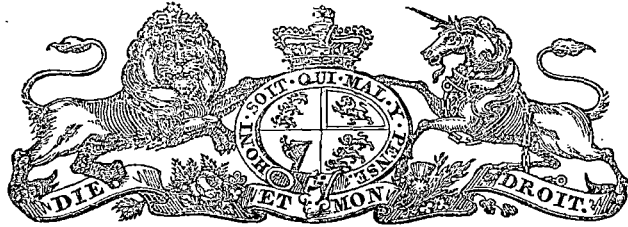


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PARLIAMENT OF TASMANIA.

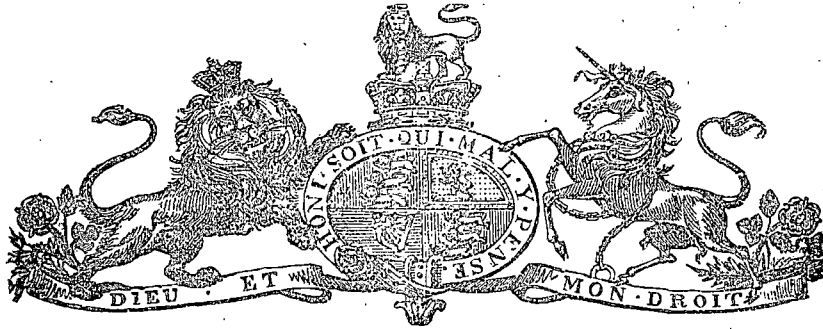
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MOUNT LYELL AND STRAHAN RAILWAY  
BILL (PRIVATE):

REPORT OF SELECT COMMITTEE, WITH MINUTES OF  
PROCEEDINGS AND EVIDENCE.

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Brought up by Mr. Inglis-Clark, September 22, 1893, and ordered by the House  
of Assembly to be printed.



*SELECT COMMITTEE appointed on the 19th September to consider the  
Mount Lyell and Strahan Railway Bill (Private).*

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MEMBERS OF THE COMMITTEE.

MR. DUMARESQ.  
MR. BENNETT.  
MR. BARRETT.

MR. SIDEBOTTOM.  
MR. INGLIS-CLARK. (*Mover.*)

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DAYS OF MEETING.

21st and 22nd September.

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WITNESSES EXAMINED.

Mr. James Fincham, Engineer-in-Chief. Mr. E. Cutter, Civil Engineer. Mr. Fred. Back, General Manager of Government Railways.

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REPORT.

Your Committee, having taken evidence in support of the allegations contained in the Preamble of the Bill, have the honor to report that the said Preamble has been proved to their satisfaction.

Your Committee having agreed that the Preamble should stand part of the Bill, then entered upon the consideration of the several clauses of the Bill.

Your Committee have the honor to recommend the insertion of the following new clause 4:—

“Section 5 of the said Act is hereby repealed.

The said railway shall be constructed in a substantial manner, so that those portions of it which shall be used without the assistance of a rack or a third rail shall be fit for the carriage of vehicles at a rate of not less than Twelve miles per hour with a load of not less than Four tons upon each axle of every vehicle; and those portions of the said railway which shall be used with the assistance of a rack or a third rail shall be fit for the carriage of vehicles loaded as aforesaid at a rate of not less than Four miles per hour; and the whole of the said railway shall be maintained and worked in accordance with the provisions of the said Act and to the satisfaction of the Minister or such officer as he may from time to time appoint to inspect the said railway.”

With this Amendment, your Committee has the honor to submit the Bill for the favourable consideration of your Honorable House.

A. INGLIS CLARK, *Chairman.*

*Committee Room, 21st September, 1893.*

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MINUTES OF PROCEEDINGS.

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THURSDAY, 21ST SEPTEMBER, 1893.

The Committee met at 11.10 A.M.

*Present.*—Mr. Bennett, Mr. Dumaresq, Mr. Barrett, and Mr. Inglis-Clark.

Mr. Inglis-Clark was voted to the Chair.

The Chairman tabled the Petition for leave to introduce the Bill. (Appendix A.)

Resolved, That the Petitioner be heard by Counsel.

Counsel (Mr. E. H. Butler) addressed the Committee in support of the Bill.

Mr. James Fincham, Engineer-in-Chief, was called in and examined.

Mr. Fincham withdrew.

Mr. James Cutten was called in and examined.

Mr. Cutten withdrew.

Counsel (Mr. E. H. Butler) again addressed the Committee.

Mr. Butler tabled—

(a) Drawing of Entrance Tongue of Double Rack Rail, Abt System.

(b) Drawing of Double Rack and Pinion, Abt System.

(c) Combined Rack and Pinion and Adhesion Locomotive, Abt System.

(d) Drawing of Treble Rack Rail, Abt System.

(e) Two Abstracts from Reports on the Abt System of Railways for Steep Inclines.

At 12.40 P.M., the Committee adjourned until 3 P.M. on Friday, the 22nd instant.

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FRIDAY, 22ND SEPTEMBER, 1893.

THE Committee met at 3.10 P.M.

*Present.*—Mr. Bennett, Mr. Dumaresq, Mr. Sidebottom, Mr. Barrett, and Mr. Inglis-Clark (Chairman.)

The Minutes of the last Meeting were read and confirmed.

Counsel for the Petitioners (Mr. E. H. Butler) was admitted.

Mr. Frederick Back, Manager of Government Railways, was called in and examined.

Mr. Back withdrew.

Counsel withdrew.

The Committee then entered into consideration of the Bill.

Preamble agreed to.

Clauses 1 to 3 read and agreed to.

The following new clause was inserted as new Clause 4 of the Bill :—

“ Section 5 of the said Act is hereby repealed.

The said railway shall be constructed in a substantial manner, so that those portions of it which shall be used without the assistance of a rack or a third rail shall be fit for the carriage of vehicles at a rate of not less than Twelve miles per hour with a load of not less than Four tons upon each axle of every vehicle : and those portions of the said railway which shall be used with the assistance of a rack or a third rail shall be fit for the carriage of vehicles loaded as aforesaid at a rate of not less than Four miles per hour ; and the whole of the said railway shall be maintained and worked in accordance with the provisions of the said Act and to the satisfaction of the Minister or such officer as he may from time to time appoint to inspect the said railway.”

Clause 5 (4) read and agreed to.

The Committee then proceeded to consider the Draft Report, which was read and agreed to.

Resolved that the Chairman do present the Report at the next sitting of the House.

The Committee adjourned *sine die*.

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[57 VICT.] *Mount Lyell and Strahan Railway.*

**Bill as amended in Select Committee.**

A

**B I L L**

TO

Amend "The Mount *Lyell* and *Strahan* Rail- A.D. 1893.  
way Act."

**W**HEREAS it is expedient to amend "The Mount *Lyell* and *Strahan* Railway Act" in the manner hereinafter provided : PREAMBLE.

Be it therefore enacted by His Excellency the Governor of *Tasmania*, by and with the advice and consent of the Legislative Council and 5 House of Assembly, in Parliament assembled, as follows :—

**1** This Act may be cited as "The Mount *Lyell* and *Strahan* Rail- Short title.  
way Act, 1893."

**2** In this Act the expression "the said Act" shall mean the Act of Interpretation.  
the Parliament of *Tasmania* intituled "An Act to authorise 'The  
10 Mount *Lyell* Mining Company, No Liability,' to construct and maintain  
a Railway from Mount *Lyell* to the Town of *Strahan*," and the  
expression "the said Railway" shall mean the Railway which the said  
Act authorises the said Company to construct and maintain.

**3** Notwithstanding anything contained in the said Act, the said *Abt* or *Fell*  
15 Railway may be so constructed that the locomotives, carriages, and System may be  
other rolling stock used thereon may be used and worked thereon with used.  
the assistance of a rack or a third rail in the manner adopted in the  
construction and working of Railways in accordance with the systems  
respectively known as the "*Abt*" and "*Fell*" Systems, and those  
[*Private.*]

\* \* The figure proposed to be struck out is enclosed in brackets [ ] ; the words and figures to be inserted, in parentheses ( ).

*Mount Lyell and Strahan Railway.* [57 VICT.]

A D. 1893.

portions of the said Railway whereon any locomotives, carriages, or other rolling stock shall be used and worked as aforesaid may be of a grade not steeper than One in Ten.

(4 Section 5 of the said Act is hereby repealed.

The said Railway shall be constructed in a substantial manner, so 5 that those portions of it which shall be used without the assistance of a rack or a third rail shall be fit for the carriage of vehicles at a rate of not less than Twelve miles per hour with a load of not less than Four tons upon each axle of every vehicle; and those portions of the said Railway which shall be used with the assistance of a rack or a third 10 rail shall be fit for the carriage of vehicles loaded as aforesaid at a rate of not less than Four miles per hour; and the whole of the said Railway shall be maintained and worked in accordance with the provisions of the said Act and to the satisfaction of the Minister or such officer as he may from time to time appoint to inspect the said 15 Railway.)

Acts to be read together.

[4] (5) This Act and the said Act shall be read and construed together as one Act.

## APPENDIX A.

*To the Honorable the Speaker and Members of the House of Assembly of Tasmania, in Parliament assembled.*

The humble Petition of the Mount Lyell Mining and Railway Company, Limited, Registered in the Colony of Victoria under Part I. of "The Companies Act, 1890," and having its registered Office at Prell's Buildings, Queen-street, Melbourne, in the Colony of Victoria aforesaid,

## SHOWETH :

1. That on the twenty-ninth day of August, one thousand eight hundred and ninety-three, previously to the presentation hereof, notice of the intention of your Petitioners to apply for a Private Bill was published in the *Hobart Gazette* of that date, and in the *Mercury* and *Tasmanian News* of that date, both being public newspapers published in Hobart, which said notice contained a true statement of the general objects of the Bill as hereinafter set forth: Your Petitioners have been unable to comply with the Standing Rules and Orders of this Honorable House in consequence of Parliament having been in Session a long time before the necessity arose for obtaining the legislation sought by the said Private Bill, and it would be most detrimental to the interests of the Mount Lyell Mining and Railway Company, Limited, if the said Bill should be postponed until the next Session of Parliament.

2. That the general objects of the said Bill are:—

To enable the said Mount Lyell Mining and Railway Company to construct their Railway on the Fell or Abt system, and, in the event of so doing, to alter the grade mentioned in Section 4 of the said Act.

Your Petitioners therefore pray for leave to introduce the said Bill.

And your Petitioners will ever pray, &c.

Dated this first day of September, one thousand eight hundred and ninety-three.

BUTLER, M'INTYRE & BUTLER,

*Agents for the Mount Lyell Mining and Railway Company, Limited.*

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## EVIDENCE.

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THURSDAY, SEPTEMBER 21, 1893.

JAMES FINCHAM, *called and examined.*

1. *By Mr. Butler.*—What is your name? James Fincham.
2. You are Engineer-in-Chief of Tasmania? Yes.
3. And a Member of the Institute of Civil Engineers? Yes.
4. Have you read the Bill to amend the Mount Lyell and Strahan Railway Bill? Yes.
5. And also the section it is proposed to insert in lieu of Clause 5? Yes, I have.
6. Would you kindly state whether you consider it advisable to use either of these two systems of railways—the Abt or Fell systems—on this line? I consider it advisable.
7. Will you kindly state the reasons you have for that opinion? One reason is that by using one of these systems the distance to be worked is materially shortened; that is to say, instead of having to work over a succession of heavy grades by a line on the adhesive principle in order to get the ruling gradient fixed by Parliament, you would be able to gather, or bunch, as we call it, all the heavy hauling into one spot. Instead of having to cross hill after hill, as you would have to do on the route adopted, with a view of getting a 1-in-33 grade, you would have a nice easy grade to the point where the Abt or Fell system would come in.
8. *By the Chairman.*—The grades on the other parts of the line would be less? Yes. Speaking from levels submitted to me some time ago by the Engineer, they would be very good indeed. Mr. Napier Bell informed me that the same principle had been adopted by him in New Zealand, in order to save cost in length and tunnels, on the Midland Line. The Abt system is the one to be used there, and the line runs along easy and level ground, and takes all the rise at one point.
9. *By Mr. Butler.*—What do you know of the Fell system? It originated with Fell, an Engineer connected with the Mount Ceniz Railway, and he took out a patent for it thirty years ago. The invention was forced upon him by the necessity of having to carry the traffic between France and Italy over the Mount Ceniz Pass in the Alps, pending the construction of the heavy tunnel which exists there now.
10. Have you any knowledge of the working of the Abt system from personal observation or otherwise? I have no personal experience of the Abt system, and there are not many in Australia who have. All our information, of course, is from engineering literature.
11. *By the Chairman.*—Does it not exist in New Zealand? No, it has not been carried into effect there yet, the works of the New Zealand Midland Railway having been stopped for want of money. The Abt system came into notice about ten years ago, and is only an adaptation of the old well-known rack system, which really antedated the present ordinary railway. The great feature of the Abt system is that you can work with one locomotive both the easy grades of the ordinary railway and the severe grades of the Abt system. There is a central rack rail between the two ordinary rails. The locomotive uses the ordinary rails until she comes to the steep gradients where the central rail is laid down, when a system of springs and pinions gear with the teeth without any noticeable jar or any stoppage. The most prominent working example of this line is the one over the Hartz Mountains in Germany. There are also lines on the same system in Austria and Bosnia, and some, I think, in the native country of the inventor, Switzerland.
12. *By Mr. Dumaresq.*—Is it not in use on Mt. Pilatus? That is a rack railway, but what system I cannot say. The grades are more severe than in any Abt system I am acquainted with, being up to 1 in 3. I do not know of any Abt system where they are more than 1 in 12½. The line over the Hartz Mountains, according to a statement made by a director at a meeting held in London some four or five years ago, compared very favourably indeed in working with the Semmering route on the mountain section of the Austrian Southern Railway. The traffic during 1888 represented something like 55,000 train miles, and the goods traffic 146,000 tons during the year. The system is now making rapid headway; and the largest instance of its use is in the case of a railway in Styria now being constructed—Beirut to Damascus. It has been undertaken by a French contractor, and the contract was signed in August, 1892. This railway is 86 miles long, and in 20 miles of the distance they have all the more severe grades. It crosses the great Lebanon Mountains, and rises 4800 feet above sea level. The population is 200,000 and 120,000 respectively at the two ends of the line.
13. *By Mr. Butler.*—Do you know the country between Strahan and Mt. Lyell? Yes, by the ordinary road.
14. What would be the difference in the cost of a line on the rack system and one on the adhesive system? I cannot speak as regards the cost by the King River route, which it is proposed to adopt for the Abt line; and, in speaking of the grades, my authority was the information that had been submitted to me. After observing the country, when the engineers were working there in the first instance, I am thoroughly well satisfied that, without an almost prohibitive cost in works and rolling stock, the Company would never be able to have obtained the speed fixed in the Act by Parliament, 15 miles an hour. I have very little doubt that, whether the work is undertaken by the Government or by the Company, the present idea is the right one. If the line is carried out on the system proposed, it will be an inestimable boon to the country, and will show what can be done in surmounting cheaply the very severe physical features of the Colony.
15. Do you see any objection to inserting the new Clause proposed in place of Section 5? No, I cannot see any objection. The first idea in fixing the speed was, as in the case of the old Main Line Com-

pany, a certain amount of guarantee for the efficiency of the works; but Parliament having provided for thorough inspection in everything, I see no necessity for that limit now.

16. *By the Chairman.*—Is there not one Government line—the Scottsdale line—which only runs 12 miles an hour? That is 15 miles an hour. The line is 47 miles long, and the distance is run in  $3\frac{1}{4}$  hours.

17. *By Mr. Butler.*—But it is a heavier line, with less steep grades, is it not? Yes, the rails are heavier, the grade 1 in 40, and the curves not so sharp.

18. *By Mr. Bennett.*—The object is to reduce the cost per mile, and also to reduce the distance, is it not? Yes, it will do both.

19. Do you know the actual route? I know where it goes at present, but I have not travelled by the King River route.

20. Will the proposed alteration have the effect of altering the terminus? It will not affect the terminus at the Mt. Lyell end, but it will no doubt alter the terminus at the Strahan end, while still remaining within the limits of the Act. Strahan runs down to Pine Cove, and beyond.

21. *By the Chairman.*—Pine Cove is only a mile or two from Strahan, is it not? It is rather more than that, but it will be quite feasible to connect this line with the Government system at some future day, by simply following the shore line.

22. Are you aware whether there was a road surveyed under the original Bill? There was no road surveyed before the Bill was proposed.

23. Was any terminus fixed under the original Bill? Not that I am aware of. The Bill says that the line is to come into Strahan, but that gives you a very wide latitude, extending from Macquarie Heads to Pine Cove. The terminus now proposed is in the town.

24. *By Mr. Dumaresq.*—This Bill will not run counter to the old Bill in regard to the terminus? No, it will not make much difference.

#### FREDERICK ALFRED CUTTEN, called and examined.

25. *By Mr. Butler.*—What is your name? Frederick Alfred Cutten.

26. You are a Civil Engineer? Yes.

27. And Engineer of the Mount Lyell Company? Yes.

28. Will you tell the Committee why it has become necessary to make this application to Parliament to alter the existing Act? Upon making a survey of the country we found it would be terribly rough, and to conform to the Act the line would have to be exceedingly costly to be effective, and would be rather dangerous to work, owing to the immense number of steep gradients of 1 in 33, sharp curves, high viaducts, and short tunnels. This line would have been terribly severe to work, especially in such a moist country, it would be difficult to get engines to haul by pure adhesion.

29. Will you tell the Committee anything you know about the Abt system? Yes. The Abt line we have most information about is the one over the Hartz Mountains. It is 19 miles in length, and there are 11 separate sections with the racks, with gradients of 1 in  $16\frac{1}{2}$ . The engines weigh 51 tons in service, and carries a train of 135 tons at an average throughout of 12 or 13 miles an hour. It takes the heavy gradients of 1 in  $16\frac{1}{2}$  with the rack as high as  $7\frac{3}{4}$  miles an hour, and it takes the rack without the slightest jarring. In June, 1888, they transported 398 trains, carrying 13,500 tons of goods and 8580 passengers.

30. *By the Chairman.*—What is the gauge? 4 feet  $8\frac{1}{2}$  inches.

31. And the extra speed is on account of the broader gauge? No, it does not make the slightest difference. On the Puerto Cabello Railway, in South America, they run over a grade of 1 in  $12\frac{1}{2}$  at the rate of 12 miles an hour, with a 3 ft. 6 in. gauge. The speed is simply a matter of power.

32. But they don't usually run a narrow-gauge railway at the same speed as a wide one, do they? Of course you design your grades and curvatures according to the speed required on the road.

33. *By Mr. Butler.*—Of the Fell and Abt systems, which do you prefer? I prefer the Abt, because the Fell is in principle dependent upon adhesion, and there is a certain amount of slip. In the Abt the rack is acted directly upon, and it is not possible to slip; therefore there is absolute safety in descending the steepest inclines.

34. Will you explain the system of brakes in use in the Abt system? The first brake is the ordinary one in use on ordinary locomotive engines. That brake is sufficient to control the train on any gradient. Then there is a hand brake on the drum of the spur wheel. That is an independent brake capable of holding the whole train likewise. Then there is a patent valve on the cylinders of the rack engine, which compresses the air into them, and brings the thing up in that way, something on the principle of the atmospheric brake. This is also capable of controlling the whole train alone.

35. By adopting the Abt system there would be a great saving in cost? Yes.

36. Would it have the same powers of traction as the line originally proposed? We could carry very much greater loads on it. With an engine weighing 18 tons, on a road upon the adhesive principle, with the gradients as given in the Act, the material would only equal 58 tons at a load, whereas by the Abt system on the same line we could take 120 tons, or about five times as much. The great principle is to shorten the line by making the gradients steeper.

37. Will you explain the reason why you wish to repeal Clause 5? 15 miles an hour seemed to me almost an unsafe speed for a line constructed according to the Act. On the Scottsdale line the working



rate is only  $14\frac{1}{2}$  miles an hour, and there the worst grade is 1 in 40, the sharpest curves 5 chain radius, and the rails 50 lbs.

38. You think it would be scarcely safe to run 15 miles an hour on a line constructed according to the original Bill? Yes.

39. A minimum of four miles an hour is fixed for the rack railway; do you think that is a fair minimum? Yes.

40. On the Fell line, in New Zealand, the minimum is five miles-an hour, with a gradient of 1 in 15—that is for carrying ordinary working traffic? Yes.

41. *By Mr. Bennett.*—What is the gauge of that railway? Three feet six inches.

42. It is possible you may run more than four miles an hour? Yes, we can go more than that; but that is the rate for effective traffic.

43. *By Mr. Butler.*—I should like you to explain to the Committee the reasons why you think one terminus would be preferable to others at the Strahan end? It is merely a question of traffic and capital cost. By coming into East Strahan towards the King River we can get a line with all the heavy gradients concentrated in one point, so that the heavy traffic can be carried to the foot of the rise and taken over in smaller loads. The West Strahan line would be four miles longer and cost £40,000 more than the route now proposed by the King River; the latter route, as I have already explained, would enable us to carry nearly twice greater loads. It matters not which route we take, the Abt system would have to be adopted, as it would save so much money and give us a so much more effective line. It has not been decided yet what process is to be used in the reduction of the ore at the mine. I have to design the line on the assumption that we will use the ordinary roasting process, which takes one ton of coke to seven of ore, but the new process, which Dr. Peters calls pyritic smelting, only takes 1 per cent. of coke, which very much reduces the traffic on the railway. In the latter case the traffic might be carried on with the present Government wharves at Strahan, as it would only represent 20 or 30 tons of coke a day; but under the other system it would represent a traffic of from 300 to 400 tons of coke a day, for which the present Government wharves would be quite inadequate.

44. *By Mr. Dumaresq.*—Would the Company put up their own wharves? Yes, at the King River.

45. *By Mr. Butler.*—Would there be any difficulty in connecting the Government lines with your line? No; it would have to run about three miles along the coast. The crossing of the King River would be a very simple thing, as there is only a tidal rise of from two feet to three feet; and it would be hardly worth while to put in a swing bridge, as there is only about three feet of water on the bar.

46. *By Mr. Bennett.*—What would be the cost of extending the line from the proposed terminus to the Government system? About £20,000.

47. Would it not be undesirable to establish a new terminus where one is already fixed? It is a question of the capital cost which will be entailed upon the Company. One could buy the whole of Strahan for £40,000, and put it down on the King River, and have a considerable balance left at the bank. The only wish of the Company is to get the shortest possible line. It will make no difference to them whether they land at the wharves at the King River or whether they land at Strahan. They will have to pay harbour dues whichever way they go.

48. Would it not be a considerable expense to the Government in putting up fresh Customs buildings, &c.? The present Customs office at Strahan could be replaced for £15. I admit that it is not desirable to divide the traffic, but still I think that our terminus at the King River is within a reasonable distance, and a small steam launch could carry all the traffic.

49. I am speaking of what is in the future. It will be easy to connect the two systems when the traffic warrants it.

50. At a cost of £20,000? Yes.

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FRIDAY, SEPTEMBER 22, 1893.

FREDERICK BACK *called and examined.*

51. *By Mr. Butler.*—What is your name? Frederick Back.

52. You are Manager of Tasmanian Railways? Yes.

53. Have you read the Bill to amend the Mt. Lyell and Strahan Railway Act? Yes.

54. Will you kindly state to the Committee your opinion as to whether it is desirable that the Amendment should be made as proposed? I see no objection to the proposal at all; there is a good deal to recommend it. There are two systems mentioned here, the Abt and Fell. These systems were brought into existence to enable steep grades to be got over by concentrating all the grades, or resistance, at one point. The principle of the Fell system lies in putting additional gripping wheels to the locomotive, which hold a centre rail, and it is used either in ascending or descending. The Fell system has drawbacks as compared with the Abt, in so far as it requires a special locomotive. Mr. Carruthers, of the firm of Wilson and Carruthers, who, I think, is one of the greatest authorities on the question, has come round to the way of thinking that the Abt system is the more economical. Many years ago I had the honour of serving under Mr. Carruthers, and know something about his views. The Fell system requires two locomotives, one for the adhesive rail and a separate one for the incline, and where the latter is not continuously employed it is a cause of additional expense. With the Abt system, on the other hand, one engine will take the train throughout the whole line, on the adhesive line as well as on the rack, and

consequently is more economical. The Abt system differs from the Fell in that instead of having a centre rail it has a triple rack. The locomotive has four cylinders instead of two, which, by-the-by, is rather a good thing, as it assists exhausts and tends to efficiency and economy. In using the Abt system the engine is always at the foot of the decline, pushing the train in going up, and getting in front again and acting as a brake in descending. The expense of the Abt as compared with the Fell on a line such as I imagine the Mt. Lyell to be would be only half. There is everything to recommend the Abt system, and modern science has now generally adopted the idea that it is cheaper to concentrate the resistance in one place.

55. From what you know of the country between Mount Lyell and Strahan, do you think one of these systems would be advantageous. I don't know the country except by description.

56. For an ordinary mountainous and hilly country? I understand that they will be able to get an easy grade up to a certain point, which can be worked by adhesive locomotives, and will require either the Abt or Fell system to take them over the incline.

57. Is the Abt system in use in many parts of the world? It has come into general use. It is used in Mexico and South America and other places, and is now, I think, likely to be adopted as the modern system for inclines.

58. From what you know of it, is it capable of carrying as heavy loads as the ordinary adhesive line? The principle is that you take the full load on the level line, and take the train in two loads over the incline.

59. Have you read the amendment proposed? Yes. I do not see any objection to it. I think it would be a mistake to compel them to run at any particular speed.

60. Do you think 12 miles an hour would be a fair rate of speed on the adhesive portions of the line? I don't see what you want to go tearing through the country on a mineral line for. If a line is strong enough to carry the locomotives it is only a question of power. I take it that on a mineral line 12 miles an hour is enough.

61. On a line with a grade of 1 in 43, 43 lb. rails, and 4-chain curves, would not 15 miles an hour be rather a high speed? I do not care about constructing 4-chain curves; and I would be inclined to make them 5-chain. If you had your stock adapted to such a line it might be all right.

62. *By Mr. Bennett.*—Do you know the proposed route? Only on paper.

63. Do you know the proposed terminus? I hear it is to be at the mouth of the King River.

64. How will that affect the Government line? It will not affect it one way or the other as far as the railway is concerned. From a railway point of view the question of the terminus does not matter at all.

65. *By Mr. Butler.*—Is it not possible to connect the two lines? I think so.

66. Is not the distance about three miles? I don't know exactly what it is, but I think it is a little more than that. I do not think you could connect the two lines under five miles. The question, from the Government standpoint, would mean two Custom Houses, two Post Offices, two Schools, and so on; but from a purely railway standpoint it would not matter much one way or the other.

67. We have been told that one engine could carry double the load on the proposed line that it could if the line was between the present township of Strahan and Mount Lyell? I do not know if that is the case.

68. In that case would you not say that the company was right in constructing their line from the King River? Yes.

69. *By Mr. Bennett.*—Would it be feasible to bring this line into the Government line and run over a portion of it? It is quite feasible; but it is a question whether it is fair to force the company to great expense to bring revenue to the Government railways.

70. If this proposed line is carried on from the proposed terminus into the present town, would it come in contact with your line in any way? No, it would not affect the railway in any way.

71. *By Mr. Dumaresq.*—We have evidence to show that if the ore is treated at the mine there would be a large quantity of coal and coke required: do you think the wharfage at Strahan would be sufficient to accommodate that traffic? If the quantity contemplated in Dr. Peters' report is used it would be insufficient, but Dr. Peters told me they would not use either coal or coke, but charcoal, and there is ample means of supplying that at the mine.

72. *By Mr. Butler.*—Mr. Cutten stated in his evidence that it would cost £40,000 to bring the line into the township. Under those circumstances, do you think it would be desirable to compel the company to bring their line into the township? From a railway point of view it would not make any difference where they brought the road, unless it ran into the Government line, where the Government could charge them haulage. It seems an unfair thing, however, to force the company to expense to enable the Government to make a revenue out of it.

73. *By Mr. Bennett.*—Do you think £20,000 is a reasonable estimate of the cost of extending the line from the proposed terminus at the King River to Strahan township? It would cost more than that. It would be barely enough to make the line without anything else. It would cost £4000 a mile, or thereabouts.

The Committee then adjourned.