REPORT OF THE CHIEF OF THE BUREAU OF SAFETY COVERING INVESTIGATION OF AN ACCIDENT WHICH OCCURRED AT THE INTERSECTION OF THE BALTIMORE & OHIO RAILROAD AND THE MONONGAHELA VALLEY TRACTION CO, NEAR PARKERSBURG, W VA, AUGUST 14, 1919

OCTOBER 13, 1919

To the Commission

On August 14, 1919, there was a side collision between a switch engine of the Baltimore & Ohio Railroad and a street car of the Monongahela Valley Traction Co at Parmaco, W Va near Parkersburg which resulted in the death of 12 passengers and the injury of 25 passengers, several of whom have since died The investigation of this accident was conducted jointly with the Public Service Commission of West Virginia, and as a result of this investigation, I respectfully submit the following report

The collision occurred at the intersection of the main line of the Parkersburg-Marietta division of the Monongahela Valley Traction Co and a spur track leading from the main line of the Ohio River division of the Baltimore & Ohio Railroad to the plant of the Essex Glass Co Leaving the Baltimore & Ohio main line, the spur, which is nearly 1,500 feet in length, curves to the left and east on an ascending grade until it crosses a public highway and the street car track, 800 feet distant, at an elevation 14 feet higher than that of the main line This crossing is at an angle of 45° The spur extends an additional distance of nearly 700 feet in a southeasterly direction

On the south side of the spur, just before it crosses the highway, is a loading shed belonging to a silk mill, the mill being located northeast of the intersection of the two tracks This mill sets back from the street car track a distance of 57 feet and is 69 feet north of the center line of the intersection There is a small pump house standing within a few feet of the street car track, 35 feet north of the crossing, and this pump house, together with a row of shade trees in front of the silk mill and extending some distance north thereof, materially restricts the view of approaching engine and street car crews when the engine is on the east side of the street car line Illustration No 1 is a view of the crossing, looking east along the spur track On the right side is the glass works Illustration No 2 is a view taken from a point between the street car track and the highway looking north, showing the pump house on the right and beyond that

the silk mill, with the row of trees in front of it This view also shows how the line of poles carrying the power-transmission wires obstructs the view of a flagman at the crossing unless he is standing directly on the street car track If the engine had been standing on the spur about 60 feet east of the crossing, as claimed by the Baltimore & Ohio employees, before it pulled ahead to the crossing, then the engine crew had a view of the approaching street car a distance of 150 feet, while the motorman on the street car, being lower down could look under the trees and distinguish the number on the cab of the engine when 471 feet from the crossing If the engine had been standing only 39 feet from the crossing, as other evidence indicated then the street car could have been seen a distance of 401 feet, while the engine could have been seen by the motorman a distance of 493 feet When the engine was behind the pump house, the view of the engine crew was entirely shut off while the motorman of the street car could see only that part of the engine projecting out from behind the pump house

Illustration No 3 is a view taken from the cab of a locomotive standing on the spur the cab being about 25 feet from the center line of the street car track, and shows how the view of the engineman is restricted by the trees in front of the silk mill Illustration No 4 is a view taken from the center of the street car track at a point 531 feet north of the crossing showing how the trees and pump house obscure the view of a motorman Illustration No 5 is a view taken from the center of the street car track at a point 325 feet north of the crossing In the immediate foreground is the driveway referred to as the upper driveway, and beyond it is the lower driveway The street railway is a single-track line, extending from Parkersburg to Marietta, Ohio a distance of 13 miles Trains are operated by rules and train orders No printed time-table is in use, employees being required to memorize schedules In the immediate vicinity of the point of accident the track runs north and south Approaching the crossing from the north, the track is tangent for a distance of 1,658 feet, with a grade which is practically level Under an agreement dated August 1, 1910, the Baltimore & Ohio Railroad is responsible for furnishing proper flag protection at this crossing when the spur track is being used by its engines At the time of the accident the weather was clear

On the day of the accident, Baltimore & Ohio switch engine 1220, in charge of Conductor Bradley and Engineman Boyd, was engaged in switching at industrial plants within yard limits at Parkersburg and vicinity At about 12 o'clock noon engine 1220 entered the Essex glass works siding, being operated backing up and pushing a box car After passing over the crossing, another car a gondola, was picked up The engine then continued backing up toward the

glass plant, but as there was no work to be done, it then moved ahead and was brought to a stop, according to the railroad employees, within about 60 feet of the crossing, at which point it waited for Baltimore & Ohio passenger train No 74 to pass on the main line After that train had passed, a signal to pull ahead was given to Engineman Boyd, and the engine started to move toward the crossing As it started over the crossing, moving at a speed estimated by the engine crew to have been 2 or 3 miles an hour, it was struck by car No 625 of the Monongahela Valley Traction Co

Car No 625, in charge of Conductor Wines and Motorman Barnes, was a special car, running as the first section of the regular car due to leave Marietta at 11 a m, central time It left Marietta at 11 03 a m, and while traveling at a speed variously estimated at from 5 to 40 miles an hour struck the side of engine 1220, the collision occurring at about 12 40 p m eastern time

The street car struck the engine at the rear of the cylinders and the momentum carried it along the side of the boiler a few feet to the left the street car coming to rest with its head end against the rear of the boiler and the engine cab, about 5 feet east of the east rail of the street-car track The car remained upright with the rear truck on the rails As its forward end scraped the side of the boiler it struck the delivery pipe of the right injector, causing the right boiler check case to be broken off flush with the boiler This allowed steam and hot water at boiler pressure to be blown into the street car through the open windows, all of the fatalities being due to this cause There was one other death as an indirect result of the accident, that person dying supposedly of heart failure after the collision while assisting the passengers to get out of the car The forward end of the street car was badly damaged, while the right side of engine 1220 was scraped and various parts bent and broken The only wheel of the engine which was derailed was the left No 2 driving wheel

Illustration No 6 is a view of the wreckage taken from the northwestern corner of the crossing This view also shows the location of the right boiler check case, the breaking of which allowed the steam and hot water to be forced into the street car Illustration No 7 is a view of the right side of the engine after its removal from the scene of the accident, while illustration No 8 shows the damage sustained by the forward end of the street car

Engineman Boyd in charge of engine 1220, stated that after bringing his engine to a stop about 60 feet east of the crossing and while waiting for passenger train No 74 to pass, he went to the platform of the loading shed on the opposite side of the street, upon which also were Conductor Bradley, Brakeman Murphy, and some girls employed in the silk mill When the passenger train had gone,

he returned to his engine, and as soon as he boarded it he received a proceed signal from Conductor Bradley, who was then standing on the street-car track He then started the automatic bell ringer, and after looking both north and south and not seeing any street car approaching, started his engine toward the crossing As it approached the crossing, he saw Conductor Bradley and Brakeman Murphy giving stop signals to the motorman of the street car The conductor was standing astride the north rail of the spur, while the brakeman was standing between the rails of the street-car track, north of the spur He could not see the street car at this time on account of the trees He stated that he saw the conductor and brakeman when they began giving stop signals and that they continued to give them vigorously until the collision occurred He also said that they did not begin giving these signals until the front of the engine was practically on the crossing He first saw the street car when it was about four car lengths away, at which time his engine was on the crossing The speed of his engine was not more than 2 or 3 miles an hour, and he was quite sure he had brought it to a stop just before the collision occurred, previous to which he had received a stop signal from Conductor Bradley He thought about one and one-half minutes elapsed between the time Conductor Bradley first gave him a signal to proceed and the time of the collision He did not know exactly what the conductor and brakeman were doing during this time, but was sure they were on or near the crossing Judging from the force of the impact, he estimated the speed of the street car to have been 25 or 30 miles an hour Engineman Boyd further stated that he had never seen a southbound street car stop before passing over this crossing, and that he had never had his attention called to the fact that the Baltimore & Ohio Railroad employees were not properly flagging the crossing while engines were working on the spur although he had heard something to that effect at safety-first meetings He considered adequate protection was afforded the movement of his engine at this particular time He also said that there had been times when he had crossed without any flagman being on the crossing

Fireman Cunningham stated that he did not see the engineman when the latter returned to the engine, his first knowledge that he was there being when the engineman started the automatic bell ringer He then put in a fire before the engine started ahead, this operation taking from one-half to three-fourths of a minute, and while he did not pay any particular attention to it, he said that this must have caused quite a little smoke Fireman Cunningham said that he did not see the street car approaching, but heard some girls screaming about three seconds before the collision occurred, and thought they were afraid of being run over by the engine He said

the engine moved ahead a distance of about 70 or 75 feet before stopping on the crossing and that it had come to a full stop before being struck by the street car

Conductor Bradley stated that his engine waited east of the crossing a period of 12 or 14 minutes for train No 74 to pass He fixed the position of the engine by a derail, saying the engine truck was about 5 or 10 feet from the derail which is 56 feet from the crossing This would indicate that the engine was 60 or 65 feet from the crossing While waiting, he was sitting on the steps of the loading shed, on the west side of the street, checking over his work As soon as train No 74 had gone, Engineman Boyd returned to the engine and he gave the engineman a proceed signal The engineman boarded the engine and then Brakeman Murphy gave him a proceed signal At this time, Conductor Bradley was standing at the intersection of the two tracks, while Brakeman Murphy was standing on the street car track, north of the crossing As he gave the proceed signal he looked up the street car track and saw the car coming around the curve, while the engine had also started ahead He then looked back at the street car, and as it seemed to be traveling pretty fast he gave the motorman a stop signal, this being when the car was about 900 feet distant, this signal was acknowledged by two blasts of the whistle By this time the engine was about on the crossing He saw the conductor of the street car standing in the front vestibule with the motorman, and thought the motorman was looking toward the silk mill When about 500 feet from the crossing, the conductor went back inside the car Both he and Flagman Murphy continued to give stop signals as the street car approached the crossing and when he saw that no attention was being paid to the signals, he gave a stop signal to Engineman Boyd, but he thought that by this time the engine was just about across the east rail He saw the motorman give the controller a twirl and start out of the side door of the vestibule He thought about two minutes elapsed between the time he first gave Engineman Boyd a proceed signal and the time the engine fouled the street car track The speed of engine 1220 had been about 4 or 5 miles an hour, but at the time of the collision it had been brought to a stop, he estimated the speed of the street car to have been 35 or 40 miles an hour and he did not think any reduction in its speed had been made He considered that the street car was given ample warning After the accident he heard some one say something about the wheels of the street car having been sliding He looked at about 60 feet of the track but saw nothing neither did he see any signs of sand having been used Conductor Bradley further stated that he had been previously employed on this job as a flagman for several months, but that this was his first day as a conductor, as well as the first day this year that

he had been on the job As a flagman, he had on several occasions flagged approaching street cars, always giving the stop signals with his hands He had never seen a street car stop for the crossing unless flagged He said the street cars passed over the crossing at rates of speed which he considered dangerous, and several months previously he had reported the matter to the yardmaster and also to a member of the Safety First Committee He also said that in March, 1918, he was called in to the trainmaster's office and instructed about flagging these crossings, complaint having been made by the street car company

Brakeman Murphy stated that after coupling to the car which was on the spur and finding no work to be done the engine moved toward the crossing, stopping about 5 or 10 feet east of the derail While the engine waited at this point for main line train No 74 to pass, he was talking to some of the girls on the platform at the loading shed west of the crossing The engineer and conductor were also there After the passenger train had gone, the engineman started toward the engine, he and the conductor following him closely He stated that he took his position in the center of the street car track, just north of the crossing, and that after he had looked in each direction both he and the conductor gave proceed signals to the engineman The conductor was standing beside him He then saw the street car coming, and when it was at least 900 feet distant, he began to give stop signals, these being acknowledged by the motorman with two short blasts of the whistle He thought that the motorman after acknowledging the stop signals looked toward the silk mill, and when the car was about 150 or 200 feet from the crossing he saw the motorman throw up his hands and start for the door At this time the conductor was in the vestibule with him In the meantime he had taken a few steps toward the car, remaining in the middle of the track, flagging until he had to jump to avoid being struck He estimated the speed of the street car at the time of the collision to have been about 30 or 35 miles an hour Brakeman Murphy stated that the car was 900 or 1,000 feet distant when he began to give stop signals and that at this time engine 1220 was actually starting across the crossing Brakeman Murphy further stated that he had been instructed by conductors to be careful about flagging this crossing, and had on several occasions flagged street cars, using his hands in giving stop signals, he had never experienced any difficulty in causing the street cars to stop He had never seen motormen bring their cars to a stop unless flagged

Brakeman Howell had remained at the main line switch while the yard engine was on the spur He stated that he heard the motorman of the street car sound a road crossing whistle signal when in the vicinity of the schoolhouse, which is about 3,500 feet from

the crossing, this was followed by one blast, and when the car was about opposite him, which would bring it about 750 feet from the crossing, the motorman sounded two short blasts on the whistle He thought the speed of the car at this time was at least 35 miles an hour, and he stated that there were two people in the forward vestibule, apparently looking ahead From his position about 800 feet from the intersection he could also see the top of the boiler of the engine east of the crossing, and it was moving toward the crossing when he first saw the street car, about 400 or 500 yards from the crossing He had previously stated that when the engine started the street car was about 200 or 300 yards from the crossing He said he had worked on this job for about eight months, during which time he had on several occasions flagged the crossing and he said he had always used his hands in giving stop signals

Motorman Barnes stated that he had orders to run with car No. 625 as the first section of the regular car due to leave Marietta at 11 a m After leaving Marietta, safety stops were made on the Ohio River Bridge and at the railroad crossing at Williamstown, W Va. As the car rounded the curve north of the point where the accident occurred and when about 200 feet north of the silk mill he sounded the usual crossing signal consisting of two long and two short blasts on the whistle, shut off the current, and made a light application of the air brakes, intending to allow the car to drift over the crossing. During all this time he was looking ahead to see if a flagman were in sight, and when opposite the northern end of the silk mill he saw some cars back from the crossing, but thought they were standing still He did not notice any smoke The engine suddenly appeared from behind the pump house and he saw a man on the footboard of the engine step to the ground and give him stop signals with his hands, the street car was then passing the lower driveway, which is about 150 feet from the crossing He at once made a full application of the air brakes, reversed the power and gave the sand lever a jerk, after which he jumped from the left side of the car, sliding a short distance on his side and stopping almost under the cab of the engine He said the speed of his car had been considerably reduced, but he was unable to make an estimate as to how fast his car was traveling Previous to seeing the flagman he had not seen anyone on the car track except some people crossing over to the silk mill when the car was some distance away So far as he knew there was no one in the vestibule with him He said the sand would stop running as soon as he released his hold on the sand lever He had worked on this part of the road two or three days a week since spring, and previous to the accident had worked there regularly for two weeks Motorman Barnes further stated that his instructions were that the State law required cars to be brought to a stop a safe

distance from main line crossings but that no stop was required at the two crossings with Baltimore & Ohio industry tracks at Parmaco, one of these being where this accident occurred and the other a short distance farther south, as protection at these points would be afforded by employees of the railroad company When he was flagged he was to acknowledge the signals and bring his car to a stop, when a flagman was not seen, the crossing was supposed to be clear In the State of Ohio all cars had to be brought to a full stop at all railroad crossings at grade and the conductors go ahead and protect the movement of the car by flag He also said that about five weeks previously he had been flagged at this crossing, at which time the flagman was standing on the steps of a box car At that time he was not sure whether the signal was intended for him or for the engineman of the switch engine Both trains were brought to a stop and he was then given a proceed signal

Conductor Wires stated that his car left Marietta at 11 02 a m He heard the motorman sound a crossing whistle when approaching the silk mill, and when a short distance from the mill he was standing in the door leading from the smoking compartment into the front vestibule, behind the motorman At about this time he saw the motorman shut off the power and make an application of the air brakes, the car by this time being near the upper driveway to the silk mill 295 feet from the crossing He was looking ahead and when in front of the silk mill looked toward the crossing and then leaned out of the open side door When he looked up, he saw the engine starting over the crossing with a man on the front end of it, about one-third of the engine was then in sight the front wheels being on the track His car at this time was between the lower driveway and the crossing, or from 130 to 150 feet away He saw the motorman apply the air brakes, reverse the power, and start for the left side of the vestibule He himself jumped from the right side of the vestibule just before the collision occurred, striking the ground with one foot against the cylinder of the engine He had not noticed any one on the track, neither had he noticed any smoke from the engine He could not say how fast his car was traveling This was his first trip over this part of the road as a conductor but he had been told by other employees that it was not necessary to flag crossings except at Williamstown

W B Childers, a passenger on the street car, stated that he had been sitting in the smoking compartment on the left side, looking ahead on the track When he first saw the engine coming out from behind the pump house, the street car was about 200 or 250 feet distant, and at first he thought the motorman would be able to bring it to stop He did not at this time notice whether there was anyone on the front of the engine but stated that he did not see anyone

signaling the street car until two or three seconds after the engine had fouled the track at which time the car was within 100 feet of the crossing He then saw two people giving signals, these men standing on or near the street car track, beside the engine He said the motorman shut off the power, but that he did not know whether the brakes were applied He thought the speed was about the usual speed, and estimated it to have been about 25 miles an hour Mr Childers also said that he did not hear the motorman sound the whistle when close to the point of collision

According to the statement of P H Greathouse an employee of the glass company, engine 1220 had been standing much nearer the crossing than was stated by the railroad employees He said that as he came out of a door of the glass plant with a wheelbarrow, he had to turn out around the rear of the second car behind engine 1220 Measurements subsequently made with the engine in this position showed its forward end to be only 39 feet from the crossing In his testimony Mr Greathouse stated that at the time the collision occurred he was standing on the north side of the spur at the rear end of the gondola, the second of the two cars coupled to engine 1220 He did not see the signal given to the engineman to start the engine but heard the bell ring and at about this time heard the street car coming When he first saw the street car, it had traversed about half the length of the silk mill, being probably within 20 or 30 feet of the lower driveway He said that as the engine moved toward the crossing he could not see the engineman, but that he could see the elbow and side of a man sitting on the front of the engine on the right side He said that his view of the crossing was not obscured and that he saw there would be a collision unless something was done As the engine moved ahead there was no one on the street car track, either signaling or looking ahead but he said that if a man had been directly in front of the engine, he could not have seen him After the street car had reached a point between the silk mill and the pump house, at which time the engine was on the crossing he saw some one signaling the motorman He did not know who this man was, but said that he stepped out from in front of the engine He did not know whether or not it was the man he had seen sitting on the front of the engine

N J Keigwin, foreman of the silk mill, stated that he was sitting on the platform in front of the mill at the time of the accident He saw a man standing at the intersection of the two tracks give a signal to the engineman, the engine at that time standing at a distance from the crossing estimated by him to have been about 10 feet He thought the man who gave the signal was facing west and that he looked toward the engine as he gave the signal The engine started toward the crossing, and he could just see the front of the engine

coming out from behind the pump house when he first saw the street car, which at this time was about opposite the center of the silk mill He said the man at the crossing, after having signaled the engineman to come ahead, was looking toward where some people were standing when he happened to look up and see the street car approaching, at which time he signaled it to stop The car was then at the lower driveway Illustration No 9 is a view taken from the point where Mr Keigwin was sitting, showing the relative position of the engine, street car, and flagman at the time the street car was flagged, as located by Mr Keigwin This shows the head end of the car opposite the lower driveway 137 feet from the crossing with the front end of the engine visible at the right of the pump house between the pump house and the tree in the center of the photograph, and the flagman just to the right of the tree, the flagman being in the northwestern corner of the intersection of the two tracks Mr Keigwin stated that he saw only one railroad man at the crossing, although previously there had been three of them sitting across the street He did not notice any one riding on the front of the engine He thought the street car was traveling at the usual rate of speed, estimating it to have been from 25 to 30 miles an hour He also said that he did not notice any whistle sounded by the motorman of the street car

Glenn Milhoan, an employee of the silk mill, stated that he was sitting on the platform of the mill and first noticed the street car when it was at the upper end of the tract of land occupied by the mill, about 450 feet from the crossing At this time the engine was on the crossing, and he said that when he first saw a man signaling to the motorman of the street car the car was about opposite the mill platform He thought the man who was doing the signaling was standing in the middle of the track He did not hear the motorman sound the whistle and did not notice whether or not the engine bell was ringing He thought the street car was running at the usual rate of speed

Garnet Hamilton an employee of the silk mill, stated that she was at a window in the mill when the collision occurred She saw the engine pull out on the crossing and saw a man in front of the engine waving his hands She said that this was the only man she saw giving signals, and that she did not see him until the street car was so close to the engine that a person could hardly have walked between them

Millard Callahan, also an employee of the silk mill, stated that he had been at the store located about 175 feet south of the crossing and was on his way back to the mill He was standing directly across the street from the crossing when he saw the street car near the silk mill At this time two members of the train crew were standing talking

near the street-car track He was unable to locate their position definitely, but thought they were north of the spur track, between the street-car line and the highway He saw one of the two men give a signal to the motorman of the street car when it was opposite the lower driveway In answer to a question whether or not he heard the two men say anything about the approaching street car while they were talking with each other, he said he did not think they saw it

Howard Weldon, a silk mill employee, stated that he was about halfway up the lower driveway on his way into the mill when he saw the street car coming at which time it was at the northern end of the mill He did not think the engine started ahead until the street car was nearly opposite the upper driveway, and said that he did not see any one signaling to the street car until it was opposite the lower driveway This man was right beside the engine and when he saw the street car approaching, jumped into the middle of the track and began waving his hands

Garnet Montgomery, an employee of the silk mill, was returning to the mill from the store south of the crossing She was about 10 feet from the crossing when she first saw the street car, at that time between the two driveways The engine was then moving slowly toward the street, and she said she saw someone going around in front of the engine to the north side of the spur The engine then came between her and this man so that she was unable to see if he signaled to the street car Miss Montgomery further stated that, as she was walking up the road, she had seen two men on the back of the engine, and one, Conductor Bradley, standing in front of the engine at the track intersection Conductor Bradley was signaling to the engine, while it was about this time that she saw the other man disappear around the front of the engine She did not see Conductor Bradley signal to the motorman of the street car and had not seen anyone riding on the front of the engine

Helen Simpson, employed at the silk mill, was on the opposite side of the street from the street-car track, waiting for the car to pass before going to the mill The car was then at the upper driveway Just before this, she had seen the engine moving slowly toward the crossing the engine then being at the rear end of the pump house There were then two men on the ground near the engine, one about opposite the head end 10 feet back from the street-car track, while she thought the other was beyond him There was then no one on the crossing, and one of the two men near the engine was giving signals to the engineman Some of the girls started to run across the track, and he told them not to hurry At this time the man had not seen the street car, but as he turned around he saw it, at which time it was at the upper end of the mill He then threw up his left hand

and gave a signal At this time the man was standing on the edge of the car track and the engine was just coming on the crossing She said that the man she saw giving these signals was Conductor Bradley

Motorman Park, in charge of car No 624, northbound, the last car over the crossing previous to the accident, stated that he had stopped at Parmaco, just south of the crossing and was approaching the crossing at a speed of about 5 miles an hour when he was given a proceed signal by a flagman about 20 feet distant He said he had been flagged at this crossing on several occasions and while in some instances his car had been several hundred feet distant, yet he had been flagged when only 100 feet distant He had never been instructed that the railroad company would protect this crossing by flag, but had reached that conclusion because flagmen were always at the crossing when an engine was working there He had been employed as a motorman about 13 years and had been working on this division about 5 months

Robert Gossett, a motorman employed by the traction company stated that the motorman who instructed him on this division told him that the railroad company was supposed to flag this crossing He stated that he instructed Motorman Barnes in his duties as a motorman and that he told him that the railroad company was supposed to flag the crossing and for him always to be on the watch for a flagman He said that he usually shut off the power at the northern end of the silk mill and approached the crossing at a speed of 15 or 20 miles an hour He had been employed as a motorman for about 17 years and for the past several years had been working on the interurban part of the system

Supt Wilson, in charge of the lines in Ohio of the Monongahela Valley Traction Co and also of that part of the State of West Virginia on which this accident occurred, stated that on the lines in Ohio conductors are required to flag their cars over all crossings whatever their nature but that instructions had been given to all motormen and conductors, relative to the crossing with the Baltimore & Ohio Railroad at the Essex glass plant and also the Parkersburg Machine Co that they were to reduce speed and depend upon the Baltimore & Ohio crews to protect It was also understood that the street car employees would take every precaution and that they would allow their cars to drift across at 5 miles an hour, unless flagged He did not know anything about the requirements of the state law with respect to these crossings He said he had never received any complaint that the railroad employees were not properly protecting these crossings, although he had heard some of his men say that the railroad employees were a little careless Supt Wilson also said even though the railroad employees did not properly protect

this crossing, the street car company was not going to operate under any other system than the present system, and that he was going to do exactly as he had been doing until he received orders to the contrary

Supt Root of the Ohio River division of the Baltimore & Ohio Railroad stated that a letter dated March 21 1918 was received from the manager of the traction company, in which complaint was made of lack of proper protection both at the Essex glass plant spur and the Parkersburg Machine Co spur He at once wrote a letter to Terminal Trainmaster Davis, instructing him to have the members of the switch crew come to his office, instruct them in their duties and require them to sign a statement relative to such interview This was done, and under date of April 1 1918, he received the signed statements of each of the three men composing the crew at that time To the best of his knowledge, Conductor Bradley was the only member of the crew on the day of the accident who was called to the trainmaster's office for instructions in March, 1918 Subsequent to this he had received no further complaint

Terminal Trainmaster Davis stated that in his position he instructed train and enginemen in regard to their duties, including the protection of the crossings at the two spur tracks previously mentioned No complaint of lack of proper protection had been received since the complaint of March, 1918 He had personally observed crews working on these spurs and they had always sent a man ahead to protect He said the signals had always been given by hand signals and unless at night or under adverse weather conditions, he considered hand signals sufficient

The State law requiring trains to stop before proceeding over railroad crossings at grade is contained in chapter 54, section 61, of the general laws of the State of West Virginia enacted in 1882, and reads as follows

A bell or steam whistle shall be placed on each locomotive engine, which shall be rung or whistled by the engineer or fireman at the distance of at least 60 rods from the place where the railroad crosses any public street or highway and be kept ringing or whistling for a time sufficient to give due notice of the approach of such train before such street or highway is reached, under a penalty of not exceeding $100 for each neglect, one half of which shall go to the State and the other to the prosecuting witness, and the corporation owning or operating the railroad shall be liable to any party injured for all damages sustained by reason of such neglect *Provided*, That such penalty shall be sued for within three months from the time the cause of action arises, and not after When the tracks of two railroads cross each other, or in any way connect at a common grade, the crossing shall be made and kept in repair, and watchman maintained thereat at the joint expense of the companies owning the tracks all trains or engines passing over such tracks shall come to a full stop not nearer than 200 feet nor farther than 800 feet from crossing and shall not cross until signaled so to do by the watchman, nor until the way is clear and when two passenger or freight trains approach the cross-

ing at the same time the train on the road first built shall have precedence if the tracks are both main tracks over which all passengers and freight on the roads are transported, but if only one track is such main track, and the other is a side or depot track, the train on the main track shall have precedence, and if one of the trains is a passenger train and the other a freight train, the former shall take precedence and regular trains on time shall take precedence over trains of the same grade not on time, and engines with cars attached not on time shall take precedence of engines without cars not on time

Rule No 18, of the Rules and Regulations for the Government of Motormen and Conductors of the Monongahela Valley Traction Co reads as follows

STEAM RAILROAD CROSSINGS

18 Car must be brought to a full stop at a safe distance approaching steam railroad crossings at grade, and motorman must not proceed until conductor has gone ahead to the center of crossing, looked both ways, and given the "Come ahead" signal Before starting, the motorman must look back to see that no passengers are getting on or off, and in no case proceed, even after conductor's signal, until he has also examined the crossing and satisfied himself that steam cars are not approaching

When there is more than one track the conductor must remain in advance of the car until the last track is reached

After boarding car, conductor will give "Go ahead" signal to notify motorman that he is aboard Motorman is forbidden to proceed without this signal

Where crossing is protected by derail interlocking plant, or flagman (employed by the company) this rule does not apply special instructions being issued to govern in such cases

The arrangement under which the Baltimore & Ohio employees protect the crossings is provided for in Section 2 of an agreement dated August 1, 1910, at which time the Baltimore & Ohio Railroad constructed the Essex glass plant's spur In that section it is provided among other things that the railroad company shall install a derail on the spur track and also that at the time cars are "being placed or switched the said party of the second part (the Baltimore & Ohio Railroad) will further protect said crossing by placing a flagman at said crossing to warn oncoming cars of the Parkersburg, Marietta & Inter-Urban Railway Co" The Parkersburg, Marietta & Inter-Urban Railway Co was absorbed by the Monongahela Valley Traction Co about two years ago and has since been operated by the last-named company Section 5 of the same agreement also provides that the party of the second part will at all times indemnify the party of the first part (the street railway company) for any and all damages, losses, and expenses or claims therefor caused by failure on its part to comply with any of the conditions of the agreement

Car No 625 was a wooden car of the semiconvertible type, 44 feet in length, and weighing about 22 tons It was equipped with two 4-wheel trucks, Westinghouse motors and straight air brakes the main reservoir pressure being 90 pounds maximum and 70 pounds

minimum In order to determine the speed which could be attained by this car and the distance within which it could be properly stopped a test was made with car No 629, of the same type and construction as car No 625, and of the same gear ratio The car was started at a point about 2,000 feet north of the crossing and after rounding the curve full power was used for a distance of approximately 750 feet at which time it had developed a speed of 28 miles an hour as indicated by the speedometer of an automobile pacing the street car on the parallel highway The power was then turned off and an emergency application of the brakes made, at which time the main reservoir pressure was 78 pounds The car was brought to a full stop within a distance of approximately 213 feet W M Koon, in charge of the car barn of the traction company at Marietta, stated that he inspected car No 625 at about 4 p m the day before the accident Some work was done on the car at that time including putting on two new brake shoes, some air motor brushes, and an examination of the air brakes and the sander Everything about the car was in first-class shape The trip on which the accident occurred was the first made by the car since his inspection

As previously stated, no printed time table is in use on this part of the Monongahela Valley Traction Co No train sheet record is kept, dispatchers copying the substance of train orders on a printed form, which is preserved to show the orders in effect None of the employees is required to pass an examination on the book of rules, the new employees being placed under the instruction of older motormen and conductors, who tell them how to operate their cars and about the various rules and how they should be observed When a man is approved by the older employee he is placed in charge of a car as needed

In determining the cause of this accident the first important feature for consideration is whether or not the State law of West Virginia, as well as rule No 18 of the book of rules of the traction company, is applicable

The question of the application of the statute to interurban or street railways was submitted to the attorney general of the State of West Virginia by the chief railway inspector of the West Virginia Public Service Commission, and in the attorney general's reply, dated September 16, 1919 the following opinion was stated

Without making a careful or extensive investigation, I would hold that this statute would not apply to street railways or interurban electric railways Evidently the statute was intended to govern steam propelled cars and was enacted at a time before street railways came into existence in this State Moreover, it appears that this accident occurred on an industrial spur track of the Baltimore & Ohio, which crossed the interurban line for the purpose of serving a glass plant whereas the statute under discussion would probably not be construed to govern a situation of that kind You advise that an agreement had

heretofore been entered into between the street railway and the steam railway concerning the duties of each with reference to this grade crossing and accidents which might happen thereat, thus indicating the view or construction of this statute by these companies at the time the agreement was entered into In view of this agreement, it is persuasive that these companies did not consider that the statute above referred to had application

It is also apparent that rule No 18 does not apply, in view of the agreement of August 1, 1910, and especially in view of the instructions said by the superintendent to have been given to all employees that protection at this crossing would be afforded by the employees of the Baltimore & Ohio Railroad Co

The second question presented by this case is whether or not proper flag protection was afforded by the railroad company's employees for the movement of the switching engine over the crossing

Of the five employees constituting the crew of the switch engine one was at the main-line switch and was not in position to know definitely what was going on at the crossing, while the fireman had no first-hand knowledge of circumstances leading to the accident Conductor Bradley stated the engine was practically on the crossing at the time he gave the stop signal to the motorman of the street car, the car at that time being about 900 feet from the crossing, while Brakeman Murphy states that the street car was from 900 to 1,000 feet distant when he himself began to give stop signals and that at this time engine 1220 was actually starting over the crossing These statements are partly confirmed by the statement of Engineman Boyd that he saw the conductor and brakeman when they began to give stop signals and that they did not begin to give these signals until the engine was within a foot or two of the crossing According to the statements of the railroad employees themselves, therefore, the engine was moving and was actually at or on the crossing when stop signals were first given to the crew of the approaching street car and on this point they agree with the statements of the crew of the street car as well as with the statements of other eyewitnesses But there is a decided disagreement as to the location of the street car at this time The conductor and brakeman who were the only members of the railroad crew in position to see, stated that the street car was about 900 or 1,000 feet distant The motorman and conductor of the street car locate their car as being from 130 to 150 feet distant and their statements practically agree with those of Mr Childers, a passenger, and Mr Keigwin, foreman at the silk mill Mr Childers estimated the car to have been from 200 to 250 feet distant when the engine came in sight and about 100 feet distant when the first stop signals were given, while a street car placed in the position occupied at the time Mr Keigwin saw the car flagged for the first time was only 137 feet from the crossing

The statements of Conductor Bradley and Brakeman Murphy that the street car was 900 or 1 000 feet distant from the crossing when they first gave stop signals are discredited not only by the statements of other witnesses but also by consideration of facts and circumstances which were established beyond question by the investigation All statements in the matter agree that stop signals were not given to the approaching street car until after the signal for the engine to come ahead had been given and the engine had actually started The engine had moved not more than 50 or 60 feet and was still moving at the time the collision occurred Assuming that this move was made at the rate of an ordinary walk or 3 miles per hour this move consumed only about 10 or 11 seconds Had the street car traveled the distance of 900 or 1,000 feet in that short time it would have been running at the rate of 55 or 60 miles miles per hour In view of the circumstances, this is entirely beyond belief

Statements which were made by several persons who were in the immediate vicinity of the crossing going to and from the silk mill and a store on the south side of the crossing, were to the effect that no stop signals were given until the street car was close to the crossing, and great weight is attached to the statements of Messrs Childers and Keigwin, both of whom were disinterested persons separated from the crowd of men and girls in the vicinity of the crossing, and were in position to have a good view of what occurred There is also testimony which indicates that the conductor and brakeman were talking together on the crossing and that they did not see the street car until it was almost upon them The statements that a man was riding on the front end of engine 1220 as it moved toward the crossing are so conflicting that it is impossible to reach any definite conclusion on that point However, the weight of evidence in the matter establishes beyond reasonable doubt that Conductor Bradley and Brakeman Murphy did not give any stop signals to the crew of the street car until the car was only a very short distance from the crossing, probably about opposite the lower driveway of the mill, this was about the time the engine headed out on the crossing and a second or two previous to the time the car was first seen by Engineman Boyd

It is apparent, therefore that proper flag protection at this crossing was not provided for the movement of the switch engine over it Conductor Bradley and Brakeman Murphy were not engaged in any other duties, and both of them were in such a position that had they been alert and attentive to their duties they could readily have flagged the approaching street car in ample time to have averted the accident It is clear from the investigation, however, that neither of them was aware of the fact that a street car was approaching until

it was so near the crossing that at the rate of speed it was running it could not be stopped short of the crossing

Attention is also called to the fact that when the engine first backed over the crossing on its way to the glass plant the movement was made without proper flag protection The statements of the various employees as to where they were located at that time are confused, but the evidence indicates that Conductor Bradley had crossed the street and was at the derail, 56 feet beyond the crossing, that Brakeman Murphy was somewhere on the box car which was being pushed by the engine, while the engineman and fireman were on the engine and the fifth member of the crew was at the main line switch Engineman Boyd also stated that on other occasions he had crossed the street-car track without flag protection

The investigation of this accident indicates that the flagging practices commonly followed by railroad employees at this crossing were somewhat lax, and it does not appear that any definite instructions regarding the protection to be afforded, other than verbal instructions to certain employees, had been issued by the Baltimore & Ohio Railroad Co, notwithstanding the agreement between that company and the street railway company that a flagman would be stationed at the crossing by the Baltimore & Ohio Railroad Co when it was being used by a switching locomotive of that company It is questioned whether the crew of the switch engine was more negligent in flagging the crossing in this case than in other instances, and the complaint of lax flagging methods, which was a subject of correspondence between the two companies, supports the conclusion drawn from the investigation that in this instance the railroad employees involved in this accident did not depart in any essential manner from their usual method of flagging this crossing That the means employed for safeguarding traffic over this crossing are inadequate has been fully demonstrated by this disastrous accident

The third question for consideration in determining the cause of this accident is whether the practices under which the street car of the Monongahela Valley Traction Co was operated were based upon a proper regard for the safety of employees and the traveling public It was contemplated by the agreement between the railroad company and the street car company that street cars on this line would not be required to stop before passing over the crossing unless flagged by an employee of the railroad company, and practices which had been established in conformity with this understanding were in effect and of long standing Supt Wilson of the traction line stated that while the Baltimore & Ohio Railroad crews were relied upon to protect this crossing it was understood that street car company employees would take every precaution, and that unless

flagged the car would be allowed to drift over this crossing at a speed of about 5 miles per hour

The speed at which street cars were being operated over this crossing had also been a subject of correspondence between the two companies, and the investigation indicated that it was common practice for street cars to be operated over this crossing at speeds of 15 or 20 miles per hour, this being considerably in excess of the limit which Supt Wilson evidently considered safe and proper It does not appear that any specific instructions in the matter had been issued by the traction company other than verbal instructions to certain employees, which were in turn communicated by word of mouth to other employees instructed and trained for service by them

The street car which was involved in this accident was a chartered car en route to Parkersburg, and was not making scheduled stops between Marietta and Parkersburg Parmaco is a scheduled stop for regular street cars on this line and is located a short distance south of the point of accident It is common practice for employees of regular street cars to shut off power before reaching the crossing and allow their cars to drift over it, making the regular stop a short distance beyond This practice and the location of the scheduled stopping point results ordinarily in cars being operated at comparatively low speed over the crossing As the car involved in this accident, however was not making scheduled stops, it is quite probable that the rate of speed was somewhat greater than that of regular cars This conclusion is supported by the fact that the motorman made a light application of the brakes when approaching the silk mill, and a full application of the brakes when about 100 or 150 feet from the crossing and, notwithstanding his efforts to stop, the street car struck the locomotive with considerable force, as is shown by the results of the collision Tests with a similar car demonstrated that by an emergency brake application it could be brought to a stop from full speed of 28 miles an hour in a distance of little more than 200 feet Notwithstanding statements made by several witnesses examined that the car involved in this accident was running at about the usual rate of speed for cars in that vicinity there can be no question but that this car was being operated at a rate of speed very much exceeding the rate of 5 miles per hour, mentioned by Supt Wilson as the proper rate of speed for cars passing over this crossing, and it is believed that this car was running faster than any street car should be operated when approaching a crossing of this character, where the view from the approaching car is obstructed and a car is likely to be flagged at any time even when only a short distance from the crossing Had the crew in charge of this street car taken proper precautions and approached this crossing at a reduced rate of speed, with their car properly

under control as required by the exercise of common prudence when approaching a point of possible danger such as this crossing, they would have been able in spite of the negligence of the Baltimore & Ohio employees in flagging the crossing to bring their car to a stop in time to avert this accident.

The direct cause of this accident was the failure of the crew of the switching engine to provide proper protection for the movement of that engine over the crossing. Conductor Bradley was responsible for the safe movement of his engine over this crossing; he knew that street cars did not stop and that it was the duty of the railroad company's employees to protect the crossing, having been previously called into the trainmaster's office and instructed in regard thereto, yet the engine was practically on the crossing before he made any attempt to stop the street car or his own engine. Brakeman Murphy was, or should have been, in position to protect the movement of his engine, being fully acquainted with the conditions existing at this point and in view of his failure properly to perform this duty he must also share with Conductor Bradley responsibility for this accident.

Under the ordinary rules of railroad operation, the engineman is equally responsible with the conductor for the safe movement of their train. In this particular case, however, engine 1220 undoubtedly had started ahead before the street car came within the engineman's range of vision at the point where the engine had been standing. Not having seen the approaching street car at any time, the engineman, after receiving a proceed signal, was justified in assuming that the conductor and brakeman on the crossing were giving the full protection required for the movement of the engine. As a matter of fact, Engineman Boyd did not see the street car until his engine came out from behind the pump house and was actually on the crossing, and although the brakes were applied at about this time, the marks on the side of the engine indicated that it had not been brought to a full stop when the collision occurred.

Conductor Bradley was employed as a yard brakeman in August, 1913, and was promoted to conductor in 1916. Although this was his first trip on this job as a conductor, he had been previously employed on it for several months as flagman, and was thoroughly acquainted with the conditions existing in the vicinity of the point of accident. Five entries had been made against his name at various times for yard accidents of a very minor character.

At the time of the accident Conductor Bradley and Brakeman Murphy had been on duty about five hours, after a period off duty of about 16 hours.

As a means of preventing accidents of this character in future, it is recommended that in addition to the derail on the spur track

fixed signals and derails be installed on the track of the traction company, the normal position of these signals and derails being clear for the passage of street cars When the crossing is to be used by crews of the Baltimore & Ohio Railroad Co they should first be required to set the signals at stop and open the derails Unless and until this is done, definite and specific flagging instructions should be issued by the Baltimore & Ohio Railroad Co and rigidly enforced, also, a low-speed restriction for street cars passing over this crossing should be prescribed and strictly adhered to by the Monongahela Valley Traction Co

Respectfully submitted

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Chief, Bureau of Safety

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