

# LINK & PIN NEWS

9 July-Aug-Sept 1982  
Published in December, 1982

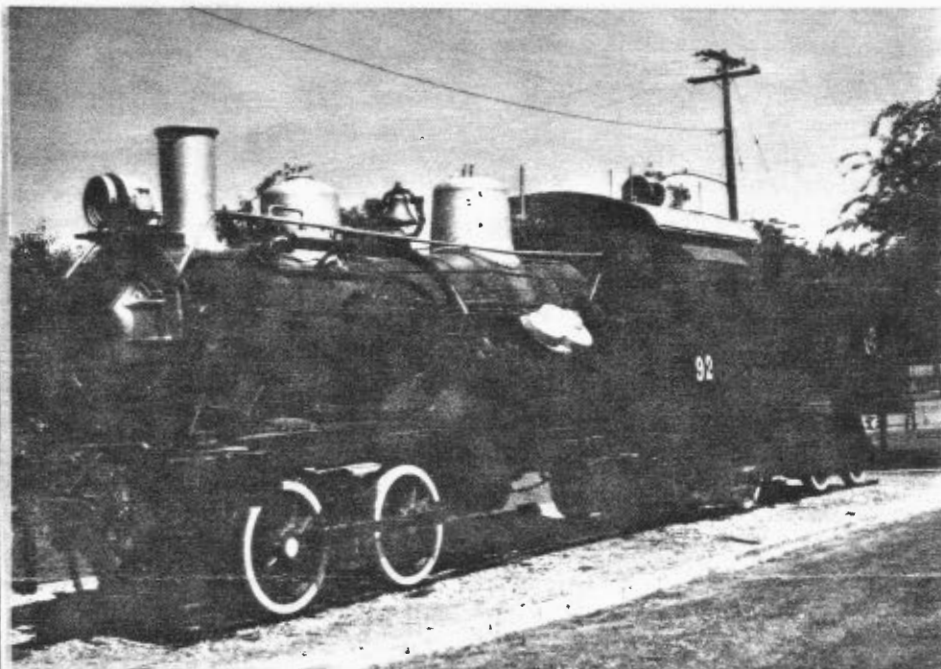
LINK & PIN NEWS is the official publication of the Narrow Gauge, Logging & Shortline Div. of the T.A.M.R. Yearly dues in the division are: \$3.00

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NG,L&SLD-WR-TAMR



Potlatch Forests Inc. Heisler no. 92 on display in Lewiston, Idaho. This 90-ton locomotive was built by the Heisler Locomotive Works (shop no. 1502) in 1924. It was originally Ohio Match Co. no. 1. No. 92 is one of thirty-four remaining Heisler locomotives. Of those remaining, twenty-nine are located in the U.S., four are located in New Zealand and one is located in Mexico.

## Dues DECREASE!!!

In case you might not have noticed, NG,L & SL Div. dues have been lowered. "But aren't we starving for funds?", you may ask. This question can only be answered in one true way: yes! But in order for the division to be healthy, it must have a higher level of membership. The division must be attractive to new members. Thus, lowering the dues makes the division more attractive.

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Good news for the Cumbres and Toltec: Ridership on the C&TS increased this year by 8000 to a total of 30,000. The railroad had in service for the first time this year, five new coaches built up from old 6500 series flats of the D&RGW. Four of the cars (Antonito, Alamosa, Monte Vista, Del Norte) are run out of Antonito while a fifth car seems to be unused at the present time and sits in Chama. See next issue for further details and photo.

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BACK ISSUES of L&P NEWS available:

May-June, 1981(1)  
July-August, 1981(3)

Nov-Dec, 1981(2)  
April-May-June, 1982(3)

Number in parenthesis indicates number of issues available. All issues are 50¢ apiece. Further information on the contents of each issue can be obtained by just dropping me a line.

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PLEASE support the division by promoting it whenever possible; writing articles; sending in photos, prototype news or anything else that you feel would be of interest to other members. Your comments and suggestions are also greatly appreciated.

M E R R Y

C H R I S T M A S

LOGGING LOCOMOTIVE BUILDERS Part II  
The Heisler Locomotive Works

Charles L. Heisler first involved himself with locomotives and locomotive building when after attending Cornell University for three years, he found himself short of funds. He decided to seek employment which he found at the Brooks Locomotive Works in Dunkirk, NY. He was assigned to serve as engineer in charge of the training of apprentices.

By both saving the money he earned at Brooks and by borrowing, Heisler was able to re-enter Cornell to finish his studies. He graduated in 1890 with a degree of Mechanic Engineer. He then returned to Dunkirk and accepted a position on the staff of Edward Nichols who was both president of the Brooks Locomotive Works and of the Dunkirk Engineering Co.

It was during his association with Edward Nichols that Heisler developed a geared locomotive. Mr F.A. Addington, a lumberman from North Carolina, was in need of a locomotive for his tramway. Addington, after a review of what Dunkirk had to offer, was not satisfied. Edward Nichols, aware of Heisler's locomotive designs, called upon him to present his geared locomotive to Addington. Addington liked the design and placed an order for the first Heisler locomotive.

Heisler applied for a patent on May 25, 1891. It was approved on September 20, 1892. However, Edward Nichols died in January of 1892. After his death, neither Brooks nor Dunkirk was interested in producing the Heisler locomotive.

Heisler left Dunkirk and moved to Philadelphia. He continued to improve his locomotive's design in order to make it more presentable to any possible manufacturer. It was about this time that he presented his designs to the Baldwin Locomotive Works. He became acquainted with George Burnham of Baldwin, whose family owned a large interest in the producer of Stearns sawmill machinery, the Stearns Manufacturing Co. of Erie, PA. Burnham decided that since Stearns was already in close contact with the lumber industry, they would be more fit to add a logging locomotive to their line of products. Heisler eventually entered into an agreement with the Stearns Manufacturing Co. which gave them the manufacturing rights to build the Heisler locomotive at their Erie plant.

The first Heisler locomotive built by Stearns was outshopped in August, 1894. It weighed 17-tons and was designated shop number 1001. The 17-ton design was soon followed by a 14-ton, a 30-ton and a 45-ton. In 1898, a 60-ton, three-truck locomotive was added to the list but it did not prove successful as only two were built.

Heisler sales were at first slow but eventually picked up at a rapid rate. Despite a good sales volume, the Stearns Manufacturing Co. decided to shut down its plant. A group of Erie industrialists obtained manufacturing rights for the Stearns line of sawmill machinery and the Heisler locomotive. A new company was incorporated under the name of the Stearns Company.

Because the old Stearns Manufacturing Co. plant had already been sold, new locations had to be found for the business. It was decided that the locomotive manufacturing and boiler, engine and sawmill machinery manufacturing would be handled at two different locations, both of which were eventually found in Erie. This arrangement of two locations continued until 1907. In that year, the business was divided into two separate companies. One company retained the name, Stearns and continued to manufacture boilers, engines and sawmill machinery. Another company was formed under the name of the Heisler Locomotive Works on May 9, 1907.

The Heisler Locomotive Works continued to build locomotives at the same plant which had been completed by the Stearns Co. in 1905. This plant had proven its ability to produce locomotives at a steady volume. Over 25 locomotives had been sold in 1906 alone. Thus, the new company had no need to build new manufacturing facilities.

The new company appointed John P. Whitney as an agent to sell the Heisler locomotive on the west coast. Whitney and his three brothers had for some time, run a business selling logging and sawmill machinery, railway equipment, used locomotives and supplies. In two years time after being appointed Heisler agent, Whitney had sold twenty-two locomotives. Unfortunately, Whitney did not have the capital to stock great amounts of repair parts or build a repair shop that would be able to handle a large territory. Thus, it was decided that a new company that would be 50% Heisler owned and 50% Whitney owned would be formed. On January 10, 1908 the Whitney Engineering Co. was formed.

From 1907 to 1914, Heisler's sales volume remained good. WWI did slow production but the 1920's brought new locomotive orders again to a high level although not as high a level as the previous decade. Although Heisler was not building as many locomotives, production remained at a steady level whereas Lima's Shay production dropped by 64% in the 1920's.

As was the case with all the geared locomotive builders, the Depression put production to a standstill. Heisler was again producing locomotives at higher levels than Lima during the 1930's. During this time there were 32 Heislars built. It was also during this time that Heisler started building fireless locomotives for industrial use. The production of these locomotives helped keep the company alive for several years. The company also built and experimented with a diesel. The unit was loaned to two different companies on a trial basis but neither of these companies was interested in buying. It was then stored for five years until it was sold to a steel company who used it until 1970.

With the out-break of WWII and the possible entry of the US foreseen, the directors decided to close the Heisler plant for good. The reasons were many. The plant equipment was old and outdated and thus not likely to be converted to manufacturing of war materials and if the US did enter the war, there would not be any sales anyway. The plant was sold in early 1941 but the company was able to complete orders for fireless locomotives and thus were able to use the plant until August 15, 1941.

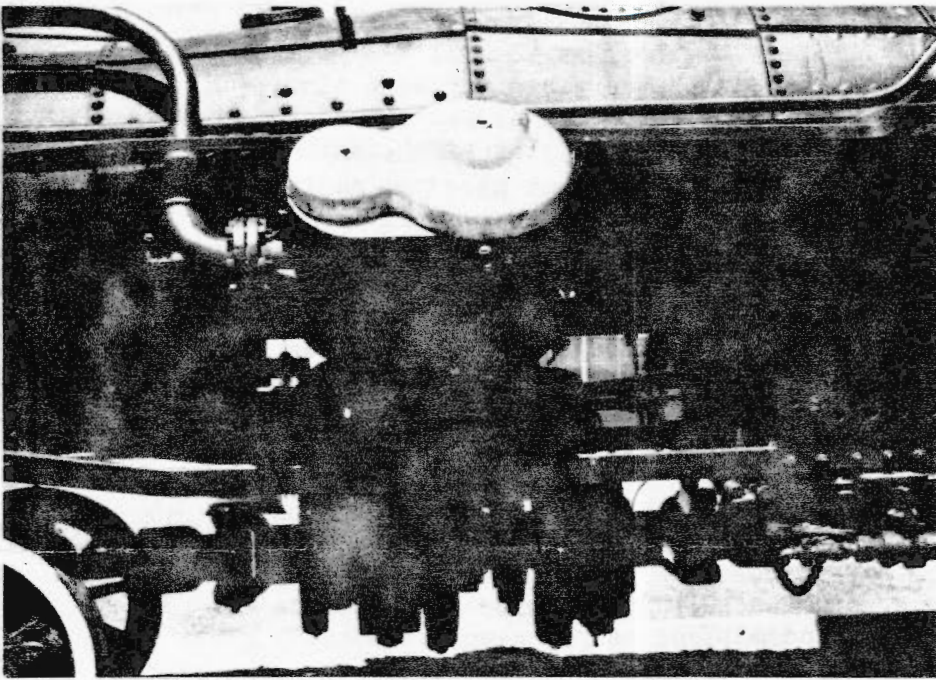
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The location of a Heisler's cylinders was like a Shay, in the center of the locomotive. There were two cylinders arranged in a "V" shape with one cylinder being located on the right side and one on the left and they both turned a crankshaft located on the underside of the locomotive in the center. The crankshaft connected to the trucks with a line shaft and flexible couplings. This enabled the trucks to move freely over rough track. The line shaft connected to one axle of a truck through the use of bevel gears. One pair of drivers was connected to the other with a drive rod.

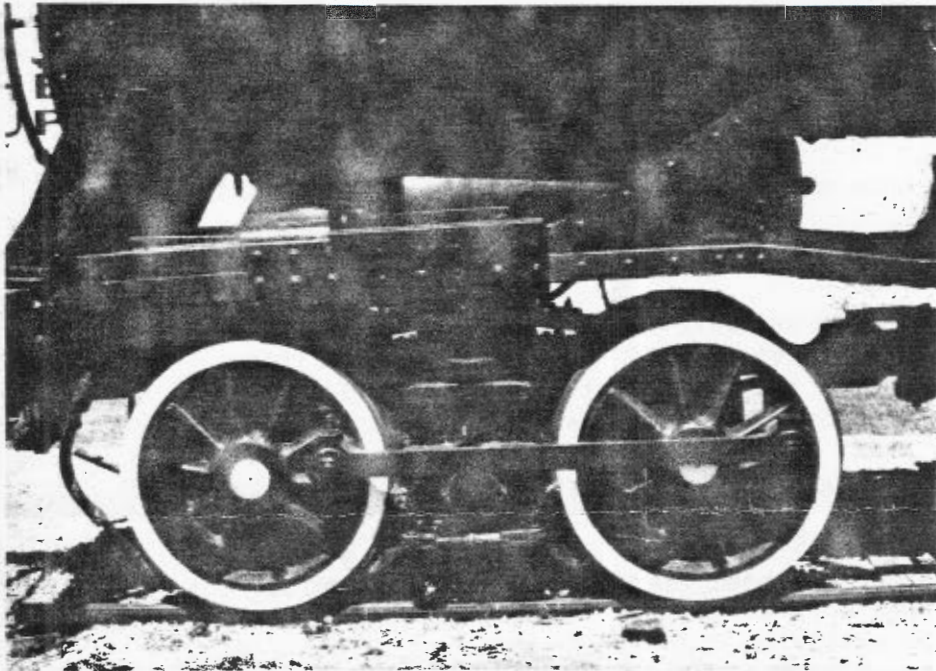
Over all, Heislars were much better balanced than Shay locomotives were. They also had enclosed gears which made them more attractive to customers whose operations took place in areas where gears could easily be worn out by water, coal dust, etc. This made the Heisler the better locomotive for mine railroads or railroad operations in swampy areas.

A GOOD SOURCE of information on Heisler locomotives is The HEISLER LOCOMOTIVE 1891 - 1941. The book contains many excellent photographs, drawings, a list of Heislars built and of course, a history of the locomotive in great detail. The book is available from: Benjamin F.G. Kline, Jr.  
920 Wheaton Drive  
Lancaster, PA 17603

It sells for \$20.00 per copy plus \$1.50 shipping.



This view shows the left cylinder of Potlatch's Heisler no. 92. Steam from the boiler came from the piping at the left



Front truck of a Heisler. Only the forward axle is connected to the line shaft. It drives the rear set of drivers through the use of the drive rod.

Because of the lack of information, photographs, etc, this installment of "Logging Locomotive Builders" will probably be the last. Further information on at least one other builder of geared locomotives, the Willamette Iron and Steel Works, can be found in: THE WILLAMETTE LOCOMOTIVE, by Steve Hauff and Jim Gertz, Binford & Mort, Portland, OR, 1977.

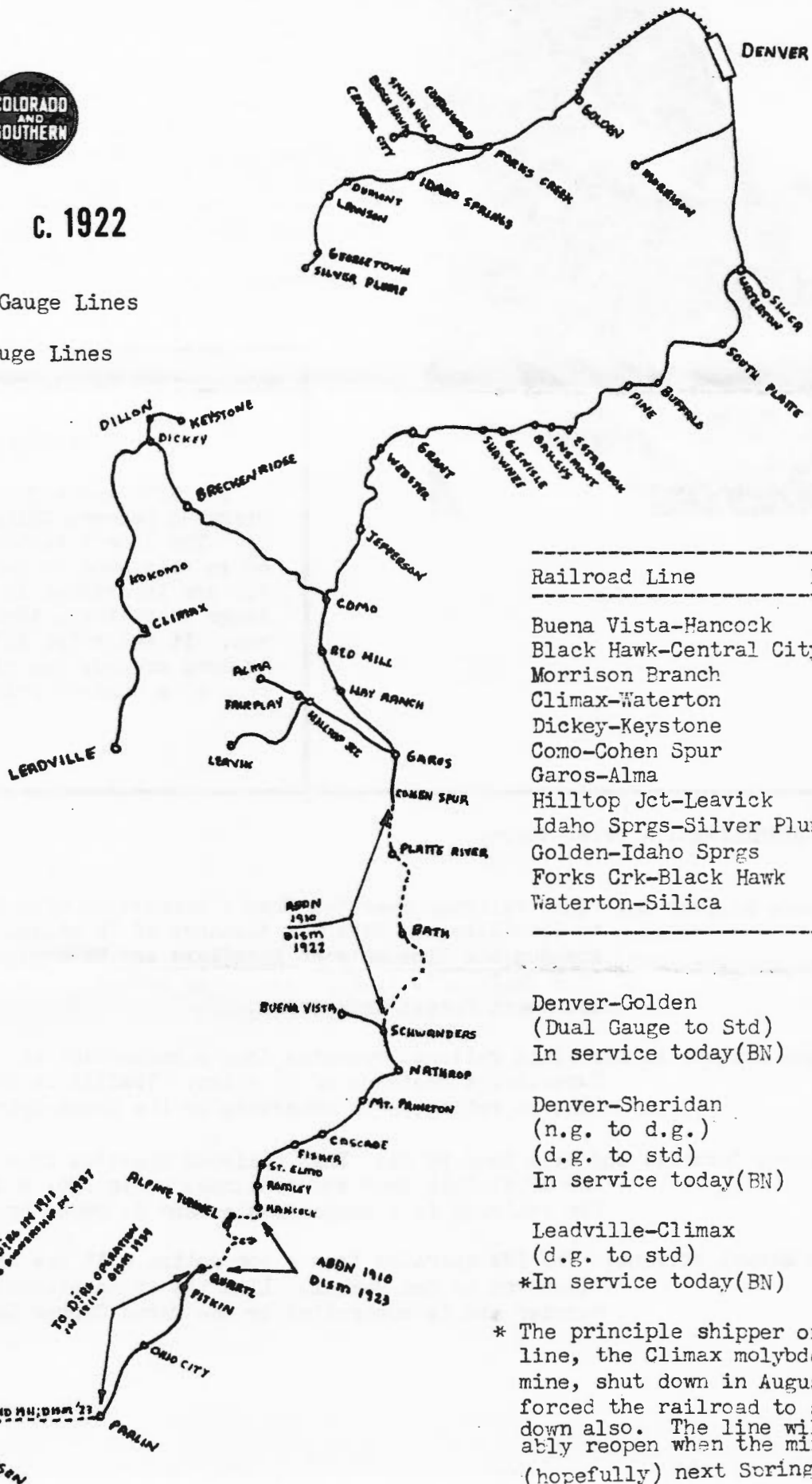
C & S



NARROW GAUGE c. 1922

———— Narrow Gauge Lines

———— Dual Gauge Lines



| Railroad Line            | Date Abnd |
|--------------------------|-----------|
| Buena Vista-Hancock      | 1924      |
| Black Hawk-Central City  | 1931      |
| Morrison Branch          | 1933      |
| Climax-Waterton          | 1937      |
| Dickey-Keystone          | 1937      |
| Como-Cohen Spur          | 1937      |
| Garos-Alma               | 1937      |
| Hilltop Jct-Leavick      | 1937      |
| Idaho Sprgs-Silver Plume | 1939      |
| Golden-Idaho Sprgs       | 1941      |
| Forks Crk-Black Hawk     | 1941      |
| Waterton-Silica          | 1941      |

|                                                                            |              |
|----------------------------------------------------------------------------|--------------|
| Denver-Golden<br>(Dual Gauge to Std)<br>In service today(BN)               | 1941         |
| Denver-Sheridan<br>(n.g. to d.g.)<br>(d.g. to std)<br>In service today(BN) | 1938<br>1942 |
| Leadville-Climax<br>(d.g. to std)<br>*In service today(BN)                 | 1943         |

\* The principle shipper on this line, the Climax molybdenum mine, shut down in August. This forced the railroad to shut down also. The line will probably reopen when the mine does (hopefully) next Spring.



A narrow gauge C&S mixed on some rough track near St. Elmo, CO in 1922. The locomotive, no. 62, was a 2-8-0 built by Rhode Island in 1886. It was originally purchased by the UP for the Utah and Northern and then it was sold to the Denver, Leadville and Gunnison.

BOOK REVIEW: Nevada County Narrow Gauge  
by Gerald M. Best. Berkeley:  
Howell-North, 1965.

The NCNG was a 3 ft. gauge line that operated between Colfax and Nevada City, CA. The line's history is well documented in this book by Gerald M. Best. If you are interested in mountain narrow gauge shortlines, then this book is for you. It sells for \$17.50 but remember to look around, you might get a good used copy at a cheaper price.

#### ARIZONA SHORTLINES: A Brief Survey

Apache Railway Co: This railroad operates from a connection with the AT&SF at Holbrook to Snowflake and McNary, a distance of 74 miles. ARy has applied to abandon the line between Snowflake and McNary.

The railroad's traffic is mostly lumber. The line is controlled by Southwest Forest Industries.

Magma Arizona RR Co: This railroad operates from a connection with the SP at Magma to Superior, a distance of 28 miles. Traffic is mostly in copper and this is reflected in ownership by the Magma Copper Co.

Tucson, Cornelia and Gila Bend RR Co: This railroad operates from a connection with the SP at Gila Bend and continues on to Ajo, a distance of 43 miles. The railroad is a copper hauler and is owned by Phelps-Dodge.

San Manuel Arizona: The SMA operates from a connection with the SP at Hayden and continues on to San Manuel. Like the Magma Arizona, it is a copper carrier and is controlled by the Magma Copper Co.