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THE CANADIAN ASSOCIATION OF RAILWAY MODELLERS

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observation platform john johnston: editor

I have been putting off building roads on my layout as I couldn't decide on which method or approach I was going to use. I considered plaster, but I've never been a fan of how even when painted it still looks like plaster. The Smooth It by Woodland Scenics seems to be much smoother than other plasters and a friend who models in HO has used it to good effect. It was on the list of possibilities. One downside is that it can be pricey. I looked at the Roadway material from Busch and when you weather it looks quite good. The problem is the lack of curve material. You get a 6" curve and here in Canada the price of this product is ridiculous for the amount of material you get. There is also the issue of seams and blending it into large areas like parking lots. I considered styrene and that seemed to be a very viable option. I can buy a 4X8 ft sheet from a local plastic wholesaler, .040 thickness for a very reasonable price, around $30 to $40. Single sheet would do all of the roads. The one minor annoyance I had with styrene was the "glass" like look that you get. Ron of Ron's Trains on You Tube has done some styrene roads and they look excellent so it was at the top of my list, then the other night I happened to see a video on making roads on a You Tube Channel entitled Late Night Model Railroad. This gentleman used Tile Grout and I was quite fascinated by the effect. I decided to give it a try.

I headed to my local Home Depot and picked up some 3/16 X 3/8 Weather Stripping for Windows which would act as the tape to outline the edges of the Grout road, and a container of pre-mixed Tile Grout in DeLorean Gray.

Applying the grout is an identical process to applying plaster or Smooth It. The one difference I did learn about very quickly is that grout is “stickier” than plaster

MEMBERS AREA PASSWORD

USERNAME:
gondola

PASSWORD:
hopper

COVER PHOTO TOP BY JOHN SOEHNER, MODELS BY RAE MUNROE: On the CN Northumberland Subdivision of Rae Munroe, Extra 3010 West led by an Atlas RS3 equipped with ESU LokSound DCC passes MacRae’s B/A gas station. I (Rae) cannot recall the kit provider however I kit bashed the station to represent my Grandfather’s service station in Lachute Quebec in the 1940’ & 1950’s. Yard Cafe to left is a Blair Line kit.

COVER PHOTO BOTTOM BY DAVID MACLEAN: Seen here at the O scale Model Railroad Club of Toronto, a string of eight 3D printed CPR Big Otis gondolas led by a Sunset D10 then trailed by a brass CPR van crosses over the 3D printed high steel trestle. The Big Otis gondolas are built from craftsman style “kits” that feature 124 3D printed parts. The bridge is 7’ long and 3’ high, and has a superelevated 78” radius curve.

and you have to be diligent about keeping your trowel clean or the grout sticks to it and you cannot get the road smoothed out. I had a container of water available and a paper towel. I would wet the plastic trowel, draw it across the grout, dip it in the water, clean it with the towel, wet it in the water again and then use it to smooth the grout. Tedious, but it works. After the grout had dried, I gave it a light sanding. Another caution, grout dries like cement. It takes around 24 hours to fully dry, but it has set up after about 12 hours or so. I gave it a first light sanding at that point. I also did a grade crossing and you need to clean out the side of the rails early, I did it after about 5 or 6 hours while the grout was still malleable. If you let it fully dry I suspect it would be almost impossible to clean it out.

I did a small test area with a painted stripe. I masked it off making sure I had the tape fully down. I then used a sponge to dab paint onto the grout. This is essentially a dry brushing technique. I let it dry and removed the mask. I still encountered bleeding and the lines weren't sharp. I suspect the issue is the grout is textured, not smooth, and the tape is not making a good seal. Another method or solution was required.

I then had what I call my "George Dutka" moment. What about PanPastels. I masked off the lines, got out my sponge applicator and my white PanPastel. Wow, the lines are nice and crisp and clean. I'm very satisfied with the result. One caveat, PanPastels will smear if someone rubs the road. Gee, that wouldn't happen on an Open House Tour would it? Problem solved with an overspray of Dullcote. I also weathered the road with PanPastels.

This appears to be an inexpensive way to do roads with good results. I am currently doing the town of Nathansville which is more complex with 11 foot wide travel lanes, 10 foot wide parking spots, and 7 foot wide sidewalks. I'll update my progress in the next Issue. **A series of photos of some of the process can be found below and a colour photo of the finished test road is on the back cover**.

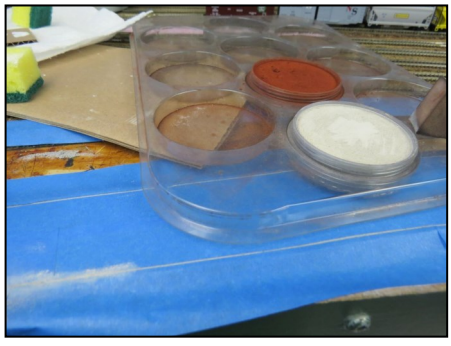
John Johnston: Editor

Here is the grout I used with the weathering tape sitting on top.

The roads in Nathansville have been "taped" out and are waiting for grout.

This is the road and the parking lot at the power plant freshly laid and in the drying process.

In this photo the grout has been sanded. A light second layer was actually applied to feather out the transition to the roadway. The lines were also cut along the rail at the grade crossing.



After experiencing bleed through with paint, I taped off the road and applied PanPastel white, dabbing it on with a PanPastel sponge. You can see where it has been applied at lower left.

Here is the finished striping before weathering has been applied to the road. As you can see the striping is nice and crisp. As noted, this needs to be sealed with Dull Cote.

Chairman's Report

I expect, like me, some of you subscribe to some magazines and buy random issues of others when their covers or contents grab our eyes. I recently bought CN LINES Volume 21 No 4 Issue 81 because it contained "CNR 6060 Then and Now", which for me was must reading.
Later in the issue was a surprise article I also found interesting. Keith Hansen (author of several books) visited Prince Edward Island several times, the last in October 1979, and he wrote detailed notes of his railfanning. He died without publishing them, and his wife asked his friend Ted Rafuse (an author himself, a former CARM Director and heavily involved in our 2013 Port Hope convention) to take over. The result was a 3 part article "CN's Prince Edward Island Operations in October 1979" in V20N1, V20N2 and the V21N4 I had bought. I liked reading all the details of Keith's PEI explorations. Now I want to find the first two parts.

Looking for them I came across CN LINES Volume 20 number 24 issue 77 containing another Keith Hanson article and Craig Symington's "Jordan Spreader at Thunder Bay in 1996". Those made it a must-buy. Two more also needed reading, one coauthored by Andy Malette and another coauthored by Al Lill.

My real surprise though was "Travelling Classrooms in Northern Ontario and the Italian Connection" by Palmiro Campagne (unfortunately just one page). The government operated a dozen passenger cars modified to have a schoolroom in half the car and a home for the teacher and family in the other half. They were typically dropped off at a different town each month, and most of the students would travel through the woods to it to spend a month learning. The first car is on display in a park in Clinton Ontario. One of my great uncles and great aunts taught in another car. When my great uncle died my great aunt took over, then moved with their kids and taught at a regular school until she retired to Toronto near the bluffs. I of course *had to* buy that issue!

On an entirely unrelated topic, a modeler in Mississauga would like to *pay* someone to help lay track for his layout. If you're interested please contact me.

Ian McIntosh

Chapter Reports

TORONTO CHAPTER:

We put together a program of layout tours for the members of the Toronto Chapter of CARM. I am grateful to all 6 members who graciously offered to open their homes and layouts. While the attendance was a little disappointing, the 12 members who attended the various visits and operating sessions were very impressed and enjoyed their visits. Here are some of the highlights. **(All photos by Malcolm Back except where noted)**

Ed Freeman hosted on Saturday, March 9 and Wednesday, April 17 in downtown Toronto. 5 members attended the first general site visit and 2 members the second operations visit. **The Nipissing Southern Railway** is an operations based HO layout running between Nipissing in Northern Ontario to Toronto and across the border to New Hampshire. There is also a connection with the Boston and Maine Railway. This layout is operated with set operation sequences rather than a fast clock. This layout is a great example of an operations based layout in a modest area. It kept two operators busy for 3 hours.

PHOTO LEFT: Ed Freeman handles paperwork while Dan Barnes is making up a train in Nipissing Yard.

PHOTO ABOVE: The main line to Keene on the left and to Toronto and Buffalo on the right on Ed Freeman's Nipissing and Southern Railway.

Willie Waithe hosted 2 operating sessions on Saturday, March 16 and Wednesday April 17 in downtown Toronto. He accommodated 4 operators the first day and 2 the second day. None of us had "operated" on an N-scale layout before, and we were all impressed with the operations possible on this wonderful layout.

This railway models the **CN Weston Subdivision** in N scale. This industrial switching layout was designed for operation and operate it does. The modern era layout models the CN Halton Subdivision, the CN Weston Subdivision and a CP interchange at Lambton Yard near Keele Street. Willie uses the program "Ship It" by Albion Software. This program generates the train schedules and switch lists. The layout is run with Lenz DCC. https://youtu.be/qe1OQ60FztE?t=

On March 16th, four of us operated on Willie's CN Weston Subdivision layout. For three of us this was the first opportunity to operate a Railroad in a prototypical way. A great time was had by all thanks to Willie, Walter-Joseph Grabowski and Keith Martel. Here are some impressions from the attendees.

Sim Brigden says "*I arrived and was warmly greeted by William (Willy) and the other model railroaders. Willy had provided comprehensive layout information in advance of the session so that I had an idea of what the layout consisted of. What I did not expect was a full-on, five hour operating session! Before I knew it, Willie teamed me up with Malcolm. Thank goodness Malcolm was the conductor or we'd still be running trains today! I had never operated in N Scale, used Lenz throttles, and operated with the duties of engineer and conductor separated out.*

Willie's layout is incredibly well designed. Mostly because it is extremely well researched. As such, the selective compression works very well: Willie limits trains to 10 cars. This makes for reasonable train lengths without requiring huge head ends to do switching. We were very comfortable having two trains running at once on the layout. Neither train interfered with the other. Technically, the layout was a marvel: The Lenz system was enhanced by powered frogs and broken into blocks. The turnouts were mostly servos with extremely simple, touch toggle controls. Signalling was minimal but Willie ran a tight ship when it came to authenticity.

I bungled some switching before realizing that Willie had set out a 44 tonner to do the work of my long, consisted road locos on short sidings!! One aspect of the layout that I found most enjoyable was that, rather than a single track, most industries were configured with multiple sidings. This made for great set out and pick up challenges. You can watch a short video of this amazing layout. The detail is exquisite. Apologies for shooting it vertically but it was the best way to capture it." ***https://youtu.be/r3gXM_MLHts***

Howard Back stated "*It was my first experience at an actual operating session. Willie's attention to detail in modelling an actual industrial setting is outstanding. Having to follow an actual switch list/train order over the layout was an interesting challenge although a bit overwhelming at first. The engineer/conductor team added realism. It was a great experience and look forward to being able to participate in more*."

PHOTO BELOW: Dan Randall (left) and Howard Back (right) acting as Engineer and Conductor.

PHOTO ABOVE: Malcolm Back (left) and Dan Barnes (right) operating.

Dave Randall wrote, "*A railfan my entire life, I had always planned on building a model railroad. While I have never actually completed a layout I have had the pleasure of visiting a number of exceptional home and club layouts to fill the void. My observation is that some railroad guys just like to watch passenger and freight trains run in continuous operation, while others throw a wheel bearing if you drop off a car on the wrong siding. While I am familiar with the general principles of railway operations, classification yards, switching lists etc., I had never actually participated in a full operating session on a very good layout designed for prototypical operations. That is until I was introduced to the world of William Waithe's CN Weston Subdivision Layout. As I entered the layout room I have to admit that I was a little intimidated by the scope of the layout. That soon dissipated as we were greeted with a smile and a handshake by the railroad's chief custodian William. Operationally the layout is a point to point design with 3 yards (classification, storage, interchange) and 9 large industries. After a brief overview I was assigned as an engineer to a train waiting in MacMillian Yard along with my buddy Howard who was assigned as the conductor. Armed with our switch list we began operating.*

The operating session led to these observations. First, Mr. Waithe's in-depth knowledge of the Weston subdivision, industries and real-life switching practices added an element of realism to the experience. Second, a good working relationship between the engineer and conductor is paramount as there are many more details to pay attention to than I realized (track speeds, yard and siding limits, throwing and resetting switches, track clearance orders, engine run arounds, dropping off cars, picking up cars...). We spent 95% of our time focused on operations. Aside from a couple of self-inflicted derailments and the odd section of dirty track, the layout and 55 switch machines ran flawlessly. Third, the level of scenery detail on this layout is exceptional. William told me that while much

of the layouts structures and detail is available commercially, a large portion has been scratch built to scale.

If you are a railfan and have the opportunity to participate in an operation session, then take advantage of it. Not only do you get to meet a bunch of great guys and gals, you will also develop a much greater understanding and appreciation of how real railroads operate. Best Saturday afternoon in a long time. Thank you to Mr. William Waithe and his friends, Walter-Joseph Grabowski and Keith Martel, for hosting a great experience."

On Tuesday, March 26, we were scheduled to visit **Mike Walton** in Acton. Unfortunately, due to a medical emergency with one of the participants we had to postpone this visit. We hope to re-schedule a visit in the future. **Lostock Junction Railway** is a 45' x 24' OO Gauge British basement layout. It has been in operation for over 24 years with 6 to 10 operators over 240 operating sessions. While the focus is on operation the scenic coverage is about 90% complete with detailing work ongoing. A second layout "Underneath the Arches" highly detailed dual narrow-gauge layout created by the late Brian Fayle. This 48" x 42' layout is currently being restored with improved wiring as an exhibition layout. https://www.youtube.com/watch?v=SEqF7nAlfFo.

On Saturday, March 30, **David Woodhead** hosted an operating session for 4 members. Taking its name from the real Belleville and North Hastings, which was proposed as a 3'6" gauge line, the M&NH (**Madoc and North Hastings**) is an "informed freelance" narrow gauge set in Central Ontario in the years around the turn of the century (19th into 20th).

Built to 3' gauge in ¼" to the foot scale, or On3, it has evolved into an around-the-walls point to point layout with a central peninsula used as a project area. The prototype influences are primarily from Eastern common carrier narrow gauge lines such as the Ohio River and Western, early EBT, and Waynesburg and Washington. Scenery is about 67% complete, and operating sessions have occurred at irregular intervals using the Switchlist program and Lenz DCC. http://www.davidwoodhead.com/page7.html

PHOTO ABOVE: Turntable and yard at Windrim, Ontario on the Madoc and North Hastings.

On Saturday, April 20 **Gerald Harper** hosted two members to operate his **CP Sweetgrass Subdivision** layout. The CP Sweetgrass Subdivision is an HO layout located in Alberta and British Columbia featuring the CP Crows Nest pass rail line and the BNSF northern transcontinental line through Selby, Montana where coal and grain are king. Trains include run through unit trains and locals switching old style grain elevators. The layout occupies 3 decks with ramps between decks rather than helixes. Scenery is essentially complete but always in need of refreshing. Period is mid 90's to early 2000s so features lots of new motive power but still no shortage of narrow cab locomotives. It occupies a room 13 x 24 feet and has recently been modified to help older operators avoid a duck under to access one area.

Gerald's second layout is On3 scale and represents the **Anyox, British Columbia mine railway** in summer 1921. This railway was one of the earliest examples of electrification in Canada and the model includes two scratch-built steeple cab electric locomotives and scratch-built brass ore cars as exact models of the unique operating at the mine from 1914 till 1936. Track is mostly hand laid, scenery is 95% complete but work is still ongoing on operating wiring and some scenicing. Some ore cars are still under construction as also are the scratch-built catenary system. The buildings and industrial plants are almost entirely scratch-built. Lighting and sound effects are still being worked on. This layout occupies three sides of an area 16 x 14 feet. We didn't operate this layout, but it was a privilege to study this layout in detail.

PHOTO BELOW: Engine shed at Coe Hill on the Madoc and North Hastings.

PHOTO BELOW: Ben de Vos operating a Soo Line Freight on the Sweetgrass Subdivision.

PHOTO ABOVE & BELOW: Gerald Harper's Anyox, British Columbia mine railway.

On Saturday, April 27 **Walter Reid** in Mississauga hosted our last visit. Unfortunately, or perhaps fortunately for me, I was the only operator to show up for this session. I had a private tour and operating session with Walter. We had a ball running all those geared locomotives. And the backdrops are spectacular. I really felt I was standing in the middle of the Rocky Mountains.

Walter Reid's **Dolly Varden RR** is built in On30. The layout is based on the prototype narrow gauge railway existing in the 1920's in Northern British Columbia. All the track is hand-laid code 83 with turnouts built with Fasttracks turnouts jigs switched with ground throws. Steam rules with Porters, Shays, Climax and Heisler steam engines, along with some small early diesels. The layout is point to point in an 11' x 17' room with an attached 12' yard. The operation orders are given by the dispatcher to the train crews. The layout is Digitrax DCC with wireless throttles and Tam Valley Frog Juicers to alternate the polarity of the frogs. Signaling in the yard and automated lighting in the town building is done with Arduino controller and Neopixels. The layout lighting is controlled by dimmers that allow for a day / night transition.

If you want to learn more about the Dolly Varden, go to the website: http://dollyvardenrr.com Photos of the building of the layout**:** http://dollyvardenrr.com/reid.htm

Malcolm Back

PHOTO ABOVE: Walter Reid operates on the newly constructed logging branch of his Dolly Varden RR.

PHOTO ABOVE by John Johnston: 50 ton centre cab Whitcomb pushed ore cars up the grade to the mine.

PHOTO BELOW by John Johnston: Heisler pulling log buggies down to the docks.

NATIONAL CAPITAL CHAPTER:

The National Capital chapter enjoyed our first excursion of 2024 in early May. While the crowd was not large, we all enjoyed ourselves immensely.

We started off with a very nice HO layout in Stittsville. Marten Zieren has modelled a freelanced CN/ CP line loosely based in Eastern Ontario/ Western Quebec area during the steam/ diesel transition. The scenery is spectacular and about 75% finished

Marten has extensively used fibreoptics for lighting, with hundreds of little "bulbs" lighting up everything from police cruisers to campfires and arc welders.

After tea and cake provided by the hostess, we proceeded to lunch at Boston Pizza where we had a mini meeting. The current Chapter officers were acclaimed, the financial statement was read and approved and we had a great meal.

We finished with another great HO layout modelling the New York Central/ Michigan Central/ CP traffic through Western Ontario in the late '50s. John Mitchell has captured the flavour of the area with several recognizable structures and features. John operates with a regular crew and a 24 hour schedule takes several sessions to complete. Our gracious hostess offered us refreshments here as well.

A very successful day with more excursions in the pipe." **Bruce Leckie**

PHOTO ABOVE: Peter Jackson inspects the fibreoptics system on Marten's layout

PHOTO BELOW: Marten Zieren's (left) and Malcolm Vant (right) with Ed Brandon in the background

PHOTO BELOW: The lunch crew (l-r) Ian Frost, Malcom Vant, Peter Jackson, Suzanne Brandon, Ed Brandon, Paul Anderson, Jeff Hill
.

PHOTO BELOW: John Mitchell has scratch built the Michigan Central station and shops at St. Thomas complete with interiors.

Part 2: DCC-EX The Command Station & Booster

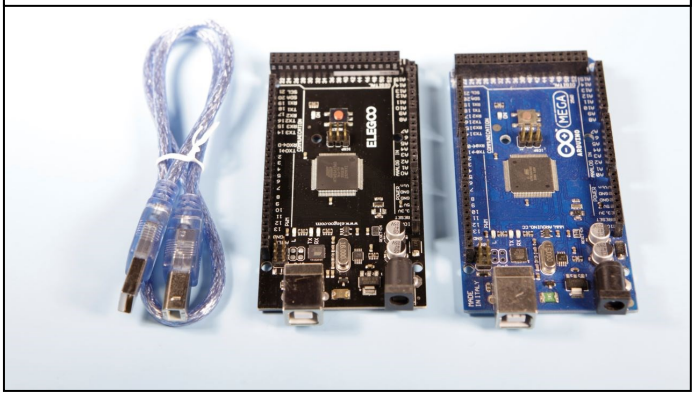
Article by David King

This is the second part of my writings on DCC-EX and this time I would like to give you the details needed to get started with building or assembling your own system. As I mentioned before there will be some work required by you to obtain the parts needed and you will need to install a set of files into the controller. This may sound like a big job but getting all the parts will take you longer then setting them up. Let's get started.

Controller Board

The first component you will require is a controller board. The most widely recommended board is the Arduino Mega 2560 R3 or an equivalent board. You can obtain this board, usually an Arduino brand original, from a number of electronic or hobby supplies but if you don't know where to go just search Amazon for "Arduino Mega 2560 R3". While writing this I did a search and found many choices on the first page of search results. At the high end was an Arduino original brand board for about $79 and an Elegoo board with USB cable for $30. There were others as well for around the same price. I'm sure the quality of most of these boards is good but I would personally stick to either the Arduino original or the Elegoo board as I've never heard anything bad about either one. So my first choice would be the Elegoo, after all I don't mind saving a little bit of money.

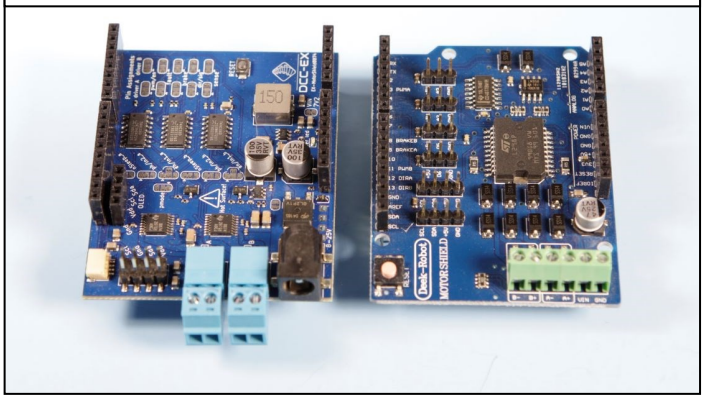
Controller Boards, left to right, USB Cable, Elegoo and Arduino



Booster/Track Power

Next we are going to need the booster board which supplies the power to the tracks for both mains and programming. This is just a motor driver board that is used to combine the power needed for the track with the command signals from the controller board. This is made easy for use as we do have a few choices and all of the boards that I would recommend are referred to as motor shields. I tried searching on Amazon for this one but with less promising results so I searched from another shop I've used, RobotShop Canada, ca.robotshop.com. Here I was able to search for "Arduino Motor Shield" and I got some good results. First they had the Arduino Motor Shield Rev3 in stock for just over $35 and another one from DFRobot for about $22. These both look like they would work fine but they have some limitations. Both of these units have a max input/output voltage of 12V DC, which is okay for most of us but it is limited to a maximum of 2 Amps. Most of these types of motor shields that stack right on top of the controller boards need to have a wiring trace cut or a pin bent out of place to prevent the motor shield from back feeding to the controller board. In most cases the voltage is different on this connection between them. As a result of the different voltages power to the motor shield is only used for the track power and a power supply will also still be required for the controller board. This will be fine for a couple of locomotives but if you want to be able to run more you are going to need something bigger.

Motor Shields, left is DDC-EX version, right is Arduino Clone



To overcome the limitations of the limited power capabilities of these shields the group at DCC-EX developed their own motor shield with expanded capabilities which include higher input voltage range from 9 to 30V DC and 2 outputs of up to 5 Amps each for main and programming track power. They have also built in many other features that are included commercial DCC systems like reverse polarity protection, fault detection to protect against shorts, the ability to supply the controller boards with power (so only one power supply is needed), and many more features as explained on their website dcc-ex.com and look for MotorShield8874. One item to note is that if you use this motor shield you don't need to cut a wire trace or bend a pin out of the way as this board is designed to supply the proper power to the controller board. This also means that you no longer need to supply the controller board with a separate power supply. Now to get one of these boards takes a little more effort as I didn't find anyone in Canada who sold them. On the DCC-EX website they list a number of contacts that sell the board and I chose store.dcc-ex.com from the United States and ordered mine from there. If you check it out you will find it says Pre-Order, this is normal at their site as they get in 10 to 20 at a time and assemble and test them before shipping them out. The cost ranges from about $35.50 US to $44 US. It varies depending on the options you choose, mine was $36.50 US as I chose a kit with headers which meant I had to do the soldering of the headers. If you want the full kit soldered together yours

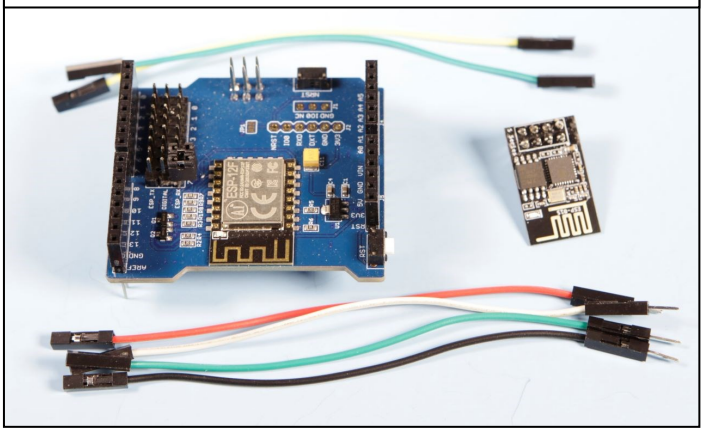
would be $44 US. Of course don't forget shipping, duty and taxes. I lucked out as I wasn't charged duty or taxes as it just shipped through regular ground mail.

Communications, WiFi

Third item you will need to get is a wifi board so that you can communicate between the controller board and whatever you use as a throttle. In this case there are options but really only viable options starting with the ESP-01s wifi module. This module would not be my first choice even though I started with one of these modules. The biggest issue is that these have been manufactured for years so there are many variations of the firmware on the on-board chip. For use with DCC-EX the firmware needs to be 1.75 and so far I haven't found any of these modules with that firmware revision on it. As a result of this I had to do a lot of searching and eventually found all of the tools needed and I was able to reprogram them to revision 1.75. I spent a lot of time figuring out how to do this and finding the right software versions to get the end result needed. I spent more time on this than any other part of this adventure. These are cheap as I did find them on Amazon for about $10 for one but there is a better choice.

The better choice is to use the wifi shield that was created for this system by MakerFabs in the UK. This shield has the ESP-01 wifi chip installed on a convenient board called the ESP8266 WiFi Shield and they even have the proper version of the firmware already installed on it. This makes using this wifi shield basically a plug and play device. I liked the idea and the build so much that I ordered it from MakerFabs in the UK but as I recently learned I didn't need to do that. Both RobotShop and the DCC-EX store carry the shield. From RobotShop they are selling for $13.61 and DCC-EX for $13.95 US and this one includes the 2 jumpers required to connect it to the controller board. Either option would be a good choice and having the convenience of having the correct firmware installed makes this a great option.

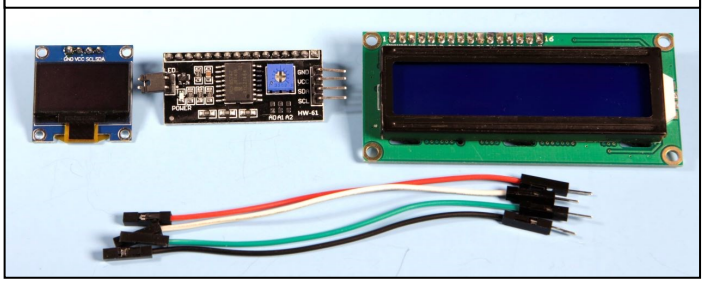
Wifi boards, left is MakerFabs, right is ESP-01s, and wires



Display, Optional

I list this as optional but I would recommend that you install one of the 2 possible displays as this makes it much easier to know what is going on such as when track power is on. I started with the 1602 LCD display that has a backlight. To use this display you also require the adapter board that soldiers directly to the back of the display

Displays, left is OLED, middle is LCD I2C adapter, right is 1604 LCD, and wires



and has the 4-wire connection point that is used to connect it to the controller board. This is a common connection used and is called I2C. The four wires used are for +5 volt power, common wire, SCL and SDA. The SCL and SDA are the wires that are used to carry the actual coded communications from the controller to the display. This display is available on Amazon for about $13 (display, I2C adapter and wires), and from RobotShop they were out of stock at the time of this writing but about $18 and you would need to supply the wires.

After a short time using the LCD display I switched to a smaller, (letter size), display that showed more information at once on the screen, the letters are much smaller, 0.96" OLED display. This display has the I2C adapter built in so the only other item needed is the 4 wires to connect it. This display I find is easier to read as it is not backlit so the lettering is very sharp. This is also available from Amazon for about $15 for a single to $27 for 2 to 4 units including wires. RobotShop also has them on their website for about $9 with no wires but at the time of this writing they were out of stock. As a final note on this be sure if you are ordering this that it is ready with I2C built in.

Wires, as Needed

A few wires will be needed to complete the wiring if the display or the wifi modules didn't include the required wires but you can order wires with connectors already attached to the wires. The most common name for these wires are Dupont wires. They come in various lengths and various combinations of male and female connector ends. Which ones you need will vary depending on which parts you ordered. I have found that having a small number of each combination, there are only 3 combinations, handy to have around for various projects. Again these are available from Amazon for about $9 to $20 for a package of wires with 3 combinations included in 1 or 2 different lengths. RobotShop also carries various packages of wires ranging from $5 to $22. Just make sure that you get a variety of connector combinations as this is very handy for this project and maybe others in the future.

Power Supply

You will need a power supply to run your new DCC-EX system and there are many options. First you need to know which motor shield you will be using. If you use the shield that was designed by DCC-EX you will want a power supply that can provide 12 to 18 volts DC and is capable of 3 to 10 amps. This will allow you to run multiple locomotives and you will not require a separate power supply for the controller board. If you are using one of the

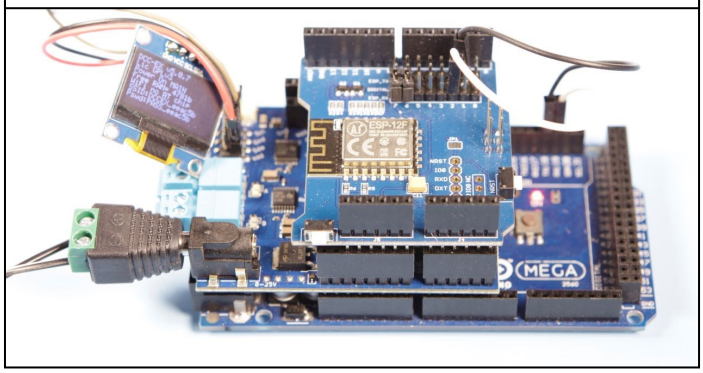
other motor shields you will require a 12 volt DC with about 2 to 3 amps, as well you will need a second power supply for the controller board that is 6 to 9 VDC and is capable of 500 to 1000 milliamps.
In all cases it is best if the DC connector on these power supplies has a 5.5 x 2.1mm barrel connector with a positive polarity center pin. If your connector doesn't match you can get adapters that will you use to make the connector compatible. I was fortunate to have a few power supplies laying around that are usable for this use. Expect to pay $15 to $80 for each power supply as the prices increase as you want more current.

Software, the Program
Once you have obtained all of the different components needed you can find the software needed to set everything up on the DCC-EX website. They have made setting up your new command station and its options simple as they have created an installer to write the code for you. All of the files that will be needed are downloaded by following the instructions on prompts when you use the EX-Installer. You can find the installer listed in the menu on the left side of their website. I used this method myself when I first installed the software on my own setup and it worked great! As you work through the prompts it asks you which motor shield, booster, you are using, are you using wifi and if so which board are you using, and it even asks if you are using a display and which one. Then it proceeds to build the files needed and downloads it directly into your controller board.

Myself being a bit of a programmer and tinkerer I also tried that manual download which allowed me to even make more customizations to my setup. If you wish to do this you will need to use the Arduino IDE, software, and edit some of the files. You won't be totally alone in doing this as they have a large mound of information on the site and on their discord channel that will help with this process. In the end I think it is worth the effort to learn some of the programming but it is not mandatory. You should be able to have some fun quickly as the installer makes getting started easy.

What's Next?
For the next issue of The Canadian I will write about the WiFi wireless throttle and take you through my build and setup. We will start with components needed and the programming. A future article will have the final build including the 3D printed cases that I'm using and hints on building a finished product. Once these are done I will look at upgrades/additions to the system and maybe more on 3D printing for model railroads.

Command Station, Parts assembled and powered up



Useful Links;

DCC-EX Website	https://dcc-ex.com/
DCC-EX Discord	search for DCC-EX
RobotShop	https://ca.robotshop.com/
DCC-EX Store	https://store.dcc-ex.com/
MakerFabs	https://www.makerfabs.com/
Amazon	https://www.amazon.ca/

Calling All Photographers

Please submit photos for the 2025 CARM calendar

If you have an image that you would like to submit to us for use in the 2025 CARM calendar please read the following. We are seeking 6 high quality images of prototype scenes and 6 high quality images of model railroad scenes to include in the calendar. These images need to be in sharp focus for most of the image, well lit, well composed and of interest. Images should be in 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. If you have an image you wish to submit an image for consideration follow these steps.

Submit a small JPG image if possible for consideration. Obtain all of the information about the image including:

Location
Date
Photographer
Camera stats
Owner of items in the scene

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

Send your submissions to calendar@caorm.org before

July 14th, 2024 Thank You

CN NORTHUMBERLAND SUBDIVISION

LAYOUT AND ARTICLE BY RAE MUNROE PHOTOS BY JOHN SOEHNER

My name is Rae Munroe, I live in the Glenora/Picton area of Ontario. My freelanced layout is a “U” shaped walk in based on the imaginary Northumberland Subdivision of the Canadian National Railway. The railroad is set in the autumn of 1958. I spent 11 summers from 1961-1971 working for Canadian National mostly as an Agent/Operator at a variety of locales including, Trenton Junction, Cobourg, Port Hope, and Napanee.

At that time Belleville was headquarters for the Rideau Area and was a bustling centre of CNR activity. Locations, structures and track plan are totally freelanced and the Stations, Section Houses, Freight Sheds etc are all Kanamodel kits which are prototypically accurate but not for the locale portrayed. The layout is approaching completion and I am looking forward to operations. The layout has 70 feet of mainline track. The back wall is 16 feet and the side walls are 12 feet each while the lower yard area is 10 feet and the upper yard area 8 feet. Some scenes are complete but many details are still to come. Layouts are never truly finished! Enjoy this photo tour of my layout.

PHOTO BELOW: Hendrix Foundry is a FOS hydrocal kit with some added detail. The Foundry is "now owned" by my UWO Big Brother John Soehner or so the story goes. Hydrocal does a great job replicating a stone building.

PHOTO ABOVE: Train No. 6 approaching Cobourg Station. The station is a Kanamodel Grand Trunk/ Canadian Northern Class E station. The locomotive is a Proto 1000 C-Liner # 8720 pressed into Photo-op service as the Rapido FPA-4 # 6767 is still in the box. The detail bag with horns, grab bars etc still not installed in the C-Liner as it was in the shop having Soundtraxx Tsunami DCC & Sound installed. Freight Shed and Section House are Kanamodel kits as is the Company house in the background.

PHOTO ABOVE: H.S. Traviss Feed Millis a Fine Scale Miniature Crocker Bros. Feed Mill. FSM kits are complex builds but wonderful results. The actual Swift mill existed in Walton Ontario owned by my hunting partner’s father Herb Traviss in the 1950’s-1970’s.

PHOTO ABOVE: John Soehner on the left and Rae Munroe on the right.

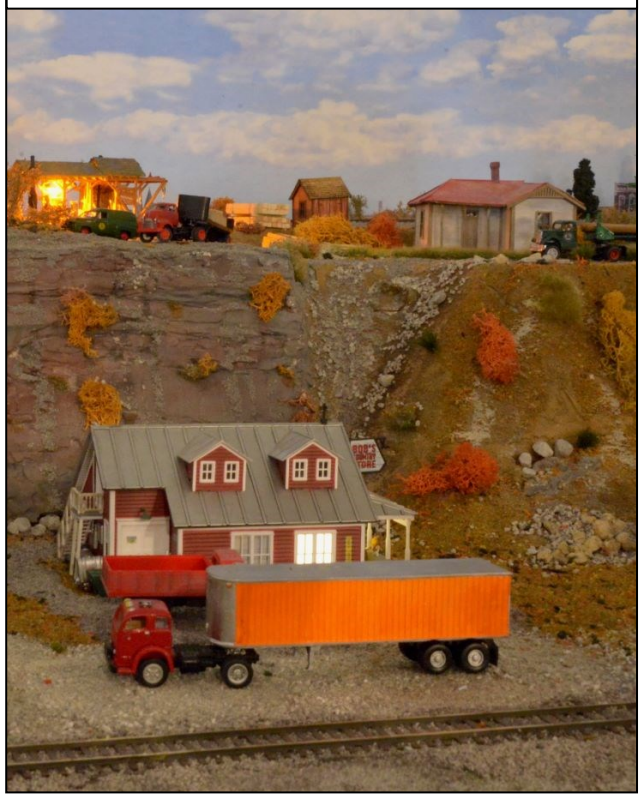
PHOTO BELOW: Clyde & Dale's Barrel Factory is a Woodland Scenics Built & Ready. I have an FSM kit which may replace this building once I find time to build it.

PHOTO BELOW: Extra 1861 heads past the Cobourg Station and goes up the 12 foot wall past the kit bashed MacRae's B/A station which represents my Grandfather's service station in Lachute Quebec in the 1940' & 1950's.

PHOTO ABOVE: Port Hope freight shed from Kanamodel kit—line side shed probably an ITLA kit.

PHOTO ABOVE: Extra 1861 heading East to Cobourg led by a Bowser Grand Trunk RS3 Phase III with ESU LokSound DCC & sound. It passes under the Rix overpass. The house with the red roof at the far left is American Model Builder's Old Man Dan's House, an easy and enjoyable build.

PHOTO BELOW: Grenville Lumber from The Trainmaster was another enjoyable build. The model in the foreground is Jerry's Small Engine Repair from Bar Mills Models.



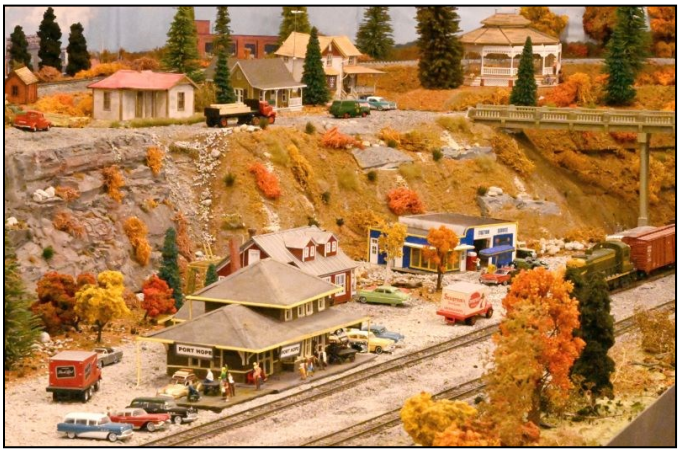


PHOTO ABOVE LEFT: Farmer sets out on his tractor to see how his pumpkin crop is coming along.

PHOTO ABOVE RIGHT: Passengers wait on the platform at the Port Hope station as a local freight drifts by.

PROMOTIONAL SURVIVOR BY PETER MUMBY

On July 03, 1971, four specially decorated freight cars were on public display at the CN yard in Belleville, Ontario. Each of these cars had one side painted and lettered to represent the type of load it was designed to carry. The opposite side and ends were finished in the normal fashion. The prototype photos in today's post were also taken at Belleville, although this time insulated boxcar CN 283032 displays its appearance on July 25, 1993 at Belleville, Ontario following 22 years on the road.

An HO decal set for this car had been produced. This set, Prototype Model Industries H-3, included instructions to paint one car side white, but neglected to indicate specifically which side. That is where the photo of the "A" end of the car comes in to play, making it clear that the large apple logo was painted towards the "B" (brake wheel) end of the car. **Colour photo on rear cover.**

MEMBER'S SUBMISSIONS

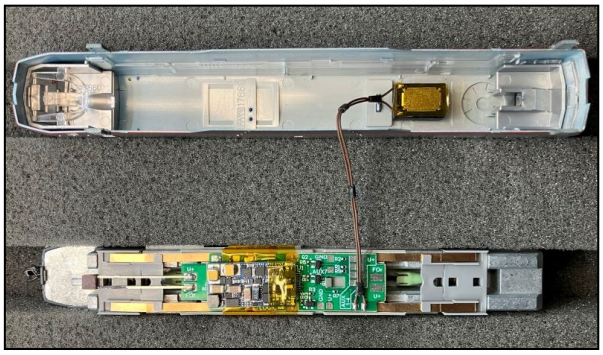
CONTENT AND PHOTOS FROM A WIDE VARIETY OF MEMBERS

ANDY MALETTE (Etobicoke, ON)

Here are some pics of CNR K-3-b 5588 and CNR K-3-a 5567. I have finished building them. At present they are in the paint shop. I should add that they are built in S Scale. 5588 is on the left and 5567 is on the right.

WALTER-JOSEPH GRABOWSKI (Toronto, ON)

I have been installing ESU LokSound 5 decoders in my N Scale locomotive fleet over the past 6 months. I have acquired many new old stock (NOS) locomotives built by Atlas, Bachmann, Intermountain, Kato, and Life-Like. LokSound decoders are made by ESU, and range from simple direct drop-in style to more advanced micro & nano size with hardwires. Each locomotive upgrade has unique attributes, but all share similar electronic wiring characteristics such as track power, motor power, isolating the split frame chassis to avoid shorts, LED lighting, and sugar-cube speakers. My personal favourites are the older analogue DC locomotives that require minor modifications to the split frame chassis, for those locomotives I use a Proxxon MF70 milling machine. I enjoy researching locomotive parts diagrams, fibre optic filaments, SMD LEDs, sugar-cube speakers, wiring harnesses, ring terminal connectors, and various model railroad forums pertaining to dcc sound decoders. Hopefully my passion will interest some people to explore the possibilities of installing a dcc sound decoder in a locomotive.



ROBERT LANGLOIS (Port Stanley, ON)

This model was started at the 2003 Toronto Maple Leaf convention at a clinic presented by Peter Moffett. The model kits parts were cast by Peter based on the prototype located at Brantford. The NMRA had indecently bailed from supporting the convention after a panic attack of SARS which was more prevalent in the States than here but Peter took on the challenge to give a clinic. It has taken 20 years to finish it but it is now complete, even with an internal scale balance beam.

RICHARD CARNEGIE (Qualicum Beach, BC)

Several months ago, I decided to design and build realistic, automatic level crossing signals: flashing lights, bells and working gates. This has turned out to be a much more complex challenge than I expected, so it is currently a “work in progress”.

The electronic logic that detects when a train enters and leaves the zone around the level crossing is the key to the whole project. It controls when to turn on and off the flashing lights, etc. It recognizes trains of any length moving in either direction, which is surprisingly tricky to do, especially since the rails can’t be used. Trains are sensed by infrared or ultrasonic sensors in trackside “shanties” at each end of the zone. Having them ignore the gaps between cars is another challenge.

BRUCE LECKIE (Brinston, ON)

A busy day in Coralie Cove. The White Swan is unloading cargo, the GeeBee has just arrived at Kriskot Fish to unload their excellent catch. The Calabogie Clipper trundled by on its way to the station.

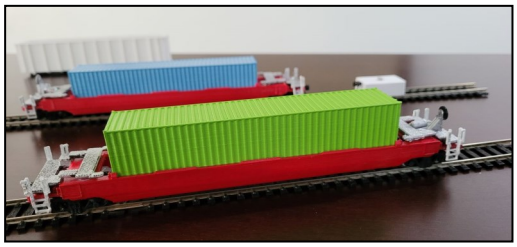
This scene is on my On30 module. The White Swan is a Sylvan kit, the GeeBee is scratch built and the Doodlebug is a kitbash from a Bachmann combine.

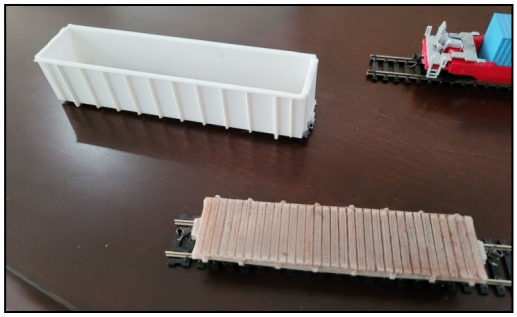
BEN de VOS (Etobicoke, ON)

I recently visited a store called DB Sport Collectables, located on St. Clair Avenue West which has a good selection of TTC memorabilia including stuff that was exclusively given to TTC employees. The owner of the store, Dan is a retired TTC driver. He used to drive the TTC work trains including the TTC's diesel locomotive RT-18, he even has a model of the locomotive that the TTC gave to him as a gift, he keeps it on display at the store but he did make it clear it's not for sale.

VIC NELSON (Kingsville, ON)

I got into 3D printing a couple years ago and have a few HO models in various stages of completion. These are a pair of Smooth side well cars with 40ft containers. Everything is 3D printed except the wheel sets and couplers. The containers are also printed. Still need to so the decals which I have also printed. Also a couple of prototypes . A 36ft plank top flat and a Canadian wood chip car. Still working on these and also a 3 car well car set printing now.





DAVID MacLEAN (Terra Cotta, ON)

Seen here at the O scale Model Railroad Club of Toronto, a string of eight 3D printed CPR Big Otis gondolas led by a Sunset D10 then trailed by a brass CPR van crosses over the 3D printed high steel trestle. The Big Otis gondolas are built from craftsman style “kits” that feature 124 3D printed parts. The bridge is 7’ long and 3’ high, and has a superelevated 78” radius curve. It’s sort of like a MicroEngineering kit but in 1:48, with many 100s of parts and enough rivet detail to satisfy the “no compromises” style of modelling.. Happy to report that although its a bit daunting to cross, there have been no accidents after over two years of heavy service! Pay not attention to the strange creature seen on the horizon. **Additional photo on front cover.**

IAN MCINTOSH (Regina, SK)

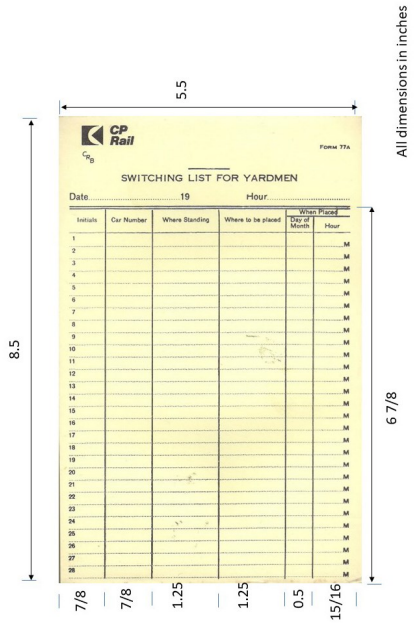
While at Regina Railfest model railroad show in late April, I came across something I considered quite unique. An ALCO C630 #2032 of the Cape Breton and Central Nova Scotia Railway in HO scale. The model is a Bowser Executive Line DCC locomotive with Tsunami sound. A highly unusual unit to find at a model railroad show on the Canadian Prairies. The Cape Breton and Central Nova Scotia Railway is a short line, serving Cape Breton and central Nova Scotia, previously owned by CN. The ALCO unit is a former CN unit. The railway had a number of these units, powering trains hauling steel and coal as its primary business. The painting of the unit is a very accurate representation of the actual unit. On my layout, I have it paired and treated as a unique lease unit with a like ALCO C630 CP Rail unit to serve hauling coal. It is enjoyable watching them in action.

MALCOLM VANT (Ottawa, ON)

Last issue I reported on a scenery diorama I had been working on. It was still in its early stages then. This issue I’d like to share some photos from a walk through the underbrush in my HO scale forest. I’ve been learning how to replicate the forest floor with dead leaves, twigs, bushes, stumps and trees appropriate for the scene. **Additional photo on rear cover.**

PHILIP JAGO (Gloucester, ON)

For those interested in prototypical paperwork, I obtained a pad of CP Rail's "Switch List for Yardmen" forms from a recent yard sale held by the Railway Museum of Eastern Ontario in Smiths Falls. I purchased this to add some semblance of order to my chaotic mind when switching cars on my layout. For the benefit of those interested in making up their own forms, I have provided a dimensioned version of the original



KEN LAYLAND (Burlington, ON)

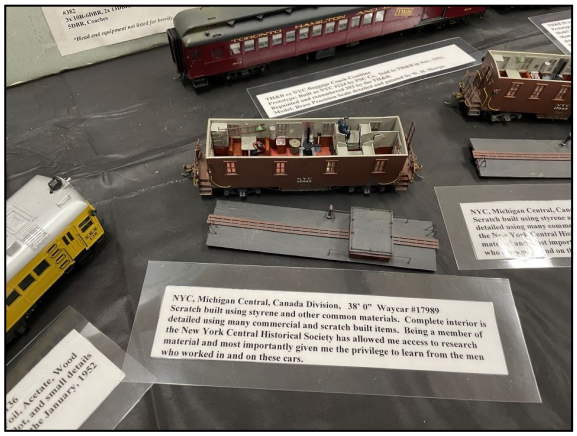
The HOMES Club of which I am a members sponsored an RPM meet and we had a great day. Here are some of the models that were displayed.

Scratchbuilt narrow gauge combine by Keith Stamper of Port Colborne

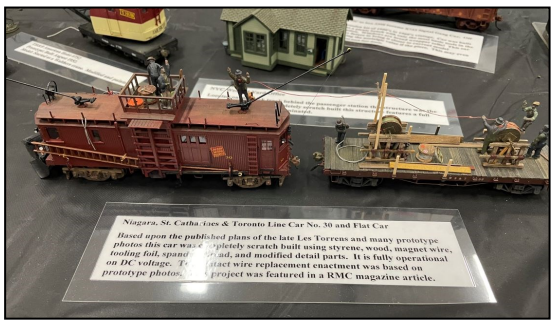
Colorado and Southern consolidation #71 by Keith Stamper

Overall view of the display put out by Bill Sharpe

NYC/Michigan Central Waycar #17989 by Bill Sharpe

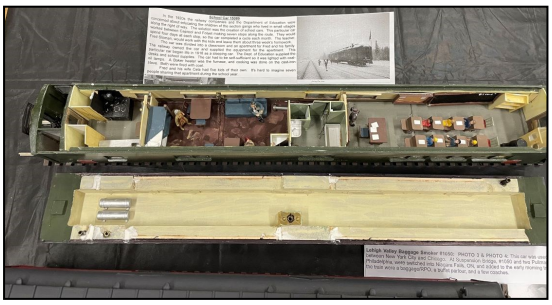


"Niagara St. Catharines & Toronto line car and flat car by Bill Sharpe



NYC/TH&B Freight House in Welland as it was in the summer of 1954, scratchbuilt by Bill Sharpe

"O" Scale School Car by Craig Webb



Greg Lech's collection of CN steam

OK AUTO BODY

BY GEORGE DUTKA

At one time OK Auto Body was located across from the VIA-CN Brantford station parking lot. I liked the looks and the ring to the sign and name so I took a photo (digital files are cheap compared to film in years gone by), I photograph everything digitally these days.

I built a medium size diorama a few years back (was in RMC earlier this year) as a backdrop for my photos. It is a mix of leftover bits and pieces stored away in numerous boxes for years. OK Auto Body using these leftovers became a small building flat at the very back of the scene. I needed a smaller filler structure for this leftover space.

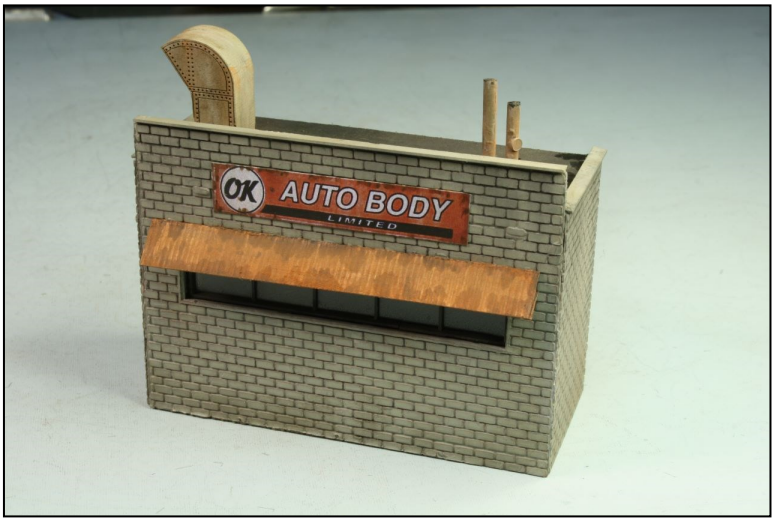
I had some plastic block wall sheeting that was really sturdy that I am not sure were it came from that I cut to make three walls. I glued corner supports in place using Walthers Goo The roof and backwall is made from sturdy cardstock and attached with my Goo also.

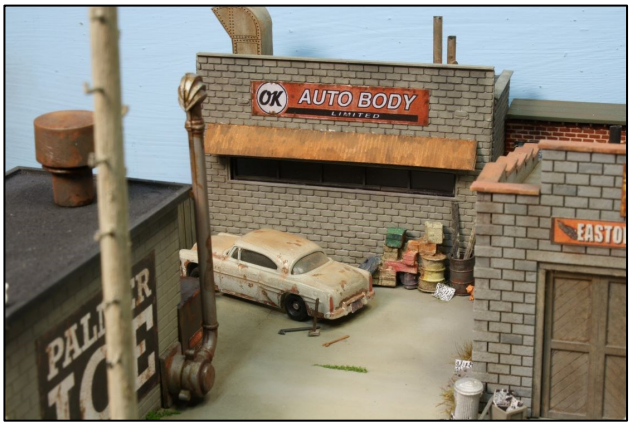
The blocks are spray bomb painted Model Master light sea gray. I then applied PanPastel neutral grey extra dark and raw umber shade. The roof is acrylic black from the dollar store. I added an awning made from a leftover piece of corrugated siding from a BarMills kit. It is a cardstock item which is painted a rust color followed by some AK rust highlights and Vallejo rust texture. Windows are painted black.

On the roof I added a blower vent leftover from an ITLA kit. ITLA always supplies you with lots of extra details that work well in other projects. It was painted silver and rusted up a bit with Bragdon Powder dark rust. I also added two stacks on the other side of the roof. These are made by cutting apart some Tichy detail part sprues to length painting them black with more Bradgdon Power dark rust applied. I have used sprues a lot for stacks.

The last detail added to the structure is the OK Auto Body sign which I made a colour photocopy of my printed photo of the structure. Out front I added a beat up car, some tools and a load of boxes and barrels. I really like how this little structure fits in with the rest of the back alley scene. Its small with some added interest. **Colour photo on rear cover.**

The finished structure is ready to be placed into the scene





OK Auto Body fits nicely in the rear corner of the back alley diorama. Some details out front and a fence running down the side of the diorama (a Tichy detail) ties the scenes together. More interest is added, such as a rusted old car being worked on and boxes and barrels against the structures wall. Most of these are BarMills details.

The walls are being worked on and these are some of the tones used from my collection of PanPastel pigments.

The rear wall will not be seen at all so nothing is done here. It is just a heavy piece of cardstock that is leftovers from another build. I have a lot of bits and pieces of cardstock from craftsman kits that were not used when kit-bashing was required. FOS also sells good cardstock as an extra if none is on hand.

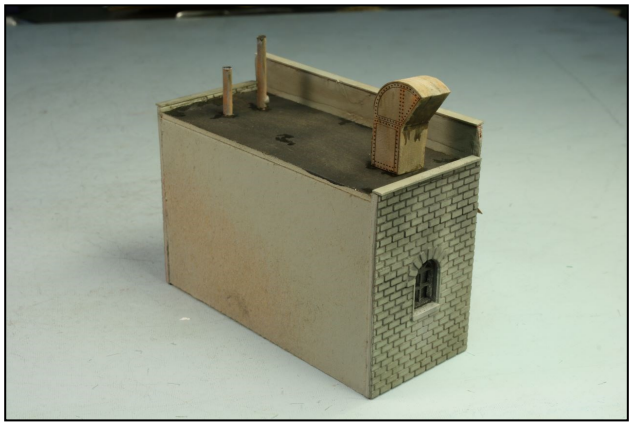


PHOTO LEFT by MALCOLM VANT:

This photo shows the forest on a scenery diorama I am working on. Take a walk through the underbrush in my HO scale forest. I've been learning how to replicate the forest floor with dead leaves, twigs, bushes, stumps and trees appropriate for the scene.

PHOTO RIGHT by PETER MUMBY:

CN 283032 was photographed at Belleville, Ontario on July 25, 1993. . Each of these cars had one side painted and lettered to represent the type of load it was designed to carry.

PHOTO LEFT by GEORGE DUTKA:

OK Auto Body fits in nicely in the rear corner of the back alley diorama. Some details out front and a fence running down the side of the diorama (a Tichy detail) ties the scenes together.

PHOTO RIGHT by JOHN JOHNSTON:

This shows the test road that I constructed from tile grout using PanPastels for the lane markings. Basic hardshell scenery and soft shoulders have been added.