVAR members to keep displaying their models and artifacts. It is always interesting and often inspiring to see the various rolling stock models and structures brought to display. The April Display was fantastic in terms of quantity and quality of models. It was also a tangible witness to the number of model railways in the Ottawa Valley.

Change is inevitable; there will be changes in the Ottawa Valley model railroading scene coming in 2012. The Algonquin College Woodroffe campus keeps evolving, making it more challenging to hold Railfair. A group of modelers from the Ottawa Region is working hard to make a bigger rail show at a different time and location. Time will tell. I wish all endeavours good success.

If we have as much rain this summer as this spring, we will have a lot of time to complete summer projects. Those in Garden Railroading will have the opportunity

to improve their drainage. However, I do wish for a sunny summer so we can enjoy railfanning, garden railroading or even other pastimes like golf.

Do plan to show your summer project at the September meeting. It does not need to be completed. Work in progress makes a great display both because it shows others how you are doing your project and because you can seek the advice of other OVAR members who have resolved similar challenges before you.

If you are not "into operations", summer may be the right time to visit an operating group. Summer time is more relaxed. You could learn the ropes at a more comfortable pace. Those who are operating the layouts are good mentors, they like you to enjoy operating and they need operators. Operating groups are important contributors to the friendships found in OVAR.

I thank all members of the OVAR executive for their support, and occasional needling during my two years as Chairman. Many are staying on giving great service to OVAR.

If you have ideas on how things could be better, you should run for the OVAR Executive to make it happen!

Happy Railroading

—Normand Levert,  
Soon to be Past Chairman

## Interchange yard

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Where truth is stranger than fiction!

## OFF THE MAINLINE

**E**ric Halpin sends the following report on his Algoma and Rideau Railway.

This season's primary operating period begins to slow down come June what with all the other summer activities to be enjoyed. Looking back over the past year, I realize that it actually has been very productive on the layout. The new expansion of sixty-four square feet is all but completed. That means structures have been detailed and weathered; track has been ballasted and all scenery is in place. In fact, the whole 25'x 12' x 41' A&R layout "U" is now virtually complete! I still have to power up the turntable pit tracks and carefully ballast around the turn-out point rails but that is it for the construction. I recently installed some photo backdrops and the consensus from all who have seen it is that they really look good. The backdrop adds an additional level of realism and depth to the layout as a whole.

I hope to begin air brushing the locos and rolling stock this summer. Hopefully, some of the crew who are proficient at that sort of thing will give me a hand. Since there are about two hundred items of rolling stock, a bit of effort will be required to complete that task.

The actual 'operating' methodology and protocols for running the A&R are still under development. I am trying to keep it as simple as practical yet somewhat challenging for each train crew. I do like the written train order format but it can take me several hours of prep time to get everything ready for the next session. The A&R can handle about seven people at a time actually running/switching trains without getting in each other's way. What I have to do is figure how to spread out the jobs so crews don't end up congregating all in the same area.

Should any of you be taking a drive out in the Perth area this summer (or anytime for that matter), I hope you will arrange to come see the layout. Have a safe summer.

**T**he late Tony Pearce's Leaming Southern RR has had its share of

electrical problems lately causing headaches for the Thursday night crew.

It all started with a short that caused a transistor to fail in the power supply for Winchester/Mountain. After replacing the transistor (after at least one hour of tracing the circuit), Winchester/Mountain was running again, although not without problems. The short was still there under certain conditions! It occurred when we aligned the switches at Winchester North for either the main or the siding. If both switches were set the same, either straight or bent the short was there. If the switches were set one straight and one bent the short went away.

Finally, after three more 2+ hour nights and replacing a relay (which turned out to be OK), we removed the Pacific Pike switch machine at the extreme outer end of Winchester/Mountain to find the plastic base holding the contact set on the end the machine was broken (literally fell off in our hands) shorting out the frog power contacts when the machine was operated. We replaced the machine with a spare that we had on hand, tested all the operational possibilities, and everything worked as it should. Winchester/Mountain was up and running again and so was the Thursday Night crew.

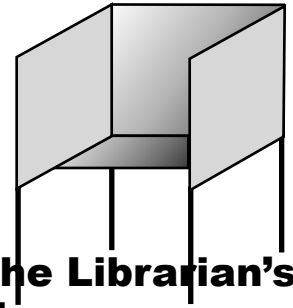
### In other news:

**Dave Venables'** St Francis Valley RR has seen scenery added between Richmond and Sherbrooke. Also Dave's wife Jane has restored the back drop as close as possible to the way it was when Ken Healy built the railroad on Regina Street.

Scenery continues at a snail's pace on the Bourget Cornwall (**Barry Innes**), although scenery changes are happening all the time. Also the BCR has taken delivery of 2 Atlas CN GP40-2's. These units will replace the CN power on trains CN1 and CN2 that arrive in daily in Cornwall in the late afternoon and depart before midnight of the same day.

**Fred Mill's** outdoor G Scale layout was put out of operation after the big windstorm in late April. Seems a big tree was uprooted by the wind taking out several feet of track and some yards. Check out Fred's OVGRS website.

Remember that if you have news on your railroad, send it to me, Barry Innes, at [innes3@sympatico.ca](mailto:innes3@sympatico.ca) or give it to me or the editor at the OVAR meetings. Let's hear what's happening on your model railroad.



## From the Librarian's Carrell

Tuesday last, I attended a briefing session and tour of the new City Archives building for the "Partners". The building is Fantastic!

The entrance atrium is bright and airy and contains the stairway to the second and third floors as well as an elevator. The ground floor is the public space with meeting rooms, etc. It also has conservation rooms and laboratories. The second floor is offices for the Archives staff and the third floor is the Reference Room. The overall impression is a very modern facility with attractive varying colour schemes in the offices and working areas. The Reference Room is the interface between the Archives and researchers. It is a bright airy space facing south and one may have to bring a bottle of sunblock when planning research. There are, however, white semi-opaque blinds which can be lowered to reduce the light to comfort levels.

The building is comprehensively wired, including wi-fi links and there will be a full complement of up-to-date electronic equipment, computers, scanners and printers. Warm up your laptops gang!

The CRCML books have already been shelved. Unfortunately, I was unable to examine them to ascertain their status as the mobile shelving was closed up. These movable banks are similar to those now found in medical and veterinary offices. These are "start of the art" and are electrically powered with a safety brakes mounted on a baseboard, so if the range begins to move, a quick kick on the baseboard with the red stripe will prevent browsers (people that is) being compressed.

The staff work rooms on the second floor have not yet been fully furnished but they are colourful and look like pleasant places to work—a far cry from the small crowded quarters in 111 Sussex. The CRCML and other Partners have dedicated work stations on this floor to provide work areas for cataloguing and other chores.

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# May Display: Non-Canadian

Photos by Graham Stremes



Barry Innes: 1. Modification of AHM Coach to VIA “CAFE/LOUNGE”—built from an article in the May, 1982 MR by Ross Peever. 2. AHM Observation lettered for Bourget Cornwall.



Bill “Sn3” Scobie: Denver & Rio Grande Western—new on the layout this week the pair of P-B-L Hybrid K-27 456 & 463. Still working them in.



Bill Erwin: Building constructed using Model Builder Software.



Charlie Shrubsole: 1. HO streetcar by Roco in Karlsruhe colours. 2. HO streetcar by Penn Line in TTC colours.



Jeff Trew: Scratch built from an Art Cullen article from Dec 1982 *Model Railroader*, using the LifeLike Hotel kit as the basic building block.



Clément Richard: Quick and easy rock cliff made in a few hours out of packaging material.



Bud Nelson: Assorted cars from the Archie Williamson collection; baggage and coach from Walthers kits; RPO is scratch built (collection is for sale, contact Bud. 1902 “Dome” is a limited run Westwood kit that is not part of the collection and is not for sale.

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# Display

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Carl Swail: Rutland drop-bottom gondola by Funaro & Camerlengo; resin kit.



Dave Venables: P4 L&NWR Railmotor by Mallard Models; built from a Mallard etched brass kit; painted with a combinations of spray, brush, and lining pencil; built to P4 standards, which are basically 4mm to the foot and 18.83mm track gauge.



Peter Cunningham: Boston and Maine passenger car #4620 from a Branchline kit of an ex B&O car #800 built by St. Louis Car Company in 1935; purchased by the B&M as part of a program to replace wooden cars in the early 1950s—four-wheel trucks added.



Burnell Cox: Cast iron trackless floor model by Wilkins/Kingsbury, circa 1885-1919; Wilkins thought that a toy was an educator, and in designing them he put in much more detail and he adhered strictly to the shaping and sizing of the prototype he was reproducing in the miniature toy than others of his era. He loved to build toy trains and carriages; but by far, the cast iron train set was the most popular toy he sold.



Dave Moat: 1. NKP #87136; this Nickel Plate 50' automobile boxcar is one of three built from Proto 2000 kits procured so long ago that they contained x2f couplers; cars were built "straight up" (except for the installation of Kaydee #5s) and weathered to represent cars built during WWII and subsequently well maintained into the 1950s. 2. Cotton Belt 50' single-door box car from Proto 2000 kit; side sills have been reconfigured to match notched side sills of the prototype; lightly weathered with Bragdon chalks and Humbrol paints to replicate a car recently (in 1958) out of Cotton Belt's shops. The Proto 2000 kits are a pleasure to build but the small parts are **very** fragile..



Jack Scott: 1. CPR Park car by Broadway Limited. 2. CPR "Cafe" car by Riverrossi. 3. CPR Sleeper by Round House—lengthened from two kits.



Mike Hamer: Boston & Maine way freight—an amalgamation of kits.

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# Pulp & Paper

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by appending a paper production operation, in that carloads of paper finishing materials, such as kaolin and starch may be required.

Alternatively, if your operations require a supply of, for example, CN “yellow door” box cars, for delivery to numerous locations across Canada and the USA, then a simple warehouse would be all that is required. In short, it all depends upon how you want to view the pulp and/or paper mill from the perspective of your layout’s operation.

## *Pulp and Paper Mill Traffic Flow*

The tables included provide a very high level description of typical material movements in and out of a pulp and paper mill. Serious modellers may want to be more specific. The contents of these tables are by no means comprehensive—obviously, a source of heat is required, so oil tank cars or coal hoppers would be appropriate, regardless of mill type. I simply wish to indicate the variety of rail cars one could consider. Further descriptive material on specific pulp and paper mill operations abound on the internet. I have included one website as a reference at the end of the article. Try Wikipedia (Kraft\_Process, for example) for more specific information. I also recommend reading the article in *The Model Railroader’s Guide to Industries Along the Track*—2 cited in the references. It provides a good illustrated overview of pulp and paper mill operations from the modelling perspective. Additionally, this article includes a good variety of prototype images. I have used them for my modelling efforts, and I hope that they assist you in yours.

## *Intra-Plant Switching*

Not to be forgotten is the movement of freight cars within the mill complex. In fact, the switching of cars within a pulp and paper mill could be the basis of a “stand-alone” model (see photos 4 and 5 on opposite page).

## **Model Design**

### *Track Diagram*

The model railway real estate available for my pulp and paper mill, the Bulkley Valley Paper Company, consisted roughly of one half of a pear-shaped peninsula, defined by a 30 inch radius curve, bisected by a backdrop. The first determining

<b>Table 1 Inbound—Pulp Mill</b>		
Commodity	Typical Car Kind	Comments
wood chips	open hopper, wood chip hopper	generally dumped into a cavity which feeds into a conveyor-to-stock pile system.
logs - hardwood / softwood	flat, gondola	specialized cars may be used. logs may be stored on ground or in ponds.
sodium hydroxide,	private line tank	used to make “white liquor” – sodium-based chemicals are used in digester for the kraft process, for example.
sodium sulphate sulphuric acid	private line tank	
recycled paper, rags	box	
calcium carbonate	hopper	limestone, used in chemical recovery process.

<b>Table 2 Outbound—Pulp Mill</b>		
Commodity	Typical Car Kind	Comments
wood pulp	box	
sodium hydroxide	private line tank	optional - to be used in other plants.

<b>Table 3 Inbound—Paper Mill</b>		
Commodity	Typical Car Kind	Comments
wood pulp	box	
starch	private line tank car	normally a slurry. used to add to paper “basis weight” and to reduce blurring.
kaolin (calcium carbonate)	private line tank car	normally a slurry. used to add to paper “basis weight” and to reduce blurring.
sodium chlorate	private line tank car	used to make chlorine dioxide – bleaching agent.
hydrochloric acid	private line tank car	used to make chlorine dioxide – bleaching agent.

<b>Table 4 Outbound—Paper Mill</b>		
Commodity	Typical Car Kind	Comments
paper rolls (newsprint)	box	normally requires high grade box cars
copy paper	box	"
liner board	box	"

factor in terms of space utilization was the need to generate a goodly number of outbound box cars containing product. Many doors of a long warehouse were required, but depth was not—positioning the warehouse loading dock along the backdrop

was an obvious decision (see diagram on opposite page).

I included a hidden track between the warehouse and the backdrop. This would serve as a support track for the mill, or, depending upon the layout operating plan

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# Pulp & Paper

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“de jour”, an interchange track with the BCR (see Photo 6).

The rest of the mill components were positioned to provide straight-forward switching, while still retaining a feeling of



Photo 3: As a prototype, this maze of pipes and scaffolding is rather intimidating to a railroad modeller. Nevertheless, one need only replicate a sense of this complexity in order to render a credible model.



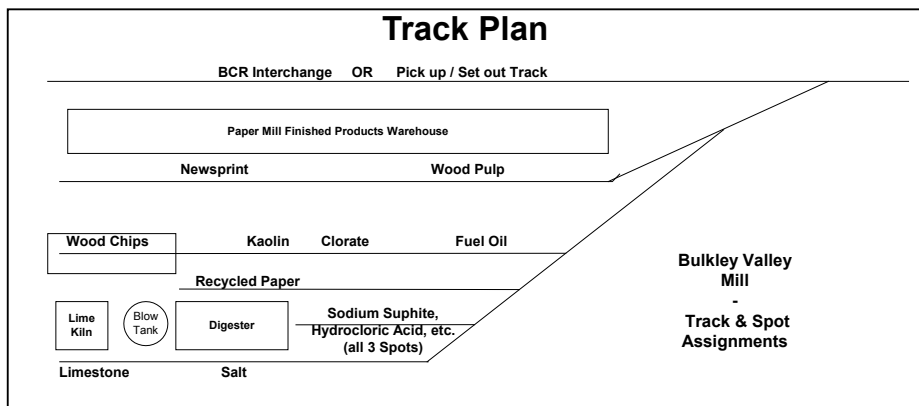
Photo 5: By 2007, the SW-900 was replaced by a much less attractive but perhaps more economical Trackmobile unit.



Photo 4: Many pulp and paper mills had company-owned “loks” which were used to perform intra-plant switching. This General Motor SW-900, retired from CN service as #7935, is switching the paper products side of the Howe Sound mill in February 1992. The significance of the sprigs of softwood foliage in the area normally allocated to classification lights is left to the reader’s imagination!



Photo 6: Hidden behind the façade that poses as a finished product warehouse is a service track. A GR-12 road switcher is spotting an interchange cut, while the warehouse is being attended to by another crew. The author cannot claim credit for scenery in the foreground—it was completed by an intrepid group of OVAR members known as the HOTrekkers.



This diagram is posted near the Bulkley Valley mill to aid operators in their efforts to switch the mill. All specific spots are identified—it is left to the operator to match the spots with the contents of his cut of cars.

immensity and reasonably logical product flow through the mill. At this point in the design process, it would be wise to consider track cleaning and car uncoupling methods!

### Mill Model Implementation

For my purposes, I decided that I would like to model both the pulping and paper making operations, regardless of space restrictions. To make it all fit, I drastically reduced the size of the mill by compression, building background “flats” and cutting out optional mill functions. While doing so, I tried to ensure that the model mill buildings were large in comparison to other structures on the layout, and that the image of “cavernous” alleys

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# Pulp & Paper

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for rail traffic resulted. The following models were included:

- Steam Plant;
- Wood Chip Unloader, Storage and Conveyor;
- Tank Car Service Track;
- Chemical Plant;
- Digester and Blow Tank;
- Finished Product Warehouse and Loading Dock; and
- Intra-Plant Transportation.

The function of each are briefly described, along with an example of how they were implemented on my layout.

## Steam Plant

A source of steam power is required to augment electrical power for both pulp and paper mills. In fact, many mills use “hog”, which is bark and other otherwise unusable parts of a tree, and waste from the pulping process, to assist in the generation of heat. Regardless, added fuel is required to produce highly heated steam which facilitates the isolation of cellulose fibres and to “dry” the paper as it passes over steam-heated rollers, for example. I selected oil over coal as a fuel source. No particular reason—coal is good—oil just fits better in to my operation.

This unit is one of the simplest to build, and is based upon a one-storey Walthers “3-in-1” kit, its associated foundation and a fuel oil tank. It is positioned so that operators are provided some visibility and access to the finished product loading dock (see Photo 7).

## Wood Chip Unloader and Conveyor

Producing pulp requires raw material, and of all the options available, recycled paper and rags take the absolute minimum layout space—all that is required is a siding spot. On the other hand, “pulp mills cannot live on recycled stuff alone”. I really did not have room for a log yard, and debarking operations, so I limited the pulp mill raw materials to wood chips and recycled material. Handling wood chip car loads is less space-demanding than modelling a pulp log pond and associated processes, so I decided to model a “chip-dumper”, which will handle the elevation and end-dumping of 1980s era wood chip hoppers, as well as the bottom-dumping of 1950s converted hopper cars. All chips go underground, from where they are elevated and piled. From there, the chips are “re-dumped”, and elevated to the digester. (see Photo 8).

## Tank Car Service Track

All pulp and paper mills require chemicals, toxic and benign, which is good, if you are a tank car aficionado like me! Modern mills now have extensive programs to recycle pulping chemicals. On the other hand, older mills had more voracious appetites for sulphur, chlorine, and sodium, for example.

Generally speaking, different types of chemicals are required for each of the pulp and paper processes. The former is concerned mainly with extracting cellulose fibres, or “digesting” the pulp, while the latter is focused upon the bleaching and finishing of the paper products.

For my layout, I really wanted to include a tank car unloading dock, as easily as possible. Space limitations dictated that I concentrate the loading and unloading of tank cars at one location—at one end of the digester described below. This meant that chemicals in tank cars had to be unloaded at one spot, regardless of their destination in the mill. To enhance variety in traffic flow, I concocted a scenario under which my particular pulp and paper mill produces pulping chemicals (sodium hydroxide) for other mills. A readily available tank car loading kit, fiddled to appear as though unloading was also possible, was used. A symbiotic and operationally inviting flow of toxic chemicals resulted (see Photo 9 on next page).

## Digester and Blow Tank

The digester is the focal point in the



Photo 7: Steam generation plants are fairly common across industries, and a “generic” approach is appropriate. Walthers building kits, augmented by pipes which deliver steam and return condensate, were used.



Photo 8: This form of wood chip unloader serves both bottom and end unloading cars. An article describing its construction was included in the November 2009 edition of *The Interchange* (Issue 439). Walthers conveyor kits were used as “building blocks” for conveyor system models and, in fact, for the transmission of mill fluids. The conveyer elements were used to move the chips from the unloading structure to storage, and from the same unloading structure to the top of the digester. Beyond the chip storage yard is a dock at which recycled paper and rags may be unloaded into the digester building. Also visible is a portion of the lime kiln.

pulping process and, at a minimum, consists of a large, fairly non-descript building with one or more large tank structures along side. The digester building must allow for the entry of chemicals and wood chips, and the exit of the pulp slurry to the pulp drying and paper production facilities associated with the warehouse.

My interpretation of these units is based upon the Walthers Tri-State Power Authority Plant and a Tichy tank kit. Both items were “kit-bashed” to fit the available space, hide a basement support column, (it became a chemical holding

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Photo 9: This tank car servicing facility is based upon a Walthers Oil Loading Platform. Chemicals may enter the digester directly, or be pumped over the tracks to the chemical plant. It doesn't take much to generate the sense of chemical transport within a mill.



Photo 11: A second Walthers 3-in-1 kit was used to receive, store and forward chemicals, while a second scratch-built site provides for preparation and delivery to the production line. A service track runs along side these two buildings to facilitate the unloading of these materials.

tank of incredible proportions!) and to fit around curved mainline right of way. A variety of smaller “tank and tube” models were added to the basic building. My model also allows for the unloading of cars carrying recycled material, limestone required in the liquor recovery process and salt used to manufacture sodium hydroxide and chlorine-based bleaching agents (see Photo 10).

## Chemical Plant

On the paper production side, the chemical input is somewhat more varied. The pulp slurry that results from a digesting process is typically not bleached completely. Chemicals, such as chlorates, are used to further bleach the pulp. This is normally left to the various paper mills

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that use the pulp for a variety of products having different bleaching requirements. The wood pulp is typically dried as thick sheets and baled for transport, unless the entire output is to be used in an immediately adjacent paper mill.

Then, the process of finishing the paper product must be considered. For example, Kaolin, a mineral based upon silicon and aluminum, may be used to add weight and consistency to the resulting paper product. Other materials are used to prevent inks from blurring.

I included a rather modest pair of buildings where all this material preparation would somehow happen (see Photo 11).



Photo 10: Many modern mill buildings are often fairly plain, and easy to model—all that is required is the creation of bulky buildings that dwarf rolling stock and rail car servicing facilities. Using “kit-bashed” material from kits for a power plant, a large tank plus a variety of tank and tubing items, a form of model digester and blow tank was created.



Photo 12: Many finished product loading sites are enclosed to minimize exposure to the elements. I choose to add interest by scratch-building an open loading dock..

## Finished Product Warehouse and Loading Dock

This part of the mill is quite simple, and the only variables are the number of tracks and loading platforms available. If this is the focus of your mill, then you may consider a variety of specific mill products, and two or more tracks. Being space-challenged, I defaulted to one outbound track having 4 spots, and a very thin platform (see Photo 12).

The warehouse was kit-bashed from an Acme Nuts and Bolts Kit #802 by Korber Models. I'm sure that this kit is no longer available, but any 2- to 3-storey factory kit can be used to model the warehouse. Actually, I only modeled that portion of

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## Pulp & Paper

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the warehouse that is used to load freight cars with wood pulp and paper. For effect, consider at least four loading bays.

Very often, the warehouse is adjacent to, or part of the building that contains the paper-making machinery (e.g., the Fourdrinier), and machinery used to cut paper rolls to customer requirements. None of these mill operations add to the modelling of rail operations, so they were minimized by ignoring them.

### Intra-Plant Transportation

Now for the icing on the cake: I harboured no illusions of being able to accurately model the incredible array of pipes and tubing that one finds in the typical pulp and paper mill. Check out any pulp and/or paper mill, and a myriad of pipes and conduits abound. In truth, it doesn't really matter whether the design of the piping for your mill makes any sense—it's the visuals that matter. Multiple pipes of various sizes have to go up and over roads and tracks, and around buildings. As I mentioned in a previous article, exactitude is not absolutely necessary to render a credible model. As is the case for Charlie Brown's pumpkin patch, it simply must be "sincere".

Nevertheless, it is important to keep the pipe sizing realistic, and to do a good job of modelling the pipe supports for a typical mill. I used some commercial kits for this purpose, but relied mainly on my

junk box and commercial shapes (see Photo 13).

### **Conclusion**

Is this a "big job"? Well, yes, it can be. However, after putting together "the overall plan", consider staging its development, and operating the mill as you build it.

Start with the finished product warehouse, and throw in a fleet of "yellow doors". Add a steam plant and cars to transport fuel. Step by step, you will be adding a wide variety of freight car types and operating scenarios.

### **Material Used**

- Finished Paper Warehouse—Acme Nuts and Bolts Kit #802 by Korber Models
- Steam and Chemical Buildings—3-in-1 Building set #933-3750 by Walthers
- Tank Car Platforms—Oil Loading Platform #933-3104 by Walthers
- Piping—Piping kit #933-3105 by Walthers
- Digester / Material Storage—Tri-State Power Authority Plant #933-3055 by Walthers.
- Digester Blow Tank—Steel Water or Fuel Tank #7013 by Tichy



Photo 13: Illustrated herein are various methods of incorporating mill piping. A combination of kits and structural parts and shapes are used to create a credible mill image.

- Lime Kiln – scratch built from plastic shapes and aluminium tubing.
- Conveyors – Kits #933-3149 and #933-3518 by Walthers
- Open Web Trusses—Model Builders Supply
- Plastic Pipe Shapes—Evergreen-scale Models

### **References**

*The Model Railroader's Guide to Industries Along the Track – 2*, by Jeff Wilson, Kalmbach Publishing, ISBN 0-89024-658-0

[www.borealforest.org/paper/mill.htm](http://www.borealforest.org/paper/mill.htm)  
Wikipedia sections devoted to Pulp and Paper mills. 

## Display

Continued from page 5



John Mitchell: 1. HO Coach by Branchline CPR #1852. 2. HO 8-4 Sleeper "Vaudreuil" by BGR. 3. HO Cafe/Parlour car CPR #6553 by BGR. All three ran on the Toronto-Detroit route.



John Moore: Two CPR lightweight coaches; scratch built on Rivarossi frames.

# The Ottawa Valley NTRAK Club:

## A Brief History

by Mike Shea, President, OV NTRAK  
(This article did not make it into the 50th Anniversary issue of *The Interchange*.)

**N**TRAK has been part of the model railroad scene since 1974. The idea for an N-scale modular standard was the brainchild of Ben Davis, a founding member of The Belmont Shore N-Scale RR Club in California. Ben was looking for a way to promote N-scale model railroading and to large dynamic operating layouts to big public train shows.

The NTRAK modular specifications were designed so that any builder, anywhere in the world, could build a module, bring it to a show and know that it would connect seamlessly with other modules built to the standard, and operate as one layout.

The first prototype module was built in Ben's garage in 1973 and displayed at the 1973 MRIA Show in Costa Mesa California. The following year, Ben and other newly converted NTRAK enthusiasts, displayed a 12' x 72' NTRAK modular layout running 50 to 100 car trains at the 1974 NMRA National Convention.

Robin Adair, being an avid N-scale modeler, was quick to acquire a copy of the newly published NTRAK modular standards. In May of 1976, Robin announced to the membership of The Ottawa Valley Associated Railroaders, that he was planning to organize a new N-scale modular group called NTRAK and that anyone who was interested could talk to him at the break. A number of people looked at the standards and six of them decided to meet the following week to discuss the idea of forming a new club.

Those six people, Robin Adair, Bill Erwin, Tom Caine, Tony Chinery, Bob Craig and Roger Truman, decided to build a modular layout using the newly published NTRAK modular standards. The Ottawa Valley NTRAK Club was born!

Tony Chinery was chosen as the club's first president. The first public show for the club's new modular layout was at the British Railway Modellers of North America (BRMNA) convention held in the basement of the Embassy West Hotel on Carling Avenue in Ottawa. That first layout consisted of two 4' corner modules

and a number of 4' straight modules. That first show was a great success.

With the first show under its belt, the club started to grow as other modelers of N-scale joined the group. When OV NTRAK was approached by the BRMNA to participate in another show a year later, Tom Caine started lobbying for a larger show to not only include the BRMNA and OV NTRAK, but other organizations and groups like The Ottawa Valley Live Steamers and The Bytown Railway Society. There was some initial resistance to the idea, but with the help of Dave Venables and Bob Craig, a group of 34 other interested people soon assembled to plan the first Ottawa RailFair which would be held in the 14 000 square foot cafeteria at the Woodroffe Campus of Algonquin College.

In addition to participating annually at RailFair, the club used a number of locales over the years for its monthly modular set-ups—mainly community centres in the Ottawa area, but other locations like the back room of Dynamic Hobbies, the Bank Street Legion, and a vacant storefront beside Discount Hobbies in Orleans also served as meeting places for the club. Few opportunities were missed to display the club's modular layout in Ottawa area malls including Place D'Orleans, Herongate, Elmvale and Bayshore.

The club also took the opportunity to travel in those early years. OV NTRAK set up and operated modules at train shows in a number of communities including Cornwall, Kingston, Almonte, Smiths Falls, Prescott, Brockville, Syracuse (NY), Cap-de-la-Madeleine (PQ), Quebec City (PQ), Potsdam (NY) and Toronto.


Club members have also taken and operated modules in a number of NMRA and NTRAK national conventions in the United States like Dearborn MI, Louisville KY, Columbus OH and Chantilly VA. In Canada, members have taken and operated modules at the NMRA national conventions in Toronto, Calgary and Winnipeg.

While there may have been other NTRAK modellers in Canada in 1976 we believe that The Ottawa Valley NTRAK group was the first NTRAK club to be

organized in Canada. In those formative years the club quickly grew to a high of 42 members by the mid to late eighties.

Today the current club membership varies between 18 to 20 members, most of whom are active in displaying and operating trains on the club's many modules. Although the club is not as big as it was back in those early days, members continue a very high level of activity, promoting the NTRAK modular standards and the hobby of model railroading by attending an average of 10 to 12 model train shows and displays each year.

Because the club does not have a permanent home for set-up and operations, we will continue to be a travelling club for the foreseeable future. As a travelling club we move our modules from show to show in a school bus, which has been converted for transporting our modules and trains to shows and displays. The bus is easy to recognize since it is painted in the Santa Fe Railroad War Bonnet paint scheme and sports a vanity license plate that reads "OVNTAK".

For more information about our club activities please visit our website at [www.ottawantrak.ca](http://www.ottawantrak.ca) 

### **Dinner Presentation— June 2011**

#### **Phil Mason— Coal Dust & Steel Rails**

Phil Mason, a former CPR locomotive engineer from Revelstoke, B.C., retired on January 12, 2005 after a career on the railroad spanning 33 years. An avid railfan and photographer, he was also active in the Brotherhood of Locomotive Engineers at the local, provincial and national level. Phil will talk about the CP coal trains which operate from the Crowsnest Pass in southeastern B.C. to the Roberts Bank.

# A Journey Into The Past: CPR's Rare K1a Northern #3100

by Bob Baker

(Photos by the author except as indicated)

I had a book entitled *Canadian Steam* published by Kalmbach and one of the pictures was entitled "The Rare K". This was my first introduction to a class of locomotive that was fairly elusive since only two locomotives were built and the

long term overnight train assignments on trains No. 21 & 22, (Montreal-Toronto-Montreal), did not lend themselves to easy photography. I came to consider them as my all time favorite steam locomotive. A class of only two, but surprisingly probably the only class of locomotive anywhere that has been completely preserved. #3100

at The Museum of Science & Technology in Ottawa, ON. and #3101 at IPSCO in Regina,.

Here then is my story of No. 3100 and its coming to my O 3-rail layout.

## The real life locomotive



From the C. Robert Craig Memorial Library.



#3100 at Carleton Place en route to NMS&T. Photo © Bruce Chapman.



#3100 and CN #6200 at Ottawa West for display at NMS&T.



#3100, #2858, and #1201 at Ottawa West for display at NMS&T.

In 1964, while in the military, serving at Camp Petawawa, I received a copy of the Free Press Prairie Weekly dated 30 December, 1964. It contained an article and pictures that informed me that there were still 30 retired steam locomotives at CPR's Weston Shops in Winnipeg.

A quick scan of entitled holidays available convinced me to head for the capital of Manitoba. The CFO of our household said that a trip on The Canadian would be feasible provided I used a berth in the tourist sleeper, (at that time still assigned, U class 12-1 stainless steel sheathed). In short order, I was deposited in Winnipeg in January, 1965—in -40 degree

F temperature and snow up to the proverbial derrière. What had I been thinking? I'm here so better get to work taking photos.

Out at CPR's huge Weston Shops complex on Winnipeg's west side, it was so cold my assigned CPR escort wouldn't venture outside. He just told me to go ahead and don't fall off anything. I was overjoyed to find amongst the thirty engines #3100 & #3101 with the most beautiful words I could imagine "HOLD & DO NOT SCRAP". Despite it being so cold that my 35mm film broke in two, I managed to save some pictures of 3100. (see below).

In the early 1960's the Hobby store I went to was Riley Hobby Service in Hamilton, ON. In the mid 60's they had produced for them 3/8 scale wooden models of various Canadian steam locomotives. In June, 1968 I purchased 3 models from them, CNR #6400 and #6218 and CPR #3100. Unfortunately, as the years passed with constants moves across Canada I sold the CNR models and I only kept CPR's #3100 (see pictures below).

I was modelling in HO at the time and the only Canadian steam locomotive available was a Tenshodo CPR Selkirk 2-10-4 which was not really to scale but at

continued next page

# #3100

continued from previous page



#3100 on "hold" at the Weston Shops

least it was CPR. Later years, Van Hobbies imported many CPR & CNR steam locomotives. Of several that I purchased, one was #3100.

In 1974, my friend, the late Bill Williams from Hobbyland, put my wife in touch with Don Loney who had done a painting for Bill. Knowing of my love of this class of locomotive she had the idea to have a painting of 3100 done for me as a Christmas present.

After I retired, I found that ageing was making working with HO an imposing task and I opted to go to O third rail gauge. At first, all that was available in Canadian locomotives was a CPR

The Interchange

Royal Hudson with conventional operation and no sound. After some searching I found command control and sound from an after-market supplier in the USA and suddenly here it was—a model that looked good, sounded great and would operate with a remote hand held controller. I was in heaven. As the years passed MTH, then Weaver and 3rd Rail all started to produce CPR & CNR O-scale steam locomotives with sound & command control. BUT still no model of the Rare K's.

Then, in 2006, 3rd rail announced it would produce #3100 & #3101 in O 3-rail and 2-rail. Then the wait and anticipation

began. After much delay, a reduced production run—with a price increase—was announced and production was scheduled. Many months later, (November 2010) the package arrived and what a model it turned out to be.

(More photos on page 15.)



Free Press Prairie Weekly Article .

## #3100 The Model



#3100 in HO

## Librarian's Carrell

continued from page 3

The vaults are impressive to say the very least. They are huge with airlock entries. They contain some 23 kilometres of shelving! (that's 15 miles) and the top shelf can only be reached by separate large multi-step moveable ladders. As you enter, the ranges seem to disappear in the distance on either side. Here, too, the ranges are powered and they have to be, very few people would be able to move them when they are filled. The vault will only be open to Archives staff and they will have to retrieve the stored records. Retrievals will be scheduled twice a day by a retriever (human of course, not canine). The retriever will have a cellphone so that the process may be a bit more flexible than that at the Library and Archives Canada. This process will only apply to CRCML slides and other images as our book and magazine collections are on open shelves in the Reference Room. A project to digitize our image collection,

which would then be available in the Reference room, is already under way.

There are still workmen in hard hats and steel-toed shoes carrying ladders etc. on their shoulders as they move about finishing the details of the building. The rooms have not yet been fully finished and many lack their intended furniture and shelving. The potential is promising and approaching completion.

Am I enthusiastic? Yes I am. The operation will have to adapt to some bureaucratic changes but it has become so enormous that changes are necessary. The staff are as friendly and helpful as they have always been. All-in-all, it will be to our advantage.

At the moment the parking lot is the preserve of the workmen so the availability is not apparent.

The hours of opening for the public will remain the same as previously viz. Tuesday to Friday 9:00 to 16:00. Saturday openings will not be reinstated until mid-late September

A lot of changes have occurred. The

municipal collections have exploded and the OC Transpo records have undergone a major expansion. These and other changes have altered the way the Archives functions. Consequently a number of operations have been formalized.

The Partners have been asked to establish more formal rosters of volunteers to assist them in offering services to the public in general as well as to the members of their own organization.

Now is the time to sign up with us and benefit from the orientation sessions that are to be offered. Please contact me directly and give me an idea of when in a weekly schedule you can volunteer—probably for individual sessions on the reference desk in either the morning or afternoon or both—as I have to present a draft schedule as soon as possible.

I can be reached in person at OVAR, at [knowlesdc@bell.net](mailto:knowlesdc@bell.net), or 613 722-4473

No official date for public access has as yet been established., but perhaps by mid-June we will see a credible date.

—Dave Knowles

## Railfair request

If you have ever visited your local Library, you will probably have seen that in the foyer there is a secure glass fronted display cabinet in which there is usually a topical display that changes each month. The displays are normally organised by individuals or groups who have obtained approval from, and reserved a specific time period with, the Library.

In past years, a couple of OVAR and BRMNA members have arranged with two Libraries to have a Railroad oriented display during the month of October in order to create an interest in attending RAILFAIR. While it is not known exactly how much interest this actually stimulates, the potential is there as the libraries are attended on a daily basis by very large numbers of children—especially for the story time periods—as well as adults.

The RAILFAIR Organising Committee is asking club members to visit their local Library and to offer to put together

a Railroad oriented display for the month of October which would also include posters and flyers about the show.

The earlier that you visit your local Library, the greater the chance that you will be able to get the preferred time period and the more time you will have to prepare the display. If you visit your Library and manage to get a reservation please let us know ([railfairottawa@gmail.com](mailto:railfairottawa@gmail.com)) so that if more than one of you is interested in the same Library a joint effort can be organised.

All are open Mondays through Saturday and some are open on Sundays. Following is a list of Ottawa city libraries to help you locate the one closest to you.

- Alta Vista, 2516 Alta Vista
- Beaverbrook, 2500 Campeau
- Blackburn Hamlet, 199 Glen Park
- Carlingwood, 281 Woodroffe
- Carp, 3911 Carp
- Centennial, 3870 Richmond
- Constance Bay, 262 Len Purcell
- Cumberland, 1599 Tenth Line
- Elmvale Acres, 1910 St-Laurent
- Emerald Plaza, 1547 Merivale

- Fitzroy Harbour, 100 Clifford Campbell
- Greely, 1448 Meadow Drive
- Greenboro District Library, 363 Lorry Greenberg Drive
- Hazeldean, 50 Castlefrank
- Main, 120 Metcalfe
- Manotick, 5499 South River
- Metcalfe, 2782 8th Line
- Munster, 7749 Bleeks
- Nepean Centrepointe, 101 Centrepointe
- North Gloucester, 2036 Ogilvie
- North Gower, 6579 Fourth Line
- Orléans, 1705 Orléans
- Osgoode, 5630 Osgoode Main
- Richmond, 6240 Perth Street
- Rideau, 377 Rideau
- Rockcliffe Park, 380 Springfield
- Rosemount, 18 Rosemount
- Ruth E. Dickinson, 100 Malvern
- St-Laurent, 515 Côte
- Stittsville, 1637 Stittsville Main
- Sunnyside, 1049 Bank
- Vanier, 310 Pères Blancs
- Vernon, 8682 Bank

—RAILFAIR Publicity

# #3100

continued from page 13



The author's painting of #3100 by Don Loney.



Wooden model of #3100 from Riley Hobbies.



#3100 in O.

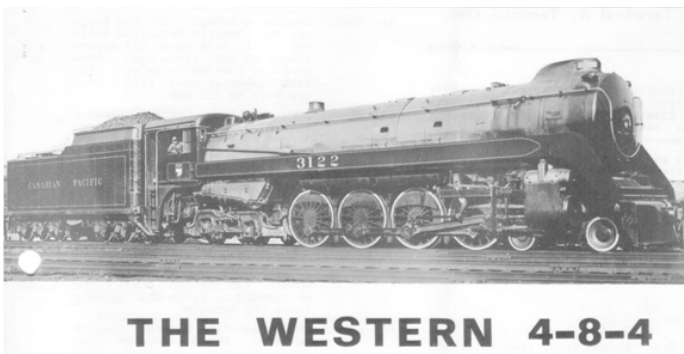


#3101 at the station on the author's layout.

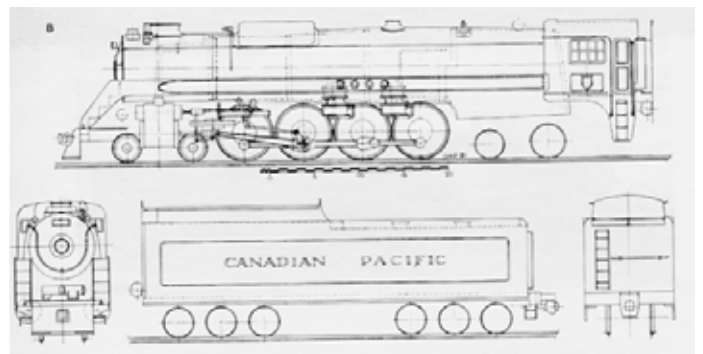


#3100 at the station on the author's layout.

## What If...



CPR had intended to make more 4-8-4s, but streamlined.....





## After Dinner Presentation

# Ken King

## CN engineer from St. Albert, Alberta

**Display  
Your Summer  
Project**

## Tuesday, 13 Sept 2011

**St. Anthony Soccer Club Hall  
523 St. Anthony Street,  
Ottawa**

*(just off Preston Street at the Queensway)*

**Doors open at 5:30 p.m.  
Dinner served at 6:30 p.m.**

### **Admission: \$25.00**

Includes dinner, facilities, program expense, taxes and gratuities.  
Free parking available at St. Anthony SC or the Adult High School.

### **Please note:**

If you cannot attend the meeting after saying you would, please call Fred Mills at (613) 723-1911. Thank you.



## **OVAR Directory 2010-2011**

Chair: Normand Levert 613-834-6798  
Vice Chair: Chris Lyon 613-837-8522  
Secretary: Mike Shore 613-829-8867  
Treasurer: Fred Adams 613-834-0591  
Membership: Bernie Goodman 613-720-5650  
Program: Joël Racine 613-987-2206  
50th: Michel Boucher 819-684-5044  
Dinner: Fred Mills 613-723-1911  
Archives: Dave Knowles 613-722-4473  
Webmaster: Steve Watson 613-592-3609  
Video Library: Paul Anderson 613-445-3573

**Web Site: [www.ovar.ca](http://www.ovar.ca)**

## **The Interchange**

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Staff**

### **Features, story ideas, comments, complaints:**

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### **Distribution and mailing:**

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### **Submission of articles:**

*The Interchange* welcomes your submissions that may be of interest to club members. Material can be submitted to the Editor via e-mail, on memory stick (Windows format), on CD or DVD, typewritten, or even handwritten.

### **Copy Deadline:**

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