



# The Mail Car

Newsletter of the St Lawrence Division – NMRA

Issue no. 53 – March 2009

St. Lawrence Division web site: [www3.sympatico.ca/gd.knowles/sld/sld\\_index.htm](http://www3.sympatico.ca/gd.knowles/sld/sld_index.htm)

## From the Superintendent's Desk

By Peter Joyce

Members will want to hear that we received a very nice letter from the Craig Memorial Library thanking us for our donation in Brian Ludlow's memory.

Our Kitbusters session in January was well attended: the variations on the basic kit are many and will make for a colourful group presentation in the Appearance Contest at the Woodstock Turn in April. Our next session will be Saturday March 28<sup>th</sup> when we will be assembling our kits, applying finishing details and preparing for the Convention. Speaking of the NFR Convention, **HAVE YOU SUBMITTED YOUR ATTENDANCE SHEET YET?** We need the SLD to be well represented, as we are one of the largest divisions in the NFR. As well we have some of the most talented modellers in the NFR, and we look forward to bringing home more than one award of excellence in the Judged Contest.

Our January meeting saw nearly thirty members in attendance, and we were rewarded with a detailed but simply stated Power Point presentation on exterior and interior lighting for our Kitbusters project from Peter Nesbitt. Grant Knowles reviewed our collective progress to date on the bakery, and answered technical questions from the members. Contrary to my remarks in January, we did not spend the afternoon modeling, but visited two east end layouts: Jim McSherry's and Ron Newby's. Many of us had not seen the layouts recently, having been busy during the Bytown Bobber when they were last open: we were all quite impressed! Some visitors took the opportunity to browse through *Discount Hobbies* while they were in the Orleans area.

The Division will be representing the NFR at the Kingston Rail-O-Rama on the weekend of March 21-22: Andrew Chisholm is our man on the ground and is looking for volunteers to man the booth on both days; perhaps modeling, or operating the SLD module, and/or extolling the virtues of joining the NMRA Canada and the SLD since Kingston is in our geographical area.

**WE NEED VOLUNTEERS – CONTACT ANDREW AT [chisholmag@intercolonialrailway.com](mailto:chisholmag@intercolonialrailway.com), or me in Ottawa.**

Continued on page 2

## NFR Convention Contest

By Grant Knowles

There is a stigma floating around implying the NMRA Contests are not for everyone. I cannot think of a statement that could be any further from the truth! Allow me to explain.

The NFR Model Contest consists of two distinct contests, the Judged and the Appearance. The Judged Contest is where you submit your models if you wish to have them evaluated against the NMRA Achievement Program (AP) standards. The Appearance Contest is where the models are displayed and a Popular Vote is held. In both cases the models are submitted anonymously with only you knowing which model(s) is yours.

A good way to think of the Appearance Contest is that it is just the same as the SLD Display Table except that your Description Tag does not have any personal identification information. Everyone who is registered for the convention is issued a ballot for them to indicate which model they feel is most deserving in each Appearance Contest Category. The Models with the most votes will be announced at the Saturday Night banquet. As the last crowning stage of our Laser Structures 101 program, I am (strongly) suggesting that we all submit our models in the Appearance Contest under the Structures Kit Built category. It will certainly be impressive to see all of these "bakeries" lined up there!

Now for those who wish to be a little more adventurous and have their model evaluated, then the Judged Contest is for you. Once again this whole process is anonymous but will require the completion of some paper work that should not take more than a couple of hours to do!

There are five categories the AP assesses a model against: Construction, Detail, Conformity, Finish & Lettering and Scratch Building. The judges are divided up into 5 teams corresponding to these categories. Each team will judge each model for the category they are assigned, thus one team will be evaluating "Construction" across all the entries. This approach ensures a few things, all models are judged by at least five individuals, all models are scored relative to each other in the same category by the same judges and there is no bias in the scoring.

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#### Copy Deadlines

May Issue - April 15  
September Issue - August 15  
November Issue - October 15  
January Issue - December 15  
March Issue - February 15

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

Continued from page 1 "From the Superintendent's desk"

Our March meeting will be held on Saturday March 28<sup>th</sup> at Emmanuel United Church. Following the morning business and information meeting we will spend the afternoon making those last minute touches to our bakeries (and pool halls, and drug stores, and ....and....) prior to heading for Woodstock.



Ron Newby and Jim McSherry hosted the SLD crowd on the afternoon of the January meeting. Both layouts combine hand laid track with scratch build structures set in front of a gorgeous backdrop. Whereas Ron models in On30 (see above), Jim choose HO scale to depict logging and mining operations on Vancouver Island. (see below).



The Contest Chairman will then add up the scores of 5 categories on each model and assign the final points. The Contest Chairman has the final say in the judge/scoring and may adjust any scores if there appears to be an issue. A score of 87.5 points or better out of 125 will earn the owner a Merit Award.

A few years back, the NMRA reduced the number of points allocated to the Scratch Built category to recognize the increased quality of the commercial kits. Thus a well built kit can earn a Merit Award if they score well in the other four categories. Of course the addition of any scratch built details, e.g. store interior, shed, etc, will help to increase the score potential. I have earned a number of Merit Awards for Kit Built models.

Enclosed in the Mailcar is a copy of the NFR Judged Contest Entry form. This is the paperwork that you must complete for the Judges as it tells them a little bit about your model and what they should be looking for; e.g. threaded turnbuckles! Now you must remember the Judges only have about 10 minutes to review your model, so do not write a novel! Also remember we have five teams each judging a specific category so they will not be reading your paperwork in full but just focusing on their category. So here are a few pointers on how to complete this form:

1. Check off the appropriate boxes in each category. Do not think you are at a disadvantaged if you do not check all the boxes. They do not all apply in all cases.
2. Though there is a couple of lines to describe the model, this is not sufficient. Recommendation is to attach a few more sheets with headings for the five categories thus you can add a lot more material.
3. When you add your information in each category, use bullet points. Do not waste your time writing prose as the judges do not have time to read it.
4. Keep you points / description sorted and to the point. For example drapes are made from tissue paper and made to look like blowing in the breeze, painting was done in two layers: strain followed by dry brushing.
5. If you followed plans from an article, etc, include these as the judges require this type of information to verify your "conformity" to the prototype.
6. I recommend you visit the AP section of the NMRA web site to understand more of what is judged under each of the five categories. Also you can corner myself or Peter Nesbitt.
7. You may repeat some detail between sections to ensure the judges for each category are aware of what they should notice.

Not only do the judges assign a score to your model, but they are required to fill out a Comments page which is to provide feedback to the Modeller in both what they liked and what could be done to improve the score in future. Note, that you can resubmit your model for judging at another time if you have made changes to it. I have done this a number of times for models that were not "good enough" first time around. Thus this feedback was most beneficial.

One of the underlying objectives of the Laser Structures 101 Program was to instil confidence in the builder that they can do this. Through the SLD clinics and mentoring in the workshops hopefully we have given you the knowledge and experience to take a simple model and make it special – even to the point of a contest quality model!

So hopefully I have clarified some of the mystery and stigma around the Model Contest paradigm and strongly recommend that everyone who will be attending the convention take their Bakery Project and at least enter it in the Appearance contest. And do not be afraid to go one step further and test the AP Contest waters as the workmanship I have seen in the club will certainly stand up to that test!

I have also posted a soft copy of this form and an example on the SLD Web site so you can fill out the template electronically.

## NMRA Dates

<b>SLD Meetings</b>			<b>NFR-NMRA Convention</b>
March 28, 2009	Emmanuel United Church 691 Smyth Road Ottawa		April 17 – 19 Quality Inn & Suites Woodstock, ON
			<b>SLD Workshops</b>
May 30, 2009	TBD		

Model Description \_\_\_\_\_

Entry No. \_\_\_\_\_

**1. CONSTRUCTION (Maximum 40 Points)**

Points Awarded

- Drew your own plans       Followed a construction article
- Used prototype plans       Cut and fit metal       Cut and fit cardstock       Soldered
- Used kit plans       Cut and fit plastic       Cut and fit glass       Made patterns
- Used commercial plans       Cut and fit wood       Crosskitted (Kitbashed)       Made molds

Describe in detail how model was built: \_\_\_\_\_

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**2. DETAIL (Maximum 20 Points)**

Points Awarded

Describe complexity, difficulty, refinement, amount of subordinate parts: \_\_\_\_\_

---

List commercial parts used: \_\_\_\_\_

**3. CONFORMITY (Maximum 25 Points)**

Points Awarded

Give information as to prototype modeled, or explain logic of design: \_\_\_\_\_

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**4. FINISH and LETTERING (Maximum 25 Points)**

Points Awarded

- Weathered       Not weathered       Sprayed       Brushed       Masked and sprayed
- Used decal lettering       Used decal stripping       Hand lettered       Hand striped
- Other (explain) \_\_\_\_\_

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**5. SCRATCHBUILDING (Maximum 15 Points)**

Points Awarded

List all parts you have fabricated. You will receive credit for these. Note any special or unusual features. \_\_\_\_\_

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Tabulated \_\_\_\_\_

This space is for Contest Committee only  
Verified \_\_\_\_\_

Final Score

# Signals for the Shadetree and Nepean

## Part 2: Drive Circuits

By Andreas Mank

In the first instalment, the assembly of the signals was explained. Before going into the electronic circuitry just a few words about painting.

The Oregon Rail Supply signals are a mixture of black styrene and brass parts. Before painting, I applied masking tape to the front of all LEDs. The masking tape was cut to app. 4 mm diameter and fit onto the targets over the LEDs. To ensure even colouration, I applied a base coat of grey first. After the base coat had dried thoroughly, I followed with a coat of silver metallic paint. Both coats were applied using spray cans. Once the paint had dried, I removed the masking tape from the targets and painted the front of the targets flat black.

Now let us discuss the electronic drive circuitry. To improve the flow of the article, I separated some basic concepts and summarised them on page 6 and page 7. If you have no experience with electronic circuitry, I would suggest to start by reading those basic concepts.

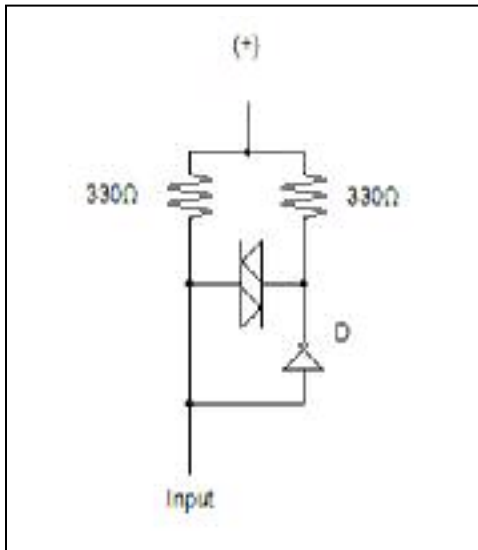


Figure 8: Basic drive circuit for a bi-colour LED. The inverter negates the input. By changing the polarity of the input, the LED will change its colour.

The Oregon Rail Supply searchlight signals use a two-legged bi-colour LED to display the three basic signal indications: red, green, yellow. You may ask: Why not use the three legged LED and not have to go through the more complex way of driving the LED? Well, with three signal heads on the mast, there are 6 wires required for the two legged LED and nine wires required for the three legged variety. It is difficult enough to feed 6 wires through the mast, it would be almost impossible to get 9 wires through the mast. In principle, the mast itself could be used as the return (ground connection), but then one leg needs to be soldered to the mast, which brings with it another set of problems due to the large difference in thermal mass.

Let us build up a circuit to drive the two legged bi-colour LED. In order to generate the two primary colours, the polarity needs to be reversed. We will use an Inverter (NOT-logic gate) to achieve the polarity reversal as depicted in figure 8.

If the input to the NOT-gate is (+), the output will be (-) and vice versa. The state table for the circuit is given in table 3:

Input	D	LED
0	1	Red
1	0	Green

Table 3: State table for the circuit depicted in figure 1.

To depict the yellow aspect, a pulsed signal is supplied to the input, switching rapidly between the two states. The pulsed signal can be generated using a 555 timer chip. If you are not satisfied with the colour rendition, then one other variable to adjust are the resistor values. By increasing the value of one of the resistors, the amount of Red (or Green) in the Yellow colour will be decreased.

By using a couple of NAND gates and another NOT gate, the basic circuit from figure 4 can be expanded to perform all functions except for the off state.

Table 4 shows the complete state table for the circuit shown in figure 9. In the table the options that are not of importance for the discussion are shaded. The first row gives the default position, since both the G and the Y input are biased to (+). For safety reasons, the default should be the most restrictive indication, thus the LED should be installed to depict Red in the default position. Connecting the G input to ground will change the signal display to Green.

Connecting only the Y input is to ground, transfers the signal from the P input, which should be connected to the 555 timer output, to the LED and it switches rapidly between Red and Green, appearing as a yellow indication to the observer.

Continued on page 8

Parts List: (all part numbers for Digi-Key)	
Resistor, 330 Ω	330QBK-ND
Resistor, 4.7 kΩ	4.7kQBK-ND
Resistor, 10 kΩ	10kQBK-ND
Resistor, 68 kΩ	68kQBK-ND
Resistor, 680 kΩ	680kQBK-ND
Capacitor, 0.1 μF	495-2832-ND
Capacitor, 1.0 μF	495-2822-ND
NOT-gate	296-1566-5-ND
NAND-gate	296-1563-5-ND
555-timer	296-1411-5-ND
ULN2003A	296-1979-5-ND
PCB	V2018-ND

# Basic Concepts in Electronics

## LED basics

Here are the basics on how to wire a Light Emitting Diode (LED). The basic circuit is depicted in figure 1.

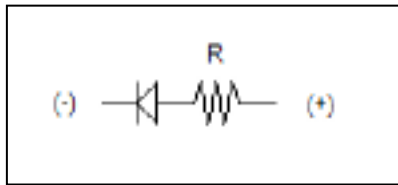


Figure 1: Basic LED circuit with a current limiting resistor

The size of the resistor depends on the voltage of the power supply and the LED. Each LED has nominal operating current. Using Ohm's law, the correct resistor value can be calculated:

$$U = R * I$$

Where U is the Voltage measured in Volt [V] (of your power supply), R is resistance measured in Ohm [ $\Omega$ ] (of the current limiting resistor protecting the LED) and I is the design current, measured in Ampere [A]. In this case, we are interested in the correct resistor value for a certain power supply voltage and diode current, therefore we solve for R:

$$R [\Omega] = U [V] / I [A]$$

For example, for a 5 V supply and a current of 20 mA (m is short hand for  $10^{-3}$ , or 1/1000), the result is 250  $\Omega$ . The next larger resistor size is 330  $\Omega$ . You can always select a larger resistor in this application, it will result in a slightly dimmer LED. Do not select a smaller resistor, as it will increase the current and can lead to permanent damage to the LED.

## Bi-colour LEDs

A bi-colour LED is constructed from 2 LEDs in a single package. Internally, the LEDs can be connected in two different ways as shown in figure 2 and figure 3. The LED shown in figure 2 has three legs, the one shown in figure 3 has two legs.

With the 3 legged version, there are 4 ways of powering the device: (the center is always connected to ground)

- 1 – no power on left and right leg, dark
- 2 – power on the left leg, left LED lights (colour 1)
- 3 – power on the right leg, right LED lights (colour 2)
- 4 – power on both legs, both LEDs light and the displayed colour is a mixture of both

Using a red/green bi-colour LED with 3 legs makes it possible to display red (colour 1), green (colour 2), and yellow (actually more amber) as a mixture of both.

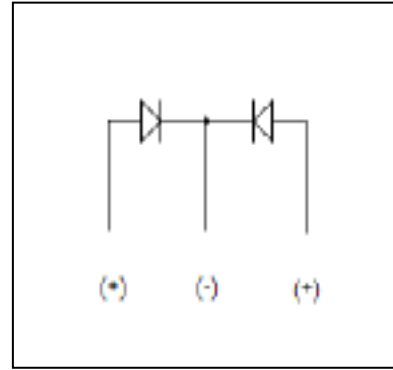


Figure 2: Bi-colour LED with three connections

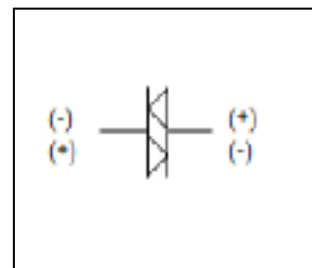


Figure 3: Bi-colour LED with 2 connections

With the 2 legged variety as shown in figure 3, the first three states are straightforward:

- 1- both legs on the same polarity, dark
- 2- leg 1 (+), leg 2 (-), colour 1
- 3- leg 1 (-), leg 2 (+), colour 2

In order to achieve the mixed colour, the following trick can be used. The human eye cannot resolve individual pictures (or colours) when a sequence of pictures (colours) is shown at more than 25 pictures per second (The entertainment industry is raking in huge profits through movies and TV based on this simple trick), so by reversing the polarity at a faster pace than 25 times per second, your brain will see a mixed colour.

## Logic gates

Logic gates are integrated circuits that perform according to the rules of Boolean logic. For this application, we only need to concern ourselves with two different varieties, the NOT-gate and the NAND-gate.

The NOT-gate has one input and one output, whereas the NAND gate can have several inputs and one output. The NOT-gate is also called an Inverter. The symbols for these two gates are depicted in figures 4 and 5.

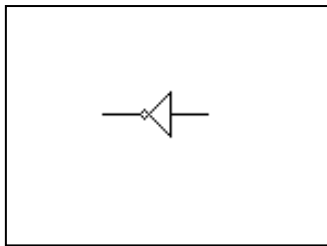


Figure 4: NOT-gate

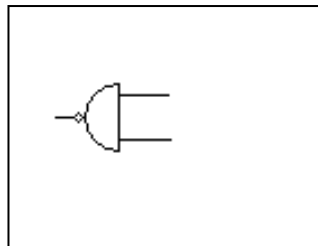


Figure 5: NAND-gate with two inputs

The behaviour of the gates is summarized in tables 1 and 2 for the NOT-gate and a two-input NAND gate:

Input	Output
1	0
0	1

Table 1: State Table for a NOT-gate

Input 1	Input 2	Output
1	1	0
1	0	1
0	1	1
0	0	1

Table 2: State Table for a 2 input NAND-gate

The binary logic states are commonly denoted by 1 and 0. In a circuit, the “1” is equivalent to connecting to a voltage close to the voltage that supplies the logic gate, here it would be +5 V. The “0” is equivalent to connecting the gate to ground.

## 555 timer chip

There are several good sources on the internet for examples on how to set up the 555 timer chip; I used the following two sites:

Source 1: <http://baylug.org/zonker/ZSignal.html>

Source 2: <http://www.uoguelph.ca/~antoon/gadgets/555/555.html>

In figure 5, the required circuit is reproduced from source 1. The 555 timer is used in astable mode (also called free running), which will provide a pulsed signal at pin 3.

Source 2 gives the formulas to calculate the appropriate capacitor and resistor values to set up the pulse train. For the bi-colour LED, I am using:

$C = 0.1\mu\text{F}$ ;  $R_1 = 4.7\text{ k}\Omega$  and  $R_2 = 68\text{ k}\Omega$ .

With those values, the 555 timer will output a pulse train that switches polarity 100 times per second (100 Hz) with almost equal on and off times.

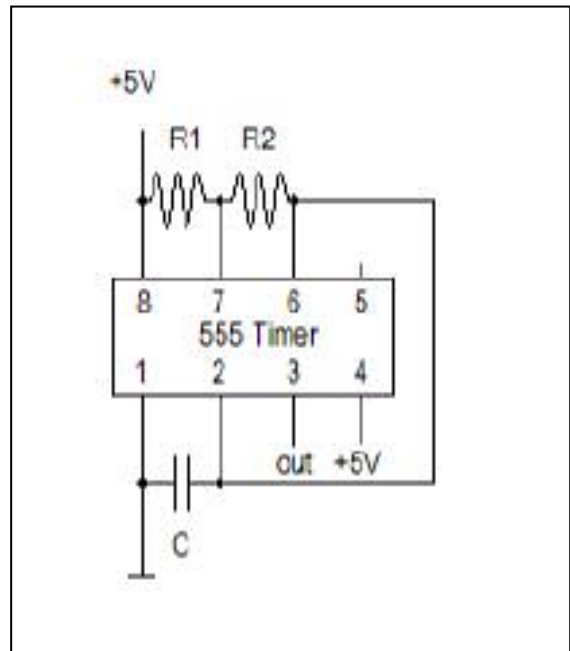


Figure 6: 555-timer in astable mode

For the blinking function I am using:

$C = 1\mu\text{F}$ ;  $R_1 = 4.7\text{ k}\Omega$ ;  $R_2 = 700\text{ k}\Omega$

Which will generate a 1 Hz pulse train with almost equal on and off times.

One 555 timer can supply the pulse trains for many signals. I combined both timers on one PCB, as shown in figure 7. I also included a chip with 6 NOT-gates. One of the gates drives a bi-colour LED, I use it to check that the timing on that circuit gives the correct colour. The other 5 gates are used to increase the fan-out (the number of other circuits that can be driven) of the 555 timer circuits.

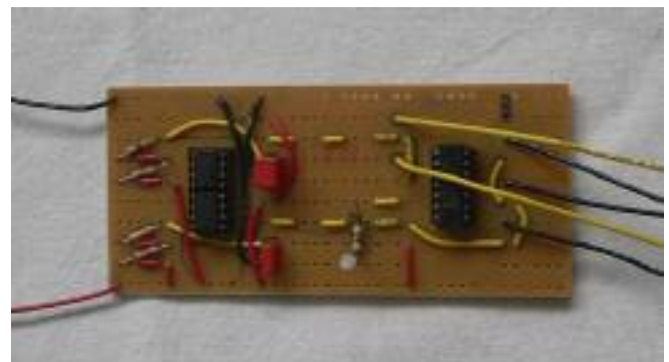


Figure 7: PCB with two 555 timer circuits. I am using two independent chips for the timer as I only had these in my parts box. Three outputs (black) run at 100 Hz, two outputs (yellow) run at 1 Hz.

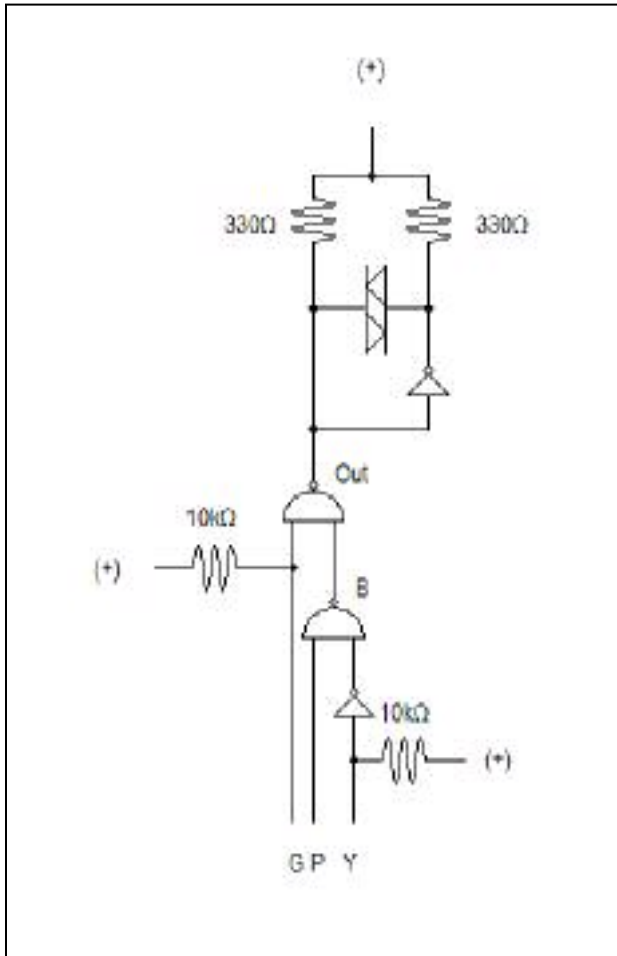


Figure 9: Basic drive circuit for a Bi-colour LED used in a searchlight signal.

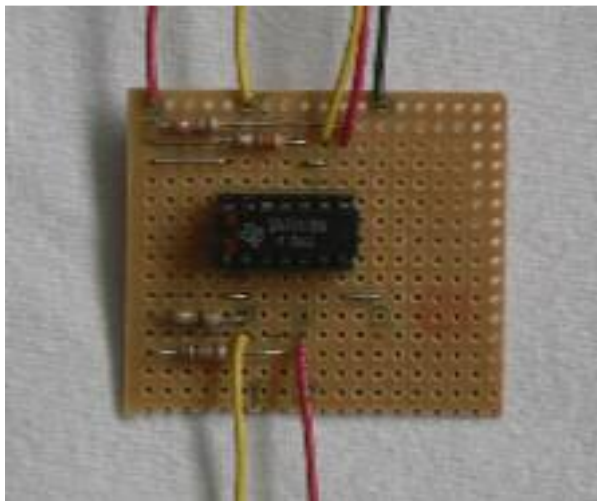


Figure 10: Top view (component side) of the basic drive circuit. The yellow and red wire at the top are the connection to the bi-colour LED. The wires at the bottom are for Y and G signals, the P input is at the top (yellow)

Y	NOT Y	P (Pulse)	B	G	Out	LED
1	0	1	1	1	0	Red
1	0	0	1	1	0	Red
1	0	1	1	0	1	Green
1	0	0	1	0	1	Green
0	1	1	0	1	1	Yellow
0	1	0	1	1	0	Yellow
0	1	1	0	0	1	Green
0	1	0	1	0	1	Green

Table 4: State Table for the circuit depicted in Figure 9

If both the yellow (Y) and green (G) input are connected to ground, the LED will be green. It is possible to modify the circuit so that the more restrictive yellow indication overrides the green indication, but it will require a more complex circuit and I did not feel that it was justified.

The advantage of the circuit shown in figure 9 is that it only requires one chip with 4 NAND-gates (2 of them are used as NOT-gates by connecting their inputs together). The 555 timer chip can be build as a separate circuit, since one 555 timer chip can drive many signals. The basic signal drive circuit fits on a small prototype PCB as shown in figures 10 and 11.

Now that we have covered the basic functionality, I will add some additional features. Signalling practices in Canada also use blinking aspects. Please check the Trackside Guide for a complete list. The introduction of the blinking aspect requires some additional circuitry as shown in figure 12. By comparing this circuit with figure 8, it is easy to see that 2 additional NAND-gates were included. Table 5 shows the possible states for this circuit and should be compared to table 3. With the introduction of the additional NAND-gates, the Off state can be depicted. This is useful in two ways:

- It can be used to model approach lit signals, i.e. the signal only lights up when a train is approaching. The required signal could be generated by an occupancy detector.

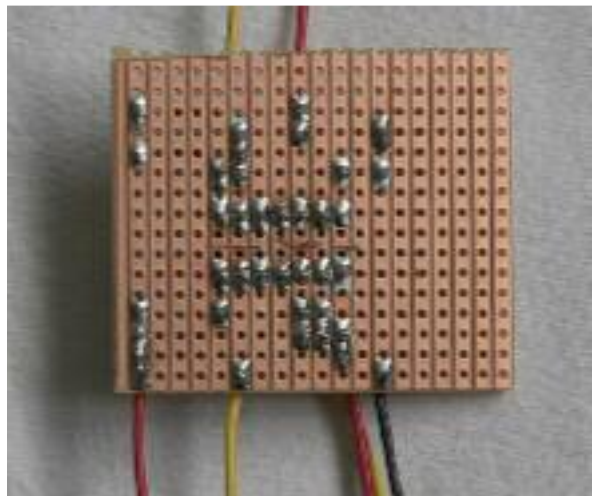


Figure 11: Bottom view of the basic drive circuit. Some traces need to be cut under the NAND-gate



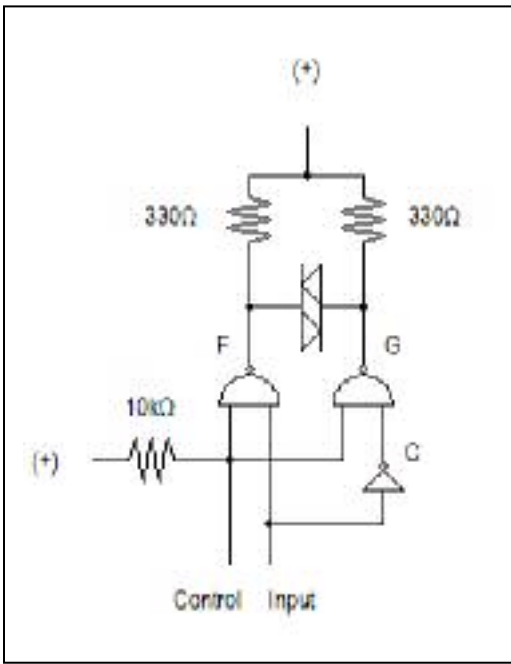


Figure 12: Adding blinking and approach light functions to the circuit.

Input	D	Control	F	G	LED
0	1	1	1	0	Red*
1	0	1	0	1	Green*
0	1	0	1	1	Off
1	0	0	1	1	Off

Table 5: State Table for the circuit depicted in Figure 12

- It can be used to model the blinking aspect. A blinking signal is a signal that switches between the Off state and the On state. By supplying a correctly timed pulse train at E, the signal indication will blink.

One note though, due to the additional negation on these NAND-gates, it is necessary to physically switch the connections on the LED to achieve the desired Red / Green indications. You can see by comparing tables 3 and 5, that the respective states at F and G are inverted.

I will not go into further details on the first point, as that is an article in itself and neither Don nor I intend to model approach lit signals. For the blinking aspect, the pulse train can be supplied by another 555 timer

One other issue to be considered is that the output of a logic gate can supply a maximum of 20mA current. The bi-colour LED requires 20 mA current, therefore, each logic gate can drive only one LED. If you intend to install repeater LEDs, for example in a control panel, it will be necessary to boost the output power of the gates. In this case, Don has one location where it is difficult to see the signal indication from part of the layout and a repeater needs be installed on the fascia.

The amplification can be achieved using discrete transistors, or, which I prefer, an amplifier chip can be used. The ULN 2003/2803 family is such a chip. Each output can supply up to 500 mA, the entire chip is rated at 2.5 A. Figure 13 shows how to modify the basic circuit from figure 8 to include the ULN 2003 chip, the circuits from figures 9 and 12 can be modified in the same fashion. With this circuit, it is possible to drive several LEDs in parallel.

A board with the full functionality is shown in figure 14. It combines 3 basic drive circuits with the blinking function on two of those circuits and an amplifier chip to drive several LEDs in parallel.

Now we have the basic drive circuits for the bi-colour signal LEDs. In the next instalment in the May issue of the Mail Car, I will discuss several ways on how to set up the logic that provides the inputs to the drive circuits.

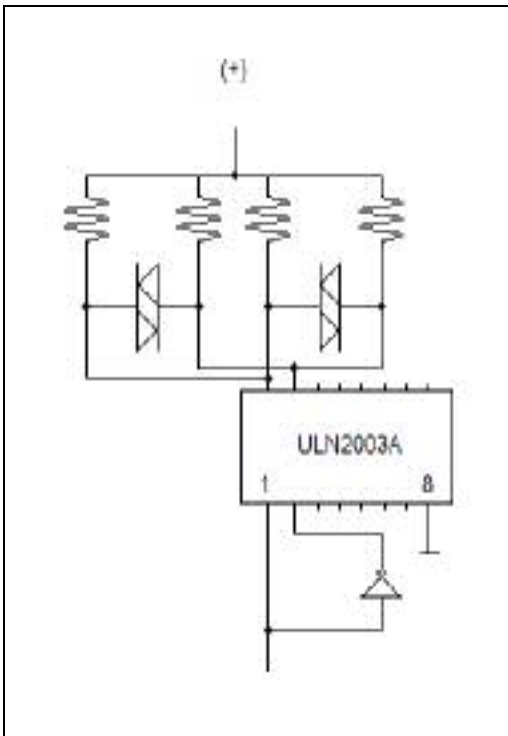
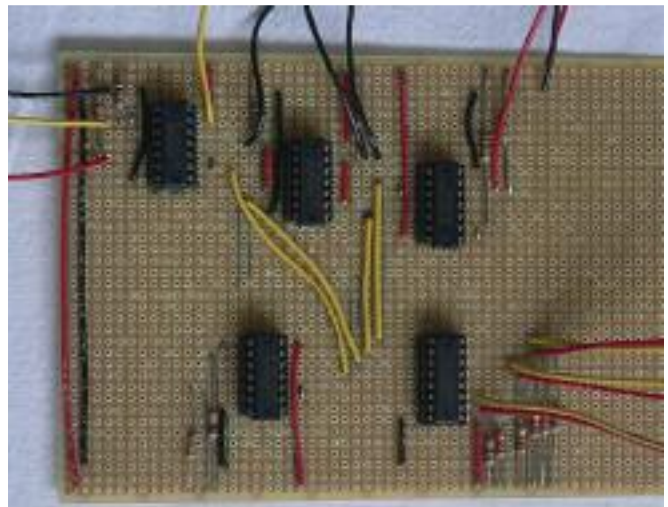


Figure 13: Using an amplifier chip to boost the output current to drive several bi-colour LEDs in parallel.

Figure 14: (right) PCB including full functionality to drive a 3-target searchlight signal



# Display Table

By Grant Knowles

The January Display Table had a great selection of models on display ranging from structures to motive power and even electrical projects, once again demonstrating the diversity of the club.

Starting off we had the HO Scale H. Scodras Corner Gas Station. This model was built by Grant Knowles from an Ed Fulasz kit for Don Leger. This kit is comprised of some very detailed casting of not only the structure but also gas pumps, barrels and even car tires! The store is named after the late Howard Scodras who has built a number of models for Don and the attached garage is named on honour of Bob Farquhar. Grant states the Ed Fulasz kits are wonderful models to build and are very affordable.



Next up we have a mystery item that Lorne Munro brought in the form of a large leather attaché case complete with a diesel logo engraved on the top. The case has certainly seen many years of service – in what we're not sure.

Andreas Mank's services have also been engaged by Don Leger to provide a working signal system for his layout. Andreas is building a number of Oregon Models Search Light signals (article appeared in last month's **Mail Car**) and had a working prototype on display that demonstrated the three signal colours. The second instalment on the electrical system that is used to drive the signals can be found in this edition of the **Mail Car** on page 5.

Grant Knowles had his completed Silver Plume Bakery model on display. Despite the questionable instructions, Grant states he enjoyed the build. Some additional details and weathering have yet to be added.

Grant also brought out his Christmas project – the Colorado & Southern Boreas Pass Section House. This is an HO scale laser kit from Wild West Scale Model Builders that has balsa wood wall panels to represent the log construction. The model was built over three casual evenings and even includes interior floor and walls.

Steve Watson has built an N scale Engine House made by American Model Builders. Steve noted that since the engine house will be viewed from above on his coffee table Barry's Bay, Embrun & Eastern RR, the roof will have to be super detailed. The home made corrugated iron roofing was made from aluminium foil and "rusted" using circuit board enchants.



Paul Anderson was cornered into participating in a workshop at the recent Springfield Train Show. Fran & Miles Hale instructed the participants on how to assemble a 3 in 1 kit donated by Walthers. Paul added additional details in the way of tools, etc from purchases at the show.

It has absolutely fascinated me how our members have taken up the Silver Plume Bakery challenge and made the building something unique. Gilbert Lacroix has flipped the floor plan around on this kit to make the "Wrongway's Used Car Dealer". The Dealership sports SMD Lighting, a 3 volt regulated power supply, and a decade counter for a sequence flashing light sign that will use fibre optics.

Chris Lyon also brought out his Silver Plume Bakery rendition, in this case the Silver Plume Pool Hall. The front room sports a pool table, two players and neat double lamp fixture made by Peter Nesbitt that contains two LEDs for illumination. The Pool hall also sports a real patio for the patrons.

Scale Structures Limited is well known to those amongst us that like to add detailed interiors to their buildings. John Stewart has a number of SS beautiful castings on display that he plans to assemble for his buildings.

The Colorado Midland Railroad had a number of “Hanrahan” Refrigerator cars. These cars had a central roof hatch for loading the ice with the perishable goods entering by two doors on each side. David Steer built this HO scale model from the new Protowest resin kit. The kit comes complete with the multi coloured billboard “Indian” logo for the car. Of course Dave could not resist adding his trade mark “threaded” truss rods and turn buckles. The designer, Mr. Hanrahan, once lived in Ottawa and holds a number of patents.



Dave also brought out a Central Vermont Auto boxcar he built from a F&C resin kit. The kit required some cutting and fitting to go together. The project required 2 years to complete with most of the time consumed waiting for paint to dry – or at least that is what Dave claims!

And finally Dave brought out another long term project he has been working on – a PBL/Samhongsa Sn3 Westside Lumber Company Shay #12. The PBL shays are notorious for requiring extensive fiddling to get them up and running to which this unit was no different. Dave even had to rebuild the three cylinder engine in order to get it to run smoothly. The model now sports a magnificent paint job and only awaits a crew before it is put into service.

Alex Binkley, our resident S-scaler, had a beautiful 2-6-0 on hand that he has in his collection. This brass model is from a Simeon Parent kit.

Michael Rozeboom had three large HO scale steam engines on display. A Royal Hudson made by Tenshodo, an Santa Fe 2-10-2 made by Samhongsa and the largest of all, a UP Big Boy also made by Samhongsa. All were very nicely painted and weathered.



Moving up to the larger scales, Ron Newby had his On30 Railcar and Trailer on display. This combo is made by Bachmann and comes complete with DCC. Ron plans to add DCC Sound before it is placed into regular service.



This completes the review of a very well attended January Display Table. For those who might be wondering, the Display Table Theme for this month was “Motive Power – non Diesel”. The theme for next month’s display table is “Toy Trains” – anything non-scale. We would like to see all those treasures giving you fond memories of times gone by.



# Next Division Meet

St Lawrence Division – NMRA

**When:**

**Saturday, March 28, 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**

- Ron Newby  
*Scratchbuilding an addition to the bakery*
- tbd

**Display**

- Toy Trains – non-scale

**Door Prizes**

- You never know what to expect!

**Afternoon:**

- Kitbusters – Laser Structures 101:  
*Scratchbuilding an addition to the bakery*

