

Asso. Ed. L&P:

Vacant

NG, L&SLD-WR-TAMR

Ex-D&RGW K-36 no. 489 at Osier, CO with the train from Chama, NM, the New Mexico Express. When the train from Antonito, CO(The Colorado Limited) arrives, the 489 will head that train back to Antonito. All in a day's work on the Cumbres & Toltec Scenic RR. September 4, 1982.

As most of you probably know, the NG, L&SL Div. isn't the largest organization within the TAMR. As far as I know, we are one of the smallest organizations printing its own newsletter. Most of you also know that TANR membership has dropped in the past few months and is only now starting to once again grow. I know that if TAMR membership grows, so will NG.L&SL Div. membership. Please support both the TAMR and the NG, L&SL Div. by contributing articles, information, etc. and by promoting the organizations whenever possible.

You don't have to write a full length article to show your support. L&P NEWS can be supported in many ways. Any narrow gauge, logging or shortline information from your area can be of great help in keeping this newsletter alive and flourishing.

I have been working one some items that I hope can be printed in L&P NEWS in the future but I need help in completing them. I would like to compile a list of railroads that exist soley on the logging industry of partic ular areas. I would also like to compile a list of operating, displayed or stored narrow gauge, logging or shortline steam locomotives. Even though information is almost impossible to obtain, I would like to print a few articles on narrow gauge or logging lines in other parts of the world(i.e. Portugal, Brazil, Australia, etc.). I would like to hear your opinions on these ideas and I would like to hear some ideas of your own.

FOR FURTHER READING ON SILVERTON:

NARROW GAUGE IN THE ROCKIES, Lucius Beebe and Charles Clegg, Howell-North, Berkeley, CA, 1958.

SILVER SAN JUAN: The RGS, Mallory Hope Ferrell, Pruett Press, Inc., Boulder, CC, 1973.

THE RAINEOW ROUTE, Robert E. Sloan and Carl A. Skowronski, Sundance Publications, Ltd. Silverton, CO, 1975

\*THREE LITTLE LINES, Josie Moore Crum, Durango Herald-News, Durango, CO, 1960.

\*Limited edition.

## A TRANSFER CRANE Drawings by: Steven Masih Information by: Steven Masih

These drawings of a transfer crane are of no specific prototype. They were drawn keeping in mind, standard construction techniques. These drawings are to give you a starting point for a scratchbuilt structure for your own layout or a possible idea for a diorama. Although there are many commercially available cranes to which to choose from, it is always fun to try your hand at something new. I have just a few suggestions that may help you.

The side drawing shows two "left ends". One of these solid and one a "ghost" figure. The main drawing allows for three standard loading/unloading areas. The crane can travel the full length with no obstructions. If you do not wish to have such a long crane then the inner "ghost" drawing should be used. Simply use what suits your needs best. I have tried to put nut-bolt-washer(NBW) detail where it could add to the structure. There are several companies who manufacture such detail so you have a wide choice.

The ties at the end of the crane stop the carriage from falling off. The extra eight feet of overhang on the ends allows the carriage to be stored out of the way when not in use. I would suggest the crane be built on a seperate module that can be fitted on the layout for ease of construction. Each side could be constructed individually and then be glued down with the proper distance between each side.

Finally, the carriage is based on an upside-down MDC handcar. Grandt Line also produces a handcar in HOn3 that would also work. Remember that the spacing between the sides would have to be adjusted! The only additions for the carriage that are needed are two pulleys, the hook and a little wire. One note: the end drawing has been drawn for proportions for the standard gauge carriage.

### PLEASE NOTE:

The position of Associate Editor, L&P NEWS is still vacant and open to anyone who feels they can do a good job. If you are interested in this position, please contact me. CM









DURANGO & SILVERTON NARROW GAUGE K-28 no. 476 rounds the curve at the US 550 overpass north of Durango, CO. August 31, 1981. Photo by Mr. F. Kaszniak. Mark Kaszniak collection.

#### ERRATUM:

While looking through past issues of L&P NEWS, I noticed some minor errors. I would like to set things straight. Shown below are the corrections to the errors.

The first sentence of the first paragraph in the SFNW article in L&P Extra no. 1 should read thus: "The Santa Fe Northwestern Ry was the longest lived independant shortline built after WWI in the state of New Mexico."

As stated in Part V of the SILVERTON AND ITS RAILROADS series(Jan-Feb-Mar 1982 L&P NEWS), the first train pulled into Silverton on July 4, 1882. Many sources have said that the Silverton branch wasn't completed until a later date. The date of completion for the Silverton branch was probably July 11 or 13, 1882.

### STEAM FANS:

Although not able to be found on most common carrier lines, steam can still be found on tourist lines, in storage by a railroad, or on display in public parks. As information becomes available, L&P NEWS will print information on locomotive displays, stored locomotives or tourist lines. Shown below are the names and addresses of some of Oregon's tourist lines. SUMPTER VALLEY RAILROAD Box 654 Baker, OR 97814 (503)894-2268 OREGON, PACIFIC & EASTERN Ry (503)942-3368 What makes a logging railroad different from other railroads? Is it the territory served by the line or the rough, steep trackage? Many things make a logging road different from other railroads. Locomotives are one difference. A logging locomotive had to be able to move over very rough trackage and be able to pull heavy loads up grades of hg or more. The logging roads needed a locomotive that could do the job. The solution to the problem was the geared locomotive. Many types of geared locomotives were used on logging lines. These geared locomotive types included the Shay, the Heisler and the Climax. Regular rod locomotives were used on logging lines but were mostly confined to the better trackage. Geared locomotives were not only used on logging lines but also mining and industrial lines and some Class I carriers had geared locomotives on their rosters. In this issue of L&P NEWS, we take a look at the builder of the Shay locomotive, The Lima Locomotive Works. This article is part one of a series that will cover most of the North American geared locomotive builders.

# LOGGING LOCOMOTIVE BUILDERS Part I The Lima Locomotive Works

The predecessor companies that became the Lima Locomotive Works did not start off by building locomotives. The Carnes, Harper and Company, a machinery firm in Lima, Ohio, supplied lumber companies with various equipment. The firm also manufactured non-logging machinery. After the panic of 1873, Carnes, Harper and Co. started manufacturing boilers.

At about this time, a Michigan lumberman named Ephraim Shay was rebuilding his tramway locomotive into what would become the first Shay. His idea was to build a locomotive that would not be so hard on the wooden rails of his tramway. Shay had dealt with Carnes and Harper at this time.

In 1877, The Carnes and Harper Co. was re-named The Lima Machine Works. In 1879, because of slow logging machinery trade, the company expanded into locomotive building and built three locomotives. Shay got in touch with The Lima Machine Works about his new locomotive. John Carnes, co-owner of The Lima Machine Works, worked with Shay in ironing out the problems of Shay's locomotive. In 1880, the first locomotive of Shay's design was put out by the Lima Machine Works. After being granted a patent on June 14, 1881 for his locomotive designs, Ephraim Shay gave the Lima Machine Works exclusive rights to build the Shay Geared Locomotive. As time passed, the Shay locomotive designs were improved on. Early Shays were two-truck, two-cylinder designs with vertical boilers. By the mid-1880's, Shays were built with horizontal boilers, vertical fireboxes, three cylinders and by the late 1880's, three trucks. Eventually, Shays were built with two, three or four trucks and the largest four truck Shays weighed 150 tons. The majority of the work done at The Lima Machine Works was locomotive building and so in 1892, the company name was changed to The Lima Locomotive and Machine Works.

It was inevitable that the Shay locomotive design would have to be updated and improved with the passage of time. Shays built before the 1920's had I-beam frames. The I-beam frame had reinforced truss rods. The frame accommodated itself to rough track by twisting to the position taken by the trucks. The I-beam cracked after a few years of rough operation. A steel girder frame built from boiler plate five-eighths of an inch thick on the left side and three-fourths of an inch thick on the right side was first used on a three-truck Shay in 1920. Heavy angle stock was riveted to the top and bottom of the frame. Flexibility was attained by making the space between the frame and the bolster on the front truck greater than on the rear truck. An opening in the girder frame allowed for easy examination of the staybolts. The steel girder frame was one difference between older Shays and the new designs, called the Pacific Coast type. Cast steel trucks were used on the Pacific Coast type Shays. Older Shays had used (con't from page 5)

arch bar trucks. The Pacific Coast Shavs also had larger cylinders than the older Shays and this gave them greater tractive power.

The first Pacific Coast Shav was built in October, 1927 and ran at the Pacific Logging Congress in Tacoma, WA in 1927. This new Shay design impressed the western logging operators. The first Pacific Coast Shay was promptly sold at the logging congress to the Bloedel, Stewart & Welch, Ltd. of Menzies Bay, BC. Between 1927 and 1940, 24 Pacific Coast type Shays were built.

Because of the Depression, Shay production was lowered considerably. Lumber production wasn't great enough to justify the purchase of new locomotives by the loggers. When the lumber industry got back on its feet again after WWII, the diesel was already hauling the timber out of the woods. Logging companies were simply not interested in buving Shavs. In 1945, the last Shay was built for the Western Maryland Ry. This 165-ton Shav is now on display at the B&O Railroad Museum in Baltimore,MD. The Lima Locomotive Works considered building diesels themselves in 1947. The first Lima-Hamilton switcher came out in 1949. In 1950, the Baldwin Locomotive Works merged with Lima-Hamilton to form Baldwin-Lima-Hamilton. After the merger, production of Lima locomotives ceased.

Both Shays and rod locomotives were steam driven. Aside from this, the two were different in many ways. The first difference in the two types of locomotives was the location of the cylinders. (1) On a rod locomotive, the cylinders were usually located just below the smokebox. (2) A rod locomotive usually had a pair of cylinders, one cylinder being located on the right side of the engine and the other on the left.

A Shay's cylinders, on the other hand, were located on the right side of the locomotive only. Because the location of the cylinders would cause the right side to weigh more than the left, the boiler was built off center toward the left. This offset the weight of the cylinders on the right and balanced the locomotive.

The cylinders of a Shay turned a crankshaft directly beneath them. The crankshaft was connected to the line shaft through the use of various coupling rings and square shafts. The line shafts connected to the trucks through the use of bevel gears. Because the cylinders were located on one side only, the wheelsets in Shay trucks had gearing on one side only.

What brought out such high tractive power from such a small locomotive like the Shay was the fact that the entire locomotive weight rested on drivers. This was unlike most rod locomotives where weight came mainly from the boiler only. The tender of a rod locomotive contributed nothing to the tractive power and, because of this, was wasted weight.

Most early Shavs burned wood for fuel. This was because wood was readily available to a logging railroad. Later most Shays burned oil. Although some Shays were built to burn coal, these were found primarily in regions abundantly rich in coal.



This Class C Shay(3 trucks, 3 cylinders) was photographed at Heber City, UT in June, 1980. This view shows the rear truck and the tender.



The cab, steam dome, cylinders and front truck of the Class C Shay in Heber City.



Tender headlight and sand box on the back of MASP Shay no. 10. No. 10 was photographed inside the enginehouse at Fish Camp, CA in June, 1981.



Left side of Class C Shay at Heber City. Although most of a Shay's "action" was located with the cylinders on the right side, the left side was neverthe-less, interesting.

Research By: Sean Gallagher & Claude Morelli

# THE RIO GRANDE EASTERN

Many railroads have been built on optimistic dreams. Some of these railroads succeeded and others didn't. The Rio Grande Eastern Ry was an optimistic dream that failed.

The town of Hagan came into being in the early 1000's. The town was named for W.C. Hagan who was an official of both the New Mexico Fuel and Iron Co. and the Santa Fe Central Ry. The NMF&I Co. was interested in developing the coal field around Hagan. The Albuquerque Eastern Rv, a company affiliated with both the SFC and the NMF&I Co., was incorporated on July 22, 1901. This company planned to build a railroad from a connection with the SFC at Moriarty, NM to Albuquerque. The company also proposed building a line from Frost(a town on the AE) to the Hagan coal field and on to a connection with the AT&SF at San Felipe Pueblo, NM. Work began on the Moriarty-Albuquerque line in 1903. In 1904, it was announced that the branch to San Felipe would also be constructed at this time. Right of way across San Felipe Pueblo land was aquired by the AE on May 2, 1904 for \$212.52. Work on both the Albuquerque and San Felipe lines was slow. By 1905, only 22 miles of trackage had been laid out of Moriarty. Lack of funds was the reason for the slow work. In 1908, the SFC and the AE consolidated to form the New Mexico Central RR Co. A \$2,500,000 bond issue dated April 1, 1909 was authorized by the NMC. This was to provide funds for the construction of the Hagan line. Work started in 1909 and a grade was completed to within a few miles of Hagan. A previous SFC debt prevented the NMC from ever issuing its bonds and work was once again halted. On January 10, 1910, the NMC fell into receivership. Work on the Albuquerque and Hagan lines was never again started.

In May, 1919, the Hagan coal field was acquired by interests associated with the United Sulpher and Development Co. of New Orleans. Hagan Coal Mines, Inc. was formed to operate the property. The Hagan Co. also aquired along with the coal field, the AE right of way across San Felipe Pueblo land. The Rio Grande Eastern RR was formed to build from a connection with the AT&SF at San Felipe Pueblo to Hagan.

In August, 1923, grading was underway and ties were being distributed on the new RGE. At about this time, the Colorado Springs and Cripple Creek District Ry. was being torn up. The RGE acquired from the CS&CCD, 14 miles of 60 lb. rail, ties, and 1000 feet of trestle. The RGE also acquired their one and only locomotive from the CS&CCD. This locomotive was a 2-6-2 and was originally CS&CCD #101. It became RGE #101. The RGE also obtained from the CS&CCD, a caboose, a combine, two flat cars, four push cars, and a speeder.

The RGE was originally built as an intrastate carrier. RGE management decided that interstate traffic could be handled over the line. On August 6, 1924, a new company, the Rio Grande Eastern Railway was formed. On August 30, application was made to the ICC for authority to acquire and operate the line in interstate commerce by the Railway.

3651 revenue carloads were expected during the first year of operation. 77% of this total would come from outbound shipments of coal. The mines at Hagan would account for most of these coal shipments but the Tejon Coal Co. was expected to construct a spur off the RGE mainline four miles closer to San Felipe. This company was expected to ship three to five carloads of coal per day. Other shipments over the line would include the production of the Tonque Clay Products and inbound shipments of supplies for the town of Hagan which was expected to reach a population of 1000.

The 12.6 mile RGE officially engaged in interstate commerce on December 29, 1924. Operations had started with the completion of the mainline on August 17, 1924. The first car of coal was shipped a week later.

The Hagan operation was not successful. Coal was being replaced by natural gas and fuel oil. The Hagan company had expected to produce 1000 tons of coal daily for 90 years. There just weren't enough people buying New Mexico coal at the time to use this amount. The Hagan mine operation was unprofitable and the lack of traffic from the mine lead to the RGE not being able to meet its expenses. By the fall of 1931, the railroads losses exceded \$250,000.

The Hagan operations had shut down on May 1, 1931. On July 20, 1931, the RGE filed its abandonment application with the ICC. Approval from the ICC for the abandonment came on September 14, 1931. The RGE continued some operations until the middle of 1933. This was probably due to the removal of mine equipment from Hagan. The railroad was dismantled in the summer of 1933.

#### RIO GRANDE EASTERN EQUIPMENT ROSTER

#### Locomotive:

| Road No. | Builder's no.     | Туре  | Cylinders | Drvrs | T.W.    | Τ.Ε.   |    |
|----------|-------------------|-------|-----------|-------|---------|--------|----|
| 101      | Schenectady #5625 | 2-6-2 | 19"x24"   | 51"   | 217,760 | 25,990 | 1. |

 Built August, 1900 as CS&CCD #101; to RGE as #101; scrapped in Albuquerque by AT&SF in June, 1933.



Stark: m.p. 2.9; siding.

Tonque: m.p. 7.4; siding; Tonque Clay Products Co.

Coyote: m.p. 8.8; siding; town of Coyote nearby.

Hagan: m.p. 11.5; station and scale; power plant; coal mine w/tipple and four loading tracks; company store w/barber shop, post office and safe; school; gas sta; hotel(?); The town of Hagan had a post office as far back as 1902 but the town wasn't fully de-veloped until the Hagan Coal Mines, Inc. acquired the property.



Page 9





### References:

Albuquerque Morning Journal, Albuquerque, NM, August 3, 1923.

Geology of Sandia Mountains and Vicinity, New Mexico, Vincent C. Kelley and Stuart A. Northrop, New Mexico Institute of Mining and Technology, Socorro, NM, 1975.

NEW MEXICO RAILROADER, Railroad Club of New Mexico, Albuquerque, MM Vol. 2, No. 8: "The Rio Grande Eastern Railway", Vernon J. Glover. Vol. 13, No. 5: "The Rio Grande Eastern Railway", Joseph P. Hereford.

Some facts of interest:

H.J.L. Stark of the Lutcher and Moore Lmbr. Co., Orange, Texas, had a large interest in Hagan Coal Mines, Inc. The siding of Stark was named after this man. The office of RGE Ry. president(H.J.L. Stark) was located in Orange, Texas. Because of this, some of the company built structures in Hagan had orange painted windowsills.