

(No. 115.)



1871.

---

T A S M A N I A.

H O U S E O F A S S E M B L Y.

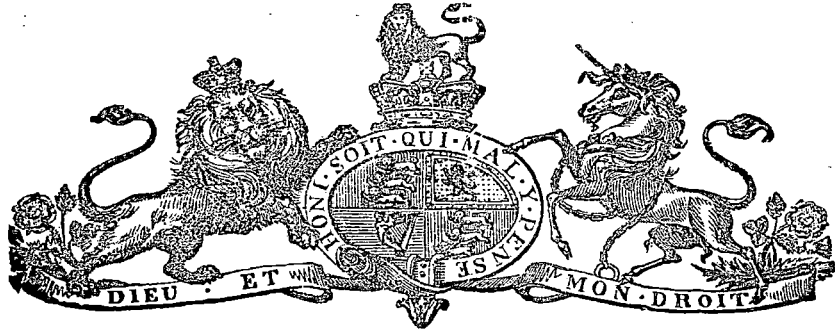
---

**MERSEY AND DELORAINE TRAMWAY.**

REPORT OF MR. S. V. KEMP.

---

Laid upon the Table by the Minister of Lands and Works, and ordered by the House to be printed, December 5, 1871.



*Railway Commissioners Office, Public Buildings, Launceston, 23rd June, 1871.*

SIR,

In compliance with the request contained in your communication to me of the 1st instant, I have the honor to state that, on the 15th instant, in company with the Managing Director of the Mersey and Deloraine Tramway, I proceeded over the Line, and on the three following days made a careful examination of that portion of the Tramway completed by the Company alluded to; every facility for doing so having been afforded me by Mr. Stephen Grey, the Engineer of the Company, under whose direction the works have been constructed.

The Tramway, or Railway, is composed of a single line of 4 feet 6 inches gauge, starting from the south side of Gilbert-street in the Township of Latrobe, and terminating at or about three miles from Kimberley Ford, at the River Mersey. The Line passes through a thickly timbered country,—the greater part may be termed dense forest,—several portions of which have been cleared and cultivated. The widths of land taken for railway purposes where it passes through crown lands is 209 feet, and through private lands 66 feet.

Only a very small portion of the Line is at present fenced, and it is therefore open to trespass by cattle, which have in many cases trodden the slopes of the embankments out of shape: it is also a source of considerable danger and delay to the running of trains in the day-time, and which would make it impossible to run trains after dark with any degree of safety. There is at present about three miles of single fencing, and about two miles of double fencing, completed.

The slope drains and fence ditches, so essential for carrying off the water from the Line, have not received that attention which their usefulness demands; and the Line cannot be economically maintained in a proper state until these are formed throughout the whole length of the Line.

The cuttings and embankments have been formed to a width of 12 feet. In some instances this width is scarcely sufficient in some of the cuttings to admit of proper drainage, especially in that one which passes through the Big Hill.

The cuttings have been formed, with but few exceptions, to a slope of 1 to 1, and the embankments to a slope of  $1\frac{1}{2}$  to 1, which slopes have not been soiled or sown; and it would not be desirable to do so until the whole of the fencing has been completed, so as to prevent the trespass of cattle.

The culverts under the Line, which have been constructed for the passage of storm waters, have been substantially made. They are what are generally known as open culverts, constructed of stone rubble sides and hardwood timber superstructures, and vary in width from 6 feet to 12 feet.

The flood openings along the Line are numerous, and have been constructed entirely of hardwood timber in a substantial manner upon piles, and divided into spans of 16 feet 6 inches each.

The bridges crossing the River Mersey and the different creeks have in all cases been constructed of hardwood timber at considerable cost, particularly those over the Mersey, the first crossing of which at 70 chains from Gilbert-street is spanned by a bridge 200 feet in length divided into four spans each of which is 50 feet, resting upon piled piers and abutments, all of which are strongly braced together. The north end of the bridge is joined by a timber structure 99 feet long, on piles, divided into six spans of sixteen feet six inches each. This structure appears to admit of the rapid escape of flood waters. The River Mersey is again crossed at 13 miles 75 chains from Gilbert-street, by a structure similar in every respect to the first crossing, and is joined on the north end by a hardwood timber structure 11 chains in length, resting upon piles, and divided into spans of sixteen feet six inches each. These structures appear to give a very large area for the escape of floods, and I am informed that they answer all that is required of them. The other bridges crossing the different creeks are of variable lengths, resting in every case upon piles, the whole of which appear to be substantially constructed, and ample provision appears to have been made thereby for the passage of flood waters.

The level crossings along the Line are few in number, and are of a primitive character. There can be no doubt that a greater number of communications across the Line than now exists will hereafter be required, and that properly constructed gates and crossings will, eventually, have to be made.

The Line has been ballasted 9 feet wide and of an average depth of 9 inches; the material used is principally composed of gravel, some of it rather large, which will get broken up during the maintenance of the Line. There are many places along the Line where the ballast is very bare, which will require immediate attention and extra ballast.

The sleepers are of hardwood, cleanly split, and are 8 feet long, of an average width of nine inches and four and a half inches thick: they have, I am informed, been fairly bedded in the ballast, and spaced three feet from centre to centre.

The rails are 30 lbs. to the lineal yard, and are of an old-fashioned pattern, secured by means of hardwood keys and cast-iron chairs spiked to the sleepers. The joints of the rails are held in a joint chair of 14 lbs. weight, and the intermediate chairs are 10 lbs. weight. The mode which has been adopted for jointing the rails is somewhat objectionable: they ought to be secured by means of fish plates and bolts, as is provided for in all modern Lines by the Railway Department of the Board of Trade in England. But I am informed by the Managing Director of the Company that they only propose running at very low rates of speed. I am of opinion that the Company should be restricted to the maximum speed of fifteen miles an hour, until they adopt some other more secure means of fastening the joints of the rails. Their present mode will entail extra expense in the maintenance of the Line.

The road generally, at the time I passed over it, had anything but a good running surface: this, however, must be attributed to the unfavourable state of the weather, and the fact of its not having anything done to it in the shape of maintenance since the Line was constructed.

No provision as yet has been made for Station accommodation, or sidings, beyond the erection of an engine shed, and siding leading thereto, at Latrobe. But I am informed by the Managing Director of the Company that they contemplate erecting at the starting point a passengers' station and platform, with dwelling-house for the Superintendent, a carriage shed, and a goods shed, with all the necessary sidings for working the terminal and intermediate traffic. Also at Railton, a small place about half-way along the Line, a passenger platform and small shelter shed. At Kimberley's Ford, and at the far end of the Line, a passengers' platform and shelter shed at each place.

No arrangements appear to have been made, at present, at any of the proposed stopping places for supplying the engine with water; nor has any arrangement for working the Line by means of signals been made, neither am I aware if any are contemplated.

The rolling stock of the Company consists of one locomotive engine manufactured by Messrs. Sharpe and Stewart of Manchester, one carriage divided into two compartments capable of holding sixteen persons, one covered goods van, and one open goods truck with moveable seats, which can be used, if required, as a third-class conveyance for passengers. The whole of this stock, with the exception of the engine, have been made in the Colony, the wheels of which are of cast-iron, which is highly objectionable; and I would strongly advise the Company to have them replaced with wrought-iron wheels, which can be procured in the neighbouring Colonies for a small outlay.

It will also be necessary before opening the Line for general traffic that some arrangement should be made whereby the guard should be enabled to break the train. At present this duty is exclusively performed by the fireman of the engine. If any derangement should occur with the break power of the engine, the train would get beyond control.

Generally, I may observe, that considerable alterations and deviations have been made of a favorable character from what was originally intended, and shown upon the Parliamentary Sections, (pointed out by Mr. Grey), whereby the steepest gradient on the Line has been reduced from 1 in 36 to 1 in 60, thereby permitting the use of steam as a tractive power instead of horse power as originally contemplated. The Line may, therefore, fairly be called a Railway and not a Tramway, and, from what I saw during the limited period I was upon the works, I am of opinion that much attention and care have been bestowed upon the laying out of the same. As to the question of route I am unable to speak upon, owing to my limited stay.

In the absence of more specific directions from you, I had to determine first, what was the description of Line contemplated in the resolution quoted in the communication forwarded to me; and having done this, then to ascertain whether the Company constructing the works had complied with the requirements so as to entitle them to a certificate "that the Line is completed in accordance with the resolution of Parliament."

Parliament determined this:—That a Line should be constructed whose weight of rails should

be 30 lbs. to the lineal yard. This, I take it, not only defines the weight of rails, but also determines that the Line shall in other respects in the construction thereof correspond to a Railway whose rails are of this weight. A careful examination has satisfied me that the spirit of this resolution (if my construction of the Act be right) has been carried out by the Company, saving in a few minor matters.

These exceptions, which I append in another paper, when made good, together with what I have herein pointed out, will entitle the Company to their certificate that they have carried out the requirements of Parliament; and the Government may then safely sanction the opening of this Railway for public traffic. I go farther and say that, as far as I could judge, the Line when completed to Deloraine will meet all the requirements of the Districts; it will also facilitate settlement on the valuable unoccupied crown lands, and, if economically worked, will tend to increase the trade of the Launceston and Western Railway. I, however, wish to guard myself against it being supposed that the Line is to be contrasted with others in the adjoining Colonies whose materials have been heavier, and whose construction was made for a larger traffic. My observations are limited to a Line whose leading feature is a 30 lb. rail, and whose works correspond to this and to no more.

I have not measured the length of the Line; the different measurements quoted were given to me by the Company's Engineer. I am of opinion that it is essential for the fulfilment of the resolution of Parliament that this should be done; but the consideration of this, together with the time for the completion of the Line, I leave to the Government.

I have the honor to be,  
Sir,

Your obedient Servant,

SAML. V. KEMP, *Civil Engineer.*

*The Honorable* DR. BUTLER, *Minister of Lands and Works,*  
*Hobart Town.*

---

*STATEMENT of Works required to the Mersey and Deloraine Tramway to enable the Company to claim a Certificate from the Government that the Line is completed in accordance with the Resolution of Parliament.*

At 1 mile 40 chains from Gilbert-street the flood waters appear to wash over the line. This can be remedied by cutting a 5 feet ditch for about 4 chains in length, which will allow of the escape of such waters into the River Mersey.

At 3 miles from Gilbert-street, near the Old Kentish or Nook Road, a 12-inch earthenware pipe has been inserted, which is insufficient to carry off the large body of water which is obstructed by the line. I consider that a 9 feet open culvert is required here.

At 4 miles 19 chains from Gilbert-street, or near the south end of Cutting No. 8, the flood waters wash over the line for some distance. A broad open culvert is required, with inlet and outlet ditches of corresponding width, to allow of the rapid escape of flood waters into the Caroline Creek.

At 6 miles 30 chains from Gilbert-street two 9-inch earthenware pipes are required across the line to carry off the drainage waters.

At 6 miles 41 chains from Gilbert-street a 9-inch earthenware pipe is required across the line to carry off the drain water.

At 6 miles 48 chains from Gilbert-street the flood waters appear to wash over the line. I consider that an open culvert, 10 feet wide, is required to prevent a recurrence of the same.

At 7 miles 48 chains from Gilbert-street a 9-inch earthenware pipe is required to carry off the drain water across the line.

At 8 miles 9 chains from Gilbert-street a 6 feet open culvert has been constructed, which has proved insufficient to carry off the flood waters. I consider that this culvert should be made 12 feet wide.

At 7 miles 47 chains from Gilbert-street no provision appears to have been made for carrying off the drainage. A 9-inch earthenware pipe is required across the line.

At 9 miles 36 chains from Gilbert-street a 12-inch earthenware pipe has been inserted under the embankment, which has proved quite insufficient to carry off the flood waters. I consider that a 10 feet open culvert should be made here.

At 10 miles 21 chains from Gilbert-street a 9-inch earthenware pipe is required across the line to carry off the drainage.

At 12 miles 40 chains from Gilbert-street two 12-inch earthenware drain pipes have been inserted under the embankment, which has proved quite insufficient to carry off the flood waters. I consider that a 10 feet open culvert is required.

At 14 miles 17 chains from Gilbert-street a 12-inch earthenware pipe has been inserted, which has been found quite insufficient to carry off the flood waters. I consider that a 6 feet culvert is required.

At 14 miles 45 chains from Gilbert-street a 12-inch earthenware pipe has been inserted, which is insufficient to carry off the storm waters. An additional 12-inch pipe is required alongside the other one.

At 14 miles 60 chains from Gilbert-street no provision was originally made for drainage at this spot. The late floods have made a large breach in the embankment, over which a temporary bridge is at present erected. I consider that a 12 feet open culvert ought to be built here.

Although for three days I devoted a most earnest attention to a thorough examination of the line, yet there may be other places requiring increased water-ways which may have escaped my notice.

Extra ballast is required at several places along the line.

Stations, sidings, water arrangements, and signals are required.

Although it does not come strictly under the Resolution of Parliament, yet I should advise the Company to have the line cleared of all vegetable growth for a distance on each side of the rails. The line throughout ought to be lifted and the ballast well packed under all the sleepers, so as to put a good running surface upon it. The timber work of all the wooden structures ought to be tarred to prevent premature decay, and additional locomotive power and rolling stock ought to be provided without delay, so as to ensure continuance of running after opening for general traffic. The slope drains should all be cleaned out.

SAML. V. KEMP.  
23. 6. 71.