

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE UNION PACIFIC RAILROAD AT GIBBON, NEBR.,
ON SEPTEMBER 18, 1933.

January 23, 1934.

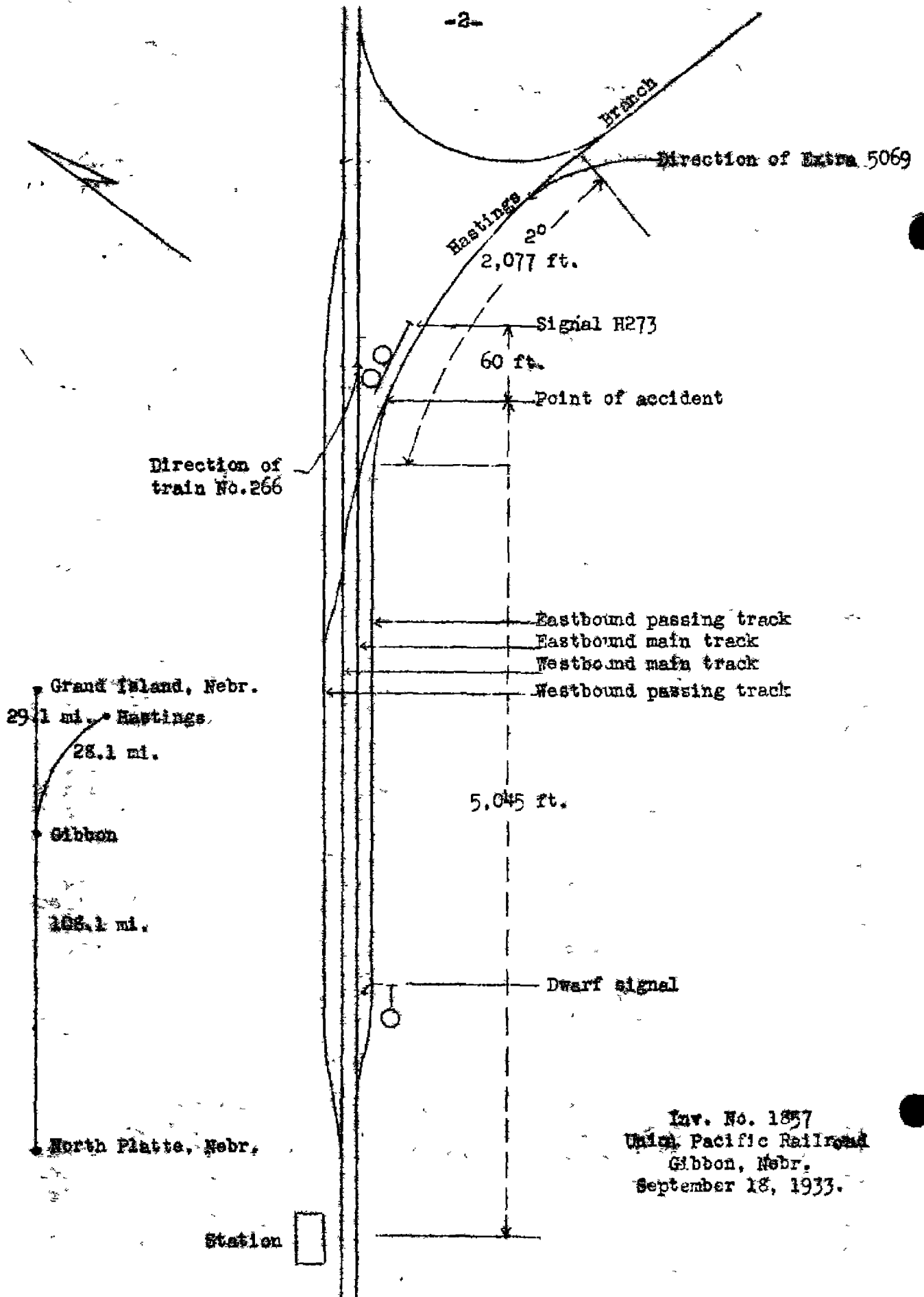
To the Commission:

On September 18, 1933, there was a derailment of a freight train on the Union Pacific Railroad at Gibbon, Nebr., the engine then fouling the side of a freight train which was passing on an adjacent track; this accident resulted in the injury of four employees.

Location and method of operation

This accident occurred at the junction of the Hastings Branch of the Second Sub-division of the Nebraska Division. The Second Sub-division extends between Grand Island and North Platte, Nebr., a distance of 137.2 miles, and in the vicinity of the point of accident is a double-track line. The Hastings Branch extends between Hastings and Gibbon, Nebr., a distance of 28.1 miles, and is a single-track line. Trains over both lines are operated by time table, train orders, and an automatic block-signal system. An east-bound passing track, 4,563 feet in length, parallels the east-bound track of the Second Sub-division on the south, and the Hastings Branch joins this passing track at a point 5,045 feet east of the station at Gibbon, and at this point there are cross-overs connecting with the main tracks of the Second Sub-division. The accident occurred at the east switch of the cross-over connecting the east-bound main and passing tracks. Approaching the point of accident from the Hastings Branch, the track is tangent for a considerable distance followed by a 2° curve to the left 2,077 feet in length, the switch involved being located on this curve at its extreme western end. At the point of accident the grade is slightly ascending for west-bound trains. On the Second Sub-division the track is tangent for several miles in either direction and at the point of accident the grade is slightly descending for east-bound trains. Special time-table instructions provide a speed restriction of 15 miles per hour on that part of the Hastings Branch west of the east wye switch.

The switch involved is a facing-point switch for west-bound trains on the Hastings Branch and leads off through a no. 14 turnout. The switch stand, located to the right or north side of the track, is of the high Star type equipped with an 18-inch red disc; the normal position of this switch is for a movement to the passing track. It is a hand-throw switch and when lined for the cross-over it operates the automatic block-signal system on the east-bound main track.



Inv. No. 1837
 Union Pacific Railroad
 Gibbon, Nebr.
 September 18, 1933.

Station



Block signal H273, situated 80 feet east of the cross-over switch, is equipped with two panels, the upper signal, a three-color light, governs west-bound movements on the east-bound passing track as far as the interlocking dwarf signal located at the western end of the passing track, and is electrically operated by the operator at Gibbon. When a yellow indication is displayed it authorizes a movement to the passing track, with the dwarf signal at stop. The lower signal, a two-color light, governs movements from the Hastings Branch to the west-bound main track.

At the point of accident the track is laid with 90-pound rails, 39 feet in length, with an average of 22 ties to the rail length, fully tieplated, and ballasted with gravel to a depth of 6 inches under the ties. The track is well maintained. At the time of the accident, the switch point involved was badly worn and was in process of being built up by welding.

The weather was clear at the time of the accident, which occurred about 1:20 p.m.

Description

West-bound Hastings Branch freight train extra 5069 consisted of 80 cars and a caboose, hauled by engine 5069, and was in charge of Conductor Streater and Engineman Burke. This train departed from Hastings at 12:35 p.m., passed Hayland, the last open office, 15.5 miles from Gibbon, at 12:54 p.m., according to the train sheet, and on passing over the east switch of the cross-over at Gibbon it became derailed and struck the side of train no. 266 on the east-bound main track while traveling at a speed estimated to have been 6 or 7 miles per hour.

East-bound Second Sub-division freight train no. 266 consisted of 100 cars and a caboose, hauled by engine 5058, and was in charge of Conductor Dodendorf and Engineman Johnson. This train departed from Kearney, 13.1 miles west of Gibbon, at 12:55 p.m., and was passing through Gibbon at a speed of 40 or 45 miles per hour when the fifty-seventh car from the engine was struck by extra 5069.

Engine 5069 remained upright with the engine truck and driving wheels derailed, stopping with its front end about 134 feet beyond the point of derailment; one car in the middle of the train was derailed and the caboose was knocked off center. Eleven cars in train no. 266 were demolished and 10 others were badly damaged. The employees injured were the engineman, fireman, conductor and flagman of extra 5069.

Summary of evidence

Engineman Burke, of extra 5069, stated that he had reduced the speed of his train to 6 or 7 miles per hour on approaching signal H273 at the junction; this signal was displaying yellow over red, which meant that his train was to enter the east-bound passing track. As he passed over the switch he felt nothing unusual until the engine gave a lurch, dropped down and nosed to one side, and he immediately applied the air brakes in emergency. After the accident he examined the switch point which was being welded and found a bulge on the point and a mark on the poll of the rail where the engine had climbed over it; the switch point was flush against the stock rail and the switch was locked. Engineman Burke stated that at Hastings he inspected his engine and found it in good condition, and there was nothing irregular in its riding qualities. After the accident he inspected the engine again and could find nothing wrong. The statements of Fireman Bachman and Conductor Streater substantiated those of the engineman.

The crew of train no. 266 stated that their train was passing through Gibbon on a clear block-signal indication at a speed of 45 miles per hour when the fifty-eighth car from the engine was struck by engine 5069. This train had been seen approaching the junction switch at a low rate of speed.

Roadmaster Foreman stated that on the day of the accident he instructed Welder Osborne to build up the switch point at the east cross-over at Gibbon, and on arriving at the switch a short time after the work had been started he instructed him first to build up the switch-point protector; this protector consisted of a tapered weld or bulge on the gauge side of the stock rail just ahead of the switch point and is for the purpose of crowding the wheel over far enough to prevent it from striking the point. After this work was completed they resumed welding the switch point, stopping for lunch at 12:30 p.m. and Roadmaster Foreman then left to go to Suda, 8.3 miles distant, but stated that he would try to get back before they resumed work, and he said he instructed the welder to be sure to keep the point tapered and not to take any chances and also told him there would be a freight train out of Hastings between 12:30 and 1:30 p.m. Roadmaster Foreman did not return until 15 minutes after the occurrence of the accident and on examining the switch point he found that about 1 or 1½ inches of additional welding had been done, but not according to his instructions; there was quite a lump on the side of the point and it appeared that the wheel had climbed the welded portion, which in his opinion was the cause of the accident. Roadmaster Foreman stated that he had not received instructions of any kind regarding overwelding and the building-up of switch points but that Welder Osborne had been instructed by Instructor Woodruff of the Oxveld Company, and had built up five switch points in the yard at Grand Island within the past 10 days. He further

stated that the welding of switch points is not permitted on main or high-speed tracks, and he thought that it was a safe practice to build up switch points without flag protection if the work is properly done, so as to avoid a sharp shoulder.

Welder Osborne stated that he started to work on the cross-over switch about 10:30 a. m. and about 10 inches had been built up when a west-bound motor train passed over the switch, about 20 minutes before the arrival of the freight train. After the motor train passed he used the torch and applied a small amount of metal, and this was hammered out and the torch removed when the freight train was about 500 feet from the switch, and the metal was hot when the train passed over it, he still had about 26 inches to weld up to the tip of the point. He had seen the freight train approaching at a low rate of speed in time to smooth out the work and could have easily stopped the train had he not thought that it was absolutely safe for the passage of the train. Welder Osborne stated that Roadmaster Foreman had told him to keep a good taper while building up the point and he had been instructed recently by Instructor Woodruff in the proper method of building up switch points, this being the fifth point he had built up, his instructions covered the necessity of building from the heel toward the point, and of keeping a good taper and the metal well hammered out in order to prevent derailments when trains were expected to use the switch while the work was being done, but he did not remember having been told not to allow a train to pass over the metal when it was hot. Welder Osborne stated that he had been in the employ of the Union Pacific Railroad as a welder since June 1919.

Welder Helper Hall stated that he assisted Welder Osborne with the switch involved and was present when Welder Osborne was instructed on building up the switch points. He also said he had acted as helper for the instructor on previous occasions and thought the work had been done properly by Osborne; the hot metal, however, was pushed back on top of the cold, with the result that when he examined it after the accident the metal was in a ball about three times as large as it was before the engine encountered it.

Instructor Woodruff, of the Oxweld Company, stated that he had instructed Welder Osborne on building up switch points, his last instructions being given on September 8, 1933. He told him to start the weld from the heel and to work toward the tip of the point and that he must maintain a taper 7 or 8 inches in advance of the weld, and not to permit a train to pass over the hot metal. Mr. Woodruff stated that it had been the practice of various railroads to weld switch points on yard, industry and slow-speed tracks since 1919, and it is considered a safe and successful practice when the work is properly done, and in this case the work was started right out the welder did not adhere to instructions given previously to carry his run out in advance of the weld.

Master Mechanic James made an inspection of engine 5069 after the accident and found the engine trucks, trailers, drivers, tires and flanges in first-class condition and no defects that would have contributed in any way to the cause of the accident. He stated that this engine had run approximately 3,000 miles since receiving a complete overhauling to machinery on August 8, 1933.

Inspection of the point showed that it had been badly worn and that the welding had been completed for a distance of 2 feet 3 $\frac{1}{2}$ inches. Near the unfinished end of the weld the metal was bunched for about 3 inches, giving it the appearance of having been upset and the hot metal pushed back to the cold metal. This gave a footing for the flange, which was crowding the outside of the curve and permitted it to climb the rail as indicated by marks on the point.

Conclusions

This accident was due to the fact that a train was allowed to pass over a facing-switch point which was in the process of being built up by welding.

The investigation developed that part of the metal used to build up the worn switch point was still hot when the train was permitted to pass over it. Welder Osborne had been warned by Roadmaster Foreman to be sure to keep a good taper in advance of the weld, and the instructor from the Oxweld Company said he had warned him not to allow a train to pass over the hot metal, although Welder Osborne did not remember of anything being said as to the danger of permitting trains to pass over the hot metal. He had been informed of the intended arrival of the freight train off the branch and saw it approaching at a low rate of speed, but continued using his torch until the train was about 500 feet distant. Had he realized the danger, either he or his helper could easily have flagged this train and prevented it from passing over the switch. Welder Osborne had been in the employ of this railroad since 1919 as a welder, but this was only the fifth switch point he had built up.

Officials in charge of this type of work could not recall that any written instructions had been issued as to the proper method of handling oxweld. Steps should be taken to see that the men doing this work are thoroughly versed on the subject and consideration given to the question of requiring flag protection until welding has been completed and the metal cooled.

Respectfully submitted,

W. P. BORLAND,
Director.