

Mel Medhurst's Railroad Empire

Mel describes his layout as dual 'scale'. Not a dual 'gauge' layout as seen on other layouts. (Dual gauge meaning both standard gauge (4' 8 1/2" gauge) and narrow gauge (3' gauge) represented on the same layout such as exists in real life) Most model railroaders model in one of several popular scales such as "Z" scale (1/220), "N" scale (1/160), "HO" scale (1/87), "S" scale (1/64), "O" scale (1/48), and "Large Scale" (various scales running on 45mm track). His dual 'scale' layout represents both narrow gauge (3') and standard gauge (4' 8 1/2") trains but in two different scales. The standard gauge trains are 1/29" scale (1" equals 29") while the narrow gauge trains are 1:20.3 scale (1" equals 20.3 inches). Only one set of trains is on the layout at any given time so as not to mix the two scales which would be an obvious visual discrepancy in scale. Since 1/29th scale trains run on 45mm track (45mm between the rails) and 1:20.3 scale trains also run on 45mm track it is easy to have a dual 'scale' layout. All of the structures, vehicles and people are generally 1/24th scale which makes them a tad bit small for the narrow gauge trains and a tad bit large for the standard gauge trains but the visual impact is minimal and it allows for not having to change these items when the trains are exchanged.

Planning for this layout began while drawing the plans for his house, in Windsor, Colorado. As Mel and his wife laid out the basement design he was able to plan the space that would become the layout room. By doing this before the house was built he was able to insure that there would be no windows, a high ceiling (nine foot), plenty of electrical outlets and lighting designed for a layout room. They moved into the house in September 2003 and within a few months he began finishing the basement. The area allotted for the train room is almost 1200 square feet and was completed in March 2005.

Design Criteria

Mel says: "With the basement and train room finished, building of the layout began immediately with several items fitting into my philosophy for my dream layout. These eight items are as follows:

1. Lighting - I wanted enough lights to be able to view all areas of the layout without any shadows and ended up with 75 canned lights operating on nine different circuits. To help keep down the heat buildup I use 130 volt bulbs which run considerably cooler and use much less energy than 120 volt bulbs do. When I am working on the layout I only need to turn on the circuit in the area that I need thus cutting down on usage during working times.
2. Electrical - To eliminate extension cords I placed outlets every 4 to 5 feet. A total of three circuits provides plenty of power for operation and any work that needs to be done and eliminates cords running all over the floor.

3. Room color - The entire room, including the ceiling, was painted 'Universal Blue' by Sherwin Williams. When scenery is added and clouds placed on the walls the blue will blend in and the ceiling will not detract from the scene.
4. No windows - Windows offer distraction from the view on the layout so it was my desire not to have any windows within the train room area. In reality I actually have one window on the south side but while I was framing the walls I framed right over this window with the ability to remove the framing if it should ever become necessary. The basement has adequate heating and cooling so windows are not necessary.
5. Curved corners - In nature there are few straight lines or square corners. If corners in a layout room are coved (rounded) than the eye tends to see a straight wall and is not distracted. There are nineteen corners in the train room and seventeen of them were coved by building a rounded framework and then dry walling right over them.
6. Minimum of legs - Legs under a layout always seem to get in the way for one reason or another. I designed the layout so that it is suspended from the walls. In the center section where the display cases sit there are the only legs in the room and they are built into the cases so they are not obtrusive.
7. Under layout displays - Part of my original plan was to place glass shelved display cases underneath a portion of the layout so that I could display my collection of diecast cars, trucks and tractors. At about the same time that I started on the layout the local Shopko store was closing and selling off all of their store fixtures. I was able to purchase ten 4' long jewelry cases that are mirrored on the inside and have three glass shelves along with florescent lighting. With the height of the layout over the cases at 56" the viewer is able to see into the cases from the front and top without any obstruction. The florescent lights within the cases light up all of the displays nicely.

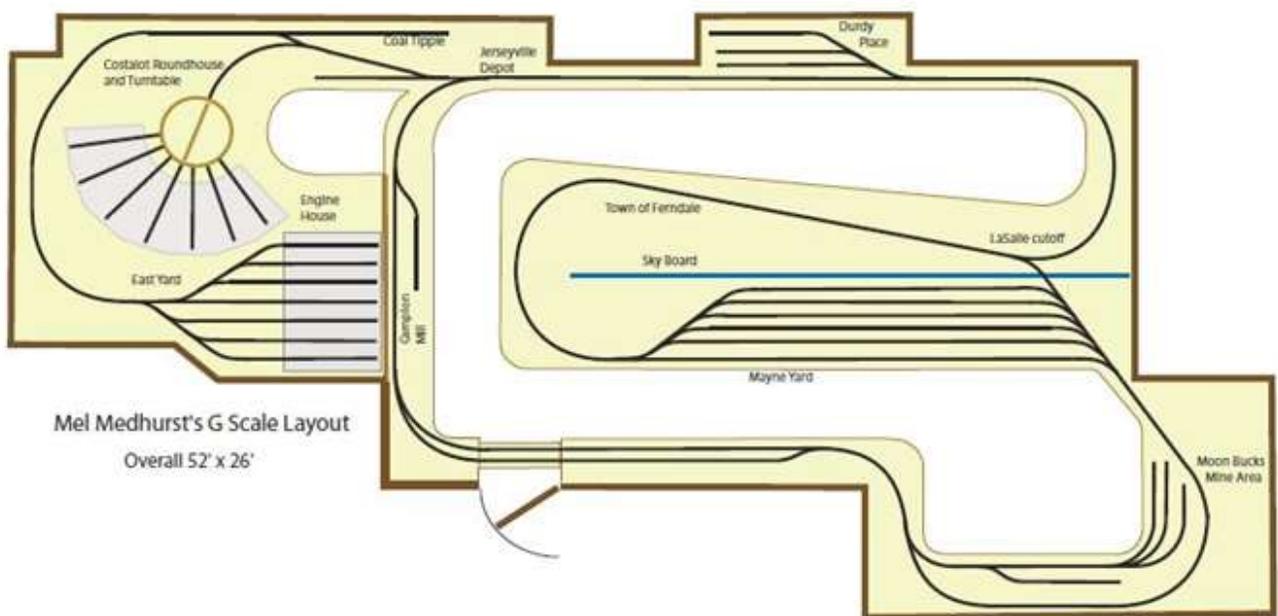


Figure 1. Plan of Mel's Layout. [Click on the plan to see a larger version](#)



Figure 2. Some of the display cases Mel uses underneath the layout

8. Viewing height - The minimum height on the layout is 48" at the roundhouse end of the line. Leaving the yard area there is a 3 percent climb leading to the town of Ferndale which is the highest point on the layout and is located at an altitude of 56". People often ask why the layout is so high off the floor and I have a simple answer - in the natural world we look at trains on an almost eye level direction. Many model railroads are placed at lower heights to make it easy for the owner to work on but it then forces one to view the trains as if they were in a helicopter. Not a normal viewing angle so I chose to start at 48". A couple of complications are created by placing it so high and the first is that shorter people and kids may not be able to see sufficiently. To accommodate those individuals I have placed several passenger car steps (built from plastic stools available at many department stores) around the layout that they can avail themselves of. The second problem created by the layout being so high is that I am not able to reach all areas to allow for working on it. The solution for this problem was to build the benchwork (supporting wooden structure) strong enough that I can climb upon any area that I need to reach and perform needed repairs and work. If you look underneath you will readily see the 2" x 6", 2" x 8", and 2" x 10" lumber that went into the framework that allows for walking upon the layout."



Figure 3. A view of Mel's Roundhouse. There is another train shed with several more locomotives.

Structures

With only a few exceptions all of the structures are smaller versions of full size buildings. The building must be smaller in size because at this large scale (1:20.3) structures would be too large to model and place on the layout. As an example, the Ferndale depot, if it were built to a more prototypical size, would be over twenty feet long! The seven stall roundhouse, even though it is not full size, measures over seven feet across. The seven stall engine house measures four feet by four feet. The two engine facilities are fairly large models even if not built to scale or full size. Because of all of the downsizing of structures Mel likes to call them 'caricatures' of real buildings with an almost Disneyland like look to them. The details that make a building "feel" right are for the windows and doors to be the correct size. This is the same technique used in Disneyland.

On the layout most of the trains are ready to run models while there are a few kits and a couple of kitbashed (modified kits) models. The structures on the other hand are all kits from Pola, Piko, and Korber. Several have been extensively altered while there are also a couple of scratch built buildings.



Figure 4. Mel's RG narrow gauge passenger consist, waiting at Ferndale.

Animation

A model railroad seems lifeless unless there is some indication otherwise. Lighting, sounds, and movement all play a part in bringing a layout to life. He has incorporated the animated lights in the Ferndale buildings, along with various sound effects coming from virtually every structure. Movement comes in the way of the trains, city trolley, oil well, mine train, live steamers and track workers. Someone always asks why the locomotives don't have smoke coming from them and he responds that "model smoke making units produce an unrealistic smoke and tend to smell up the room. The lack of smoke coming from each locomotive is not as apparent when you listen to all of the sounds that the individual locomotives are capable of making."



Figure 5. More of Mel's exquisite Large-Scale locomotive collection.

Layout Specs

The following are some of the datum and figures for the layout:

1. Minimum radius on track curves - 48" through out the whole layout. (Exception is 24" in mine area)
2. Maximum gradient - 3 percent going from the engine facility to the entrance of Ferndale.
3. Layout height - 48" at the engine facilities rising up to 56" at Ferndale.
4. Total area layout occupies: Approximately 1200 square feet [which is almost 5 times the area of his previous layout].
5. Lighting - total of 75 cans of 50 watt bulbs (draw 43 watts on 120 volts) controlled by 9 circuits.
6. Total length of main line run – approximately 250 feet with another 300 plus feet of sidings and yards.
7. Train controls - Analog (conventional) power uses a Crest 15 amp power supply with a Crest Train Engineer radio control unit. For DCC (Digital Command

- Control) he is using 'Easy DCC' brand equipment. The 20 amp power supply and related control equipment was built by Mel.
8. Storage tracks – 190 feet of storage tracks located under the engine terminal and under the roundhouse.
 9. Total number of locomotives:
 - a. Standard gauge - twenty locomotives
 - b. Narrow gauge - twenty six locomotives
 10. Total number of pieces of rolling stock:
 - a. Standard gauge - 84 pieces
 - b. Narrow gauge - 96 pieces
 11. An additional 143 pieces of other scales (T scale up to O scale)

Mel's Modelling Background

"I became a model railroader at the age of four when I received my first Lionel train set for Christmas. I continued with the Lionel trains until I saw a small diorama in HO scale at a local train store in 1956. Becoming immediately entranced with the new, to me, scale and detail I had to wait until my twelfth birthday before being able to switch over. For my twelfth birthday I received a Pacemaker "Hobo" Santa Fe F7 Locomotive (battery powered), a Varney "Katy" outside braced boxcar and four pieces of flex track. A "Hobo" Santa Fe Locomotive and a Varney "Katy" boxcar are now in my collection and on display. (See details of the "Hobo" locomotive and Varney boxcar on page 14)

When N scale was introduced in the mid sixties I was newly married, living in a small rented house and saw an opportunity to model big time with small space. I continued with the N scale until shortly after purchasing our first home which had a double car garage. With the new house I went back into HO scale. In 1972 I took my wife and two young sons to ride the narrow gauge Cumbres & Toltec Scenic Railroad in southwestern Colorado. I was bitten by the narrow gauge bug and haven't recovered since. For a while I modeled in HOn3 but eventually discovered Sn3 with the larger scale and greater detail I had to make the switch. Sn3 is a great scale for narrow gauge modelers but after a few years I realized that I missed the standard gauge trains. About the same time L.G.B. came out with the now famous Santa Fe warbonnet locomotives with sound. Also 1:20.3 scale was starting to take off and I saw a perfect opportunity for me to model the narrow gauge trains and also have some standard gauge trains. As the old saying goes 'the rest is all history' holds true for this model railroader."

Stuff You Probably Didn't Know About Large Scale

A little explanation of what Large Scale is. Model railroad track with 45 millimeters between the rails is called 'gauge one' or 'standard gauge track'.

For many years there have been model railroaders that modeled standard gauge trains (models of real trains that run on 4' 8 1/2" gauge track) to run on this 45 mm model track. The scale of these trains is 1/32nd and these models were among the first to use the 45 mm track.

In 1968 Lehmann Gross Bahn (L.G.B.) of Germany began production of models of meter gauge German trains designed to run on 45 mm track. Real German narrow-gauge trains commonly use 1 meter gauge track so the relationship between the models and their big brother was 45 mm to 1 meter or 1 to 22.5 (1 meter divided by 45 mm equals approximately 22.5). Another way of putting it would be if 22.5 model locomotives were placed end to end it would be the same length as the real locomotive. When L.G.B. began to make models of American narrow gauge trains they used the same 45 mm gauge track and kept the scale the same 1 to 22.5 which means that the trains are models with meter gauge wheel spacing instead of the correct 36" used on Southern Colorado narrow gauge trains. L.G.B. trains were the second group of users of the 45 mm track. Large scale trains are sometimes incorrectly called 'G' scale trains. 'G' scale generally refers to 1:22.5 trains. Mel says "In September, 1987 I purchased my first LGB trains with the excuse that they were to run under the Christmas tree. When LGB brought out the Santa Fe F7 locomotives in 1997 I decided to go into large scale totally and sold all of my Sn3 collection and became a "Large Scale" modeler in November, 1997. "

Louis Polk started producing American prototype standard gauge models to run on 45 mm track but instead of using the correct scale of 1/32nd he chose to use a scale of 1/29th. This makes these models (USA brand) a little bit larger in size than 1/32nd models. Enter another scale of trains using the 45 mm track.

Some narrow gauge modelers wanted to use the 45 mm track but didn't like the odd scale of 1:22.5 so began modeling in an easy to use 1/24th scale. Since everything had to be scratch built it was much easier using 1/24th for converting figures. These 1/24th scale models are using the 45 mm track.

Many narrow gauge modelers wanted their trains running on 45 mm track to be correct scale models of 36" gauge trains and thus was born the scale of 1:20.3. (20.3 times 45 mm equals 36") This scale eventually became known as Fn3 where F stands for 'Finescale 45 mm gauge', n stands for 'narrow gauge', and 3 stands for '3' feet between the rails. Fn3 trains run on 45 mm track.

As you can see by now there are several scales of trains that use the 45 mm track making it confusing to anyone not familiar with large scale. No one seemed to know what to call it but finally came up with "Large Scale" to encompass all scales that run on 45 mm track. A suggestion was made a few years ago to call each of the individual large scales by the designation L.S. 20, L.S. 22, L.S. 24, L.S. 29, L.S. 32 etc. wherein L.S. stood for large scale and the number stood for the fractional value but it never took off and the idea seems to have died.

The Diecast Vehicle Collection

The display cases below the layout house Mel's collection of tractors, trucks, fire trucks, and automobiles. He started to collect diecast vehicles when he first began modeling in large scale, feeling that models in 1/24th scale would work nicely on the layout and he bought a few. It

wasn't long before there were too many for the layout and he decided to display the extras. Well the extras now fill the ten display cases and range in scale from 1/200th for models of some of the larger tractors all the way up to some that are 1/6th scale. A total of over 360 die-cast vehicles are displayed.

In 2014 Mel decided to re-create his first Lionel train set and also obtained several other pieces of vintage Lionel from the same era. All of this interest in ¼ inch models prompted him to build a three rail O scale layout under the main large scale layout. This new interest has allowed him to obtain O scale models of locomotives and equipment that is not available in large scale and that he had long been interested in with the two U.P. turbine locomotives being a prime example.