



# Sunrise Herald

April 2014 Volume 7, Number 4

## Sunrise Division Officers

Superintendent.....Steve Schweighofer  
Asst. Superintendent.....Frank Germo  
Secretary.....Stewart Jones  
Treasurer.....Bill Johnson  
Program Chair.....Gary Myers

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## Notes from the Secretary

In June we have the Rocky Mountain Region Convention in Salt Lake City. That will be a long trip for us, but it appears that it will have many events of interest and I hope that many of you are making plans to attend.

Now that the weather is warming up, many of us will begin to focus our attention outdoors. This will also be a good opportunity to work on our modular layout, since this is mostly an outdoor activity. If you haven't worked on it yet, E-mail

Don Francis at [dbyron08@aol.com](mailto:dbyron08@aol.com) so he can advise you about times when we will be working.

## Next Meeting

Our next meeting will be Saturday, May 3. We will be unable to meet at Holy Love Lutheran Church on the first Thursday in May, so we will have individual layout tours on Saturday instead. The layouts will include: Bob Rothgery, Dennis Hagen, Stewart Jones, and John Griffith. Frank Germo announced that the Forney Museum N scale layout will also be open to the public that day so we plan to end our tour there in the afternoon.

## Upcoming Clinics for 2014

June: World War II Railroading – Ernee Edwards  
July: Open

## Upcoming Tool Times for 2014

June: Inexpensive Drilling – Dennis Hagen  
July: Parts Storage – Gary Myers

## Show 'n' Tell Themes for 2014

May 1 - No Meeting, Offsite Layout and Museum Tour instead  
Jun 5 - Steam/Diesel MOW  
Jul 3 - Naked Ladies  
Aug 7- Residential Structures

Sep 4 - Agriculture  
Oct 2 - Sports  
Nov 6 - Mail  
Dec 4 - Switcher Engines

## April Meeting Notes



Steve Schweighofer opened the meeting promptly at 7:15 with introductions. There were 25 members present. Gary Myers made a request for clinic topics and presenters. We also made announcements about the Rocky Mountain Regional convention in June in Salt Lake City. There were no further announcements so we proceeded immediately to Tool Time with Jim Laird presenting. Following Tool Time we had Show and Tell. This month's theme was sheep which brought in a number of photos but only a single model. Following a short break, Stu Jones presented a clinic on layout wiring then adjourned for pie and coffee.

## April Tool Time

Jim Laird presented "Layout Planning" for the April Tool Time. He brought in a large pad of paper, about 30 x 40-inches, the kind that can be mounted on an easel, and showed us how to lay out a full size track plan. He used turnout templates that can be reproduced on a copier or printer to locate and align turnouts. When the diagram is satisfactory, the drawing(s) can be transferred to your roadbed.

## April Show 'n' Tell

The theme for April was sheep which was wide open to interpretation.

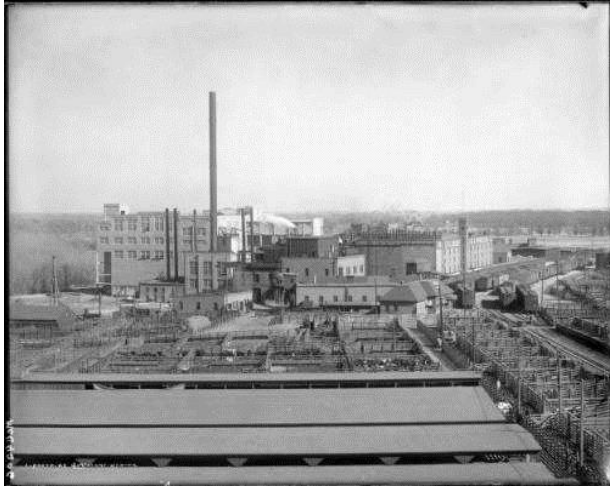


Dick Hunter submitted this photo of a sheep roundup somewhere in western Colorado. At one time these sheep would have been transported by rail, but the rails are gone and trucks are now the only available mode of shipping.



Steve Schweighofer brought in this N scale stock car. Note that it is a double-deck car that would have been used for low-height animals such as sheep.

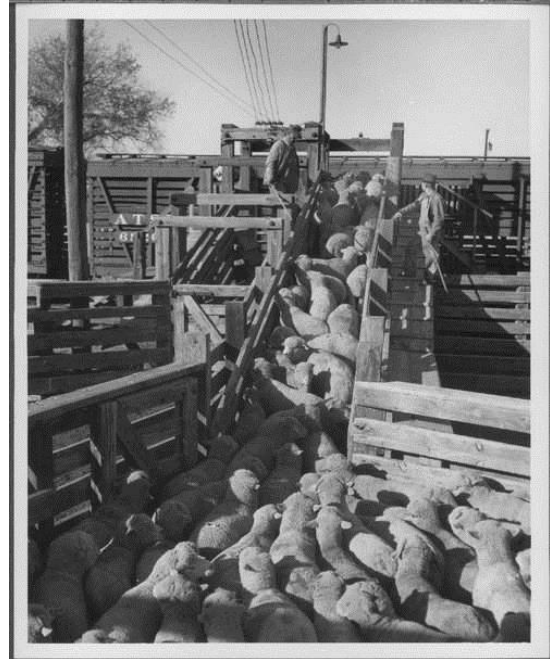
Ernee Edwards submitted the next three photos of stockyard facilities. These appear to date from about the '30s.



Denver Union Stockyards



Ogden, Utah, stockyards



Sheep being loaded into the upper deck of a double-deck stockcar

## April Clinic



Someone tell this guy to wake up

Stu Jones presented the April Clinic on wiring a layout. The clinic discussed the basic electrical components that are needed to set up power supply. He then proceeded to describe the differences between DC and DCC control systems. A show of hands revealed that most of



the members present already use DCC, but many of us at some time might be asked to help a family member, friend or neighbor set up a basic layout with DC control, so a little refresher was probably in order. Another goal of the clinic was to discuss topics that must be addressed for anyone who wants to work on the Electrical Achievement Program award.

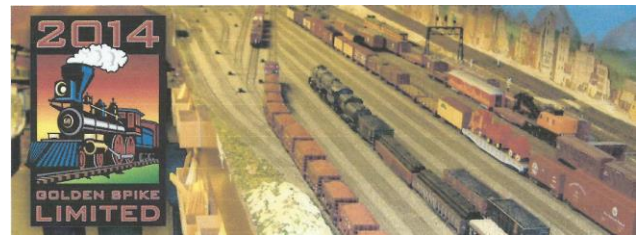
DC systems for large layouts quickly become very complex with miles of wire, numerous switching components, and many wiring challenges, but many of the same problems can be found on even a small layout. DCC control has greatly simplified layout wiring, but even here some of the basic DC problems still exist, such as return loops and wyes, that must still be considered. Another aspect is how to install or modify turnouts that are not “DCC friendly” on your layout.

Finally the clinic addressed how to divide your layout into sub-districts to facilitate troubleshooting when the inevitable short circuit shows up and some ways to provide multiple short-circuit protection devices so that these problems don’t bring all operations to a screeching halt.

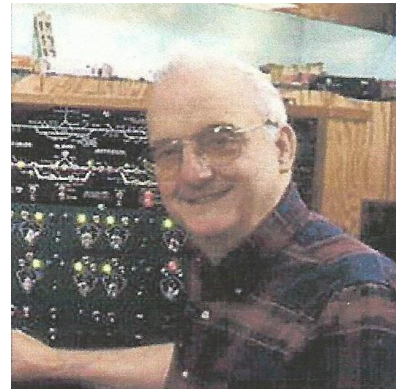
## Module Report

Now that Spring has finally decided to arrive our work on the layout modules is finally being realized again. For several weekends in April we have been working on modules 3, 4, 5 and 6, adding new track, installing roadways, locating structures and building a lake on module 6. Unfortunately several modules sustained some minor damage during the last transit. The truss bridge deck separated from the superstructure and several Tortoise switch machines broke loose. We will have to remount the machines using a more substantial attachment.

## The Regional Convention



The Rocky Mountain Region convention will be held at the Cotton Tree Inn in Sandy, Utah, June 19<sup>th</sup> through the 22<sup>nd</sup>. The cost, if you register before May 15 is \$45.00, but there additional activities you may want to register and pay for. If you can’t attend all days, you can also register and pay for single days only at a reduced rate.



The featured speaker for the convention banquet is nationally known modeler and author Bruce Chubb, brass hat of the Sunset Valley layout. Bruce will also be offering five different clinics:

1. Sunset Valley system updates and operation.
2. Interfacing layouts to a computer to model your railroad.
3. Fundamental concepts of railroading signaling
4. Turnout control and grade crossing systems
5. Centralized Traffic Control Systems



Another attraction on Thursday will be a trip to the Golden Spike National Historic Site. The convention has been successful in getting the Historic Site to re-enact the driving of the golden spike.

As always, there will be layout tours and many more clinics. To register, go to :  
<http://gsl2014.org/registration-is-now-live>

## May Layout Tour

Since we cannot meet at Holy Love Church this month, we have scheduled layout tours instead as follows:

**Bob Rothgery #1**  
 22045 E. Jamison Pl  
 Aurora, CO 80016  
 (303) 766-2412

Note: in Bob's complex there is street parking only. You risk a substantial fine if you park in the driveway.

**Dennis Hagen #2**  
 16613 E. Kent Dr.  
 Aurora, CO 80013  
 (303) 690-4450



Here is a view of Dennis' Sn3 layout, which is obviously under construction.

**Stewart Jones #3**  
 2421 S. Krameria St  
 Denver, CO 80222  
 (303) 757-4215



Here is a view of the Boreas' main passenger terminal. This layout is a three-deck point-to-point design.

**John Griffith #4**  
 3008 Wheeling St  
 Aurora, CO 80011  
 (303) 360-9027

**Forney Museum #5**  
 This is an N scale model of the Moffat Road from Denver to the Moffat Tunnel. The Forney Museum is immediately south of the Denver Coliseum and I70.

Gary Myers has assembled a schedule and maps for the tour. You probably will have received it by now.

## The NMRA Achievement Program Award

### Model Railroad Engineer - Electrical

The requirements for Model Railroad Engineer - Electrical may look long and complicated, but they are not really. The reason that they are so long is to offer you more options for meeting the requirements.

You don't even have to do all of the work on a single layout - you can do some on a club layout, some in your basement, and some on your garden railroad, etc.

Remember - don't make the requirements more difficult than they are, by reading more into them than is there.

To qualify for the Model Railroad Engineer - Electrical certificate, you must:

**A. Construct and demonstrate on own or club layout, the satisfactory operation of an electrical control system on a model railroad capable of simultaneous and independent control of two mainline trains in either direction, and containing at least:**

"Simultaneous and independent control of two mainline trains... " can be as simple as a single track main with sidings. This means that as long as you can cut power to the sidings individually, you can run one train, park it on a siding while you run another, then park it and run the first again. This meets the requirement.

1. For conventional DC wiring (non-command-control), five electrical blocks that can be controlled independently. For command control wiring (DCC, TMCC, and others), sufficient gaps and switches to maintain polarity, phase if needed, and troubleshooting.
2. One mainline passing siding.
3. One reversing loop, wye, turntable, or transfer table.
4. One yard with a minimum of three tracks and a switching lead independent of the main line.

("Independent" means that you are able to operate the locomotive switching the yard

and the lead on a separate powerpack without interfering with mainline operations.)

5. Facilities for the storing of at least two unused motive power units

Don't make this harder than it is - these are just sections of track (usually spurs) that you can cut power to independent of the main.

6. One power supply with protective devices (short indicator or circuit breaker) to ensure safe operation.

You don't have to build this yourself, you just have to have one in your control system. You can use a commercial supply that has these features, modify a commercial supply to add these features, or even build it yourself - but only if you REALLY know what you're doing.

**B. Wire and demonstrate the electrical operation of at least three of the following items:**

1. Turnout

Wiring up the simplest powered turnout from your hobby store will satisfy this requirement.

2. Crossing

Most commercial crossings come pre-wired. Just set one up so that you can run trains through on both tracks.

3. Crossover
4. Double Crossover
5. Slip Switch - (*single or double*)
6. Gauge Separation Turnout
7. Double Junction Turnout
8. Three Way Turnout
9. Gauntlet Turnout
10. Spring Switch

## 11. Operating Switch in Overhead Wire

Don't make the requirements in B or C any harder than they have to be. You do not have to scratch build any of these; you just have to show that you can make them work electrically. Of course if you want to go to the effort of building them yourself, you may learn many new skills in the process! The whole point of these requirements is for you to demonstrate a variety of skills.

### **C. Wire and demonstrate the electrical operation of at least three of the following items:**

1. Electrical turnout position indication on a control panel or at trackside for a minimum of four turnouts. (Remember that many commercial switch machines have electrical terminals to allow you to do this easily.)
2. Track occupancy indication on a control panel or at trackside for a minimum of five blocks.
3. Cab control, making provision for connection of at least two power supplies to a minimum of five blocks as the trains progress. (This means that your layout has at least five blocks, each of which can be controlled by one of two power supplies. The five blocks DO NOT have to be in a row along the same stretch of track.)
4. Engine terminal, including an electrically powered turntable or transfer table, a minimum of three stall tracks, and at least two blocked storage sections for parking locomotives outside the stall area. (This means you need to have a total of five tracks (three inside an engine house or roundhouse, and two outside), that you can cut power independently to store motive power).
5. Two turnout junctions with electrical interlocking and protecting trackside signals. (This is simply a turnout with electrical

protection to prevent a train from going through a turnout that is set against it. Again, the electrical terminals on a switch machine, combined with a couple of insulated rail joiners, make this a fairly easy project. )

6. High Frequency Lighting (This is an old term for Constant Lighting.)
7. Electronic throttle with inertia and braking provisions. (This requirement could be combined with requirement A-6, above.)
8. Grade crossing with electrically actuated warning indication. (You don't have to design or build the circuitry for this yourself. There are a number of commercial components available that you can just wire up to meet this requirements. Or you can use commercial plans that appear in magazines from time to time. Or you can do it from scratch.)
9. Two-way block signaling with automatic train detection for at least five blocks. (See remarks under #8).
10. Operating overhead wire, using either pantographs, trolley poles, or both for current collection. (Any traction fans out there?)
11. Installation of an advanced electronic and/or computer control for the model railroad.
12. Design, installation, and operation of animated mechanical and/or electrical displays.

This doesn't have to be a huge animated display - think about small eye-catching displays like animated industries or signs. Put a carousel in the local park or chase lights on the marque at the Bijou . . .

13. Design, installation, and operation of mechanical and/or electrical layout lighting displays.



(This means lights which illuminate the layout, as opposed to lighted things on the layout. For example, lighting which simulates the change from day to dusk to night)

14. Installation of a command control receiver. Modifications or additions to the device's wiring are required. Installing a plug-equipped decoder into a manufactured prewired socket is not sufficient.
15. Installation of a command control throttle buss line around a layout capable of handling at least two throttles at three or more separate locations.

**Commercially assembled complete units are not acceptable in the items below:**

16. Construction and installation of a sound system.

This does not have to be an on-board sound system, it could be an under-the-layout system.

17. Construction and installation of a signaling system.
18. Development and installation of a CTC system.
19. Installation and operation of an on-board video system.
20. Computer generated block detection information.
21. Hardwired or stored control program (i.e. computer) for operation of the railroad.
22. Development and demonstration of a computer-to-railroad interface.
23. Other:

(Examples of 'other' includes flashing warning lights on locomotives, or end-of-train devices on cabooses)

Please note that operating third rail (center or outside) or overhead wire powered layouts may be considered for ALL aspects of the AP. Also note that the use of advanced power supplies, train control, track wiring, and track control methods shall not be restricted by the definitions in the minimum requirements listed above.

These items may not appear to be equal in difficulty - they aren't meant to be. They are meant to provide a wide variety of things that people may have done that they can get credit for.

**D. Prepare a schematic drawing of the propulsion circuitry of the model railroad in (A) showing the gaps, blocks, feeders, speed and direction control, electrical switches, and power supplies.**

Note that this requirement includes ONLY the propulsion circuitry. It is not required to include the wiring for electrical turnout control, signal systems, building lighting, etc. You do not need to include the details for parts of the diagram which are repeated. If a number of parts are wired in the same way, it sufficient to draw one section in detail and indicate other locations with rectangles.

**5. Prepare schematic drawings identifying the wiring and components of the six items under (2) and (3).**

For the sake of clarity, these schematics should probably be separate from the propulsion circuitry schematic in (D) above. If you already have one over-all schematic of the layout, you might want to consider making multiple copies and going over the applicable lines with a highlighter for each feature.

Note that this is just turning in the kind of documentation that you should be preparing for your layout anyway. It will make trouble



shooting much easier in a couple of years when you 've forgotten how it all went together!

**E. You must submit a Statement of Qualification (SOQ - available from the Regional AP Manager) which includes the following:**

1. The track plan for the layout used in (A).
2. A description of each of the features used in (B) and (C), including:
  - a. A description of the item.
  - b. The methods of construction.
  - c. Identification of commercial components used.
3. The signed Witness Certification form, showing that each of the above items are operational and meet all applicable NMRA standards.

Notice that there is no requirement for Merit Judging in this certificate. The presence and operation of the required features must be verified by a witness (the Region AP Manager, or their designee), but they do not have to achieve a minimum score.

#### Further Information

Contact National Achievement Program General Manager, Paul Richardson, MMR [achiev@hq.nmra.org](mailto:achiev@hq.nmra.org), or your Region or Division Achievement Program Manager for more information.

Also refer to the NMRA AP regulations (1992), the AP Handbook (1991), and from the articles "Model Railroad Engineer - Electrical," and "Electrical Engineering," NMRA Bulletin, July 1991.

Forms available for this category:

- SOQ Form: (PDF)
- Record and Validation form: (PDF)