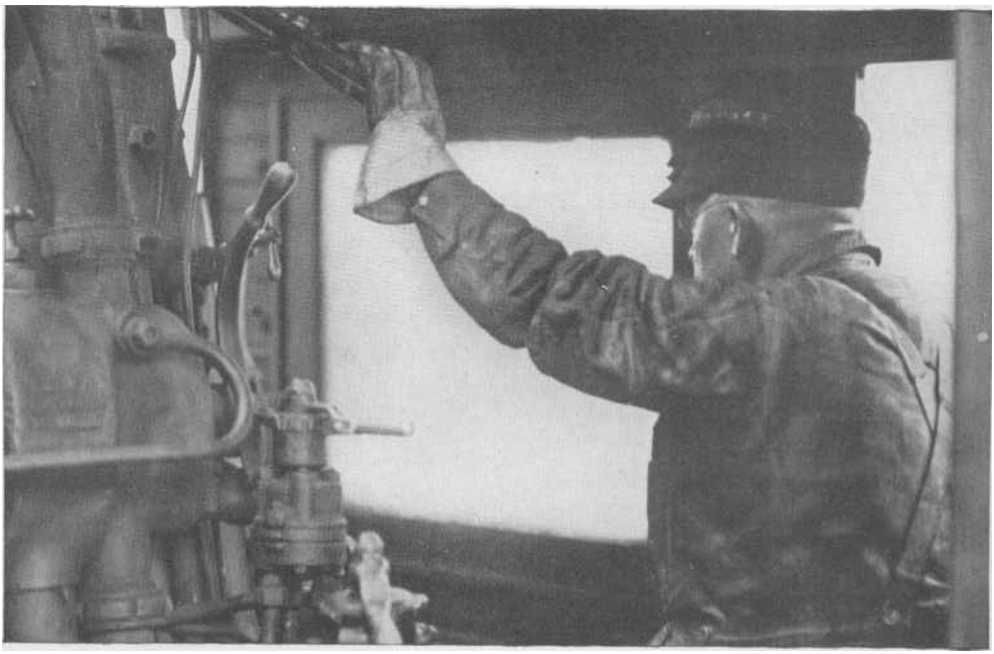
THE PENNSYLVANIA RAILROAD SYSTEM

Broad Street Station
PHILADELPHIA, PA.

December 6, 1913

Pennsylvania Station
PITTSBURGH, PA.

How a Locomotive Engineer "Keeps a Lookout"



AN ENGINEER AT WORK

Francis J. Keller, 68 years old, at the throttle as the Pennsylvania Limited left Philadelphia for the West on November 26, 1913. Mr. Keller retired four days later after serving the Company loyally for 49 years and 7 months.

By Edward F. McKenzie
Passenger Engineman, Pittsburgh Division,
Pennsylvania Railroad

On the Pittsburgh Division of the Pennsylvania Railroad after running a freight engine an average of ten years you receive a letter from the road foreman, nominating you for the position of passenger engineman if you qualify.

To qualify you must pass a perfect examination on eyesight and hearing, and make at least 85 per cent. on machinery, air brake, rules, time tables, special and block signal rules and signals.

On this division we have about 1200 miles of track on main line and branches on which a man entering passenger service must qualify by an examination before our signal instruc-

EDWARD F. McKENZIE
Passenger Engineman, Pittsburgh Division

Edward F. McKenzie, a Passenger Engineman on the Pittsburgh Division of the Pennsylvania Railroad, was awarded the first prize in a contest the *Railway Age Gazette* conducted recently for the best article on the subject, "Keeping a Good Lookout on a Locomotive." Forty-six articles were submitted. Mr. McKenzie's paper, which appeared in the *Railway Age Gazette* of November 14, 1913, is reprinted in this leaflet.

tor before being permitted to run, as extra men go all over the division on anything their turn may call for.

We have automatic, semi-automatic, interlocking, manual, manual controlled and unattended (telephone) block signals; and it is absolutely necessary to know where each signal is, and what kind it is, as well as what it indicates; and to be thoroughly familiar with the block signal rules that apply to each different kind of signal.

* * * *

I have been an engineman eighteen years, seven of which have been on passenger, and have been on a regular run ten months. I will give you my way of working the extra passenger list, which is the most difficult position to fill successfully on the division.

I abstain absolutely from all intoxicating liquors.

I never come to work except in the best of health; take all the rest I can get; live happily with my family and leave my family affairs absolutely at home and think only of the work ahead when on duty.

I obey the rules of the Company absolutely, in regard to (a) looking over the bulletin board, (b) comparing time with standard clock, (c) signing for general orders and registering, and (d) the rigid inspection of engine before going out.

I am very particular in testing air brake, signal whistle, sand pipes and *injectors*. Nothing takes your attention away from the track so much as a bad working injector, or an engine slipping because of defective sand pipes.

* * * *

I tell all my stories and do all my talking to the fireman before leaving, and allow no conversation on the engine while running except the calling of signals and the answering of them, unless the fireman notices something wrong with his side of engine; then I instruct him to step up alongside of me and talk direct, while I look straight ahead; and not yell across boiler and take my attention away from track.

As we run all trains, local or through, as our turn calls for, it is necessary to study the time table before going out, pinning the leaves at your particular schedule and also

the schedule of opposing trains,* so that you can see your figures at a glance in each direction and not run by a [standing passenger] train at an unprotected station.

We are now ready to leave. On the main line between Pittsburgh and Altoona we have about 1800 signals, each way, in a distance of 114 miles; and have about 259 signals in the Pittsburgh station limits, 0.6 mile.

The greatest distance between signal bridges is 4200 feet, and at interlocking plants or where traffic closes up we have three in that distance; so it will be seen that we have to keep a good lookout, under normal conditions, as well as on track, for flagman in case of emergency.

We call all signals as well as the numbers of opposing trains, so we know what trains have been represented.

When diverted to freight tracks we have, in addition, at six places going in one direction and seven going the other, to receive a hand signal from switchman holding green flag by day and green lamp by night. The fouling of any of these switches without first receiving this signal is the same as running by a stop signal, and is a violation of the rules.

At bad places, such as high hills and public road crossings, where watchmen are stationed permanently, I keep a very close watch for them.

I recently saved an automobile and its occupants by using brake hard when I saw the crossing watchman give the automobile a signal to cross over when he had overlooked my train. As I was making a station stop I had no trouble in reducing speed sufficient to allow him to clear. If I had not noticed the watchman I should have struck the automobile.

* The timetable of the Pittsburgh Division is a book of 170 pages, 4½ inches x 9½ inches. On each two facing pages there are columns for 13 trains. Some of the semaphore signals on this division are lower quadrant and some upper quadrant; there are both two-position and three-position signals; and on the main line there are some speed signals—those in which the upper arm on a post indicates regular speed. the second arm medium speed and the third, or dwarf arm, low speed.

WHAT THE ENGINEER SEES FROM HIS SEAT IN THE CAB

To see just what view of signals and track an engineer gets, a camera lens was focused where Engineer Keller's eyes had been.

I also had an example when I first went into passenger service of allowing the mind to stray: While planning a pleasure trip for myself and family I had to make a rough stop to keep from running by a regular station stop; that cured me, and I allow no mental straggling since.

But the discipline of the mind necessary to keep up a vigilant habit is, of course, a continuing matter. We all begin some discipline of the mind in childhood. In railroading a man must give attention to this as soon as he goes to firing. He should profit by other men's failures and resolve never to allow himself to do likewise.

While I was firing, my engineman ran past a signal while taking off his overclothes. I resolved never to take mine off until I arrived at the ash pit, and I have lived up to this resolve. Some roads in recent years have posted notices on this subject, forbidding this practice and also forbidding washing up approaching the terminal.

* * * *

On parts of our division we receive two caution or distant automatic signal indications, the first one being two blocks or about 8000 feet in the rear of the stop signal, while the other is one block, or about 4000 feet back. But the rule nevertheless requires trains to approach the second distant prepared to stop; it may be set at stop because of an accident. The failure to observe this rule to the letter caused one of our best passenger engineman to side-wipe a wreck that had occurred just ahead of him, and both he and his fireman lost their lives.

The sub-conscious mind (or instinct) should be trained to act promptly. While running about 35 miles an hour with a heavy passenger train on a dark night, I ran through a box car that had been derailed on the adjoining track and had fallen in my path. This was on the Horse Shoe Curve. From the time the pilot struck, until the cab of the engine struck was about ½ second; in that time I shut the throttle, applied air brake, opened sand valve, reversed engine, jumped down behind boiler and whistled brakes for the second engine. We stopped in a little over 130 feet, as we were going up hill. As I had no warning, I could not have thought and acted so quickly; neither could the other engineman have done his part, if it were not a part of a runner's nature to be eternally on the lookout for trouble—trouble which we don't want to find.

One of our enginemen who saw a caution signal in the clear position and could not see the top or home signal because of smoke, ran by. It proved to be a surprise test, the signal being capped. He was severely disciplined; and the rest of us were in that way warned, by the company, that a strict observance of the rules is required, and that no chance taking will be tolerated.

* * * *

A careful study of the sheet posted monthly, which shows all failures of men and the discipline imposed, as well as commendations for good service, is a great help to all enginemen who make proper use of the lessons.

And now to other railroad companies I would commend the P. R. R. practice of making the men comfortable. Have all gages and the water glass placed close to engineer with a good cab lamp showing on them. Have gage cocks, throttle, reverse lever and sand valve as convenient as possible; a good roof and a comfortable seat, and a storm window 4 inches x 24 inches hinged outside of cab, between the two side windows. This enables the engineer to see while passing trains. He can wipe this window off at any time, and be protected from the weather.

With the Pacific type engine I have had to use brake and use steam going down hill in order to raise the cloud of steam and smoke which hangs over the cab and obscures vision on account of short stack and long boiler. The Atlantic type of engine is much better.