

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE NORTHERN PACIFIC RAILWAY AT SIFTON,
N. D., ON FEBRUARY 12, 1933.

May 3, 1933

To the Commission:

On February 12, 1933, there was a derailment of a passenger train on the Northern Pacific Railway at Sifton, N. D., which resulted in the death of one employee.

Location and method of operation

This accident occurred on the Second Subdivision of the Fargo Division, extending between Jarestown and Mandan, N.D., a distance of 107.5 miles, in the vicinity of the point of accident this is a single-track line over which trains are operated by time table, train orders, and an automatic block-signal system. The accident occurred at the east switch of the passing track at Sifton, approaching this point from the east, there is a 2° curve to the left 608 feet in length, followed by several miles of tangent track, the switch being located on this tangent at a point 327 feet from its eastern end. The grade at the point of accident is 0.4 percent ascending for west-bound trains.

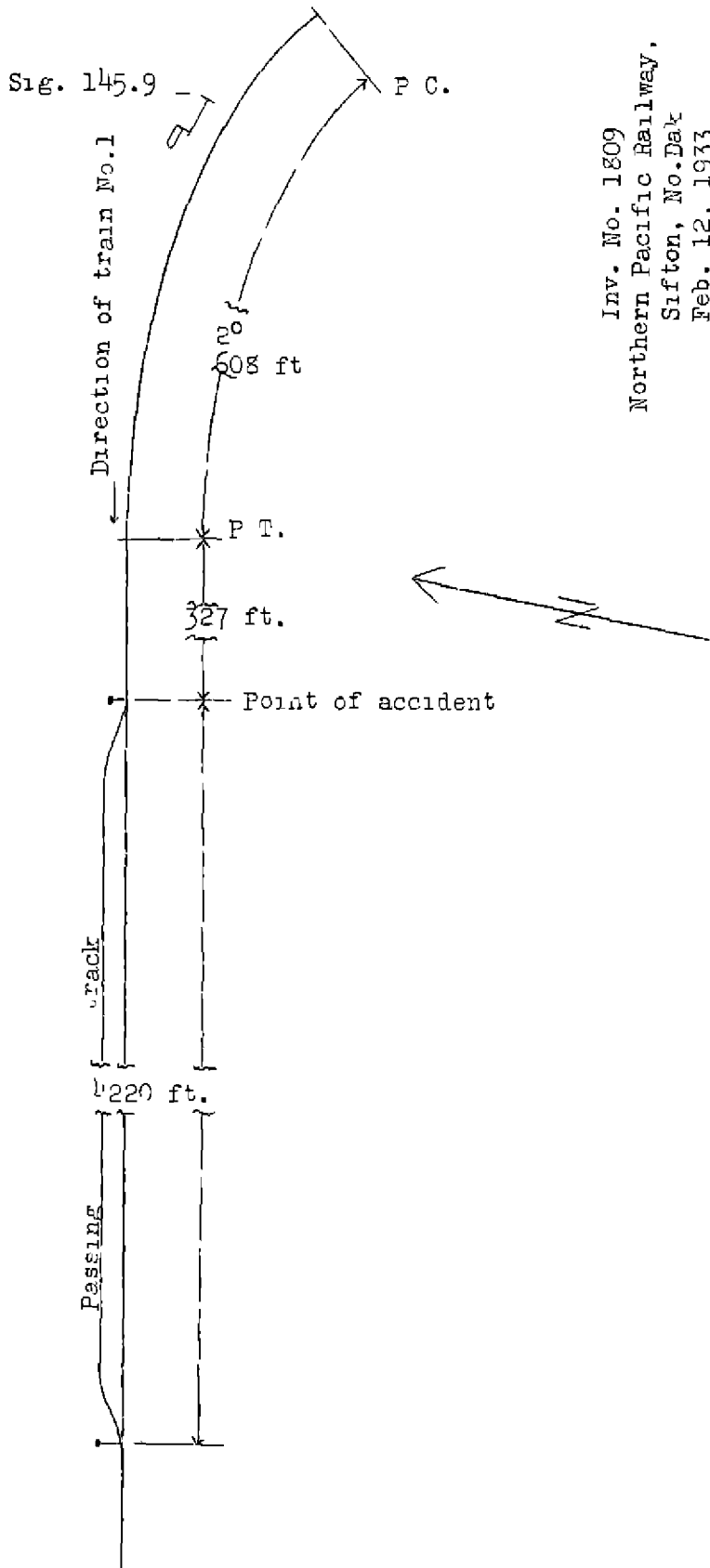
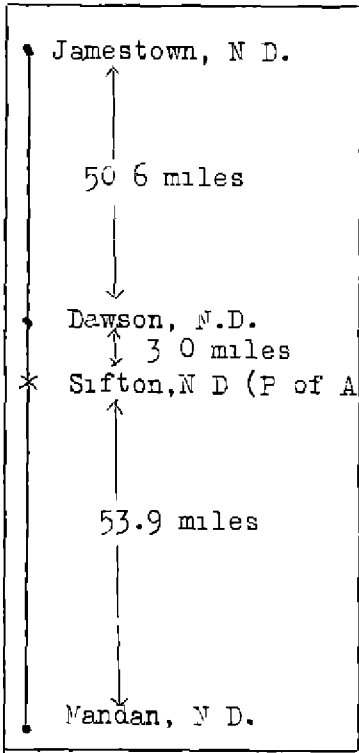
The passing track is 4,220 feet in length and parallels the main track on the north, the east switch is a facing-point switch for west-bound trains and leads off the main track through a no. 11 turnout. The switch stand is located on the engineman's side of a west-bound engine, with a switch lamp mounted above the target. West-bound signal 145.9 is located 824 feet east of the switch.

The track is laid with 90-pound rails, 33 feet in length, with about 20 ties to the rail length, fully tieplated, and ballasted with gravel about 12 inches in depth, it is well maintained.

The weather was clear and cold at the time of the accident, which occurred about 9.25 p.m.

Description

West-bound passenger train no. 1 consisted of 1 mail car, 1 dormitory baggage car, 1 coach, 1 tourist car, 1 dining car, 3 Pullman sleeping cars, and 1 observation car, all of steel construction, hauled by engine 2603, and was in charge of Conductor Williams and Engineman Middaugh. This train left the siding at Dawson, 3 miles east of Sifton, at 9:20 a.m., according to the conductor, 2 hours and 45 minutes late, and



Inv. No. 1809
 Northern Pacific Railway,
 Sifton, No. Dak
 Feb. 12, 1933

was derailed at the east switch of the passing track at Sifton while traveling at a speed estimated to have been between 20 and 25 miles per hour.

Engine 2603 and its tender stopped north of and fouling the passing track, partly jackknifed, the engine was on its right side, with its head end 340 feet west of the switch points, while the tender was upright. The first two cars were derailed but remained upright and in general line with the track. The employee killed was the engineer.

Summary of evidence

Fireman Miller, of train no. 1 who was working on the fire approaching Sifton, said the first he knew of anything wrong was on hearing a severe click or snap and he immediately jumped upon his seat box, opened the window, looked back and saw the first car swaying, then he gave a quick glance toward the engineer and saw that the latter had closed the throttle and applied the air brakes in emergency, following which the rear of the engine seemed to swing toward the north, or right, and then the engine turned over. Fireman Miller said that everything happened so quickly it was hard to tell just what did occur, however, he thought that the engine had not reached the switch when the trouble first started. He estimated the speed to have been not over 25 miles per hour. Fireman Miller further stated that the starting signal at Dawson was displaying a clear indication when his train left that point but he did not see the indication of signal 145.9

Conductor Williams, Head Brakeman Olesen and Flagman Walsh were unaware of anything wrong until the accident occurred. After the accident Conductor Williams observed that the switch was closed and locked, but did not get down under the train to examine the switch points. Head Brakeman Olesen examined the north switch point and found it was tight against the north rail, he did not examine the south switch point as the section foreman was then on that side and told him that it had the proper clearance.

Section Foreman Lunner stated that his examination of the switch made about 1 hour after the occurrence of the accident disclosed that the two switch rods were broken on their north ends and the south switch point was about $1\frac{1}{2}$ or 2 inches from the south rail and loose, the broken ends of the rods had been pulled eastward about 4 or 5 inches and were covered with snow. He last inspected and cleaned the switch about 10 a.m. the day before the accident.

District Roadmaster McCarthy arrived at the scene of the accident about $3\frac{1}{2}$ hours after its occurrence. Examination of the switch disclosed the head rod to be broken off at the first rivet that fastened the clip on the north point. The tie rod was broken at a point that just cleared the second rivet hole on the transit clip. The north switch point was badly

sprung, and it also was broken about 6 feet from the neel, out the safety strap was not broken. The south switch point was sprung and twisted, with a fracture about 1½ feet from the neel. There also were marks showing that the head-rod and tie-rod bolts had been struck by some object. The first rail on the north side of the main track west of the frog was gouged considerably at the west end, while the next three rails west thereof were torn out, the rails on the south side of the main track were intact. The rails of the passing track were torn out, except the first rail west of the frog, which was held by the angle bars, although it was badly twisted and torn loose from the ties.

About 2 hours and 40 minutes prior to the occurrence of the accident the left main driving-wheel tire had broken on engine 2602, of east-bound passenger train no. 2, which train passed Sifton about 6:45 p.m., traveling on the main track and passing over the switch in question as a trailing-point movement. Engineman O'Hearn of that train stated that he applied the air brakes when the train was west of the east switch and that as the brakes took hold he noticed a slight jar, as though something had been struck, he inquired of Fireman Glandt whether he too had noticed the jar and the fireman said that he had, the fireman then looked out and saw fire flying, so the engineman stopped the train by a service application at a point 6,450 feet east of the switch, where the broken tire was discovered and removed. Flagman Ross went back to flag, going finally as far as Sifton, he did not examine the track or the switch at Sifton, not knowing why his train had stopped, but did notice that signal 145.9 was displaying a proceed indication.

East-bound passenger train no. 4, hauled by engine 2243, was following train no. 2 and arrived at Sifton at 7:05 p.m., where it headed in at the west switch of the passing track for the purpose of meeting train no. 1. Due to delay to train no. 2, however, the dispatcher issued instructions for train no. 4 to meet train no. 1 at Dawson instead of at Sifton. Train no. 4, therefore, headed out at the east switch of the passing track at Sifton and then stopped behind train no. 2 until the broken tire had been removed. Train no. 4 then followed train no. 2 into Dawson, where train no. 1 was met. Conductor Landquist, of train no. 4, stated that after his train stopped on the passing track at Sifton, he and Head Brakeman Westoy went to the east switch and the head brakeman swept out the snow from the switch points so that everything would be in readiness when it came time to depart, the snow was about 3 inches above the ties and covered the head rod and tie rod but the south point appeared to be in normal position. Neither he nor the head brakeman tried the switch at that time, the conductor was not present when the head brakeman opened it for the train to head out and did not know that the tire on the engine of train no. 2 had broken at some point west of the switch. Head Brakeman Westoy stated that when he opened the switch it seemed to handle normally for

cold weather, and he thought he noticed that the north point had cleared the rail, although he was not certain. Flagman Eddinger stated that as his train headed out, he dropped off the rear car at the switch, closed and locked it, looked at the north switch point and saw that it fitted against the rail, then crossed over and saw that the south switch point was away from the south rail, after which he gave a proceed signal and the train departed. Conductor Landquist saw the switch lamp change from red to green when Flagman Eddinger closed the switch, and Flagman Eddinger saw the indication of west-bound signal 145.9 change to proceed when the rear of his train passed it.

Signal Supervisor Staver stated that five days after the accident he tested the signals involved and found them to be working properly. In the event the east switch at Sifton had not been closed after train no. 4 departed, or if the north switch point had been away from the stock rail, then signal 145.9 would have displayed a stop indication, the second signal east thereof would have displayed a caution indication, and the starting signal at Dawson would have displayed a proceed indicator, the south point of the switch at Sifton could have been against the main line rail without affecting the signal. In this connection it is to be noted that Flagman Eddinger saw signal 145.9 change to proceed as the rear of his train passed it, while Fireman Miller, of train no. 1, stated that the starting signal at Dawson was displaying a proceed indication when his train departed from that point.

The left main driving wheel tire on engine 2602, of train no. 2, apparently broke when the engine of that train was between the switches at Sifton, as examination of the track subsequent to the derailment of train no. 1 disclosed an indentation on top of the head of the north rail of the main track at a point 1,847 feet west of the east switch, about 4 feet east of this indentation there was a triangular piece of tire tread, with about 1 inch of flange, lying between the rails. At a point 117 feet farther east there was a piece of tire shim, and 5 feet beyond this point there was another piece of tire shim as well as three pieces of brake shoe head, while 21 feet beyond there was a brake shoe key. Pieces of tire shim were then found at points 64 feet, 95 feet, and 183 feet farther east, respectively, while 34 feet east of this last point a brake shoe was found. At a point 218 feet east of the brake shoe the first mark of the tire appeared in the snow inside the north rail, this point being 1,265 feet west of the switch, while the switch was damaged and the broken ends of the switch rods were pulled eastward, indicating that they had been struck by an east-bound train. At a point 1,824 feet east of the switch a brake head key was found and 4,130 feet farther east was found a piece of tire 8 inches long, while 429 feet east of this latter point, or almost $1\frac{1}{4}$ miles east of the switch, were the two large pieces of tire, one of these pieces measuring 10 feet $8\frac{1}{4}$ inches around its circumference and the other 7 feet 9 inches. The reason the

tire broke was not determined, the breaks were new and without indication of previous flaws or cracks. The tire involved was applied at the tire engine 2602 was equipped with a new pair of main driving wheels, on January 30, 1933, since which time the engine had made 8,794 miles until the accident occurred.

Conclusions

This accident was caused by train no. 1 encountering a damaged facing-point switch.

It appeared from the investigation that the head rod and the tie rod of the east switch of the passing track at Sifton were broken by being struck by the broken tire on the left main driving wheel of engine 2602, of east-bound train no. 2, and that the crew of the following train, east-bound train no. 4, headed out at the switch involved without noticing anything wrong with the way the switch handled. The flagman of train no. 4 said that after the switch was closed and locked he examined the switch points and saw that the north point fitted against the rail and that the south point was away from the rail, while the conductor saw the indication of the switch lamp change from red to green, and as the train departed the flagman saw the indication of signal 145.9 governing train movements in the opposite direction, change from stop to proceed after the rear of his train passed it. As a result of the proceed indication displayed by signal 145.9, no warning of danger was given to the engineman of west-bound train no. 1 as to the damaged condition of the switch. The damage found to have been sustained by the trailer truck, together with the statement of the fireman that the rear of the engine seemed to swing sharply to the right, indicates that the trailer truck of the engine was probably the first to be derailed, no definite statement can be made, however, either on this point or concerning the exact condition or position of the switch at the time train no. 1 reached it. The reason for the failure of the tire under the engine of train no. 2 was not ascertained

Respectfully submitted,

W. P. BORLAND,

Director.