Sunrise Herald

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Sunrise Division Officers

Superintendent……..…Steve Schweighofer
Asst. Superintendent……..…Bob Rothgery
Secretary……...……..Stewart Jones
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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

We will not have a meeting in October because that will coincide with the Regional Convention, October third through the 9th, in Colorado Springs. See the announcements below. We hope that many of you will plan to attend this convention since the Pikes Peak Division has put together a great program. Our next Division meeting will be Thursday, November 3, 2016 at Holy Love Lutheran Church, South Chambers Road at 7:15.

Upcoming Clinics for 2016

October – Regional Convention
November – Military railroads
December – Christmas treats and movie

Upcoming Tool Times for 2016

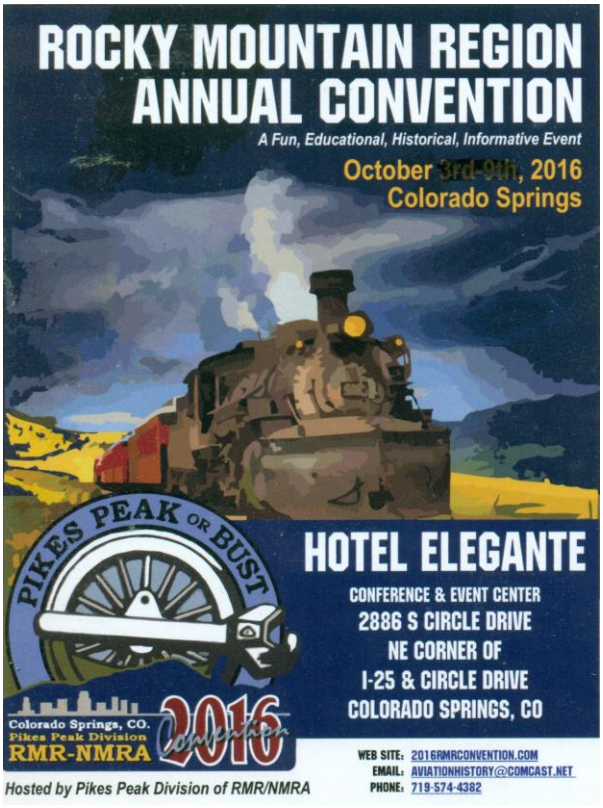
October – Regional Convention
November - TBA
December - TBA

Upcoming Show 'n' Tell Themes for 2016

October – Regional Convention
November - Military
December – Water Craft//Boat/Ships

September Meeting Notes

Steve Schweighofer called the meeting to order at 7:15 with xx members present. We hosted two members from the Pike's Peak Division, Wade Mounts and Roy Thompson, who talked to us about the Regional Convention in Colorado Springs.



There is still plenty of time to register. See the flyer above. Here is a short list of reasons to attend the 2016 Pikes Peak or Bust convention;

- A great First class hotel 500+ rooms rate $99 +tax per night
- Meet and Greet social
- More than 15 Layout tours
- Operating sessions on several home layouts
- About 23 clinics for modelers of all skills
- 7+ operating train layouts
- 3 Halls for vendors with 140 tables, to sell, buy and trade MR stuff in all gauges
- 16 spaces for manufacturers and supplies of MR items
- Auction with hundreds of items in HO & N scales
- Royal Gorge Train ride
- Evening trip to Cripple Creek
- NORAD Northcom presentation
- Full NMRA contest and display
- Ladies luncheon and program
- Door prizes and raffles
- Historical train Presentations
- Visit the Colorado Springs Pikes Peak area

Here is a list of the clinics that will be presented:

1. Painting a better backdrop
2. Loads on freight equipment
3. Railroads of the Pikes Peak Region
4. Kids'n trains – starting and growing a model train club for boys and girls
5. Weathering without an airbrush – Take 1
6. Dirty water is the key to rock molds
7. Scratchbuilding adobe and stucco buildings
8. Applications of weathering mix
9. Balsa foam carving – Parts 1 and 2
10. Fun and easy scenery techniques
11. Tools, Tools, Tools
12. Weathering without an airbrush – Take 2
13. Building a snow fence
14. Building a King Bridge (admission fee)
15. Building a Queen Bridge (admission fee)
16. Achievement Program judging for Division AP chairs
17. Model train detection; How it's done and what's it good for
18. Quick and Easy tree making
19. Weathering and detailing hints and methods for wood model kits
20. Where does all the current go?
21. Box car races
22. Salt Lake, Garfield $ Western Railway
23. NCE 2-day clinic and forum program
24. The Durango & Silverton: A different perspective

There ought to be a few clinics that would be of interest to you. This list doesn't include the dates and times for these clinics, so go to 2016rmrconvention.com for complete information. This website also provides much more information about the convention.

Module Report

Don Francis announced three upcoming shows where we could display our Division layout:

- The TCA show on October 21 – a one-day show
- The Spring show in Longmont
- The Intermountain Train Expo in Salt Lake City, (Sandy), November 5-6

September Tool Time

Bob Rothgery presented a 'mental' tool time about the use of 1/8-inch hardboard for backdrops and fascia boards. It was mental in the sense that he didn't haul in a slab of 4x8 hardboard. He took individual 4x8 sheets and cut each in two pieces: one 36-inches wide for use as a backdrop and the remaining piece, 12-inches wide, to use as fascia.

This view shows how Bob bent his fascia board to conform to his layout contour

A problem developed when he attempted to bend the fascia into a sharp curve – the pieces kept breaking. A friend offered the solution (no pun intended). He sprayed Formula 409 onto both sides of the hardboard in the area where he wanted to make the bend. After a few minutes this cleaner softens the board so that it is possible to bend it. Once wetted, clamp the board to the approximate bend and let it dry. It might take several applications before you will be able to make the bend as sharp as you want it.

This view shows how Bob painted the backdrop hardboard to give depth to his scenery. Note the fascia in the foreground

September Show and Tell

The theme for the September Show and Tell was pump houses. Steve Schweighofer submitted the only entry this month. By default, Steve received the Caboose gift certificate. We wisheded him luck in finding anything left in the store.

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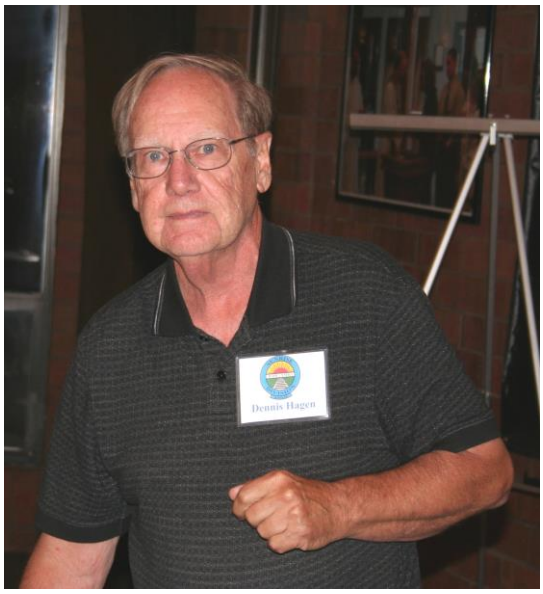
Steve submitted three N scale examples of pump houses. The center structure is obvious as it has a pipe directing water into the tank. Steve admitted that the other two could be considered pump houses even though they show no visible plumbing.

September Clinic
Everything You Know About Scale Time is Probably Wrong



Dennis Hagen presenting his clin**ic**

Steve told me I could speak tonight on one condition: I have to time my clinic with a fast clock.

Tonight I hope I can provide some ideas for improving your operations. For me scale speeds and "Scale Time" have always been the most important parts of realistic operation. Unfortunately, a lot of modelers don't really understand them. So, let's see if I can confuse you even more. As always, if you have questions, just jump in. If I don't have an answer, I'll make something up.

Operations start with rule books and employee time tables. It used to be a challenge to find them at swap meets. Today there are hundreds on Ebay. I really recommend that you pick up something that fits your era or your prototype. You will find rules regarding standard time and certification of crew watches. You'll find rules requiring watches to be compared before every run.

Employee time tables add rules regarding speed limits. 6 mph here, 8 mph there, 15 mph on this stretch and so on. Speed and time are critical to real railroads. So, how do we simulate real operations if we don't understand scale speed, scale time and scale distances? I would say, "We can't!" Fortunately, it's easy.

You probably learned everything you need to know back in junior high school. Remember this? Distance = Rate x Time. Most of our operations revolve around this simple formula. The distance a train travels is simply a function of how fast it moves and for how long it moves. Let's start with scale distance. I'll generally use HO since that's where most of you live. But everything I mention will work in any scale.

A scale mile is simply 5,280 feet divided by your scale. It seems too simple to mention. But you really should start by measuring your main line and converting it to scale miles. For example, my main line is 168 feet long. That means it's almost exactly 2 scale miles in S Scale. When we have to do calculations, 2 is a whole lot easier number to work with than 168, right?

Rate essentially means speed. (Here Dennis showed profiles of four locomotives in different scales) Let's say that these images represent the four major scales. Narrow Gauge, of course. Now, imagine a video of each of these models running at 20 scale miles per hour. And imagine a video of the real locomotive running at 20 actual miles per hour. In your imagination, you now have five videos running simultaneously. You can see that the drivers on all five locomotives rotate at exactly the same rate regardless of scale. The side rods all rise and fall at exactly the same rate, regardless of scale. It also takes exactly the same amount of time for each locomotive to travel a scale mile. Every video appears to be identical. You may have to think about this a minute to have it sink in. But

the point is that since everything is in scale, scale speed always looks exactly like prototype speed and it always looks exactly the same in every scale. Your operations can't look right unless your speeds look right. So, how do we make our speeds right? Real engineers checked elapsed time between mile posts. We can do that, too.

Here's what a prototype engineer knew. "You want me to memorize that?" No, of course not. There's just one easy trick you need to understand. Speed times the number of minutes it takes to travel a mile always equals 60. But a scale mile is too big to use on a layout. We need something quicker. What's another way to express 60 miles per hour? 88 feet per second, exactly. We can calculate our train's speed exactly the same way prototype engineers did by using 88 feet rather than a mile and by using seconds rather than minutes. As you can see, all of the calculations still equal 60. Here is what 88 scale feet looks like in each of the four popular scales.

O	1 foot 10 inches
S	1 foot 4 ½ inches
HO	1 foot
N	6 ½ inches

Now, you can set up a "speed trap." In HO scale, for example, set a couple of pins 12 inches apart and count the number of seconds it takes for your train to pass. But what if I'm not near the "speed trap?" Great question! Here's the easiest way I know for you to become a hot shot operator. Whip out a tape measure again, but this time instead of setting pins, note what 88 scale feet looks like on the actual train itself. (Note two 40-foot cars coupled is about 88 scale feet.) Now I can calculate my train's speed anywhere on the layout any time I want instantly by simply watching this portion of the train pass any point anywhere and roughly counting seconds. This method works with any equipment in any scale. You can use any combination of locomotives or cars. But be prepared for a big shock. You'll learn that scale speed is a lot slower than you think.

So, we've touched scale distance and scale speed so let's tackle Scale Time. Scale time has been around for about 70 years. I'm going to refer primarily to two articles written by the legendary John Allen almost 50 years ago. In his first article, John Allen said that without timing, realistic operations were virtually impossible. You can't schedule if you don't know how much time to allow. With this in mind, he suggested that every time you perform some task on your layout, you should make note the time required. On my layout, for example, an average switching move takes about 30 seconds. Some are longer, or shorter, of course, but the average is about 30 seconds. So, if I can switch cars in 8 moves, I know the job should take about four actual minutes. (Here Dennis showed a hypothetical point-to-point layout about 120 feet long.)

Here's where I said that scale miles become easier to work with. Remember our chart. At 20 miles per hour it should take 3 minutes per mile or 6 real minutes to travel two scale miles. We can schedule a train to leave one end at 1:00 and arrive at the other end at 1:06. So far, so good. Now let's add a town that's twenty feet from one end. That's a third of a mile, so traveling at 20 miles per hour takes one minute. This looks okay. But at 30 miles per hour it takes 40 seconds and at 60 miles per hour it takes only 20 seconds. Real railroads don't use seconds or fractions of minutes on a timetable. How do we indicate these times? It still has to be 1:01. A train traveling at any speed between 20 miles per hour and 100 miles per hour will still have a timetable entry of 1:01.

Rule books say an inferior train must clear a superior trains by 5 minutes. How can you do

that when your time between stations is only one minute? How do you make a five-minute station stop? Most time increments are meaningless when you use real time.

John Allen's second article presented "Scale Time." Let's see how this might work. What if instead of using six actual minutes we simply call our time sixty scale minutes? We haven't changed a thing. But now our timing looks much more prototypical and we can handle shorter times. Oops. Our distance = rate x time formula just fell apart! We said we traveled 20 miles per hour for a whole hour. That's not two miles, it has to be 20 miles. How do we resolve that?

Frank Ellison, another great model railroad pioneer, addressed this problem in a 6-part series called *the Art of Model Railroading* back in 1964 and 1965. (Editor's note: this series of six articles was originally published between March and August 1944)

In part 4 of his series, Ellison introduced what he called "Smiles." I like to think of them as "simulated miles."

So, what is a "Smile?" The simple answer is, "it depends." "Smiles" are different for each scale and for each different scale time. Returning to junior high again, recall that if you multiply one side of an equation by some amount, you have to multiply the other side by that same amount. If we increase our time by a factor 10, for example, we also have to increase our distance by 10. So, to return to our diagram, depending on the clock ratio we choose, we can simulate almost any number of "Smiles" we want. Scale distance, then, depends on our scale time because of the "distance = rate x time" formula.

A couple of things to keep in mind when you chose a clock speed: There is no correlation between scale size and scale time. A 10:1 clock works exactly the same way in N scale as it does in O. Your "scale time" and number "smiles" have no impact whatsoever on real time or real distance. It will still take exactly the same number of minutes to run the mainline, no matter what you call it. This is where many folks get confused. A different name does not actually change the distance.

Having said that, however, slower scale speeds mean fewer smiles, effectively making the simulated distances shorter. So, let's say we choose a 10:1 scale time. Here is what our distances in "smiles" might look like. Once again, scale miles and "smiles" are much easier to work with than actual feet.

Here is your challenge. Write a schedule and run it. How close can you come. When you work to a schedule, I guarantee that you will really notice derailments, stalls, mistakes and other problems that you overlooked before. Hopefully you will correct them. As John Allen said, by working with "scale time," you simply have to become a better operator. You can't help it.

Well, this was a pretty quick overview and probably too much information to absorb in one sitting. But time is short and I want to bash some of the arguments against "scale time." Some operators argue that 20 or 30 minutes travel on the main line is fine but allowing 4 hours for a switching job is not prototypical. They say that you can't use a fast clock for switching. They forgot what I keep pounding: scale time and real time are exactly the same thing. In my world, 4 hours of switching equals 24 real minutes. If it takes 24 real minutes to do the job, changing or even eliminating the clock won't make any difference. But are they even right about the time differential? Modelers can actually switch many, many more cars that the prototype can in a given amount of real time. There are several reasons for this.

A real 50-car cut takes much longer to pull in and out of a spur than a model 5-car cut, for

example. Doing a run-around on a mile-long siding takes a lot longer than it does on a 10-foot model siding. Brakeman can't always verify car numbers from a distance. They have to do a lot of walking. Modelers almost never allow time for the brakeman to walk to a switch and line it manually. Prototype crews plan where to drop brakemen to minimize walking. Modelers don't.

Prototype coupling requires a complete stop, hoses have to be connected, slack taken out. Modelers often just ram into a car and couple on the fly. Before moving a train, a brakeman walks its length to verify that all brakes have released. This could take 20 minutes on a prototype train.

"Yard speed," is often far less than 5 miles per hour to prevent damage to cars and merchandise. Even with 128 speed steps on DCC it's very hard to run a train at 5 miles per hour.

Here's a personal example. Years ago I watched some yard switching at Silver Plume. The problem required about 12 moves. I allow about 12 moves per scale hour on my layout. This chore took them nearly three hours. Once at Larkspur I watched a pair of helper engines drop off. They were cut in front of the caboose, so they only had to drop off and do a run-around to replace the caboose. Six moves took over forty-five minutes. Real switching takes a lot longer than you think. Scale time actually does simulate both main line running and switching quite accurately.

Some say that working against a clock is too stressful. Once again, John Allen said, "Baloney." "Working against a clock – that is, getting your work done by a due time without speeding loco movements or otherwise breaking prototype rules – can give one a purpose and feeling of accomplishment as well as develop the operator's skill." As I said earlier working against a clock, real time or scale time, has to make you a better operator.

The argument that makes me want to tear my hair out is, "we have to slow the clock down to make it easier on the operators." Baloney! This argument simply means that someone doesn't understand how to schedule. Scale Time and real time are always exactly the same; they simply have different names.

Whether you call it 90 minutes on a 10:1 clock or 36 minutes on a 4:1 clock. It is still always exactly 9 real time minutes, period! To an observer, your switcher will move at the same speed and each move will look exactly the same no matter what you call the time. When you say you have to slow down the clock, all you are saying is that you have to allow more real time minutes to complete the job. You have to allow 10 or 11 or 12 minutes rather than 9. The clock ratio has nothing to do with it!!! Remember, if you slow the clock you have to adjust all of your speeds and distances!

"Smiles" makes a train appear to be 2 or 3 miles long. "Smiles" don't actually measure anything. They're simply tools for calculating time and speed. I operated on a layout with a 300 foot main line that represented Pueblo to Cheyenne. 300 feet simulated 200 miles. Every foot and a half represented a mile. Why wouldn't that make a train appear to be 10 miles long!

Smiles" in HO scale

A Scale Mile Contains the Same
Number of "Smiles" as your scale time

12 to 1 clock = 12 "Smiles" "Smile" = 5 feet

10 to 1 clock = 10 "Smiles" "Smile" = 6 feet

8 to 1 clock = 8 "Smiles" "Smile" = 7.5 feet

6 to 1 clock = 6 “Smiles” “Smile” = 10 feet

4 to 1 clock = 4 “Smiles” “Smile” = 15 feet

In HO scale a scale mile is 60 feet (rounded off), so you simply divide 60 by the fast clock ratio.

Scale time only makes sense for huge layouts with lots of operators. Not true! I started using scale time on my little 4x8 layout nearly 50 years ago. I always think in terms of scale time even when I am completely alone. It makes my operations “feel” much more real.

When I build a train I actually simulate each of the steps that I discussed in my steam engine servicing clinic from a couple years ago. I stop at the ash pit for 10 minutes, I allow 5 minutes at the water tower, 5 minutes to do a blow down of the boiler, 5 minutes to take on sand and 10 minutes to top off my coal load. It takes me about 70 scale minutes. Guess what! It takes longer than that to get a real engine ready at Chama. My scale time simulation looks pretty good.

I don’t want a 24-hour day. When I operate alone I often run for only about 45 minutes to an hour. This fits perfectly into a scale 8 to 10 hour shift. Fast clock systems are expensive. I still use a cheap Wally-Mart clock and convert times in my head. You can get started the same way.

I found the worst argument ever online. You know that only two hours have passed, yet you call it twenty hours. This sets up cognitive dissonance and your mind rebels. This one is almost too dumb to answer. The 300-foot mainline I just mentioned took a through train about 20 minutes to traverse. Cheyenne to Pueblo in 20 minutes? That’s not cognitive dissonance?

Let me conclude with one of my favorite thoughts. When Model Railroaders operate their layouts, they don’t play; they don’t imagine; they don’t pretend. Model railroaders **simulate**! How on earth can you simulate reality when you have five towns within a two-mile stretch? Or two towns less than a quarter mile apart? Or passing sidings a quarter mile long? Or stops less than a minute apart? Good grief! Talk about “cognitive dissonance!”

“Scale time” and “smiles” are not real. They are simply tools like lighting, weathering, back-drop painting, selective compression, forced perspective or anything else that we use to create an illusion of reality.

Utah Rail Show Announcement

The following flyer was distributed at the meeting for a Train Expo in Sandy, Utah in November. This is your opportunity to discover what railroaders in other division are doing.