



**Three Lakes Model Railroad Club**  
**Volume 2, Number 1**

**1<sup>st</sup> 100% Club in Wisconsin**  
**Jan 2011**



**Reviewing December's TLMRC Meeting:**  
*perhaps a couple of model railroading firsts*

Our first meeting, at Paul Wussow's home Dec 30<sup>th</sup> 2010 was as well attended as weather allowed. An ice-storm striking north of town prevented the Eagle River-Phelps trio. Those present and voting were: Paul Wussow, David Krembs, Dale & Janel Wolke, Keith McMillen (via Skype), and your penman, Roger Blocks.

We agreed that \$10 would be adequate to cover annual dues. We also agreed to hold our next meeting on the 3<sup>rd</sup> Sunday, 3PM (changed after polling everyone to the 4<sup>th</sup> Sunday, February 27<sup>th</sup>, 3PM) at the Blocks home. We agreed that we'd hold meetings at different member's homes and/or visit layouts and not be too rigid. In concert, we thanked our hosts Paul and Sharon Wussow for coffee, cookies, and the warmth of their fine home where Paul is just now setting up an 'up north' layout.

I presented a clinic on the topic of wire. Many folks take wire for granted. We covered many essential wire concerns with meager discussion on wiring a layout. A copy of the wiring clinic handout was included in the Rhinelander Railroad Warrant for January. If you desire a copy, simply request it and I'll send you one.

Paul presented a clinic on engine programming for Digital Command Control (DCC) using his favorite tools. Engines all ship from the manufacturers with a DCC base address of 3 rather than the engine number. He demonstrated the simplicity of changing

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the address of a new, out of the box Bachmann On30 steam engine. He demo's re-programming lights, sound of chuffing, reversing, and acceleration among other things. Then, in what may be a first: Paul ran the new On30 engine and a new Atlas Classic SOO logo HO Diesel #372 as a coupled consist. They operated flawlessly, smoothly, and coordinated with proper lighting, leader and follower behaving in a rational manner. *Two modeling gauges: one track: one consist: a 100% NMRA Club first?* Perhaps. The top two photos (below) illustrate our operating consist. Someone will challenge us if this is not a first. It was considerable fun while being educational.



*Another potential NMRA first was our unorthodox manner of holding a local meeting with one of our club, Keith McMillen physically in Las Vegas communicating via Skype. The two right photos above feature Keith at the top watching the two engines and bottom with a simulated wig, red sunglasses, his shelf layout in the background, adding his two cents. Keith was able to help Dave program turnouts involving a Digitrax control. Dave is the tall gentleman on the bottom left, flanked between Paul holding his wireless NCE controller, Janel and Dale Wolke. A short movie, describing the weathering of rolling stock using pastel chalks, produced by Keith and Paul several years ago was also shown and could easily be repeated for those who missed a very productive first meeting!*

## **2<sup>nd</sup> Meeting of the TLMRC: Sunday, February 27<sup>th</sup>, 3 P.M.**

Marge and I are honored, to invite you to our home at 1162 Medicine Lake Lodge Road, Three Lakes, WI 54562. My job, as CEO/CFO of the Thomasville Region of the C&NW

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is training coordinator and Chief Engineer. My grand kids are principle stockholders and gandy dancers. Anna, James, Laura, Sam, T.J. and Dan hold the majority of voting shares. It's a work in process. Grandkids have contributed their labor and learned new skills at every step. The idea is having fun together: it's not a race, nor is it a compulsion.

From the onset we planned to run our rail enterprise in the black. Almost all construction materials were either donated as offal, came as contractor spoils, or were solicited by my grandkids pulling a red wagon and negotiating with contractors. True, we bought track, turnouts and power supplies. We spread our costs over many birthdays and years.

Everyone learned to saw, screw, solder, wire, plaster, paint and work together. Only one of our gandy dancers is now a teen; however, the years race by. Remarkable results from a youthful crew have been the norm. Rapid construction it is not.

In 2010, I reached age 70 and decided the OutaSite Mountain area, crawlspace under my office, was a bit difficult on old knees. So, it was improved and is now quite accessible by all visitors (however, it is not quite OutaSite). This Holiday Season, my grand-crew worked at carving retaining walls approaching Mount Marge. Below, *top left*, Anna uses a hotwire to carve retaining wall stones, *top right*, I'm under a mountain ready to glue the retaining wall emplaced by my wife, Marge. Grandson James is fitting yet another wall.



Each of Thomasville's four Divisions run trains; however, track and turnouts are incomplete. The present goal is to finish scenery in the main area of the Thomasville Region. Thereafter we'll attack the OutaSite Mountain area and T&O RR (On30).

## **Wiring Your Layout: a Block by Blocks approach**

*by R.G. Blocks*

### **Classical Concerns**

Irrespective of your gauge, whether AC or DC, two-or-three rail, the concepts in classical wiring are essentially identical. Classical control creates isolated segments of track, each called a block so that each train is within its own circuit and thus independent from all other trains. Block control mimics a considerable segment of real 1:1 prototype rail right up to the age of wireless and computer control. In the late 1970s both model railroads and the real thing both became 'computerized' and digital began to overwhelm analog due to safety, cost and efficiency.

However, old block control schemes have a place in today's DCC world. Thus, we're going to discuss wiring a layout 'the good old fashioned way' so you can run good old-fashioned engines on the very same layout as you run DDC, DCS or DCC.

In classical wiring, the more blocks equals more trains. Each block will have one or more toggle switches to energize the track. Sounds logical and works well as long as operators turn off the block abandoned and properly energize the block being entered. Else, a following train can overtake, or your train halts abruptly. Complex? No, actually quite simple. Costly? Not compared to DCC. But it can be too complex for neophytes and the degree of difficulty to operate lessens the fun aspects.

Thus, we cover the topic since block control is absolutely necessary if you want to:

1. run non DCC engines without possibly hurting their motors with square waves
2. isolate engines (classic or digital) on sidings without risk of unanticipated turn-on
3. alternate running of classic and DDC, DCS & DCC on the same layout and tracks
4. run both classic and DCS, DCC types at the same time and layout not same track
5. provide multiple programming tracks for your DCS & DCC engines
6. isolation of trains prevents one fault from shutting everything else down.

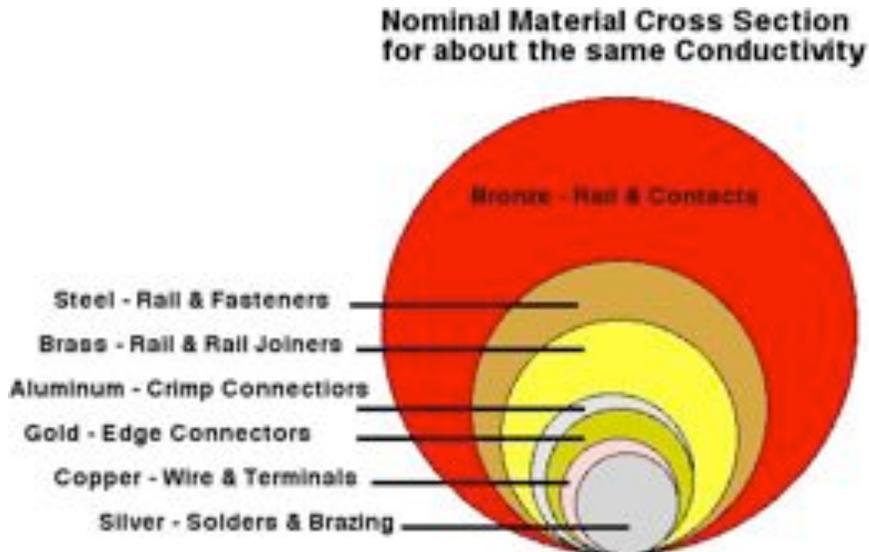
You may want some of the aforesaid benefits regardless of how you feel about your old equipment. Your cost is in time to plan, wire cost, toggle switches, terminal blocks, relays and the like. Pick and choose from the following as you design your controls.

### **Additional Thoughts:**

Flex track is normally longer than its rigid snap-together counterparts. Hence, there are fewer rail junctions (joiners) when rails are long. Fewer rail junctions mean fewer mechanical joints to fail (via expansion, contraction or corrosion).

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Long, straight runs of track are beautiful; however, in the model world, as in the real world, become subject to the forces imparted by ambient temperature on substructure and rail. Roughly, we realize 0.045 to 0.05 inch expansion or contraction every 100 linear inches over the 45-degree temperature swings of many of our homes in the northwoods. Thus, if we build a straight track 200 inches or 16.6 ft long we'd have a 1/10<sup>th</sup> of an inch movement spread among the rail joiners or find a slight bow up or sideways. This implies a small gap of say 0.03 or 1/32<sup>nd</sup> of an inch every say three feet to avoid heaving.



Pure, annealed copper (soft) is the basis for comparing wire conductivity and equals 100% International Annealed Copper Standard or IACS. Aluminum wire is typically 61% IACS. Thus, we need roughly a third larger surface using

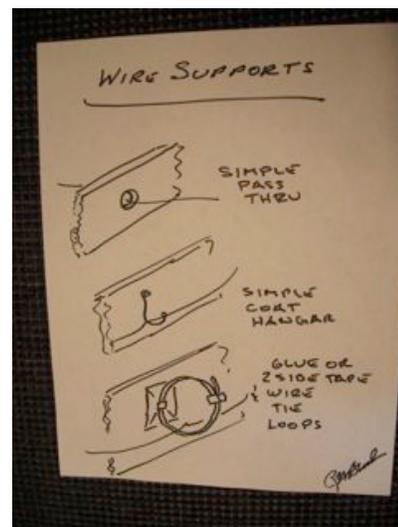
Aluminum wire to match that of copper. Also, some rail stock is made of Nickel Aluminum Bronze a mere 7% IACS. Our three-rail track has roughly 10% the conductivity of copper. That's one reason Lionel's best "O" gauge track was so very beefy. It simply is a poor conductor. We provided one feeder per about 10 feet of track and still get some speed variation. The above drawing, while relative, gives you the idea.

Regardless of scale, rail that is code 100 from the same manufacturer will have better conductivity than code 83 and 83 will be a mite better than any smaller code. Assume all rails are of the same alloy composition; then, lower rail code equals lower conductivity.

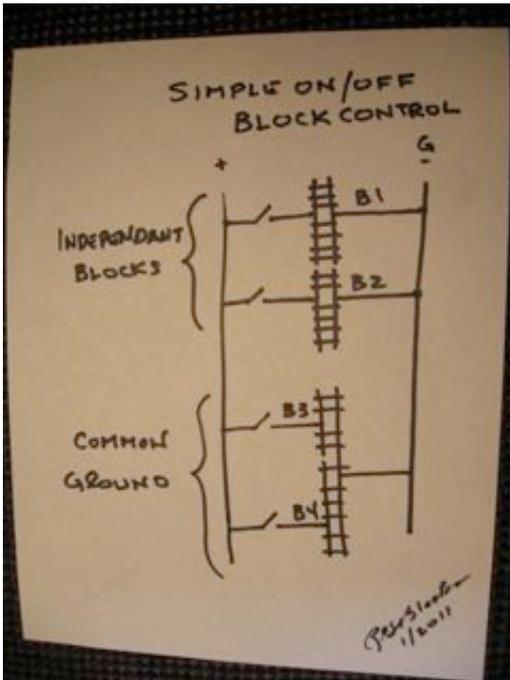
### Concerns of First Time Builders

Wire supports favored are simple pass thru, or bent coat hangers, or wire ties screwed to the layout supports. Staples and various nail type wire supports are to be avoided due to shock vibration on scenery and structures and potential for damage to wire coating insulation.

Double Pole, double throw (DPDT) toggle switches are available for \$1 to \$3 dollars at electronic and science supply stores. DPDT with center off are really



the best of the lot and the center off feature is desirable for yard, siding, turntable, off stage setup, engine houses and programming tracks.



This writer suggests that while common ground systems save a bit of money, that we should instead plan and install independent block wiring. Independent blocks have both rails separated from other blocks. The gap between rails can be set by an insulated spacer or air gap of about 0.03 inches. The extra wire of independent blocks construction is repaid in more consistent operations, and less chance of a short causing total system shutdown.

A PowerPoint program has been developed by this writer to provide the many visuals we need to adequately express this topic. This brief paper is a reasonable reminder of several salient points.

Written by RG Blocks for both Rhinelander Railroad Association (RRA) and Three Lakes

Model Railroad Club (TLMRC) on January 25, 2011. It is the second program in a series of programs dealing with both classic and digital layout controls.

### **Members of the TLMRC :** *(as of January 10, 2011) : (list purged July 2011)*

Please note: The NMRA has requested (in July 2011) that lists of members no longer appear in publications of the various clubs within its purview. Thus, in keeping with the desire of the senior body we have eliminated lists of members in past written publications (considered completed in July 2011) and will avoid publishing lists of members in the future.

All publications prior to and including July 2011 have been purged of this club's member name lists by August 2011 that are under the control of TLMRC.

We regret if such publication caused anyone a problem. If so, we'd like to hear of it. As of July 30, 2011 there have been no reports of problems regarding the membership in TLMRC.

Respectfully, ed.

**Railroad Happenings: or semi local coming events..**

January 29, 2011- Great Tri-State Rail Sale- LaCrosse Center- 2nd & Pearl Streets LaCrosse, WI Info at: [www.4000foundation.com](http://www.4000foundation.com)

February 12, 2011 – Rhinelander Railroad Association (RRA), “Wiring Your Layout”, by R.G. Blocks, (place and time to be determined). Call 715-546-2807

February 20, 2011-WISE Division Meet-Country Springs Hotel Waukesha, WI [www.wisedivision.org](http://www.wisedivision.org) “Wire”, by R.G. Blocks, P.E. 3PM

February 19-20, 2011- Mad City Model RR Show- Alliant Energy Center-Madison, WI [www.nmra-scwd.org](http://www.nmra-scwd.org)

February 27, 2011 – “Wiring your Layout”, by R.G. Blocks at 1162 Medicine Lake Lodge Road, 3PM. [www.tlmrc.org](http://www.tlmrc.org)

March 5-6, 2011- Traintime 2011 Model Train Show- MSOE-1025 N. Broadway Milwaukee, WI Free Admission

March 5-6, 2011- High Wheeler Train Show- Harper College- Palatine, IL [www.highwheelertrainshow.com](http://www.highwheelertrainshow.com) Or [www.foxvalleydivision.org](http://www.foxvalleydivision.org)

March 13, 2011- Metro Model Railroad Club Show- Circle B Recreation Center Hwy 60 Cedarburg, WI- [www.metrorrclub.org](http://www.metrorrclub.org)

April 9-10, 2011- 10th Annual Model Train Show- Menomonie Middle School Menomonie, WI Info Call: (715) 505-4044

April 15-17, 2011- NMRA Midwest Region Annual Convention- Madison, WI Info at: [www.nmra-scwd.org/Badgerland](http://www.nmra-scwd.org/Badgerland)

April 30 & May 1, 2011- Titledown Train Show- Shopko Hall- Green Bay, WI Info at: [www.ttsgblc.com](http://www.ttsgblc.com)

May 14, 2011- NMRA Winnebagoland Division Annual Spring Meet Neenah, WI