

1907.  
NEW ZEALAND.

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## NIGHTCAPS COAL-MINE DISASTER

(REPORT OF ROYAL COMMISSION APPOINTED TO INQUIRE INTO THE) ON THE 21st JUNE, 1907.

*Laid on the Table of both Houses of the General Assembly by Leave.*

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### COMMISSION.

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PLUNKET, Governor.

To all to whom these presents shall come, and to William Reeve Haselden, Esquire, of Wellington, District Judge; Huntly John Harry Elliott, Esquire, of Hutt; Henry Andrew Gordon, Esquire, of Auckland, Mining Engineer; and Alexander Forbes, Esquire, of Kaitangata, Secretary to the Otago Coal-miners' Union of Workers: Greeting.

WHEREAS a disaster occurred at the coal-mine at Nightcaps, known as the Nightcaps Colliery, the property of the Nightcaps Coal Company (Limited), on the twenty-first day of June last, which caused the deaths of three persons working therein: And whereas it is expedient that a Commission should be issued for the purpose of inquiring into the cause of the said disaster, and into the working of the existing law in respect to the prevention of such disasters, and for the other purposes hereinafter mentioned:

Now, therefore, know ye that I, William Lee, Baron Plunket, the Governor of the Colony of New Zealand, reposing trust and confidence in your knowledge, integrity, and ability, and acting by the advice and with the consent of the Executive Council of the said colony, do hereby, in exercise of the powers conferred on me by "The Commissioners Act, 1903," and of all other powers and authorities enabling me in this behalf, constitute and appoint you, the said

WILLIAM REEVE HASELDEN,  
HUNTLY JOHN HARRY ELLIOTT,  
HENRY ANDREW GORDON, and  
ALEXANDER FORBES,

to be a Commission for the purpose of making inquiry into the matters herein-

before referred to and into the several other matters mentioned in these presents, that is to say,—

- (1.) To ascertain in what parts of the mine the disaster occurred, and the nature of the disaster.
- (2.) To ascertain how the disaster was caused.
- (3.) To ascertain what lights were used in the different parts of the mine at the time of the disaster.
- (4.) To ascertain whether any inquiry into the cause of the disaster has taken place: if so, what was the nature of such inquiry; how was the tribunal constituted; what were the verdict and recommendations of such tribunal.
- (5.) To ascertain to what extent the provisions of "The Coal-mines Act, 1905," and the general rules, the special rules, and additional rules made in accordance with the provisions of that Act, were complied with in the mine, but more especially as regards,—
  - (a.) Ventilation and lighting,
  - (b.) The examination of the mine,
  - (c.) The withdrawal of workmen in case of danger, and
  - (d.) The means of escape in case of accident.
- (6.) To ascertain the nature and character of the working and general management of the mine, and whether the mine was well managed or not.
- (7.) To determine the competency of the Inspector of Mines, and the efficiency of the inspection of the mine.
- (8.) To determine the competency of the mine-manager, mine officials, and servants, and the management and working of the mine.
- (9.) To ascertain the number and efficiency of the stoppings, the materials of which they were composed, and the condition they were in immediately prior to the disaster.
- (10.) To ascertain the nature and efficiency of the machinery and appliances used in the working of the mine, and the condition the same were in at the time of the disaster.
- (11.) To make suggestions for the prevention, as far as possible, of similar disasters, and for the safe working of this and other mines in the future.
- (12.) And generally to make inquiry into any matter or thing arising out of, or connected with, the several subjects of inquiry hereinbefore mentioned, or which in your opinion may be of assistance in fully ascertaining, explaining, and arriving at a fair and just conclusion in respect to the subjects of inquiry, and into the working of the existing law in respect to the prevention of similar disasters.

And with the like advice and consent I do further appoint you, the said William Reeve Haselden, to be Chairman of the said Commission.

And for the better enabling you to carry these presents into effect you are hereby authorised and empowered to make and conduct any inquiry under these presents at such place or places in the said colony as you may deem expedient, with power to adjourn from time to time and from place to place as you think fit, and to call before you and examine on oath or otherwise as may be allowed by law such person or persons as you may think capable of affording you any information in the premises; and you are also hereby empowered to call for and examine all such books, documents, papers, maps, plans, or records as you judge likely to afford you the fullest information on the subject of this Commission, and to inquire of and concerning the premises by all other lawful ways and means whatsoever, and also to use the evidence taken in the course of any previous inquiry touching the disaster.

And, using all diligence, you are required to report to me, under your hands and seals, your opinion resulting from the said inquiry in respect of the several matters and things inquired into by you under or by virtue of these presents not later than the first day of October next ensuing, stating in such report what steps, if any, it would, in your opinion, be expedient to adopt under the circumstances which you find to exist, and in what manner effect should be given to such recommendation.

And it is hereby declared that this Commission shall continue in full force and virtue although the inquiry be not regularly continued from time to time by adjournment, and that you or any two of you shall and may from time to time proceed in execution hereof, and of every power, matter, and thing herein contained.

And, lastly, it is hereby further declared that these presents are issued under and subject to the provisions of "The Commissioners Act, 1903."

Given under the hand of His Excellency the Right Honourable William Lee, Baron Plunket, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Knight Commander of the Royal Victorian Order, Governor and Commander-in-Chief in and over His Majesty's Colony of New Zealand and its Dependencies, acting by and with the advice and consent of the Executive Council of the said colony; and issued under the Seal of the said Colony, at the Government House, at Wellington, this twenty-third day of August, in the year of our Lord one thousand nine hundred and seven.

[L.S.]

JAMES MCGOWAN,  
Minister of Mines.

Issued in Executive Council.

ALEX. WILLIS,  
Clerk of the Executive Council.

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### EXTENDING TIME OF COMMISSION.

PLUNKET, Governor.

To all to whom these presents shall come, and to William Reeve Haselden, Esquire, of Wellington, District Judge; Huntly John Harry Elliott, Esquire, of Hutt; Henry Andrew Gordon, Esquire, of Auckland, Mining Engineer; and Alexander Forbes, Esquire, of Kaitangata, Secretary to the Otago Coal-miners' Union of Workers: Greeting.

WHEREAS by a Commission bearing date the twenty-third day of August last, you, the said

WILLIAM REEVE HASELDEN,  
HUNTLY JOHN HARRY ELIOTT,  
HENRY ANDREW GORDON, and  
ALEXANDER FORBES,

were appointed to be a Commission for the purposes and with the powers in the said Commission more particularly mentioned: And whereas by the said Commission you were directed and required to report to me, on or before the first day of October then next ensuing, your proceedings and your opinion touching the matters mentioned therein: And whereas it is expedient that the said period should be extended as hereinafter provided:

Now, therefore, in exercise of the powers conferred by "The Commissioners Act, 1903," and of every other power and authority enabling me in this behalf, I, William Lee, Baron Plunket, the Governor of the Dominion of New Zealand,

acting by and with the advice and consent of the Executive Council of the said Dominion, do hereby declare and appoint that the time at or before which you shall present to me your report aforesaid is hereby extended to the first day of November, one thousand nine hundred and seven.

Given under the hand of His Excellency the Right Honourable William Lee, Baron Plunket, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Knight Commander of the Royal Victorian Order, Governor and Commander-in-Chief in and over His Majesty's Dominion of New Zealand and its Dependencies, acting by and with the advice and consent of the Executive Council of the said Dominion; and issued under the Seal of the said Dominion, at the Government House, at Wellington, this second day of October, in the year of our Lord one thousand nine hundred and seven.

JAMES MCGOWAN,  
Minister of Mines.

Issued in Executive Council.

[L.S.]

ALEX. WILLIS,  
Clerk of the Executive Council.

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## REPORT.

To His Excellency the Right Honourable William Lee, Baron Plunket, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Knight Commander of the Royal Victorian Order, Governor and Commander-in-Chief in and over His Majesty's Dominion of New Zealand and its Dependencies.

MAY it please Your Excellency,—

The Commission intrusted to us by Your Excellency directed our attention to the following matters in connection with the disaster on the 21st June last in the coal-mine belonging to the Nightcaps Coal Company (Limited), which caused the deaths of three persons working therein :—

- (1.) To ascertain in what part of the mine the disaster occurred.
- (2.) To ascertain how the disaster was caused.
- (3.) To ascertain what lights were used in the different parts of the mine at the time of the disaster.
- (4.) To ascertain whether any inquiry into the cause of the disaster has taken place: if so, what was the nature of such inquiry; how was the tribunal constituted; what were the verdict and recommendation of such tribunal.
- (5.) To ascertain to what extent the provisions of "The Coal-mines Act, 1905," and the general rules, the special rules, and additional rules made in accordance with the provisions of that Act, were complied with in the mine, but more especially as regards—
  - (a.) Ventilation and lighting,
  - (b.) The examination of the mine,
  - (c.) The withdrawal of workmen in case of danger, and
  - (d.) The means of escape in case of accident.
- (6.) To ascertain the nature and character of the working and general management of the mine, and whether the mine was well managed or not.
- (7.) To determine the competency of the Inspector of Mines, and the efficiency of the inspection of the mine.
- (8.) To determine the competency of the mine-manager, mine officials, and servants, and the management and working of the mine.

- (9.) To ascertain the number and efficiency of the stoppings, the materials of which they were composed, and the conditions they were in immediately prior to the disaster.
- (10.) To ascertain the nature and efficiency of the machinery and appliances used in the working of the mine, and the condition the same were in at the time of the disaster.
- (11.) To make suggestions for the prevention, as far as possible, of similar disasters, and for the safe working of this and other mines in the future.
- (12.) And generally to make inquiry into any matter or thing arising out of, or connected with, the several subjects of inquiry hereinbefore mentioned, or which, in our opinion, may be of assistance in fully ascertaining, explaining, and arriving at a fair and just conclusion in respect to the subjects of inquiry, and into the working of the existing law in respect to the prevention of similar disasters.

2. Having now concluded our investigations and inquiries, we have the honour to submit to Your Excellency our report on the several matters referred to us. The time for presenting our report has been extended by Your Excellency to the 1st day of November, 1907.

3. Your Excellency's Commission, dated the 23rd August, 1907, was received by us on the 27th August, and we at once proceeded to Riverton, and opened the Commission there on the 30th August. The parties represented by counsel were—

- (1.) The Mines Department and Inspector Green (represented by Mr. T. M. Macdonald, Crown Solicitor, Invercargill).
- (2.) The Nightcaps Coal Company (Limited) (represented by Mr. A. C. Hanlon, barrister, Dunedin).
- (3.) The Coal-miners' Union (represented by Mr. Macalister, barrister, Invercargill).

4. The procedure was first discussed and formulated, and it was arranged that Mr. Macdonald should call such witnesses as he deemed advisable; that Mr. Macalister should first cross-examine such witnesses; and that Mr. Hanlon should follow.

5. On the following day we went to the mine at Nightcaps, and made as thorough an investigation as circumstances permitted. The area of the mine known as No. 1 Section, in which the disaster occurred, was sealed off, and it was not possible to enter therein. Tests were made of the air and gases within the mine by means of lighted safety-lamps held over the mouth of the shafts, which were uncovered for the purpose. These tests demonstrated the presence of black-damp in large quantities. Thermometers were also lowered down the shafts and these showed an increase in heat at the bottom of the shaft of 23°. We examined the workings in No. 2 Section, and they appeared to be in good working-order. The ventilation was good, and due regard to the safety of the men engaged seemed to be observed. On the 4th day of October, the mine was again visited.

6. On the 2nd September we began the examination of witnesses at Riverton, which was found to be the most convenient place of sitting for all parties, and we continued such examination daily until the 3rd October instant. The only interruptions were on four different days, when we found it impossible or undesirable to sit. The proceedings were open to the public, and very full reports were published in at least three different newspapers. The process of examining witnesses was somewhat slow, and somewhat difficult, and both counsel and ourselves had to gradually learn where to look for evidence and extract it from the witnesses, but we believe that ultimately we exhausted all the information obtainable on the questions committed to us.

7. We append hereto the Commissions issued to us by Your Excellency, the minutes of our proceedings, a list of witnesses examined, the depositions on

oath signed by the witnesses, and a verbatim report of the addresses of the counsel engaged. We also append the plans referred to in such evidence.

8. Before dealing specifically with the questions committed to us, it will be convenient to give a short summary of the history of the mine and of the events which led up to the disaster.

9. The mine is situated at Nightcaps, in the County of Wallace, and is owned by the Nightcaps Coal Company (Limited), who have a paid-up capital of £24,000, but the managing director says that £30,000 has been expended on the mine, the railway, and general machinery and works. The following properties are held by the company: (1) Five hundred acres of freehold at Nightcaps; (2) a leasehold from the Crown of 15 acres at Nightcaps; and (3) 500 acres of freehold at Hokonui. The last has not been worked for coal. The present workings extend over an area of nearly 100 acres. The method of working is the ordinary pillar-and-bord, with an opencast or quarry in No. 2 Section. This opencast has greatly aided ventilation in this section. The operations have been continuous for the last twenty-six years, and altogether something over half a million tons of superior lignite coal have been won. There are in all three seams of coal of the aggregate thickness of 36 ft. The upper seam is from 4 ft. to 17 ft. thick, then there is a "band" of sandstone 4 ft. thick, then a seam of coal from 4 ft. to 13 ft. thick, then a "band" of sandstone 7 ft. to 12 ft. thick, then a seam of coal 3 ft. to 18 ft. thick. Only the two upper seams have been worked. The seams dip in a north-easterly direction at an inclination varying up to 1 in 7. The mine is entered by a tunnel, which runs through to the opencast in one direction, No. 2 Section being to the westward, and branches to the dip in No. 1 Section to the eastward. The method of ventilation in No. 1 has for the past six years been by means of a fan, exhausting or drawing the air up a shaft to the surface. The air-intake is from the mouth of the tunnel. In No. 2 Section the ventilation is the natural draught from the tunnel-mouth to the opencast, directed by brattice and doors as required. Water-pipes, connected with a race and dam on the surface, were led into No. 1 Section. Mr. John Lloyd has been manager of the mine from the commencement of operations. He holds a first-class certificate as a mine-manager, obtained by service, and not by examination.

10. On the 28th March, 1903, a fire broke out fiercely in the mine (No. 1 Section), close to the engine-station in the main haulage-road, caused, it is said, by a spark setting light to the timber in the engine shaft. It raged over a considerable area among the pillars, but was successfully subdued with water and blocked off. After some considerable time the area was opened afresh, and the ground worked; but the fire continued to eat its way ahead of the workings and eventually reached a place in the northern end of the mine where there is a fault in the upper seam. Whether there was always a connection traceable from the fire of March, 1903, to the last fire is doubtful, and the evidence is somewhat conflicting; but this fact is clear: that eighteen months prior to March last whatever fire there was in the mine was at the place marked "A B C" on the plan, and was securely sealed off by stoppings and there was no indication of any recrudescence until March last, when the stoppings that shut off the air from the fire were opened for the purpose of extracting all the coal then standing in the pillars. Within a day or two after the stoppings were broken down and the air admitted to the place, heat increased until the fire was visible. Instead of shutting the place up again, and working in the adjacent headings, bords, and pillars, and losing a comparatively small quantity of coal, the management decided to take out every ton of coal possible, draw the pillars, and let the roof fall. They had been, so far as we are able to learn, successful in thus coping with the fire in its previous stages, and doubtless thought they would be able to do so again, but in this attempt they undertook a very grave responsibility. In April last the fire became active; water was brought in by means of pipes, and was constantly played upon the fire. Black-damp naturally generated, and probably some small proportion of white-damp, but the fan appears to have been able to so ventilate the mine that no actual injury to the men occurred, although

the effect of such gases on the men was at times perceptible. It is said that the object of so constantly pouring water on the fire was not only to quench the fire, but also to so pack the fallen *débris* from the roof as to form an air-tight non-inflammable "gob." The latter object was not attained, as the gob became fiercely on fire, extending gradually in area until on the 20th June it reached a length of about 3 chains. From March to the 20th June there were two working-shifts in the mine—the morning shift from about 7.30 a.m. to 4 p.m., and the afternoon shift from 4 p.m. to midnight. During these two shifts the fan constantly worked, and cleared the mine sufficiently to enable men to work, as it turned out, in safety, though not in comfort. During all this time no safety-lamps were used in the mine, and none were ready for emergencies. The tests relied on were, it appears that, as black-damp will extinguish a naked light as readily as one in a safety-lamp, a naked light was as good a test for black-damp as a safety-lamp; that white-damp cannot be tested by a safety-lamp until the proportion is fatal to life, and that, as fire-damp rises to the roof, the black-damp, which would be on or near the floor, would extinguish the light before it could be raised to the roof. These are the reasons given by the deputies and underviewer as justifying the non-use of the safety-lamp. We deal with the matter later. At midnight the fan ceased working, and two men entered the mine as watchmen, and to do odd jobs when not actually engaged on the fire. During this period the air was so bad near the fire area that the men could not remain more than a short time within it. They suffered in health, and Somerville, the elder of the two, begged for "another job," and, as he says, left the mine because he did not get it. He says he frequently told the underviewer that there was black-damp in the places, and was informed that he knew nothing about it. The fire area had by this time been opened up so that three vents to the air existed. Some of the witnesses described how the live coal fell from the roof and slopes, and hot stones rolled at the feet of the men who were extracting the coal; but the work went on. The last box of coal was taken from the fiery area about noon on the 20th June. At 8 o'clock that morning the manager (John Lloyd) saw that the fire was gaining the mastery, and he ordered stoppings to be erected, so that the fire could be sealed off. A great mass of evidence was adduced to show the character of these stoppings, some of it of a very contradictory character; but one fact is clear—namely, that the stoppings erected were useless, and there was no time to erect effective stoppings. There is a conflict between Lloyd, the manager, and Frame, the underviewer, and others, as to whether Lloyd on the morning of the 20th June ordered the work to proceed continuously or not, but certainly the work ceased at midnight, and we are of opinion that it would have been impossible to make effective stoppings in the time available. Lloyd, the manager, left the mine between 4 and 5 p.m. on the 20th, and proceeded to the house of a miner (Carson, one of the victims); sent Carson for a bottle of whisky, drank some then; went away, but returned about 8 p.m., drank more whisky, and remained at Carson's until 3 a.m. on the morning of the 21st, sleeping, as he (Lloyd) alleges, on the sofa until 3 a.m., when he arose, and was going home, when he met Dixon, a deputy, who told him he was wanted in the mine. It is uncertain what was actually said on this occasion, but no doubt Lloyd was informed that there was a serious aspect of affairs. The afternoon shift of five or six men had gone into the mine at 4 p.m. on the 20th and had worked at the stoppings until midnight, when they were told by Frame (underviewer) they need not stay longer, and they went home. No effectual stoppings had then been erected. The fan was stopped as usual. At midnight the watchman (Somerville) and a youth named Brazier went on duty, and Dixon (deputy), who had been at work since 4 p.m., having gone to his home for about forty minutes for refreshments, returned and remained with them. They occupied themselves in attempting to connect a fresh length of hose, and in various other ways, until 3 a.m., when Dixon went to call the underviewer (Frame); but, as he was on his way to Frame's residence, he met Lloyd, who was then going home from Carson's. He told Lloyd something of the condition of things in the mine, and Lloyd, instead of going at once into the mine, decided to

call up other men to assist. According to his own account he called four men, and spent nearly an hour in doing so, and it was 4.20 a.m. before he reached the seat of the fire in the mine. When he arrived he found several men there, who had been summoned and had come in. These men were waiting for the water to come through the pipes and hose, but no water came, because the men sent to turn on the tap could not reach it on account of the smoke and foul air. A man named Somerville then attempted to turn this tap, and after he had been gone twenty minutes, Lloyd and Dixon went to look for him. Lloyd says he went up the heading, where his light was extinguished by black-damp, and then he withdrew the men to the opencast. Lysaght and Somerville had found their way to the opencast, and were a good deal affected by smoke and noxious gases. At 5.30 a.m., finding that the water could not be turned on, Lloyd told Dixon to take the men in and cut the air off, and the men went in accordingly, and it was then that the framework was put up across the heading. Lloyd himself left the mine at this time in company with Carson. While Lloyd was out of the mine Dixon sent two men, Lysaght and Brazier, for brattice-cloth. They found Lloyd and told him the men inside wanted some beer, so Lloyd himself went for the beer, while Lysaght and Brazier got the brattice. The beer was taken in by Welsh and Carson, Lloyd staying behind to give instructions. Then Lloyd went again into the mine, and Dixon told him the men had cut the air off the fire except at "Carson's jig," where they had put a framework, and that the fresh men could put up the brattice in about ten minutes. Lloyd had 30 ft. of brattice cut off, and told Carson and Welsh to go down and put it up. Lloyd says he followed them down the dip, and that on the way he went through "the resin-seam door," and found plenty of fresh air there (the position of this door is given on plan—"D 2"). He was coming back up the dip when he met Duncan (a deputy), and he says he told him that Welsh and Carson had gone up the heading, and that if they found the smoke too thick, they were to go through the resin-seam door, where there was plenty of fresh air, and to come out through the back workings. This statement of Lloyd's is unsupported by other evidence. The man to whom he says he spoke is dead, and we think it would be rather extraordinary if the air behind the resin-seam door was much better than in the dip. The point loses importance when it is considered that the men who died were overcome before they could get to this alleged place of safety. Lloyd returned to the other men at the engine-station, and was much exhausted, he says, by his exertions. His light had been extinguished by black-damp, and he had almost succumbed to its effects. The two men, Carson and Welsh, were sent to put up this brattice-cloth across the heading without any precaution being taken as to their safety, and in contravention of the provisions of the statute, which enacts that whenever dangerous conditions exist, every workman shall be withdrawn from the mine or such part thereof as is found to be dangerous, and only after a competent person has examined the mine with a locked safety-lamp, and has reported on the conditions of the mine, may any workmen be readmitted. Welsh, Carson, and Duncan died in Carson's heading from the effects of the gases they encountered there. Lloyd and the rest of the men waited for them to return. They waited thirty-nine minutes. It was 7.40 a.m. when the men went down the dip; it was 8.19 when it occurred to those waiting that they had been gone too long. The work they were told to do was estimated to take from five to ten minutes. Then a miner named Jardine went down the dip with Frame (underviewer). Every one used naked lights. Jardine found Duncan near the entrance to Carson's heading, alive, but unconscious, and breathing heavily, and frothing at the mouth. He partially lifted him, and carried him some distance, Frame leading the way with the lights. Jardine felt his strength going, and called to Frame "For God's sake go and tell them to start the fan." Frame went to do this, and no adverse criticism should, we think, be made on his action in so doing. Jardine himself says he thinks Frame did right in going. Jardine struggled bravely on, and at last he put Duncan on the floor, took off his own waistcoat, put it round Duncan's face, and almost immediately fell himself unconscious. No one up to this point seems to have thought of the fan as a means of clearing the air. Frame got back

to the engine-station and after some delay the fan was started. The condition of the mine can be estimated from the statement of witnesses to the effect that in fifteen minutes from the time the fan started the heat so affected the bearings that it would not work. Some minutes elapsed, and more fresh men came into the mine. Then Frame, who appears at this time to have taken control of affairs, said that a door in the old lay-by should be opened. Frame says he intended to open the door across the lay-by, quite close to the engine-station, but Lloyd and Dixon, who went to carry out this direction, opened a door leading westward from the lay-by to the fan-shaft. This would have a tendency to draw the air from that portion of the mine where Carson and Welsh were, and to some extent cause a back current. The moment the door was opened there was a slight explosion of firedamp, and a tongue of flame ran along the roof over the men's heads. The door shut as the men fled, and all the men who were at the engine-station, fearing a general explosion, ran back to the drum-points. Some time elapsed—it is estimated at forty-five minutes—and then Todd, Moncrieff, and McDowell, fresh men, who had just come into the mine, learning that Jardine and the three other men were down the dip, made a rush and brought back Jardine unconscious, but alive, and Duncan, who was then dead. Jardine ultimately recovered. When found, Jardine's lamp was burning brightly, thus negating the presence of black-damp in quantity. Nothing could then be immediately done to rescue Carson and Welsh, who were almost certainly dead, but Moncrieff and a Mr. A. R. Jackson, a storekeeper, but an experienced miner, who had formerly worked in the mine, obtained brattice and other kinds of cloth or sheeting, and blocked off all the openings in the road as far as the engine-station, and also blocked one opening a little beyond that point. They withdrew from the mine for some hours, and then they, with the assistance of others, at about 7.30 p.m., found Carson and Welsh quite dead, at the places marked on the plan. Moncrieff and Jackson, with the assistance of other men, worked all Saturday up to 1 a.m. on Sunday morning, and by that time efficiently blocked off the fire by stoppings across the main haulage-road.

11. As compensation to the relatives of the men who lost their lives the company has paid the sum of £2,200, with £225 costs.

#### THE PERSONAL CHARACTER OF THE MINE-MANAGER, JOHN LLOYD, HIS CONDUCT AT THE TIME OF THE DISASTER, AND HIS GENERAL COMPETENCY.

12. Lloyd is a man of intemperate habits, who has several times during the past few years had prohibition orders made against him. It is said, however, that since the disaster he has been a total abstainer, and his employers retain their confidence in him. He has passed no examination in mine-management, but obtained his certificate because he was actually in charge of a mine when the Act of 1886, providing for the issue of mine-managers' certificates, came into force. He is, however, a man of considerable intelligence, who has risen from the position of a working-miner to that of mine-manager. His employers evidently value his services highly. They have retained him in their employ for twenty-six years, and in June last were paying him £30 a month. Up to this disaster he had been very successful in winning all available coal at a minimum cost, and in making the mine remunerative to the owners.

13. On the evening of the 20th June he went to the house occupied by the Carsons, and before 10 p.m. had consumed the greater part of a bottle of whisky. He then went to sleep on a sofa in Carson's kitchen until about 3 a.m., when he left, and was proceeding to his own home when he met Dixon. Instead of going at once into the mine, he occupied from three-quarters of an hour to an hour in calling up three or four men. After five hours' sleep he was probably in appearance sober, but he would hardly be in the best condition to grapple with such an emergency as he was called on to meet.

14. *The Actual Disaster.*—When Lloyd entered the mine at 4.20 on Friday morning he should have withdrawn all men, made a careful and cautious examination, and only sent men to work when it had been ascertained that they could do so with safety. After sending Carson and Welsh down the dip, he

allowed far too long a time to elapse before ascertaining whether they were safe. He took more drink in the mine, and this, combined with the effect of the overnight potations and the foul air in the mine, incapacitated him from exercising sound judgment.

15. Omitting a number of details which do not affect the main issues, the foregoing narrative contains all essential matters relevant to the events leading up to the disaster.

16. Dealing with the twelve questions referred to us, we find—

- (1.) The deaths of the three men—Carson, Welsh, and Duncan—occurred in No. 1 Section of the mine belonging to the Nightcaps Coal Company (Limited), at Nightcaps, at the places marked on the accompanying plan, known in the mine as “Carson’s heading,” and were caused by poisonous gases—black-damp, or white-damp, or a mixture of both.
- (2.) The cause of the disaster was the disregard by the manager of all precautions, statutory and otherwise, for the safety of coal-miners in the conditions existing at the time, and sending the men into a poisonous atmosphere, and leaving them there for an unreasonably long time.
- (3.) The lights used in all parts of the mine at the time of the disaster were naked lights; no safety-lamps were used.
- (4.) An inquest was duly held into the cause of the deaths of the three men by a duly appointed Coroner. The inquiry was as full as could be expected under the circumstances. The jury were all business men, and none of them miners. As a fact, only three coal-miners were in the neighbourhood, other than the employees of the Nightcaps Coal Company (Limited). To this extent the provisions of section 62 of “The Coal-mines Act, 1905,” were disregarded. The verdict and recommendation of the jury were as follows: “That (1) William Duncan, Patrick Welsh, and William Short Carson died on the 21st June, 1907; (2) the cause of their respective deaths, according to medical testimony and other evidence, was due to the effects of ‘white-damp.’ *Rider*: The jury consider that due care was not exercised prior to the three deceased entering the dip, and recommend that safety-lamps be used for inspection, and that the Inspector of Mines insist upon the management complying with all the provisions of the Coal-mines Act in future.” We agree with the verdict and rider.
- (5.) The provisions of “The Coal-mines Act, 1905,” and the rules thereunder were not observed in the following particulars:—
  - (a.) *Ventilation*.—While the fan worked and before the fire assumed the mastery, the ventilation was usually sufficient, though at times, when the smoke from the fire increased, inconvenience was experienced. During the watch shift—viz., from midnight to 7.30 a.m.—the ventilation was insufficient.
  - (b.) *Lights*.—The provisions as to inspection with safety-lamps were constantly disregarded.
  - (c.) *Examination of Mine*.—The daily examination of the mine appears to have been an empty form. A stereotyped entry was made in the underviewer’s report-book to the effect that he “had examined all working-places and found all safe.” No mention is made of the fire or any operations connected therewith.
  - (d.) *Withdrawal of Workmen in Case of Danger*.—The men were not withdrawn from the mine when the fire increased and the presence of black-damp was evident. After the men had gathered at the opencast they were sent into the dangerous area without due precaution, although both Lysaght and Somerville had suffered from the effects of poisonous gas.

(e.) *Means of Escape in Case of Accidents.*—The means of escape were under ordinary conditions sufficient.

(f.) *Minor Matters.*—Sulphate-of-iron spray was not used or provided as required by section 39, subsection (2). Dressing-rooms were not provided (subsection 27), but as the men lived very near the mine this was not of importance.

17. *The Nature and Character of the Workings and General Management of the Mine.*—The workings may be summarised as pillar-and-bord workings with an opencast. From the owners' point of view the mine was well managed, every ton of available coal being taken out at a remunerative rate. In the matters mentioned in the preceding paragraph, laxity was shown in complying with the statutory requirements, and too great risks were incurred in the endeavour to save the loss of coal by sealing off the fiery area.

18. *The Competency of the Inspector of Mines.*—The Inspector, Mr. E. R. Green, is a well-trained and experienced man, with a competent knowledge of his duties, but in this instance he has not acted with sufficient caution and firmness. Mr. Green did himself grave injustice in the way he gave his evidence. He seemed to have to some extent lost his memory and judgment in the witness-box, and advanced theories to account for what actually happened which were plainly erroneous.

19. The Inspector has shown too much laxity in the following matters:—

- (a.) In not insisting on the use of safety-lamps for the daily examination of the working-places.
- (b.) In allowing, without protest, the withdrawal of pillars from within the fire area.
- (c.) In not insisting on proper stoppings being constructed so as to completely isolate the fire area from the other workings.
- (d.) In not insisting on entries being made in the report-books as to the condition of the fire.
- (e.) In not having the plans of the mine brought punctually up to date.
- (f.) In not apprehending the danger arising from the generation of firedamp, black-damp, and white-damp, and the almost certainty of such generation in the circumstances existing in the mine.

20. On the whole we do not consider him deserving of serious censure, but remissness in matters of detail adds to the probability of remissness in important matters. Mr. Green duly reported the existence of the previous fires and of the last fire in the mine to the Minister.

21. Mr. A. Forbes dissents from paragraph 18, regarding the competency of Mr. E. R. Green, Inspector of Mines for the Canterbury, Otago, and Southland districts, and substitutes the following as a minority report thereon: "18A. The incompetency of the Inspector of Mines is established by the fact that he knowingly permitted—(a) an isolated fire to be opened and the area to be worked for coal on the occasion of his visits of inspection in April and June, 1907; (b) defective fire-stoppings, constructed of 1 in. boards, to be erected in close proximity to the fire; (c) water-pipes to be laid partly in the return airway from the seat of the fire; (d) the mine officials to ignore the Act regarding faithful reports of the state of the mine, and to omit all reference to the fire; (e) the manager to neglect the daily examination of the mine with safety-lamps; (f) the manager to fail to comply with the law as regards mine-plan. As the result of the above inefficient inspection and management three lives were lost. The amount of the work the Inspector had to do in no way excuses incapacity. The quality of his work on the occasions of the inspections he made was bad, and the ignorance he displayed regarding mine-gases when giving evidence before the Commission proves him to be incompetent as an Inspector of Mines for the purpose of protecting the lives of the workmen. I further recommend (a) that Inspectors of Mines should be notified to observe the requirements of the Coal-mines Act; and (b) that, owing to the fear by the miners that by applying to the manager for permission to inspect a mine a man may lose his work, the check inspection of coal-mines has been entirely neglected, and it is very necessary that the Government employ, in addition to the Inspectors

already engaged, a Workmen's Inspector, not necessarily to hold a first-class certificate, who shall devote his time to the inspection of those mines which may be regarded as specially dangerous. Such an Inspector would be more likely to obtain correct information from the men regarding the inner workings of the mine and what takes place on the night-watch than the class of Inspectors at present employed, and to whom the miners are nervous of making complaints."

22. *The Competency of the Mine-manager, Officials, and Servants; and the Management and Working of the Mine.*—We have fully dealt with Mr. Lloyd's competency and character already. As his employers desire to retain his services, and it is stated that he has been an abstainer for more than three months, and in view of his twenty-six years of successful management without serious accident, we are not prepared to say he should be called upon to show cause why he should not be disqualified as a certificated mine-manager. It is, however, a matter that the Board of Examiners may deal with. The other officials of the mine were under the manager's orders, and cannot be held responsible for his defects.

23. *The Stoppings in the Mine.*—There are a large number of stoppings in No. 1 Section for ventilation purposes, but close to the fire new stoppings were specially constructed to exclude air from the fire. They were composed of wooden props 9 in. in diameter, placed 2 ft. apart and let into the roof and floor, with 1 in. boards nailed on each side of the props, and filled in between the boards with ashes; the joints between the edges of the boards being plastered with clay on the outside. These special stoppings were completed prior to the 20th June, and on that date the manager ordered three additional stoppings of a similar construction to be erected, but these were not completed. None of these stoppings were effectual as fire-stoppings, and there was not sufficient time to even complete the additional stoppings ordered on the 20th June.

24. *The Machinery and Appliances* were, we think, efficient; but we were unable to personally inspect those in the section of the mine in which the disaster occurred, because it was sealed off. The machinery and appliances in the open portion of the mine were efficient and sufficient.

25. *Suggestions for the Prevention of Similar Disasters, and for the Safe Working of this and other Mines in the Future.*—In accordance with Your Excellency's directions, we submit the following suggestions:—

- (a.) That wherever a fire occurs in a mine, the fire should be completely isolated by stoppings constructed at least 33 ft. from the nearest point of the fire. These stoppings should consist of either a double row of logs laid one on the top of the other from the floor to the roof, the logs to be let into the floor and the roof at least 1 ft., and the ends let into the sides of the pillars at least 18 in. The rows to be at least 4 ft. apart, filled tightly with ashes, sand, or clay. Or the stoppings should consist of brick or stone walls of sufficient thickness to resist the pressure of the superincumbent strata, and in every case wherever a fire is likely to become fierce a bank of sand or ashes should be placed within every stopping.
- (b.) That the report-books of the officials in every mine should contain ample reports of daily occurrences in the mine.
- (c.) That the provisions of the Act in respect to the use of safety-lamps be strictly enforced in all underground workings in coal-mines.
- (d.) Every Inspector should be required to make a record plan of the underground workings of every coal-mine in his district, and the provisions of section 51 of "The Coal-mines Act, 1905," should be strictly adhered to. That the copies of the plans forwarded to the Inspector, as required by that section, be every six months transferred to the record plan in the office of the Inspector, instead of the Inspector forwarding his record plan to the owner, agent, or manager of a mine to have the workings of the mine recorded thereon.

- (e.) Every Inspector of Mines should keep a journal in his office in which should be shown what work he has been engaged on day by day, and upon his return to his office from the inspection of any mine the Inspector should record in this journal full particulars of each inspection, and within the first seven days of each month every Inspector should forward to the Minister a summary of the entries in his journal for the preceding month.
- (f.) As the present Inspector is required to inspect 139 coal-mines in the Canterbury, Otago, and Southland districts, in addition to a large number of gold-mining claims and dredges, and as the coal-mining operations are rapidly extending, it is impossible for him to efficiently inspect the coal-mines, and your Commissioners would accordingly recommend that an additional officer should be appointed, who should be the holder of a first-class certificate of competency under "The Coal-mines Act, 1905."

26. *And generally to make inquiry into any matter or thing arising out of, or connected with, the several subjects of inquiry hereinbefore mentioned; or which, in our opinion, may be of assistance in fully ascertaining, explaining, and arriving at a fair and just conclusion in respect to the subjects of inquiry, and into the working of the existing law in respect to the prevention of similar disasters.*—As regards the working of the existing law in respect to the prevention of similar disasters and the better working in future of coal-mines generally, we submit the following suggestions:—

- (a.) There should be a Chief Inspector of Coal-mines for the Dominion, who should be a man of high qualifications, possessing experience both in New Zealand and Britain, or America. Each District Inspector should furnish to the Chief Inspector a monthly report, showing the work done during the previous month, and the conditions of each mine inspected. In the case of dangerous conditions arising, or any difficulty between the District Inspector and the owners, the Chief Inspector should personally visit the mine, and special power should be given such Chief Inspector to act promptly and effectively in order to remedy what might be amiss. Under the present system the Inspectors report annually to the Hon. the Minister of Mines, and this has led to matters being allowed to stand over which ought to have been dealt with at once. Without a Chief Inspector the Minister has no officer to whom to refer any matter, other than an Inspector of equal rank to the Inspector in whose district the difficulty occurs. A local Inspector, with no Chief Inspector to support him, is placed at times in a very difficult position. If he enforces the regulations, mine-owners may complain that the coal industry is being crippled by over-regulation, and, as it is impossible to prove that a disaster would have occurred but for the Inspector's caution, every averted catastrophe may be made the occasion for complaint against the Inspector's so-called timidity. The appointment of a Chief Health Officer has worked satisfactorily, and prevents the difficulties pointed out in the case of Inspectors of Coal-mines. This recommendation was made in the report of the Royal Commission appointed in 1900-1 to inquire into and report on the workings of the coal-mines of New Zealand. (As to this recommendation we are divided in opinion, the Chairman and Mr Forbes making it, and Messrs. Gordon and Elliott dissenting, as they are of opinion it would not be desirable to have an officer, with unlimited powers, between the District Inspector and the Minister.)
- (b.) It should be made compulsory by statute that wherever fire is discovered in a mine, the seat of the fire should be immediately completely isolated by efficient stoppings from all other workings in the mine.

- (c.) All underviewers, deputies, and firemen should pass examinations and receive certificates of competency from the Board of Examiners, and, before the Board issues a certificate, it should satisfy itself that the candidate is a person of good repute.
- (d.) In every mine where thirty or more men are employed the underviewer, deputies, or firemen should alone fire shots, and in every mine where the Inspector of Mines is of opinion that coaldust contributes towards explosions, the coaldust should either be sprayed with water or cleared out of the mine.
- (e.) Whenever any miner reports gas or any other danger to any official, such official shall at once enter such report in his report-book, with the date and time, and sign it. The official shall then read the report to the miner who gave the information, who shall also sign it.
- (f.) The adequate amount of ventilation in a mine provided by (b) of clause 1 of section 39 of the Act should be increased to not less than 200 ft. for every man and 600 ft. for every animal.
- (g.) Every Inspector or Assistant Inspector should be furnished with a special testing safety-lamp, which should show the half of 1 per cent. of methane gas in the mine.

#### SUMMARY.

27. We have the honour to report the results of our investigations to be as follows :—

- (a.) The disaster occurred in "Carson's heading" in No. 1 Section of the Nightcaps Colliery.
- (b.) The evidence shows that Duncan, Carson, and Welsh lost their lives by inhaling carbon-monoxide and carbon-dioxide gases.
- (c.) Only naked lights were used.
- (d.) The only previous inquiry was by a Coroner and a jury of six persons residing at Nightcaps, none of whom were coal-miners.
- (e.) The provisions of "The Coal-mines Act, 1905," the General Rules, and the Special Rules were not strictly complied with. There were no Additional Rules.
- (f.) There was considerable laxity in the management and general discipline of the mine.
- (g.) The Inspector has a competent knowledge of his duties, but he was lax in enforcing compliance with the requirements of the Act.
- (h.) The stoppings in the mine were not efficient stoppings for isolating the fire which led to the disaster.
- (i.) We believe the machinery and appliances were efficient and in good working-order.
- (j.) The report contains suggestions for the prevention, as far as possible, of similar disasters, and for the safer working in future of coal-mines generally.

28. We have made no order as to the costs of the inquiry.

29. We desire to bring under the notice of Your Excellency the names of the following men, who acted so conspicuously on the morning of the disaster in attempting to rescue their comrades at the risk of their own lives, viz. :—

William Jardine, deputy;  
 Thomas Todd, miner;  
 Thomas Moncrieff, miner;  
 Robert McDowell, miner;  
 Alexander Dempster, miner;  
 Robert Sheddon, miner; and  
 John Jobey, miner.

30. We would recommend them for some mark of approval of their gallant conduct.

31. In conclusion, we desire to acknowledge the assistance given to us during the inquiry by the learned counsel engaged, and the courtesy and ability shown by them throughout. Mr. L. E. Johnson ably and satisfactorily discharged the duties of secretary and reporter to the Commission.

Given under our hands and seals, at Wellington, this twenty-first day of October, one thousand nine hundred and seven.

|                   |        |
|-------------------|--------|
| W. R. HASELDEN.   | [L.S.] |
| H. J. H. ELLIOTT. | [L.S.] |
| HENRY A. GORDON.  | [L.S.] |
| ALEXANDER FORBES. | [L.S.] |

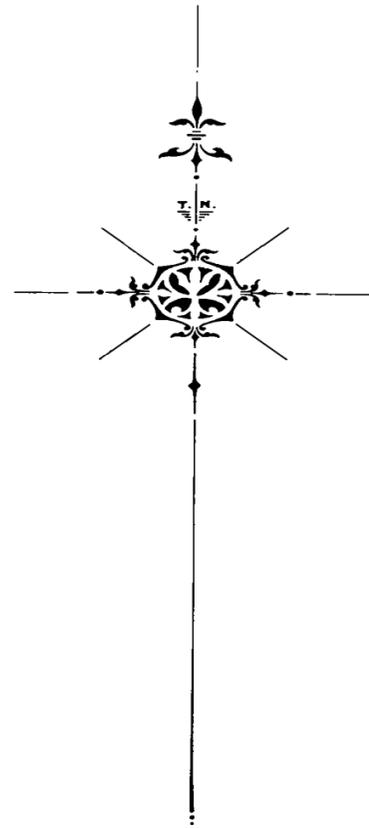
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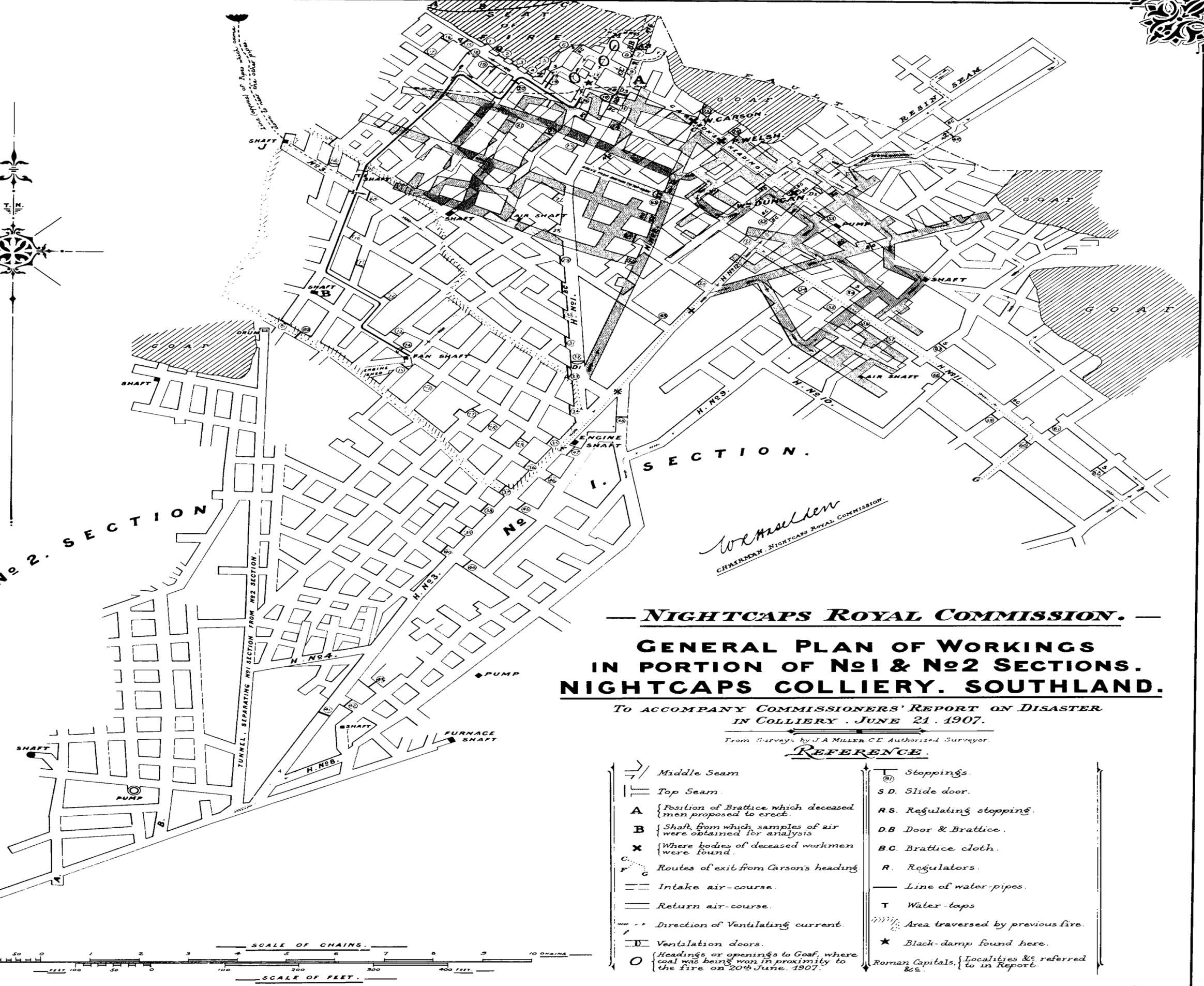
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No 2. SECTION

SECTION.



*W. Haselden*  
CHAIRMAN, NIGHTCAPS ROYAL COMMISSION

**— NIGHTCAPS ROYAL COMMISSION. —**  
**GENERAL PLAN OF WORKINGS**  
**IN PORTION OF No 1 & No 2 SECTIONS.**  
**NIGHTCAPS COLLIERY. SOUTHLAND.**

To ACCOMPANY COMMISSIONERS' REPORT ON DISASTER  
IN COLLIERY . JUNE 21 . 1907.

From Surveys, by J. A. MILLER, C.E. Authorized Surveyor.

**REFERENCE.**

- |          |  |             |   |
|----------|--|-------------|---|
|          | Middle Seam  |             | Stoppings.  |
|          | Top Seam.  |             | S.D. Slide door.  |
| <b>A</b> | { Position of Brattice which deceased men proposed to erect. | <b>R.S.</b> | Regulating stoppings.   |
| <b>B</b> | { Shaft from which samples of air were obtained for analysis | <b>D.B.</b> | Door & Brattice.  |
| <b>X</b> | { Where bodies of deceased workmen were found.               | <b>B.C.</b> | Brattice cloth.   |
| <b>C</b> | Routes of exit from Carson's heading                         | <b>R.</b>   | Regulators.   |
| <b>G</b> |  |             | Line of water-pipes.  |
|          | Intake air-course.   | <b>T</b>    | Water-taps  |
|          | Return air-course.   |             | Area traversed by previous fire.  |
|          | Direction of Ventilating current.                            | <b>*</b>    | Black-damp found here.  |
|          | Ventilating doors.   | <b>O</b>    | { Headings or openings to Goaf, where coal was being won in proximity to the fire on 20th June, 1907. |
|          | Roman Capitals, { Localities &c referred to in Report &c.    |             |   |



C.H. PIERARD - DELX.

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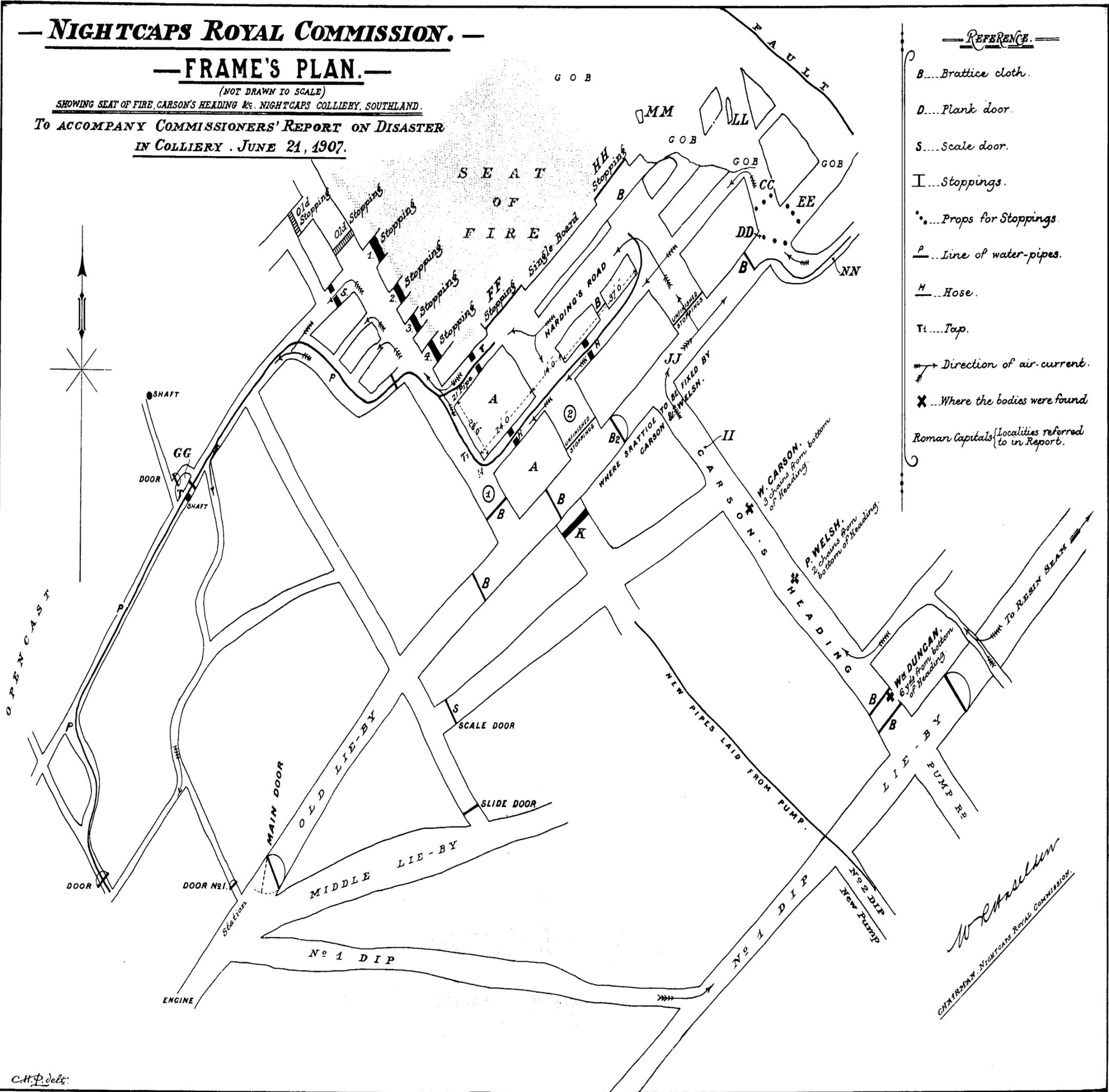
**— NIGHTCAPS ROYAL COMMISSION. —**

**— FRAME'S PLAN. —**

(NOT DRAWN TO SCALE)

SHOWING SEAT OF FIRE, CARSON'S HEADING & NIGHTCAPS COLLEERY, SOUTHLAND.

To ACCOMPANY COMMISSIONERS' REPORT ON DISASTER  
IN COLLIERY. JUNE 21, 1907.



**REFERENCE.**

- B... Brattice cloth.
- D... Plank door.
- S... Scale door.
- I... Stoppings.
- Props for Stoppings.
- P... Line of water-pipes.
- H... Hose.
- T... Tap.
- Direction of air-current.
- X... Where the bodies were found
- Roman Capitals { Localities referred to in Report.

*W. C. Jackson*  
CHAIRMAN, NIGHTCAPS ROYAL COMMISSION.

C.H.P. del.

