WESTERN NEW YORK AND PENNSYLVANIA RAILWAY.

(Operated by the Pennsylvania Railroad Company.)

(Inspected August 21, 22 and 23, 1906.)

On August 21, 22 and 23, 1906, I made an inspection of the lines of the Western New York and Pennsylvania Railway in this State and respectfully submit the following report:

The Western New York and Pennsylvania Railway, operated by the Pennsylvania Railroad Company, have in this State the following named lines of railroad: Buffalo division, including the Union Terminal Railroad in Buffalo, extends from Buffalo to the Pennsylvania State line near White House, a distance of 78.78 miles, and has 16.41 miles of second main track and 96.49 miles of sidings and yard tracks. Rochester division, extending from Rochester to Hinsdale on the main line of the Buffalo division, a distance of 98.54 miles. It has a freight branch in Rochester considered as main line extending from the Rochester yard to a connection with the New York Central and Hudson River Railroad, a distance of 2.46 miles, and another branch known as Swains branch which connects with the main line at Nunda Junction and extends to Swains on the line of the Pittsburg, Shawmut and Northern Railroad, a distance of 12 miles. The operation of trains over this branch excepting between Nunda Junction and the village of Nunda, about 2.50 miles, has been discontinued for several years. All the lines are single track. There are on this division 30.57 miles of sidings and yard tracks. The River division extends from a connection with the main line, Buffalo division, at Olean, to the Pennsylvania State line near Wolf Rock, a distance of 38.30 miles, single track and has 47.13 miles of sidings and yard tracks. The Chautauqua division extends from the Pennsylvania State line near Clymer to a connection with the main line, Buffalo division, in Buffalo, a distance of 85.91 miles, and has 17.66 miles of sidings and yard tracks.

Roadbed.

The cuts and embankments of all the lines are generally of fair width and proper slope; a few side cuts of the River division through soft shelly rock, have rather steep slopes subject to wash in times of severe storm; whenever storms occur, however, watchmen are stationed at those points. The Buffalo division has many cuts where track would be improved if better ditches were maintained. There are also a few places on the other divisions where ditches need cleaning and sub-drains would be beneficial.

Bridges, Trestles, Open Culverts and Cattle Passes, Arch and Box Culverts and Iron Pipe Drains.

There are no wooden bridges in the roadway. The steel and iron bridges of the Buffalo division are in good condition, excepting that many of them should be repainted to prevent injury from rust. Quite a number of new bridges have been put in since the last inspection, replacing lighter bridges and timber structures. On the Rochester Division, bridges 12, 13 and 28 are very light, but only the lighter class of motive power is used there and the bridges are to be replaced in the near future. Some of the bridges on this division also need repainting. The bridges of the River division are in first-class condition; most of them have been recently repainted and all are designed for carrying a heavier class of motive power. The bridges of the Chautauqua division are generally in good condition and well painted. The flood bridge near Irving, damaged by freshet about two years ago, has not been rebuilt as recommended. The bridge consists of four spans of deck plate girder. The south abutment and southerly pier were undermined by the freshet; the abutment settled and partially tipped forward; the pier was undermined to the extent that it settled several feet at the easterly end and now is inclined at an angle of approximately 30 degrees. Piles were driven about this masonry and timber cribbing put in supporting the girders. The abutment and pier

above referred to should be promptly rebuilt and the grade at this point raised at least 2½ feet to give sufficient water way, or an additional span of bridge put in. The bridge is owned jointly with the New York, Chicago and St. Louis Railroad, and the masonry extends under the tracks of both roads, which are close alongside. There appears to be some difficulty in reconciling the ideas of the management of the two railroads as to what should be done. I am informed that one railroad wishes to build some masonry on top of the crippled masonry, while the other wishes to rebuild from the bottom. The latter method is the only proper way.

The ties and guard timbers to all bridges are of standard dimensions and are well maintained. Inside guard rails are maintained on all. The masonry is generally in good condition and repairs or renewals are being made as necessary. The overhead highway and farm bridges, both wood and iron, are in good condition and all that are less than twenty-one feet above the track, are protected by warning signals.

The pile and framed bent trestles, of which there yet remains a goodly number, and some quite extensive ones, are of standard construction and well maintained. Very many have been replaced with masonry and iron bridges or culverts and filing since the last inspection, and arrangements are made for eliminating others in the same manner.

Nearly all open culverts and cattle passes of the Buffalo division have good masonry, I-beam stringers and standard floors in proper repair. A few yet remain that are constructed entirely of wood. Since the last inspection very many of the wooden culverts and cattle passes have been replaced with masonry and I-beam or solid flooring. On the Rochester division a large proportion of them is constructed entirely of timber; they are also in good repair and quite a number have been eliminated in the same manner as those on the Buffalo division. All those on the River division have first-class masonry and I-beam stringers. On the Chautauqua division a great portion of those remaining are constructed entirely of timber. A large number have been eliminated by putting in masonry and solid covering and many more replaced with masonry and I-beams. The floors to all are of standard construction and in good repair.

The arch and box culverts and iron pipe drains are apparently in good condition. Many iron pipes have been put in since the last inspection, replacing open culverts.

Track.

The cross-ties of the Buffalo and Rochester divisions are 6 x 7 inches, 8 feet in length and laid at the rate of 2,560 to the mile of track. Those of the Buffalo division are about 98 per cent. oak and the remainder chestnut; of the Rochester division 16 per cent. oak, 70 per cent. chestnut and the remainder cedar. The ties of the river division are 7 x 8 inches, 8½ feet in length, all white oak and laid at the rate of 3,000 to the mile of track. Those of the Chautauqua division are also 7 x 8 inches, 8½ feet in length and laid at the rate of approximately 2,500 to the mile of track under the 85-pound rail and 3,000 to the mile of track under the lighter rail. The ties of this division are all white oak. All ties are full spiked, well spaced and are in good condition, proper renewals having been made.

Eighty-two and eighty-eight one-hundredths miles of the Buffalo division main track are laid with 85-pound, 11.71 miles with 80-pound and the remainder, 0.60 miles, with 67-pound steel rail. The 85-pound rails are connected by angle plates 34 inches in length with six bolts; the 80-pound rail by angle plates 29 inches in length with six bolts, and the 67-pound rail by angle plates 26 inches in length with four bolts. The 85-pound rail is in good condition; the 80-pound rail, generally in good condition; the 67-pound rail is somewhat worn and is to be replaced as well as whatever of the 80-pound needs to be. Three and fifty-one one-hundredths miles of the main line Rochester division track is laid with 85-pound, 17.42 miles with 80-pound, 72.01 with 67-pound, 1.00 mile with 60-pound and 4.60 with 56-pound steel rail. The freight branch in Rochester is laid entirely with 56-pound steel rail. The Swains branch has 3.60 miles laid with 60-pound, 3.05 miles with

56-pound steel rail and the remainder, 5.33 miles, with 56-pound iron rail. The portion of this line laid with iron rail is not operated. The 85-pound rail is connected by angle plates 34 inches in length and the 80-pound rail by angle plates 29 inches in length with six bolts; the 67-pound rail by angle plates 26 inches in length and all the other steel rail by angle plates 24 inches in length with four bolts. The iron rail is connected by fish plates 20 inches in length with four bolts. The 85-pound rail is in good condition and the 80-pound in very fair condition. A portion of the 67-pound rail is somewhat worn and some renewals are necessary. The 60 and 56-pound rail of the main line is much worn and to be replaced. The 56-pound rail of the branch track at Rochester is somewhat worn but in fair condition for the purpose used, which is transferring freight between the two railroads. The 60-pound rail on the portion of the Swains branch which is used, is much worn and should be replaced. The rail on the portion of this branch out of operation was not examined but when last examined, (four years ago) was very poor. One and five-tenths miles of the River division, main track is laid with 85-pound, 3.00 miles with 70-pound and the remainder, 33.80 miles, with 67-pound steel rail. The 85-pound rail is connected by angle plates 34 inches in length with six bolts and the other rail by angle plates 24 inches in length with four bolts. The rail is in from fair to good condition and renewals are being made as necessary. Eighty-three and ninety-one one-hundredths miles of the Chautauqua division main track is laid with 85-pound and the remainder, 2.00 miles, with 70-pound steel rail. The 85-pound rail is connected by angle plates 34 inches in length with six bolts and the 70-pound rail by angle plates 24 inches in length with four bolts. The 85-pound rail is in first-class condition, most of it being new; the 70-pound rail is somewhat worn and is to be replaced.

There are on the Chautauqua division yet remaining two Wharton switches. All other main track switches are split point. Rigid stands are used but there is a spring in the head rod rendering switch automatic for main track. All switch stands have well painted targets. Nearly all switch stands of the Buffalo and River divisions, and many of those of the other divisions, have high targets and in obscure place on grades there are distant signals interlocked with switch stands. Switch and semaphore lamps show red light for danger and white for safety. Green is used for caution. Nearly all main track frogs are spring rail. Derailing switches are in all the sidings connecting with the main track upon which cars are left standing where the grade decends toward the main track. Many were noted, however, where the stands lacked targets.

The main tracks are ballasted with gravel and cinders in from medium to fair quantity. Considerable reballasting has been done.

The alignment and surfacing of the track is very good and the outer rail on curves properly elevated.

The track sections of the Buffalo division average about four miles in length and the force employed upon each consists of a foreman and four laborers; of the Rochester division, 5.50 miles in length and the force employed, one foreman and three laborers; of the River division, 5.00 miles and the force employed one foreman and four laborers; of the Chautauqua division, 5.60 miles, and the force one foreman and four laborers. Regular track walkers are not employed but all portions of the road are patrolled daily. Each section gang is furnished with flags, lanterns and torpedoes.

Alignment, Grades and Curves.

The general alignment of the Buffalo division is fair; the maximum curve is 6 degrees near Ishua. The Rochester division is very crooked and the curves sharp; the maximum is 15 degrees north of Rockville. The River division is rather crooked; the maximum curve is 8 degrees near Wolf Rock. The Chautauqua division has fair alignment and most curves are light; the maximum is 6 degrees, 30 minutes near Prospect. The Buffalo division has a maximum grade of 64 feet per mile for about two miles near Lime Lake.

The Rochester division has many grades and some long. The maximum is 79 feet per mile near Rockville. The River division is nearly level; the maximum grade is 18 feet per mile. The grades of the Chautauqua division are very much broken; the road abounds in sags. The maximum grade is 79 feet per mile for about six miles in the vicinity of Prospect.

Grade Crossings or Railroads.

The Buffalo division crosses at grade one track of the Buffalo Creek Railroad and four tracks of the Erie Railroad at East Buffalo. The crossings are about 200 feet apart and the movements of all trains are governed by signals located on a tower about midway. The signals located on the same tower govern the crossing of the Erie tracks by the Chautauqua division, also the crossing of the Erie by the Buffalo Creek Railroad. There are between four and five hundred movements of trains over these crossings daily and the method of signaling is of the oldest type and nothing prevents the signal tender from placing any or all of the signals at either danger or safety. This crossing should be protected by a proper interlocking plant. All trains are required to come to a full stop. Two main tracks of the Delaware, Lackawanna and Western Railroad at East Buffalo; the crossing is protected by a proper interlocking plant. One track of the Buffalo, Gardenville and Ebenezer Railway, (electric) at Indian Church Road, and another track of the same railway at Ebenezer. At neither crossing are there derails in the track of the electric road or protection over the trolley wire. Two tracks of the Terminal Railway near Ebenezer, protected by a proper interlocking plant. One track of the Buffalo, Rochester and Pittsburgh Railway at Machias, protected by tilting board signal. All trains are required to come to a full stop. Two tracks of the Erie Railroad at Olean, protected by a proper interlocking plant. One track of the Olean Street Railway, (electric) on Union street, Olean. There are no derails in the track of the electric road, but a proper wire netting is over the trolley wire. Another track of the same street railway is crossed at South Olean. There are no derails in the track of the electric road or protection over the trolley wire. Another track of the same street railway at White House. There are derails in the track of the electric road and proper wire netting over the trolley wire. One track of the Pittsburg, Shawmut and Northern Railroad at White House, protected by a proper interlocking plant.

The Rochester division crosses at grade two tracks of the Rochester Electric Railway on Plymouth avenue, Rochester. There are no derails in the track of the electric road, but a proper copper trough is over the trolley wire. One main track and two sidings of the Buffalo, Rochester and Pittsburgh Railway by the branch connecting with the New York Central and Hudson River Railroad at Rochester, protected by tilting board signal. Western New York and Pennsylvania trains come to a full stop; Buffalo, Rochester and Pittsburgh trains do not if the signal is in their favor. Two tracks of the West Shore Railroad at Genesee Junction, protected by gates and all trains come to a full stop. Two tracks of the Delaware, Lackawanna and Western Railroad at Mount Morris, protecteed by a proper interlocking plant. The River division crosses at grade, one track of the Olean Street Railway, (electric) near Olean. There are no derails in the track of the electric road or protection over the trolley wire. One track of the Buffalo, Rochester and Pittsburgh Railway and one track of the Erie Railroad at Riverside Junction, protected by a tilting board signal and all trains are required to come to a full stop.

The Chautauqua division crosses at grade, one track of the Jamestown, Chautauqua and Lake Erie Railway at Mayville, protected by a proper interlocking plant. One track of the Dunkirk and Fredonia Railroad, (electric) at Dunkirk. There are derails in the track of the electric road and the copper trough over the trolley wire is too short. One track of the Dunkirk, Allegheny Valley and Pittsburgh Railroad at Dunkirk, protected by tilting board signal and all trains are required to come to a full stop. One track of the Erie Railroad at Dunkirk, protected by tilting board signal and all trains are

required to come to a full stop. One track of the Buffalo and Southwestern branch of the Erie Railroad at Blasdell, protected by tilting board signal and all trains are required to come to a full stop. Two tracks of the Buffalo Creek Railroad at Buffalo, protected by tilting board signal and all trains are required to come to a full stop. Two tracks of the Delaware, Lackawanna and Western Railroad at Buffalo. The crossing is protected by disc signals located on a tower. All trains are required to come to a full stop. The question of the elimination of this crossing is now pending. Two main tracks and two sidings of the Erie Railroad at Buffalo, protected by signals located on a tower. This is the crossing referred to at the head of remarks concerning grade crossings. All trains are required to come to a full stop.

Interlocking.

Interlocking plants are maintained on the Buffalo division at the connection of the New York Central and Hudson River Railroad at Buffalo, the crossing of the Terminal Railroad at Ebenezer, the crossing of the Erie Railroad at Olean and of the Pittsburgh, Shawmut and Western Railroad at White House, governing the movements of trains at those points. On the Rochester division at the grade crossing of the Delaware, Lackawanna and Western Railroad at Mount Morris, governing the movements of trains over the crossing. There are no interlocking plants on the River division. On the Chautauqua division the only one is at the crossing of the Jamestown, Chautauqua and Lake Erie Railway at Mayville, governing the movements of trains over the crossing.

Right of Way.

The right of way is free from trees, brush and rubbish, with the exception that in a few places small brush is left to protect slopes. The fences are generally of wire, and while in very fair repair, a few places were noted where additional repairs are needed.

Highway Crossings.

The grade crossings of highways are properly graded, well planked and protected by signs of the diamond or triangular form. The signs are properly placed and fairly well painted.

Brush in the vicinity of highways crossings outside of the company's right of way, has been removed where practicable.

Five highway grade crossings of the Buffalo division are protected by flagmen, two by flagmen and gates and one by an electric bell. On the Rochester division, four by flagmen. On the River division, one by flagman. On the Chautauqua division, eleven by flagmen, one by flagman and gates and two by electric bells.

Block System, Etc.

The movements of trains on the Buffalo division north of Olean, are protected by a telegraphic block signal system, which system is planned to be extended to other divisions. On the balance of the Buffalo division and on the other divisions, the movements of trains are governed by the telegraphic train order system; passenger trains being protected until arriving at the station in advance, and freight trains spaced and protected when considered necessary. Mile posts are maintained and whistle posts are at the prescribed distance from the highway crossings.

Stations, Etc.

The station buildings are in very fair repair and are clean and neat. Drinking water is furnished and time tables posted in the waiting room. Water in barrels and fire pails is kept in the stations as protection against fire, and at some of the larger stations are fire extinguishers and hose. The station platforms are generally of gravel; some plank platforms yet remain. All are suitably maintained. The station grounds and yards are generally

well kept and at some of the more important ones are small lawns with shrubs, flowers, etc. Station employees are uniformed and wear badges stating their employment.

Equipment.

All equipment observed was in proper condition. Passenger cars have automatic couplers and air brakes, are heated by steam and lighted with gas, oil or electric lamps. Drinking water is carried in the cars and the emergency tools are properly located. All passenger trainmen are uniformed and wear a badge. Dining or cafe cars are run in the long distance trains. The freight equipment appears to be in good condition. Box cars have grab irons on the sides and ladders on the ends; the running boards appear to be well maintained. All freight cars have automatic couplers and about 90 per cent. are equipped with air brakes.

There has been added to the equipment since the last inspection, (August, 1904) four locomotives, two baggage and mail cars and 1,644 freight cars.

Repairs and Improvements.

Very many extensive repairs and improvements have been made since the last inspection; the principal ones noted being as follows: About 33 per cent. of the cross-ties of the Buffalo division have been renewed; 15 per cent. of the Rochester division and 20 per cent. of the other divisions. Fifteen and eighty-three one-hundredths miles of new 85-pound steel rail has been laid on the Buffalo division replacing worn 80 and 67-pound rail. Three and five-tenths miles of second use 85-pound, 17.40 miles of 80-pound and 2.50 miles of 67-pound rail on the Rochester division, replacing worn 67, 60 and 56-pound rail. Three miles of 70-pound rail on the River division replacing worn 67-pound rail. Twenty-five and ninety-one one-hundredths miles of new 85-pound rail on the Chautauqua division, replacing worn 70 and 67-pound rail. Ten and two-tenths miles of main track, Buffalo division, have been reballasted with gravel, 13.25 miles with cinders. Fifty-eight and fifty one-hundredths miles of main track of the Rochester division with gravel and 1.02 miles with cinders. Twenty and one-fourth miles of the River division has been reballasted with gravel and five miles with cinders. Sixteen miles of the Chautauqua division with gravel and 4.00 miles with cinders. Quite an amount of gravel ballast is now distributed on this division ready to put in track.

Two light iron bridges of the Buffalo division and one of the River division have been replaced with stronger structures. Two iron structures of the Rochester division and one of the River division replaced with iron pipe and filling and two of the Rochester division with concrete culverts and filling. Two trestles of the Rochester division and two of the Chautauqua division have been rebuilt. One trestle of the Buffalo division and one of the Rochester division replaced with iron bridges. Two trestles of the Buffalo division and five of the Chautauqua division replaced with concrete culverts and filling. Three trestles of the Buffalo division have been extensively repaired; lighter repairs to others on the different divisions. Two open culverts and cattle passes of the Buffalo division, three of the Rochester division and one of the Chautauqua division, rebuilt. Six wooden culverts and cattle passes of the Buffalo division replaced with masonry and I-beams. Two cattle passes of the Buffalo division and thirteen of the Chautauqua division filled. Four culverts and cattle passes of the Rochester division have had timber structures replaced with I-beams. Extensive repairs have been made to the ties and guard timbers of bridges, open culverts and cattle passes and a large number entirely replaced.

Necessary repairs have been made to station and other buildings and a number of minor buildings, water tanks, etc., constructed. Twenty-seven iron structures of the Buffalo division, eleven of the Rochester division and ten of the River division have been repainted. Twenty-five and fifty-one one-hundredths miles of fence of the Buffalo division has been rebuilt and 91.00 miles repaired. Seven miles of the Rochester division rebuilt and 26.00 miles

repaired. One mile of the River division rebuilt and 2.51 miles repaired. Sixteen and seventy-five one-hundredths miles of the Chautauqua division rebuilt and 23.00 miles repaired. Considerable addition has been made to tracks in the various yards some new passing tracks constructed and others extended.

Recommendations.

That the ditches be cleaned where necessary; that the remainder of the bridges where paint is poor repainted; that the flood bridge on the Chautauqua division near Irving, have the south abutment and southerly pier rebuilt; the other masonry and bridge raised at least two and one-half feet or an additional span put in to provide sufficient water way; that necessary renewal of rail, as indicated in above report, be made; that all stands of derailing switches be provided with targets; that a proper interlocking plant be put in at the crossing of the Erie Railroad in Buffalo and that necessary repairs be made to fences.

A copy of this report was sent to the company with a letter making the recommendations in the report the recommendations of this Board. The company replied, stating that the ditches would be cleaned wherever necessary; that the bridges would be painted and the work completed in the coming year. "With reference to rebuilding of piers and trestles, and raising our bridge No. 23, Dead Creek * * *, this is a joint bridge and it takes the action not only of our company, but, also, that of the New York, Chicago and St. Louis R. R. Co. We have this matter under consideration just now and will push it to a rapid conclusion." "All the light rail will be removed from our tracks as rapidly as conditions will warrant." "With reference to the present system of signalling at the crossing of the Erie R. R. at Buffalo, a modern plant is being considered by all parties concerned and a satisfactory conclusion is hoped for at an early date." "We have arranged to make repairs to fences wherever needed." (No. 17 — 1906.)