

these routes, it may be accomplished with one party of Engineers. I would not therefore, at present, recommend any increase of the Engineer Corps for this service.

Before closing this Report, permit me to allude briefly to your road in connection with the Atlantic and St. Lawrence Road, which taken together are to form a continuous line from the St. Lawrence at Montreal to the Atlantic at Portland.

From my position as Engineer of the whole road, I have become intimately acquainted with the entire country traversed by this great work, and am familiar with its Topography, facilities of construction and resources.

Embracing with one view this section of country, it will be observed by reference to the annexed maps and profiles, that there is but one summit or main dividing ridge, between the waters which flow into the St. Lawrence and those flowing into the Atlantic, that the approach to this summit is through the valleys, of large streams, affording long and easy slopes for overcoming its elevation.

The principal highlands intervening between the St. Lawrence and the Atlantic are the White and Green Mountain ranges. The former is crossed through the valley of the Androscoggin and Ammonoosuck rivers with no inclination exceeding 40 feet per mile, with but a slight undulation in the grade of the road and no heavy work whatever. The latter extends into Canada, but falls off as it approaches the St. Lawrence basin, and is principally avoided by following the Valley of the St. Francis and Black Rivers.

Nearly the whole route from Montreal to Portland has been carefully surveyed, and it gives me great pleasure to state that I know of no line of equal extent connecting the western waters with the Atlantic which will compare with this for the great extent of easy grades, straight lines and cheap construction. While other lines are subjected to great disadvantages from steep grades, abrupt curvature and excessive cost, this is happily exempt from nearly all.

A large portion, equal probably to one half the whole of this road, will be either level or of inclinations not exceeding 20 feet per mile. The curvatures are all easy, and nearly equivalent to a straight line. Passenger trains may pass over the whole road in the space of 10 hours, and the largest class of freight engines will be able to transport 200 tons over the road in either direction.

With a view to illustrate more clearly the great advantages this road possesses for cheap transportation and the attainment of great velocity, compared with other great roads designed as channels for the western trade, I

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