

WRITES ARTICLE FOR MAGAZINE

R. Williams, of La Grande, Tells of Work on O.-W. Railroad

George R. Williams of La Grande, road foreman of engines and who has worked with locomotives for the last 20 years, has an article in the March issue of the Union Pacific Magazine.

The title of the article is "An Old Man on This Job Must Know Engines." The article follows: A locomotive engineer, a passenger conductor, a crossing watchman, a station agent, a section foreman and others have shown through articles in the Magazine at their work, when explained properly, is very interesting to other classes of employes. The articles have helped us to understand them and their work better than before.

There is much interest also in the work of a road foreman of engines, and it may be that I can convey some of this interest as the others have done, and contribute something in the way of understanding of the road foreman's work.

The first objective of our operating department is to get trains over the road safely, on time, economically and with a maximum of satisfaction to the patron. Naturally a prime factor in accomplishing this is the locomotive; and it is to it that the locomotive does its job properly in the work of the road foreman of engines.

The proper instruction of engine-men is an essential part of his work. The careful selection and instruction of new men entering his service is another. Engine-men are daily going to school. Every time they go on the job, they learn something new and while the road foreman is endeavoring to help them in this respect, he is in turn learning from them—and with them.

Improvements That Have Revolutionized the Locomotive

The locomotive of today looks in general way like the locomotive of the past. But to those who know it, it is a very different machine from the locomotive of even a few years back. One of the great improvements of recent years is the superheater. This is a device by which the steam, after being drawn from the boiler, is further heated before it enters the cylinders. The efficiency of the steam being thereby greatly increased.

Another improvement is the brick arch, which is built into the firebox in such a way as to produce more perfect combustion and to force the flames against the back surfaces of the firebox, reducing sparks and smoke and protecting the flues.

The feed water pump utilizes exhaust steam from the cylinders, which was formerly wasted for heating the water before it goes into the boiler. In this way, with the incoming water thoroughly heated, the boiler temperature is not interfered with.

The automatic stoker, or mechanical fireman, has not only lightened the fireman's task, but it has made it possible to build big locomotives with large fireboxes.

The "Booster" Adds Reserve Power Not the least among the large list of appliances that have been added to the modern locomotive is the booster. This is really a small, auxiliary engine, built into the under trucks or trailer trucks. Its driving wheels are smaller than the regular drivers of the locomotive and have therefore a special value in starting a train or in propelling it slowly. It may be brought into action, or its use discontinued, by the manipulation of a lever in the engineer's cab. On tracks it frequently eliminates the need for a helper engine. In starting, it helps the locomotive make a quick get-away with smoothness and ease.

All of these and other modern features have increased the efficiency of the locomotive to a very great extent, and have lessened the engineer's work.

As I look back over my early days on an engine and note the contrast with the present, I can readily understand that a man coming into service in recent years would have a hard time believing that so many things could be done to a machine to improve it.

Trying an Engine, Then and Now Twenty years ago, when firing a boiler would strip ourselves down as if we were going into the firing line of a battleship. When the mail train was first put on, the schedule was fast and the train heavy on the size of the engine. All firing was done by hand through aaffle door; that is, the top part of the fire door was dropped down on a hinge, leaving an opening of about 15 inches wide by 8 inches deep.

While the engineer was trying to maintain the schedule on a two percent grade, and was sweating over the water level in the boiler, the fireman was also sweating on the deck because at every opportunity it would be necessary to put a second water injector, and the extra cold water going into the boiler would pull the steam pressure down to around 150 pounds. In a 200 pound pressure was needed to keep up train speed, it was necessary for the fireman to double his efforts in order to regain his lost pressure.

Today you see none of this in the cab of an engine. The engineer does not worry about his water level though he is working the engine up to its fullest capacity because with the modern means of applying the boiler the margin of capacity is so widened that he has ways ample reserve means of delivering the water. With the large automatic stokers the fireman does not have to worry or sweat regarding how hard the engine is worked. Engineers admire the "9000's."

Among all the engines I have ridden in my twenty-three years' railroad experience, the 4-12-2 Union-Pacific type (9000-class) is supreme, not only in beauty of lines and workmanship, but in the way it meets all the requirements of the road. This monster that dwarfs all other engines, is amazing in its flexibility of operation. The ease with which it starts heavy trains on mountain grades is phenomenal.

This not only lessens the worry of the engineer but it also lessens the wear and tear on draft gear. This engine, due largely to the Alomite method of lubrication and the uniform application of power throughout the entire revolution of the driving wheels, rides like a Pullman, and the engineer cannot help admiring this machine because of its adaptability to the service.

In addition to his duties pertaining to personnel, the road foreman of engines functions as a connecting link between the road and the shop. Charged with the responsibility of reporting to the superintendent and the master mechanic regarding the performance of locomotives, he keeps in close touch with the machines, making himself familiar with any operating conditions that might cause interruption of service and reporting these conditions to the proper officials.

Road Foreman Knows Each Engine Individually

It is up to the road foreman of engine not only to watch the performance of the engines, as a group, but to come to understand each of them individually. In order to do this, he must ride each power unit as an observer, and as a willing listener to the constructive criticism offered by the engine crew. This direct observation must be made of every unit in his district, be it switch engine or freight or passenger engine.

To get the utmost efficiency out of all of the power units under his supervision, the road foreman of engines must be equipped to command any situation that may arise. Not only that, but from the background of past experience and study he must be able to judge whether a given engine is properly performing its work. If it is not, he must be able to report what needs to be done. A Typical Observation Trip Under all circumstances, the road foreman must do the thing that will keep the engine moving without delay, consistently with safety. To give a better picture of the actual work of a road foreman

while on duty, I shall outline briefly a typical trip.

I leave my terminal in the Blue Mountains on the engine pulling the Oregon Special. I watch the performance, make notes of the engine to a point where a helper is picked up at the foot of the two per cent grade, calling attention of the engineer to anything that may come under my observation which I think will help get better performance. Dropping back, I get on the helper engine and watch its performance on the heavy grade. If the train does not handle as I think it should I walk over the train to the point where the slack occurs. I then check the tonnage on each side of the slack to ascertain if each engine is handling its proper proportion of the load.

At a point on the opposite side of the mountain where a helper is picked up by trains in the opposite direction. I leave the Oregon Special and get on the engine of one of our eastbound manifest trains, making the same observations as before, also checking the helper. After this, I leave this train at an open telegraph office and while waiting to get out of this point, I listen in on the dispatcher's phone to keep posted on the operating conditions along the line.

As I listen to the information passing back and forth between the different operators and the dispatcher I readily pick up any conditions requiring attention. If engine is needing help, I may be able to prevent a delay by getting the information about it soon enough, in this way.

As the road foreman spends most

of his time on the road, he has little or no use for an office. His work requires him to keep pretty steadily out on the firing line.

The transportation and air brake rules are the road foreman's guide. The more they are studied and the more they are applied in the conduct of the service, the more efficient and safe is the service, and the more plain it is that these rules are sensible and necessary.

To maintain fast schedules, it is necessary to have adequate braking power. With this our locomotive and cars are equipped. And it is necessary for all concerned with their operation to have a thorough knowledge of the air brake appliances.

The only thing a railroad has to sell is service in the way of transportation of passengers and freight, and in order to give the best, the highest possible point of efficiency. Foremost in the equipment is the locomotive, and the well earned reputation of the Union Pacific for on-time performance has been made possible because our locomotives as well as our other equipment and our tracks are kept in the best of condition.

\$100,000 FOR NEW U. P. GRAIN BINS

PORTLAND, Ore., Mar. 8.—Six concrete grain bins, costing approximately \$100,000 and having a capacity of about 200,000 bushels, will be added to the Union Pacific grain terminal at Portland, it was announced here by J. P. O'Brien, general manager of the O. W. R. & N., following a conference with Peter Kerr, of Kerr, Gifford

and company, who are lessees of the property.

Work will commence this month on the new bins and it is planned to finish construction by Nov. 1, 1929.

It is understood that Kerr Gifford and Company will spend an additional \$25,000 for necessary equipment.

If you see the ARAB

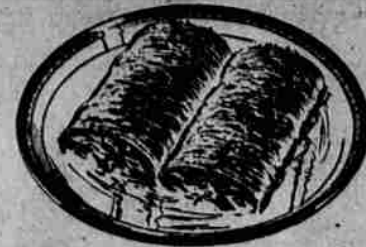
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Opposite Observer

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