THE SIGNAL BRIDGE

Volume 18 NEWSLETTER OF THE MOUNTAIN EMPIRE MODEL RAILROADERS CLUB Number 7B

JULY 2011 BONUS PAGES

Published for the Education and Information of its Membership

CASS SCENIC RAILROAD

CASS, WEST VIRGINIA

Company Store

LOCATION

ETSU Campus,
George L. Carter
Railroad Museum

HOURS

Business Meetings are held the 3rd Tuesday of each month. Meetings start at 7:00 PM at ETSU Campus, Johnson City, TN. Brown Hall Science Bldg, Room 312,

Open House for viewing every Saturday from 10:00 am until 3:00 pm. Work Nights each Thursday from 5:00 pm until ??


« CASS »
SHOWCASE
SHAY
RAILROAD
SHOP


CASS


CASS SCENIC RAILROAD
6

HEISLER LOCOMOTIVES

Masters of the Backwoods

From Wikipedia, the free encyclopedia

A Heisler locomotive

The **Heisler locomotive** was the last variant of the three major types of geared steam locomotive, Charles L. Heisler receiving a patent for the design in 1892 following the construction of a prototype in 1891. Somewhat similar to a Climax locomotive, Heisler's design featured two cylinders canted inwards at a 45 degree angle to form a 'vee-twin' arrangement. Power then went to a longitudinal drive shaft in the center of the frame that drove the outboard axle on each powered truck through bevel gears in an enclosed gearcase riding on the axle between the truck frames. The inboard axle on each truck was then driven from the outboard one by external side (connecting) rods.

In 1897, Heisler received a patent on an three-truck locomotive. As with Class C Shay locomotives, the tender rode on the third truck. Unlike the Shay, Heisler's design did not have a continuous string of line shafting running the length of the engine. Instead, the tender truck was driven by a line shaft above the shaft driving the main engine trucks, connected to it through spur gears. This patent also covered use of a 4-cylinder 'vee four' cylinder configuration.

The Heisler was the fastest of the geared steam locomotive designs, and yet was still claimed by its manufacturer to have the same low speed hauling ability.

Builders

The first Heislers were built by the Dunkirk Engineering Company of Dunkirk, New York, at the time producer of their own design of geared locomotive (called the dunkirk), of which the Heisler could be considered an improvement. They did not adopt the Heisler design, but in 1894 the Stearns Manufacturing Company of Erie, Pennsylvania started to produce Heislers, and did so until 1904. Reorganised as the Heisler Locomotive Works in 1907, it produced locomotives of the Heisler design until 1941.

Variants

Heislers were produced mostly in two and three truck variants in sizes ranging from 17 tons to 95 tons. There was one single truck, narrow gauge Heisler built, Lake Shore Stone Products Co. #7.

Survivors

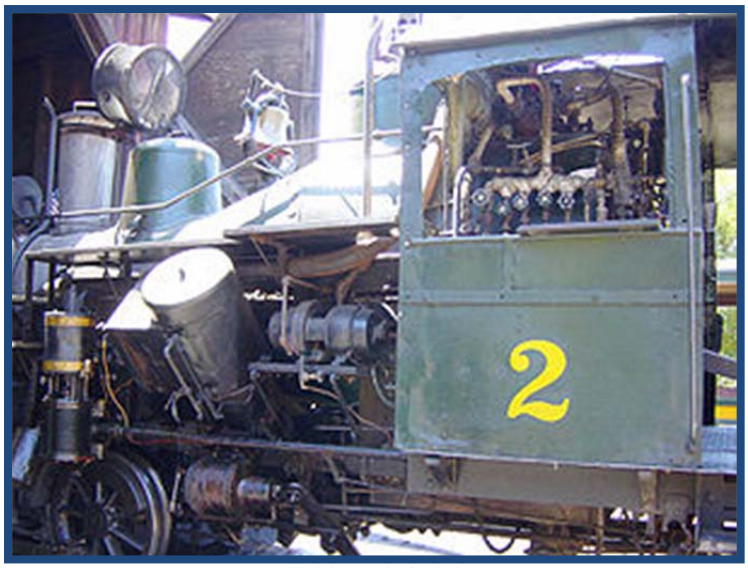
Roughly 625 Heislers were produced, of which some 35 still exist. Approximately eight of these survivors are currently operational. A 75 ton 1918 Heisler locomotive is on static display at the Travel Town open air museum in Los Angeles. Ex-Curtiss Lumber Company loco number 2 operates on the Oregon Coast Scenic Railroad during the tourist season. And the 3-truck 90 ton West Fork Logging Co #91 operates on the Mt. Rainier Scenic Railroad in Elbe Washington, who also has a 78 ton 3 truck on static display. Cass Scenic Railroad State Park in Cass, West Virginia operates a 90 ton, 3-truck Heisler built in 1929. Another Heisler two truck locomotive can be found on static display next to the headquarter's building of the former Pacific Lumber Co. in Scotia California. Heisler serial number 1260 built in 1912 (2 truck) is currently running on the Silver Creek and Stephenson historical railroad in Freeport, IL.

Advantages & Disadvantages

The Heisler locomotive's gearing was inside the frame and thus protected, unlike that of a Shay locomotive. However, the Heisler's drive shaft, in the center of the frame, limited firebox space.

References

1. Charles L. Heisler, Locomotive, U.S. Patent 482,828, Sept. 20, 1892.
2. Charles L. Heisler, Locomotive, U.S. Patent 585,031, June 22, 1897



Heisler technical view

MORE ABOUT HEISLERS

Everything You Wanted to Know But Were Afraid to Ask

From http://gearedsteam.com/survivors.htm

Construction:

The Heisler consisted of 2 steam cylinders positioned in a "V" under the boiler about 3/4th the way back from the front. In the photo above, the left side cylinder can be seen below the brass bell. The piston rods came out of the cylinders and attached

to a "crank shaft" located under the center of the boiler. Attached to either end of the crank shaft were drive shafts. The drive shafts were located below the center line of the engine. On the two truck models, the drive shaft attached to a gear box located on each truck's wheel set that was located furthest from the center of the engine frame. Power was then supplied to the other wheel set on the truck with an outboard tie rod connecting two wheel sets together. This tie rod is readily visible in the picture above.

In terms of speed, it was the fastest of the 3 most prevalent geared steam locomotives. It also had the fewest numbers manufactured of these type of locomotives.

Variations:
Cylinders:
The engines were manufactured with two cylinders.

Trucks:
Models with either two or three truck sets were manufactured. The three truck models were used on those engines that required more power and more fuel. The third truck was powered and carried a tender (similar to those on "rod" engines) to carry additional fuel and water.

Classification:
In contrast to the alphabet letter codes utilized on the Shay and Climax locomotives, the Heisler Company utilized a 3 number coding scheme to differentiate each of its model types. Like the Shay, however, each model type was also assigned a code name.

A total of eleven model sizes were available.

The number coding system consisting of three numbers separated by a dash. The first number was the weight of the locomotive in **tons** when it was "*in average working order.*" A dash was applied to the sequence. Then the second number denoting the **quantity of driving wheels** or "drivers" the locomotive had. This was followed by a dash and the final number which represented the **driving wheel diameter** in inches. The code words (Argil, Arian, ...) associated with the number codes were "cable codes". These typically shorter (in length) words allowed for easier and cheaper telegraph or wire cable communication. They were a simple way to break numbers and letters down into words that were easier to work with by all involved.

To illustrate the code application, the model coded *Ascend* had a number code of 65-8-40, meaning it weighed 65 tons in normal working order, it had 8 drivers, and those drivers were 40" in diameter

Class	Code
24-8-30	Argil
28-8-30	Arian
32-8-30	Arithmetic
36-8-33	Armill
42-8-33	Arouse
50-8-36	Arsenal
55-8-38	Artful
65-8-40	Ascend
70-12-36	Ascribe
80-12-38	Ashes
90-12-40	Aside

The above table is from the 1923 Heisler marketing catalog. At that time, only 11 models or classifications were being built. Over the company's history, many additional models ranging from a 14 ton unit built in the late 1890's to a three truck model weighing close to 95 tons were also produced. The additional models were dropped from their offering due to lack of customer popularity.

Manufacturer:
1891 - Dunkirk Engineering Company, - Dunkirk, NY.
1894 (Aug,) - 1904 - Stearns Manufacturing Company - Erie, PA.
1907 - 1941 - Heisler Locomotive Works - Erie, PA.

The first locomotive of the Charles Heisler design was built in 1891 by the Dunkirk Engineering Company for F. A. Addington. At the time, Charles was an engineer and personal assistant to Dunkirk's president, Edward Nichols. Heisler's design departed in several ways from the typical Dunkirk / Gilbert Class "B" being built at the time. Two changes of note were the placing of the cylinders under the boiler outside the crew cab and the use of side-rods on the wheels. For some unknown reason, Dunkirk never adopted the design and Heisler later left the company before its closure.

Heisler Locomotive Works also manufactured a single diesel-electric locomotive in its twilight years utilizing their trade-mark side-rods on the outside of each truck's wheelsets.
As of 1998, the buildings composing the former factory complex were still standing.

Geographic Use:
Although some engines were exported, the vast majority were used from coast to coast in the United States.

Quantities:
Approximately 625 were manufactured.

When Manufactured:
August 1894 - 1941

The first locomotive of the Heisler design was built in 1891 by the Dunkirk Engineering Company. Frequent and dedicated production begin in 1894 when Heisler's design was adopted by the Stearns Manufacturing Company. It is thought that Stearns discontinued the locomotive's manufacture in 1904 because of lack of profitability and its desire to focus on other more important endeavors.

After the "panic of 1907", the locomotive manufacturing works were reorganized into a new company, the Heisler Locomotive Works. This company continued the design until 1941.

Sizes:
Over the company's history, well in excess of 11 model sizes were manufactured ranging from 14 - 95 Tons with from 2 - 3 Trucks - See Classification

Fuels:
Wood, coal, and oil were the predominate fuels used.

Invented by:
Patented by Charles L. Heisler of Wapakoneta, Ohio, in 1892.

Engine No	Class	Whyte	Gauge	Line	Location	Status	Notes
		Heisler	4'-8½"	Jones Lumber	Vidalia, GA	unknown	
91(102)	90 ton	Heisler3Tr	4'-8½"	WCS (KPM)	Mineral Shops, Mt. Rainier Scenic Railroad, Mineral, WA	operational	
2(6)	75 ton	Heisler3Tr	4'-8½"	PLC (HH)	Travel Town Museum, Los Angeles, CA	display	,
2(3)	37 ton	Heisler2Tr	36"	WSL	Roaring Camp & Big Trees Railroad, Felton, CA	operational	Named Tuolumne
4(5)	53ton	Heisler2Tr	4'-8½"	Chicago Mill & Lbr Co	Railroad Museum of Pennsylvania, Strasburg, PA	display	
1	86ton	Heisler3Tr	4'-8½"	PLC	Peralta & Shinn, PLA, Fremont, CA	display	
1	18ton	Heisler2Tr	36"	Richardson Lumber	Marysville, CA	private restoration	From Rancho Cordova
1	28ton	0-4-2	4'-8½"	Yakutat & Southern (NYE)	Y&S RoW near school, Yakutat, AK	display	awaiting restoration
1	35 ton	0-4-0F	4'-8½"	Potomac El Power	Smithsonian Warehouse, Silver Hills, MD	stored	
1	42 ton	0-4-0F	4'-8½"	Continental Can Co	Kellogg Elevator Co., Carson City, MI	operational	
1	22ton	Heisler2Tr	4'-8½"	Phenix Marble	Passumpsic Railroad, Barnet, VT	operational	Owned by Marvin Kendall, , , photos
2	37ton	Heisler2Tr	ng	WSL	Depot Park, Tuolumne, CA	display	
2	36 ton	Heisler2Tr	4'-8½"	SC&S	Silver Creek & Stephenson Railroad, Freeport, IL	operational	
2	70 ton	0-6-0F	4'-8½"	Union Electric Co	Museum of Transportation, St. Louis, MO	display	
2	60 ton	Heisler2Tr	4'-8½"	Curtiss Lumber (Vancouver Plywood)	Oregon Coast Scenic Railroad, Garibaldi, OR	operational	from Mt. Rainier Scenic, later Tillamook, OR
2	42ton	Heisler2Tr	4'-8½"	Broughton Lumber	Tillamook Air Museum, Tillamook, OR	display	from Mineral, WA
2	50 ton	Heisler2Tr	4'-8½"	NP&TC	Northwest Railway Museum, Snoqualmie, WA	cosmetic restoration	M
2	42ton	Heisler2Tr	4'-8½"	Forest Products	John Tisdale, shop building, Davis, WV	stored	from Rossville, GA, later L&N Depot in Adalusia, AL, ,
3	20 ton	Heisler2Tr	4'-8½"	Santee River	Whitewater Valley Railroad, Connersville, IN	display	
3	42ton	Heisler2Tr	4'-8½"	Fisher Lumber	Rogers Lumber Co., Ferriday, LA	stored	Stored in an old shed at an old sawmill.
3	40 ton	Heisler2Tr	36"	WH Eccles Lumber	Sumpter Valley Railway, McEwen, OR	operational	
3	22ton	Heisler2Tr	4'-8½"	Holly Ridge Lumber	Dr. Marvin Kendall, Barnet, VT	display	
3	63ton	Heisler2Tr	4'-8½"	Craig Mt. Lumber	National Railroad Museum, Green Bay, WI	operational	from the Kettle Moraine Railway

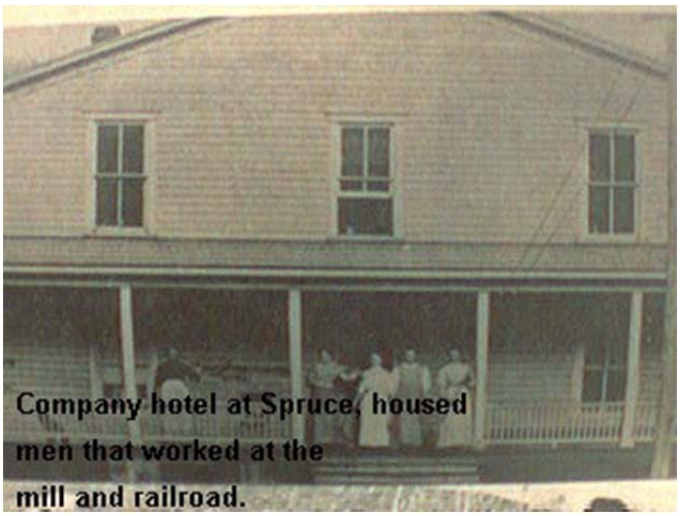
9(5)	36ton	Heisler2Tr	4'-8½"	TPLCo (MT&MW)	Pacific Lumber Co, Scotia, CA	display	
9(5)	36ton	Heisler2Tr	4'-8½"	TPLCo (MT&MW)	Pacific Lumber Co, Scotia, CA	display	
4	32ton	Heisler2Tr	4'-8½"	Intl Shoe Co	WMCRR, Clark's Trading Post, Lincoln, NH	out of service	requires staybold replacments
4	80ton	Heisler3Tr	4'-8½"	Maderera de Durango	El Salto, DGO	display	
5	86ton	Heisler3Tr	4'-8½"	PLC	Niles Canyon Railway, Sunol, CA	future restoration	
6(1)	47ton	Heisler2Tr	4'-8½"	Blake Bros (Mason Valley)	Roots of Motive Power, Willits, CA	operational	from Eureka, later Timber Heritage Association., Glendale
5	62ton	Heisler2Tr	4'-8½"	Buffelen Lumber	Oregon Coast Scenic Railroad, Centralia, WA	stored	from Tacoma City Watershed, Eagle Gorge, WA, to Tillamook, OR
6	90 ton	Heisler3Tr	4'-8½"	Meadow River	Cass Railroad, Cass, WV	operational	restored in 2003,
7	80 ton	Heisler3Tr	4'-8½"	Middle Fork RR	West Virginia Railroad Museum, Elkins, WV	restoration	from Bonsal, NC
9	55 ton	Heisler2Tr	4'-8½"	CLCX	Southeastrern Railway Museum, Duluth, GA	display	
10	78ton	Heisler3Tr	4'-8½"	PLC	Mt. Rainier Scenic Railroad, Elbe, WA	display	
92	90 ton	Heisler3Tr	4'-8½"	Potlatch For	park, Lewiston, ID	display	

The Town of Spruce, WV

From the Cass Railroad State Park website

With the completion of the railroad to the top of the mountain in 1901. The number of men multiplied as the cutting and shipping of pulpwood increased enormously. With the increase of workers three camps were formed. Near the top of the mountain camp2 was built on Cheat River. One mile up camp3 was built. The last camp up river was camp. Through the week these camps were occupied by workers. On Saturday they rode the log train to Cass. By Sunday afternoon they returned to camp on another train. This arrangement wasn't working well for workers with families. A proposal for the company to house the workers and their families arose. The company agreed to build houses.

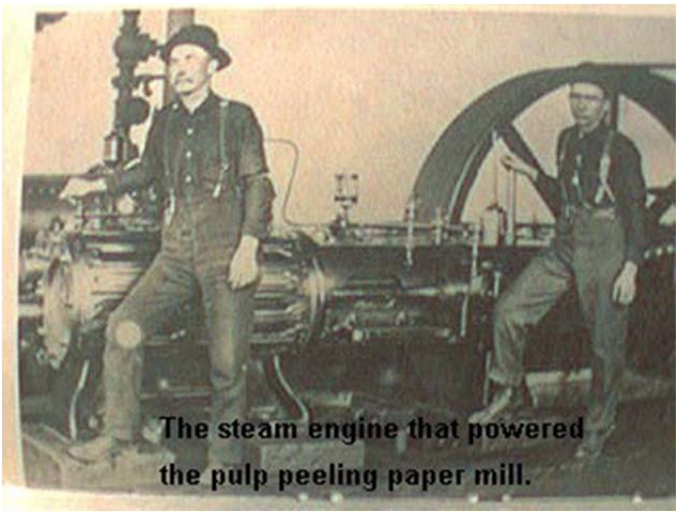
The location for these houses would be near the "low place" where the railroad crossed over the mountain. With the construction of houses a town was soon formed. This town became Spruce.



The shipping of pulpwood increased. Most of it shipped with the bark still on it. This was ruining the pulp and rolls of paper. In effect hundreds of men were hired to trim the bark from the pulp with axes and spuds. Housing these men became expensive. In return a peeling plant was built. In 1904 Spruce was moved. This town was less from a mile from the original town. The first town became Old Spruce and the new town became Spruce.

The new town of Spruce had a hotel with 40 rooms, complete with a store which was a branch of the Pocahontas Supply Company Store in Cass, thirty five houses, and one school. The past office was moved from Old Spruce to Spruce.

At 3,853 feet, Spruce was one of the highest towns in the eastern United States. At this height it was normal to have frost in the warmest months of the year.


The steam engine that powered the pulp peeling paper mill.

There was no road into Spruce. All necessities and materials were brought in by train. Spruce had no cemeteries. Bodies of the deceased were carried out by train.

The mill at Spruce was operational from about 1905 to 1925.
In the winter months, logs were dumped into a steam heated pond. This kept the logs from freezing. These logs were then floated to a jack slip. This placed the logs on the main floor of the mill. The logs were then cut into 24 inch blocks which went to the rossing machine. The rossing machine was where the bark was removed. It took seven men to keep eighteen machines operating. In the winter of 1905 480 men were employed and more to be hired in the spring.

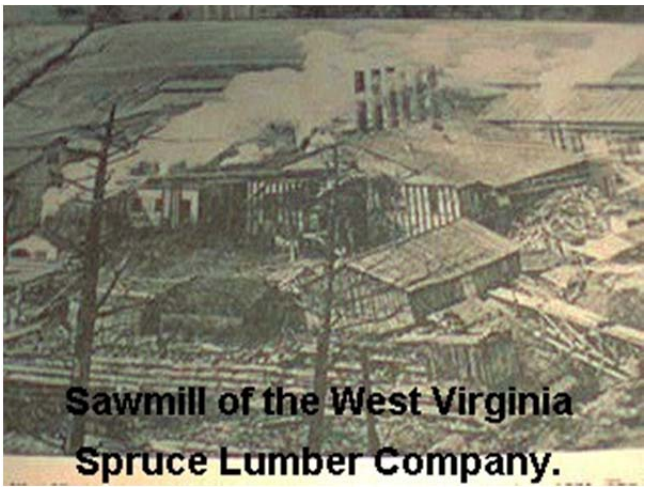
In 1905 records list	
E.P. Shaffer; Postmaster	Amos Lyons; Blacksmith
O.G. English; Express and Tel. agent	L.B. Smith; Blacksmith
D.J. Taber; Lumber Superintendent	O.B. Sprague; Blacksmith
Robert Newcomer; Proprietor Hotel Spruce	J.L. Ervin; Shoemaker
B.W. Watson; Clerk, Pocahontas Supply Company Store	

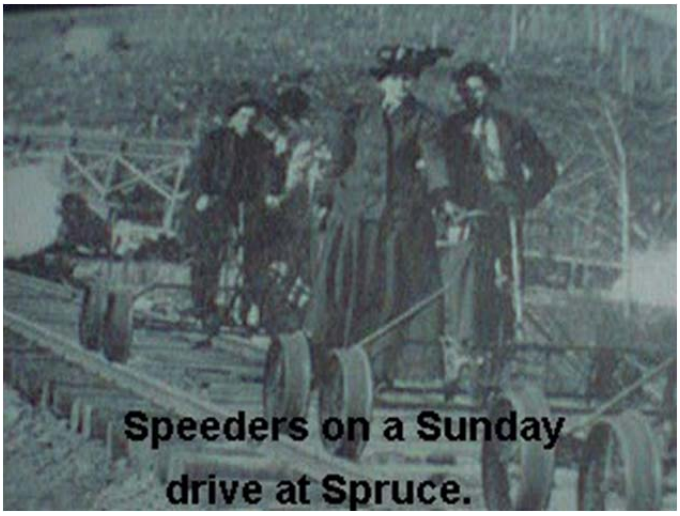
In 1906 the population boosted . This year hosted many events for Spruce. The company hired a doctor in 1906. Dr. Uriah Hevener Hannah. He remained in Spruce until 1914 when he moved to Cass. He was replaced by Dr. H.W. Neal.

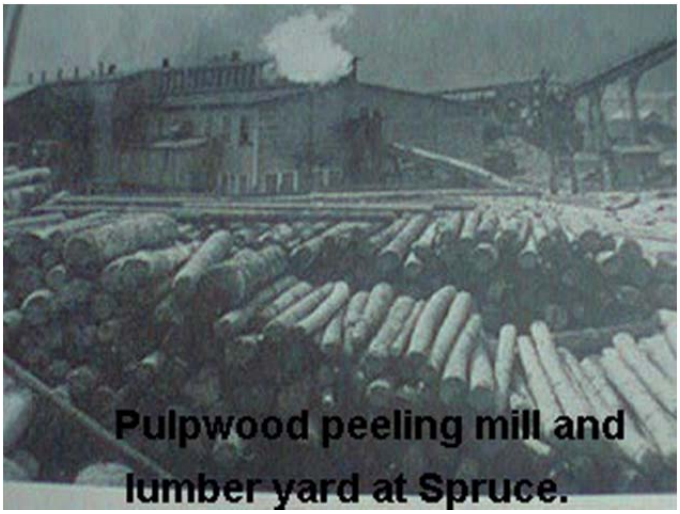
Spruce became incorporated in 1909.

In 1913 Spruce was the junction point for the Greenbrier, Cheat and Elk Railroad.

In 1920 Spruce built a two room School. The population was now up to 350


Sawmill of the West Virginia Spruce Lumber Company.


Speeders on a Sunday drive at Spruce.


Pulpwood peeling mill and lumber yard at Spruce.

IIn 1925 the mill at Spruce closed. The town was becoming smaller and smaller. Many of the workers moved to Cass or Slatyfork. They still continued working for the company.

On August 31, 1925 the post office closed. Several families still remained.

By March 3, 1927, Cheat and Elk river railroad were sold to Western Maryland Railroad Company. The West Virginia Pulp and Paper Company paid a set rate for the right to use the tracks. Spruce was now basically used for assembling trains to Cass.

In 1939 Spruce had a boarding house, an engine house, and nineteen houses. All of this was operated by the Western Maryland Railroad Company. At this time Spruce housed eight Western Maryland Locomotives.

In 1950 the school was closed at Spruce.

There are no signs of life now at Spruce. No houses are standing. All that is left are concrete foundations of the mills, shops, and houses. Interpretive signs and a ptah through the site help the visitor to visualize the old town.

THE CASS ROSTER
Locomotives - Heislers #6

In The Old Days...

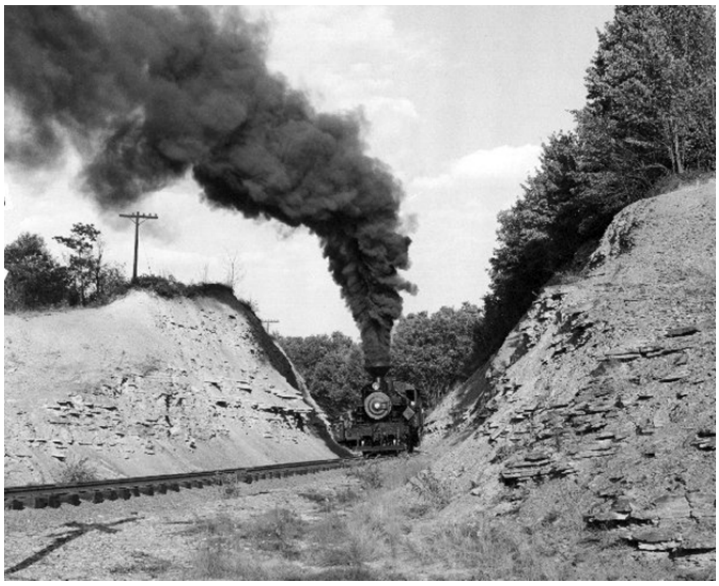
In August of 1894 the first geared locomotive to bear the name Heisler was completed at Stearns Manufacturing Co. Built in 1929 for the Bostonia Coal and Clay Products Company of New Bethlehem, Pennsylvania as their #20, our Heisler #6 is a big, modern Heisler. Some geared locomotive historians classify it as a "West Coast Special", the Heisler designed to do battle with Lima's Pacific Coast Shays. However, #6 is a standard class C-90 3 truck Heisler. The "West Coast Special" was distinguished by piston valve cylinders and a few other items that were applied to upgrade the standard 90-3 to compete with Shay. The odd thing is that when #6 was built in 1929 all 90-3 Heislers were being built as West Coast Specials. How did #6 come to be built as a standard "old fashioned" Heisler? Could it have been built several years earlier and remained unsold? Perhaps there was a price break offered if the older style was used, using up spare parts on hand at the factory? Or was it special ordered?

Past to Present...

Cass Scenic Railroad bought Heisler #6 from the Meadow River Lumber Company of Rainelle, West Virginia in 1968. Today #6 lives in harmony with its Shay cousins; it has operated successfully on the Whittaker Station Train, and has been used on off-line trips because of its greater speed. It is another fine example of the last of the art of logging locomotive design and therefore an important addition to The Cass Collection. Heisler 6 can be seen at the Cass Locomotive Shop and will be used as a back up engine this season.

Technically Speaking:

Builder No.: 1591	**Date in Service:** 1929
Class: Heilser C-90	**Trucks:** 3
Bore: 18 inches	**Stroke:** 16 inches
Drivers: 42 inches	**Weight:** 100 Tons



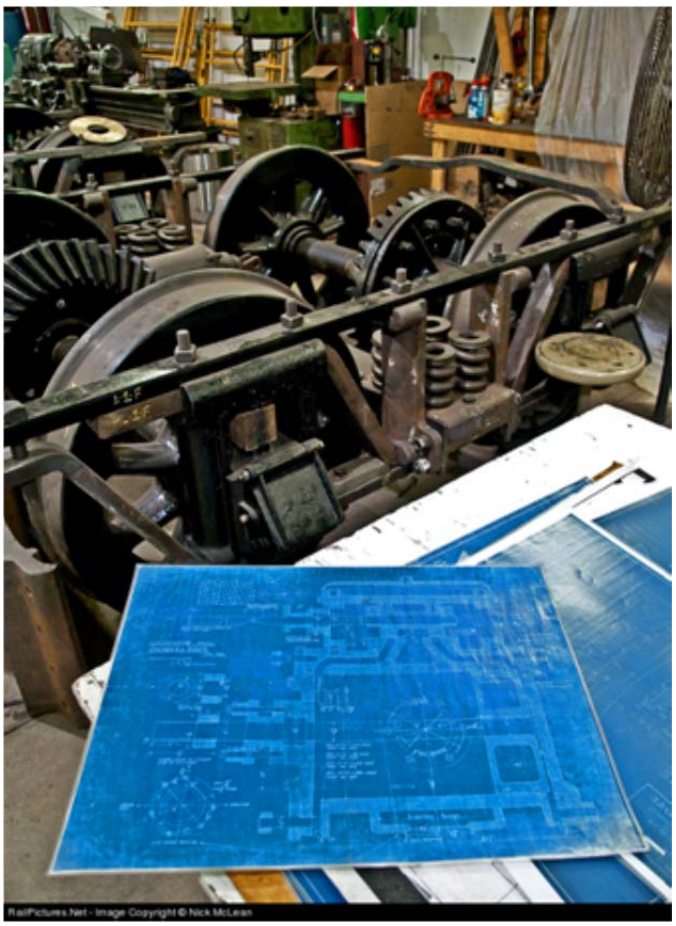
THE CASS ROSTER
Locomotives - Climax #9

In The Old Days...

In the 1880's Climax Manufacturing Company was already established in Correy, Pennsylvania, manufacturing agricultural and oil field machinery. The idea for their geared locomotive came from an unknown logger. On March 4, 1888 Climax completed its first locomotive. On February 10, 1888, George Gilbert of the Climax Manufacturing Company applied for a patent on the not yet completed locomotive. He was awarded patent No. 393,896 on December 4th of the same year. Shortly thereafter Ephraim Shay, the father and patent holder of the Shay locomotive, became aware of the Climax locomotive. From March 1889 into 1890 several letters were exchanged between Ephraim Shay and Climax Manufacturing. Shay accused Climax of infringing on his patent and demanded that they settle with him, but the outcome of the dispute is unknown.

Past to Present...

Our Climax #9 was purchased from Robert L Johnson, of Rossville Georgia who acquired it from Moore-Kepple & Co., of Ellamore WV, where it was used on their subsidiary operation, the Middle Fork Railroad Co. as their #6. Currently the restoration of Climax 9 is one of the lead projects of the Mountain State Logging and Historical Association. Progress on this engine can be seen at the Mountain State Shop in Cass.



From the Camera
Photos by Paul Haynes

These photos were taken in Johnson City in the late 1990's or early 2000's. A work train had been set out on the siding near the old Clinchfield Station. The flat cars had seen better days. They would make interesting model projects if one tried to duplicate the hard use and weathering details.

Illinois Railway Museum
Photos by Eric Bronsky

The Illinois Railway Museum in Union, Illinois is one of the premier museums in the country. It's collection is extensive with an emphasis on traction and Midwest railroading. What follows is an update from Eric Bronsky, a long time Chicago modeler and railfan. His YouTube video is well worth a watch.

The weather was magnificent and IRM's Independence Day Trolley Pageant went off smoothly. Enjoy my latest YouTube masterpiece (link below) along with the attached still photos.

http://www.youtube.com/watch?v=iqlQrDBJgiM ***Running time: 13:04***

Note the rare operation of pantograph-equipped cars. The overhead frogs are not "ramped," so it's necessary to drop the pans to get through these spots. I'm guessing that the controller on the South Shore train was up against the post because its 1500VDC motors were cranking out a respectable speed, even with just 600 volts on the line.

In addition to riding the Vera Cruz open car and IRR 65, another highlight of the day was riding the beautifully restored NWERR/CRT 1268 coupled to a trio of 4000s.

Black flags were displayed at the eastbound end of the 3-car steel CA&E train in memory of Julie Johnson. It was through Julie's generosity and hard work that 409 and 460 returned "home" to rejoin 431.

It was refreshing to be able to photograph trains without having cops or security guards question me, for a change.

Illinois Terminal 3-Car Train

Chicago South Shore & South Bend 2-Car Train

Chicago Rapid Transit No. 1268

CNS&M and IT Trains

CNS&M No 714-160 at Johnson Siding

A 4-Car Chicago "L" Train

- ***Eric Bronsky***

Installing Tortoise Switch Machine and NCE Switch-It Decoder

Posted in December 13th, 2007 by Mike Minton in Track, Wiring

This article will describe how I install Tortoise machines and the Switch-It decoder so that I can control turnouts from the same DCC hand held controller that I use to control the engines.

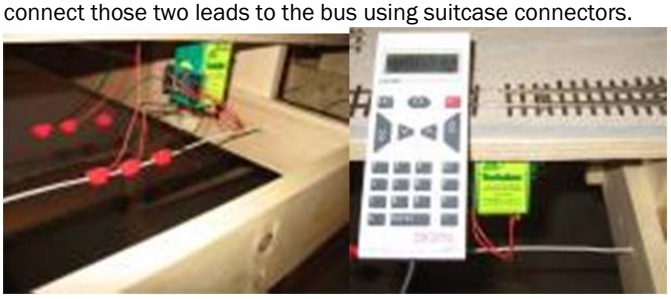
The switch machine moves the switch turnout by level action through the roadbed with piano wire. The first step is to mark where the 5/16″ hole should be drilled. Then move the turnout and drill the hole.

The next step is to assemble the actual Tortoise machine according to instructions. I do replace the light piano wire that comes with the machine with a heavier .034 gauge wire due to the thickness of my roadbed. Cutout the template from the instructions in order to help with drilling the mounting holes. At this time I also solder the leads onto the PC board. The two outside leads will connect to the decoder and the three inner ones are used to power route the frog. I use red for the frog wire because I always forget which one is the frog lead of the three.

The next step is to use the drilling template to drill the mounting holes that will later be used to screw the machine to the underside of the roadbed. I drop a pencil into the previously drilled 5/16″ hole in order to properly align the template. I then tape the template to the underside and drill the holes. I will use 1/2″ #6 pan head screws to mount the machine so I use a 1/16″ drill for the pilot holes.

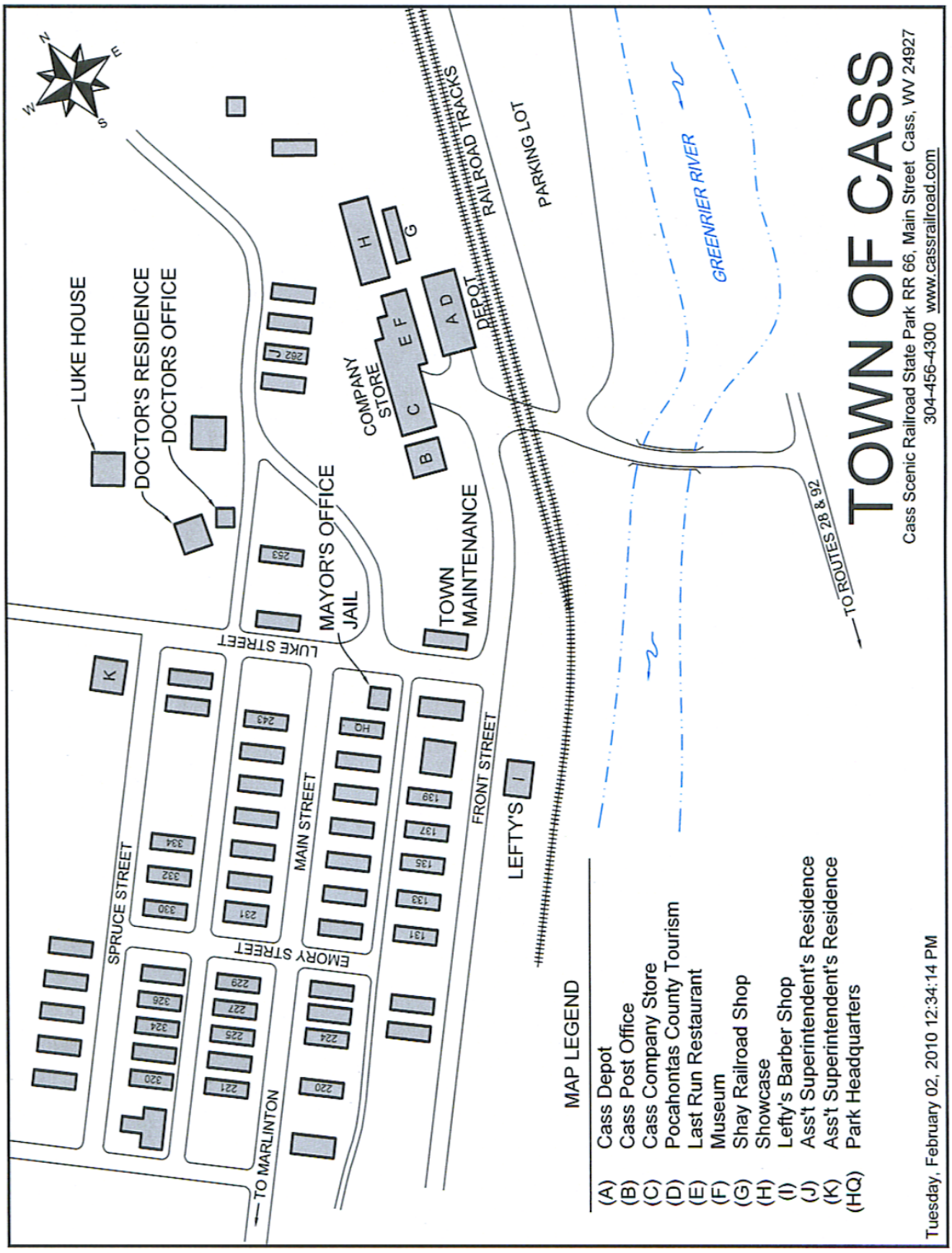
Now comes the fun part that also requires some preparation and manual dexterity. Make sure your #1 phillips screwdriver and screws are within easy reach. Connect the turnout to the adjacent track using rail joiners and spike the turnout down to prevent movement. Next starts the fun. Feed the control lever through the roadbed and thread it through the hole in the turnout throw bar. Hopefully you ensured that the hole in the throw bar is big enough for the piano wire. With some wiggling and try and error it can be done. Once you get it, don't lose it. Holding on to the machine with one hand, use your other free hand to screw in the first screw. With the right screwdriver I use the tip of my finger to hold the screw on the point while I position the screw in the hole and start turning. It takes a little practice and a few dropped screws to get it right.

The hard part is done! Now we just need to wire up the decoder and do something with all of these dangling wires. Before doing that, use a Dremel with cut-off wheel to trim the piano wire that is sticking up through the throw bar. I won't go into the details of the decoder wiring as the NCE directions are plenty clear. The two outer control wires will go into either set of control terminals (Switch A or Switch B) as one Switch-It controls two motors. Two wires go from the bus wires to the track terminals on the Switch-It. Finally, we need to deal with the frog power routing. Solder the frog lead wire to the frog. Manually align the switch machine and use the voltmeter to confirm polarity of the other two frog leads from position 2 and 3 on the Tortoise PC board. Once confirmed, connect those two leads to the bus using suitcase connectors.



All that is left now is to test. Make sure the switch machine can freely move left and right without binding. If it binds then adjust the switch machine or the turnout until it doesn't. By default the Switch-It is accessory decoder #1 and #2. They can be programmed differently but I'll save that for another blog post. Fire up the DCC system and cycle the switch. That's it! You now can control another element of your miniature world without leaving your comfy stool.

Double-sided sticky tape can also be used to temporarily hold the switch machine while mounting with screws.


TOWN OF CASS
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304-456-4300 www.cassrailroad.com
Tuesday, February 02, 2010 12:34:14 PM
MAP LEGEND
(A) Cass Depot
(B) Cass Post Office
(C) Cass Company Store
(D) Pocahontas County Tourism
(E) Last Run Restaurant
(F) Museum
(G) Shay Railroad Shop
(H) Showcase
(I) Lefty's Barber Shop
(J) Ass't Superintendent's Residence
(K) Ass't Superintendent's Residence
(HQ) Park Headquarters
LUKE HOUSE
DOCTOR'S RESIDENCE
DOCTORS OFFICE
MAYOR'S OFFICE
JAIL
COMPANY STORE
TOWN MAINTENANCE
DEPOT
RAILROAD TRACKS
PARKING LOT
GREENRIER RIVER
LEFTY'S
LUKE STREET
SPRUCE STREET
MAIN STREET
EMORY STREET
FRONT STREET
TO MARLINTON
TO ROUTES 28 & 92
N
E
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W