

MAINE STATE LEGISLATURE

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SEVENTY-FIFTH LEGISLATURE

HOUSE

NO. 576

House of Representatives, Mar. 14, 1911.

Introduced by Mr. Dresser of South Portland, who moved its reference to the Committee on Ways and Bridges. By Mr. Trafton of Fort Fairfield tabled for printing pending acceptance of report.

C. C. HARVEY, Clerk.

STATE OF MAINE

The joint Special Committee of the Seventy-fifth Legislature, appointed in pursuance of the order of February 1, 1911, to be known as The Committee on Portland Bridge, have attended to the duties assigned them and ask leave to submit the following report:

PROCEEDINGS.

The order authorizing the appointment of the Committee directed them to "inquire into the condition of Portland Bridge, so called, connecting the cities of Portland and South Portland, with reference to safety and convenience and to report by bill or otherwise."

Acting under this authority, the committee gave a hearing to all parties interested at the Cumberland County Court House in Portland, on Monday, February 27, 1911, at ten o'clock, A. M., due notice thereof having been published in the Portland papers. Prior to the hearing, the committee employed Professor Harold S. Boardman of the University of Maine to examine Portland Bridge and to present his conclusions to the Committee at the hearing.

At the hearing the cities of Portland and South Portland were represented by counsel and members of the board of County Commissioners of Cumberland County were in attendance.

Seth A. Moulton of the firm of Sawyer & Moulton, civil engineers, of Portland, and J. R. Worcester of Boston, a consulting engineer of national reputation, testified at length as to the strength and structural condition of the bridge and their testimony was concurred in by Prof. Boardman who in some instances went even farther than they in his judgments as to the extent of the deterioration which certain members of the bridge had suffered.

Numerous citizens of unquestioned standing testified as to the dangerous conditions existing at the Portland end of the bridge and to the inconvenience and dangers consequent upon the opening of the draw during the seasons of heavy travel.

FINDINGS.

From the undisputed testimony as presented at the hearing, the Committee find:

That the bridge is a pile structure with a steel draw span to accommodate navigation, connecting Ocean Street in South Portland with a County way known as Cape Elizabeth Crossing in Portland with two additional approaches to the Portland end, one an overhead bridge known as Clark street bridge, which extends over the tracks of the Maine Central and Boston and Maine Railroads, something more than twenty in number, and which leads to the bridge at an angle of about ninety degrees and at a sharply descending grade, and the other, which also carries the tracks of the Portland Railroad, at grade, leading to the bridge at a similar angle in the opposite direction. Owing to the narrowness of the bridge, the tracks of the Portland Railroad lie upon a trestle, constructed by the railroad company, at the easterly side of the bridge and occupy only the draw span of the bridge proper which they approach from the trestle at either end upon a sharp angle.

The draw span was constructed in 1893 at a time when no **tracks crossed the bridge and in its design no provision was made for carrying electric or other cars.** In 1895, when the electric road was to cross the draw, it was reenforced by placing several ten inch "I" beams longitudinally beneath the floor and

the plans from which this reenforcement was made stated that the draw as strengthened would be adequate to carry 13.2 ton electric cars, team traffic only having been provided for in the original construction.

The width of the draw, available for traffic, is only eighteen and one-half feet and when a car is upon it the width remaining is nine feet eight inches; so that horse drawn or other vehicles traveling in opposite directions may not pass while abreast of an electric car. The volume of traffic appears to be such that the accumulation of teams and cars at the opposite ends of the draw during its opening for the passage of vessels frequently precipitates a condition of crowding not only inconvenient in the extreme, but actually dangerous.

The sidewalk is outside the westerly truss and is supported from beneath; so many of the sidewalk supports have been sheared off or otherwise damaged by collision of passing vessels that any considerable gathering of people upon the walk would be likely to tax it beyond its strength.

The floor members of the draw in many instances have become seriously impaired by long exposure to the salt air and their strength as compared with that when new is variously estimated by the engineers as from 80% to as low as 30%.

The loads to which the bridge is subjected have increased to a marked degree in recent years; electric cars with their loads weighing in the aggregate from twenty-five to thirty-five tons are freely crossing the draw, two of them frequently being upon it at the same time, while automobile trucks weighing from 10 to 12 tons constantly cross the bridge. The computations of the engineers show that the factor of safety of portions of the draw which, with reference to loads for which it was designed, was four at the time of its construction, has, owing to deterioration by corrosion and the greatly increased loads to which it may be subjected, fallen to a figure as low as sixty-five hundredths; the only conclusion being that in its present condition, there is nothing to prevent such a loading at any time as would test the draw beyond its elastic limit.

Testimony, in some particulars conflicting, was given as to the method of construction employed in building the foundation upon which the draw span rests, and the testimony as to its present condition was not entirely unanimous, but from it the

conclusion seems to us warranted that no certainty exists that the concrete of which it was constructed is homogeneous or that upon the giving way of the half-inch steel shell or caisson surrounding it, now eighteen years under water, it may not immediately settle to such an extent as to leave the draw span entirely without a central support and consequently useless.

In the light of the facts which we think the testimony proved, we cannot in good conscience declare the bridge safe.

RECOMMENDATIONS.

It is doubtless true that the reconstruction of the draw and its foundation in their present position might remove those elements of danger resulting from weakness and restricted width, but two considerations deter us from recommending this solution of the difficulty: Should this be done and orders presently be received from the Federal Government so to elevate the draw that craft without masts could pass beneath it, the unwisdom of the course that had been adopted would be embarrassingly apparent. Moreover, the inconvenience and dangers occasioned by the approaches from the Clark street bridge and across the numerous railroad tracks, not inaptly termed "the gridiron of death," would still remain with all their deterrent effect upon the development of South Portland and its reciprocal advantage to the larger city.

We therefore recommend as the permanent and complete remedy for this situation the enactment of Senate Bill No. 193 entitled "An Act for the reconstruction and extension of Portland Bridge."

And we further recommend that, whatever course is taken in the matter, that the present draw be temporarily strengthened, and the County Commissioners of Cumberland County be instructed to enforce restrictions upon travel thereon at least to the extent of permitting but one car upon the draw at a time and of permitting only horse drawn vehicles upon the draw simultaneously with a car.

Respectfully submitted,

W. F. DRESSER,
IRA. C. FOSS,
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