Sunrise Herald

June 2016 Volume 9, Number 6

Sunrise Division Officers

Superintendent……..…Steve Schweighofer
Asst. Superintendent……..…Bob Rothgery
Secretary……...……..Stewart Jones
Treasurer……..…Rich Flammini
Program Chair……..…….Gary Myers
Division AP Chair……...……
Youth Coordinator……...Ernee Edwards
Education Chair……..Stewart Jones
Modular Layout Chair……..……Don Francis

In the Herald

Next Meeting

Our next meeting will be Thursday, July 7, 2016 at Holy Love Lutheran Church, South Chambers Road at 7:15.

Upcoming Clinics for 2016

July - TBA
August – Adding dimensions to around-the-wall layouts
September – Fast Clock Operation: everything you know about fast time is probably wrong
October – Regional Convention
November – Military railroads
December – Christmas treats and movie

Upcoming Tool Times for 2016

July - TBA
August - TBA
September - TBA
October – Regional Convention
November - TBA
December - TBA

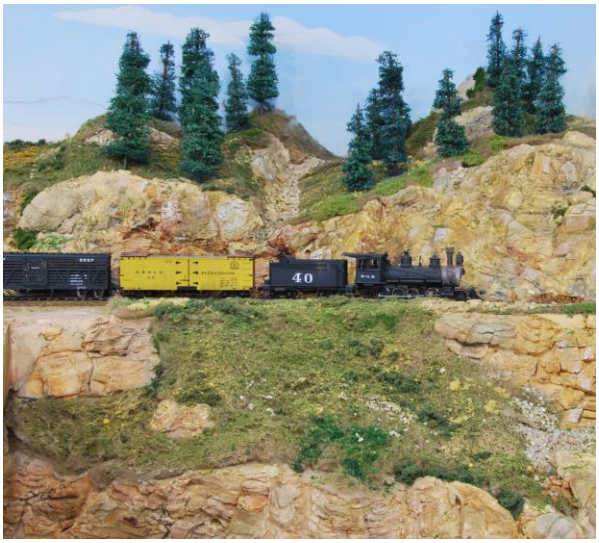
Upcoming Show 'n' Tell Themes for 2016

July - 1960 – 1969 Locomotives
August – Shops/Retail
September – RR Pump Houses
October – Regional Convention
November - Military
December – Water Craft//Boat/Ships

June Meeting Notes

Steve Schweighofer, Superintendent, brought the June meeting to order at 7:20 with twenty members present. We had the usual introductions with one new member. Often members describe some new project on their

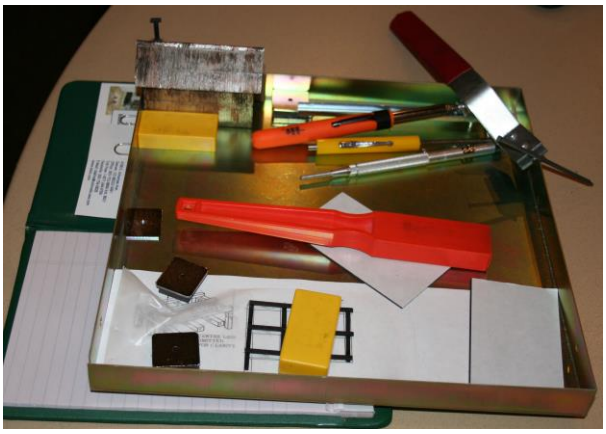
railroad. Your secretary suggested that if you have a project you would like to share with the membership, that you send a photo or two to the editor and we will highlight that in the Herald. Dennis Hagen described a mountain that he recently added to his Sn3 layout. It turned out well and he is eager to try some additional scenery building. A picture of his work appears below.

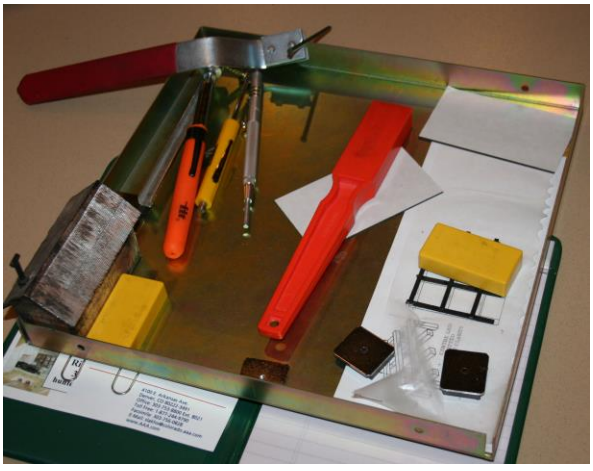


Last month someone announced that the November train show at the Denver Merchandise March was cancelled for this year. This is not the case, but the show will be held in October this year in Loveland instead of Denver. The Sunrise Division will be displaying our modular layout in the Denver Public Library again in September. The location will be the fifth floor in the Western History section.
Bill Johnson announced that Caboose Hobbies is receiving shipments of Broadway Limited Import items. He specifically mentioned the Pennsylvania RR. Mountain and steam turbine locomotives. However the turbine model is already sold out. He suggested that if you want a particular model that has been announced, put your name on a waiting list. You may have to wait a few months to a year, but otherwise nothing may be left when the models finally arrive.
Recently your editor sent out the application form for the Regional convention in Colorado Springs in October. By the time this Herald reaches you the deadline for early registration, June 30, will probably have passed.

June Tool Time

Dick Hunter presented a discussion of magnetic tools and their advantages. Several pictures of his tool collection appear below.





First he showed and described magnetic screw drivers that are useful for holding steel screws while you are trying to insert them. The bright red plastic item houses a strong magnet that is

useful for picking up steel items that have dropped on the floor. One of the tools shown is an extendable rod (not extended in the photo) with a magnet on one end. This can retrieve small items that may have fallen into a cranny where you can't reach it otherwise. The tool with the dark red handle is a nail holder, shown with a nail attached to one end. This can help you get a nail started without risking pounding your fingers or thumb. How often could we have used one of those? The large steel pan that is holding all the other tools is designed for assembling models and keeping them square while adhesive sets. The edges of the pan are square and the yellow 'rectangles' are magnets that will hold the pieces in place. One member added that screwdrivers can be magnetized by placing them against a permanent magnet for a while or stroking them with a magnet.

June Show and Tell

The June theme was work train bunk and kitchen cars. These cars have faded from use on railroads in recent years, so we only had three entries.

Stu Jones displayed this kitchen car on the left and bunk car on the right. These cars were originally made by Tru-Scale years ago, and the line is now offered by Walthers. An entire work train is offered in two sets of six cars each. In addition to the cars shown above, the sets include a burro crane and crane tender, box cars, flat cars, gondolas and a tank car to make up a complete train. Bunk cars are no longer favored by railroads since most work sites are accessible by bus or van, and crews would much rather say in a motel if working far from home. Also track maintenance is highly mechanized and automated, now requiring smaller crews.

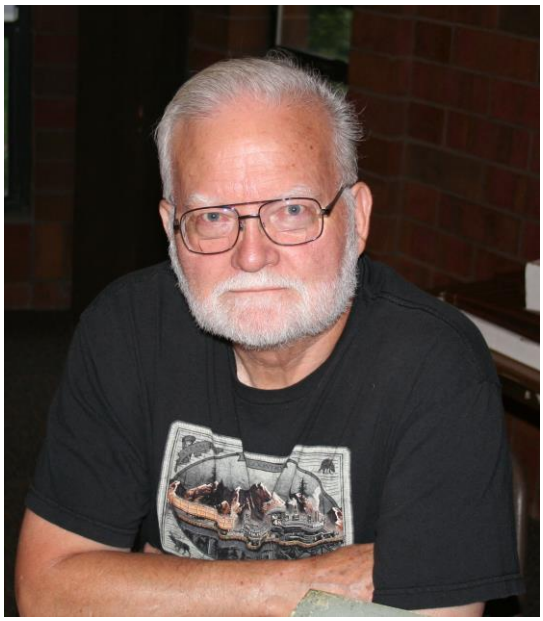
Bob Rothgery 'borrowed' these kitchen and bunk cars that are used on his Elk Pass Railroad. He built both cars 20 – 25 years ago, probably from Model Die Casting kits, with a lot of detail added. Note that the kitchen car has a bell on top to summon the crew when dinner was ready. More recent cars would lack this amenity, since a unionized crew would know exactly when it was dinner time.

Larry Stephens displayed this combination observation-sleeper, shown below. In recent years, railroad often repurposed such older cars for work train service rather than converting boxcars. Larry intends to rebuild the interior so that the sleeper end will become bunk rooms and the observation end will provide dining facilities. Occasionally in the pages of *Model Railroader* and *Railroad Model Craftsman* you will find photos of these cars that have been converted for use as a temporary station or perhaps as crew shelter in a remote crew change division point – something you can easily model on your layout.

Larry Stephen's work crew car

June Clinic

Larry Stephens presented the June clinic on the subject of using miniature LEDs for locomotive lighting, although his clinic was broader in scope than that.



Larry Stephens preparing for his clinic

The miniature LEDs that Larry worked with are quite small as shown in Figure 1. The dimensions are given in millimeters and inches [in the square brackets]. The small size presents some challenges when soldering leads to the LEDs. However their size lends them to some interesting applications where a larger LED simply will not fit. Figure 2 shows how Larry configured the headlights and number board lights for a Union Pacific PA-1. The prototype has two lamps stacked vertically for the upper headlight and two lamps arranged horizontally for the lower headlight. Dual head lights came in about the mid 50's. With these LEDs he is able to reproduce the prototype configuration.

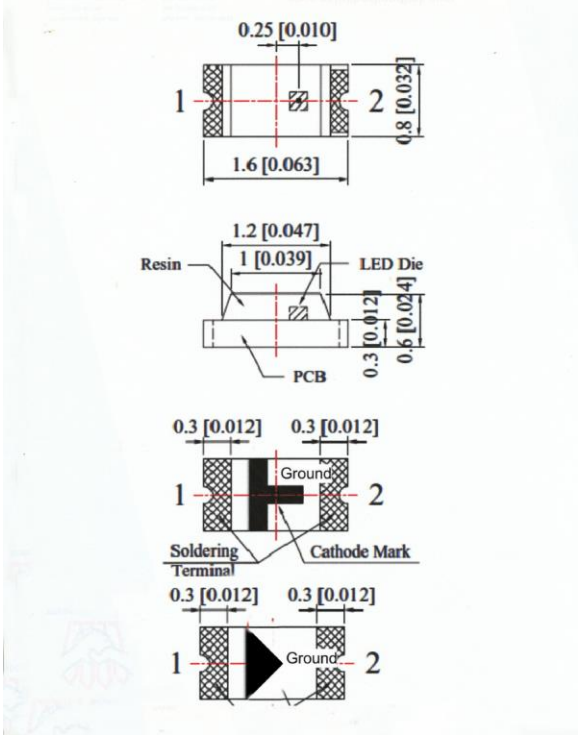


Figure 1: LED Dimensions

The number boards require two LEDs in series for each board. Each LED requires its own resistor, A high value resistor allows the luminosity for the boards to be considerably dimmer than the headlights. More about this later. Larry also suggested that if you place a

lens over the LED, as in a headlight, place the LED as close to the lens as possible. Otherwise the lens will distort the image.
Soldering leads onto LEDs this small presents a challenge. Larry's technique is to prepare a board with double sided tape as shown in Figure 3. He then mounts one end of an LED onto the tape leaving the other end exposed and applies supersafe flux to both the LED and wire. To solder a wire at right angles to the LED, he positions a wire as shown in Figure 4. Larry uses DCC wire and the color of the wire matches to the color of wire from decoder. When one side of the LED is soldered, Larry turns the assembly over and attaches a second wire. For some applications, Larry wants the wire parallel to the plane of the LED. To accomplish this he places the LED flat on the sticky tape with the wire abutting or on top of the metal ends before soldering.

Figure 2: Locomotive headlights


Figure 3: Holding LEDs for Soldering


Figure 4: A Wire Positioned for Soldering. Larry uses decoder wire of the appropriate color for this application

To make such delicate solder joints, Larry modifies the solder tip as shown in Figure 5. For a soldering tool he uses a battery-powered hand-held ISO tip soldering iron (not shown). He files the end of the tip flat, as shown in the second diagram in Figure 5. The solder will form a bead at the end of the tip. The hot element with molten solder can now be touched to the LED where the joint will be made almost instantly. Remember to add the flux first.

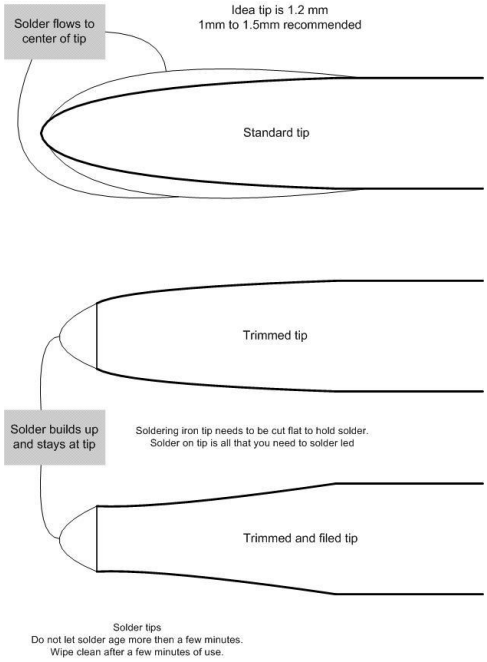


Figure 5: A modified Solder Tip

Larry briefly discussed wire. He discussed the use of #24 gauge wire, widely used in telephone applications. He also mentioned magnet wire that comes in much finer sizes. However magnet wire is usually coated with a non-conductive lacquer that must be stripped before making a solder joint. This can be done by sanding the end with #600-grit sandpaper. (Editor: wire-wrap wire that is 30 gauge is another option.)

Another application that Larry demonstrated was external building lights covered by a shade. Appropriate shades may be found at Caboose or the Walthers catalog, or if you can't locate them there, in the jewelry section of Hobby Lobby. For these lights, he solders the leads perpendicular to the LED and feeds the wires through the hole in the center of the shade. The LEDs are small enough to fit neatly inside the shade. If the wires need to be insulated, use Liquid Tape that can be found in the electrical section of Home Depot or similar stores. It comes in various colors.

Depending on the application you may want to adjust the brightness of the LED. At normal brightness LEDs typically draw about 20 milli-Amperes (ma). To dim them you will need to reduce the current to 5 or 10 ma. Most decoders have a 12 volt output for headlights. They may also have a 1.5 volt output, but these are only for incandescent bulbs. LEDs require 3 to 3.4 volts so you must use the 12 volt output with a dropping resistor. To calculate the resistor value use Ohm's Law which is:

Resistance (Ohms) = Voltage / Current

For example with a 12 volt circuit and a current draw of 20 ma you will need at least a 600 Ohm resistor (600 = 12 / 0.020). (Note: resistors come in standard sizes 620 or 680 Ohms) If you want a dimmer luminosity, what you would get at a 5 ma. current draw, you would need a 2400 Ohm resistor. (2400 = 12 / 0.005). Resistors are not made in every possible value, so select the next larger value that is available. Also they come in different capacities: ½, ¼ and 1/8 watt. For such low current draws 1/8 watt should be sufficient, but are sometimes harder to find. Be aware of what voltage you are working with. Note that the decoder output is usually polarized so ensure you connect the LED anode to the positive output. You may put the resistor on either lead.

(Editor's note: I don't think that Larry mentioned polarity. LEDs will pass current in only one direction. If you are working with a direct current source such as a decoder output you must observe the correct polarity or the LED won't function. Figure 1 shows the polarity markings. The cathode mark indicates the ground or negative end. You can connect the LED directly to an AC circuit and it will work just fine with the appropriate resistor. Here you don't need to observe circuit polarity. It is a diode after all. It will illuminate only half the time when the current is flowing in the preferred direction, but your eye will not notice it for 60 Hertz or higher frequencies. – DCC is

typically about 7000 Hertz. With AC circuits you may want to increase your dropping resistor values by about 50%)
When selecting LEDs you need to pay attention to the color temperature. They may come in Bright White that approximates fluorescent lighting or Warm White that approximates incandescent lighting. For most model applications, Warm White is preferable.

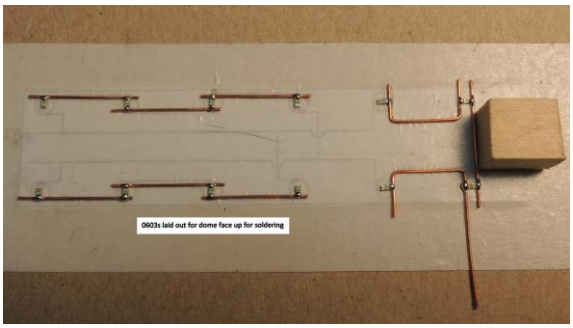


Figure 6: LED layout for dome lighting

Larry also demonstrated installing LEDs in the dome of a Vista Dome car. Figure 6 shows the layout and Figure 7 shows how the LEDs are installed in the dome.

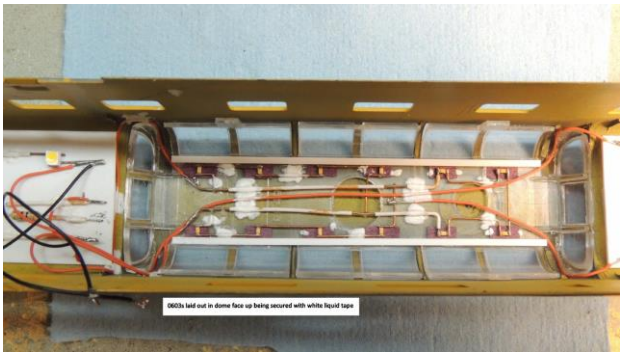


Figure 7: Leds installed in a Vista Dome

Figure 8 shows the axel wipers that Larry installs on his passenger trucks to pick up current for the interior lighting. Your car must have metal axels with one wheel not insulated. Both non-insulated wheel must be on the same side of the truck. He indicated that you can obtain these from Richmond Controls.

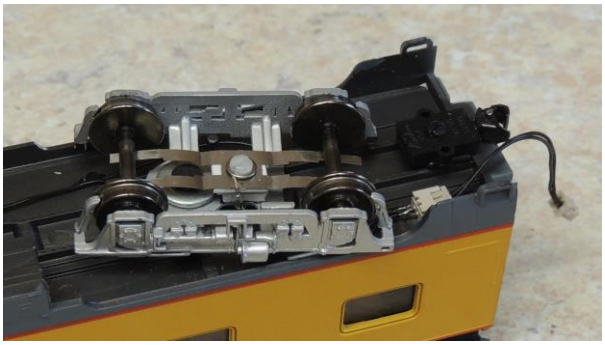


Figure 8: Axel wipers for electrical pickup

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Tools and supplies

Led – Warm White - EBay China
0402 - N scale comes pre wired.
0603 - HO scale used for crane, engine, yard or anywhere that a scale light is needed.
3528 - HO scale used for passenger car or anywhere that the light is not seen.
3528 3 led strip reel – Great for passenger car lights and makes quick work for buildings although the straw hat led works just as good and has leads.
Straw Hat Led- Great for lighting where a non-focused light is needed and not seen. Also works as a ceiling light in homes.
Supersafe flux H & N Electronics - Caboose Hobbies
Solder .15 dia. part # 6400035 and .22 dia. part # 6400013 - Radio Shack
If not using this solder you must use 62/36/2 solder on the 0402/0603 and recommended for the 3528.
Lens - M.V. Products
Liquid Tape GB – Home Depot
Double stick cloth carpet tape – Ace hardware.
Double stick plastic carpet tape – Ace hardware.
Double stick poster tape – Office Depot
If you are adding lights to cars without power pickup on trucks, www.richmondcontrols.com carries some nice wipers.

Optional

ISO soldering Iron. EBay, Amazon and tool web sites. Larry's choice is www.parts-express.com as they have the best price on tips. You will need 2@ 370-221 micro tip (short life) 1 @370-222 fine tip. It is also a great source for electronics for the hobby. If not using an ISO iron, you will need the finest tip you can find, 1 mm to a max of 1.5 mm. The tip heat needs to be controlled and cordless helps. He highly recommends the ISO soldering Iron. You'll wonder how you got along without it.

Additional Parts for other projects

Circuit board Solder Breadboards (many sizes). http://www.proto-advantage.com/store/product_info.php?products_id=200004

Larry has indicated he will have the presentation done in Power Point, with a Power Point Reader on CD,s with bonus material at the July meeting.

GET READY
THE FIRST ANNUAL SUNRISE AUCTION IS COMING

At the AUGUST Sunrise meeting we're going to do something different, an auction for members and non-members alike in place of a clinic. Only NMRA members can sell, but if you know of someone who might like to buy, you'll be able to bring them along as your guest.

And at the upcoming July meeting, we'll have a table set up to display your items that you will enter in the auction. That should get our members excited about some of the items that will be available. Rules will be simple. Minimum opening bid will be $10 but you can set it higher. Sellers can also provide a minimum winning bid on an item and if that is not reached, the item can be withdrawn. Payment will be by cash or check at the auction unless the buyer makes other arrangements with the seller before bidding starts. Seller must guarantee that an item is operable if applicable. A member can only enter two items for bidding unless previous arrangements have been made with the auctioneer. But you can create a "package" like 3 vehicles or 2 structures as one item.

This is intended to be a fun summer event so I hope you get in the spirit of it. You must have must some good items sitting on a shelf that somebody else really needs badly. So enter them to see what they may be worth. And for sure, bring a wad of cash or that checkbook to do some lively bidding too. I hope you find this to be a great addition to our already terrific Division meeting schedule. If not, we'll make it our last annual Sunrise auction.

Rich Flammini

Rocky Mountain Train Show Announcement

This show will be held at the Forney Museum in July. Details appear in the flyer below.

Swap Table Challenge

Let's get some fresh stuff on the division's swap table! Everyone is challenged to bring *something*. We all have things we don't need, no longer want or will never use…whether down-sizing, changing scales or just cleaning house. This could be *anything*: parts, kits, R-T-R cars, locomotives, track, scenery materials, tools, memorabilia or books. Consider donating them to the division's swap table.