INEXPENSIVE WATER TANK UPGRADED USING PAN PASTELS

FRONT COVER PHOTO BY GEORGE DUTKA: The diorama is set in place on the White River Division. A Rutland Railway Mikado handles a short train out of Petersburg.

observation platform
john johnston: editor

THE GREAT BACKDROP EXPERIMENT

For several years now I have been experimenting with backdrops for the Grand Trunk Southern. These experiments have generated a number of conclusions. First and foremost, I am not an artist. Painting my backdrops is clearly out of the question.

Yes, I watched all of those You Tube videos that claim to show you how to do it in 3 easy steps. My efforts looked like they were done by a 1st grader. Painting my own backdrops was clearly a non starter.

At this point I should clarify I need roughly 100 feet of backdrop. I next considered using Roll Outs by CARM Sponsor Sceniking. This looked like it would work, however, just as I began to consider which ones to use, Les decided to retire. Two options down.

A friend has used commercial backdrops on his small HO layout with good effect so I began to research the commercial vendors. With Les out of the business, all of these vendors are now located in the U.S. More later on the problem that creates.

After a long and tedious Internet search, I had focussed on a vendor in New York State called LARC Products. I priced out my 100 feet of backdrop. $1400 U.S. That brings up the problem I talked about, conversion to Canadian dollars and then importing through customs. End result was a cost in the $2000 Canadian range.

Now, this is an important part of the layout, and I did briefly think about it, however, I just couldn't justify the cost. LARC does offer all of their backdrop photos on a series of CD's for $75 U.S. I decided to order them.

This proved to be an excellent investment. If you want to look them up they can be found at www.larcproducts.com or just google them.

I had previously tried printing my own backdrops on 8X11 paper using my colour inkjet and then gluing them to the backdrop. Another experiment. Two things, one, it is hard with an inkjet to get consistent colour, and two, it is hard to find an effective glue. I kept getting edges peeling up. So, now I had some excellent pictures, but not an effective means of producing them, or adhering them to the backdrop.

I solved the first problem by going to the printer I use for the Canadian. They were happy to print them out using their Laser Colour printers.

The second problem, adhering them, was solved quite by accident. I follow a number of blogs on the Internet, one of them being, Mike McNamara's Maine Central Blog. On his blog he talked about using LARC Products backdrops he printed himself on full page Avery Labels. That peaked my interest.

I approached my printer to see if they would print out the backdrops on full page labels for me and what would be the cost. Sure they said $1.39 per page. Wow, I could do the entire layout for less than $200, 1/10th the cost. But would they stick. Well, they have been up now for a month, and all is going well. If you are interested in going this route feel free to drop me a note and I will be happy to share my experiences.

The photo below shows an area that is about 8 feet long and represents two scenes that I blended myself. The backdrop is made up of 8X11 sheets. Once I have trees on that hillside in the front, I expect it will blend in very nicely.

JOHN JOHNSTON: EDITOR
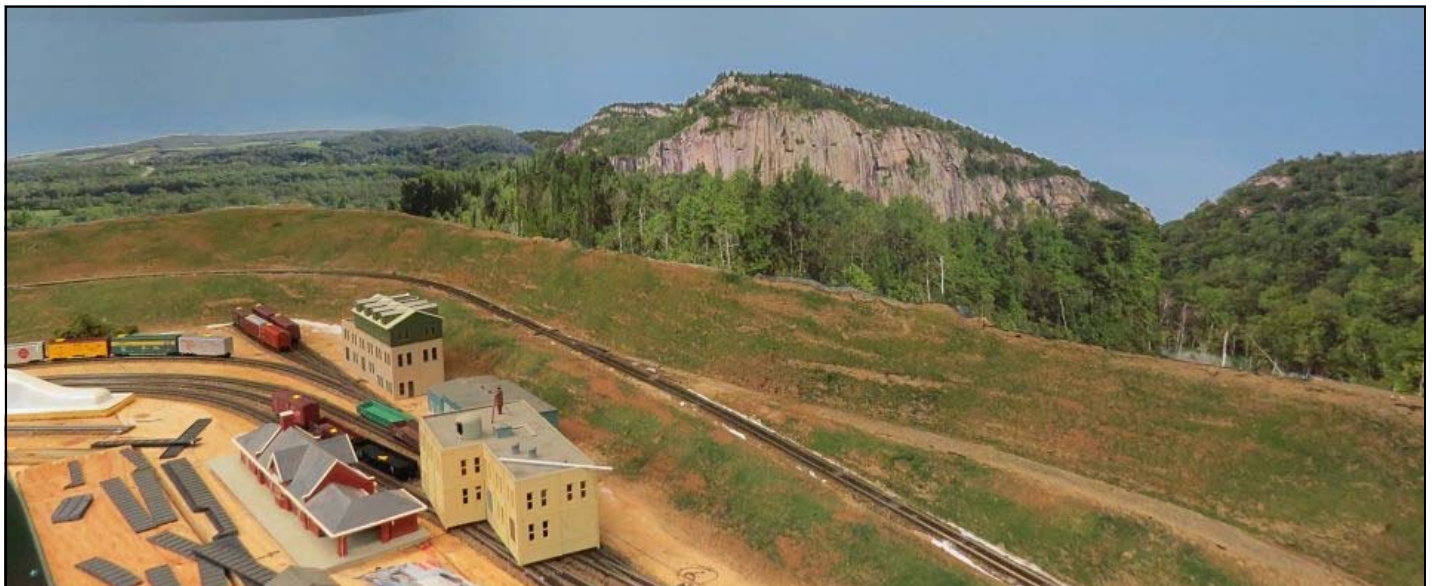
CARM SUPER MEET
"Opening Doors" Layout Tour Montreal August 5&6, 2017

This event is planned as a mini or micro convention, consisting of club layout tours only. The specific dates are: 5 & 6 August 2017. These dates were selected to take advantage of the long weekend in Ontario

There will be no clinics, no CARM organised lodging or transport. There may be time for an AGM, if it fits into the time-table. Similarly, a meet & greet could happen. A brief list of preferred Rail-fanning spots will be available. All partici-pants are expected to have an up to date GPS available. The addresses; and a pass to enter; will be in the booklet given to each participant which will be distributed in advance by email as a pdf so you can plan your trip there. There will also be a visit to Exporail, in St Constant. Members in good standing of CRHA enter for free. There will also be private individual layout available to visit on the way to & from Montreal. These are all a short detour from Highway 401, on the way to & from the Toronto area.

There are 7 club layouts at this time, some in Montreal proper, others are in the surrounding region.

West Island Modular Railroad Club
Started in 1986, this HO scale modular club moved around a lot until 2003, when it found its current location, on the mezzanine of an indus-trial building. Totally renovated (read recovered) by the members, the 1500 sq. ft. area houses a lounge and a work room, as well as the layout itself. A Digitrax DCC system is used for operating trains, and there are some servo controlled switches & crossovers, where access is an issue. This evolving layout no longer is considered modular, the recent helix and second level being integrated into the overall design. There is a U-shaped lower level, and a corresponding L shaped upper level, joined by a helix. There are a number of detailed scenes, ranging from woodlot sawmills to urban trackside vignettes. While the transition era is roughly followed, members run any & all forms of locomotion, tramways, steam, RDC, modern diesels, turbo trains, etc. A Steel Mill on the second level is already in use for operating sessions, the scenery detail work is under construction

British Model Railway Club of Montreal
This club has 3 separate layouts on hand. The biggest, and most recent, called Allingham, is a DCC controlled OO scale modular layout, reflecting Brit-ish railroading between 1923 and 1948. Also on hand in their club location is the original layout, representing Frome ,although it has been partially merged into Allingham. The individually owned modules reflect the individual interests and skills of the owner, while meeting the club basic tenets.

JACHobby O & HO Layouts
This locale has 2 separate club layouts on hand, each with 3000 sq. ft. of space, in the lower level of a spacious hobby shop (part of an industrial building). The O gauge layout is modular in design, as they annually attend the miniature train show at Exporail. The HO layout is organised quite separate from the O Gauge.

Sorel, Richelieu & Sant Laurent Model Railway
This HO scale freelance layout represents an imaginary railroad serving the Sorel/Montreal corridor, as well as the line between Sorel, Saint Jean de Richelieu and Sherbrooke. Operations are an important aspect for this club layout, with 283 turnouts over 1269 feet of track, via 2 main lines, sidings and industries. It uses a NCE DCC system for control. The main motive power is diesel, although some steam is present. The layout ranges over a space of 73 x 45 feet.

About 30% of the overall layout is scenicked. There is ample parking right beside the entranceway
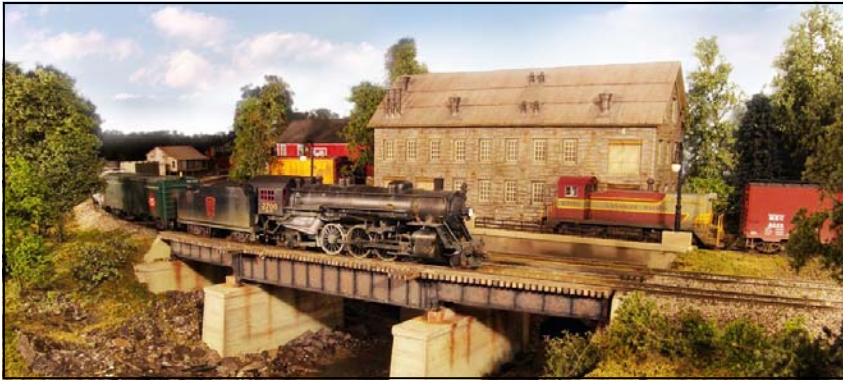
Montreal Vermont & Essex
Initiated in 1998, this layout is modelled closely after the Central Vermont Railway, referring often to the Canadian Museum of Science & Technology archives. This ever expanding HO scale layout is extremely well scenicked, and uses DCC to control the layout as well as operate trains. The photos on their website do not show the ongoing extension in progress. A small bistro style lunch & refreshment area will be open.

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ALSO OPEN: Montreal Live Steamers, Green Valley Short Line Railroad Club
Exporail Railway Museum

There are a number of hobby stores catering to Railway modellers: **Hobby Jonction: Udisco: VanHorne Hobbies: Montreal Vermont & Essex: JAC Hobbies**

OPEN SUNDAY IN LAPRAIRIE, PQ:
Remi Gagnon's CN Ontario Subdivision
This private HO scale layout, started in the year 2000, is fully scenicked, in a 30 x 30 sq. ft. space. All mainline track is code 83, and the sidings are code 70. Operating using MRC DCC wireless, it represents the Northern Ontario, with an interchange with the Ontario Northland, in the time period of May 1990. It is oriented to operations, capable of taking 7 or 8 operators at a time.

OPEN FRIDAY IN CORNWALL, ON:
Pierre Lamontagne's Chambord & Port Alfred
Pierre's layout, the Chambord & Port Alfred Railway is set in the Saguenay Region of Quebec in 1941. As such, steam rules the rails. The railway serves a major industrial region and this reflects its importance to the on-going war effort. Wood, paper, fabricated components, and mining all contribute to keeping the little railway working hard. Working hard to help the war effort and keeping its own equipment in good repair considering the volume of traffic that is now thrown at it.

ALSO OPEN ON FRIDAY ON THE WAY TO MONTREAL: Alex Thum.

ALSO OPEN ON FRIDAY ON THE WAY TO MONTREAL: James Van Reisdyk.

A list of hotels located close to the Dorval Train station & the airport is shown on the next page. The contact information is sourced from the internet.

Dorval Area Hotels

Name of Hotel	Nominal star rating	Room rate	Address
Airport Marriott In Terminal	4.5 stars	$349	In Terminal
Sheraton Airport	4 stars	$179	555 Blvd McMillan
Aloft Motel	4 stars	$161	500 Blvd McMillan
Quality Inn & Suites	3 stars	$139	1010 ch Herron
Fairfield Inn & Suites	4.5 stars	$199	700 Av Michel Jasmin
Beause Hotel	3 stars	$76	440 Av Roy
Comfort Inn	3 stars	$139	340 Av Michel Jasmin
Holiday Inn Express	4 stars	$192	10888 Cote-de-Liesse
Novotel	4 stars	$188	2599 Blvd Alf Nobel
Hampton Inn & Suites	4 stars	$205	1900 Trans Cda Hwy
Days Inn	3.5 stars	$106	4545 Blvd Cote-Vertu
Hilton	4 stars	$203	7880 Cote-de-Liesse
Quality Hotel	3 stars	$159	7700 Cote-de-Liesse
Travelodge	2.5 stars	$115	7300 Cote-de-Liesse
Econo Lodge	2 stars	$89	6755 Cote-de-Liesse
Crowne Plaza	3.5 stars	$158	6600 Cote-de-Liesse
Courtyard by Marriott	4.5 stars	$249	7000 Pl RobertJoncas
Holiday Inn	3.5 stars	$158	6500 Cote-de-Liesse
Quality Suites	4 stars	$153	6300 Trans Cda Hwy
Comfort Inn	4 stars	$108	700 Blvd St Jean

Note that room rates are from an internet discount booking search engine so can't assume the rate will be the same for the weekend in August. However you can use the relative rates as a guide to what is acceptable.

C.A.R.M. Montreal Super Meet

Summary Program

Friday 4th August	1 - 5pm	Layout tours open houses - eastern Ontario	Up to three home layouts in Brockville and Cornwall will be open for visits. Details to follow
	7.30 - 10pm	Registration and Layout tour - West Island Modular Railroad Club	West Island Modular Railroad Club - HO
	8 - 10pm	Informal meet and greet at ?	Details to follow
Saturday 5th August	10am - 5.00pm	Layout tours, open houses - Montreal and suburbs	West Island Modular Railroad Club - HO
			British Model Railway Club of Montreal
			JACHobby O and HO Club Layouts
			Vermont and Essex Club Layout (note this layout has a café attached) www.montrealvermontrr.com
	7.30 - 10pm	Railfanning, C.A.R.M. Informal Meeting and social	Ste Anne de Bellevue - Details to follow
Sunday 6th August	10am - 5.00pm	Layout tours, open houses and EXPORAIL visit - Montreal outer suburbs and surrounding towns	EXPORAIL - Sante-Constant www.exporail.org
			Sorel, Richelieu & Saint Laurent Model Railway Club Layout
			Remi Gagnon's CN Ontario Subdivision Layout
			Montreal Live Steamers
			?

Montreal 2017
Opening Doors Layout Tour
The Canadian Railway Convention
www.caorm.org

August 5th and 6th, 2017

Registration Form: Part 1: General Information

First Name: _____ Last Name: _____

Address: _____ CARM Membership # (optional): _____

City:_____ Province/State: _____

Postal/Zip Code: _____ Country:_____

Phone Number: (   )_____ Email Address: _____

Part 2: Primary Registrant

Tag Name (First & Last): _____ (postmarked by June 30, 2017)$ 40.00

_____ (after date of June 30, 2017)$ 50.00 _____

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

Tag Name (First & Last): _____ $10.00

Tag Name (First & Last): _____ $ 10.00 _____

Total: _____

Please note that entry to Exporail is not included in the registration fee.   Members of the CRHA get to enter free, while non-members will have to pay the regular entry fee.

Registrations must be **received** no later than **July 21st, 2017.** After July 21st, 2017, registrations will only be accepted at the convention. Send your payment by cheque or money order in Canadian or US funds payable to the "**Canadian Railway Convention**", and mail to: **Canadian Railway Convention, Walter Reid, CARM Convention Registrar, 2219 Council Ring Rd., Mississauga, ON, L5L 1B6,Canada**

GERALD HARPER: CARM CHAIR

Most model railroaders who have been in the hobby for any length of time will have accumulated a very substantial number of locomotives and rolling stock, whether freight or passenger equipment is their primary interest. Once the layout is up and running one sets up rosters and train orders and the preferred locomotives and freight or passenger cars compiled into consists. There will be a few glitches when couplers keep coming undone and one or more cars needs to have the coupler height adjusted but once those are fixed the operating sessions can run pretty smoothly. However once in a while you will want to change a train and will go delving into the boxes to find the particular item. That is when you realise what an incredible numbers of cars you have and what a high proportion are never going to be run on your current layout,

If you are like me that is when you decide that some of them will never be run and therefore you should reduce your inventory by taking a table at a local show and selling some of them and doing so can be a whole story of experiences in its own right. However the purpose of this piece though is not to talk about sales but things to do for what you want to keep. Firstly you need to know what you have and where it is. Computers have made this task much easier. A basic spreadsheet program allows one to list all ones items with a line per item and separate columns for things like railroad, number, model, etc. One cell for storage location can also be added for all those boxes stored under the layout. On my spreadsheet I also keep track of which locomotives are DCC or have been converted to DCC and what brand of decoder and sound, if that is installed. Once I got my database or index completed I was horrified to learn that I had over 1,000 items of rolling stock and I only used about 300 on my layout. Incidentally my layout is quite a large one with a large yard and the ability to run 30 – 40 car trains so I had a very large number of items in boxes which never saw the daylight or put wheels on rails. So another bout of shows as a vendor is looming in my future.

The most recent use for my database has been to review all my locomotives and think about all the DC ones to determine if they should be retained and converted or added to the sale boxes. I found five or six DC locomotives that I considered worth DCCing. Then I went through a process for each locomotive. If the box had information about the locomotive and an exploded diagram of its interior parts I could get a sense as to whether there was space for and wiring for a DCC decoder and a loudspeaker. Of course the older units were so pre DCC that the diagrams weren't drawn with such concepts in mind. In which case I tried one or other of two steps. I tried the internet to ask if anyone had added a decoder to

a certain model and what was involved. In spite of the massive amount of model railroad material on the internet there was very little about what fitted and what worked. On the other hand there were copious "chats" about how bad a certain speaker and sound were for a new sound equipped locomotive.

When the internet failed me I had to resort to the workbench to remove the shell (usually by trial and error because there were no instructions) and then start probing around with a multimeter to determine if the frame was used as the electrical return; buy an old fashioned decoder with long wires coming out of the decoder rather than a nice 8 or 21 pin plug and start soldering. At least when you are soldering the end of a wire that is 10 centimetres from the decoder, there is little chance that you will fry the decoder.

In the past two weeks I have put four of my DC locomotives through this upgrading line. One was nice and easy and just required a plug in and the others were more and more complex operations including the need to cut away portions of the pre-cast, white metal, weight. One particular brand has cost me three replacement light bulbs as the removal of the shells seems to inevitably crush the glass bulb in one end. However the end result is that I now have a threesome of U boats that are all DCC equipped, one with sound, which can be MUed to haul another unit coal train on my layout.

By now you must be wondering what I have been going on for so long about, but there is one message from it that I learned. That is that computers are invaluable for assisting one to keep ones layout operating, whether it is by maintaining rosters or setting up train orders. Once you have that computer you will inevitably have it hooked up to the internet and therefore will be able to search and shop for products and information. In fact even if you have one of the few remaining bricks and mortar model railroad stores near you, you still need to do your homework first before buying an item. For example decoders used to come in packages that said they were for "x" manufacturer and model. Now they don't say anything and even come without specific sounds loaded because it is assumed you will go to your computer and download the appropriate sound and customise to your preference. So if you haven't been keeping your computerised roster up to date take some time to do so and it may be amazing what you will find in its list that you had forgotten that you had. Meantime enjoy the summer and I hope to see lots of you in Montreal in August at the Super Meet.

Gerald

ONTARIO MIDWESTERN CHAPTER

The Ontario Midwestern Chapter held its Annual Spring Meeting on April 9, 2017 at the home Paul Korhonen in Meaford, ON. In attendance were: Graydon Hancock, Steve Hoshel, Paul Korhonen, Mike Pickup, Dolf Roelofsen, and Randy Schnarr.

Steve opened with a welcome to all. Paul advised the group that the Grey Central would pay $100 for support at the Grey Central Show, a change from prior agreement to pay us $1 per paying customer. Steve reported on membership changes. There are three basic levels of membership: 1: Internet Membership (free), 2: Internet with Calendar ($10), and 3: Membership with Calendar & 4 Issues of Canadian in print ($36).

Promoting the Hobby: (model railroad venues to engage). **April 22**: Schomberg Narrow Gauge Show **May 6**: Nottawasaga Train Auction, 215 Pine St, Stayner, Ontario. View 8:30, Auction Starts 10:30., **May 13**: County Line Caboose Garage Sale 8:00 - 12:00 noon. Elmwood Ontario., **July 7-9**: Owen Sound Waterfront Festival - Marine Rail Heritage Museum., **July 15**: Mount Forest Fireworks Festival. Switching Challenge at The Train Cellar., **Aug 18-19-20:** Bruce County Steam Heritage Festival, Paisley, Ont, **Sept 16:** Grey Central Model Train Show. Holland Center. CARM-OMW manages cash at the gate.

Project Challenge/ Items of interest: Steve brought his current project building an HO scale road grader. The detail is incredible. Mike brought his drawings to model the Port Elgin Co-op for the Bruce County Museum Railway. Judith discussed her challenges modeling the Port Elgin Station for the Bruce County Museum Railway. Randy described the progress of the dioramas for the Bruce County Museum Railway. The main structure is in place, the diorama boxes are built and the track is laid in the dioramas and on the helix. Take the challenge for our next meeting. Pick a category that fits your long term layout plan and tell a 3-D story, creatively. Bring an item of interest. ...Have fun!

We mourn the passing of our long time friend and mentor, Peter Stamford. We are happy to know his Fond du Lac layout lives on in the home of Bob Funston, a Southampton resident.

Meeting adjourned at 4:30 PM Next Meeting: October 22, 2017, location: to be determined. Minutes prepared by Randy Schnarr.

GOLDEN HORSESHOE CHAPTER:

The Golden Horseshoe Chapter held a meeting at the Dundas Valley Legion Branch 36 in Dundas, Ontario. The meeting was held on April 22nd and started at 12:20 p.m. It was our Annual General Meeting and Election of Officers. There was a very poor turnout.

Tony introduced Dave King again who chaired the meeting for the election of the chapter Officers. There were no nominees for Chair and Secretary Treasurer as Tony and Tom decided to both step down after several years. The executive was declared vacant and the Directors of CARM will have to make a decision on the future of the Golden Horseshoe Chapter.

Mert Hambly presented a clinic on culverts and it was enjoyed by the few present. This will be my last newsletter as both Tony Czerneda and Tom Allan decided it was time for someone else to step forward to lead the Golden Horseshoe Chapter. At this time the chapter will become inactive until someone steps forward to carry on the good work done by the immediate past executive. We hope someone will step forward and carry on the tradition of hands on clinics which have been well received,

Thanks to Tony Czerneda for several years Chairing this Chapter and to Tom Allan for keeping the Membership of the Chapter up to date with notices of meetings, newsletters and keeping finances in good shape. Tony and I wish the chapter every success going forward and please step forward to carry on the good work started by Tony and Tom. Be sure to visit the CARM website for more information
www.caorm.org

NATIONAL CAPITOL CHAPTER:

The National Capital chapter has been focussing its efforts on organizing the First Annual Capital Region self guided layout tour in conjunction with OVAR.
(Ottawa Valley Associated Railroaders).

The date is Saturday, October 21. The registration hall, where tickets and tour books will be sold, is St. Anthony's Italian Soccer club, at the corner of St. Anthony street and Preston, the north end of "Little Italy".

While we do not have a fixed venue model railroad club in the area, there are many superb home layouts, and there will be several modular layouts set up in the registration hall. Plan a road trip, enjoy some fall colours, and see some truly great modelling.
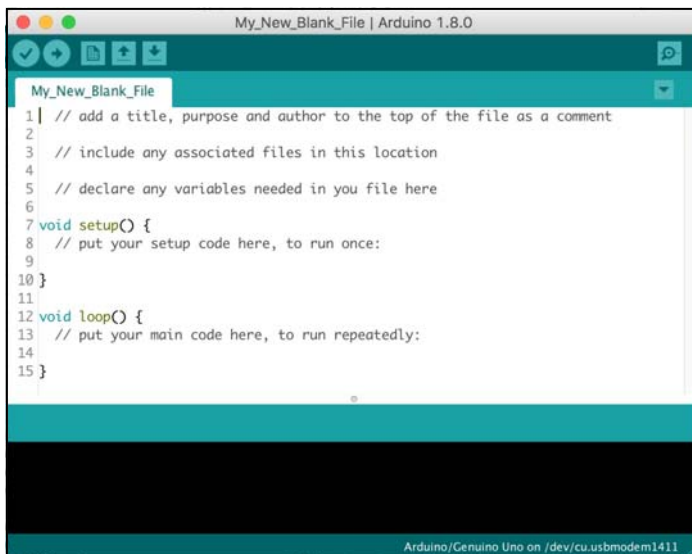
Bruce Leckie

MODEL RAILWAY ANIMATION
PART 1: LED's
Text & Images by David King

If all has gone well by this time you should have been able to obtain one of the 3 Arduino kits available from Arduino, SparkFun or Adafruit. The information about these kits was discussed in the previous issue of *The Canadian*. With a little bit of effort you should also have downloaded the free software from arduino.cc, if not please do so now and follow the instructions with your kit to set the software up for your operating system. At this point you should be able to start writing your first sketch and uploading to your Arduino UNO.

Writing a Sketch (Program)

A sketch, what Arduino calls its programs and is nothing more than a little bit of programming code that tells the Arduino UNO what it is that you want it to do. When I first start writing a sketch I start with a blank sketch that has some simple information to help me with organization of the code. Here is a screen shot showing this basic code.

This may look a little different than your screen as I use Mac computer for my coding and you may be using a Windows or Linux based computer but this doesn't matter, as the code is the same.

At the top the file name is displayed. I saved this sketch as **My_New_Blank_File**. This is done by choosing *Save As…* under the *File* tab.

In the sketch you see **//** at the start of a few lines of code. This **//** simply means that the rest of this line is a comment and is only used by the people looking at the code and it is not used by the Arduino UNO. These comments have been added to remind us what type of code should be added to these areas. Starting at rung 1 I use this

comment area for including information as to the file name of the file, a title for this sketch and details about the purpose of this sketch. Each line of code in this area should start with **//** so that the Arduino UNO will ignore it.

Next on rung 3 I have an area that we don't need right now but I will elaborate about this section in a future lesson.

In the section starting on rung 5 this is the area where I will include definitions for any variable or constants used in the sketch. This is done early in the code so that Arduino UNO will understand the meaning of words that I create for use in the code throughout the sketch. For people who are familiar with coding this is the *define* or *declare* location.

Starting on rungs 7 and 12 I have two subroutines where the bulk of my code will be located. The area where rung 7 starts is used for code that I want the Arduino to execute once when I power up the unit but I only want it to execute this code once. The word **void** is used to tell the Arduino that this is the start of the subroutine. The name that follows is the id of the subroutine and each subroutine name must be unique. In this case the name used is **setup** that is pre-defined in the Arduino language as a subroutine that runs first when an Arduino is powered up. The **()** round brackets identifies this as a data storage area, more on this in a later lesson. The area located between the braces **{** and **}** is where the code will be inserted.

The area starting on rung 12 is used for the main part of your code and this area uses the pre-defined name **loop** so that the Arduino knows that this is the code that will be run in a continuous loop once **setup** has completed its work. The other items in this area have the same function as they do in other subroutines such as **setup** mentioned above.
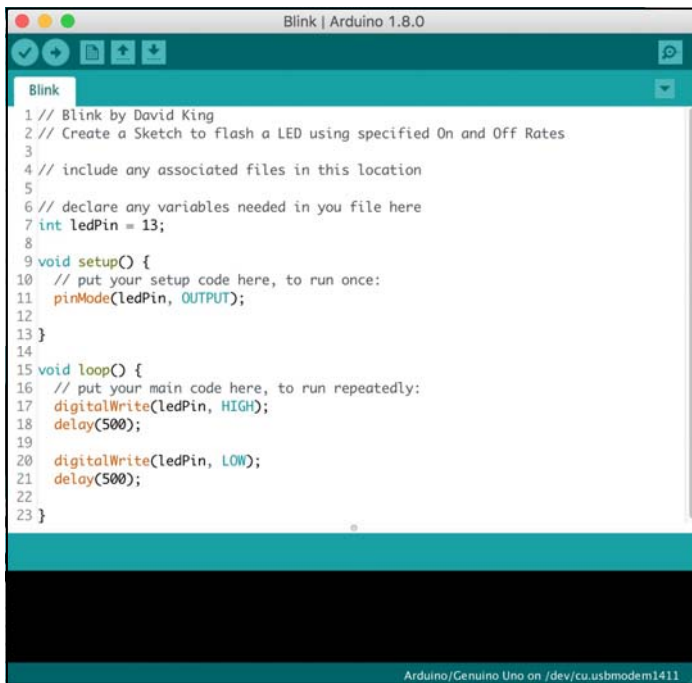
It is possible to add many more subroutines but at this time I will limit all of our code writing to these few areas.

At this time you may wish to create the sketch as shown above and save the file on your computer.

Blink, A Place to Start

A sketch called **Blink** is a common choice by may for your first working sketch. This is a simple sketch that uses only one output and no inputs on your Uno. To start the creation of this sketch you should open your saved file **My_New_Blank_File** and choose *Save As…* from *File* tab and use the new file name **Blink**. Below is a screen shot of the coding used and I will go into some

detail to explain what it all means.

In rungs 1 and 2 I have included the name of the file, the author and a description of what this sketch should do. This may seem unnecessary to some but I find it useful information if I open this file at a later date to help me understand what I will find in this sketch.

Rung 7 is used declare a variable that I will use in the sketch. The line of code has a few elements in it that I should explain. The code starts with **int**, which sets the following data as being an integer. An integer is a number that has a minimum value of -32,768 and a maximum value of 32,767. For those with computer experience this shows that an integer is a 16 bit number. For this file the remaining code, **ledPin = 13**, sets a value or 13 in the tag ledPin. At the end of the rung you will find a semi-colon, **;** , has been placed there and this lets the Uno know that this rung of code is complete. One quick note on tags names is that it is common to start the tag name using a lower case letter for the first word of the tag and than use an uppercase letter to start all other words in the tag name and also leave no space or use any symbols in the tag name. You can use numbers in a tag name but the name must start with a letter.

In rung 11 we need to set one of the digital input/output (I/O) as an output pin. When you use digital pins 2 to 13 you should set them as either inputs or outputs. In this case we want to set pin 13 as an output pin to connect to a LED. Pin 13 also has a LED built into the board but this is the only digital or analog pin that has that feature. To set the use of the pin we need to identify 3 things. First we use the reserved word **pinMode** to start this setting instruction. Than inside the round brackets we need to identify the pin and the purpose of this pin. For the pin address we will use the tag we created earlier and for the purpose we will use the reserved word **OUTPUT**. The completed code line would be **pinMode(ledPin, OUT-PUT);** and make sure you don't forget the semi-colon at

the end of the rung. Since this setting of the pin is only required once when starting the sketch it is placed inside the **setup** routine.

The code on rungs 17 to 21 is the code that needs to run continuously so this is the location of any coding that cycles through the needed functions. We start on rung 17 where we need to turn on the LED that is connected to pin 13. To do this we start the code using the instruction **digitalWrite** followed by the pin address and the state we want for that pin. Here is the code for that rung **digitalWrite(ledPin, HIGH);**. In this case **HIGH** sets the pin to about 5 volts. Rung 18 is used to set a delay or pause in the sketch. The instruction delay is used to accomplish this and the number inside of the round brackets is the amount of time to pause and the unit of time is measured in milliseconds. So the code for this rung would be **delay (500);** which would cause a delay 500 milliseconds or ½ of a second.

Rungs 20 and 21 are just a repeat of rungs 17 and 18 with one small change. This time when using the **digital-Write** instruction we want the LED to turn off so we substitute **HIGH** with **LOW**. Low set the output to about 0 volts (common).

If you have completed this code properly you can validate that the code as no syntax errors by left clicking on the validate button, the check mark in the top left of the screen. If all went well the bottom area of the window with the black background should display information on the file size and other information. If there is an issue some text will be displayed in red or orange and he should give you a hint to what the issue might be. If you see any error messages start checking the code on the rung indicated and than work up line by line to find the error. The most common errors created are forgetting to add a semi-colon at the end of a rung, not declaring a tag variable in the declaration area, or miss spelling a tag name, instruction or state. For correct spelling of instructions they are displayed in orange text, states and routine names are displayed in cyan, most other reserved words in dark


green and most other text in black.

All of these details may seem overwhelming right now but in a short amount of time it should make sense. The more you sketches you create the easier this will become.


You can now upload the sketch into the UNO by clicking the upload button. Make sure that the UNO is connected to you computer using the USB cable. If you are having trouble talking to the UNO use the guides in the notes
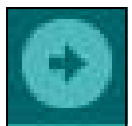
included in your kit to make sure the connection is correct and remember to set the comm port used to the comm port of your UNO.

Wiring Up the LED

Here is drawing showing the connections required from the UNO to LED using the breadboard. The resistor value to use for the LED will vary depending on which kit you have so it could 220 ohm, 330 ohm or 560 ohm. Any of these values will work for this project.
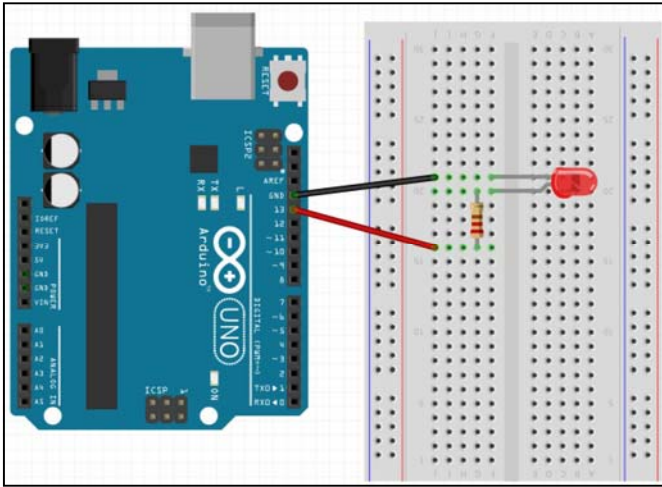
If all has gone well you will see the LED blinking on and off in one half second intervals. Now try and change the delay time from the values of 500 to other number and than download the files again and watch the results. As an example if the time in the on delay is set vary short and the time in the off delay is set long this could look like a strobe light. Experiment and see what happens after all this should be fun.

Now that you have 1 LED working trying adding a second LED to another pin and then maybe a 3rd LED. If you are vary ambitious try adding another 3 for a total of 6 LEDs and make sure 2 are red, 2 are yellow and 2 are green. Now have them turn on and off in a pattern that looks like a pair of traffic lights.

Need More Information?

To see more examples and for information about this project along with demonstrations you can go to the CARM website in the Members section and log in. Once in the Members area go to the Expanded Articles tab and use the links there for both PDF files and videos to aide you.

Next issue we will have a look at using a pushbutton and a photo sensor.

PUBLICATION SCHEDULE FOR *THE CANADIAN*
The Canadian is published four times per year. Submission by authors or Chapters
should be submitted by the following dates.

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

BOOMER AUCTION

October 28, 2017 - Annual Boomer Auction of model railroad equipment and materials at the Spirit and Life Centre, 184 Wellington St. W., in downtown Chatham. Admission $5.00 (includes door prize draws). Tables available at 8:00 am, auction sale starts at10:00 am. For additional information contact Gary Shurgold, 37 Holland Ave., Chatham, N7M5X8, ph. 519-352-3620, e-mail gshurgold@gmail.com

Painting a Water Tank with PanPastels

By George Dutka photos by author

Traditionally, modellers have finished their models using a variety of paints and techniques such as brushing or air brushing. In this article, I will describe a technique which uses PanPastels to colour a model giving one a significant degree of control over the finished product. Colouring a model with pastels is very easy to accomplish. You will be surprised; a first attempt can yield impressive results.

The Model

One of my recent train show finds was a well-worn water tank. I thought this would work well as one of my drop-in scenes and could be completed with minimal effort. On my White River Division (Sept 2016 RMC feature) I currently don't have a water tank. This model is a plastic Atlas offering. Here is what I did before painting. I began by gluing the tank back onto the base, attach the ladder and fill a couple holes in the roof. The roof top finial was missing so I used one from my parts box. The spout has string for the lines and links. I did change out the lower spout pull down with a piece of brass chain.

Painting the Water Tower

Once I was satisfied that I had everything securely attached and details added, I used a Walmart 99 cent flat black spray bomb, painting the whole structure. One does not want any other colours showing through. This was to be the base for the PanPastel colouring. I purchased a good set of brushes for applying PanPastels some time ago. The pastels normally come with foam
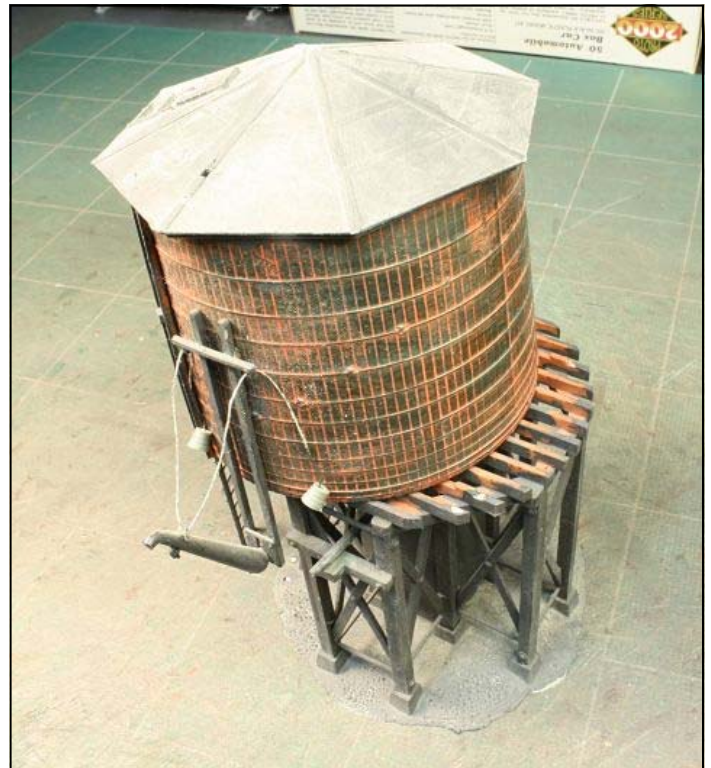

PHOTO ABOVE: This is how the water tank looked when I got home from the train show. It needed some Walthers Goo to hold the tank in place, a new finial on the roof and a piece of chain on the lower portion of the spout. The ladder was detached also, but an easy fix with Walthers Goo. In less than an hour a flea market find is fixed, detailed and ready for painting.

PHOTO ABOVE: My collection of Pan Pastels and brushes used to detail my models. The colours viewed from left to right are, Neutral Grey, Neutral Grey Shade, Neutral Grey Extra Dark, Raw Umber Shade, Burnt Sienna Shade, Red Iron Oxide Extra Dark.

sponge applicators. I don't seem to have the same control with these as I do with a good brush. Having good brushes mean they will last a long time and will do a quality job. These I have had for a few years now with little wear.

Using Panpastels for colouring on plastic, metal and styrene gives one the option of wash off the mistakes if not satisfied with what has been applied. Once dry one can start applications again. If there is wood or plaster in the structure this is another story as they are porous and not all the pastel will come off.

The PanPastels Applied

I coloured the roof first using three different PanPastel

colours. I began with Paynes Grey Extra Dark, a colour that is almost black. The entire roof is covered with this pastel. I then added some highlights around the ribs with Neutral Grey Shade. The highlights were done with my lightest grey, Neutral Grey. **SEE COLOUR PHOTO ON REAR COVER PAGE.**

The wooden tank was done using two tones of brown. I began coating the tank with Burnt Sienna Shade a colour similar to boxcar red. I followed this up with random strokes of Red Iron Oxide Extra Dark. For highlights on the tank I used my light grey once again, Neutral Grey. The concrete pads and the water spout are coloured using the Neutral Grey also as it looks a lot like a light concrete and also like a flat galvanized steel. **SEE COLOUR PHOTO ON REAR COVER PAGE.**

The wooden support base that holds up the tank needs some attention also. I began with some of the darkest grey's such as Paynes Grey Extra Dark, then lightened it up a bit with Neutral Grey. I also added a bit of a dirty looking light brown called Raw Umber Shade. On the nut and bolt castings I applied some Bragdon powders, dark rust and light rust using a fine tipped brush.

Adding a Base

I built a base for the water tank out of Gatorfoam, a rigid styrene foam board that is great for modeling. It will not be affected by water or paint. It is very easy to cut and shape. I painted my base a latex earth colour then applied sand and green ground foam while still wet. Once dry I applied Scenic Express long and short static grass on to white glue which is brushed on. I also applied some golden rod weeds and Woodland Scenic coarse ground foam.

Final Thoughts

One can start with a new out of the box water tank following what I have done and come away with a craftsman type looking structure. If you do not have PanPastels I have coloured many structures using chalks or Bragdon Powders with success. I feel though I get my best results using PanPastels. You can be the judge.

I have been asked the question "how do you seal your PanPastels". I don't seal my weathering. I find that if one overspray's the model once weathered with a flat or matt finish there always is a bit of sheen left. One wants the weathering to have a very flat dull look. If you put the flat finish on first the pastels will attach and hide the sheen but it does not give you much flexibility with applications and it can not be washed off if it turns out wrong. If one is worried about the pastels staying on, it stays on really well. In areas that one may touch and leave a finger print all that is needed is to grab the weathering brush and drag it over the area. The pastels from the adjoining areas are then moved to help colour the affected area.

Painting with Powders and Pastels

By Peter Mumby, photos by George Dutka

During the winter of 2016 George Dutka was over for our weekly Monday afternoon work session and I happened to show him an assembled set of loading bins that had been stashed away for many years. My intention was to have it stand in as the pellet loader on my projected Marmoraton Mining scene. The prototype loader featured three bins, whereas the model had five, but the basic outline was reasonably represented by this structure. The kit from which it was built must have been available for many years. I identified it as a Kibri "Gravel Works," item #405-9805 in the 2015 Walthers catalogue @ $45.99 US. My version had been picked up at a long forgotten flea market, but seemed to have been neatly assembled. Moulded in shades of red, brown, grey, green and white, it lacked the gritty look of the prototype bins I remembered from the 1970's.

George suggested a technique he had already used on a number of structures. Spray the entire unit with flat black paint, then do the highlight colouring with an assortment of powders and PanPastels. A grimy black base colour would have been preferable, but I went with what I had on hand and used a spray can of Testors flat black. I masked off the shed at the base of the structure, leaving it in the original off-white shade. The supports for the bins were obviously meant to be made of concrete, so they were painted with Floquil concrete before the powders came out. Initially I was going to use powders on the roof sections, but decided that wasn't going to provide enough colour, so they were dry brushed with an assortment of silver, rust, black, and foundation colours by Floquil. The balance of the structure was coloured by brushing on a variety of Bragdon weathering powders along with a few shades of PanPastels. The base of the structure included some features that were meant to represent rocks and soil, so this area was brushed with white glue and an assortment of crushed materials were added. A final application of powders tied everything together. Now, if I could only find kits to represent the primary crusher and the pellet mill. **SEE COLOUR PHOTOS ON REAR COVER PAGE.**

PHOTO BELOW: Peter has sprayed his stone loader using a Testors flat black spray bomb. If available Floquil grimy black would have worked better.

Kit Bashing a 1903 (HO-6) LaBelle Observation into CP Mount Gordon
By Doug Thorne

When I was first married I decided to build a few cars for my future H.O. model railroad. I obtained a LaBelle observation car and a LaBelle diner and got pretty much got the diner done in the first year and then we moved into our first house. Between yard work and basement finishing I started the observation car about 47 years ago but it got sidetracked until just recently and I realized it could be relatively easy to convert this car into a CP Mount Gordon. The following will describe the revisions I made.

I am a member of the Canadian Pacific Historical Association and was able to print the CP drawing of an "observation and compartment sleeping car" (Mount Gordon) from their archive for reference, however I did not locate any photos of these cars until I was well along with the conversion. Later I found 2 photos in CP Tracks 11-2 showing each side of these cars and in typical CP fashion the photos revealed a few discrepancies which I

will outline further on in the article. I also referred to an article in the September 1966 issue of Model Railroader titled "Plush for your passengers" which described the
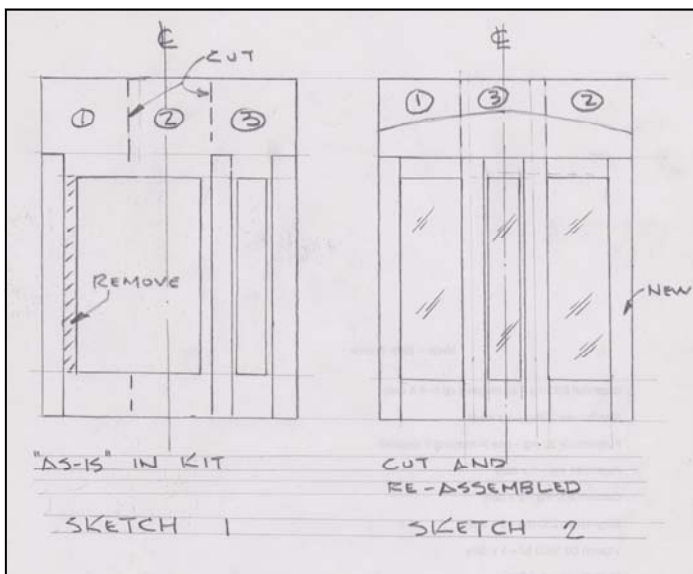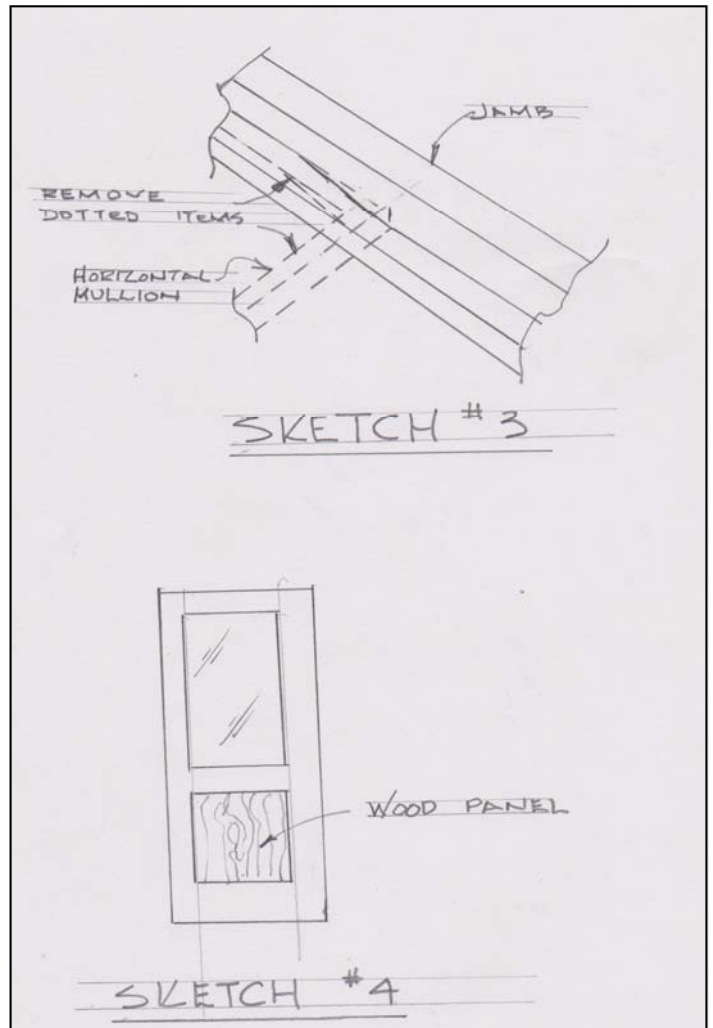
PHOTO 1

PHOTO 2

construction of the CP car named "Trent".

SIDES

I Built the sides as described in the LaBelle instructions. I cut in additional windows and blanked off some at locations to suit the CP drawing see photo 1 I installed Evergreen # 8104 (1x4) strips as required for siding terminations at window jambs as required. **(See photo #2)**.

Oval windows do not exist on Mount Baker so I cut the siding on both sides of the window opening and spliced in additional siding to make the openings to suit the CP plan.

I removed the horizontal mullion in the observation lounge windows which leaves a slight bump on each jamb of these observation windows. I removed this bump with a slight filing **(See sketch # 3)**. The observation end wall was modified as per **sketches 1 & 2** to relocate the door to the center of the wall. Reference to the photos indicated which windows had to be made obscure which was done by applying 2 layers of translucent scotch tape to the back of those windows. The photos also revealed an additional obscured window at the right hand end (observation platform being on the left hand end), this window is obscured and it makes no sense as it is in a locker and/or the heater room. Or does this window indicate a plan revision? We may never know. See photos in CP tracks 11-2.

I made the transom windows by having a decal made then after installation I painted over the dark lines on the decal with CP Tuscan Red . This requires a very steady hand and I used a sharpened toothpick to apply this paint with very little paint on it to minimize blobbing, lots of dipping. I like the way it puts the transom windows on a different plane "proud" of the other window glazing just as it should be to match the prototype.

I filled in the lower panel of the vestibule door with a wood panel. This panel should be a flat panel not scribed sheathing. **(see sketch # 4).** File the rounded corners of windows to "square up" the openings. I could not locate any information that would require a brake wheel on the vestibule end so I did not install one. The MR article also doesn't show one. The lever type brake handle at the observation end was made out of .015 brass wire. I painted Labelle's observation railing Tuscan red and then I added "Special Shapes Co stock #05001, 1/32 brass angle" to the top of the railing to give it some mass and strength. The vertical leg of the angle was positioned facing "out" or to the rear of the train. Vestibule end grab irons (DA SY 2202) were installed. Handrails at side ends are DA 2504, painted Tuscan at vestibule end and left brass at observation end. Observation end grab irons were made by modifying DA 6602 by bending tips 90 degrees to make a "deep grab iron".

ROOF

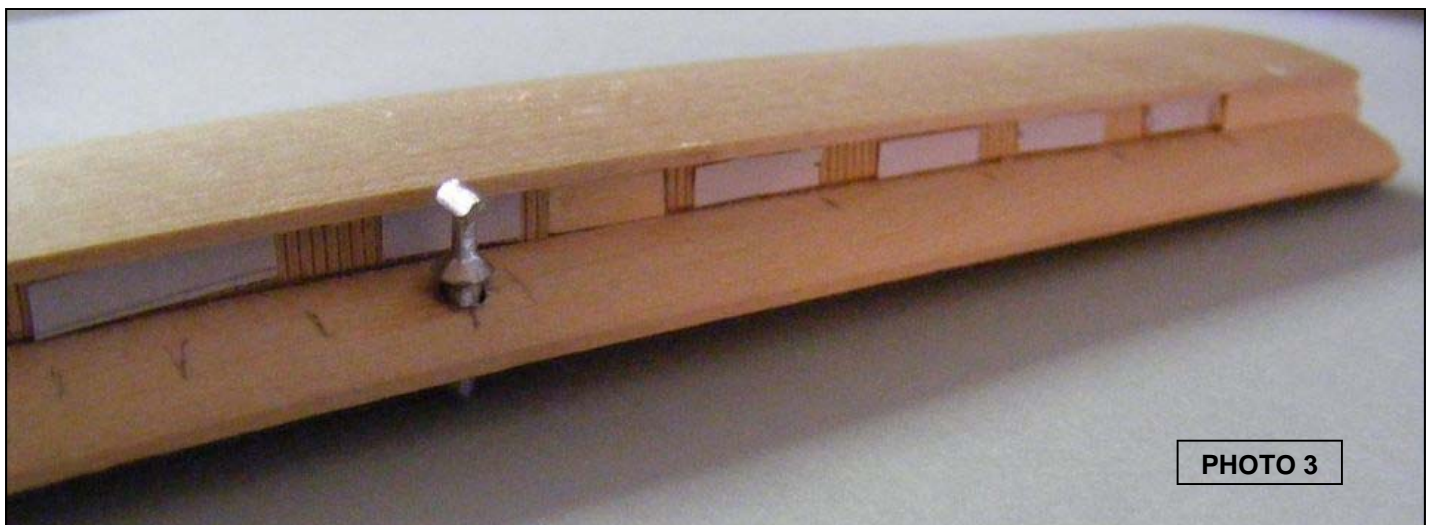The ends were rounded with an Exacto knife and a file to get to the curve to suit the CP drawing (which is a
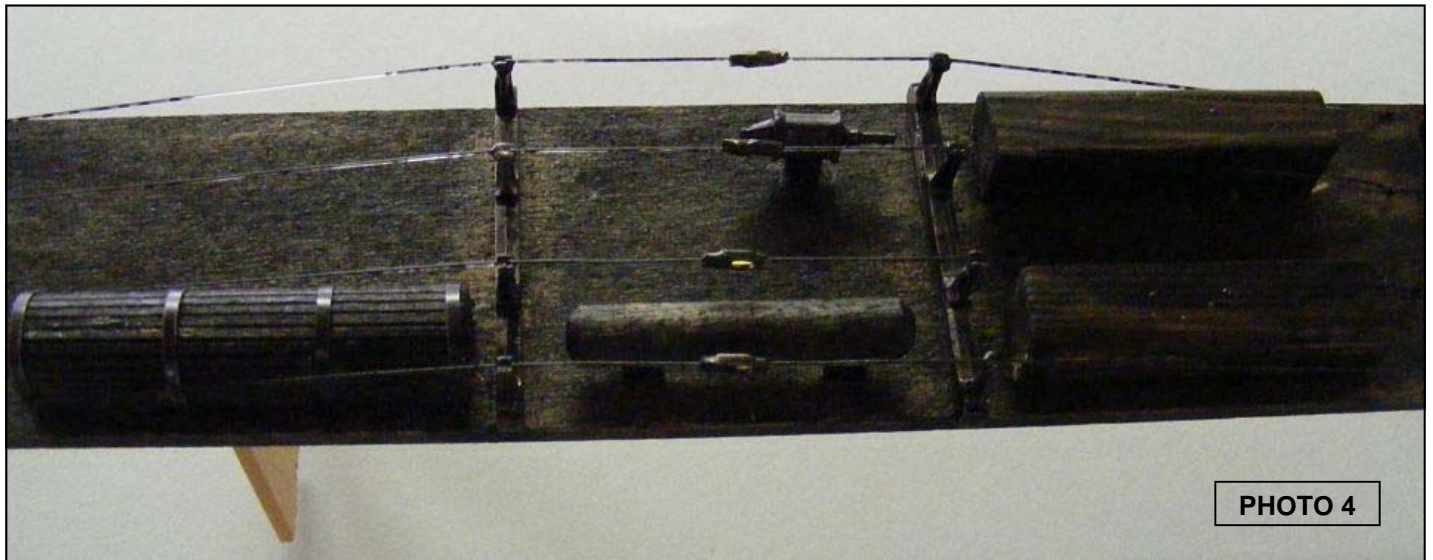

PHOTO 3

sharper curve than the LaBelle drawing). LaBelle now has a roof rounding kit that may make this detail more accurate and easier to do. But it may not be CP correct. I will try a power sander for my future coach kitbashes. Install 1 set of roof grabs at the center on the aisle side. Normally the lower one is a "ladder support" type but the photos clearly show they are both straight I used Detail Associates 6602 for these. I installed the LaBelle clerestory window strip but I replaced their fillers with strips of 1/32" scribed sheathing cut to suit. I installed some solid fillers at bulkhead locations. I then applied bond paper panels over the scribed siding to simulate the fine screen that CP had. **(See photo 3).**

I did not install any dust deflectors as noted in the MR article. I installed LaBelle smoke stacks at the heater location and the Kitchen area **(See photo # 3)** and after finding the photos the kitchen one may be wrong, however, this being a CP car it may be correct if another photo is found. The photos indicated that there were not any rain gutters on the roofs of these cars at doorways or observation ends

FLOOR

Underbody details were installed to suit the CP drawing, the battery boxes had to be scratch built. Two pieces of solid wood with the outline of a door and latch scribed onto them. (**see photo # 4).** Locate Labelle truck bolsters to suit the type of truck you are using and to suit the end stairs to allow free swinging. Locate the ends of the truss rods to suit your trucks. I like to attach items securely so I drilled out holes in the queen post beams to accept .025" piano wire stubs. The floor was then drilled to accept these wire stubs and the queen posts were installed using ACC. I added shorter queen posts between the center queen posts and where the truss rods penetrate the floor. The observation end steps are wider than the vestibule end, ensure that you get the correct ones at the correct end. Install observation end beam after you pre-drill it to accept the railing posts and the brake wheel stem. Drop grab irons (DA 2202) were installed located to suit the pictures. Air, signal, and steam hoses (Cal Scale 190-275) were installed on the observation end only. **(see photo 5)**

Decals by Black Cat are available for these cars but in my experience they are too thin for me, I was able to get one "Canadian Pacific" off but on the other side 4 got ruined before I gave up and used some others that I had on hand . It's a real shame that it appears that now that CDS is no longer available that a project of this nature is ruined by not having usable decals available. I guess I can always use WKW that are not real accurate plus the car names will have to be pieced if that is even possible.

PAINTING/WEATHERING WITH PANPASTELS

An overhead view of the roof weathering which is more on the darker side of the colour pallet.
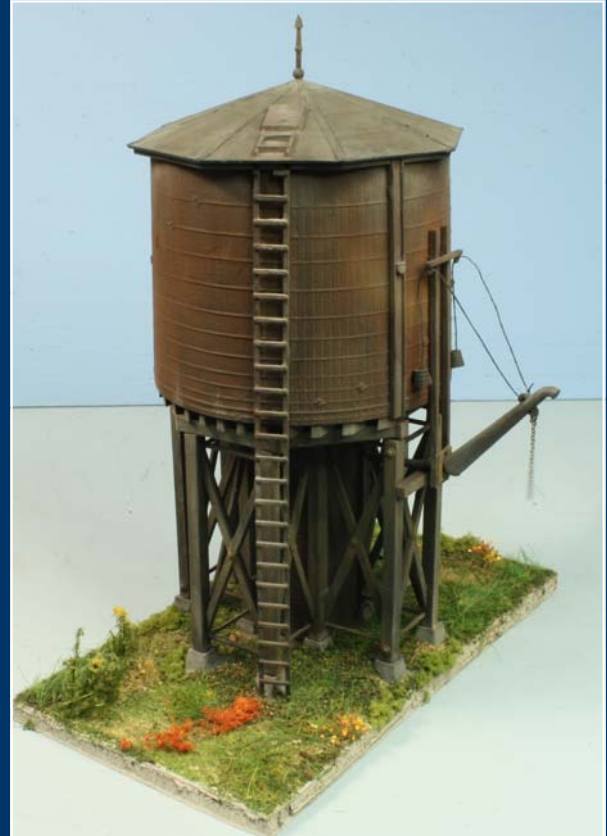
The finished and weathered Atlas water tank is set on a Gatorfoam base which is a drop in diorama for my White River Division.

A front view of the loader is seen completed. The roof was dry brushed with various Floquil colours. All the other weathering was done with Pan-Pastels lighter grey tones. Some rust colour Bragdon powders are used as highlights.

In this view one can see two MDC ore cars Peter painted and lettered many years ago anticipating their use in such a scene. To complete his Marmoraton Mining scene many more will be needed. The concrete pads were painted with Floquil paint but could have easily been coloured with Neutral Grey PanPastels which resembles concrete even when applied over black paint.