



The Mail Car

Newsletter of the St Lawrence Division – NMRA

Issue no. 52 – January 2009

St. Lawrence Division web site: www3.sympatico.ca/gd.knowles/sld/sld_index.htm

From the Superintendent's Desk

By Peter Joyce

I trust everyone had a meaningful and rewarding holiday season.

As all too often happens, there occurs an unfortunate and sad event that mars the holidays: this year it was the tragic accident that took the lives of Brian and Joan Ludlow. “Boomer” was well known by all, mostly through his activities in the OVAR arena, since his Saturdays were spent working with his son building boats and he had to forego our bi-monthly meetings. He first joined the NMRA on January 01, 1962, and has been a member continuously since then. He was always present at Railfair, modeling with his buddies and speaking with an endless stream of old and new friends about all aspects of our hobby. He also was a member of the C. Robert Craig Memorial Library - lately serving as Treasurer - was active with his fellow “boomers”, and always was available to assist and mentor all who asked.

In his memory, on behalf of all SLD members, we have made a donation of \$50.00 to the Library. He will be sorely missed by all.

Our next Kitbusters session will take place all day on Saturday, January 10th in the basement of the Emmanuel United Church. On Saturday January 31st we will hold our regular bi-monthly meeting at Emmanuel United Church, a portion of which will be a presentation on lighting our Laser Structures 101 kit. In the afternoon we will carry on with construction activities, foregoing our usual custom of visiting layouts – all this activity pointing toward completion in time for entry in this year’s NFR Convention!

That is it for now: if any of you have items that you want to have discussed on January 31st, please let me know, preferably by Email. I look forward to seeing everyone on January 10th, and since it is my birthday I will be bringing a cake to share with you.

Happy modeling!



A modern passenger train proceeds through the Alps on rack and pinion track. Scene from the Swiss Meter gauge layout (HOM) in David Steer's basement.

Photo: Andreas Mank

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Copy Deadlines

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May Issue - April 15

September Issue - August 15

November Issue - October 15

January Issue - December 15

Special thanks to Beate Herzig for proof-reading and general nit-picking

Layout Tour Report

By Andreas Mank

In the afternoon of the November SLD meeting, both Tom Badenoch and David Steer opened their layouts for us. David is making progress on the landscaping of his Swiss Meter gauge layout (see picture on cover page) and with his retirement will have more time to focus on his hobby.

In the case of Tom's CN themed layout, it was a last visit as the basement arrangements have been re-negotiated and Tom is taking down the older parts of his layout. Tom is looking forward to use the newer part as the base for a new layout. The pictures below show the main yard in the old section and the new section in the background.



Adhesives

By Grant Knowles

Despite what the advertisements might proclaim, there is not one universal adhesive for model railroading. There are certainly ones that can serve multiple purposes, but not one that does it all. This I have learned from personal experience!

So before we commence with the full all out assembly of our Silver Plume Bakery kit, allow me to take a few minutes to review the adhesives that I used along with when and how I used them.

PVA (polyvinylacetate) Adhesives

These are the glues we typically call “white and yellow” carpenters glue. These glues “set” through an evaporation process.

White glue and yellow glue have about equivalent bonds after they have cured. White glue remains just a bit more elastic than yellow after curing. Yellow glue sets up faster and resists moisture better than white glue. Yellow glue was introduced with a bit of coloring in it to distinguish it as a higher quality product. Typically, it has a higher solids content, is a bit thicker, and often has a faster tack time. None of these issues has much of anything to do with strength, but rather of handling properties. Thicker, faster tack yellow "glue" does not run as much and lends to easier assemblies in some cases.

I use yellow glue extensively with porous materials as it holds well and sets quickly which permits nearly uninterrupted construction of a model. Use white glue when you need a longer “open time” when assembling multiple pieces before clamping. The yellow glue will dry with a slight colour so ensure you clean up any excess before it sets.

Weldbond produces a more universal PVC glue that glues more than just porous materials. The beauty of this glue is that it dries perfectly clear which makes it great for gluing window materials in place. For some strange reason I find it dries up in the bottle over time so I usually purchase small bottles at a time.

Usage: For gluing wood to wood materials. Medium set time.

ACC

The ACC family of glues are recent addition to our arsenal of glues and have drastically changed the way we approach model construction.

Cyanoacrylate glues (ACC) are available in many different forms from various manufactures under such brand names as: Super Glue, Crazy Glue, Loctite or Insta-Bond. Cyanoacrylate glue is the general term for the quick-bonding super glues used to mend or combine anything from plastics to wood to metal. Unfortunately for some, this list also tends to include human skin.



Cyanoacrylate glue is actually an acrylic resin, not a traditional adhesive in the mold of water-based school glues. Some crafters or automotive repairmen may be familiar with other acrylic resins such as bondo, the clear liquid used to embed small objects. Usually an acrylic resin consists of two separate liquids, one for pouring into the mold and another used sparingly as a hardener. In the case of cyanoacrylate glue, the hardener is water. If cyanoacrylate glue is placed on a perfectly dry surface, the cyanoacrylate cannot form a bond with the surface. But if there is even the slightest amount of water present, including moisture from the air, the molecules of the glue have a chemical reaction and form into tight chains between the two surfaces being bonded. This reaction happens within seconds of the water and cyanoacrylate making contact.

Based on these properties, ACC is great for attached non porous materials such as plastic, castings and metal. There are even ‘gap filling’ ACCs which are tailored towards more porous materials. I use ACC extensively for non wood bonds but do not use it near clear acetate windows as it will cause the plastic to frost over (I use Weldbond instead).

The diversity of building materials we encounter in our hobby invariably means we have to have a varied collection of adhesives to deal with them. These are some of the more popular ones I use and they all saw use in building the Silver Plume Bakery.

Photo: Grant Knowles

I used to purchase the expensive ACC products but found invariably I did not use it up fast enough before the bottle eventually set on me. This became a hefty operational cost! So after trying various brands I eventually found the Home Hardware ACC available in tubes works best for me. A 3ml tube cost about \$2.00 and lasts quite a while and if it does set on me, it's not a financial loss.

Usage: For gluing porous and non porous materials together. Fast set time.

5 Minute Epoxy

Epoxy is made of two liquid components, a resin and a hardener, which when mixed together in equal proportions, start a curing process that produces a very solid and permanent bond. And unlike super glue, you don't have to worry about gluing your fingers together though it can be messy!

Epoxy does not need to dry like other types of glue, which means there is no shrinkage and can be used as a "filler". Fully cured epoxy is hard, but can easily be sanded or cut with power tools.

I have not discovered one brand is any better than another and usually pick up what ever CTC has in stock, i.e. Lepage. Squeeze equal amounts of the resin and hardener on a small card, mix with a stick and apply where required. It may have a tendency to creep before it sets so make sure you apply only what is required. I use it when the "gap" is large enough that ACC will not work.

Usage: For gluing most anything to everything.

Plastic Glues: Testors, TENAX-7R, Plastruct

Many of our model kits contain plastics which come in many types. The plastic glues we use on these materials rely largely on the principle of dissolving the surface layer of the plastics thus allowing it to "weld" with the adjacent material.

Testors make both a tube (semi solid) and liquid cements that we grew up with as kids for gluing styrene plastics. The tube glue is great for when there is a gap to be filled while the liquid glue, when applied with a paint brush, will creep into the space between the two pieces without leaving a mark.

Plastruct makes a more universal solvent cement that will also work on ABS butyrate and acrylic. My personal favourite is TENAX-7R and like the label says, it is a Space Age Plastic Welder. It is quite toxic but glues just about any plastic to any plastic in seconds.

Usage: For gluing plastic to plastic.

Carpet Tape (double sided)

Ah, the hidden gem! I never could find a good adhesive for gluing Campbell's corrugated metal to walls. I tried PVC glues, epoxy, even ACC with no luck. All eventually let loose at the most inconvenient time. Somewhere along the line it was suggested I try double sided carpet tape. Boy that sure did the job – stuck like . . . – well give it a try and you'll see!

Usage: For gluing sheet materials together.

NMRA Dates

SLD Meetings			NFR-NMRA Convention
January 31, 2009	Emmanuel United Church 691 Smyth Road Ottawa		April 17 – 19 Quality Inn & Suites Woodstock, ON
			SLD Workshops
			January 10, 2009
January 31, 2009	Emmanuel United Church		
			February 28, 2009
March 28, 2009	Emmanuel United Church		
			April 25, 2009
May 30, 2009	TBD		

Signals for the Shadetree and Nepean

Part 1: Assembling Signals

By Andreas Mank

While helping Don Leger with some DCC issues on his Shadetree and Nepean Railroad, he started asking me about signals for his layout. At the time, I needed one signal for my HO-Scale switching layout. A recent move into a larger basement increased the number of signals required by a few. As I needed to work out how to do the signals anyway, I volunteered to assemble the required signals for Don and to provide the electronic drive circuit for the signals.

Don selected searchlight signals for his layout. Searchlight signals use a single light with differently coloured overlays to display the basic aspects – red, green, yellow. In some instances, they also display a blinking aspect. In the model, a bi-colour Light Emitting Diode (LED) is used to display the desired aspects. Using appropriate circuitry, a bi-colour LED can be made to display red, green, and “yellowish” in full on or blinking mode.

This article will describe the assembly of the signals. The circuitry for driving the signal indications and the logic to ensure the proper aspects are displayed will be described in the next instalment of the **Mail Car**.



Figure 1. View along the main line to Toronto, standing on the station platform at Coteau. Note that the left most three headed signal is placed to the left of the track it governs (which is the station track at Coteau)



Figure 2. View along the yard towards Valleyfield. The view with the CN units puts the signal height in relation to the other railroad equipment.

Don required a total of 7 signals for the Shadetree and Nepean: 2 masts with 3 heads, one mast with 2 heads, one mast with a single head, one dwarf signal with 2 heads and a signal bridge with two 2-headed signals. After reviewing the market for available models, he selected the Signals by Oregon Rail Supply. Oregon Rail Supply has a full line of models of various prototype signals, including all the ones required in their line of searchlight signals. The Oregon Rail Supply signals require assembly. The kits come with plastic targets and mounting parts, a brass rod for the mast, a brass etched ladder, the bi-colour LEDs and current limiting resistors for operation of the LED on a 12V supply.

Before starting the assembly of these signals, I decided to look at some prototypes for guidance. A few years back, I had ventured to Coteau, the junction of the Alexandria Subdivision with the CN Toronto to Montreal main line, and took some pictures. The junction is fully signalled with searchlight signals and I had specimen of triple headed signals, double headed signals, dwarf signals and even a signal bridge in my photo collection. Figure 1 is a view along the main line to Toronto, showing three triple headed masts, a signal bridge, and two dwarf signals. Figure 2 is a view of the small yard on the line to Valleyfield and shows the back of a two headed mast.

From these pictures, I took some measurements for the assembly:

- The distance between the targets is slightly less than their diameter
- The targets are offset from the mast. The direction of the offset depends on local circumstance, such as clearances and visibility.
- The top of the mast ends approximately at the edge of the top target

I tried to determine the height of the signal targets above ground from the photograph, but the results are inconsistent. From the measurements, it seems that the targets on the two headed signal are located approximately between the targets on the three headed signal and the lowest target is approximately

4.5 target diameters off the ground. Unfortunately, all the ladders supplied with the Oregon Rail Supply Kits are the same length and just a bit too short to bring the three headed signals to the height thus determined. I decided to use the maximum height possible on the three headed signals and to put the targets on the two and the single headed signal in between the ones on the three header. It just means that they are all slightly lower than the ones at Coteau. Generally, the railroad will determine the height based on visibility requirements.

The signal kits do not provide a means to locate the targets in a consistent manner on the mast, therefore, I build a jig as shown in figure 3. I used the materials I had readily available, which in this case meant wood. The targets in the kits have a diameter of 11 mm. I drilled four holes at 19 mm distance, the top three for assembly of a three headed mast, the bottom two for the short masts that are installed on the signal bridge. I added a block with a V-groove to clamp the mast in at a distance of 4 mm from the centerline of the targets and I added some support to brace the platforms against during assembly. Figure 4 shows a signal set in the jig prior to gluing.

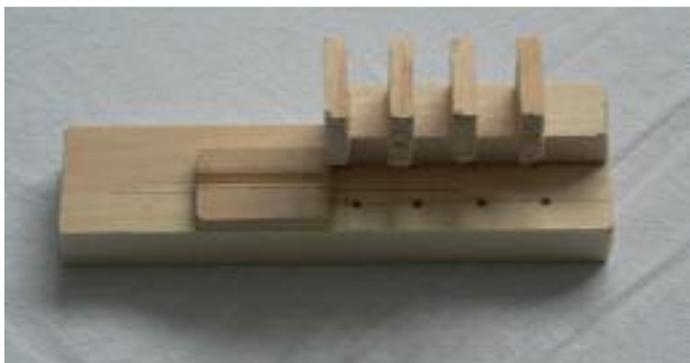


Figure 3. Assembly jig for searchlight signals. The jig in its current form can only be used for signals where the target is offset left, but could easily be modified to also allow offset right assembly.

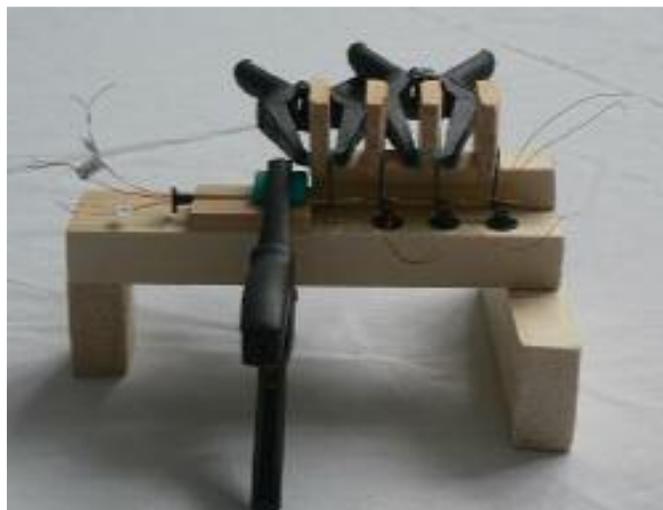
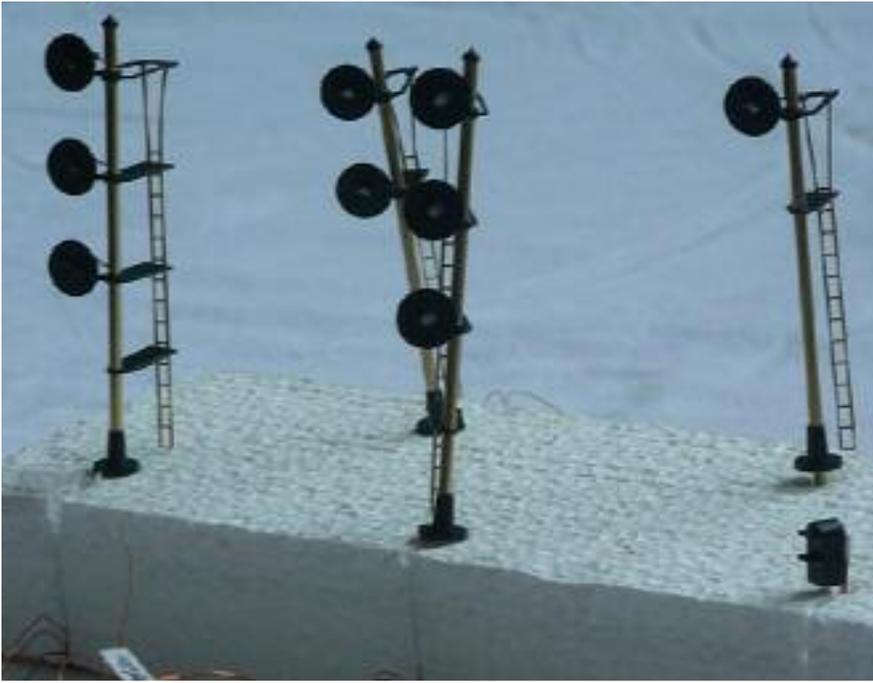


Figure 4. Loaded assembly jig just prior to gluing. See my notes in the text about wiring before gluing.

Here are the basic assembly steps:

1. File notches into the mast spaced 19 mm apart starting 5 mm below the top of the mast. Keep filing until a hole is formed to pass the wires through into the mast. Ensure that the edges of the hole and the inner surface of the mast are clean. I used a thick, straightened paper clip to clean the inside of the mast.
2. Carefully ream the openings in the target brackets, platforms, and the base so that they just slip onto the mast.
3. Remove the plastic parts from their sprue and clean them.
4. Slip the holders and platforms in place.
5. Insert the required number of targets into the jig.
6. Set the mast in place and clamp it. Align the target mounts and the platforms.
7. Using plastic cement, attach the target to its support.
8. Using CA glue, attach the parts to the mast
9. Once the parts have dried, feed the wire through the mast and the base. I used lacquer insulated wire for winding magnets and had no problems fitting 6 wires inside the mast. Label each pair at the bottom.
10. Solder the wire to the LED. Try to get as close a possible to the LED. Test the LED before nipping off the legs as close as possible to the solder joint.
11. I used Microscale Micro Liquitape on the inside of the target and the body of the LED. Once the milky substance has dried clear, it has a tacky consistency and will ensure that the LED stays in the target, yet if need be, it can still be removed.
12. Glue the top finial in place. The kit supplies a selection of different shapes, I selected the flattest one.
13. Remove the signal from the jig.
14. Prepare the ladder by removing the top four rungs and filing the surface flush. Insert the ladder in the last opening(s) of the platforms and insert the handrail part into the holes at the top railing. Attach with CA glue.
15. Attach the base with CA glue and shorten the ladder, if necessary.



Some notes: I thought it should be easier to fiddle the wires through the mast before gluing everything down, as the plastic parts might get in the way. So for the first signal, I routed the wires through the mast and then commenced gluing. I should have followed the instructions, as some CA seeped into the hole and glued the wire in place. It is impossible to solder the wires onto the LED close to the mast, one needs to be able to pull the wires with the LED to the mast. A lot of fiddling freed the wires on the first signal.

I build these signals assembly line style and removed them from the jig after gluing and before soldering. While soldering is no issue, it is a bit tricky to insert the LED in the target without backing. On the first one, I snapped the target off and therefore decided to re-mount them in the jig before pushing the LED in place. Also, ensure that you do not push the LED too far, as it has a slightly wider rim at the bottom which will not fit into the target – the target will split if you go too deep. Guess how I found out!

Figure 5 shows the completed signals before painting.

For the dwarf signal, I replaced the supplied red and green LEDs with two bi-colour LEDs similar to the ones used in the searchlight signals. (Digi-Key PN: 160-1058-ND)

The signal bridge kit comes with only one mast and a single searchlight target. Oregon Rail Supply sells extra kits with 2 short masts and 2 targets. The two short assemblies are built as before. There are no maintenance platforms supplied with these kits. I modified the double sided ones supplied with the signal bridge kit and used left-over handrails from the other signal kits.

The signal bridge is designed to have the signal masts mounted on the front. I decided to mount them on the top, as it would be easier to route the wiring into the bridge. I drilled two undersized holes in the top platform and re-enforced them with some scrap pieces from the kit. After the glue dried, I reamed the holes to the correct size.

The assembly of the cantilever bridge is straightforward:

1. Attach the side and the top to one cantilever arm. I used the Right-Clamp to ensure that the pieces were set at right angles.
2. Attach the second cantilever arm.
3. Attach the closure piece at the end of the cantilever arm.
4. Paint the inside of this assembly and the inside of the last piece to close the bridge. More on painting in the second instalment.
5. Drill a 3 mm hole in the base.
6. Wire and test the LEDs all the way through the cantilever bridge and the base. Label the wire pairs.
7. Attach the masts. If I am building another one, I would prepare a jig for this step, as I am not totally pleased with the alignment of my free-hand assembly.
8. Close the cantilever. The instructions advise to bend the last piece to its proper shape under hot tap water. I tried, but our tap water is not hot enough. (We just moved into a new home and as per Ontario Building code, the house is equipped with an anti-scald mixing valve. Our tap water does not get hot). I boiled some water and submerged the part. Obviously, you need to remove the part for shaping, but with a little bit of patience, it can be bent. Start gluing at the top of the cantilever and clamp the box. Let the first part dry before attaching it to the curve and the bottom part.
9. Once everything is thoroughly dried, finish the model by assembling a handrail from the supplied brass wire. Add the top finials and the short masts. I added two short ladders



Figure 6 shows the re-enforced holes for the signal masts on the top deck of the cantilever bridge after painting the inside.

to reach the maintenance platform from the deck and shortened the railing at the top. Prepare the tall ladder to reach from the ground, but set it aside until after painting.

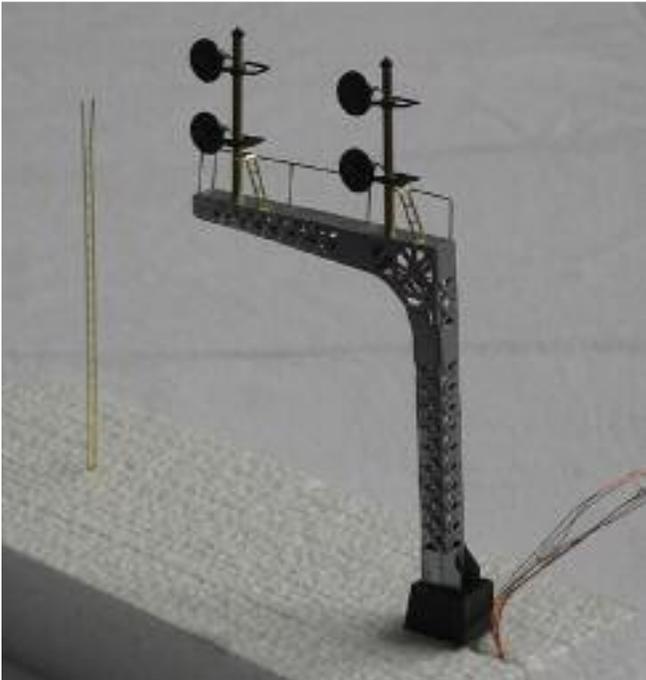


Figure 7 shows the completed signal bridge before painting.

The completely assembled cantilever signal bridge is shown in figure 7. In the next instalment, I will discuss painting and start on the electronic drive circuitry.

Parts List:

Oregon Rail Supply:

- # 130 Triple Target Searchlight Signal
- # 127 Double Target Single Searchlight Block Signal
- # 123 Red/Green 2 Light Dwarf Signal
- # 101 Cantilevered Signal Bridge
- # 129 Single Searchlight Bridge Unit

Digi-Key

- # 160-1058-ND LED 3mm Red/Grn Bicolor White Diff

Lacquer coated magnet wire

- Armour Coat Super Glue
- Microscale Liquitape
- Testors Liquid Cement

Display Table

By Grant Knowles

Once again the SLD membership has astounded us by the quality and diversity of models on the Display Table.

In keeping with this month's theme of "Passenger Cars", Grant Knowles brought out his full fleet of Hon3 cars which included the D&GRW Pagosa Junction Car (brass model), two C&S combines #25 & #20 (modified plastic kits) and the scratch built C&S Baggage Car #1.



Apparently Bill Meredith has found some free time to get back into his RR manufacturing business based on the two "kits in progress" on display. The AT&SF Hanrahan Reefer is a rather unique car with a central roof ice hatch and double side doors for freight loading. This car also has a multi coloured "Indian" bill board sized logo on the side. This would certainly make for a nice conversation piece on any layout! Bill expects to have this on the market by the time you read this. Bill also has some "masters" for the up coming ET&WNC Hopper car. Each of the styrene master assemblies has about 250 pieces – a lot of work goes into these kits that we take for granted.



Many years ago, the late Reg Bildeau scratch built an S scale round house. This wonderful model found a home on David Steer's layout, where it functioned as an On3 home for a logging railroad. It has now moved on to a more permanent home with Alex Binkley on his S scale layout. We look forward to seeing photos of it in this new location.

It is not often we run across a memento of our honeymoon. Gregory Gee had on display Rapido's special run of the Rocky Mountaineer coach that he and his new wife traveled in.

Not to be left out, Alex Binkley once again held up the S scale presence with a series of coaches. An AF combine from Al Craig that he had fixed up, an American Models CN Coach, another AM model with decals from John Licharson's railroad, a Sleeper coach lettered for Alex's line and another American Models CN car that has been custom painted.

The Craftsman Structure Show has an interesting contest where modellers are challenged with building a model on the surface area of a Kraft Peanut Butter lid – not much space in any scale!



Ron Newby brought out an HO scale farm silo he scratch built from a piece of PVC tubing and strip wood. The model is finished off with Bar Mills shingles and assorted farm "junk". The model will be installed on Chris Lyon's railroad.

Grant Knowles also brought out a couple of structures the first being Mrs Lovetts Meat Pies. This is a freelanced false front styled building reminiscent of the west. The store name comes from one of the key characters in the story Sweeney Todd whose meat pie business took an up turn coincidentally when a number of citizens went missing! Grant also brought out his Silver Plume Bakery – well at least as much as he had completed at that time.

Peter Coleman had a couple of "Dollar Store" trees on hand. These he found at the discount store and with the addition of some colour and ground foam, make very presentable background trees.



A recent issue of the NMRA publication – Scale Rails – had an isometric drawing of an ice house (with basic dimensions). Peter Coleman scratch built an excellent model out of styrene based on these plans.



And wrapping up the display, Peter Nesbitt brought out the "broad" gauge SBLK Meteora that was received as a gift. It does not run on his B&B RR but does see some service when taken out for special occasions.

Do not ever be humbled to bring out your projects / models to share with your fellow members. As demonstrated by the November table, the models do not have to be finished nor even related to the "theme", everything is free game as long as it is railroad related. Would it not be great to see something from everyone?



Next Division Meet

St Lawrence Division – NMRA

When:

Saturday, January 31, 2009

Where:

Emmanuel United Church

691 Smyth Road,
Ottawa

East of CHEO at Dauphin Road

Doors open at 9:00 am -- Admission \$5.00

What's on:

Morning:

Division Business

Clinic

- Lighting for the Silver
Plume Bakery

Display

- Motive Power – non-diesel

Door Prizes

- You never know what to expect!

Afternoon:

- Kitbusters – Laser
Structures 101

