



MLS MasterClass - 2002

Build a 2-6-6T / 0-6-6T Mason Bogie An Adventure in 1:20.3

By David Fletcher

Dedication.

I dedicate MasterClass 2002 to my dearest Mummy. She raised me, and encouraged my model making efforts throughout my life. Even at the destruction of her own kitchen benches and floors with my knives and paints, did she encourage my passions. She was a professional musician, scholar and mother. She was the finest person I ever knew, and I'm glad to have told her my feelings for her before she died. She was diagnosed with secondary liver cancer in December 2001, and the year that followed was traumatic, but all the while she continued her music and finished writing her PHD - a thesis on the life of the 1700s Italian painter 'Tiepolo'. Over 30 years we traveled to many parts of the globe together, riding trains on one day and looking at the paintings of Tiepolo the next. She enjoyed my journal articles, the MasterClasses and thought the class members were a 'riot!' and I enjoyed reading her many articles about Italian Artists. She also actively helped in the construction of our garden RR. We were never far from each other and I was with her when she passed on.

Rest in peace my dear Mummy

Joy Gwyneth Fletcher

27-01-1940 to 17-12-2002



MasterClass-2002

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Chapter 4 - Of Mice and Cabs

Background

Welcome back to the Mason show...and onward we march. This month we get to building the cab. This can take several forms. You can purchase our exclusive FH&PB Mason cab kits and build them per the FH&PB instructions. You can totally scratch build your cab with fully sliding and swinging doors and windows. Or you can scratch build your cab with doors and windows fixed into place, making life simpler, and creating a stronger cab while you are at it.

For info about the FH&PB MasterClass 2002 mason cab kits, refer to this web site:

<http://www.nmia.com/~vrbass/fhpb/>

Background - This month George Sebastian Coleman is back to tell us something about the Masons of the South Park and the complexities of the Mason, South Park cabs. Big thanks to George for this chapter and assisting our understanding of this complex Mason cab.

Construction - On to the cab construction. Those who have the FH&PB cabs can forward through most of this chapter, stopping only for some of the super-detailing tips appropriate for both kit built and scratch built cabs. We meet up at the end to talk about how the cab will be fixed to the deck.

MC2002 Product Development

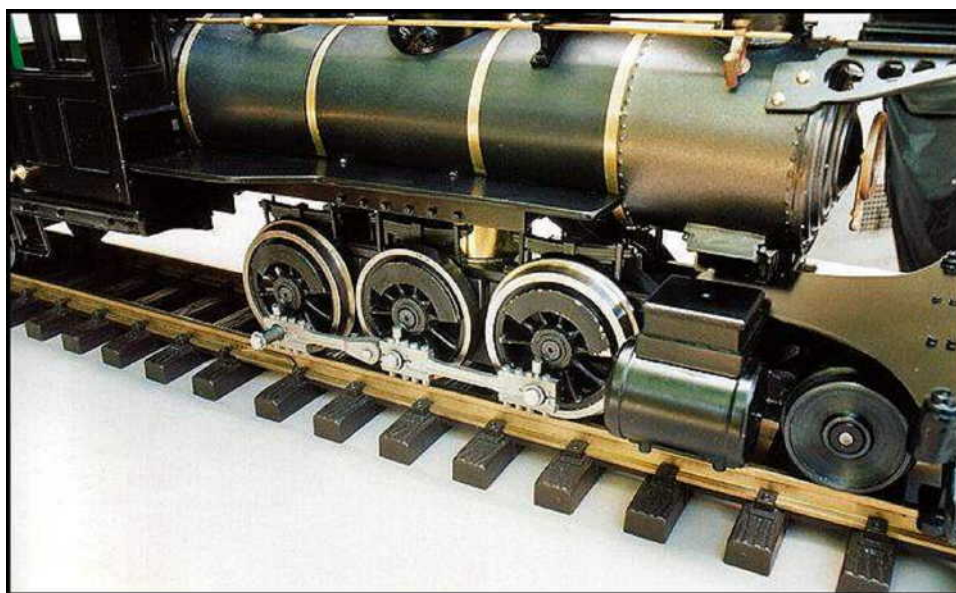
Fall River Productions:

Keep an eye on the development of the headlights at Fall River Productions. These are outstanding in detail, accuracy and are appropriate to our model. John Clark will keep this page updated to keep us in the loop.

<http://www.fallriverproductions.com/>

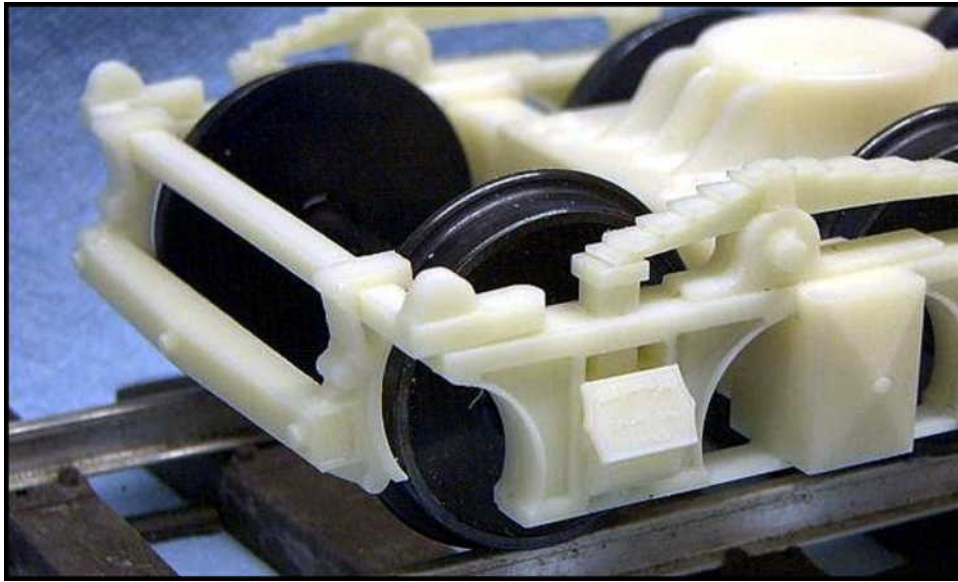
BBT & CSC Innovations:

Chuck Meckem at CSC Innovations has been doing some downright unbelievable work for all of us. Of note are the fully cast, highly detailed metal side rods that will be fitted to your BBT Mason chassis as standard, Chuck developed the masters for these side rods, under Barry Olsen's instruction. Casting is in Magnesium Bronze. We have a great team here- Barry for drawings, tech help and project management. Chuck Meckem for master patterns and Dennis Mashburn for outstanding casting work.



The BBT/CSC innovations cast side rods...oooh ahh...NICE!

Chuck and Barry have also finished the Mason 6 wheel tender truck masters for our BBT chassis. Now, these trucks are incredible. Fully detailed to the last bolt! These will also be cast in Magnesium Bronze and will contain electrical pickups and option for rear coupling mount.

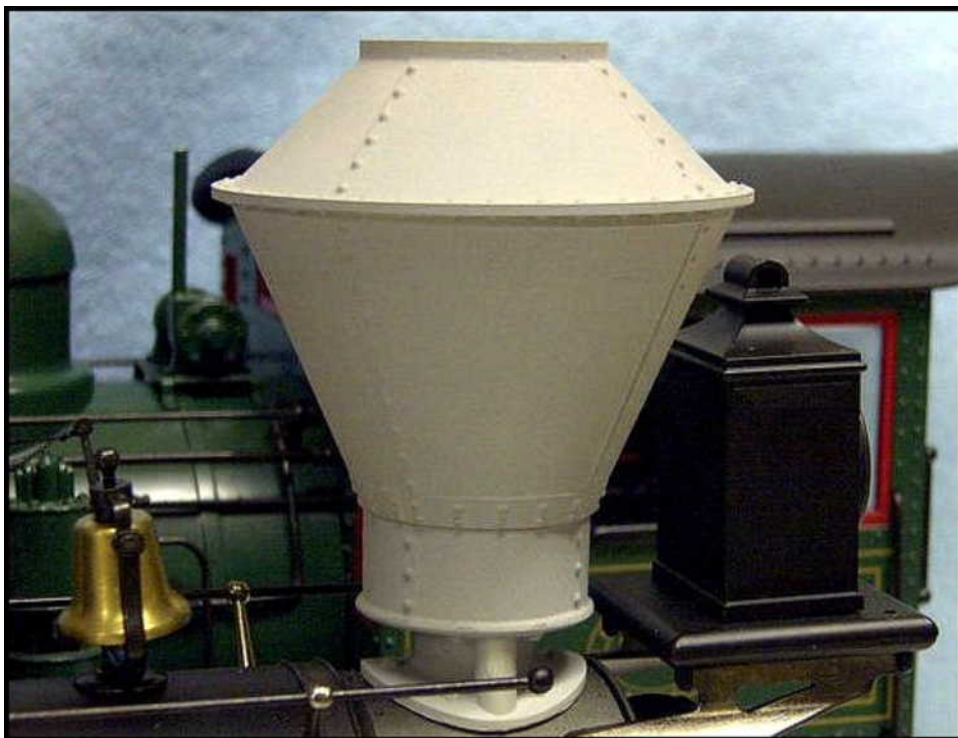


A close up of the Mason Tender truck master, developed by CSC Innovations and BBT.

Barry and chuck have put many long hours into both new products.

The NPC Smoke Stack:

Finally Chuck at CSC has been developing new products for his own line of locomotive detail parts, and the latest is a real corker! Behold the new SPC/NPC stack developed for Bachmann's 4-4-0, South Pacific Coast #3. This stack is prototypical for many Californian roads, including the NPC, owner of the Bully Boy and San Rafael Mason Bogies.



The new CSC Innovations SPC/NPC stack... Good for use on Bully Boy!

This new stack is absolutely perfect for use with the 'one the road' version of Bully Boy, option 6. The stack base curvature will also match our Mason smokebox diameter from chapter 3. The Price is very reasonable for such a highly detailed part. Please check the CSC web site for prices and availability.

<http://www.cscinnovations.com/>

The Mason Bogie Archive

Keep reviewing the Mason Bogie Archive.

<http://www.ironhorse129.com/>

The site is constantly being updated as more photos of Masons come in. Keep searching your books, old photos and magazines, and send us any Mason Bogie photos you might find that don't appear to be in the current Archive. Also send us pictures if your images are clearer than the many we have in the current Archive. E-mail the images as a jpg scan; 300 bit-per-inch images preferred.

The MasterClass Forum

Please direct your discoveries, discussions and questions to our MasterClass and Articles forum at Mylargescale.com.

http://www.mylargescale.com/forum/forum.asp?FORUM_ID=46

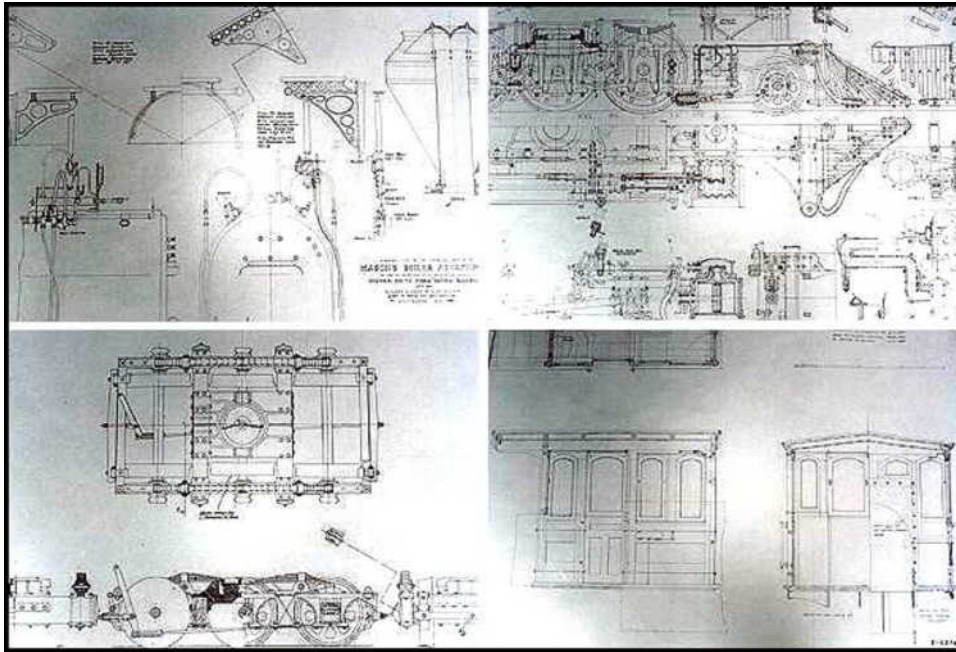
The Ghosts of Mason Bogies Past, Present & Future

The Art Wallace Legacy

You've all heard his name. His is synonymous with the name 'Mason Bogie' because I don't believe there is a living soul who has done more, gone farther, or looked harder than Art Wallace, in his quest to unravel the mysteries surrounding the Mason Bogie. Everything we know about the Mason today has been influenced in some way by Art's research. Nearly every published drawing ever done of a Mason is likely to have Art's name on it, and even some that do not have his name have been copied from Art's drawings! His drawing of the 'light' 2-6-6T published in the Sept 1960 Model Railroader is a classic. It has been reprinted, copied, traced, and plagiarized for many years!

Art's quest spans 40 years and today we build our 1:20.3 models from his very drawings. He has published drawings of every type of Mason used on the South Park as well as various 0-4-4Ts. His first drawings date to sometime in the 1950s, his most recent are from the mid 1980s. With every drawing done, more is clarified and as such a comparison of early to more recent drawings will reveal inconsistencies. That is the nature of research and is also a very clear indicator that we should, wherever possible, follow the latest research and drawings.

The most recent set of drawings are the most complete ever done of a Mason Bogie. These are 'reconstructed' engineering drawings of the South Park 2-6-6T, both light and heavy types. There are 7 large drawings to the set. Each drawing illustrates one of the major sub assemblies of the Mason in amazing clarity and detail, at a scale of 1:8. Details you could never extract from photos. This is the set of drawings from which we are creating our Cad drawings for use in the MasterClass. The drawings are not only incredibly informative about the world of the Mason Bogie, but are a visual delight as well. Here is just a glimpse of Art's drawings, which are being used in the construction of our MasterClass Masons.



The real proof of the accuracy and workability of these drawings can be seen in the number of Live Steam models that have been built from the set. The locomotives all function exactly to the details in the drawings and they work! Lets take a look at some -



This first 2 1/2" scale locomotive was brought to us by Steve Stockham, and as he explains:

Hey guys! I received an e-mail from Don Hazen, a gentleman who noticed that I was in the Mason Masterclass as well and wanted to give me a "heads up" on a really beautiful 2 1/2" scale live steam Mason Bogie that is on display in the Fine Arts Bldg. at the Kansas State Fair in Hutchinson. Since I was working in Hutch that next day I grabbed my camera and went to see it. I'll let the pictures speak for themselves, but it is a beauty!!! 4500 man hours and ten years to construct! It truly is an inspiration. I haven't learned everything about it yet but the gentleman that created this locomotive has a track out at his place to run it on.

This locomotive was built from Art's reconstructed engineering set and represents the South Park 'Heavy' 2-6-6T type. Photos by Steve Stockham.



The Ulin Locomotives

This next locomotive is another 2 1/2" scale locomotive and is equally impressive, again built from the same set of drawings. This 'heavy' South Park 2-6-6T was built by Richard Ulin as a commercial venture. These outstanding photos were directed to us by Tom Farin:



Ulin's Mason bell rig... if only we could have that on our models!!! Faithfully reproduced from Art's drawings.



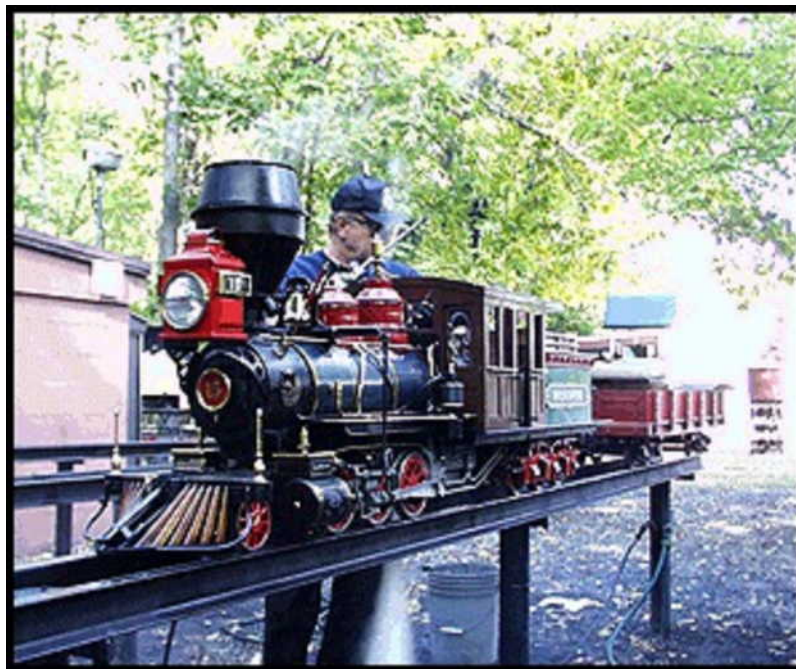
The tender truck.

Richard Ulin's web site covers some info about the locomotive, more photos, and options for purchase! His web site is as follows:

<http://www.et-wnc.com/ulinx.html>

The Kurtz Locomotive

Another heavy 2-6-6T built from Art's drawings, again 2 1/2" scale. This one was built by Paul Kurtz.



You will find more photos of the loco in operation at this web site:

<http://www.steaminpriest.com/gallery/njls.2001/njls.2001.07.html>

... and another 2 1/2" scale Mason, another fine model. Anyone know something about this one?



Rishon Locomotive Works

Finally lets take a look at one more model based on the drawing set by Art Wallace. This loco is a current offering by Rishon Locomotive works of Australia. This is a live steam 1:20.3 scale mode of Breckenridge...also a 'heavy' South Park 2-6-6T.



For more information on the Rishon Locomotives, refer your questions to:

Sulphur Springs Steam Models Ltd.
PO Box 178
St. Peters, MO 63376-3401
Phone/fax: 636-272-3401
e-mail: SSSMODELS@aol.com

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8 Ewandale Cl.
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Background

Mason Evolution on the Denver South Park & Pacific R.R.

By George Sebastian-Coleman

In my first article I discussed the general engineering strides and practices of the Mason Machine Works and the development of the bogie design. In this article, I'll address as-built variations within the South Park bogie classes and then cover the general evolution of the bogies on the South Park, highlighting some significant variations along the way. At the end there is a general summation of the "phases" in South Park bogie appearance.

As-Built

The Union Pacific renumbering and reclassification of 1885 placed the South Park bogies into two classes of 2-6-6Ts and one for the 2-8-6Ts. In addition, it placed the former Kansas Central 2-6-6T (DSP&P no. 5) in its "oddball" class (which included one-off engines from all the different roads). Although a reasonably accurate division, the Union Pacific's division of the 2-6-6Ts by weight masks some subtle variations between the engines in each class.

Stacks

The *Oro City*, DSP&P No. 3, may not have been shipped on May 20, 1878, with a small diamond stack of the type shown in the builder's photos of no. 4, the *San Juan* and no. 15, *Breckenridge*. The Mason records for No. 3 indicate the stack type as "coal burner, Fontaine." If it was shipped with this small diamond stack, it was the only Mason ever to arrive on the South Park so equipped.

The *San Juan* file sheet indicates “none sent.” for the stack. Beginning with No. 6, the *Ten Mile*, the records show all engines as having Nesmith stacks; this includes the Breckenridge whose tiny diamond stack in the builder’s photo has so often been reproduced in model form. The record for no. 5 (built as Kansas Central’s no. 5, the *L.T. Smith*) indicates various alterations to make it a South Park engine but is silent on the stack; my presumption is it was shipped with no stack since it follows the delivery of *San Juan* (none sent) by 3 months and precedes the *Ten Mile* (first Nesmith) by 2.



The beautiful 'San Juan', photographed at the Mason plant with a small diamond stack called a 'Fontaine Stack'. The spec sheets show this loco actually delivered to the South Park with no stack actually fitted. Mason would never let possible ugliness get in the way of a good photo if his locos!

However, even if No. 3 shipped with the Fontaine stack, it seems unlikely it was ever mounted on it in Colorado. All early in-service photos show the no. 3 with a Nesmith stack, and it seems likely it received the Nesmith when the shop crews first set-up the engine. What’s most interesting about this is that William Mason obviously didn’t care for the aesthetics of the Nesmith stack, so despite the fact that by the time he shoots the builder’s photo of the Breckenridge he had already built and equipped 9 South Park bogies with Nesmith stacks, he took that perhaps too famous builder’s photo with a stack more to his taste, thus unknowingly condemning modelers to swapping out the stacks on their brass imports for production run after production run.



The 'Breckenridge' posing for a photo at the Mason plant, again the loco has been equipped with a 'Fontaine stack' for the purpose of the photo. The loco was actually delivered to the South Park with a 'Nesmith Stack'.

Draft gear

An interesting experiment was tried on the San Juan and Ten Mile. While the other engines had a conventional drawbar pocket bolted to the frame at the rear of the tender, numbers 4 and 6 carry the notation “Draws from the centre of Tender truck 22” above rail.” In other words, a truck mounted couple as often found on model equipment. Presumably the goal was better operation on tight curves and, no doubt this was true as long as you were moving forward. However, the railroad found, as have so many modelers, that this arrangement is prone to derailment the minute you try to go backwards. Given that number 6 was delivered on April 8, and the Gunnison on the 23rd was delivered with conventional drawbar, either, there was little confidence in the experiment to start with, or the ill effects so obvious that a change was ordered almost immediately. In any case, presumably both engines were converted to conventional drawbars almost immediately.

Tenders

One of the most visible changes obscured by the 1885 classifications is tender length. Of the “light” bogies, class DH1, engines 3, 4, 5, and 6 were built with tenders 10’-6” long, 6’-7” wide and 38” tall for a capacity of 1,250 gallons, while 7 through 13 and DI1 9 and 14-22 (the “heavy” bogies) had 11’-6” tenders with a capacity of 1,400 gallons. While numbers 23 and 24, the last two of the DI1s, had 40” tall tenders, raising their capacity to 1450. Given the miniscule change in capacity produced by the change in height and that the 2-8-6Ts also had this dimension, I suspect this change resulted from a shift in the stock size of sheet metal rather than an engineering choice.

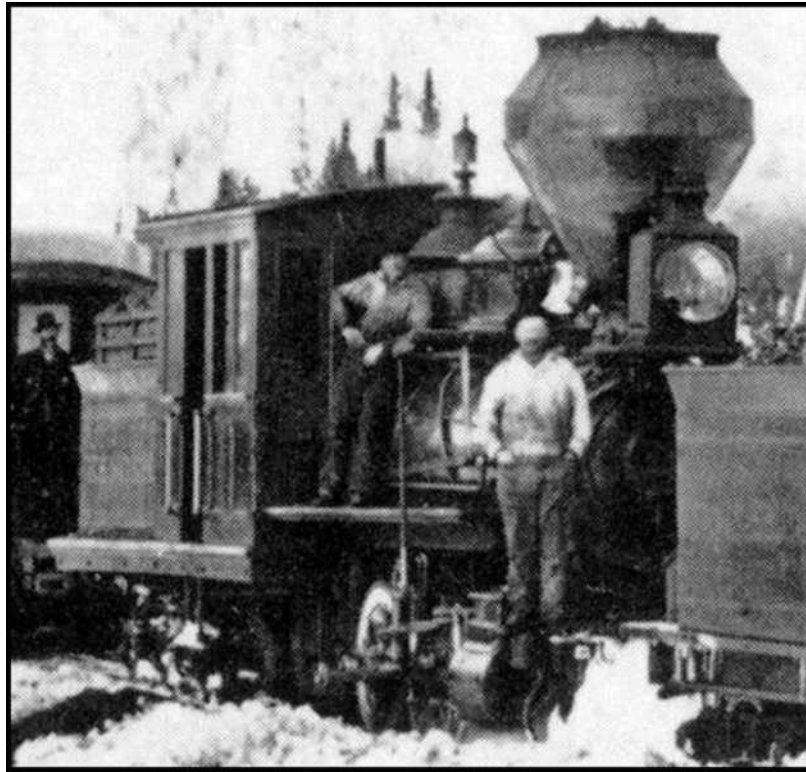
The tender frames on all the bogies were the same length, which meant that 3-6 had a small shelf behind the tender that was used for a toolbox.

Boilers

The “light” bogies were built with a nominal 38” boiler—first and second courses are 38” diameter (without jackets) with a crown over the firebox raised 6”. Most of the “heavy” bogies have a 42” boiler, raised 2” at the crown over the firebox. Thus the firebox area of all these engines was identical, the raised crown producing a pronounced “wagon top” on the “light” bogies and a very subtle one on the heavies. However, numbers 23 and 24 Number 9, the Kenosha, was built with 44” diameter boilers, eliminating the wagon top altogether. Thus despite the break into just two classes, a break into three would have more accurately represented the 2-6-6T bogies, as the 23 and 24 had both larger boilers and tenders than any of the others.

As you may have caught in the paragraph on tenders, the shift to the heavier design didn’t happen perfectly sequentially. For some reason number 9 was built in May of 1879 with the new, larger boiler. Yet it would be followed by four more small-boilered engines delivered in August and September. Number 14, the next 42” boilered engine was delivered in October only a couple weeks after the last light engine.

I surmise the 9 was a “sample” produced by Mason to see if the railroad liked the new design. However, this would seem more likely to me had the no. 9 been followed immediately by the other light engines and then the two-month gap preceded the next heavy engine, However, it may just be that Mason proceeded to build four more boilers over the summer of the smaller design before finally receiving confirmation to proceed with the larger design.



The DSP&P #9 'Kenosha' - first of the larger boilered Masons.

Evolution

Number 9 provides the perfect transition from as-built variations to evolutionary changes. The *Kenosha* is one of the few Masons for which we have an in-service picture that clearly shows the original paint scheme. The picture is taken at Hancock and is remarkable for several points. It is the only picture that shows a Mason double-headed with the Mason as the road engine not the helper. Serving as the helper is Baldwin no. 56, also in pristine original paint. The year is surely 1882 as we are at Hancock but we do not yet have air brakes. But the most remarkable aspect of this is that the *Kenosha* has a “modern” square-windowed cab.

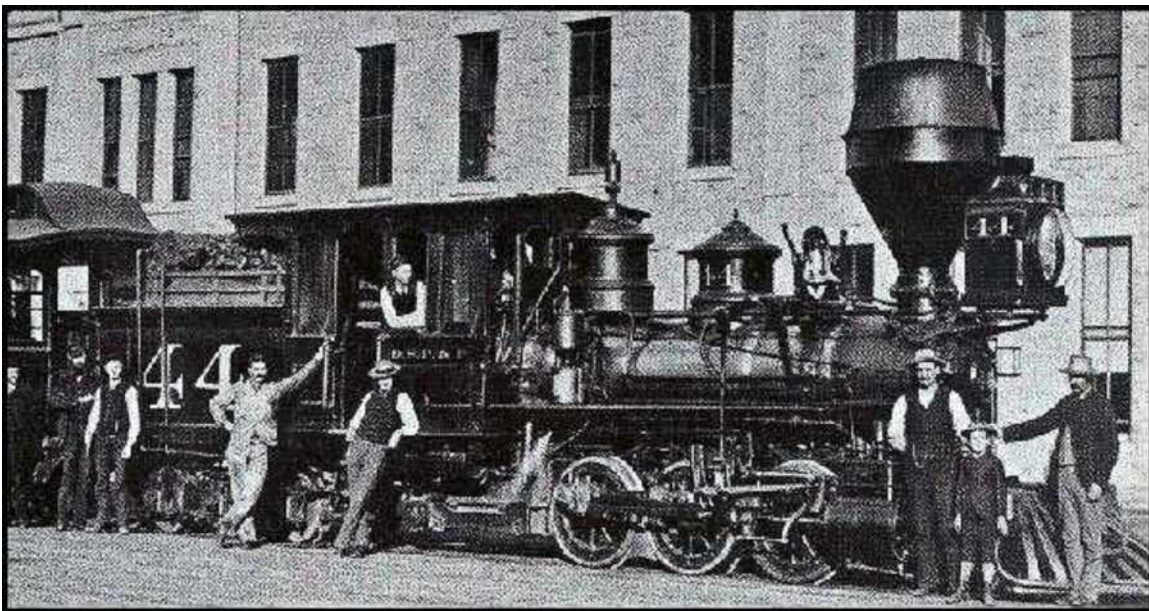


The DSP&P #9 'Kenosha' double heading with a DSP&P 2-8-0, Baldwin #56.

Brakes

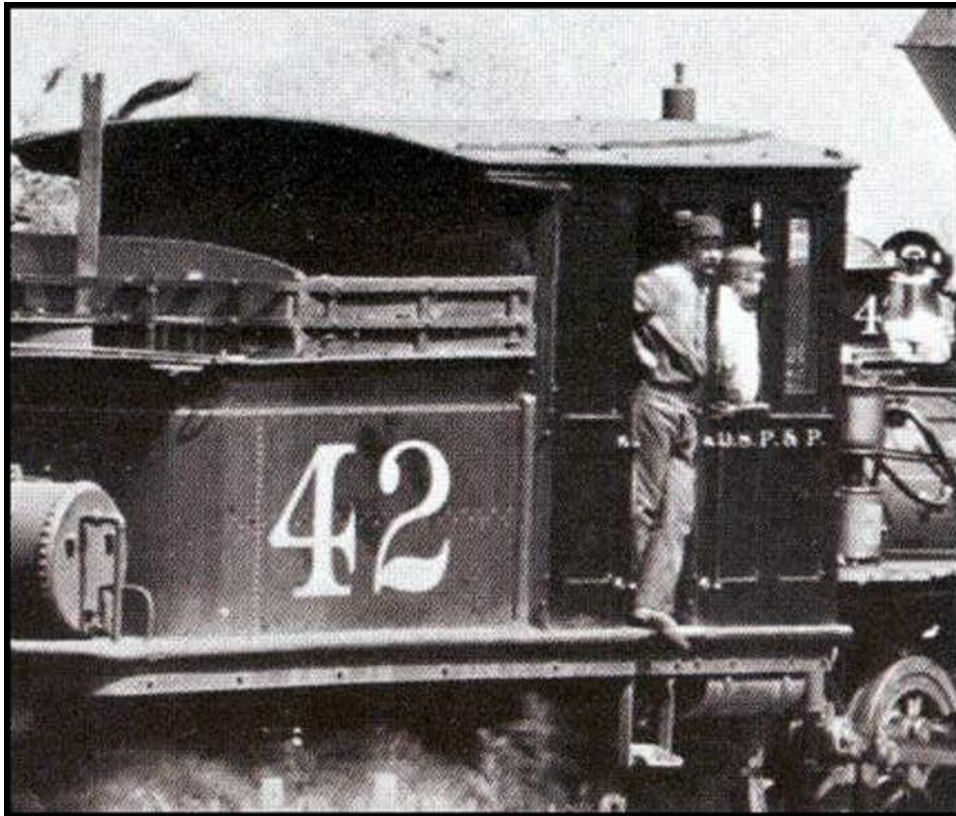
All the bogies were equipped with the Eames vacuum brake at delivery. In the winter of 1883 into the spring of 1884 the South Park converted to Westinghouse automatic air brakes (not straight air). The Cooke Consolidations delivered at the end of 1883 were the first engines delivered with air brakes installed, followed by the Cooke Moguls in February of 1884. During this same period a large group of bogies was transferred to the Utah & Northern. In Poor's DSP&P, South Park engineer William Wendell provides a rather long list of these Masons: 3-7, 10-16, and 20-22. If all the engines listed here went to the U&N, photographs show that several came back quite quickly. My own thinking is that all these engines went to Denver, where they were converted to air brakes. Some, maybe all or most, were then shipped to the U&N, while the others returned to duty. (An interesting sidelight to this is that the preponderance of bogies that reappear on the South Park were the "light" bogies. Whether this was because the U&N needed the heavier power, or South Park crews actually preferred the lighter engines and pushed the heavier engines off will probably never be known.)

The change to air brakes meant significant modifications to the bogies in the form of extensions to the tender frames to accommodate the main air reservoir. I suspect that the first Mason to be converted, perhaps the first engine to be converted, was no. 8, *Lake City*. A photograph of the engine as no. 44 taken in front of the Denver depot shows the air tank mounted above the coal bunker on the tender--a position must have made coaling up a challenge. Most of the Mason's received about a two-foot extension providing a rear deck to support the reservoir.



The DSP&P #44 with the air tank mounted above the coal bunker. This loco is modeled as 'Option 3' in Masterclass 2002.

Presumably, numbers 3-6, which had the short tenders, received only a one-foot extension. However it's possible that rather than develop a second set of replacement parts these engines received a two-foot extension as well. Then the question we must ask is whether they also got extended tenders or perhaps simply held onto their rear toolboxes. The only engine of this group with pictures is no. 42—no doubt the most photographed bogie because it W. H. Jackson's photo train in the late 80s. Even with all those photos, I can't tell for sure which way it went.



A rear view of the #42 (formerly DSP&P #6 - 'Tenmile'). The Air tank shown in them more typical location on an extended rear deck, behind the tender.

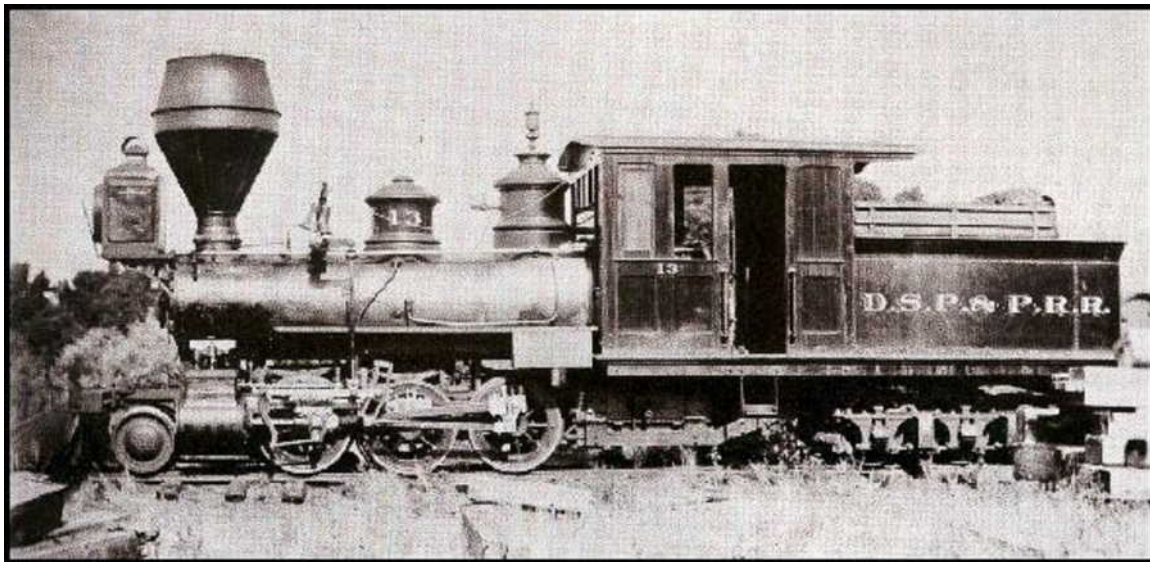
Cabs

The arch-windowed, peak-roofed cab that appears in the builder's photos and most early in-service shots obviously comes right from the builder. The assumption is that the square-windowed, arched-roof design was built in the South Park shops as a replacement for the original cabs as they were damaged or simply wore out with age. However, the shift to a square-window design is not unique to the South Park; it appears on virtually every Mason eventually, and may have been original equipment on some. It's possible therefore that the cabs were produced by Mason, or at least designed by them.

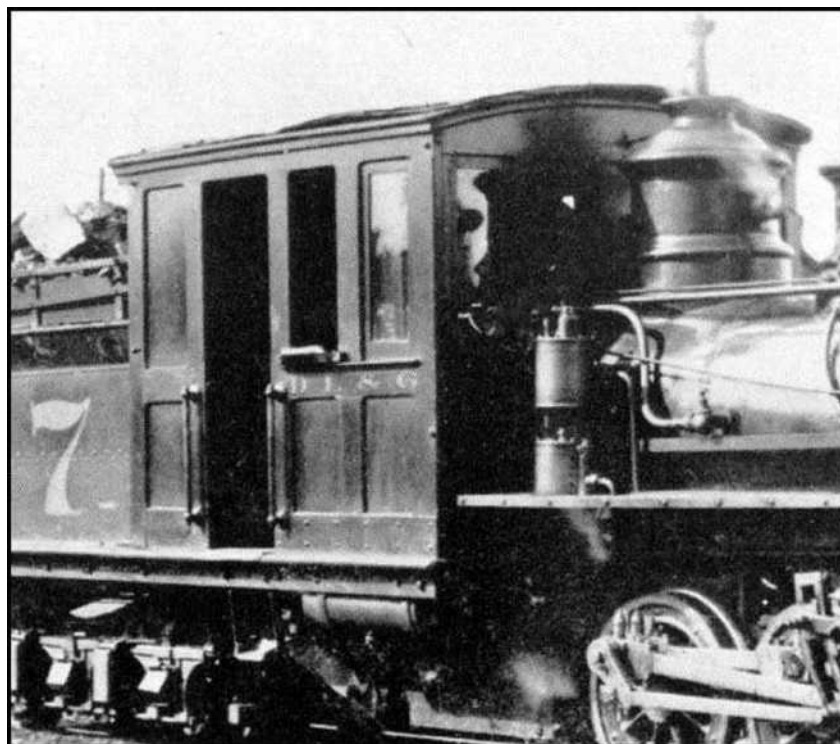
Moreover, I think it possible that the 9 (Kenosha) was delivered with the modern cab as a sample, just as it also was the first with the larger boiler. That all the subsequent bogies were delivered with the arch-windowed cab may simply reflect that while management liked the extra tractive effort of the bigger boiler, it still liked the looks of the arched-window cab. If it was so delivered, however, it obviously provided the perfect pattern for the replacement cabs, whether home built or bought from Mason.

Those replacement cabs appear to happen very quickly, but the scanty photographic evidence may be misleading. What is true is that with one exception, all photographs of Masons with air brakes show square-windowed cabs. The only known photo of an engine with an arch-windowed cab and air brakes is no. 44 in front of the Denver depot in the late 80s, long after air brakes and long after any other photos of engines with arched-window cabs.

While we have many early photos of Masons at work as the line is built, the number of clearly identified photos circa 1884-1885 are quite rare--the photo of number 13 with a Congdon stack, square-windowed cab, and air brakes being one of the few. Photographic evidence picks up again in the post-1885 renumbering, but even then shots of bogies are pretty rare, so it's possible that other engines received air brakes and retained their arch-windowed cabs for a few more years.



The last change to bogie cabs was the chopping off the roof overhang on no. 57 sometime after 1885. Whether this was done to any other engine is impossible to say. Certainly it must have made coaling up (whether with a chute or shovel easier, but I still suspect this was simply a result of damage (perhaps dropping a coal chute onto the cab roof) and not a purposeful modification.



The rear roof of the DSP&P #57 cut off.

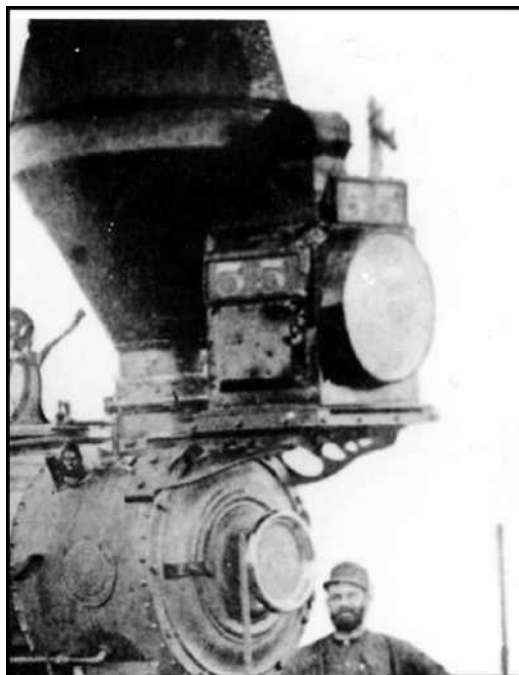
Headlight brackets

Bogies were shipped with two styles of headlight brackets and the builder's photos show both variations. The Mason bracket is interesting because it is bolted to the front of the smokebox and not to the sides as we are used to seeing on most other engines.

The ornate bracket used on the Breckenridge, 1879.



Beginning around 1885, in-service photos show a third style that looks almost as if the large bracket as used on the *Breckenridge* had had the portion of the bracket below the large hole simply sawn away. Indeed, it's possible they did just that, but it's more likely a new pattern was made and brackets cast. In any case this change is brought about by the addition of the Union Pacific classification- and marker-light holders applied to the smokebox front and rear corners of the tender. These cage-like devices held a standard brakeman's lantern. Some bogies eventually received the more common style of bracket bolted to the sides of the smokebox, most likely these were late replacements for broken parts.

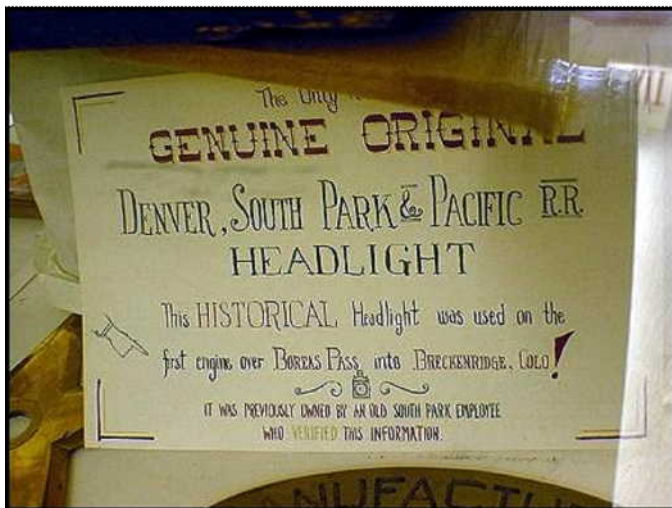


The most common headlight bracket used on the DSP&P after the UP ownership.

Headlights

Bogies originally were equipped with a rather small oil headlight. There is a headlight at the Colorado Railroad Museum that is ostensibly from the first engine over Boreas pass. As the note on the headlight declares, that engine is not identified, but I think this may be an original Mason headlight. It is only about 12" deep, whereas most of the castings out there for oil headlights are almost two-feet deep (front to back). The shallow headlight was a necessity due to the dimensions of Nesmith and Congdon stacks whose huge cones impinge quickly on headlight space, as modelers who have tried to put stock headlight castings on models quickly discover.

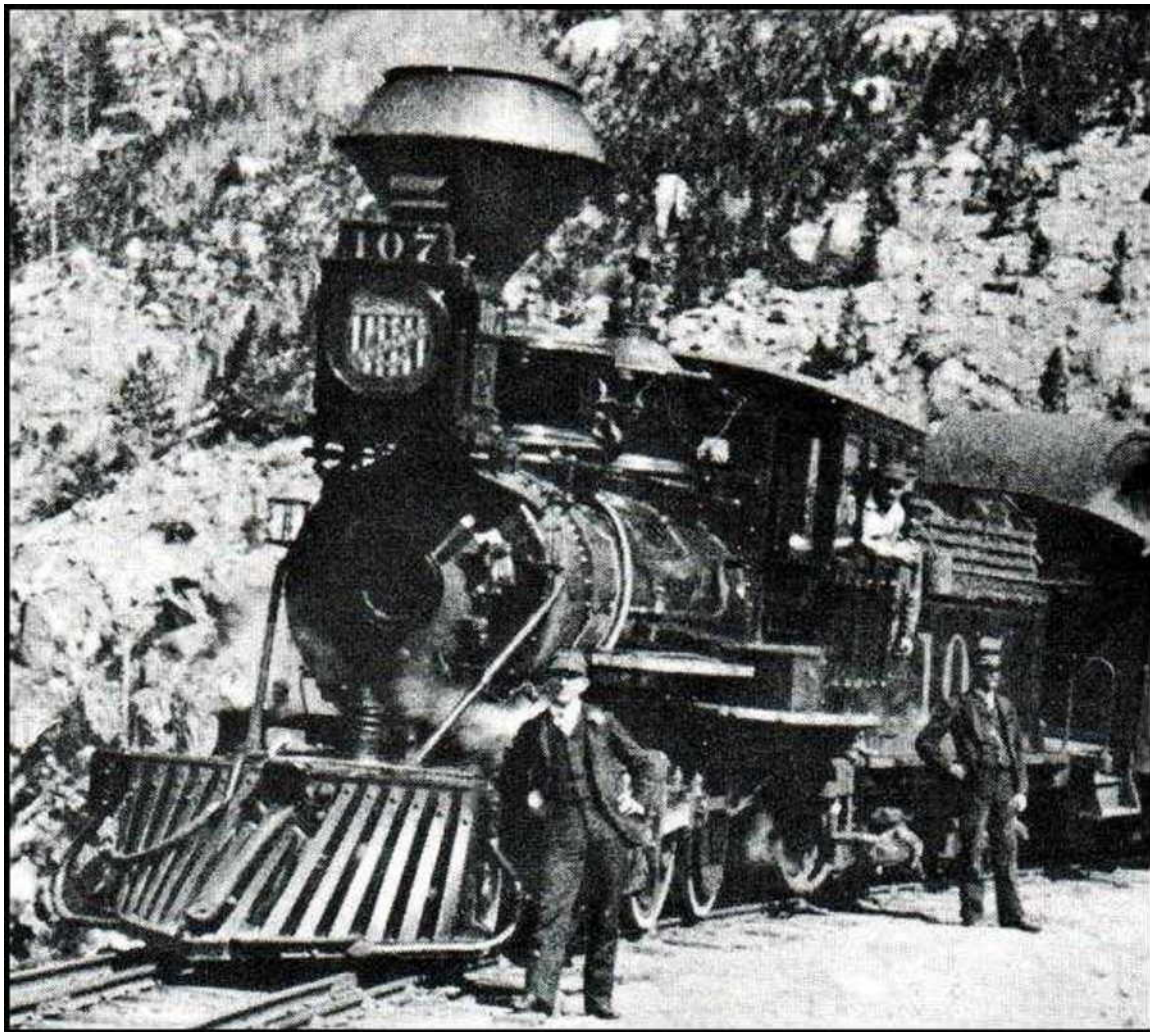
The first headlight to ride a loco over Boreas Bass, now preserved at the Colorado State RR Museum. It is possible the loco this lamp was fitted to was a Mason Bogie. Photo courtesy of Dennis Kliesen.



The note that today stands with this early DSP&P headlight. Photo courtesy of Dennis Kliesen.

Photos show that in order to install larger headlights the South Park made many modifications to headlight brackets, such as eliminating stanchions supporting the platform the light sat on, so as to lower the headlight, to apparently mounting the headlight directly to the supporting arms of the bracket eliminating the platform altogether. The desire for larger headlights was probably mainly a fuel issue. The original small lights probably too often ran out of lamp oil out on the line, requiring the fireman to have to refuel and relight the light either while underway or forcing the train to stop—neither option being particularly welcome.

At least one photo shows a Mason with a headlight with a scene painted on its side. This was most likely the work of the engine crew and not a Mason design element. Until 1885 the lights, large and small, were quite plain. But at the same time they received the marker-light holders the headlights were either replaced or modified to include lit number boards on each side and above the main headlight lens. In addition, some or all of the headlight lenses on UP lines had the UP shield etched into the headlight lens (perhaps painted).



The UP herald seen printed on the lens of the box headlight of this UP owned Cooke 2-6-0. This loco was originally owned by the Colorado Central, which later fell into the UP organisation of Colorado roads, including the DSP&P. Both lines ultimately become the Colorado & Southern in 1899.

Stacks

The short and sweet:

Nesmith:	1878-1884
Congdon:	1883-1890
Diamond:	1886-1900

The McClellan stack sometimes referred to as a “sunflower” or “pancake” 1890-1905. There are no known photos of a bogie with a McClellan stack, but I include it here because it was in use during the bogie era.



Nesmith: 1878-1884

(Some overlap in dates with other stacks).



Condon: 1883-1890



Diamond: 1886 - 1900.

(UP and C&S eras - not photographed on any Bogie locos.)



McClellan: 1890-1905

The end dates for all stack designs are approximate. I’ve never seen a Nesmith that I could absolutely date to 1884, but I wouldn’t bet against it. However, it would seem that engines received the new Congdon stack when they were converted to air brakes. Thus sometime in 1884 would have seen the last of them. Similarly, there are many photos of engines with Congdon stacks that can only be dated as “post 1885” because they’ve been renumbered but are otherwise indeterminate. I have however never seen an engine lettered Denver, Leadville and Gunnison with a Congdon stack, so 1890 seems the likely end of that design. The diamond stack never seems to have been adopted as a standard design, but it appears on bogies (and other engines) sometime after 1885 and probably was the last stack ever used on them. The sunflower or pancake stack first appears around 1890 (the earliest I can confirm is 1890 on one of the Rhode Island 2-8-0s brought down from the U&N).

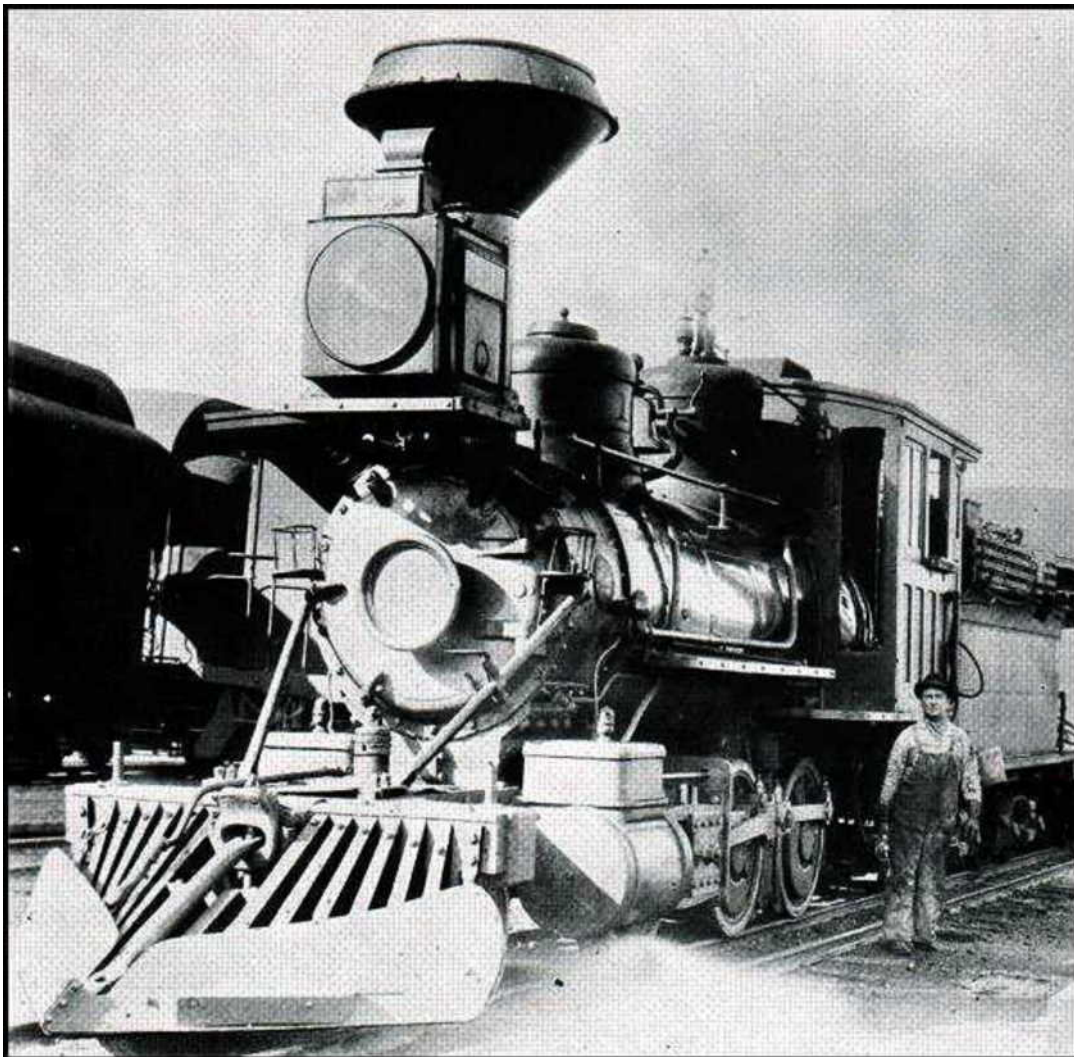
Number 42 sometime in the late eighties received a new smokebox front with a door that projects out about 4” from the face of the smokebox. Presumably the smokebox was damaged an accident and a new door was either fabricated or, given the design, acquired from some other engine.

Wheels

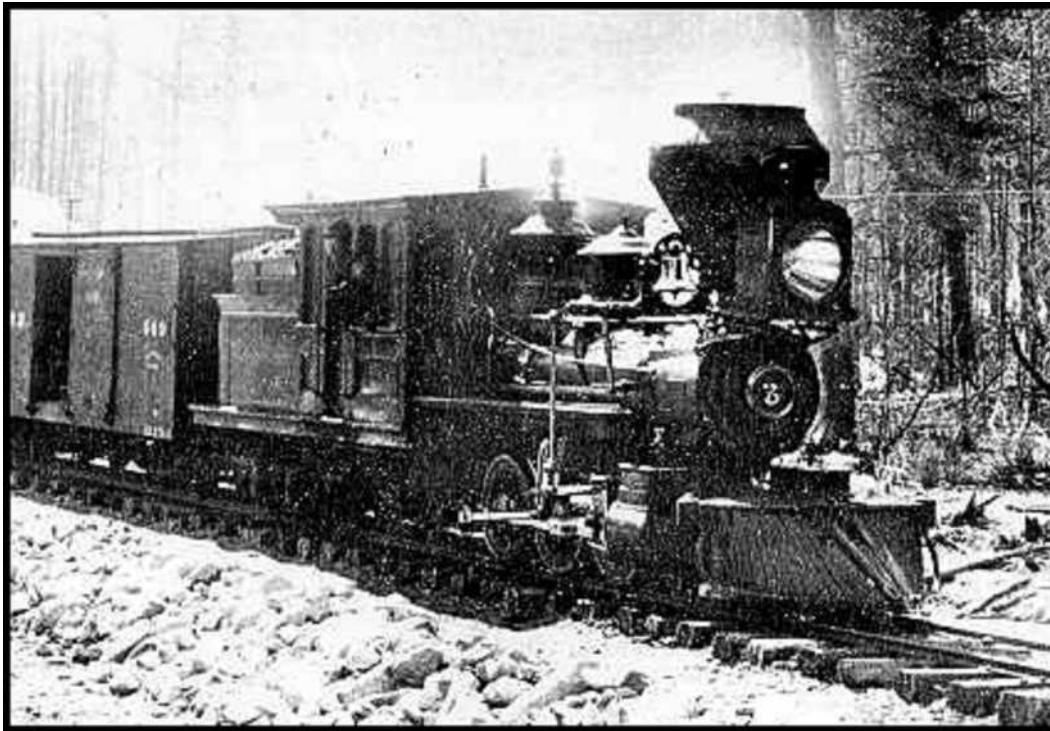
All bogies were delivered with spoked pilot and tender wheels. These seem to be universally replaced by the 1885 renumbering. In all likelihood the changeover happens at the same time as the rebuildings that accompany the application of air brakes.

Pilots

The photos of the *Oro City* in the Chalk Creek canon show a pilot with the gaps between staves filled in with more staves. This was apparently done to create a simple snowplow. The alteration appears on other engines (UPD&G 107 has a slightly fancier version with the “gaps” filled but slightly recessed to preserve the slatted appearance). The photo of Mason no. 48 at London Junction looks like maybe it’s similarly filled. Whether unique or applied to other bogies, it is in any case the only “snowplow” seen on any bogie. In the late 80s and early 90s many South Park engines received small “skiff” plows, small blades some 6 to 12 inches tall on the front edge of their pilots, and it’s possible that some bogies received these, though no photos exist of such.



One version of the Skiff plow as developed during the UP era of the South par. Note the many UP features on this Cooke 2-6-0, including the headlight, bracket and stack. This type of plow has not been photographed on a Mason.



The gaps between the pilot staves are filled in on this view of DSP&P #3, forming a form of snow plow.

I do not believe any other type of plow would ever have been fitted to the Masons because of the design of the front pivot. While I'm of the opinion that the Masons should be classed as a success on the South Park, I think the lack of any reorder can be laid to two very simple problems resulting from this pivot design: double-heading and snowplowing. I mentioned there is only one known photo of a double-header with the Mason as the road engine (coupled to the train with a helper in the front), and it is taken quite early: 1882. (A late 80s photo shows an unidentified Mason as helper in the Platte canon.) The design of the bogies' driver pivot meant that drawbar forces between the front and rear of engine took a 90-degree bend at the driver pivot went up more than a foot and then passed back through the frame to the rear drawbar. This design appears to have been perfectly satisfactory for the engines when operating alone, but it is not hard to imagine that if you placed another locomotive at the front and a train behind that you could cause the driver bogie to try and flex out of the way and probably derail. A similar effect would be had using the engine for any but light snowplowing.

PHASES

It has become common to refer to changes in locomotive appearance as "phases" and as the drawings show, you can divide the life of bogies into roughly three phases. These provide a good guide for what your family of bogies should like at any period, but some exceptions to the rule should be expected.

1878-1883

Nesmith stack, original paint (names on tenders, DSP&P below cab window, number on number plate and sand dome), Eames vacuum brake, and arched-window, peaked-roof cab. By the time the railroad reaches Chalk Creek (1880/81) larger headlights are being applied with modifications to brackets. At least the Kenosha has a square-window cab by 1882 as discussed above. Some pilots (no. 3 for sure) modified by filling in gaps between staves, presumably to make a "snowplow" of the pilot.

1883-1885

Congdon stack. Air brakes applied necessitating extension of tender deck (except no. 8). Changeover to square-window, arched roof cab (maybe simultaneous with conversion to air, though at least no. 8 is an exception). With the alterations for air brakes, the engines receive new paint: D.S.P., & P.R.R. is on the tender with drop shading, probably gold leaf and red drop shadows. The engine number now appears below cab window as well as on sand dome and number plate as before. It is probable that the engines receive solid wheels on pilot and tender trucks as part of this general rebuilding.

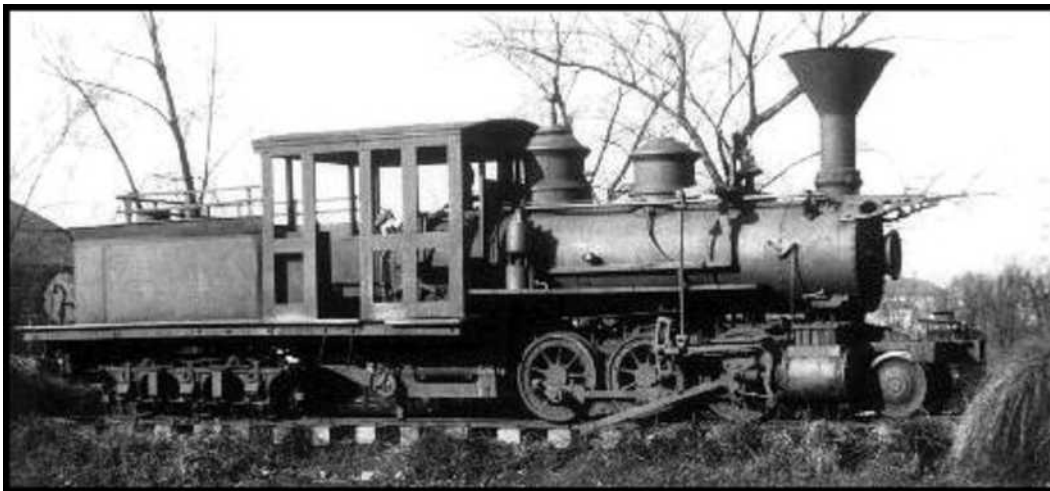
1885-99

Union Pacific renumbering. Large engine numbers on tender and D.S.P. & P. under cab window (no. 55 has Union Pacific under cab windows). Application of classification/marker light holders, headlights with number boards. Congdon stacks are phased out and replaced by diamond stacks throughout the late 80s.

The changeover to DL&G lettering in 1890 is just a matter of changing the lettering under the cab windows and adding DL&G to tender flare. Engines may not even have been repainted. Photos show diamond stacks on all engines, though the possibility that some received sunflower/pancake stacks in the 90s exists.

1900

Not really a phase, but one bogie makes it onto the C&S roster and indications on the engine after it arrives in Iowa suggest that it did get re-lettered for the new corporation. From the Iowa information the number was at least applied to sand dome and number plate. That's consistent with the first C&S style, which retained the DL&G lettering of large numbers on tender, with initials on the tender flare. However, while the DL&G also used initials under the cab windows the C&S spelled it out "Colorado & Southern" The engine still had a diamond stack in Iowa and I would presume that it did on the C&S as well.



DSP&P #24 'Buena Vista', later DSP&P #57 and finally Colorado & Southern #1, the only Mason to make it into the C&S roster. Seen here in Iowa after ending her career as a lumber loco. The remains of the UP style diamond stack is evident on this Mason.

.... and that ladies and gentlemen is a little about the Mason Bogies of the South Park.