



The Interchange Our 41st Year

Ottawa Valley Associated Railroaders – OVAR

March 2002

Issue 361

Narrow Gauge and “Oh-En-Thirty”

(On30, or On2½)

by Gord Bellamy
Bud Nelson photos

Narrow gauge is any track gauge that is less than the accepted standard gauge. Here in North America, and in much of the world, the standard gauge is four feet, eight and one half inches. Anything less is narrow gauge.

Narrow gauge railroads are fascinating. The equipment of the common carrier lines seems to be out of proportion, with tiny boilers or engine compartments and huge cabs, when compared to standard gauge equipment. Some of the equipment, such as that used on the Colorado, Pennsylvania, and Yukon lines is relatively standard in outline, albeit smaller than mainline equipment. Many industrial lines serving mines, mills, or other industries in isolation from the rest of the world use diminutive equipment, much of it purpose built, and much of that is home built by the railroad shops.

Most North American narrow gauge common carrier railroads, such as the Colorado lines, and the White Pass and Yukon, among others, were built with a track gauge of 3 feet. Some exceptions were the Maine two-foot lines, the Newfoundland Railway with 42 inch gauge, and the Portage Railway (Huntsville and Lake of Bays Railway), also with 42 inch gauge. The industrial lines used whatever gauge suited their purpose. Many



industrial lines use or used a track gauge of 30 inches or less. The sugar cane lines of Cuba and many of the cane and logging lines of Australia and New Zealand favoured 30 inches.

The use of smaller, narrow gauge equipment was usually dictated by the terrain that the line would run through and the need to minimize costs. Sharp curves, steep grades, and temporary rights of way were often the norm, and this is what makes narrow gauge modelling so attractive.

Narrow gauge modelling in ¼ inch O scale is getting easier and more reasonably priced as compared to the beautiful brass

models that have been available in many scales and gauges for the past several decades. Bachmann Industries has given narrow gauge modelling a boost with the introduction of several train sets, individual locomotives, freight cars and passenger cars, and freight and passenger trucks in ¼ inch scale, but made to run on 16.5 mm gauge (HO) track. It is called On30 or On2½. Sixteen point five millimetres in ¼ inch scale actually works out to a track gauge of 31.181 inches (792 mm) in a scale of 12” equals one foot (1000 mm=1 metre). For the non-purists, this is an economical way to represent 2 foot gauge, 2½ foot, 3 foot or even 3½ foot gauge railways, or just to have fun in a different scale to your normal modelling.

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plus much more

New OVAR Treasurer needed

With the finances in good shape and the books in good order, Vic Dohar has decided to retire as OVAR treasurer. So the hunt is on for someone to take over as the tracker of OVAR's loonies. If anyone is interested, this would be a good time to step forward as Vic will be around for some on the job training.

Vic has two youngsters at home plus a new basement where he is planning to erect an On30 pike. Elsewhere in this issue is a good description of that scale. In addition to organizing OVAR's financial records, Vic used his professional skills to produce the OVAR members layout map that was one of the highlights of last year's 40th anniversary festivities.

So make sure you all thank Vic for his contributions (so far) to OVAR.

For the Record

February Meeting:
120

Current membership:
170

Check out OVAR's new
Web Site
www.ovar.ca

INTERCHANGE YARD

Classified advertising in the Interchange Yard is free to all OVAR members. Non-OVAR members: \$1.00 per line, minimum \$5.00. Cheques or money orders should be made payable to **OVAR. Do not send cash.** Ads must include the advertiser's name and telephone number. Send copy to: Ian Cranstone, 34 Baneberry Cres., Kanata, ON K2L 2Y4 or via e-mail at lamontc@nakina.net

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Herb McEwan's inspiration for his namesake award is at centre: Crystal City Northern business car #100. On the shelf above it are cars #7 (Tom Hood), #8 (Dave Knowles) & #9 (Brian Ludlow), to its right is car #25 (Dave Venables), and on the shelf below it are cars #27 (Carl Swail) and #28 (Ken Healy).

The McEwan Car Hunt

In a few months time, OVAR members will be asked to submit nominees for the McEwan Car that is awarded annually to a person who has done a lot to promote the hobby.

This year's winner will be the 35th since the award was first made to Joe Thomas in 1968. To mark the occasion, THE INTERCHANGE wants to find out has happened to all the cars that have been handed out.

Barry Innes has kindly agreed to shepherd the McEwan Car hunt. About half of the past winners remain active members of OVAR. A few others are still in the Ottawa area but are no longer as active in OVAR. Some have passed on.

We hope in the next issue to publish a list of the McEwan cars of unknown disposition in hopes that our readers can help us track down their whereabouts.

Herb McEwan Car Recipients 1968-2001

(Year/Car #/Recipient)

1968	1	Joe Thomas	1980	13	Tony Chinery	1992	25	Dave Venables
1969	2	Bob Craig	1981	14	Odfried Wendler	1993	26	Ron Shurtliffe
1970	3	Adrian French	1982	15	Bill Scobie	1994	27	Carl Swail
1971	4	"Toots" Eggert	1983	16	Tony Mitchelson	1995	28	Ken Healy
1972	5	Bill Williams Sr.	1984	17	Jim Simpson	1996	29	Jim Nelson
1973	6	Doug MacKenzie	1985	18	Ross Peever	1997	30	Stew Waldron Sr.
1974	7	Tom Hood	1986	19	Omér Lavalee	1998	31	David Steer
1975	8	Dave Knowles	1987	20	Bill Erwin	1999	32	Marty Phillips
1976	9	Brian Ludlow	1988	21	Michel Boucher	2000	33	Steve Adamson
1977	10	Reg Bilodeau	1989	22	Bruce Curry	2001	34	Angus Palmer
1978	11	Jim Jarrett	1990	23	David Stremes			
1979	12	Al Craig	1991	24	Brian Earl			



Newest McEwan car is #34 (Angus Palmer).

"Oh-En-Thirty"

continued from page 1

The O stands for the ¼ inch equals 1 foot scale (in the U.K. the "O" stands for 7 mm=1 foot). The lower case "n" indicates "Narrow Gauge" as opposed to the 4 foot 8½ inch (56½ inch) standard gauge. The "30" indicates the gauge represented in inches. Track gauge is usually (but not always) expressed in feet, as in 2 foot gauge, 2 foot, 3 foot, or 3½ foot gauge. I like the term "Oh, en, thirty" or "On30".

By using track gauged to 16.5 mm it follows that many components from HO models are available for modellers to use in ¼ inch scale. Trucks, wheels, locomotive mechanisms, rail or prefabricated track, and couplers. Even HO rolling stock such as flat cars, box cars, and tank cars can be the basis for a kit-bash project to build cars in ¼ inch scale.

HO scale track with code 100 rail is commonly used for On30, although the ties are generally undersized, especially in length. Most narrow gauge lines used ties between 5 and 7 feet in length, usually 6 or 6½ feet. Handlaid track is an option.

Trucks and Wheels

The wheelbase of typical HO scale arch bar trucks, for example, scales out to approximately 3 feet in ¼ inch scale. Other styles of truck such as Andrews and Bettendorf and various passenger types are also useful. There are several options for wheelsets, depending on the diameter to be represented (see Table 1 at right). Just replace the normal HO wheelsets with a larger size to represent 22", 24", 25" or 26" wheels in ¼ inch scale. Trucks and wheelsets made specifically for On30 are also available.

Couplers

The NMRA Standard S1 has established that the centreline of couplers on ¼ inch scale narrow gauge equipment should be:

- 0.563" (14 mm) above rail for 3' gauge; or
- 0.344" (8.7 mm) above rail for 2' gauge.

The standard coupler height for HO scale is established at 0.391" (9.9mm), which is a good compromise for On30 equipment. The standard HO scale Kadee, and McHenry style knuckle couplers are perfect for use on On30 equipment. Kadee also makes a coupler specifically for On3.

Locomotives and Rolling Stock

Besides Bachmann, there are several suppliers of ¼ inch scale equipment that can be

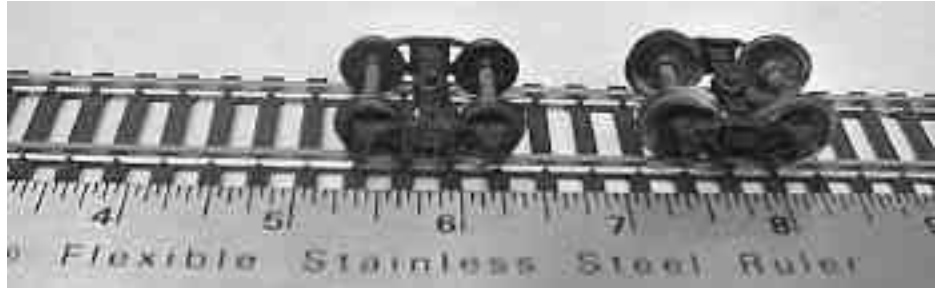


Table 1

WHEEL DIAMETER IN INCHES

HO Scale (3.5 mm=1 foot)	ACTUAL	O Scale (¼ inch= 1 foot)
33"	0.379"	18.21"
36"	0.414"	19.86"
40"	0.460"	22.07"
42"	0.483"	23.17"
	0.500"	24.00"
45"	0.517"	24.83"
	0.542"	26.00"

used with or easily converted to 30 inch narrow gauge. Alternately, HO scale chassis's for steam and diesel locomotives can be used to power kit-bashed or scratchbuilt locomotives. Use details from any of the O scale suppliers. This is a great scale to try scratchbuilding, be it structures or rolling stock.

Narrow gauge modelling is another challenging facet of our great hobby. The ideas presented above are not limited to "O" or ¼ inch scale, but are appropriate and commonly used in many scales, such as using N Scale or even Z Scale components to model narrow gauge in HO, or S, or even O. Give it a try. It's fun, and that is what the hobby, any hobby, is all about. Right?

Suppliers

- Atlas
- Athearn
- Bachmann
- Coronado Scale Models
- Grandt Line
- Kadee
- Kato
- North West Short Line
- Precision Scale

Books and Periodicals

- LIGHT IRON DIGEST
- MAINE 2 FOOT QUARTERLY
- NARROW GAUGE AND SHORT LINE GAZETTE
- SHORT AND NARROW RAILS—INTRODUCTION TO NARROW GAUGE MODELING

The Internet

There are many sites on the internet providing information, chat groups, etc., related to On30 specifically, or Narrow Gauge generally. Try searching for On30 and/or On2½ on your browser.

Bibliography

- LIGHT IRON DIGEST, P.O. Box 133, Washingtonville, OH 44490-0133
- MAINE 2 FOOT QUARTERLY, P.O. Box 133, Washingtonville, OH 44490-0133
- NARROW GAUGE AND SHORT LINE GAZETTE, Publisher: Benchmark Publications Ltd., P.O. Box 26, Los Altos, CA 94023
- SHORT AND NARROW RAILS—INTRODUCTION TO NARROW GAUGE MODELING, Author: Jim Eakin, Publisher: Railhead Publications, P.O. Box 6579, Canton, OH 44706, ISBN 0912113-45-6



Sedimentary my dear Watson!

by Normand Levert
photos by the author

It's a bad joke I know. You may notice the next time you drive along the 401 near Kingston–Napaneé, that in some areas the limestone deposits are tilted at an angle from the horizontal. On one side there is a rocky bluff while the other the ground rises gradually, normally covered with vegetation. The angle between the tilted strata and the road (or railway) can either accentuate or diminish the apparent grade of the road or railway.

I wanted a rock cut scene for my HO-TRAK module “CONNAUGHT” and I wanted the sedimentary rock strata to be on a slant. I strove for a visual break to separate the scene from the adjoining conventional module, so a low rock escarpment that had to be pierced by the railway would fit the bill perfectly. It would provide a wall and a logical break in the scenery. CONNAUGHT is a

transition module; the other end is built to Freemo standards.

I used an old trick for the rock face: broken suspended ceiling tiles. One can easily find discarded tiles somewhere. This is why it is important to finish the layout room first. The tiles are made from pressed paper, and when broken, the edges are random projections of stratified layers. One then stacks layers of broken tiles to achieve the desired height of rock face. A coat of latex paint then transforms the tiles into rocks. This time I wanted a tilted strata and to keep weight low. The solution was to build a hollow hill. I used only enough ceiling tile to build the rock faces and added pieces of Styrofoam for the top surfaces.

To achieve this effect, I broke a ceiling tile in two-three inch wide planks. I needed to get both sides of the rock cut to slope equally. In theory we have blasted our right of way through the rock and the layers on side

should continue on the other. As well, I wanted a flat bottom surface, so that the rock strata would appear to continue below ground level. The basic HO-TRAK module construction is two-inch thick pink Styrofoam insulation framed on edges.

I stacked five or six planks, turned them on edge and used an old hand saw to cut diagonally at a low angle across all the planks at once. This way, I obtained “slabs of rocks” with a bevelled flat surface to lie against the insulation. With all planks sawn at once, the bevel angle matches perfectly. Flip over the other half of the stack and both sides of the rock cut slant at the same angle. My hill is hollow: the rock faces are about two or three inches thick walls covered by a one inch thick Styrofoam “roof” shaped ground surface. Don't worry if you break a plank, real rocks split vertically too! For the front face of the escarpment, all I needed were a regular few broken chunks without bevel.

Before building up the rock cut, I cut drainage ditches on either side of the rail line. (Professional deformation — I'm an engineer) just use a utility knife at about 45 degrees to cut to “V” groves in the insulation a little distance from the edge of your ballast, say about ½ inch — oops one metre (HO) — deep and then smooth the contour with rough sandpaper. Doing ditches first before the rock faces are in place is easier and also helps in locating the rock faces correctly!

To start my rock cuts, I supported the non-bevelled end of the first layer of rock on a block of Styrofoam. This block was carved at about 45-degree angle for the front face where the talus would be, and with the top



slanted to match the bevel cut. I lined up the front supports on either side of the rail line by eye, so that the escarpment would line up. I started the side of the rock cuts some distance from the ditches, about 4-5 HO feet. From then on, it was a bit like building a brick wall; I would place a bevelled broken ceiling tile plank on the rock cut face, then continue along the escarpment with chunks until past the module edges. The ceiling tiles can be trimmed easily with a utility knife to get the piece to fit against each other. Once in a while, the texture of the ceiling tile (I place the finished side up) might be a bit too apparent. You can break off some layers of the tile top to create more irregularities. I use a combination of yellow glue and bamboo skewers to fix the Styrofoam and ceiling tiles in place. Trim any overhang past the framework with a large handsaw.

Once the first “slabs” were in place, I was able to stack the “planks” so that the escarpment was also at an angle from the vertical and the sides of the rock cuts sloped back from the vertical. OVAR members may remember presentations by a geological engineer; you want stable rock faces in the cut! Having said this, since the ceiling tiles do not break in very straight lines, you will still have some parts of the rock faces overhanging nooks and crannies. Limestone can be quite stable, so one needs only to put a minimal amount of slope in the cuts.

While the broken tiles already look somewhat like sedimentary rock faces, the next steps change broken ceiling tiles into rocks. The first is to paint the rock face with household latex paint. You might wish to brush the broken ceiling tile edges with a stiff bristle brush first, but I find that the first coat of paint needs stiff brushing anyway. I use a one-inch brush. This time, I used flat black for the first coat — because I had some and because it would add depth to the finished rock faces. The first coat of paint has to go into every nook and crannies. My usual trick is to have flat white primer and flat black latex. You then mix a lighter colour on a scrap of cardboard — or directly on the Styrofoam frame. Brush your rocks lightly with the lighter colour, leaving the deeper crevices dark. A nice variation is that often one layer of sedimentary rock is different than the others. Add a dash of brown or just mix a different shade of grey and paint one layer differently from the others. If you are subtle, it adds to the realism without being too obvious. You can then mix a paler colour still, and dry brush the tips of your strata, to

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bring out the relief even more. The next step comes when you add “ground” and vegetation to the top. In areas where there is too much top of ceiling tile showing, add sand to simulate debris build up and then add a bit of vegetation. My last step was to use commercial talus debris. These can be dyed, but I was too impatient. I used mostly medium and fine, in small amounts along the rock cuts. Place most on the flat surface by the ditches, but use some as well on the larger portions of flat “rock”. I used a few larger size debris on the talus at the base of the escarpment, but otherwise used vegetation to cover the slope.

The top of the hill was done by shaping one-inch Styrofoam into terrain by using knife, surform plane and rough sand paper to add contours, tapering thin to the edges. I used a bit of Scuptamold to build the transitions from ceiling tiles to Styrofoam, and to build a bit of a talus at the bottom of the rock cuts. I did this in fact before painting the rock faces. The talus along the escarpment

is bigger; remember we used a Styrofoam block to support the first rock strata. I bevelled the front at 45 degrees, but 30 would have been better. I could not really sand contours in this Styrofoam after the rock face was in place. Instead, I used red cedar sawdust — never throw away anything! — to build a base slope, saturated it with rubbing alcohol and then dripped diluted white glue. It is essentially the same technique I use for ballast.

The rest of the scenery work is the classic latex paint and ground foam treatment. As we add ground foam, saturate again with sprayed on rubbing alcohol (or “wet water” with a few drops of detergent) and then diluted white glue.

The result is a saw-tooth profile ridge, the long rise is covered with vegetation and the sharp drop is a rock escarpment. The railway blasted a level notch through the rock, ensured good drainage and good alignment. Most passengers hardly notice the cut.

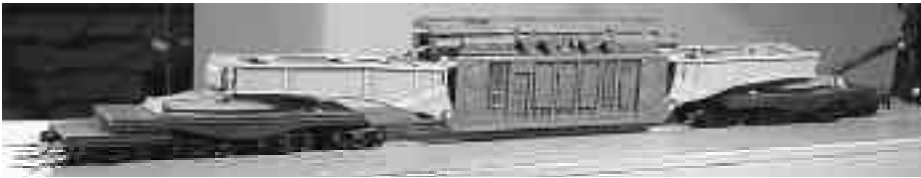
Happy railroading!



Topless is a popular category!



Spectacular lumber loads earned Greg Stubbings CHAIRMAN'S CHOICE award.



Dave Knowles went both topless and bottomless with cross-kitted Schnabel car.



Peter Cunningham displayed a string of British open goods wagons.



Unusual horizontal rib two-bay hopper was constructed by Brian Ludlow.



Jacques Thuot displayed string of cars including two open roof stock cars, complete with scratchbuilt interior detailing.

The term topless certainly gets the attention of OVAR members. The theme of the February display was topless freight cars and lots of them were on show.

Greg Stubbings won the CHAIRMAN'S CHOICE for his HO flat cars with lumber loads. Greg says the cars were upgraded Athearns to which he added peel-and-stick wood decks and then made hollow core lumber loads from stickwood. The cars were nicely weathered.

Dave Knowles decided he could go one better than the theme and displayed a car that was both topless and bottomless. It was a cross-kitted Schnabel car that he constructed from pivots, bridge and transformer from Kibri, flat car decks from Roundhouse and bolsters and trucks from Athearn. It all came together in the shops of the Cacouna Car Co. Nifty car.

A number of members went in for multiple car displays. **Peter Cunningham** brought out four pieces of British O scale equipment. He said they were typical British open wagons that he built from kits and painted and weathered himself.

Brian Ludlow displayed three O scale twin-hopper cars including a rather unique horizontal ribbed car that he said was used by the Erie and Susquehanna. The car was constructed from a Quality Craft kit and replicated a pre-USRA design. Brian had a pea coal load in this car. He also had a Max Gray brass model of a USRA designed hopper that he loaded with lump coal. As well, there was an Intermountain version of a USRA design hopper lettered for the New York Central.

Jacques Thuot had four HO cars on the display table. They were a Juneco wood gondola with extra details and a load of rusted metal; an open stock car made by a Ye Olde Huff-n-Puff that included board by board construction, chopped straw for bedding and a Preiser load; a flat boom car

made from a Juneco flatcar kit with extra details for use with the Walthers crane and a wood block car made from a Scotia Scale Kit for use in a logging camp.

Alex Binkley had three S scale cars — a bulkhead flat from S Helper Service lettered for the Canada Southern for use in hauling lumber and steel loads, an American Models flat car for use in work service on the CSR and triple hopper from a S Scale America kit.

Bill Crago, who was our reviewer for the evening, had an HO Stewart Models two-bay hopper which he said was unusual for its fishbelly sides. It was lettered for the Western Maryland. He also has a DL&W USRA double-sheathed rebuilt boxcar from Accurail and DYLX 22, a 3500 cu. ft. Dry-Flo hopper developed by General American Transportation Corp. The model was from Eastern Car Works and involved some interesting slicing and dicing. Larger versions of the prototype car were built.

Jean-François Milotte brought out a pair of Kadee disconnect logging trucks and a GS gondola made from a Ulrich kit. Both are 45 years old. I guess Jean-François got them when he was five.

John LeBlanc had a 40-foot GS gondola lettered for Utah Coal Route. He built it from a 1958-era Ulrich all-metal kit. It still looked very good after all these years.

Paul Nor ton displayed the latest motive power for his G scale collection. They were a USA Trains GP9 and an RS-3 from Aristo-Craft. Both were painted in CNR's green and gold livery by Bill Scobie. Paul says they will go to work on Fred Mills' garden railway replacing a high mileage FA-1/FB-1 set.

Carl Swail had an HO Reading gon that he built from a Funaro & Camerlengo resin kit and a Gould flat car constructed from a plastic kit and lettered for his home road.

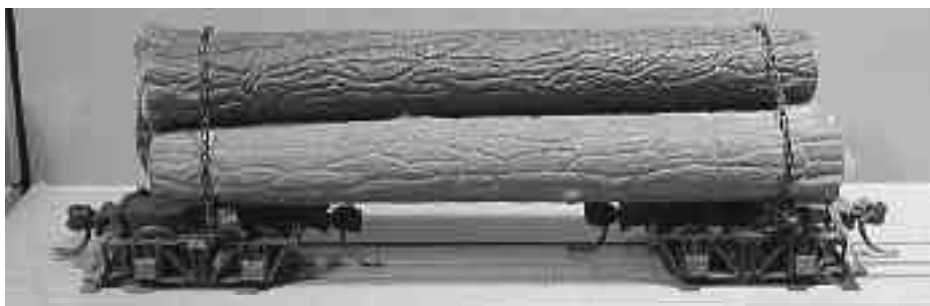
John Lichar son showed that his move and the reconditioning of his new home hasn't dulled his modelling skills. He displayed a CPR Train Master 8910, an Athearn model that he stripped, painted, decaled and lettered.



Bill Crago constructed Dry-Flo car from Eastern Car Works kit.



Ullrich 40-foot GS gondola was built by John LeBlanc.



Jean-François Milotte showed 45-year old Kadee disconnect logging trucks.

Grant Kno wles showed us more of his split personality. He displayed an On3 WSLCo sand and gravel car that he built with considerable modification from a wood kit. The car scored highly at last year's NFR convention in Ottawa. The car is owned and operated by David Steer. Grant also showed off a D&RGW drop-bottom gon that he built from a Robb Ltd. kit. In a highly unusual move for Grant, he actually built it following the instructions. He says there were over 200 tiny pieces to the model. He has two similar kits to build.

Normand Lev ert displayed an Inter-

mountain 60-foot flat car that he won at last year's convention. The load is an armed dozer equipped with a mortar. I'm sure that the Armed Forces wishes it had such a lethal weapon.

While it wasn't a model and certainly not topless (perhaps thankfully), it did end up on the review stand. It was a newspaper clipping of **Mike Hamer** and his fund-raising band for Alzheimers' research called the FORGET ME NOTS. While most of us know Mike for his gorgeous models and innovative work on layout staging, he is also an accomplished musician and former rock star.

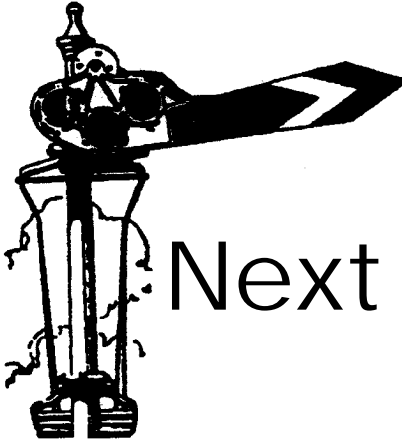


Normand Levert equipped Intermountain flat with military load.
March 2002

TIMETABLE

Upcoming events of particular interest to OVAR members

July 13-20, 2003: TORONTO – MAPLE LEAF 2003 NMRA National, International Plaza Hotel, 655 Dixon Rd. Info: David King (905) 560-6414, e-mail: dlking@wchat.on.ca
<http://www.ml2003.com>



Next Meeting

Exporail Project at the Canadian Railway Museum

presented by

Daniel Laurendeau

Display
to be announced

Tuesday, April 9

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: \$20.00

Includes dinner, facilities, program expense, taxes and gratuities.
Free parking.

Please note:

If you cannot attend the meeting after saying you would, please call Peter Joyce at 841-1950. Thank you.



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THE INTERCHANGE

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Submission of Articles:

THE INTERCHANGE welcomes your submissions that may be of interest to club members. Please send them to one of the departments listed above. Material submitted can be handwritten, typewritten, on floppy diskette, or sent via e-mail.

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