INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2488

THE VIRGINIAN RAILWAY COMPANY

REPORT IN RE ACCIDENT

AT KUMIS, VA., ON

MARCH 13, 1941

SUMMARY

Railroad:	Virginian
Date:	March 13, 1941
Location:	Kumis, Va.
Kind of accident:	Derailment
Train involved:	Freight
Train number:	Extra 101
Engine number:	101
Consist:	104 cars, caboose
Speed:	28 m. p. h.
Operation:	Timetable and train orders
Track:	Single; $0^{\circ}59'$ curve; 0.35 percent descending grade eastward
Weather:	Clear
Time:	12:57 a.m.
Casualties:	1 killed; 1 injured
Cause:	Accident caused by right switch-point of turnout to right being in position for entry to siding and left switch-point being in position for movement on main track, as a result of failure of oil buffer of automatic spring-switch
Recommendation:	That the Virginian Railway submit to the Commission rules for installation, inspection and maintenance of spring switches in use on its line of railroad.

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2488

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE VIRGINIAN RAILWAY COMPANY

May 20, 1941

Accident at Kumis, Va., on March 13, 1941, caused by right switch-point of turnout to right being in position for entry to siding and left switch-point being in position for movement on main track, as a result of failure of oil buffer of automatic spring-switch.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On March 13, 1941, there was a derailment of a freight train on the Virginian Railway at Kumis, Va., which resulted in the death of one employee and the injury of one employee.

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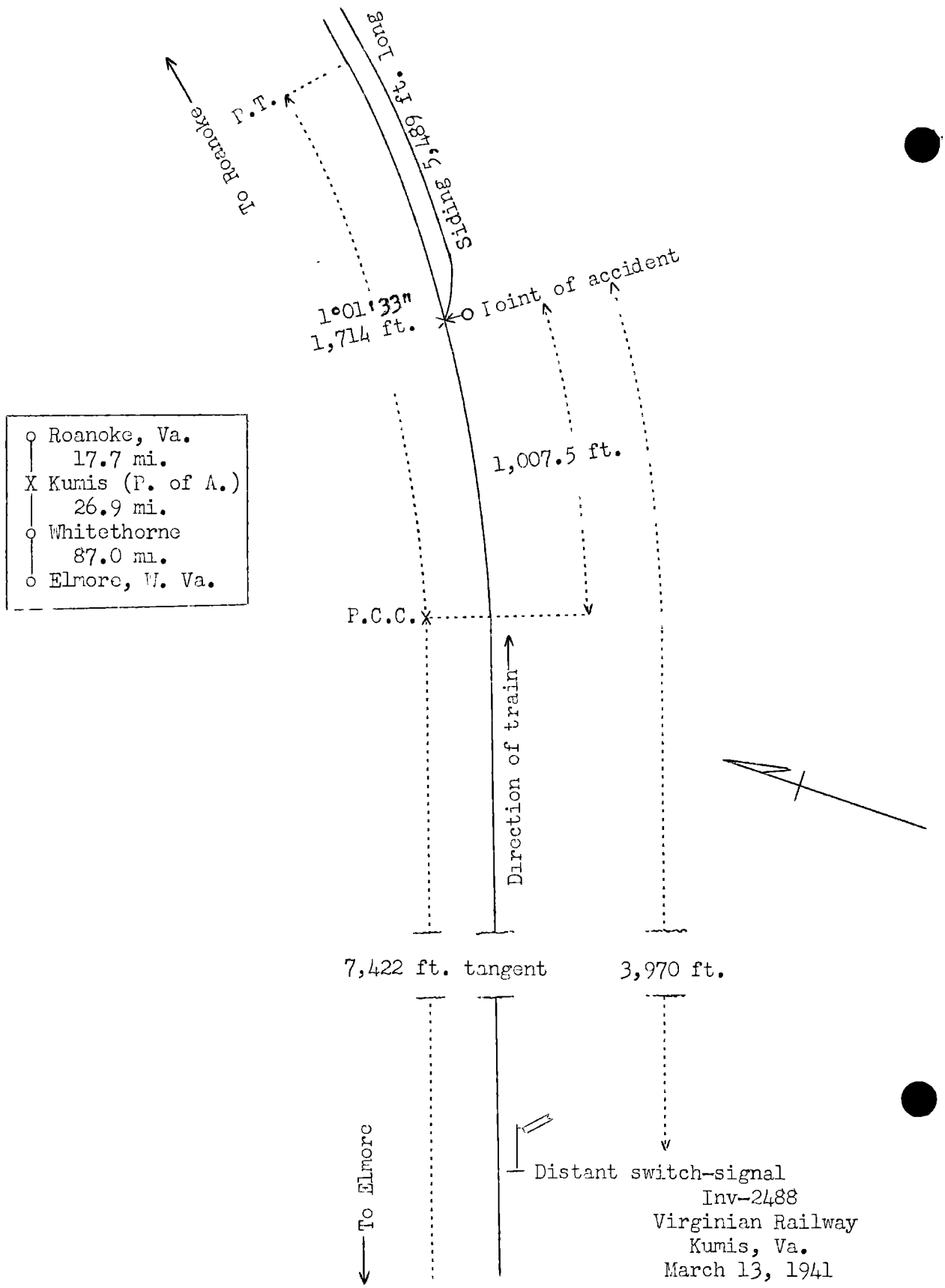
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv-2488
Virginian Railway
Kumis, Va.
March 13, 1941

Location and Method of Operation

This accident occurred on that part of the New River Division designated as the Third Sub-Division which extends between Elmore, W. Va., and Roanoke, Va., a distance of 131.6 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders; there is no block system in use. This line is equipped with an overhead catenary system for electric propulsion of trains. At Rumis a siding 5,489 feet in length parallels the main track on the south. Entry to the siding at the west siding-switch is made through a No. 10 turnout to the right. The derailment occurred 11 feet 6 inches east of the west siding-switch. As the point of accident is approached from the west there is a tangent 7,422 feet in length, which is followed by a compound curve to the left 1,007.5 feet to the point of accident, the maximum curvature of which is 1°01'33". The accident occurred at a point where the curvature is 0°59'. The grade for east-bound trains is, successively, 0.17 percent descending 1,600 feet and 0.35 percent descending 200 feet to the point of accident and a considerable distance beyond.

The track structure consists of 130-pound P. S. rail, 39 feet in length, rolled in 1929 and laid on an average of 24 treated ties to the rail length; it is fully tieplated, single-spiked, provided with an average of 8 rail anchors to the rail length, equipped with 4-hole continuous angle bars 26 inches in length, ballasted with crushed limestone to a depth of 8 to 10 inches and is well maintained. The super-elevation at the point of derailment is 1/2 inch.

The switch structure consisted of 130-pound rail, two points 16 feet 6 inches in length, 10 switch plates under each point, and 9 rail braces on each side. The wearing points of the switch were of manganese steel, 2 feet 6 inches in length, chamfered to 1/16 inch thick at the top line and 1/4 inch thick at a point 2 inches below the head of the stock rail; the vertical member was 9/16 inch thick and was reinforced by 3/8-inch straps secured by 3/4-inch bolts. The switch points were connected by two switch rods 1 inch thick and 2-1/2 inches wide, spaced 24 inches apart.

The switch-stand involved is of the Racor 100-A, three-in-one, horizontal-throw automatic-spring type and is located 9 feet south of the center-line of the track. It is equipped with two targets and a switch lamp. When the switch is lined

for the main track the switch-stand displays a white circular target and the lamp displays a green aspect. When the switch is lined for the siding the switch-stand displays a red arrow-shape target and the lamp displays a red aspect. The switch lamp is mounted 8 feet 7 inches above the level of the ties. The switch is equipped with springs to provide automatic return of the points after wheels have trailed through them and an oil buffer to prevent the rapid return of the switch points between successive pairs of moving wheels. When the switch is lined normally, which is for movement on the main track, the springs are under sufficient compression to hold the point against the stock rail.

A distant switch-signal is located 3,970 feet west of the west siding-switch. This signal is of the one-arm, two-position, upper-quadrant, semaphore type, and is oil lighted. The signal-relay circuit is controlled by a switch-circuit controller which is connected to the normally closed switch point. When the switch points opened 3/16 inch or more, the relay circuit is opened and the signal displays caution. The night aspects, indications and names are as follows:

Aspect	Indication	Name
Green	Proceed	Clear
Yellow	Proceed under control and stop clear of switch and train must not proceed over switch until it is ascertained that switch is in safe condition for passage	Caution

Time-table special instructions provide as follows:

> 6. Rule 34 of Book of Rules, effective December 1, 1918, is revised as follows:
>
> All members of train and engine crews must communicate to each other by its name the indication of all signals affecting the movement of their train.
>
> 22. * * *
>
> When signals protecting the movement over spring switches are found in caution position (45 degrees) engineers may proceed under control, but must stop in clear

> of the switch and must not proceed over the switch until it is ascertained that the switch is in safe condition for the passage of their train. * * *

The maximum authorized speed for freight trains is 28 miles per hour.

The weather was clear at the time of the accident, which occurred at 12:57 a.m.

Description

Extra 101, an east-bound freight train, with Conductor Lusk and Engineman Parsons in charge, consisted of electric engine 101, of the three-unit type, 96 loaded and 8 empty cars and a caboose. This train departed from Whitethorne, 26.9 miles west of Kumis and the last open office, at 9:51 p.m., March 12, according to the train sheet, and, while moving at a speed of 28 miles per hour, was derailed at the west siding-switch at Kumis.

The three motor units were derailed to the right and stopped, badly damaged, parallel to the track, with the front end of the first unit 300 feet east of the switch. The first and second units leaned to the north at an angle of 45 degrees, and the third unit leaned toward the south at an angle of about 45 degrees. The first 12 cars in the train, 5 of which were destroyed, were derailed and stopped in various positions on the track and near it. All the wreckage was contained within a distance of 315 feet.

The employee killed was the fireman and the employee injured was the front brakeman.

Summary of Evidence

Engineman Parsons stated that at Elmore, 113.9 miles west of Kumis, a terminal air-brake test was made and he received a lantern signal which indicated to him that the brakes were functioning properly. As his train was approaching Kumis, the speed was 28 miles per hour, the controller was closed and the headlight was lighted. He was stationed at the controls in the front end of the first unit and was maintaining a lookout ahead. The distant switch-signal displayed proceed for his train and the switch lamp at the west siding-switch displayed green. He was unable to see the

position of the switch points. The fireman and the front brakeman were in another unit of the engine. The first the engineman knew of anything being wrong was when he felt a bump, and the first unit became derailed about 12 feet east of the west siding-switch. The brakes became applied in emergency because of cars becoming uncoupled to the rear of the engine. He said that an inter-unit communicating signal-system is provided so that the engineman can summon the fireman from any unit, and a responding signal can be sounded from any unit. Under the rules all members of the crew on the engine must communicate to each other by name the indication of all signals affecting the movement of their train; however, the rules do not require the communicating whistle to be sounded as an indication that signals have been observed, nor is any signal code provided for that purpose. Some employees have formulated a code of communicating signals to be used when members of the engine crew are stationed in separate units for the purpose of attracting attention to signal indications. If the communicating system fails and an employee stationed in the rear unit deems it necessary to stop a train, such employee can cut off the power by pulling a switch. The rules require that a train must be stopped immediately when power is off. He said the communicating signal-system was in operative condition. The engineman knew of only one instance wherein a distant switch-signal displayed an indication contrary to the condition existing at the switch; however, in that instance the signal displayed caution when the switch was lined for movement on the main track.

Front Brakeman Shorter stated that as his train was approaching Kumis he was stationed on the north side of the rear control compartment of the third unit, and was facing toward the rear of the train. The fireman was seated on the south side of the rear control compartment. It was moonlight and the weather was clear. Immediately after the third unit passed the distant switch-signal, the front brakeman observed that the signal displayed caution. He called the caution indication to the fireman, who replied that he had not observed the signal. The front brakeman understood that the caution indication displayed by the distant switch-signal required his train to stop short of the switch and not to proceed until it was determined that the switch was in condition to permit the safe passage of his train. The members of a crew operating a three-unit engine call signal indications to each other if they are in the same operating compartment, but when members are stationed in separate units the communicating signal-system is used to communicate the signal indication to each other. He

said that the communicating signal-system was not in operative condition and he was unable to signal the engineman to stop the train. He did not think he could traverse the distance between the rear end of the third unit and the front end of the first unit through the narrow passageway in time to warn the engineman so that the train could be stopped short of the west siding-switch. He said that he could have shut off the power by means of a switch in the rear unit. The fireman had been stationed in the rear unit only a short time before the accident occurred. He knew of several instances when a distant switch-signal displayed caution and the switch was found to be lined normally and in good condition, but he was informed later that the signal was defective. It is customary to stop and to examine spring switches when the distant signal displays caution.

Conductor Lusk stated that as his train was approaching Kumis the speed was 28 miles per hour and he was maintaining a lookout ahead from the left side of the cupola. When the caboose was about 25 or 30 car lengths to the rear of the distant switch-signal, he observed that it was displaying clear. When the caboose reached a point about 10 or 15 car lengths west of the signal he observed its aspect change from green to yellow and he called a warning to the flagman. About 2 seconds later the air brakes became applied in emergency and the caboose moved forward about 10 or 15 car lengths before it stopped. After the accident occurred he examined the track just west of the siding switch and there was no indication of defective track or equipment having been dragged. The right-hand switch rail was canted slightly to the north and the left-hand switch rail was lying on its side. The switch-throwing lever was locked in position for the main track. He did not observe any evidence of tampering. In his opinion the distant switch-signal could ordinarily be seen from a caboose a distance of about 4,500 feet; however, on the day of the accident several high box cars immediately ahead of the caboose restricted the view of the signal involved to about 25 or 30 car lengths. The flagman did not call the indication displayed by the distant signal. The conductor said that the weather was clear and the moon was shining at the time of the accident, which occurred about 12:50 a.m. This was the first instance of which he had knowledge that difficulty had been experienced with an automatic spring-switch.

Flagman Bradbury stated that as his train was approaching the point where the accident occurred he was on the right side of the cupola. When the caboose was about 1,000 feet to the rear of the distant switch-signal he observed that it displayed clear, but when the caboose was about 5 car lengths to the rear of the signal it changed from clear to caution. Soon afterward

the air brakes became applied in emergency and the caboose stopped abruptly. He immediately proceeded to the rear to provide flag protection and observed that the distant signal continued to display caution. He did not hear the conductor call either a warning or the indication displayed by the signal.

Roadmaster Stinnette stated that he arrived at the scene of accident about 3:45 a.m. He examined the switch involved and found the switch-throwing lever locked in position for main-track movement. The oil-burning switch lamp was lighted and it displayed green for the main track; however, the switch lamp was turned slightly on the spindle. The switch points were open about 2 or 3 inches; the left-hand point was canted toward the north and the right-hand point was canted toward the south. Both switch rods were broken from the switch points but the points were not damaged. Between the left-hand switch-point and the left-hand stock-rail, at a point 11 feet 6 inches east of the west end of the left switch-point, wheels had dropped and run over the stop, footguard and heel-plates. Between the right-hand switch-point and the right-hand stock-rail, at a point about 11 feet 6 inches east of the west end of the right switch-point, flange marks appeared on the stop, footguard and plates. The right-hand main-track rail east of the switch-point rail was torn out. Starting at a point 24 feet east of the switch points, ties were torn out throughout a considerable distance. Throughout a distance of 700 feet west of the switch involved, the gage varied between 4 feet 8-3/8 inches and 4 feet 8-1/2 inches. The greatest variation in superelevation between two adjacent stations was 1/8 inch. The superelevation at the switch points was 1/2 inch. There was no mark on the top of either switch point. In his opinion both switch points were open a sufficient distance from the stock rails to permit the wheels of engine 101 to move on the stock rails until the gage became sufficiently wide for the wheels to drop off the rails. About 6 months prior to the accident, instructions were issued to examine spring switches for worn parts; visual examination only was made. About 15 days prior to the accident he received a pamphlet containing instructions for the installation and maintenance of spring switches equipped with oil buffers; however, the railroad had not issued any instructions for periodic inspection of such switches. He said that he was not familiar with the mechanism of spring switches. If any part of the internal mechanism failed, the spring-buffer case was sent to the shop for repair. Since the installation of switches of this type, the only attention given was the maintenance of the throw at 5-3/4 inches; also, at 6-month intervals sufficient oil was added to maintain the proper level in the buffer so that the return interval of the switch points was 30

seconds. Previously there had been no occasion to dismantle the oil-buffer mechanism of any automatic spring switch for inspection.

Section Foreman Brandeau stated that he arrived at the scene of accident about 5:05 a.m. and found conditions to be as described previously by the roadmaster. The switch lamp and the distant switch-signal lamp were lighted. The section foreman said that the spring switch at the west end of the siding at Kumis was installed in April, 1938. Nothing had been done to the buffer since it was installed except to add sufficient oil to maintain the proper level. On December 22, 1938, the distant switch-signal displayed caution for a period of 20 to 30 minutes after a west-bound train had made a trailing movement through the switch. At that time he found the switch point open about 3-1/4 inches; however, a slight jar caused it to return to its normal position. He reported this condition and the roadmaster who was formerly in charge of that territory adjusted the timing valve and corrected the condition. Track walkers are instructed to inspect spring switches daily and the section foreman inspects them twice weekly. On March 10, 1941, the section foreman tested the spring switch both by prying the switch points open about 4 inches by means of a bar and by hand-throw operation; the switch functioned properly. At that time he checked the superelevation and the gage of the track eastward and westward from the switch; no irregularity was found.

Signal Supervisor Lockhart stated that once each week the signal department inspects the switch points of automatic spring switches for proper adjustment and the distant switch-signal apparatus to determine if it functions properly. Signal inspection reports are not required of the signal maintainers; however, a check of work performed is made from the daily time report. On March 6 the switch and signal involved were inspected and found to be functioning properly. After the occurrence of the accident tests disclosed that the distant signal functioned properly. He knew of no instance wherein a distant switch-signal under his supervision remained clear when the switch points were not in normal alinement.

Signal Maintainer Loving corroborated the statement of the signal supervisor. The signal maintainer said that on March 6 he opened the switch points of the spring switch involved 1/4 inch and the distant signal displayed caution.

Master Mechanic Foster stated that he arrived at the scene of accident about 4 p.m. He inspected the three units of engine 101. His examination failed to disclose any condition that could have contributed to the cause of the derailment. The back-to-back measurements of all pairs of wheels of the engine disclosed the spacing to be within the prescribed limits. The flanges were good contour and over 1 inch in thickness. After he observed the condition of the switch involved his conclusion was that both switch points were separated from their respective stock rails a sufficient distance for the engine wheels to run on the stock rails until the gage became wide enough for the wheels to drop between the rails.

General Foreman Keeley corroborated the statement of Master Mechanic Foster.

Road Foreman of Engines Cook stated that he arrived at the scene of accident about 2:15 a.m. His inspection of the locomotive equipment failed to disclose any condition which could have contributed to the cause of the derailment. He examined the distant switch-signal; the semaphore spectacle casting was free from any obstruction that could have held it in a false position. He said that a fireman assigned to duty on an electric engine is required to make inspection trips throughout the three units at 15-minute intervals; however, when a train is approaching a train-order station he is required to be in the front compartment with the engineman so that he can observe and call signal indications to the engineman. The front brakeman is required to ride in the rear control compartment of the rear unit and to maintain a lookout to the rear so that hot journals may be detected; however, the front brakeman is required to be at the front end of the first unit when the train is approaching a train-order station. Neither the fireman nor the front brakeman is required to be at the front end when a train is approaching a distant switch-signal. The communicating signal system on an electric engine is used when a defective condition develops on the engine; it is used also to attract the attention of other members of the crew to train-order signals. The railroad has not provided any code of signals whereby signal indications may be transmitted and responses may be made. He said that if a train was moving 28 miles per hour it would traverse a distance of 1,600 feet while an employee proceeded from the rear end of the third unit to the front end of the first unit.

Trainmaster Daniel stated that he arrived at the scene of accident about 3:45 a.m. At that time the switch lamp was turned halfway around. The switch points were open about 2 inches from their respective stock rails and the distant switch-signal displayed caution. He said that as a result of the accident the power went off at 12:57 a.m. On April 7 he was in the cupola of the caboose of an east-bound freight train maintaining a lookout ahead and there were box cars immediately ahead of the caboose. Because of track curvature and a cut west of Kumis, the distant switch-signal involved could be seen a distance of over 1 mile during a few seconds only, then it could not be seen again until the caboose was about 2 car lengths west of the signal.

Electrician Young stated that on March 11 he repaired the communicating signal system on the third unit of engine 101; afterward, the entire signal system functioned properly.

Chief Engineer Traugott stated that 16 switches of the three-in-one, automatic spring type are in service on this railroad. The first switch of this type was installed in January, 1931. The spring switch involved in this accident was installed at Kumis in April, 1938. Prior to January, 1941, no instructions for maintenance of double-acting oil-buffer spring switches were issued to employees concerned with the repair and maintenance of such switches, except a manufacturer's pamphlet containing instructions for installation; however, during January, 1941, a pamphlet of another manufacturer, containing detailed instructions for proper inspection and maintenance of all working parts of the oil-buffer system, was issued to employees concerned. The railroad had not formulated any instructions for periodic inspection and maintenance of oil-buffer spring switches. Roadmasters and section foremen are considered competent to inspect and to determine whether the switches are defective. Should a defective condition be found, the switch is dismantled and sent to the shop for repair.

A representative of the manufacturer of the spring switch involved stated that the opening of the switch points by trailing movements of wheels produces rotation of the crank eye, spindle, inner sleeve, sliding sleeves and safety block. In the safety block, four diagonally opposed rollers are provided; these rollers engage vertical projections attached to the spring housings. When rotation results from a trailing movement the return springs are further compressed. After each pair of wheels passes beyond the switch points, the spring compression urges a return of the points to the position for which they are lined; however, an oil buffer attached to the safety block re-

tards the closing of the switch. When the piston rod moves outward, oil passes freely through a port on the piston, but when the piston is moved inward this port is sealed by a flapper valve, which forces oil to pass through a smaller port in a timing valve, thus retarding this movement. The timing valve has four ports of different diameters; three regulate the time of retardation during closure and the fourth provides no buffing action but is used for the venting of air when the oil reservoir is filled. The timing valve is equipped with a screen to prevent particles of foreign matter entering the ports.

According to data furnished by the railroad, the switch involved was last used about 11:30 p.m., March 12, by Extra 107 West in a trailing-point movement from the siding to the main track.

During the 30-day period prior to the occurrence of the accident, the average daily movement over the point involved was 11.9 trains.

Observations of the Commission's Inspectors

The Commission's inspectors examined the track a distance of more than 1 mile east and west of the spring switch involved and found no indication of defective track or of dragging equipment. The switch plates were well lubricated and there was no indication of sand or gritty substance in the grease. The marks of derailment were found to be as previously described. In addition, it was observed that, starting at a point 2 feet 6 inches eastward from the switch points, the outside faces of both switch rails were abraded throughout a distance of about 10 feet. Both switch rods were broken from the clips and were bent upward. The inside faces of both wheels of the front engine truck were heavily abraded and scored continuously at heights corresponding to the heads of rails and angle-bar bolts. Since the outside faces of the switch points were 54-3/16 inches apart at a point 3 feet east of the west end of the switch points and since the back-to-back distance between the engine-truck wheels was 53-3/16 inches, the indications were that both engine-truck wheels moved on both stock rails until the gage widened sufficiently at a point 11 feet 6 inches east of the west end of the switch points to permit the wheels to drop between the rails; during this movement the wheels compressed the switch rails until the switch rods were bent upward and broke free.

Tests made after the accident failed to disclose any condition that could have prevented the distant switch-signal from functioning properly. Examination of the oil-buffer mechanism of the spring switch disclosed that the timing valve was set for the No. 3 port, which is .048 inch in diameter. The timing-valve screen was torn. The condition of the oil in the buffer indicated that it had not been changed for a considerable length of time. This oil was removed and strained through a screen having 325 meshes to the square inch. This operation revealed a deposit containing small particles of dirt, fiber, and granular substance, and particles of carbonaceous material large enough to obstruct the orifice in the timing valve and to prevent the proper flow of oil through the opening; this prevented the switch points from returning to normal position. There was no indication of excessive wear of any part of the mechanism. The springs were capable of delivering the force for which they were designed. After the spring and oil-buffer apparatus was reassembled it was attached to a switch near the shop, and later was reinstalled at the west siding-switch at Kumis; in each instance it performed its function.

Discussion

According to the evidence, Extra 101 East was moving at a speed of 28 miles per hour when the engine became derailed at a point 11 feet 6 inches east of the west siding-switch. Inspection of the track after the occurrence of the accident disclosed that each switch point was from 2 to 3 inches from its stock rail and that there were abrasions on the outside surface of each point and on the inside faces of the engine-truck wheels. These conditions indicate conclusively that the switch points were open sufficiently to permit the engine to move on the two stock rails to a point where the gage became wide enough to allow the wheels to drop between the rails.

There was considerable discrepancy in the statements of the four surviving members of the crew concerning the indication displayed by the distant switch-signal located about 4,000 feet west of the switch. According to the statement of the engineman, he received a clear signal but according to the front brakeman, who was in the rear end of the rear unit of the engine, it was caution. According to the statements of the conductor and the flagman, when their caboose was about 1,000 feet west of the signal the indication was clear. The conductor said the signal changed from clear to caution when the caboose was from 400 to 600 feet west of the signal but the flagman said the change occurred when the caboose was about 200 feet west of the signal;

however, a test conducted several days after the occurrence of the accident disclosed that with high box cars immediately ahead of the caboose, as was the case on the train involved, the indication of the signal could not be seen from the cupola throughout a distance of 1 mile immediately west of the signal until the caboose was within about 80 feet of it.

The front brakeman knew that a caution signal required his train to stop short of the switch but he took no action to stop the train because he said the communicating signal system was not in operative condition and the distance from the rear end to the front end of the engine through the narrow passageway was too great to enable him to inform the engineman before the engine reached the switch; however, he could have shut off the power, which action, according to the rules, would have required the engineman to stop the train as soon as possible. If the brakeman had shut off the power, it is possible the accident would have been averted; at least the consequences would have been considerably lessened.

After the accident occurred, the distant switch-signal was tested thoroughly and it operated as intended. There was no condition disclosed that would cause this signal to display proceed when the switch point was 1/4 inch or more from the stock rail. From this and the statement of the front brakeman, it appears probable that the signal displayed caution for the train involved.

The last train prior to Extra 101 to pass the point involved was a west-bound freight train that moved from the siding through the west switch and thence to the main track 1 hour 27 minutes before the accident occurred. Apparently, after the rear of the west-bound train reached the main track the switch points started to return to their normal position but when they reached a point midway between the closed and the open position they stopped and remained in the midway position until the derailment occurred. There was no object found that might have fallen between the switch point and the stock rail. The sliding plates of the switch were well lubricated and free of grit. The oil buffer which was provided to prevent the rapid return of the switch points to their normal position contained a torn timing-valve screen. When the oil was strained, particles too large to pass through the port in the timing valve were found. Undoubtedly the torn screen permitted the particles to block the port so that part of the oil could not pass from one side of the piston to the other; this condition resulted in the failure of the buffer to function properly, which in turn affected the operation of the spring switch-points. Tests of the springs disclosed that they were capable of delivering the desired force.

The switch involved was installed about 3 years prior to the time of the accident. During this period the only attention given it was the addition of oil to the supply in the buffer. If this buffer had been properly inspected at reasonable intervals, undoubtedly the torn screen and the foreign substance in the oil would have been discovered. If the buffer had been maintained in proper condition for service it is probable this accident would have been averted.

Cause

It is found that this accident was caused by the right switch-point of a turnout to the right being in position for entry to the siding and the left switch-point being in position for movement on the main track, as a result of the failure of the oil buffer of an automatic spring-switch.

Recommendation

It is recommended that the Virginian Railway submit to the Commission rules for installation, inspection and maintenance of spring switches in use on its line of railroad.

Dated at Washington, D.C., this twentieth day of May, 1941.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL) Secretary.