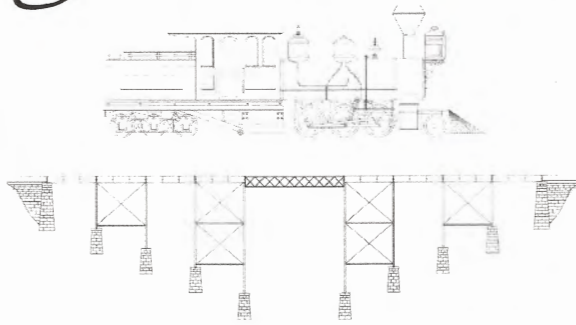
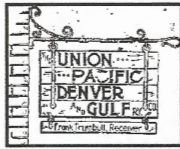


The Bogies and the Loop

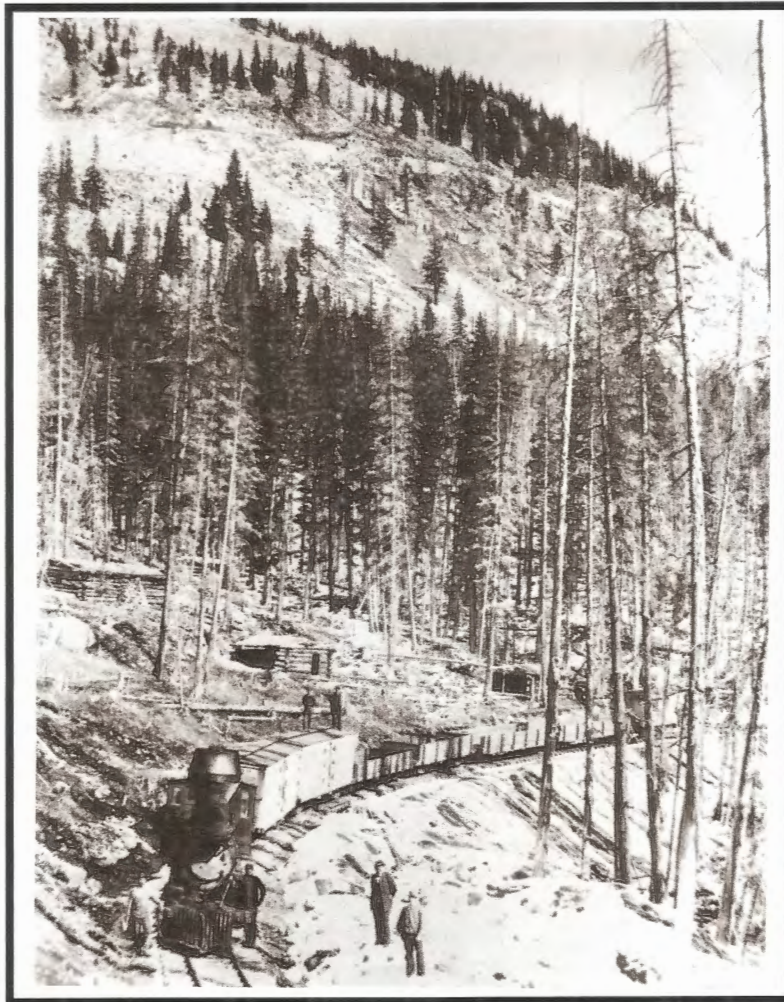


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Volume 14 Issue 1, No. 53

Magazine of the Denver, South Park and Pacific Historical Society

October 2012



— W.H. Jackson photo from "The South Park Line," courtesy of Mallory Hope Ferrell

Heading down from Alpine

A DSP&P 2-8-0 leads a train from Alpine Tunnel down the Quartz Creek Valley near Woodstock. Behind the engine are two Tiffany Summer & Winter cars (Nos. 1064 and 1057). Note double-headed freight crossing the Palisades high above in this circa 1882-83 scene. See pages 4-8 for Part 1 of Mallory Hope Ferrell's story on DSP&P Tiffany Summer & Winter cars. There are lots of other stories and society news, too. Enjoy!

TIFFANY SUMMER & WINTER CARS

PART I

By Mallory Hope Ferrell
(Photos courtesy of the author)

Over the years, there has been a great deal of discussion among South Park historians and modelers about the 27 so-called Tiffany Reefers. The questions of rooftop hatches and colors have their pros and cons. A fuller investigation of these matters was needed.

I decided to approach the ice hatch issue in order to see if it could be resolved by detailed study of all known photos of these cars, reading anything connected with Joel Tiffany (1811-1893) as well as reading his patent (No. 193.357 — July 24, 1877) covering the design. I also wanted to build an accurate 1/4-inch (On3) scale model.

Tiffany's patent for the "Summer & Winter" cars describes an insulated, ice cooled car in detail. However, all that is claimed is "a refrigerated

car having its sides and top provided with an external jacket, forming horizontal passages extending the entire length of the car." The patent went on to say that there were "openings at each end, provided with stoppers for converting the passages into dead-air chambers."

Tiffany made no attempt to claim the idea of a refrigerated car, but only a method of circulating air within the insulated car body (i.e., thin boards, felt paper, animal hair and sawdust were communally used to provide insulation during this period). Joel Tiffany summed up his patent application in November 1876 as follows:

Having thus fully described the nature, construction, and mode of operating my said invention and improvement, I will next set out what I claim as my invention and desire to secure by Letters Patent:

A refrigerator-car having its sides and top provided with an external jacket, forming horizontal air passages extending the entire length of the car, said passages having openings at each end, provided with stoppers for converting the passages into dead-air chambers, in combination within and surrounding the body of the car, substantially as described.

The Tiffany patent really does not tell us very much about the design of cars built by and for the South Park Line. In July 1880, the Denver, South Park & Pacific's Denver Shops constructed twelve 26-foot-long Tiffany Summer & Winter cars (Nos. 505-511, 555-559). The design appears to have been based on a group of 200 boxcars built at the same time by the Litchfield Car Works, according to South Park historian Ron Rudnick.

Three years later, in July 1883, the St. Charles Car Works of St. Louis, Mo., built 15 more

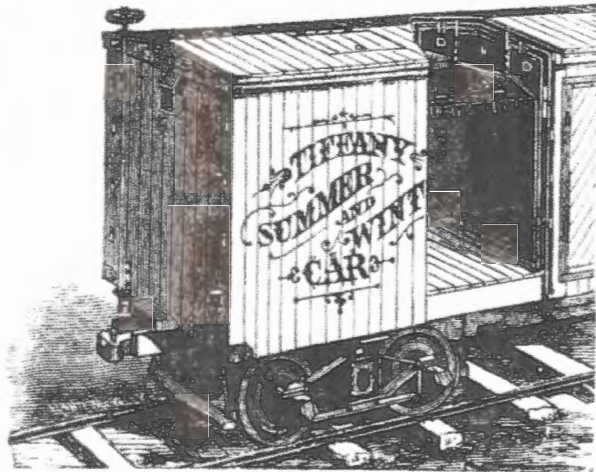


(W.H. Jackson photo)

Detail from cover photo showing Tiffany Reefers Nos. 1064 and 1057 near Woodstock, circa 1883-84. The cars were lettered "Tiffany Summer and Winter Car" as well as "D.S.P. & P.R.R. Refrigerator."

GREATEST ECONOMY IN THE USE OF ICE.

Adopted by Several Railroads and Fast Freight Lines,



FOR TRANSPORTATION OF

**BEEF,
POULTRY,
EGGS,
BUTTER,
FRUIT,**

And all kinds of Perishable Goods, Summer and Winter.

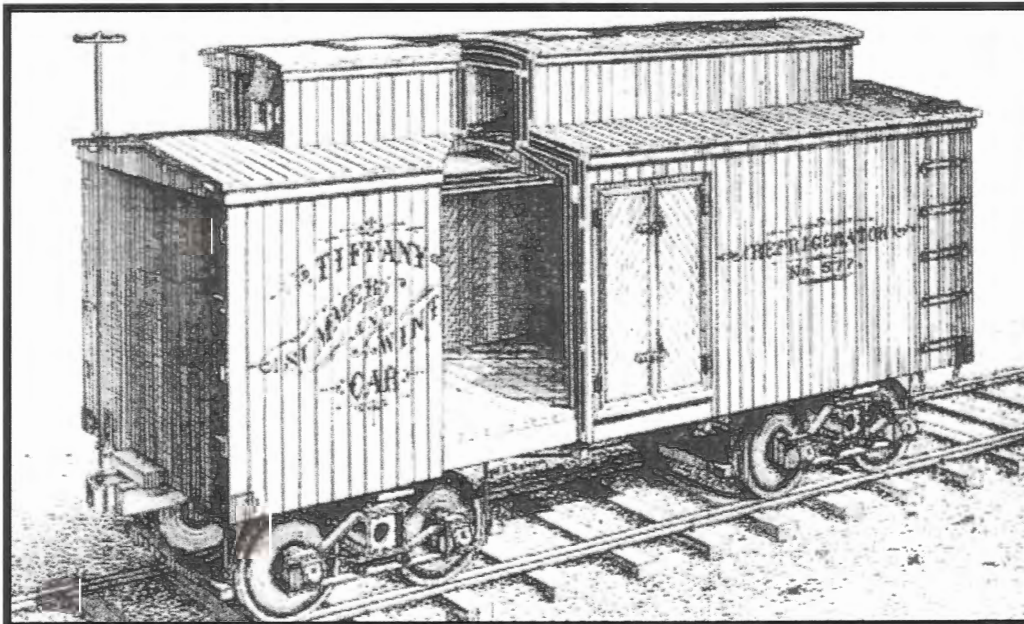
CHARLES F. PIERCE, Manager,

74 Washington Street,

Chicago, Ill.

ABSOLUTE PROTECTION FROM EXTREME COLD.

Illustration from the 1879 Car Builders Dictionary showing a standard gauge Tiffany Summer & Winter car with ceiling mounted ice bunkers and roof hatch (with lift ring). The DSP&P cars did not have roof hatches and inside height (6'6") was too low to allow ceiling-mounted ice bunkers.



This Tiffany advertisement from the RR GAZETTE appeared shortly before Joel Tiffany received his patent on July 24, 1877. The clerestory ice bunker design was shortly abandoned and used on few Tiffany cars.

Tiffany Summer & Winter cars (Nos. 1050-1064). These cars were 27 feet long and cost the DSP&P \$560 each plus a \$25 royalty. The South Park paid a total of \$375 in royalties to Charles F. Pierce, Manager, the Tiffany Refrigerator Car Co., 74 Washington Street, Chicago, Ill.

Identification of the two groups, other than length and car numbers, can easily be made. The earlier 26-foot cars had the air openings for the ice bunkers on each end at top right, while the 27-foot cars had this opening on top left of each end. These open-



— W.H. Jackson photo

A blow-up of a portion of a W.H. Jackson photo showing 2-8-0 No. 217 and 27-foot long Tiffany Summer & Winter car No. 1061 on the High Line above Leadville, circa 1883-5.

ings often appear as a black “dot” in photos. More difficult to see in photographs are four small holes on each end that provided air vents for the insulated jacket.

The short reefers had ladders on each side, while the longer 1883 cars had grab irons. The shorter 1880 cars had a pair of diagonal grab irons on each end, whereas the longer cars had two horizontal grab irons.

Other differences that help are the elliptical door hinges on the 26-foot car, while the 27-foot cars had hinges that were “squared-off” (see Ted Edgell’s plan, page 8). The poling pockets were also visually different on the two groups of cars.

I believe that much of the confusion over rooftop ice hatches comes from a drawing that was used in the 1879 Car Builders Dictionary. It shows a standard gauge Summer & Winter Tiffany car with a flush-mounted roof hatch, lift ring and ceiling-

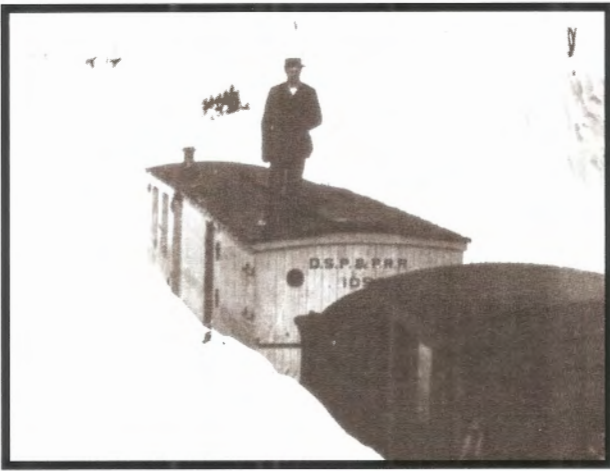
mounted interior ice racks.

A detailed examination of the sole remaining DSP&P Tiffany car and scale drawings show that there was simply not enough ceiling height in the narrow gauge Tiffany Reefers for overhead ice racks. Interior height of the DSP&P cars was only a little more than six feet.

Additionally, I’ve not found any facility on the South Park that could supply ice for rooftop loading. Blocks of ice appear to have been taken through the reefer doors and placed in ice bunkers at each end ... at this time, we simply do not know.

See page 8 for Ted Edgell’s plan for the 27-foot Tiffany Reefer, drawn in On3.

(Note: Mallory Hope Ferrell’s article will be continued in the January 2013 issue of “The Bogies and The Loop.”)



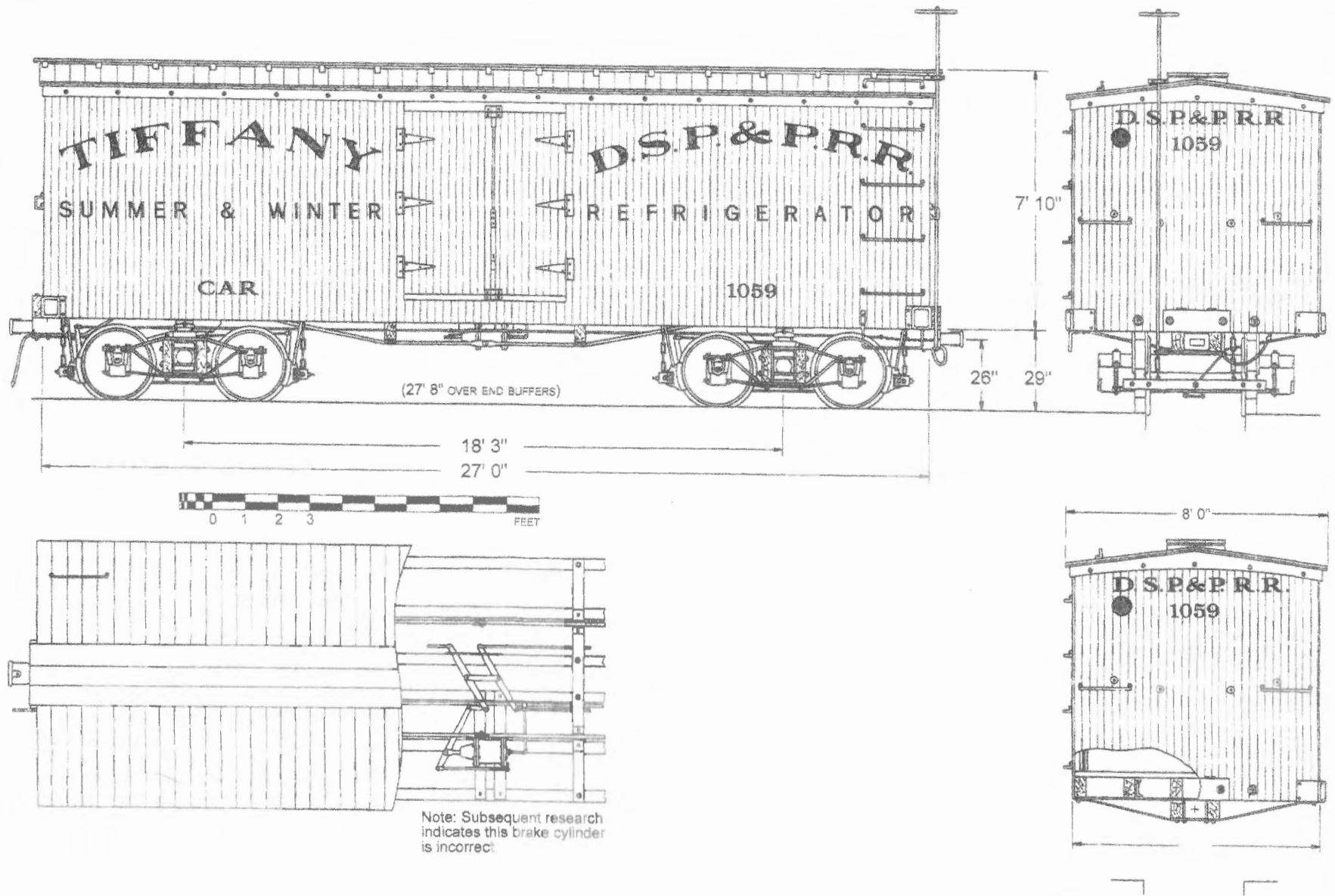
References:

- ◆ C&S Refrigerator Car Chronology, Darrell Poole, privately printed (1990)
- ◆ DSP&P Modeling Guide, privately printed (1998)
- ◆ UPD&G/DL&G Modeling Guide, Ron Rudnick, privately printed (2000)
- ◆ The American Railroad Freight Car, White, John H. Jr., Johns Hopkins University Press, Baltimore (1995)
- ◆ The Great Yellow Fleet, White, John H. Jr., Golden West Books (December 1986)

Special thanks to:
Ted Edgell and Dr. Robert Stears

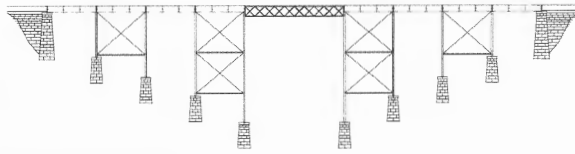
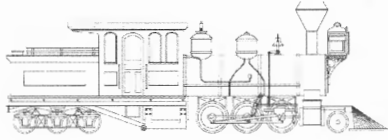


Above, detail of an 1883-4 Hancock scene showing DSP&P car No. 1059 (27 feet). Note the large air vent (dark circle at top) and horizontal grab irons on car end. The four small vents for the insulated jacket can also be seen (Joseph Collier photo). (Full view on pages 88-89 of The South Park Line shows locos and equipment still using Eames Vacuum brakes. Conversion to Westinghouse Automatic Air Brakes came in 1883-85.) Top, far left, another detail showing Tiffany Summer & Winter car No. 1057 (27 feet) a day after the "Woodstock Disaster" when a snowslide wiped out the entire town of Woodstock. Note that the reefer and the caboose appear to be the same color in this March 11, 1884 view. (Keystone-Mast Collection, UCR/California Museum of Photography)



Plan drawn by Ted Edgell in 1/4-inch scale

The Bogies and the Loop



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Volume 14 Issue 2, No. 54

Magazine of the Denver, South Park and Pacific Historical Society

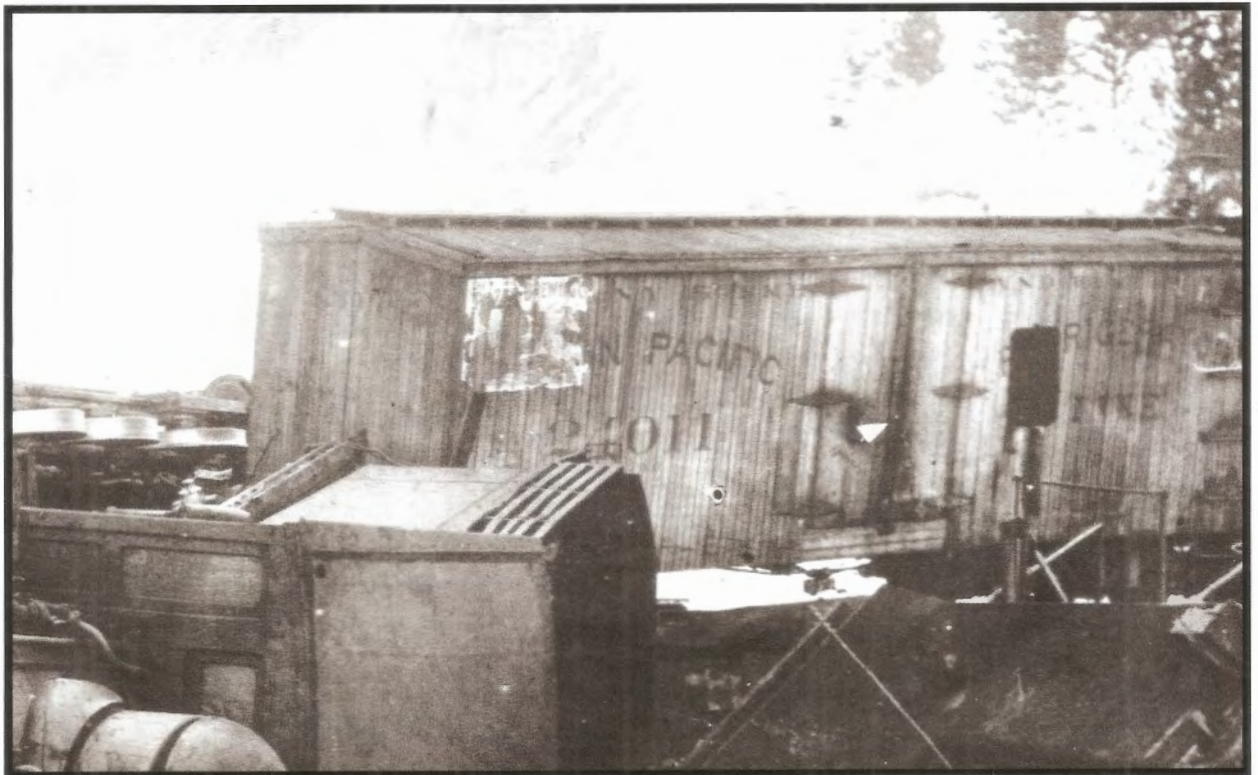
January 2013



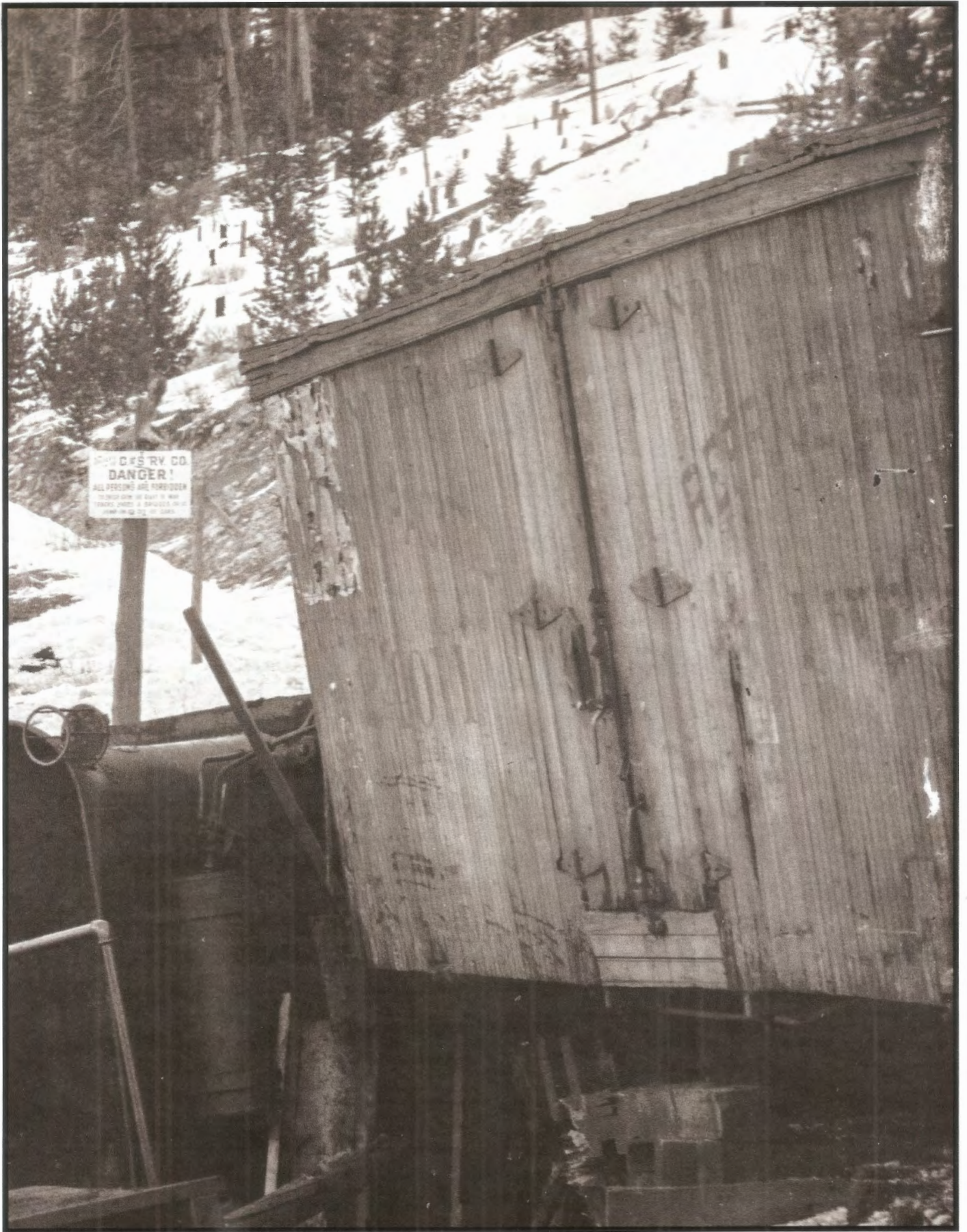
Photo courtesy of Mallory Hope Ferrell

Mixed train at Farnham

Alex Martin photographed DSP&P No. 70 and mixed train at Farnham, on the west side of Boreas Pass, in 1884. Note the 27-foot Tiffany Reefer No. 1062 in the consist. Mallory Hope Ferrell's examination of the history of the Tiffany Summer & Winter cars continues in this issue. There are lots more articles and society news as well. Enjoy!



Photos on these pages courtesy of Mallory Hope Ferrell
UP Tiffany No. 24011, originally DSP&P No. 559, a 26-foot Tiffany Reefer of 1880, was involved in this Colorado & Southern Boreas Pass runaway. The wreck occurred at Mile Post 105.6 near Washington Spur on Feb. 6, 1901. Note the diagonal end grabs and plugged vent on end of car. Car was scrapped in Denver on Sept. 10, 1901.

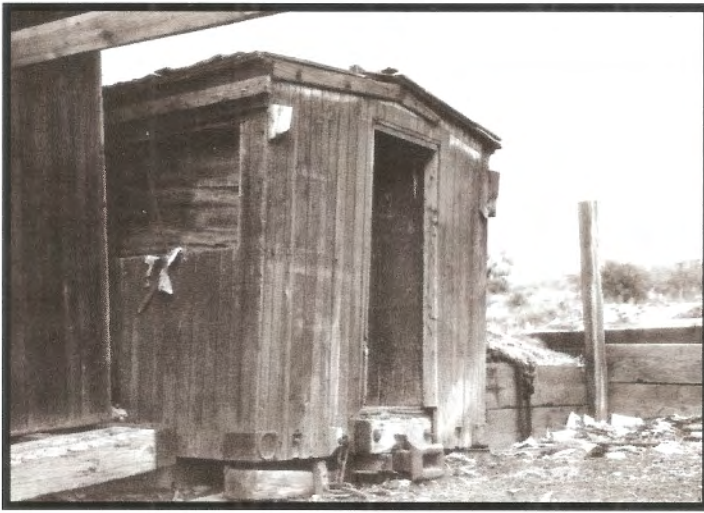


Page 6 — The Bogies and The Loop — January 2013



Photos on these pages by Dr. Clinton H Scott and courtesy of Todd Hackett Dr. Clinton H Scott must have made quite a few exposures of this Feb. 6, 1901 wreck. Mal Ferrell's prints of the wreck came from copies made of Patrick "Curley" Colligan's prints. "Curley" was the engineer on No. 70. "Curley" said the wreck was "near Mayo Spur." Other reports say Washington Spur. It was obviously Washington Spur, as the sign shows in the background. Mile Post 105.6 is mentioned, too. These two views show both 26-foot (No. 24011) and 27-foot (No. 24024) in the same picture — i.e., different door hinges, end grabs, etc.





Photos on these pages courtesy of Mallory Hope Ferrell
The last known Tiffany Reefer was used as a toolshed near the C&S Leadville Round House for many years. Car still had link and pin couplers, an indication that it was probably placed on the ground before 1903, when automatic couplers were required. Photo by Richard B. Jackson on July 9, 1937.

a Tiffany design. It is unknown where these cars operated or if this design was successful. The DSP&P is known to have operated LaMothe coal cars in the 1880s, but photos of them are rare. A number of LaMothe tubular "tin" boxcars and flatcars were also used by the narrow gauge Carson & Colorado Railroad.

The National Dispatch Refrigerator Line had 100 Tiffany cars in February 1880, with another 100 on order. This line was organized by the Grand Trunk, Vermont Central, Rutland and Boston & Lowell Railroads to carry dressed beef between Chicago and Boston. By 1881 the refrigerator line had 300 Tiffany cars in service.

By the summer of 1883 there were more than 1,000 standard gauge Tiffany cars in use. The Santa Fe had ten Tiffanys built by Missouri Car & Foundry in 1886 and by 1887 there were more than 3,000 Tiffany reefers in service across the nation, including 34 on the Union Pacific (Nos. 32150-32184).

Tiffany design seems to have lost favor by the late 1890s and their cars were no longer illustrated in the 1898 Car Builders Dictionary.

A Final Observation

In 1971 I was able to take photos and measurements of the last remaining Tiffany Reefer. This 26'-foot car body had been converted into a toolshed and sat near the Leadville Roundhouse. The car still had link and pin couplers, indicating that it had been out of service since before 1903. The car had been extensively modified with a door on one end. The opposite end had a board nailed over the end vent. I was also able to make a detailed drawing of the reefer door hardware, which was still on the car.

From my research over the past four-plus decades, I believe that the South Park's Tiffany cars did not have rooftop ice hatches or interior, ceiling-mounted ice racks. I do believe that they did have the provision for an ice bunker at each end of the insulated car.

Sometimes the answer to an historical question is simply "we do not know." In short, we still do not know the interior details of the South Park Tiffany Reefers, but the pictures tend to prove that they did not have rooftop ice hatches.



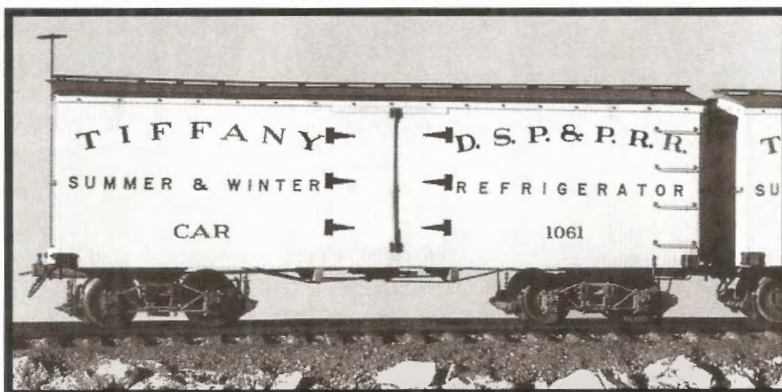
The Leadville Tiffany Reefer (toolhouse) remained into the early 1970s. This June 1969 view by John E. Robinson shows the unaltered end with a board covering the air vent. Note the elliptical door hinges on this 26-foot Tiffany car of 1880.



Detail of reefer door hardware on 26-foot (1880) Tiffany car at Leadville in June 1970. (John E. Robinson photo)



The Denver, Leadville & Gunnison ordered six new reefers from St. Charles Car Co. in 1898. They were delivered lettered for the "new" Colorado & Southern (Nos. 550-555) with Sam's (Simi-automatic) link and pin couplers, which later were not found to meet the new MCB (Master Car Builders Assn.) and Railway Safety Act requirements for a true automatic (Janney) coupler. These cars were later renumbered C&S Nos. 1120-1125 and all were gone from the roster by February 1930. (AC&F Archives, St. Louis)



Modeler Ted Edgell scratch built several On3 models of 27-foot Tiffany Summer & Winter cars. After extensive research, Ted painted the roof and underbody boxcar red and the sides white. The trucks and link and pin couplers are from Coronado Scale Models. (Ted Edgell photos)

See page 10 (following) for plans of the 26- and 27-foot Tiffany Summer & Winter cars, drawn by Dr. Robert Stears and Bill Meredith.

LETTERING DIAGRAM AND PLANS FOR 26 FT. & 27 FT. DSP&P TIFFANY REFRIGERATOR CARS

BOTH CLASSES OF DSP&P NARROW GAUGE REEFERS HAD SIDES & ENDS PAINTED WHITE OR LESS LIKELY YELLOW. THE ROOFS WERE A FREIGHT CAR BROWN OR TUCSON RED. LETTERING WAS BLACK. EXPOSED METAL PARTS WERE PROBABLY PAINTED BLACK OR POSSIBLY TUCSON RED. THE TWELVE 26 FT. REEFERS ACQUIRED C. 1880 PROBABLY HAD EAMES VACUUM BRAKES. THE FIFTEEN 27 FT. REEFERS ACQUIRED C. 1883 WERE PROBABLY DELIVERED WITH WESTINGHOUSE AIR BRAKES.

TIFFANY
SUMMER & WINTER
CAR

D.S.P. & P.R.R.
REFRIGERATOR
1063

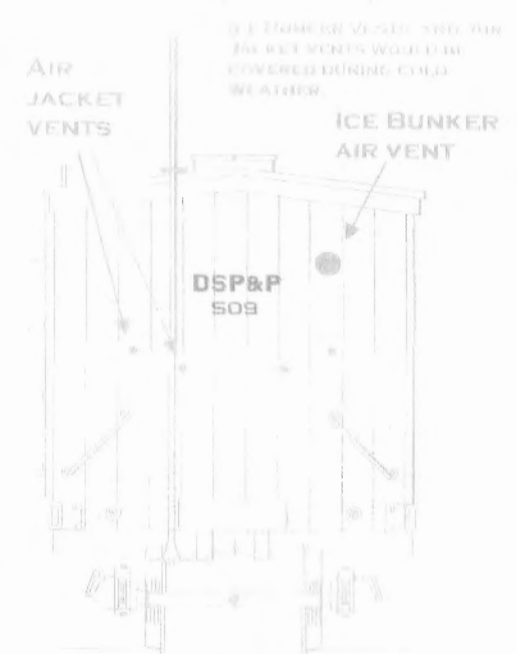
27 FT. TIFFANY REEFER C. 1883 1:48

TIFFANY
SUMMER & WINTER
CAR

D.S.P. & P.R.R.
REFRIGERATOR
509

26 FT. TIFFANY REEFER C. 1880 1:48

HYPOTHESIZED CONFIGURATION OF
 EAMES VACUUM BRAKES
 BUILT BY DSP&P SHOPS



Modeling a Tiffany Reefer

by Mallory Hope Ferrell
(Photos by the author)

For a number of years I had wanted to model the DSP&P's colorful Tiffany Summer & Winter Cars. However, accurate information was not readily available.

This lack of data started me on a multi-year search for information, which included consulting all known printed materials on Joel Tiffany's 1877 patented design as well as contacting as many knowledgeable individuals as possible. Additionally, I made a detailed study of all known photographs showing these interesting cars.

It was helpful to have been able to measure and inspect the last known Tiffany Reefer car body, which was used as a toolshed near the Colorado & Southern's Leadville Round House. This 26-foot-long car, built by the DSP&P's Denver Shops, is believed to have been originally No. 506. The car was drawn up by Charlie Bromer and the plans appeared in the March 1971 issue of *FINE LINES* (later the *NG&SL GAZETTE*).

Additional information was provided on scale drawings by Bill Meredith and Robert Stears of The Cimarron Works, who also produced a set of decals for both the 26-foot cars of 1880 (Nos. 505-511 and 555-559) and the 27-foot cars (Nos. 1050-1064) built by St. Charles Car Co. in 1883.

With the information on hand, it was time to start building a 1/4-inch (On3) model. The car body is pretty much a basic "house car" with reefer doors and no roof-top ice hatches. I used a set of Coro-

nado Scale link and pin couplers (CP-138), brass grab irons from Precision Scale (part 5623), Grandt Line stirrup steps (part 1090, no longer available in brass), PSC's brake cylinder, brake gear and brake wheel. The brass parts were blackened in A West "Blacken It" and applied after painting.

The exact Thielson-style, swing bolster, arch bar trucks used on the Tiffany Reefers are not commercially available. These trucks have the unique oval holes in the transom, between two large beams that form a "box" for the swing bolster itself. They are shown in Ted Edgell's plan used in the last issue of "The Bogies and The Loop".

I decided to "do it right" and build the correct trucks. After all, I wanted to make the car as accurate as possible. So, I made a pattern and cast duplicate sideframes in a RTV rubber mould. For those not wishing to make their own trucks, Coronado Scale Model's TR-135 truck can be used; even though not completely correct for the Tiffanys, they provide a simpler alternative.

My reefer was sprayed with several coats of Floquil paint. The roof and underbody are Boxcar Red, car body is white and trucks are Weathered Black. After several days of drying, the blackened "iron work" was installed in pre-drilled holes and Cimarron decals applied.

After masking wheel treads, the trucks were painted Weathered Black. Then the trucks and underbody were lightly weathered with a spray dusting of gray. An overspray of flat lacquer "killed" any sheen left from the lettering.

The finished model was photographed and put in a glass display case ... my many-year quest was finished.

