

RAIL ROADS AND STEAM-CARRIAGES.1831

(RESUMED FROM OUR LAST)

Some trustees have placed the toll upon the number of wheels. The Committee would object to this mode of charge, if only, because it interferes between the rival modes of steam travelling, and gives a bounty in favour of that, in which the engine is placed on the same carriage with the passengers. The opposite plan of separating the engine from the carriage is that which probably the public will prefer, until the safety of the mode of conveyance shall have been fully ascertained.

There is still a more serious objection to this mode of charge, it tends to discourage the use of separate carriages; although it must be evident, that if a certain weight be carried, it will be much less injurious to the road when divided over eight wheels, than when carried on four only. On this point the committee must again refer to Mr. Macneill's evidence. They cannot therefore recommend the House to adopt a scale of toll which shall increase in inverse proportion to the injury done to the road. It will be seen in Mr McAdam's evidence that the Toll on steam carriages imposed by the Metropolitan Roads Act, is liable to this objection.

The committee feel that however strong their conviction may be of the comparatively small injury, which properly constructed steam carriages will do to the road, yet this conviction is founded more on theory, and perhaps what may be considered as interested evidence, than practical experience; they would therefore recommend, that the House should not make, at present, any permanent regulations in favour of steam. The experience which will be gained in a very few years, will enable the legislature to form a more correct judgement of the effect of steam carriages on roads than can be now made. They therefore recommend that the *tolls* imposed on steam carriages by local acts, where they shall be unfavourable to steam, shall be suspended during *three years*; and that, in lieu, thereof, the trustees shall be permitted to charge toll according to the rate to which the committee have agreed.

The House will have perceived, in the former part of this report, that there are two modes of applying steam in lieu of horses in draught; one, where the engine and passengers are on the same carriage, the other where the engine is placed on separate wheels, and is merely used to propel or draw the carriage. Although the difference of weight may be in favour of the former mode, yet as on the latter it is divided over eight wheels, instead of four, its small excess cannot justify a larger toll being imposed, as it will be found much less injurious to the roads. The committee therefore recommend, that in charging toll, the engine carriage and carriage drawn shall be considered as one.

As it is the opinion of all the engineers examined, that the use of narrow wheels has been the great cause of the wear of roads, and that cylindrical wheels, of a certain width of tire, are not only the least injurious, but that, in some states of the road, they may be even beneficial, the committee recommend, that the wheels of the engine carriage should be required to be cylindrical, and of not less than 3 1/3 inches of tire. No proprietor of steam carriages has expressed the slightest fear of any inconvenience or loss from the use of such wheels. Beyond this, the committee would not recommend interference with the breadth of tire they shall find most convenient in proportion to the weight carried.

The committee have divided steam carriages (intended for passengers) into two classes, to be subject to different rates of toll. The first, where the carriage is not plying for hire, or where, if plying for hire, it shall not be calculated for, or carry at any time, more than six passengers; the original cost of such machines, and the expense or working them will sufficiently protect the roads from any great number of merely experimental carriages; and for the same reason they will not be of a weight or size likely to be injurious. A steam carriage only calculated to convey six passengers will be solely used where great speed is required, and will be so light as to cause very little wear of the road, probably much less than many carriages drawn by the number of horses which the committee recommend as the standard of charge for this class. The toll, therefore proposed to be placed on this class of steam carriages is that, which (on the several roads where they may be used) is charged on a carriage drawn by two horses.

In the second class they have placed all other steam carriages, except those travelling at slow rates, for goods only; carriages of this class should pay the same toll as may be charged on a coach drawn by four horses. This may at first appear unjust from the supposed power of steam to draw almost unlimited weight. The committee have already enumerated the difficulties hitherto encountered in attempting to propel very heavy loads on turnpike roads. They are such as to discourage the expectation, that within any short period of time, the system will have been so perfected as to give rise to inconvenience from this source; should any hereafter be found, it will then be sufficient to remedy the defect. Until a due proportion of the parts of the machinery shall have been ascertained, the makers of these carriages will vary but cautiously, from the models at present in use; their object will be, for some time, the perfecting of them, rather than the uncertain experiment of increasing their size.

The committee do not anticipate, that, for a considerable period, steam will be used as propelling power on common roads for heavy waggons. It appears to have been the general opinion of the witnesses, that in proportion as the velocity of travelling by steam on common roads is diminished, the advantages of steam over horse power are lost. The efficiency of horses in draught is rapidly diminished as their speed is increased; while, on the contrary, the weight, which could be carried or propelled, at any great velocity, by steam, could not be more cheaply conveyed, were the speed decreased to that of the slowest waggon.

As speed, therefore, is the cause of greatly increased expense where horses are used, while with steam it is comparatively unimportant, it is probable that the latter will be chiefly resorted to when rapidity of conveyance is required. Mr. Gurney considers, that under four miles per hour, horses can be used in draught more economically than steam. Should it, however, be deemed profitable to convey heavy goods by steam carriages, the committee recommend that there should be as little interference as possible with the number of carts employed; as the effect of the surface of roads would be infinitely more injurious if heavy loads were placed on a single cart, than if the same weight were divided over several. The committee recommend, that where carriages, containing heavy

goods alone, are propelled by steam, the weight of the load should be charged, without reference to the number of carts on which it may be carried.

As a horse is able to draw 20 to 40 cwt. on common roads, they propose that each 20 cwt of load conveyed in or drawn by, a steam carriage, should be chargeable at the same rate of toll as one horse drawing a cart.

A charge on weight is not so objectionable where goods are conveyed at a slow rate, as when speed is alone required.

In conclusion, the committee submit the following summary of the evidence, given by the several witnesses, as to the progress made in the application of steam to the purpose of draught on common roads.

Sufficient evidence has been adduced to convince your committee.

- 1.-That carriages can be propelled by steam on common roads at an average rate of ten miles per hour.
- 2.-That at this rate they have conveyed upward of fourteen passengers.
- 3.-That their weight, including engine, fuel, water and attendants may be under three tons.
- 4.-That they can ascend and descend hills of considerable inclination with facility and safety.
- 5.-That they are perfectly safe for passengers.
- 6.-That they are not (or need not be, if properly constructed) nuisances to the public.
- 7.-That they will become a speedy and cheaper conveyance than carriages drawn by horses.
- 8.-That, as they admit of greater breath of tire than other carriages, and as the roads are not acted on so injuriously as by the feet of the horses in common draught, such carriages will cause less wear of roads, than coaches drawn by horses.

9.-That rates of toll have been imposed on steam carriages, which would prohibit their being used on several lines of road, were such charges permitted to remain unaltered.

(To be continued)

AT A MEETING of the PROPRIETORS and OCCUPIERS of LANDS

in the COUNTY of NORTHAMPTON, through which the projected LONDON and BIRMINGHAM RAILWAY is intended to pass, holden at the White Horse Inn, at Towcester, on the 30th Day of December, 1830 (pursuant to public Advertisement), for the Purpose of considering the Subject; and adopting, such Measures as may be expedient on the Occasion, (Sir WILLIAM WAKE, Bart, in the Chair), Resolved unanimously, That it is the Opinion of this Meeting that the said Railway will do great Injury to the Properties through which it is to pass.

1st. By destroying the Privacy and Unity of the Farms, and cutting off Parts thereof from the Homesteads.

2dly. By dividing into separate, ill-shaped Fragments, Closes which are now- convenient in their Form, Size, and Quality.

3dly. By occasioning deep Cuttings across the Slopes of the Hills, and thereby intercepting the Supply of Water to the Wells and Grounds below them.

4thly. By occasioning large Embankments across the low Lands, and thereby intercepting the natural Drainage of the Parts above them.

5thly. By requiring in numerous Cases so great a Width for Slopes, in Addition to that of the Railway itself, as to render any Communication between the Lands separated by it extremely difficult and inconvenient.

2d. That it is the Opinion of this Meeting that it will occasion great Inconvenience to the Public, from the interruption of the Parochial and other Highways; and that

where it crosses them on the same Level it will endanger the Lives of the Passengers.

- 3d. That there is already Conveyance for Travellers between London and Birmingham by numerous Coaches every Day, at the Rate of ten Miles an Hour, and Water Carriage for heavy Goods, to a greater Extent than has ever been required.
- 4th. That no Necessity has been shown for accelerated Communication beyond what can be supplied by Means at present in Existence, and such Improvements as are constantly taking place thereon.
- 5th. That this Meeting are not aware of any Advantages likely to be produced by the said Railway sufficient to countervail the certain Evils that will be inflicted by it.
- 6th. That the Scheme is not promoted (with very few Exceptions) by Persons interested as Land-owners in the District of Country through which it is proposed to be carried, but by Persons combined together in Pursuit of private gain, and who are themselves exempt from the Evils they would inflict on others. That the Absence of the Support of the Landowners is an undeniable Proof that the Speculation is uncalled for by the Wants or Wishes of the Country.
- 7th. that the Persons whose Property and Comforts are to be sacrificed to these Ojects, are some of them Noblemen and Gentlemen, upon whose Places of Residence large Capitals have been expended in Decoration and Convenience, which Capital will be nearly annihilated; and others of them are respectable Yeomen, who dread the injury that will be done to their respective Properties, and feel severely the Hardship imposed upon them, either of sustaining the Evil, or being burdened with the Expense of Resistance.
- 8th. That this Meeting are far from wishing that any undue Attention should be paid to their individual Interest, but that they feel it a Duty to themselves and the Community to protest against such a violation of private Rights, unless a public Benefit

of correspondent Magnitude and established Certainty would be obtained by the Sacrifice.

9th. That this Meeting is strongly impressed with the fact that Endeavour has been made to obtain the Assent of the Landowners to this Measure, by exhibiting a Plan which affords no Information as to the Evils which this Meeting apprehends as detailed in their first Resolution.

10th. That from the best Information within their reach, it appears that the Expense will be far greater than the Public are led to expect, and that there is no Probability of any adequate Remuneration to the Person who may be induced to embark their Capital thereon.