



**Three Lakes Model Railroad Club**  
**Volume 3, Number 8**

**1<sup>st</sup> 100% Club in Wisconsin**  
**August 2012**

## View from the Tower

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I opened a new book that I purchased from the American Radio Relay League and as I read the introduction, the author states a number of assumptions that he has about the readers. This made me think about the material that we have been publishing in the Three Lakes Turn. After submitting the LED handout to our editor it occurs to me that a series of reviewing the basics of electronics would benefit our members and guests who receive these newsletters.

Topics will include: the vocabulary of basic electronics, identifying components and their value, as well as the meaning of terms used in the Digital operations of model railroading. Some of us have used meters to measure voltage and current in operating DC layouts and many modelers have had no need for such tools.

Our layouts, club and home, have been changing over the last few years and when everything works well the trains and accessories do wonderful things. When something stops work correctly more and more of us have to call on the “experts” to diagnose and fix the problems.

I hope as we develop new clinics and build it yourself projects for the club that a level of learning will go along with these activities. This learning of basics will be a

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review for some and enlighten for others. To provide an Ah Ha moment at discovery of how something works or why a system has failed would be my goal in these reviews of the basics.

In many cases in the newsletters to come I will refer to web based learning sites for deeper exploration of the topics. As an electronic newsletter always available on line at the club web site [www.tlmrc.org](http://www.tlmrc.org) it allows us to use the web as a resource at our fingertips.

This month I will be giving a clinic on the introduction to Light Emitting Diodes (LED). It will lead to a make and take project or two with crossing flashers and signals for turnouts. We will not be making these this month because soldering in a public library is not a good idea. I have had smoke from soldering set off fire protection systems and call the fire department. Believe me the FD and the building owners frown on that happening.

So we will look at the components see what they can do and then build them at a later date when we are at an in home meeting.



I have had a number of requests to present a clinic on Model Photography, so this will be the major clinic in August. I will cover the basics of photography as related to model railroads and post the handout on the web site. Feel free to bring your camera as I will have my Black Jacks Bar photo training module with

me at the clinic.

If you have a loco or a car or two that you want to photograph bring them too. I hope to see you at the joint meeting on the 25<sup>th</sup> at the Rhinelander Public Library.

*Paul Wussow  
President  
Three Lakes Model Railroad Club*

# An Introduction to LED for Model Railroaders – Clinic Handout

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## Incandescent Lamps

These come in most of our locomotives as headlights and marker lights. Many are 12 to 14 volt lamps connected to the track power AC or DC. These will get brighter as you add power and the train runs faster. In newer units you may find a diode board that lights the lamps as you start and keeps them at the same level of illumination. Caution the lamps are 1.5 volt and will burn out if connected to track power or a DCC decoder. Direct connections to a decoder should be done with a 14 volt lamp. Lamps give off heat and melt plastic if they are on for a long period of time. Incandescent lamps burn with a warm glow and are redder as voltage drops. These lamps draw considerable current that is dissipated as light and heat.

## Light Emitting Diodes

LEDs are low current semiconductors which conduct current in one direction. When the current flows across the diode junction they emit light. Because they are low current they do not heat up and will not melt plastic.

LEDs are low current devices (.030 to .060 Watts) and require a resistor to limit the current. Failure to limit the current will cause the diode junction to fail thus requiring replacement.

LEDs come in many colors and sizes

Some locomotives come with LED lights wired to boards with resistors built on to the boards.

LEDs may be used with DCC as long as they are wired correctly and have a series resistor.

Bi Color LEDs are 2 LEDs in one case wired opposite each other. When current flows in one direction you see red light and when the polarity is reversed you see green. By rapidly flipping polarity you may produce yellow light.

Most of the commercial Signals are common Anode (+) and the Cathodes (-) are used to control the lighting of any of the lamps.

**By P.A. Wussow for LED Clinic, Rhinelander Library, Aug 25, 2012**

## **Railroad Happenings: or Semi-local events...**

**August 25, 2012 Saturday 9 AM to Noon, Rhinelander Library**

**106 North Stevens Street:**

Clinic: An Introduction to Light Emitting Diodes

(leads to another clinic on making signals and the like) and

Clinic: Model Railroad Photography –

Both clinics by PA Wussow

*All are welcome: no preregistration is required.*

Aug 31 - Sept 3, 2012 **per Northeast Wisconsin O Gaugers**

**Calumet County Steam Engine Show** Superintendent: Jim Bastian

[www.rllines.com/](http://www.rllines.com/)

Sept. 13-16, 2012- **Soo Line Historical Society** Annual Convention

Thief River Falls, MN Info at: [www.sooline.org](http://www.sooline.org)

**September 15, 2012 Saturday 9 AM to Noon, Roger's Place**

**1162 Medicine Lake Lodge Road, Three Lakes, WI 54562**

Clinic: Make your own trees inexpensively and quickly

We will actually be making trees for Z, T, N, HO, S, O & G

Gauge Layouts... you'll be taking a couple home (proudly)

Clinic by Greg Hoppert

*All are welcome: no preregistration is required.*

Sept. 29-30, 2012 **Northwoods Model RR Club**

**Module Setup: Friday Sept 28<sup>th</sup> 4PM to 9**

Annual Train Show And Swap Meet

Saturday September 29, 2012 10 A.M. to 4 P.M. &

Sunday September 30, 2012 10 A.M. to 3 P.M.

At: MHLT Elementary School, 7450 Titus Drive, Minocqua, WI

call 715-358-2570 or 715-356-6656

**Module Takedown: Sunday Sept 30<sup>th</sup> at 3 PM.**

Oct13, 2012 **NMRA [Winnebagoland Division Fall Meet](http://www.wld-nmra.com)** in Wausau, WI

<http://www.wld-nmra.com>

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Oct 21, 2012 **Model RR Show and Swap Meet** – Circle B Recreation 6261 Hwy  
60 – Cedarburg, W Info at: [www.lammscape.com/cedarcreek](http://www.lammscape.com/cedarcreek)  
Nov 10 – 11, 2012 **Trainfest**, Wisconsin State Fair Park, West Allis, WI Info at:  
[www.lammscape.com/cedarcreek](http://www.lammscape.com/cedarcreek)

## **On a Spur and loading...**

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Jan 22, 2012 **Northeast Wisconsin O Gaugers Point Beach**  
**Visitor Center Train Show** 10am - 4pm Superintendent: Pete Kober  
[www.rllines.com/](http://www.rllines.com/)  
Jan 26, 2012 **GREAT TRI-STATE RAIL SALE**, La Cross Center 2nd & Pearl  
Streets, La Crosse, WI 54601  
May 2 – 5, 2013 Midwest Region Convention, Host is Central Indiana Div  
<http://cid.railfan.net/MP50.html> Indianapolis, IN  
July 14 – 20, 2013 NMRA Convention, Atlanta, Georgia  
Will be covered at: <http://www.nmra.org/>  
July 13-20, 2014 NMRA Convention, Cleveland, Ohio  
Will be covered at: <http://www.nmra.org/>

## **Meets On the Main Line ...**

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**Central Wisconsin Model Railroaders, Ltd**, business 1<sup>st</sup> Wed, social 3<sup>rd</sup> Wednesday,  
7PM basement, Bancroft Depot, Portage County Historical Society, Heritage Park,  
Washington Ave, ex GB&W tracks, Plover, Wisconsin. See  
<http://www.trainweb.org/cwmr/>

**Clipper City Model Railroad Club**, membership meeting 1<sup>st</sup> Thursday 7:30 PM, Iron  
Horse Barn, Manitowoc County Expo Fair Grounds, Manitowoc, Wisconsin (HO, N, O).  
Questions? [jimchadek@charter.net](mailto:jimchadek@charter.net)  
or see <http://www.clippercitemodelrailroadclub.org/>

**Paper Valley Model Railroad Club** (501 c 3) meets Thursday 7 – 9 PM and Sat 1 – 3  
PM W2221 Block Road, Kaukauna, WI 54130. See  
<http://www.papervalleymodelrailroad.com/>

**Wisconsin Valley Railroad Club**, meets Thursday 7:45PM at 403 McIndoe St (Yawkey  
House basement), Marathon County Historical Society, Wausau, WI (enter through rear  
door). Rod Beckman, Pres 715-842-7232  
See <http://www.wld-nmra.com/Wausau-WiscValley.htm>

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**Sheboygan Society of Scale Model Railroad Engineers, Ltd.** Meets / open Tuesday and Thursday evenings, at Sheboygan Railroad Museum, 1001 N 10<sup>th</sup> Street, Sheboygan, WI. See: [www.sssmre.org](http://www.sssmre.org)

**Northwoods Model Railroad Club**, business 3<sup>rd</sup> Tuesday 7 PM Minocqua Museum, Work sessions every Wednesday 7 – 9 PM / Eric Drochner, PO Box 799, Woodruff, WI 54568-0799.

See: [http://www.wld-nmra.com/northwoods\\_model\\_rr\\_club.htm](http://www.wld-nmra.com/northwoods_model_rr_club.htm)

**Rhineland Railroad Club**, business 1<sup>st</sup> Wednesday, 7 PM at the Logging Museum Depot, operating / maintenance Wednesday 7 PM same location or 123 Brown Street, Rhineland, WI with modular layout. See [www.rrahome.org](http://www.rrahome.org)

**Three Lakes Model Railroad Club**, dates open, meet at members homes and / or with the Rhineland Railroad Association. See [www.tlmrc.org](http://www.tlmrc.org)

Questions, comments or problems: call Superintendent: Paul A Wussow 312-543-4989  
Praise, congratulatory or simple fun: call Editor: Roger G Blocks 262-989-4338

## **Following Our Mission Statement**

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Our goal is to encourage model railroaders to partake of the hobby and membership in this and other railroad clubs. It is to encourage any member to partake of the Achievement Program (AP) of the National Model Railroad Association (NMRA) and to promote model railroading as a hobby. It is also to promote new memberships, new ideas and follow the guidelines of NMRA and maintain 100% NMRA membership.

I was looking at the performance of the club from inception to date and I find we are doing pretty well at achieving the goals of our mission. During the life of the club our members have achieved more than 25% of the AP certificates awarded in the Mid West region of the NMRA. We have worked with numerous clubs and the NMRA Education program to bring in and educate new model railroaders. Our members have participated in events in at least 5 divisions in three regions of the NMRA and have given clinics at many of these events. Our members have participated in prototype presentations for special interest groups and historical societies and will be continuing these for additional groups. We have recruited new members and extended our outreach via electronic media to a global audience.

We have been successful in our mission and we fully intend to continue to advance the hobby of model railroading from our little town of Three Lakes Wisconsin via the Internet and personal visits. We look forward to co-hosting the Fall 2013 Winnebagoland Division meeting with the Rhineland Railroad Association.

We have not done this alone as a 100% member club in the NMRA we have had support not only from our Division but from many NMRA members at all levels of the national organization. Our 100% clubs support, the support of the Education Department in both education activities

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and in the Achievement Program. They all have shared their time with us as we share our activities with the entire hobby. We learned, as we demonstrated, that a model railroader is not alone no matter where he or she may be there is help available from a member of the NMRA.

Too all the members and friends of the Three Lakes Model Railroad Club I say, WELL DONE!

*Paul Wussow*  
*President*

## **Rails and Tales**

*by R.G. Blocks*

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Railroad ties, in the US have been mostly made of wood for the past 180 years. There is trend towards conversion to concrete or composite ties for high speed and high tonnage mainline operations and automated track laying. But, for your everyday freight line the old wooden tie remains. They are the lower cost alternative and last 30 to 40 years.

The most popular wooden tie is of oak. Hardwoods predominate with twenty seven species reported to be of satisfactory strength. The ties are generally 8 x 10 inches by 8 or 10 feet in length (depending on use). The common rail spike grips the rail satisfactory to the tie. Typically a tie plate is used to distribute load and prevent rail wear of the tie. Mechanical springs, called rail anchors are used as keepers to keep lateral forces of rolling stock on rail from shifting the spacing of ties.



Rail spikes are commonly known as cut spikes or crampons. They have been in use since 1832 (invented by Robert Livingston Stevens). Mass produced, the most common are 9/16 or 10/16<sup>th</sup> inch square and 5.5 to 6 inches long

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with an offcenter head to hold the rail in gauge. True there are spring systems (eg, Pandrol Ltd) or, screw systems (Sonneville Int'l), chair systems and others; but the old fashioned common rail spike predominates.

In the photo above, we are looking at the now unused portion of wooden ties that supported a turnout (switch). You can see the rail spikes, tie plates and tie anchors (the item on either side of the tie fastened to the rail).

Tie plates are also known as sole or base plates with a primary functions of spreading the load over a larger area on the tie and reducing wear. The plate is canted 1.4 degrees towards the center line of the railroad and the plate has securing holes for the rail spikes and optional screw holes.



Rail anchors are used to keep the tie from moving along the rail. There are several types (Channel Lock, Drive-On: Unit Wrench: and Unit Drive-On.). The unit wrench type is a simple clamp on design shown on the left (and in the first picture as well) that finds common application at turn outs and curves beginning with the lead in: essentially any point where side thrust is expected.

Gauge Rods are metal rods that prevent rail spreading where forces are very high (sharp curves and turnouts). They are simple turnbuckles used only at unusually weak points in the track system.

Rail arrived at its current shape with a nice broad flange flat-bottom, departing from a bullhead (not broad but thick) in 1831. The

American Society of Civil Engineers (ASCE) specified rail profiles in 1893. They outlined profiles from 40 lbs to 100 lbs per yard. The idea matured under the American Railway Association (ARA) then became the domain of The American Railway Engineering Association (AREA) where 110, 120, 130, 140 and 150 lb/yd rail were completed by 1924. The heaviest mass produced rail is on the old Pennsylvania RR (PRR) 155 lb rail.

Rail length in 1831 was 15 feet and 36 lb/yard. Length migrated from flat car length (60 feet in 1950) to multiple car lengths (800 or more feet in 2010). Weight of mainline rail has been gradually increasing over the years. Rails are joined by fishplates a bolted connection. Butt welding rails to make seamless rail seasons are quite common on



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mainlines across the nation. Welded rail appeared first in 1893 and has gradually improved.

Ballast is the crushed granite rock used to keep the tie in place, support the load, provide drainage. Ships had ballast in their bottoms to assist stability: thus, apparently the source of the term for railroads.

## **Making Trees where Raking is Unnecessary**

*by R.G. Blocks*



Willy Mosconi was a pool player that knew the game. Greg Hoppert is a hobbyist who can make trees. Willy would take your money. Greg will save you some money. Both are cool characters. However, Gregg will be at my place on Saturday, Sep 15<sup>th</sup> from 9AM to Noon making model railroad trees using various techniques.



We will have a hands on clinic. It'll be a gathering where we learn some tricks from the pro and you end up taking something home that you made.

Any questions? Call 262-989-4338 and I'll try to help. It should be an entertaining and productive morning.

Greg is a long time NMRA guy and models in HO.