

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
BALTIMORE & OHIO RAILROAD

DORSEY, MD.

FEBRUARY 15, 1937

INVESTIGATION NO. 2148

SUMMARY

Inv-2148

Railroad: Baltimore & Ohio
Date: February 15, 1937
Location: Dorsey, Md.
Kind of accident: Derailment
Train involved: Passenger
Engine number: 5317
Consist: Four cars
Speed: 60-70 m.p.h.
Track: Curve to left followed by 567 feet
of tangent to point of accident.
Weather: Clear
Time: 3:31 p.m.
Casualties: Two killed, six injured
Cause: Motor truck driven upon highway
crossing at grade directly in
front of approaching train.

March 27, 1937.

To the Commission:

On February 15, 1937, there was a derailment of a passenger train on the Baltimore & Ohio Railroad as a result of striking a motor truck at a highway grade crossing at Dorsey, Md., which resulted in the death of the engineman of the train and the driver of the truck, and the injury of five passengers on the train and the fireman.

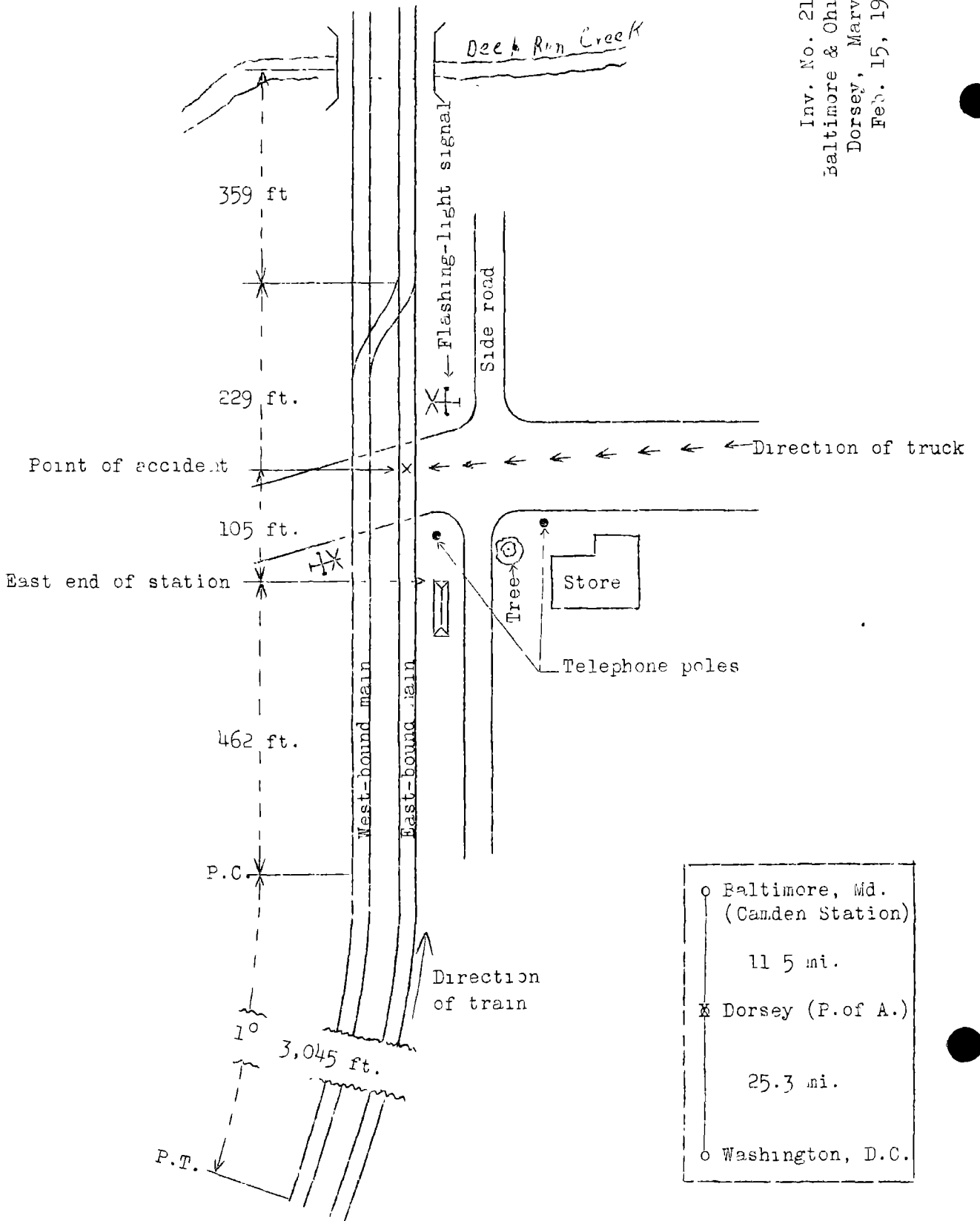
Location and method of operation

This accident occurred on the Washington Sub-division of the Baltimore Division, which extends between Camden Station, Baltimore, and Washington, D. C., a distance of 36.8 miles, and is a double-track line over which trains are operated by time table, train orders, an automatic block-signal system, and an automatic train-stop system of the intermittent-inductive type. At the point of accident the tracks run nearly north and south, but the corresponding time table directions are east and west and these latter directions are used in this report. The accident occurred at a point where a public highway known as Dorsey Road crosses the tracks just east of the station; approaching this point on the railroad from the west, there is a 1° curve to the left which is 3,045 feet in length, followed by tangent track extending 567 feet to the center of the crossing, and for a considerable distance beyond that point. The grade is 0.377 per cent descending for eastbound trains. At a point about 600 feet east of the crossing, a stream known as Deep Run Creek passes under the tracks through a 15-foot stone arch, the bed of the creek being 37 feet below the rails.

Dorsey Road crosses the tracks from southeast to northwest at an angle of 72° , and is a paved highway about 20 feet in width, including shoulders. Approaching the crossing from the south on this highway, the grade is descending for a considerable distance to a point about 440 feet south of the crossing and then there is an ascending grade of 7.6 per cent to a point about 113 feet from the crossing, where it tapers off to about 3.8 per cent until within 20 feet of the nearest track, where it again increases until the level of the tracks is reached; the crossing is laid with a plank on each side of each rail.

The crossing is protected by automatic flashing lights and bell, the control circuit in the eastbound track beginning at a point 3,393 feet west of the crossing. The flashing-light signals on the south side of the track are mounted on a mast which is located 14.3 feet south of the center line of the

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eastbound track and about 7 feet east of the paved edge of the highway. Two sets of lights are mounted on this mast, one set facing traffic approaching from the south on the main highway and the other facing traffic approaching from the west on a side road which parallels the tracks; the crossing bell is mounted on the mast on the north side of the track, on which there also is mounted a pair of flashing lights for the protection of southbound highway traffic. Cross-bar signs of the usual type are mounted on these masts above the flashing lights.

When rounding the curve the fireman of an eastbound train can see the crossing for a distance of about 1,600 feet, but a low station building on the south side of the tracks, together with a tree, telephone poles and a store building, all of which are in the southwest angle of the intersection, restrict the fireman's view of highway traffic which may be approaching from the south; the engineman can not see the crossing until within 700 feet of it, and at that time, by looking across the back of the station building, he can see traffic on that portion of the highway located between points 60 and 40 feet from the crossing, and not until close to the east end of the station, which is only 105 feet from the crossing, can he see all of the highway for a distance of about 60 feet south of the tracks. The view to be had by the driver of a northbound vehicle on the highway is restricted by the buildings, tree and poles above mentioned; when between points about 60 and 40 feet from the crossing he could have a brief view of an approaching eastbound train, and then his view would be cut off entirely until within 16 feet of the nearest track, at which point he could see about 1,600 feet.

The weather was clear at the time of the accident, which occurred about 3:31 p.m.

Description

Train No. 150, an eastbound passenger train, consisted of three coaches and one baggage car, in the order named and all of steel construction, hauled by engine 5317, and was in charge of Conductor Hale and Engineman Pope. This train left Jessup, Md., 2.4 miles west of Dorsey, about 3:29 p.m., 2 minutes late, and was derailed after striking a motor truck on the highway crossing at Dorsey while traveling at a speed estimated to have been between 60 and 70 miles per hour.

The truck involved was a 2½-ton Autocar truck, owned and operated by the Davidson Transfer & Storage Company of Baltimore, and was being driven by Sol Ely. This truck was proceeding northward on Dorsey Road, approaching the crossing at a speed variously estimated to have been between 5 and 25 miles per hour, and had started over the crossing when it was struck by Train No. 150.

The train was derailed to the right and the engine stopped bottom up in the bed of Deep Run Creek, with its head end nearly buried in the creek bed; the tender also was bottom up, directly behind the engine. The first three cars were entirely derailed and the fourth car partly derailed, but none of these cars was overturned. The motor truck was demolished, some of the wreckage being carried on the front end of the engine to the point where it finally stopped. The railroad employee killed was the engineman.

Summary of evidence

Fireman Beard, of Train No. 150, said he was on his seat box as the train rounded the curve at a speed of 60 or 65 miles per hour and that the crossing was unoccupied when it came within his range of vision. He did not see the truck approaching the crossing from the engineman's side and his first knowledge of anything wrong was when the crash actually occurred, at which time the front end of the engine seemed to be enveloped in fire and at the same time to rise in the air. The usual whistle signal had been sounded for the crossing, and Fireman Beard said it still was blowing at the time of the accident; he had not heard the engineman say anything, nor was he able to state whether the engineman applied the brakes before the crash. Fireman Beard further stated that both standing and running tests of the air brakes had been made in the Washington Terminal and that the brakes had functioned properly in making two stops en route.

Conductor Hale and Flagman O'Malley corroborated the fireman's statements as to the testing of the brakes and their proper functioning en route, and said their first knowledge of danger was when they felt an emergency application of the brakes, two or three car lengths before the accident occurred; the flagman thought the speed was about 70 miles per hour at the time. Conductor Hale said the crossing whistle signal had been sounded, and was either continued or repeated up to the crossing, while the flagman thought the signal was repeated. Flagman O'Malley went back to flag, and on his way back he heard the crossing bell ringing and saw the flashing-light signal on the south side of the tracks, which was still operating.

Supervisor of Locomotive Operation Clark, who was in the third car in Train No. 150, said the speed was 68 or 70 miles per hour and that the whistle was being sounded when he felt an emergency application of the brakes. On going back to a telephone after the accident he saw that the flashing lights were operating and said that they continued to operate, the circuit remaining open on account of the damage caused to the cross-over located just east of the crossing. In looking over

the crossing Supervisor Clark did not see any skid marks to indicate that the wheels of a motor vehicle had been sliding, although he said he might not have noticed such marks if they were 20 or 30 feet from the tracks; the pavement was dry. He was unable to state positively what part of the truck could have gotten under the engine and caused it to become derailed, but he did notice what he thought might have been the crank case, badly mutilated and bearing marks which led him to think it might have caused the derailment of the engine truck. It also appeared from the statements of Supervisor Clark that in the usual course of his duties he had examined engine 5317 at the roundhouse in Washington prior to its departure on Train No. 150, and had found it to be in good condition; he also had talked with the engineman and the fireman, and said they appeared to be in normal physical condition.

Assistant Trainmaster Warfield, who also was riding on Train No. 150, corroborated the statements of other witnesses as to testing of brakes, speed, stops, whistling, etc. On examining the crossing after the accident the only tire marks he could find were in about the center of the crossing, near the left rail of the eastbound track.

Assistant Division Engineer Clopton said the first marks of derailment consisted of wheel marks on the ties which began about 33 feet east of the center line of the crossing; these marks first appeared on the inside of the left rail about 10 inches from the rail, and indicated that one pair of lead-truck wheels had been derailed. The marks ran along parallel with the rails until they had passed the frog of the trailing switch of the cross-over, where they turned off toward the right, while the track was torn up beginning about at the heel of the switch.

Signal Maintainer Moler said he examined the signals at the crossing at 4:25 p.m. and found them to be working properly with the exception that the pair of lights which had been facing westward toward the road paralleling the tracks had been knocked off the mast and broken, apparently by flying wreckage. These signals were installed in April, 1926, and during the 5 years they had been under his supervision there had been no failures other than an occasional burned-out bulb. It was his practice to examine these signals two or three times each week, and he had examined them about 9:35 a.m. on the day of the accident, at which time he found nothing wrong.

J. L. Reimsnider, owner of a grocery store located in the southwest angle of the intersection, was standing behind the counter in his store when he saw a truck proceeding toward the crossing and at the same time heard an approaching eastbound

train; he said that he heard the noise of the train itself and also the whistle. He thought at the time that it did not appear as if the truck was going to stop for the train and then he heard the crash; on going to the door he saw wreckage of the truck and also saw that the flashing lights were still operating. He did not see the lights immediately prior to the accident, but was outside his store at the time of the arrival of a westbound train about 2:20 p.m. and at that time the lights were operating. Mr. Reimsnider estimated the speed of the truck when passing his store to have been about 15 or 20 miles per hour and said that he did not know whether the driver looked up and down the tracks before starting over the crossing; he did not, however, make any stop for the crossing. It also appeared from Mr. Reimsnider's statements that no motor vehicles were on the west side of the highway between his store and the crossing, where they would have interfered with the view.

Mrs. J. M. Powell, whose home is in the southeast angle of the intersection, said she first noticed the truck when it was about at the south end of Mr. Reimsnider's store, moving toward the crossing at a moderate rate of speed. She could hear the crossing bell ringing at the time and also could hear the whistle of the train, and on glancing through a door she saw that the flashing lights were working; Mrs. Powell did not watch the truck, however, after it passed the store and did not actually see the collision. Mrs. Powell also stated that she had seen several trains pass over the crossing earlier in the day, and at those times the flashing lights seemed to be working properly.

H. O. Whittington, a foreman in the employ of the Consolidated Gas, Electric Light & Power Company of Baltimore, said he was walking up the grade toward the crossing on Dorsey Road when the truck passed him, moving at a speed of about 25 miles per hour, and at that time he heard the whistle of the train, saw the lights flashing, and heard the ringing of the crossing bell. Mr. Whittington paid no particular attention to the truck and subsequently turned around and started back toward the bottom of the grade, at which time the truck was from 50 to 75 feet from the crossing and he could still hear the whistle and see the flashing lights, but could not hear the bell on account of the noise of the train.

N. J. Smith, O. E. Tucker, and A. T. Myers, working in connection with the construction of an underpass in the immediate vicinity of the point of accident, heard the crossing bell ringing and also the whistle of the approaching train, and saw the truck as it started over the crossing directly in front of the train; none of these witnesses was in position to see

the flashing-light signals. Mr. Smith said the truck seemed to be traveling at a speed of 5 or 10 miles per hour and to be approaching the crossing with caution, without any indication of motor trouble, and that the front wheels had about reached the north rail when the accident occurred; Mr. Myers thought the speed of the truck was about 10 miles per hour. The statements of several other contractor's employees, as well as the statements of others who were in the vicinity at the time of the accident, added nothing of importance.

Lieutenant Hageage, Medical Corps, U.S.A., on duty at Fort Meade, said that on the day of the accident he had talked with Driver Ely for about 15 minutes in connection with the delivery of a previous shipment, and at that time there were no indications that the driver had been drinking or that he was not in good health. This was the first time he had come in contact with Driver Ely, but Mr. Wassman, on duty at the post exchange at Fort Meade, had seen Driver Ely on a few previous occasions and said that on the day of the accident he appeared to be in normal condition; Mr. Wassman fixed the time of departure of Driver Ely on his way back to Baltimore as approximately 3:00 p.m.

Jay I. Davidson, Superintendent of Equipment for the Davidson Transfer & Storage Company, said that Driver Ely was assigned to local delivery service, which included deliveries in Baltimore, Annapolis, and adjacent territory. On the day of the accident he reported for duty at 7:10 a.m., after more than 36 hours off duty, and departed from Baltimore at 7:20 a.m. with consignments for Glenburnie, Annapolis and Fort Meade, being on his way back to Baltimore, light, at the time of the time of the accident. When the truck reached Dorsey it had covered about 65 miles on this particular trip and the driver had last been heard from at about 3:00 p.m., at which time he was at Fort Meade, 10 or 12 miles from Dorsey. Driver Ely had made many trips in this territory, but Mr. Davidson said there was no way of determining definitely whether he ever had crossed the railroad at this particular crossing. According to the company's records, Driver Ely was employed on March 19, 1936, and since that time had had two accidents of a very minor character; on one occasion, in starting on a grade in line of traffic, his truck drifted backward enough to contact an automobile which had stopped close behind, resulting in damage amounting to \$2.35, while in the other case a preceding truck stopped suddenly without warning, but the accident was of no consequence and the company had no record of paying damages. No complaints had been received from the company's supervisors or from any of the insurance companies relative to Ely's driving, while a platform checker employed by the company rode to his home in Glenburnie with Driver Ely on the morning of the accident and reported that

he seemed to be in perfect health and handled the truck properly, while the brakes and motor of the truck were in good condition. Mr. Davidson also said that the shops of the company in Baltimore are operated on a 24-hour basis, that drivers are required to report any difficulties immediately upon their arrival at the terminal, and in addition are required before starting on a trip to know that all safety devices are in proper working condition. Mr. Davidson examined the wreckage of the truck about $1\frac{1}{2}$ hours after the accident, and subsequently all parts which could be recovered were removed and taken to the company's shops, where inspection showed all brake linings, shoes and drums to be in proper working condition; no transmission or drive parts could be located. It also appeared from the statements of Mr. Davidson that his company requires its drivers to stop at railroad grade crossings, regardless of the nature of the protection which may be provided.

Information furnished by the Davidson Transfer & Storage Company concerning truck 168, the one involved in this accident, showed that it was an Autocar Blue Streak, built in 1931, equipped with a panel-delivery type of body, with the driver's cab mounted on the chassis independently of the body, and that it had a total weight of 9,200 pounds; the over-all length was 23 feet 10 inches, width 7 feet $4\frac{1}{2}$ inches, and height 9 feet 7 inches. Dual wheels were mounted on each end of the rear axle. The operating equipment for the brakes on the front axle was of the Lockheed hydraulic type, while the brakes on the rear axle were equipped with a B.K. booster. The engine was a 6-cylinder engine, with 38.4 horse power.

The records in the office of the Commissioner of Motor Vehicles of the State of Maryland showed that Driver Ely received an automobile driver's license in June, 1931, and that it was still in effect, licenses of this kind not having to be renewed. Chauffeur's licenses, however, are good only for one year from the date of issue, and it appeared that Driver Ely obtained such a license in August, 1934, but did not renew it until March, 1936. It further appeared that he never had been convicted of any violations of traffic laws and regulations and that there were no reports of any accidents in which he had been involved prior to the one here under investigation; such reports are not required, however, if the particular accident results only in loss or damage to property. There was nothing in the state laws requiring trucks of the type here involved to stop at railroad grade crossings.

Examination of the track by the Commission's inspectors showed that the first mark appeared on an angle bar on the gauge side of the north or left rail, approximately 20 feet east of the center of the crossing. The first tie mark appeared at a

point 33 feet east of the crossing, 9 inches inside of the gauge side of the north rail; this mark at first appeared intermittently, but finally began marking each successive tie, continuing until it reached the trailing-point switch of the cross-over, where the track began to be torn up. Examination of the engine showed that the right rear engine-truck wheel had been pulled off the axle, and at the time of this examination the wheel had not been recovered; the flanges on all the other wheels were in good condition, and nothing was found which could have contributed in any way to the occurrence of the accident.

Examination of the switch circuit controller at the west end of the cross-over, conducted several days subsequent to the accident, disclosed that on one of the normally closed contacts the driving mechanism, which drives the segment to operate the contact, was broken, the contact failing to open when the switch was opened; the other normally closed contact also stuck closed, but the two normally open contacts used to shunt the track operated as intended. The effect of the failure of the two contacts to open as intended when the switch was opened would be to allow the stick relay to stick up after it had picked up and under certain conditions to stop the operation of the crossing signals. The crossing signal will not operate in some sections when switching or irregular movements are made, even with the contacts stuck closed, but this would not effect the protection afforded for through movements and the crossing signals would be operative for all through movements on either track approaching the crossing. Generally speaking, the switch circuit controller appeared to have suffered from lack of maintenance; the cams were rusty and an accumulation of old grease and dust had collected on them, the box was dirty, and all parts seemed to have been neglected as to lubrication.

The records of the Baltimore & Ohio Railroad showed that there have been five motor vehicle accidents at this crossing since the installation of the flashing-light signals in 1926, in three of these cases an automobile was struck by a passenger train and in one case by a light engine, while in the remaining case an automobile ran into a passenger train. The only casualty was in the case of one of the automobiles being struck by a passenger train, the driver in that case being killed. Notwithstanding the number of accidents which have occurred at this point, the motor traffic is not heavy; between the hours of 3:00 and 4:00 p.m., embracing the time at which this accident occurred, there were 12 trucks and 27 automobiles, while during the same period there were 4 trains which passed. This crossing, however, is one which is scheduled for elimination, and at the time of this accident the work incident to the construction of an underpass for highway traffic was in progress.

Discussion

The evidence in this investigation showed that the driver of the truck involved had completed all of his delivery work and was en route to Baltimore with an empty vehicle, his last stop apparently having been at the post exchange at Fort Meade, approximately 10 miles from the point of accident. The evidence further indicated that he was operating the vehicle at a moderate rate of speed but that he did not stop before starting over the crossing, the front end of the truck being squarely on the eastbound track when struck by Train No. 150, which was moving at a speed of 60 or 70 miles per hour. The fireman on the engine hauling that train said he was on his seat box maintaining a lookout ahead but that at no time did he see the truck, and this statement was corroborated indirectly by the statements of eyewitnesses, which were to the effect that the truck had just reached the crossing when the accident occurred.

Investigation further brought out the fact that there was ample warning of the approach of a train; the whistle was heard by many eyewitnesses, as well as by employees on the train, and the eyewitnesses also heard the crossing bell, while some of them saw the flashing-light signals in operation as the truck was closely approaching the crossing. It also is to be noted that the roadway was dry, it was a bright sunny day, the truck was known to have been in good operating condition, and nothing was developed to indicate that there was anything wrong with the driver, either physically or mentally, which could have caused him to fail to heed the whistle of the engine or the warning signals provided for the purpose of indicating the approach of a train. It is not known whether the driver was thoroughly familiar with this particular crossing, although he had been operating a truck in this general territory for several months, and under the various circumstances as above set forth there is no reasonable explanation to be offered to account for his failure to stop and wait until the train had passed and it was safe for him to proceed.

The truck was demolished and the principal mechanical parts were so badly damaged that it was impossible to tell in what gear the truck was being operated or what particular part of the mechanism resulted in the derailment of the train, although one witness thought it might have been the crank case. In view of the fact, however, that the locomotive had been examined before departing from Washington, and in view of the further fact that subsequent examination failed to reveal any defective condition which could have caused or contributed to the accident, it is believed that some portion of the truck lodged under the front end of the engine in such a way as to result in the derailment of the lead pair of engine-truck wheels.

Light flange marks on the ties, starting a short distance east of the crossing, clearly showed that only one pair of truck wheels had been derailed, and that they then continued parallel with the rails until the cross-over was encountered, at which point the track began to be torn up and the complete derailment of the engine and following cars resulted.

Conclusion

This accident was caused by a motor truck being driven upon a highway crossing at grade directly in front of an approaching train.

Respectfully submitted,

W. J. PATTERSON,

Director.