# Olean, Rock City and Bradford Railway May 7, 1900 Inspection Report

OLEAN, ROCK CITY AND BRADFORD RAILWAY.

May 7, 1900.

I have made an inspection of the Olean, Rock City and Bradford Railway Company's system and submit the following:

My inspection of this system was confined to that portion of it which is located in the State of New York. The road extends from Bradford, Pa., to Olean, N. Y., a distance of 19.81 miles. The portion located in this State, from the State line to the city of Olean, is 9.79 miles. This portion of the road is all through private right of way, single track with turnouts, T-rail construction, weight of rail 40 pounds. This was originally a narrow gauge road operated by steam power; it has been changed to standard gauge and is now operated by electricity. The original route has been changed and the line newly constructed between the old power house and the first trestle near the city of Olean, a distance of three miles. This change was made by using the old rails and a large portion of the old ties on the new route. On the New State portion of the line there are two bridges, four trestles, four highway crossings; no steam road crossings; and the maximum grade is about 6 per cent., which extends from the old power station to the waterway at the foot of a grade near the junction of the present line with the old route, a distance of about 3 miles. Between these points the track is nearly a continuous curve in both directions, and a large portion of the distance is built on the side of the mountains, in some places the track being 100 feet above the valley, and the bank being very steep.

The following notes, taken on the inspection, will give a general idea of the construction and condition of the track, roadbed, bridges and trestles between the State line and Olean:

At State line there is a turnout, with spring point switch with switch stands. The next turnout is at Knapp's creek, about 2 miles distant. From State line to the Summit, about 1 mile, there is an ascending grade of 2 per cent. The first curve from the State line is to the left; this being a long one, with good elevation; should have rail braces. The next curve is to the right; elevation good; few braces; should have more. To this point, ties and rails fair; alignment good. The next curve is to the left; elevation O. K.; ties good; rail fair; a few braces; should be more. Next, a short curve to the left; elevation good; ties poor; rail fair; should have braces; and 20 per cent. of the ties should be renewed. Then straight track to Summit highway crossing; rail fair; ties poor; 20 per cent. of them should be renewed. This crossing of the highway is a diagonal one. Going west the view of the highway to south is obstructed by trees. There is a crossing sign at this point.

From Summit there is a long, right-hand curve with a few braces; ties and rails fair; elevation good; has been surfaced lately; gang of men working here; should have more braces. From Plainview station continue reverse curves to Knapp's Creek station, down 4 per cent. grade; ties poor; rails poor; few braces; elevation good; should have 20 per cent. new ties and more braces. There is a turnout at Knapp's Creek with spring points and switch stands. There is a depot at this point, no care taken of it; no heat or light. From Knapp's Creek to the whistle-post a left-hand curve; ties and rails very poor; few braces; all ties should be renewed; more braces; elevation O. K. From whistle-post to cattle pass right curve; ties and rails in fair condition; elevation O. K.; has been surfaced recently; few braces; more should be put on. From cattle pass to highway crossing slight curves in both directions; ties and rails in fair condition; has been recently resurfaced. Highway crossing a diagonal one, open and clear to view; crossing sign. To the next highway crossing straight track, down 2 per cent. grade; ties and rails fair; a good view of this crossing in all directions; crossing sign. To the next whistle-post three reverse curves up a 3 per cent. grade; rails fair; ties poor; few braces; elevation O. K.; curves sharp; should have more braces; 20 per cent. of ties should be renewed. To the abandoned turnout slight curves; ties and rails fair. To Rock City switch straight track and 3 reverse curves; no grade; ties poor; rail fair; elevation O. K.; some braces; 20 per cent. of ties should be renewed; more braces put on; spring point switch, switch stand. At this point the company owns a summer park in which there is a dancing pavilion, a house and inclosure for meetings. There is a depot and platform at this station; these are all in good condition; the depot newly painted. A continuous left curve to near Rock City; ties very poor; rail fair; eleva-

tion good; few braces; ties should be renewed; more braces put on. Then 500 feet of straight track to Rock City station; ties very poor; should be renewed. From Rock City 1,000 feet of straight track down 3 per cent. grade; then curves to whistle-post; ties poor; rail fair; few braces; elevation O. K.; should have 20 per cent. new ties; more braces. Then left curve and reverse curves to highway crossing; ties fair; rail fair; few braces; should have more braces; the highway crossing clear to view in all directions; crossing sign. From highway crossing continuous reverse curves and down 4 per cent. grade to cut; ties poor; rail poor; few braces; elevation O. K.; should have 20 per cent. new ties and more braces. From cut to old power station continuous reverse curves down a 4 per cent. grade; ties and rails poor; few braces; elevation all O. K.; should have 20 per cent. new ties and more braces. At this point there was a power house; this has been abandoned. From this point the route has been changed from that of the old narrow gauge road to near the first bridge going to Olean, about 3 miles. From the old power house to the foot of the grade east of the bridge, about 3 miles, there is a continuous down grade of 6 per cent. and almost continuous curves in each direction, there being very little straight track between these points; the track is in fair condition; in the construction on the new route some new ties were used, and the elevation on curves is good; the rail is fair; there are a few braces on the new curves, but not enough. From the old power house the track is laid on a side hill, there being a descent on the left side and a high bank on the right, to the cut. In the cut the track crosses the top of the hill or mountain, and from this point the descent is on the right side of the track and in places is 100 feet above the level land below, and very little slope to the bank. About one-third of the distance from the old power house there is a turnout switch. This is a dead end, spring point switch, with stand. There is a curve just east of this switch (or between it and the old power house). Before coming to this curve there is a short stretch of straight track. At the end of the straight track, and at the point of the curve there should be placed a derail switch, and 500 feet of track built up the hill. This derail switch and track would be a continuation of the straight track, and a runaway car would go up the hill without being turned from a straight course. The land necessary for this derail track is waste brush or light timber land. About half way between this point and the end of the grade on the Keiser lot the same conditions exist; a straight track and then a curve, where a derail and 500 feet of track up the hill could be put in. From this point to the white telegraph pole, 1,200 feet, there are three reverse curves, very sharp and

on a high steep bank; there is a guard rail a portion of the distance on these curves. To the next white pole, sharp reverse curves on high bank; this white pole should be replaced by the pole at the point of curve, so the stop would be made before going around the curve. The second white pole should be moved to the first pole before reaching the curve, for the same reason. This curve, which is a very sharp one, is on a 12-foot fill; there is a guard rail on a portion of the curve; this should be extended around the curve to the straight track. From this curve there is a straight track to a waterway, which is at the end of the down grade. This is an 8-foot opening over a small stream, constructed of three 6 x 12 stringers bolted together on each side, resting on mud sills, all in good condition. From this waterway up a six per cent. grade, to a highway, track straight, ties and rail in fair condition. The view of this highway, coming from Olean, is obstructed by a high bank. There should be a crossing sign at this crossing. From highway up a six per cent. grade and curve, no braces; no guard rail; ties and rail fair; elevation poor; alignment very poor; should have braces and guard rail; curve should be surfaced and lined. Then straight track on side hill, with descent on left of track to the first bridge. This track in fair condition, except alignment, which is very poor. Near the bridge the new route joins the old one. This bridge is 30 feet long, with a 15-foot opening between bents. The two bents are made of two upright timbers 12 x 12-inch, with 12 x 12-inch top and bottom stringers, each bent braced with plank spiked on the uprights; the stringer plates are three 6 x 14-inch timbers bolted together on each side; the abutments are constructed of loose, small stones; there are old wood stringers on the outside rails, and a guard rail on one rail. The approach from Olean is on a curve and on a six per cent. down grade; the approach on the other end is on a curve and up grade. This bridge is not in good condition and should be replaced by an iron girder bridge, with mason work abutments. Near this bridge there is a trestle over a gorge and small waterway. This consists of 9 bents, 14 feet each; these are constructed of two uprights and two brace timbers, each 12 x 12 inches, with top and bottom stringers, and toe nailed to them. These bents are braced, side and end, by two planks each way, spiked on the uprights; there is no stone foundation under the bents; the plate stringers are three 6 x 14-inch timbers, bolted together; the ties are square chestnut, cut for the stringer plates. The trestle is on a curve, with curves on each approach. It is on a four per cent. grade, descending to Olean. There is a guard rail on the inside rail, and old 4 x 6-inch wood stringers outside the rails. The highest point above the waterway is 20 feet. The stringer plates are in

poor condition, being warped out of shape, and are poor at the ends. The ties are in poor condition; some new ones have been added; the old ones should all be renewed; new guard stringers 6 x 8 inches, and another guard rail should be put on; more bolts should be put on to hold the stringer plates together and in position. A car passing over this trestle causes considerable side vibration. From the trestle, straight track to two reverse curves; ties not in first class condition; ten per cent. should be renewed; rail fair; should be braces and guard rails on the two curves. Then a 6-bent trestle, 14-foot bents, three 12-inch round timber piles under each end of a bent; the stringer plates are three 6 x 14-inch timbers 28 feet long, bolted together; the ties are square oak, cut for the stringer plate; there are old stringer timbers on outside of rails; no guard rails. The track on the trestle and the approaches is straight, and there is no grade. The trestle is seven to eight feet above the low land over which it is constructed; there is a small stream under the center span. The piles are of oak, and where they enter the ground a number of them are decayed to about two-thirds of their original diameter; the remaining wood is sound and solid; the first three bents have been strengthened by one or two new 12 x 12-inch upright timbers put in alongside the round piles, and braced by plank spiked to the new timbers and old piles. A car passing over this trestle causes some vibration, but it is not excessive. The other three bents should be strengthened in the same manner that the first three have been, and all should be well braced. The guard stringers should be replaced by 6 x 8-inch stringers, and two guard rails put on. The next trestle near the above one is 300 feet long, over low land, and is constructed in the same manner as the one last described, except that at the end of some of the bents there are four piles. This trestle is on a curve, with level and straight approaches; it is ten feet above the land at the highest point; there is no waterway under it. There are guard stringers and guard rails. The piles are in about the same condition as on the last described trestle, and should be strengthened in the same manner; the old guard stringers should be replaced by new 6 x 8-inch stringers. From the last trestle there are 100 feet of fill, and then thirteen 14-foot bents of trestle over low land. This trestle is similar in construction and condition to the last one described, except that there is no curve in this one. This should be strengthened in the same manner as the other two. In addition to the new piles, the outside stringer plates on all of them should be bolted by bolts passing through it and the two inside ones; the outside one is now only fastened to the center one by lag screws. The last span of this trestle extends over the highway to the end of a bridge. This bridge

is a Howe truss bridge, two spans, 260 feet over all, over the Allegany river. The abutments are of pile construction, 14 piles, 12-inch round timbers, capped with three 12 x 12-inch oak timbers. The floor beams are 14-inch angle iron, two bolted together, 10 feet apart, supported by wood uprights 8 x 8 inches, with iron caps on top and bottom; from the top cap an iron bar, $\frac{7}{8}$ x $2\frac{1}{2}$ inches, extends to the next floor beam one one side, and an iron rod $1\frac{1}{4}$ inches to the floor beam on the other side. The end posts, which are perpendicular, are composed of two 8 x 14-inch timbers bolted together. There are three timbers in the top stringers; the center one 8 x 10 inches; the two outside ones are 6 x 10 inches; these three are bolted together. The floor brace rods are $1\frac{1}{2}$-inch iron rods. The center pier consists of three rows of nine piles each; these are 12 inches in diameter, capped by 12 x 12-inch oak stringers. The floor plate stringers are 6 x 14 inches, three of them bolted together. The ties are square oak, cut for the stringer plates. This bridge is from 15 to 20 feet above the water. There are guard rails and guard stringers. The floor stringer plates are in poor condition, portions of them being decayed on the upper side. The abutments and pier are in fair condition, but the construction is not the proper one for a bridge of this size. The approaches are level and straight, and the bridge is on a straight line. I could not learn when it was built. A car passing over it causes considerable vibration, both sideways and perpendicular. Near the end of the bridge the company owns a car barn, which is now used for storing cars not in use. This is an iron truss, steel sheet covered building, with six tracks and pit under one of them; it has a capacity of 14 cars. Near the car barn a track extends to the Western New York and Pennsylvania tracks. This is used only for company freight. From this point the track is laid alongside of the Western New York and Pennsylvania tracks to the end of the line on State street, in the city of Olean, where a connection is made with the tracks of the Olean Street Railway Company.

In the above notes the rail in places is mentioned as being in fair condition; this applies to the physical condition of the rail only, not to its weight.

This company now operates two cars between Bradford and Olean. These are closed combination cars, equipped with 2 motors, sand boxes, single chain, hand brakes, double trucks, 33-inch wheels with $2\frac{1}{2}$-inch tread. These cars are heated and lighted by electricity, have oil headlights, and weight about 15 tons each.

The company has a traffic arrangement with the Olean Street Railway Company by which its cars are operated over the latter company's tracks from the terminus on State street to the Union street crossing near the Western New York and Pennsylvania

Company's depot in Olean, a distance of about 1 mile. A similar condition exists on the Bradford end of the line.

The running time between Bradford and Olean is 2 hours. The fare charged is 40 cents between these points. The distance between Olean and Rock City is 6 miles, from Rock City to State line, 4 miles. The motor equipment of the cars is such that they are obliged to run at very slow speed up the grades. For this reason the speed on the down grades is increased.

White poles are mentioned in the inspection notes. These are telegraph poles painted white, at different points on the heavy grades and curves; at these poles the cars come to a full stop.

The power house is located in Derrick City, near Bradford.

Rock City is a summer and health resort. At this point there are several hotels, one of which is quite a large one. As the management of the road has recently been changed, I was unable to learn the amount of travel on the road from Olean to this point. It must, however, be considerable, as this is about the only point near the city where the people of Olean can go for an outing, and on Sundays and holidays there must be a large number of people carried between these points.

The physical conditions on the line of this company's system make it one of the most dangerous roads in this State to operate. Safety of operation on this route necessitates good, first class construction in every particular and cars equipped with first class motor equipments and the best kind of brakes. Instead of this being the case, the track is in very poor condition; a 40-pound rail is entirely too light for use on a road of this kind, even if they were new; they are not, and some of them are much worn. Every tie on the heavy grades and curves should be in good condition; they are not; a large number of them are in such condition that they will not hold a spike. The curves should be well braced, especially on the high banks; they are not; there are a few braces on a large portion of the curves, but not enough for the purpose for which braces are used. The curves should be protected by guard rails, especially on the high banks, where derailment may result in a serious accident; they are not; there are guard rails on some of them, but they do not extend far enough around the curves to afford the necessary protection. The trestles should be constructed of first class material and maintained in a good condition; they are not. The bridges should be substantial, modern, iron ones with mason work abutments; they are not. The cars which are run from Rock City to Olean entirely by the brake, no power being used, should be equipped with 4 motors of sufficient horse-power capacity to operate the cars up the grades without overloading them; they should be equipped with an electric or air brake, in addition to the ordinary single chain brake; they are not so equipped.

To put this road in first class shape, so cars can be operated over it with comparative safety, all of these conditions should be complied with; and if it were not for the inconvenience which would be caused the public who patronize this road, your Honorable Board would be justified in taking the necessary steps to close it to traffic until such time as these conditions were complied with. As this action by the Board would inconvenience a large number of people, I make the following suggestions to improve the safety of operation on this line until such time as the above improvements can be completed.

*Recommendations.*

That the rails on the curves and on the straight track on the high banks between the old power house and the foot of the grade, should be replaced by new rails of not less than 60 pounds. That guard rails be placed on the inside rail on all the curves and on the straight track on the high banks. That the present guard rails be continued around the whole length of the curves on to the straight track, and that guard rails be placed on other curves as mentioned in the notes of inspection. That rail braces be placed on all curves as noted in the inspection notes, these to be put on every fourth tie. That new ties be put in as noted in the inspection notes. That the derail switches be put in as noted in the inspection notes. That the track be aligned where noted in the inspection notes. That a crossing sign be placed at the crossing near the junction of the old route with the new. That the stop poles be changed as noted in the inspection notes. That the bridge near the junction of the two routes be replaced by an iron bridge with mason work abutments; until this is done guard rails should be placed on each rail on the bridge, and the guard on the inside rail be carried around the curves on each end of the bridge. That guard stringers 6 x 8 inches be placed outside the rails on the bridge. That the next 9-bent trestle be filled in and a culvert placed over the waterway. That, until this recommendation is complied with, new guard stringers be placed outside the rails, and that another guard rail be placed on the trestle, and that the guard rail on the inside rail be carried around the curves on either end of the trestle. While this trestle is maintained the speed of cars over it should be limited to 8 miles per hour. That the trestles near the Allegany river be filled in. That, until this is done, the trestles be strengthened as stated in the notes of inspection, and that guard rails and stringers be placed as recommended in the inspection notes. That the bridge over the Allegany river be examined by a bridge expert, who shall be satisfactory to your Honorable Board, and that the company furnish

your Board with a copy of the report of the expert. That all cars operated on this road be equipped with an electric or air brake, in addition to the hand brake. That the use of trailer cars be prohibited under all circumstances.

The route of this line could be changed from the foot of the grade from the old power house to the trestle near the Allegany river. This would avoid the grades near the junction of the old and new routes, also the first bridge and the first trestle. This change could be made by level constructions. This statement is not made as a recommendation.

Cars are operated over the road on 2-hours headway at present. If this headway is to be materially reduced, or if any great number of extra cars are to be run, this road should be equipped with a block system, as the numerous curves present a view of the track for any great distance, but no recommendation in reference to this subject is made at present.

A copy of this report was sent to the company, with a letter, making the recommendations of the electrical expert the recommendations of this Board. The company informed the Board, in detail, that it had complied with the recommendations of the electrical expert.