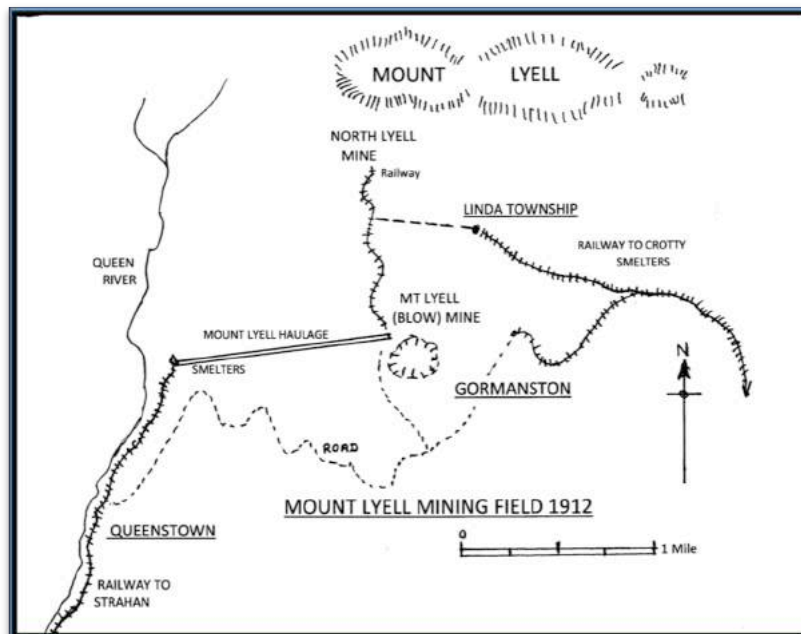


The North Mount Lyell disaster – a miscarriage of justice

By PETER SCHULZE¹

On Saturday 12th October 1912 a fire broke out in the 700-foot² level pump station at the North Mount Lyell underground copper mine in western Tasmania. Carbon monoxide poisoning from the fire killed 42 miners. The mine's only exit, the main shaft, became unusable when blocked by a jammed cage. The accident followed years of concern about safety and many fatalities,³ there had been a major strike and a number of walkouts. Unstable ground and the mine having only one exit were primary concerns of the workers, as well as by the wider public, the subject being featured in newspaper articles and debated in State Parliament. A Royal Commission established to inquire into the cause of the disaster dismissed evidence that the fire could have been the result of an electrical fault, despite evidence of previous electrical fires occurring in the 700-foot level pump station. That conclusion was reached after the Mount Lyell Mining and Railway Company (hereafter referred to as 'the Company') with their staff, their lawyers and other selected expert witnesses provided inaccurate or questionable evidence to the Commission.

Figure 1: *Mount Lyell mining field 1912.*



Source: Drawn by the author based on Mount Lyell Mining and Railway Company drawing 'Mount Lyell Mining Field 1900-1910' relevant features only used.

Company reports, announcements and detailed letters later attributed the fire to incendiarism by a miner. However, a careful study shows that there was no evidence to substantiate that claim. The assumed 'Incendiarism by a miner' was also the verdict perpetuated by Geoffrey Blainey in his book on the mine, *The Peaks of Lyell*.⁴ While

this version of events has become widely accepted, analysis of the evidence clearly shows that the most likely cause of the fire was an electrical fault in the pump station. This paper that sets out to counter the accepted verdict, provides an outline of the disaster followed by a summary of the general industrial circumstances existing at that time. Also discussed is the evidence taken and the findings of the Royal Commission set up to investigate the causes of the accident. The alleged evidence of ‘incendiarism’ is analysed and a technical appraisal made of the evidence presented by the Company’s expert witnesses.

A brief outline of the event⁵

On Saturday, 12th October 1912 at 8am, 169⁶ men went down the shaft into the underground mine. At 11am a fire in the 700-foot level Pump Station quickly filled the mine with smoke. Seventy-three miners were able to get out that day, leaving 96 unaccounted for. Rescue plans for these men were formulated, and work commenced in an attempt to clear a secondary shaft, called the Engine Winze. Work also started on clearing other openings through the upper levels of the mine. Four men escaped on the following day by the main shaft, leaving 92 miners still trapped underground. To add to the crisis, the cage in the shaft became stuck at the 600-foot level, closing off the only exit for men below that level. Rescue equipment and experienced firemen were rushed from the mainland and other parts of Tasmania.

Figure 2: *First men out of the North Lyell mine after the fire.*

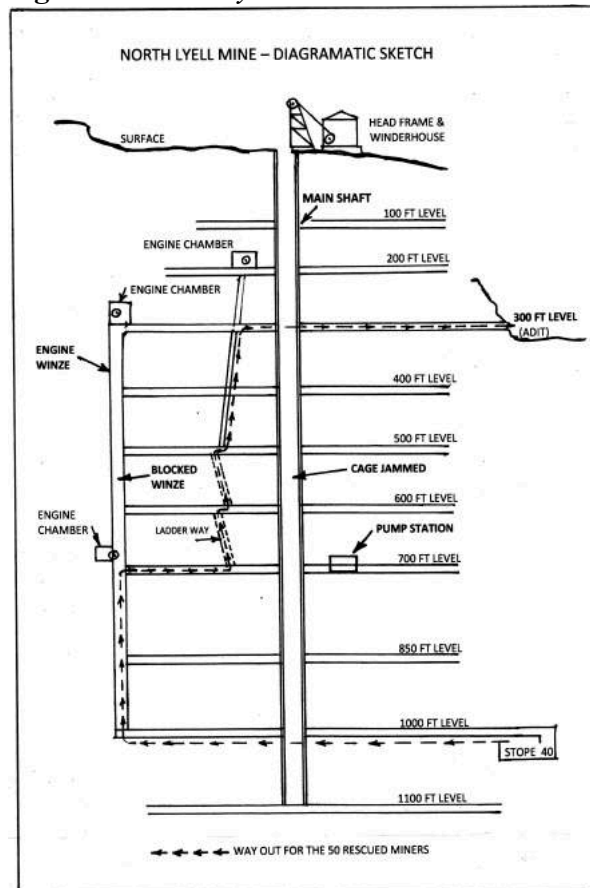


Source: West Coast Pioneers Memorial Museum, Zeehan.

By Monday the Engine Winze was opened. When rescuers descended, they found a number of bodies before being driven back by smoke. Meanwhile miners trying to free the cage at the 600-foot level inadvertently left a rope hanging down the shaft. Men trapped at the bottom of the mine saw this rope, tied a note to it, and opened communication with the surface.

Further rescue attempts early on Tuesday proved unsuccessful. However, later in the day, after Draeger breathing helmets arrived, another search found a number of miners dead at the 850-foot level. A fireman and miner were then lowered to the bottom levels of the mine where they found 50 survivors who had been kept alive by an air supply from surface compressors.

Figure 3: *North Lyell mine 1912.*



Source: Drawn by the author using basic plan, 'North Lyell Mine Disaster', Galley Museum Queenstown publication, n.d, p. 12. Additional details added and corrections made from descriptions of rescue given by the Mine manager and many of the rescued and detailed in various issues of the *Zeehan and Dundas Herald*.

On Wednesday a complex and difficult rescue operation lasting all day brought those survivors to the surface. After spending 109 hours underground in wet and cold conditions and without food, 50 miners were rescued. Unfortunately 42 miners had perished. Initial attempts to recover the bodies failed, and because the fire persisted, it was decided to flood the mine just 10 days after the fire commenced. This flooding was slow and the fire burnt itself out before water reached the pump station level. Another eight months passed before the last body was recovered.

Perhaps the greatest hero of the disaster was Albert Gadd, a miner who had been elected as one of the Union safety inspectors. Gadd, who had been at loggerheads with the Company over safety issues and was obviously disliked by the general manager, gave his all to help with the rescue operations. He was in the mine at the time of the fire

and, as was reported,⁷ he was cool and collected and practically took charge of the men on the 850-foot level when helping their escape.

Figure 4: Miner Albert Gadd



Source: West Coast Pioneers Memorial Museum, Zeehan.

On the next day, Sunday 13th October, Gadd was the first man to descend into the mine. He reached the 500-foot level without breathing equipment, and with the assistance of another miner he emptied an ore pass in an endeavour to create an exit from the mine. Smoke drove him out, but later that day he again went down to check the installation of ladders through the opening he had established. Sadly, Albert Gadd did not live to receive a bravery award. His exposure to the smoke seriously affected his health and he passed away on 19th February 1913 at the age of 30. He was posthumously awarded the Royal Humane Society's Clarke Gold Medal, the honour being accepted by his wife.

John Daniel ('Johnno') Pearton, a foreman in the adjacent Mount Lyell mine (known as the Blow Mine), immediately attended to assist at the North Lyell mine on that tragic Saturday afternoon. His presence there would have been of great value because those planning the rescue operations were the Company's senior staff and mines inspectors, none of whom had any practical underground experience or any detailed knowledge of the mine, those with the knowledge of the complex workings being the foremen who were trapped underground with their men.⁸ On Monday 14th October, before the breathing equipment arrived, Pearton accompanied the Mine Manager R.M. Murray and another miner, H. Williams, down to the Engine Winze at the 700-foot level but were driven back by smoke. In the early hours of Tuesday morning Superintendent Troussellot of the Hobart Fire Brigade descended the Engine Winze to the 700-foot level where he removed his helmet due to its weight. Pearton, who had guided him to the level, saw him collapse, and, although he had no helmet himself, rushed along the level and assisted him back to the winze. Pearton and M. Lonnegan did the whole of the work when bringing the 50 men up in the bucket through the very wet winze. This demanding task, conducted in difficult circumstances, took most of Wednesday.⁹ For his heroic efforts Pearton was awarded the

Figure 5: Mount Lyell mine foreman Johnno Pearton



Source: West Coast Pioneers Memorial Museum, Zeehan.

Mount Lyell Gold Medal and the Royal Humane Society Silver Medal and Certificate. In all, the Royal Humane Society awarded 32 medals and certificates for bravery during the rescue operation.

Background to the disaster

For many years prior to the disaster there had been major discord between the Company and its workers.¹⁰ There was a high fatality rate¹¹ in the mine and major concerns regarding its safety. A major strike¹² that lasted more than seven weeks occurred in 1911 with safety being one of the issues raised by the miners.¹³ The General Manager Robert Sticht was continually at loggerheads with the Federated Mining Employees' Association (hereafter referred to as 'the Union'), and Union representatives were dismissed on any pretext.¹⁴ In correspondence Sticht showed disdain for workers, describing one miner as 'an epileptic and incipient drunkard',¹⁵ and commonly used phrases such as, 'the usual derelicts' when referring to them.¹⁶ Mine Manager R.M. Murray also used disparaging terms, sometimes referring to workers as 'very low life'.¹⁷

After a miner was killed by a rock fall in June 1912, the men walked out of the mine. Such action is not uncommon on mining fields, but Sticht deemed the walkout 'mutinous behaviour of the local agitators' and 'flagrant violation of ordinary rules of discipline'.¹⁸ He stood down the entire workforce for having abandoned their employment, stating 'they were no longer in our employ'.¹⁹ Eleven miners whom he considered to be agitators were not re-engaged. This action came in the wake of another provocative action some months before the disaster when Sticht delayed allowing two miners to take part in mine inspections, despite State Legislation that authorised such participation.²⁰ He only relented when the chairman of the board intervened.

Figure 6: *Mount Lyell General Manager*



Source: West Coast Pioneers Memorial Museum, Zeehan

For some years a major concern of the miners and the Mines Department had been that the main shaft provided the only exit from the mine. Compounding the problem was that the shaft went through a section of unstable ground that was subject to movement.²¹ A secondary shaft, the Engine Winze, had collapsed years earlier in similar ground but Sticht failed to respond to pressures from either the Union or the Mines Department for the establishment of a replacement

second exit. The mines inspector, who for some time had wanted the Company to connect to the adjacent Blocks mine, found himself faced with various unsatisfactory delays causing him to consider placing an order for that work²² - an order that was only issued 14 days after the disaster.²³

Chief Inspector of Mines, W.H. Twelvetrees, advised the Secretary of Mines in a letter dated 5 October 1912,²⁴ that creep (slow ground movement) was a continuing problem in the mine, and referred to settlement in the ground that took place in May that same year at the 700-foot level. Twelvetrees noted that pressure had been observed in parts of the shaft and stated 'I cannot disguise my anxiety about the safety of the ground which is now being worked at Lyell'. He also pointed out that 'the history of the mine inspections at Lyell abounds in conflict between the management and the Inspector of Mines'. Outlining the history of rock falls and ground pressures, he warned that 'I do think that the safety of the mine is the fit subject for an immediate inquiry ... When men are afraid to work in a mine, its state may be taken as serious'.²⁵

In 1912, prior to the disaster, there had already been five fatalities in the mine because of rock falls, leading to a demand for more support timbering by the miners. Sticht disagreed, believing that the experienced miners lacked understanding of mine operations. In his opinion, only mining engineers possessed such knowledge.²⁶

Another serious concern frequently raised by the Mines Department and even debated in Parliament was the lack of water for sprays on the miners' drills.²⁷ Dust from rock drills was the primary cause of 'miner's disease' (silicosis), and many North Lyell mine workers had died an early and painful death as a result of being 'dusted'. The problem and its cause had been well documented and Victorian legislation forbade holes being drilled underground without a water jet spray being used.²⁸ While not directly related to the mine disaster, the Company's behaviour on the silicosis issue demonstrates its seeming disregard for the health and safety of employees.

High turnover of Company labour had for a long period been a major problem frequently addressed in correspondence with the board of directors, with the latter suspecting it was caused by safety issues. Tensions over this are clear in a four-page letter from the board to Sticht dated 11th October 1912, just one day before the tragedy:

The board feel that the last word has not yet been said with regard to the reasons for so many men leaving Lyell. From your letter it would appear that you have overlooked the fact that the men from Victorian mining centres were carefully and judiciously selected. These men only stayed a few months. It can hardly be considered that they were upset by alarmist rumours. The board still think there must be other reasons and it is their earnest desire to ascertain what these reasons are.²⁹

Clearly the board did not accept the reasons for the high turnover put forward by Sticht. The latter had always been unhappy about mine inspections in which miners participated, an opinion not shared by the board that admonished him on that matter, stating 'the directors are surprised that they were not informed earlier of the steps that were being taken by the men at the time the check inspectors were being appointed'.³⁰

It was apparent that the board was generally unhappy with Sticht's reports, because the letter indicated it had previously asked him to provide a report about mine safety following information supplied on that matter by Mine Manager R.M. Murray. Sticht had apparently indicated his reluctance to obtain an additional report to his own. The Board responded this was only 'an ordinary business precaution', and suggested that if Murray's report was 'not satisfactory' then further expert advice on the matter would be sought.³¹

Even before the accident, safety issues at the mine were a matter of wide public concern, attracting numerous media reports and debate in the State Parliament and causing the Minister for Mines to establish a Board of Inquiry comprising the Chief Inspectors of Mines from Tasmania, Victoria and New South Wales.³² Ironically, the chief inspectors arrived on the morning of the disaster and, while on the way to the mine site, they actually passed workers who had just escaped the fire. These members of the Board of Inquiry were met by a senior company official and immediately joined the General Manager and Mine Manager at the mine site.

The cause of the fire

It was apparent the senior Company officials initially believed the fire was caused by an electrical fault in the pump station. In a letter to the Secretary of Mines, Tasmania's Chief Inspector of Mines W.H. Twelvetrees stated that 'Surmises are to the effect that it [the fire] has something to do with the electrical installation'.³³ Twelvetrees' statement made shortly after his arrival at the mine site would have reflected the general consensus of those he was with at that time, those being Sticht, Murray, the other inspectors and mine rescue personnel.³⁴ That belief would have arisen from their general knowledge of previous fires in the pump station. In evidence given later to the Royal Commission, Murray indicated that he was aware that a hole had been burnt in the ceiling of the pump station some time earlier, and that the burning was believed to have originated from an electrical fault in a motor resistor.³⁵ He was also aware that the resistor had since been relocated further away from the ceiling after repair, as a precaution against a repeat occurrence. As a result of that fire, instructions were given to install asbestos on the ceiling, but evidence suggests that this work was never carried out.³⁶

A shift boss, John Ryan, was in the lower levels of the mine on the fateful day. He reportedly said shortly after his rescue that 'I knew as soon as I saw the smoke that it was the pump house on fire'.³⁷ Ryan later gave evidence to the Royal Commission, pointing out that a few years earlier he had helped put out a fire in the pump station that had been caused by an electrical cable blowing out at the point where it entered the pump motor. The cable, he stressed, had not been protected by a metal conduit but was enclosed in wood! Ryan believed a similar problem had occurred again. However, when giving evidence to the Royal Commission, he changed his story, saying he thought the smoke was from burning paper.³⁸ Adding weight to the supposition of an electrical fault was a report in the *Launceston Examiner* two days after the accident that stated: 'As far

as it can be ascertained at present, it appears that the fire started at the 700 ft. Level through the pump motor blowing out and igniting the timbers of the pump chamber'.³⁹

Despite these many indications showing the likely cause was an electrical fault in the pump station, such a finding was not in the interest of either the Company or the Mines Department, for it would have shown negligence on their part. Just prior to the commencement of the Royal Commission the local Inspector of Mines, Con Curtain, expressed concern about the electrical installation in the pump house coming under scrutiny and requested support for his objection.⁴⁰ In reply, the Secretary of Mines advised that the Solicitor General would be attending to watch proceedings.⁴¹ The Solicitor General did more than just watch; he sat with the Royal Commission, interrogated witnesses and provided an expert witness.

Writing to the Board of Directors, Sticht stated, 'I was also told that the police had satisfied themselves that the fire was not due to an electrical cause, but that they were looking for other causes'.⁴² Sticht's statement was without any foundation because the police would not have had the knowledge or experience to make such a comment. Quite apart from that, no one had been able to get anywhere near the source of the fire while it was still burning. Furthermore, the police had not even considered entering the mine. In fact, even inspection attempts by two miners with breathing equipment had failed. Making such a misleading comment to the Board suggests that Sticht was prepared to go to any length to dismiss an electrical fire as being the cause.

Further revealing the Company's concerns is a confidential report provided to its lawyers during the Royal Commission hearings:

An attempt will be made to attribute the sole cause of the fire to the electrical installation in the pump house and therefore although such an origin is so remote as to be practically impossible it must be fully discussed and elaborate experiments and reports in connection with the same have already been and are still being made.⁴³

This paper will show that those 'elaborate experiments and reports' were invalid and misleading. In the same confidential Company document a case was drawn up to indicate that incendiarism was the cause of the fire, with Robert Stone, a miner who worked on the 700 foot level, being named as the suspect. Stone was a union activist whose brother had been killed in a rock fall earlier in the year. Raising suspicion that he was to become the scapegoat is that the allegation was conjured up before the pump station was inspected and before any evidence was presented to the Royal Commission.

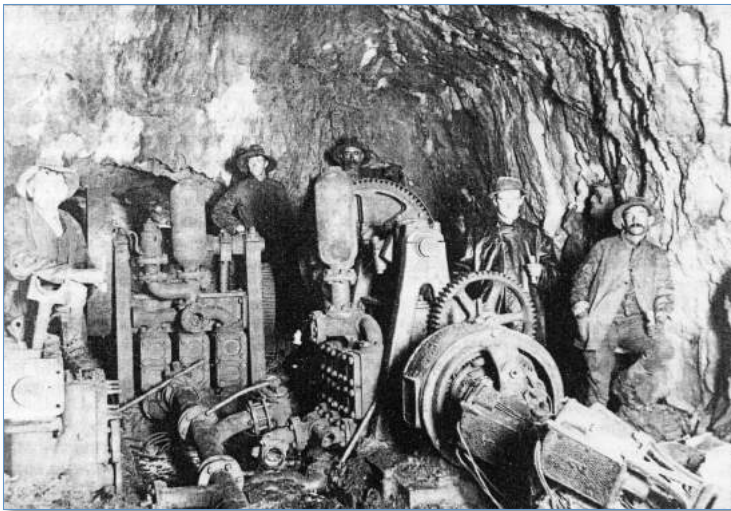
Since it had not taken adequate prevention measures following a number of previous fires in the pump station, the Company realised that a Royal Commission finding that the fire probably started from an electrical fault in the pump station could amount to a verdict of negligence on its part. Correspondence between Sticht and the Board and between the Board and the London Office regularly addressed the matter of compensation to workers, and expressed concern that should negligence be proven then civil action might be taken against the Company.⁴⁴ Every endeavour was made to convince the Commission that an electrical fire was impossible, and the spectre of incendiarism was constantly raised despite there being no supporting evidence. It is

clear that the Company had decided upon this course of action well before the pump station was inspected following the accident, and it sought to recruit ‘expert witnesses’ who would agree to that view before they even came on site.

Evidence to the Royal Commission⁴⁵

A Royal Commission was established on the 27th November 1912, just seven weeks after the fire commenced, it examined 54 witnesses and the hearings finished on 14th January 1913. The hearings operated like a court, and the process was adversarial with the Union and the Company each having its own legal representatives with the right to cross-examine. However, prior to the Commission’s establishment, the Company’s solicitors Butler, McIntyre and Butler expressed concern in a letter to Sticht that it was possible a certain individual with socialistic and labour views might be appointed as president of the Royal Commission. The Board instructed its solicitors to recommend its preferred appointee to the Government without delay, and while it is not known whether the appointment was the ‘preferred’ one, this was quite an improper attempt to influence the examination.⁴⁶

Figure 7: *The burnt out pump station after the fire*



Source: West Coast Pioneers Memorial Museum, Zeehan

Sitting with the Commissioners at the hearings was the Solicitor General who stated he was there as the Government representative. He cross-examined witnesses and was responsible for calling Frederick Medhurst, a former electrical Inspector for the Postmaster General’s Department in Tasmania. As noted below, Medhurst’s faulty

testimonies substantially influenced the Commission.⁴⁷ Such close involvement by a Government officer was highly irregular because inquiries of this nature were meant to be independent and at arm’s length from the Government, particularly when the Government was responsible for the regulation of the mining industry. Clearly there was a conflict of interest.⁴⁸ Adding to what appears to have been a biased approach by the Government, the General Manager of the mine declined to be a witness, while it is documented that ‘subpoenaed witnesses, generally the company workers and Union members, were ordered from the proceedings by the Royal Commission, with the exception of the Company expert witnesses and Mr Murray the Mine Manager’.⁴⁹ This enabled the expert witnesses to corroborate their evidence without any contradictory evidence forthcoming from the workers.

The primary issues considered by the Commission were the existence of alternative exits from the mine and the possibility of the fire being caused by an electrical fault in the pump station. On the former issue and prior to the disaster, Mine Foreman Cox had advised the Local Inspector that there were access ways through the upper stopes. When the Inspector found that was not the case, he hurriedly telegraphed the Chief Inspector and the Minister to correct his earlier letter,⁵⁰ though this information that would have cast great doubt on the veracity of Cox's evidence was not presented to the Commission when he later endeavoured to incriminate Robert Stone.

To validate the claim that there should have been more than one exit from the mine, Albert Gadd sought to testify about the unstable state of the ground and the insecurity of the main shaft⁵¹ but was prevented from doing so. The Company lawyer objected to such evidence being presented on the grounds that the pump station fire was the cause of the disaster, not the condition of the shaft. The Commission upheld that appeal.

Prior to the disaster and as a result of the miners' concerns, Sticht had written to the Minister for Mines advising that the Engine Winze had been reopened.⁵² This was false, and at the hearings all other parties testified that the Engine Winze was blocked. That letter was not presented to the Commission but it illustrates that Sticht was prepared to embellish the truth so as not to incriminate the Company.

Informed by both the Mines Inspector and the Union, the Company was well aware of the bad condition of the ground. The first report of the Workman's Inspection Group (of which Gadd was a member) carried out four days before the disaster noted, 'We find there is only one means of exit from the mine at present'⁵³. Later the Company acknowledged the problem in a letter to London Office stating:

for reasons of safety the engine winze work would have to be held up on account of danger signs in connection with an old subsidence between the engine winze and the main shaft at the 700 foot level.⁵⁴

The Royal Commission found that at the time of the disaster the only way out was the Main Shaft.⁵⁵ That shaft became blocked at the 700-foot level on the Sunday, the day after the fire started, and this blockage was most likely due to further ground movement. The cage guides dislodged, causing the cage to jam, and only months later were guide timbers cut back to enable the shaft to become serviceable.

It is perhaps ironic that while the Company had negligently failed to establish any of three proposed alternative exits before the disaster, all three tasks were carried out within two weeks of the fire starting. These were: laddering the stopes in the upper section of the mine; clearing the Engine Winze; and connecting the lower levels of the mine to the adjacent Blocks mine. Yet, perhaps indicative of the Commission's lack of concern or blindness at what today would be seen as a vital safety issue, was its preparedness to permit a Company witness to give and apparently accept evidence that single exit mines were acceptable!⁵⁶ Although the Company called this 'single exit acceptability' witness to provide evidence, Murray, the Mine Manager, earlier testified that there were a number of exits from the mine, despite his knowing these exits were not available at the time of the crisis.⁵⁷ Obviously trying to indicate that one exit was the

norm in mining was an attempt on the part of the Company to cover its own negligence and the distorted evidence presented to the Commission.⁵⁸

On the second major issue, that of the possibility of the fire being caused by an electrical fault in the pump station, seven employees:⁵⁹ miners; electrical tradesmen; and an electrical engineer testified about the general state of the station and about previous electrical fires. As previously mentioned, a fire above the auxiliary resistor had burnt a hole right through the timber lining, and as reported to the Commission, the burnt out resistor when returned after repairs, was relocated further away from the timber.⁶⁰ Another fire, it was reported, had occurred where the cable terminated at the pump motor and yet another in the control equipment. Evidence was also given about the electrical cabling being enclosed in timber rather than metal pipe as the regulations specified; that there was no fire fighting equipment in the pump station; and that it was unmanned. The Company did not refute any of these issues. Evidence was also given indicating that the motor fuses had been overloaded.⁶¹ It was also reported that water spraying from pipes sometimes caused problems when it got into the electrical gear.⁶²

An engineer with two-years previous electrical experience at the mine, James Kirkland, testified that he had witnessed the effects of a fire from a burnt out resistor. Upon examining the resistor⁶³ he discovered the wiring and motor protection did not comply with regulations, for the motor fuse was set for the starting current of the motor ‘and that would exceed the carrying capacity of the resistance and so the fuse would not save the resistance’.⁶⁴ This technically correct statement showed that he had a greater understanding of the electrics than was apparent among any of the expert witnesses. He understood that faults could occur in the starting equipment that would not be protected by the large motor fuses, thus confirming there were no control circuit fuses. His observation also explained why a faulty resistance continued to ‘flare’ until the switch was pulled, an incident also experienced and described to the Royal Commission by Richard Lonsdale.⁶⁵

This employee’s evidence was sound and credible, outlining faults that could generally be expected in the electrical equipment. Unfortunately the Royal Commission and the Union lawyer had no technical understanding and the Commission was prepared to give greater credence and regard to the faulty testimony given by the experts.

The Company’s expert witnesses on electrical fires were its chief electrical man Linden Harris, and the electrical engineer James Fraser, who had spent most of his working life in the USA and Canada. As earlier mentioned, the Attorney General provided a third expert witness, Frederick Medhurst. In addition, Murray gave considerable but very faulty evidence on how the electrical equipment in the pump station operated.

The biased and indeed collusive nature of the Company’s approach to finding the truth is well illustrated by the following two illustrations. When James Fraser was being considered as a witness by the Company, Sticht wrote to the Board: ‘Should he think that the alleged origin of the fire [electrical] is likely he will of course not be requested to come here to give evidence’.⁶⁶ From this it is clear that the Company required its witnesses to give evidence that precluded an electrical fault as being the cause of the

fire, this was before any potential witness had the opportunity to inspect the installation. Fraser would have realised the sort of evidence he was required to provide.

Again, Sticht wrote to the board on the 29th October 1912 to request that:

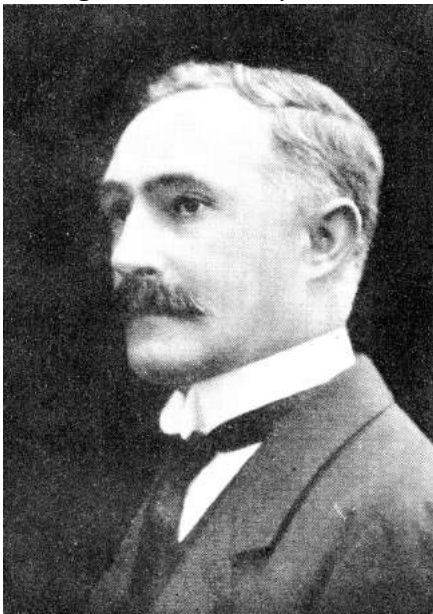
The Australian Metal Company [supplier of the pumps] send over their electrical expert [Mr Wright] as soon as possible to give an opinion on the subject of the possible origin of the fire due to an electrical disturbance. *We wish to have him here to fortify our own opinion* [author's emphasis].⁶⁷

However, concern was voiced by Sticht to the board when referring to the Australian Metal Companies reply of 19th October, where it was obvious that Wright as an expert witness would not give the evidence they required⁶⁸ - Wright was not engaged. Clearly the Company only selected expert witnesses who did not hold that an electrical fault could have caused the fire.

General evidence given by the Company's experts was also seriously flawed. For example, Linden Harris stated that 'it is impossible for the Resistances to be overloaded and I regard King Billy Pine as non flammable'. He also claimed that 'If an arc occurred and touched oily waste it would not set it alight', and that 'a fire electrically was absolutely impossible'.⁶⁹

Another example is contained in the evidence of James Fraser, whose inaccuracies included claims that 'you could not get an overload in the resistance', that 'water would not hurt the insulation about a motor', and that 'the motors were started by manual labour'.⁷⁰ All were incorrect claims.

Figure 8: *Mount Lyell Mine*
Manager R.M. Murray



Source: West Coast Pioneers
Memorial Museum, Zeehan

Frederick Medhurst stated that 'conditions in regard to the resistances made a fire impossible'. Not only is this statement technically incorrect but there was substantial evidence submitted to the commission about previous fires in such resistances. Medhurst also provided the slanted opinion that: 'rules are only there to protect the trade',⁷¹ when it was recognised that the rules were set for the safety of men and equipment.

When R.M. Murray was asked whether the motors were enclosed, he stated: 'Slipring and squirrel cage enclose the motors'.⁷² In fact, the motors were not an enclosed type, nor were they squirrel cage motors (a squirrel cage is a type of winding in the motor's rotor). When asked: 'Would that keep the moisture from the brushes', he said: 'The squirrel cage encloses the rotor, there are no brushes'. The motor *did* have brushes as do all slipring motors, making his ignorance on such matters even more apparent. The fact that Murray

was selected to explain the technical operation of the pump station rather than the expert witnesses who would have had a better understanding of those things meant that the true

pump operating details were never given in evidence. To do so would have exposed the reality that electrical fires were indeed possible, and not impossible, as contended by the experts. Murray's faulted evidence was not tested in any real way, either by the lawyers or by the Commission.

While clearly aware of the Company's flawed testimony, Wise, the Union's lawyer, lacked the technical understanding or legal ability to expose those aforementioned flaws. The evidence from all the Company's experts lacked both technical and practical credibility but was never properly tested. It is likely, as their faulty evidence suggests, that the experts did not fully understand the pump station's electrical operation. They also remained mute on matters that may have revealed an electrical cause for the fire. It was left to Murray to give the technical explanations, and social deference probably explains why he was not cross-examined on these matters⁷³.

When summing up, the Company lawyer read a section of a book, *Electricity for Everybody*,⁷⁴ [that expressed the belief that electricity-causing fires was a fiction spread by newspapers. He further suggested that electricity could not have been a cause of the fire when emphasising that people were inclined to believe whatever they saw in print⁷⁵.

Findings of the Royal Commission⁷⁶

The Report of the Royal Commission was short and essentially returned an open finding. The Report stated 'the attempt to prove that the fire was caused by a defect in the electrical installation fails', and 'The reports of the experts are unanimous that the fire was not electrically caused in the pump house'. In addition it found 'Mr Medhurst's evidence was particularly useful'.⁷⁷ Having decided that the fire could not have been due to an electrical fault, the Commission dismissed the Company's non-compliance with the electrical regulations as irrelevant.

The Commission apparently did not accept the considerable volume of evidence on previous electrical fires that was presented at the inquiry. It accepted that there had been one fire only and that its origin was inconclusive. Yet a Company report from Medhurst acknowledged three electrical fires.⁷⁸ There was also a fourth electrical fire at a motor terminal box described to the Commission by shift boss Ryan.⁷⁹ The testimony of the Company's expert witnesses was not tested, merely accepted. On the other hand workers who testified were rigorously cross-examined and at times spoken to in a demeaning way,⁸⁰ a difference in treatment that most likely reflected the class structure of the time.⁸¹

By accepting the evidence of the experts, the Commission rejected the far more valid evidence of other employees who showed that they had a far better understanding of how the pumps operated. The Commission's findings suggest that it considered 'experts' to be truthful and the miners untruthful.

The Royal Commission noted in its findings that 'It was suggested by counsel for the mine owners that certain incidents deposed to indicate the possibility of incendiarism'. A miner, Robert Stone, was the implied incendiary. The Royal Commission was wrong to both allow such a damaging suggestion to go on record without evidence being tendered and to allow Robert Stone to be named in its papers.⁸²

This perpetuated the idea that incendiarism was the likely cause of the fire, and it scurrilously and adversely reflected upon Stone's character. However, a contradiction is noted, for the Commission also concluded 'we find no evidence of any sinister or careless act causing the fire on the part of anyone'!

Perhaps it is not surprising to find in a letter to its London office, the Company applauded the Commission's findings:

in every respect the report is a satisfactory one to the Company. The Company's position has been vindicated and its officers exonerated from blame --- every one of the charges has failed. --- strenuous efforts were made to get the Commissioners to believe that the fire was due to the electrical installation, and it is gratifying that the Commissioners have expressed themselves so emphatically on this point --- It does not appear that there is anything that can be taken as strengthening the claims of the Union to compensation, apart from the Workers Compensation Act. This is a matter of great importance to the Company financially --- It is evident that the Commissioners looked upon it as a stand up fight between the Union and the Company --- It is evident that they appreciated the assistance we were able to render them.⁸³

Unfortunately for the workers, it is apparent that the Union's lawyer lacked the technical knowledge to identify the many flaws in the evidence. His performance is best summarised in a Company letter to London Office dated 23 January 1913.

It may be said without any hesitation that the general opinion of all who have followed the matter with interest is that the case for the Miners Association was badly conducted.- Mr Wise made blunder after blunder in regard to the electrical evidence and on innumerable occasions misquoted the evidence given by witnesses on both sides.⁸⁴

A letter from the Minister for Mines congratulated the company on the outcome stating 'They [the Royal Commission] clearly exonerate your Company from the more or less vague, but too often unscrupulous and cruel, allegations made at the time of the disaster chiefly by irresponsible persons'.⁸⁵ However, it is difficult to identify any such allegations in the transcripts of the Royal Commission, perhaps again indicating the bias of the Commission in favour of the Company.

The Blainey view

In *The Peaks of Lyell*, Geoffrey Blainey determined that the fire in the pump station was due to incendiarism perpetrated by a miner. Blainey did not name the miner, but Robert Stone was implied. To understand why Blainey reached this conclusion we first must gain some understanding of the circumstances that existed at the time he wrote the book.

The Mount Lyell Company commissioned Blainey to write its history in 1952, when he was just 22 years old, and it took two and a half years with much of that time being spent in Queenstown. The first publication of *The Peaks of Lyell* was in 1954. At a conference in Queenstown in 2008,⁸⁶ Blainey stated that he had some initial

difficulties in accessing all the records at the time he was writing. It would have been natural for the Company to have been reticent to disclose material that may have shown it in a bad light. It was also in a good position to rigorously put its own spin on events and so mould the view of the writer whom it employed.

In his book Blainey adopted the Company's derogatory language when describing the workers, for example, 'agitator', 'shirker', 'slovens'.⁸⁷ He was also quick to expose the shortcomings of the workers and rarely focussed on the shortcomings of the Company.

While Blainey stated in his book that the evidence against the agitator was the 'barest fabric', he then added that, 'the guilt of the subject should not be magnified. He could not foresee the consequences' and 'perhaps he justified his action'.⁸⁸ Blainey clearly found the accused guilty and persuades the reader to accept that point of view.

Each matter considered by Blainey as evidence for incendiarism closely reflects the writings contained in a 13-page Company report titled 'Notes in Connection with the Fire Disaster at North Mount Lyell Mine 12th October 1912'.⁸⁹ Each of these matters is now carefully analysed.

- *It was claimed Cotton waste had been found at the Mount Lyell mine some weeks after the fire commenced*⁹⁰.

Blainey wrote that 'Officials of the mine were satisfied that the waste was deliberately placed there to kindle a fire'.⁹¹ However, when interviewed at the time, Mine Manager Murray stated that 'I could not say it was placed there with malicious intention'.⁹² Murray suggested that an employee, intending to later take it home, might have placed it there. The foreman at the Mount Lyell mine Johnno Pearton said: 'I do not know much about it. I did not see it myself'.⁹³ Pearton's statement conflicts with the report Sticht made to the Board in which he claimed that Pearton found the waste some days before he reported it.⁹⁴ Sticht stated that Pearton and a shift boss named Hollow had found it on Friday 8th November!

The *Zeehan and Dundas Herald* of 11th November 1912 reported that 'The police, it was made to appear were suddenly called and on going below were shown a quantity of cotton waste at a spot where it had no right to be'.⁹⁵ The words 'it was made to appear' casts doubt on the authenticity of the whole affair. The report indicated that the police questioned many of the miners but that none had seen the material. In other newspapers at the time it was reported that the police did not attach any significance to the matter.

It has been erroneously believed and often reported that the cotton waste was found in the North Lyell mine where the disaster occurred.⁹⁶ In fact it was found in the Mount Lyell (Blow) mine, situated almost two kilometres from the North Lyell mine.⁹⁷ Robert Stone did not work in that mine. Any claim that cotton waste found in the Mount Lyell mine was evidence of incendiarism by Robert Stone or any other miner who worked in the North Lyell mine is clearly invalid.

- *'The underground foreman noticed that the agitator [Stone] and his mate [Knight] were absent from their working place in the drive'*.⁹⁸

It would seem that this statement made by Blainey arose from evidence given by foreman Cox to the Royal Commission. Cox stated ‘I know that Stone and Knight were not in their usual place on the day of the accident’.⁹⁹ Timekeeper Gillies testified that he saw Stone and Knight in their work area on more than one occasion during that day.¹⁰⁰ There were many people coming and going that morning on the 700-foot level, and while there was confusion at the time and some conflicting evidence, a number of witnesses testified to the presence of Stone and Knight.

Cox had made several incorrect statements about the North Lyell mine. Prior to the disaster he had misled the local Mines Inspector by claiming there were a number of exits from the mine through the upper levels.¹⁰¹ In evidence to the Royal Commission, Cox again claimed that additional mine exits existed. When it was pointed out to him that his testimony disagreed with that given by seven other witnesses he said: ‘it depends on what side you are on as to what men will say’.¹⁰² From that it was clear that Cox was a loyal Company staff employee. Cox also told the Royal Commission ‘That he had no complaints from any of the men about a second exit or as to any part of the mine being dangerous’.¹⁰³ That is difficult to believe, because concern about the absence of alternative exits had been aired widely by the unions, reported in the newspapers, been the subject of concern by the Mines Department and had been debated in the State Parliament. Concern about the safety of the mine was obviously a reason that so many miners were leaving the field. Cox would have known all those things, and while there was no doubt about him being a loyal staff employee, he certainly could not be regarded as a reliable witness. Moreover, even if the claim made by Cox to the Royal Commission was true it could not be regarded as evidence of Stone being an incendiary.

- *Blainey claimed that the suspect’s actions when leaving the mine on that fateful Saturday were suspicious. In his initial thesis Blainey described those actions as incriminating.*¹⁰⁴

When Stone and 78 others got out of the mine it was fast filling with smoke. He immediately went to the timekeeper near the mine entrance and requested that doctors be called. Blainey cast suspicion on Stone’s subsequent action of proceeding to the Post Office to advise his union representative of the fire. Blainey considered that Stone should have returned to the mine to try and warn the men below or assist men out of the cage. At that time, both smoke and miners were pouring out of the mine from a relatively small exit. Going back against the human tide would not have been very helpful and possibly dangerous, and there is no evidence of any other miner doing so. Stone’s actions when leaving the mine were perfectly reasonable and normal in the circumstances, and those actions do not constitute evidence of incendiarism.

Blainey stated that ‘the evidence that did not come before the Royal Commission offers the only feasible explanation of the fire’. However, when properly analysed, the evidence that was presented to the Commission *does* provide a very feasible and likely explanation. In fairness, both Blainey and the Royal Commission were short on the technical skills required to identify the grossly flawed evidence that had been submitted.

When Blainey was in Queenstown writing *The Peaks of Lyell*, Mine Manager G.F. Hudspeth wrote to him,

I am not altogether happy about the frank analysis of its [the North Lyell disaster's] causes in Chapter 22. The evidence disclosed has not previously been made public. I have no personal objections but think the matter should be considered carefully and also an assurance obtained that there can be no legal repercussions'.¹⁰⁵ There was clearly a concern that these matters might not have stood up under scrutiny.

Electrical fires and analysis of the evidence given by the Company experts

In 1912 electrical fires were not uncommon in mines and in other spheres, and even today statistics show that 20 per cent of fires are caused by electrical faults.¹⁰⁶ The electrical equipment in the North Lyell mine pump station was particularly vulnerable. The motors were an open type in which the windings were quite exposed. That type of motor is not permitted in such locations today. The switch gear was mounted on timber, not a desired practice and the walls and ceiling were clad in King William Pine. The electrical cables running from the switch gear to the motor and to other devices were not enclosed in metallic conduits as required by regulation, but in a flammable timber. One fire described by Shift Boss Ryan was at the motor terminal box and spread along the cable that was encased in timber. The intensity of the fire diminished when the main switch was pulled. The point where the supply cables are connected to the motor terminals is a common spot for electrical overheating and for faults to occur. This is due to the holding nuts not being sufficiently tightened, or because with time the tension is lost. Thus Ryan's evidence was technically sound and coming from a staff man who generally had supported the company, quite believable. Medhurst, an expert witness, when questioned about this matter said that such connections should only be inspected visually and not tested mechanically. This approach was not good engineering then, and only would be now if infra-red heat detecting equipment was used. Wiring diagrams indicate that the auxiliary circuits were not separately fused. In those circumstances any fault occurring in the circuit or in its components would have probably caused serious overheating and fire. The fault current may not have been sufficient to blow the motor supply fuse, yet may have allowed sufficient energy to flow and start a fire.

It should be understood that with a short circuit fault occurring in the auxiliary resistor, the solenoid that is in series with that resistor acts as a choke and limits the current. The current would be less than required to blow the main motor fuse yet high enough to generate considerable heat in a small region for an indefinite time. Once a fault occurs, the relatively high voltage (550 volt) would be capable of sustaining an electrical arc. This explains the continuous flaring that took place in the auxiliary resistance. Lonsdale reported that the flaring was too bright to look at and only stopped when the switch was opened.

Other electrical fires reported in the pump station were one in the starter panel and another on the terminal strip of an auxiliary resistance. These are the type of faults that would be common with equipment used at the time. Far more sophisticated protection equipment is used today, and in addition to fuses we see circuit breakers often used, and invariably, thermal protection is provided. Even so there are still numerous electrical fires, thus making it more likely that in the early 20th century the likelihood of the Mt

Lyell fire being started by an electrical fault would have been highly likely, especially when the evidence is weighed up, for in addition to the flawed evidence detailed previously, there were three major technical flaws in the evidence presented by the experts.

1. Medhurst stated: ‘there had been no overload on the wires’. This claim was made after his inspection of the burnt out pump station. Overload currents that pass through a cable do not normally leave any detectable evidence. Cables are rated to pass fault currents at around 10 times their normal current carrying capacity for five seconds without causing any deterioration or observable signs. The amount of energy feeding a fault can therefore be substantial and certainly of fire initiating proportion yet leave no detectable evidence on the supply cable. Had there been an overload on any cable it could not have been detected.

2. The expert witnesses, Linden Harris, James Frazer and Frederick Medhurst all contended that fuses would always blow before a fire could be initiated. A fuse of the type used at the mine will pass around three times its rated current for five seconds before it blows, and that current generates a high energy input to a fault, again of fire-initiating proportions. On the 25th October 1912, well before the pump station was even inspected, Sticht made the following fallacious claim in a letter to the board: ‘The internal safety devices in the appliances absolutely prevented any ignition of the surrounding timber because they instantaneously shut off the power altogether’.¹⁰⁷ This simply does not happen. Fuses are not instantaneous. If such were the case electrical fires would be a rarity. Even today with far better protection devices electrical fires are common.¹⁰⁸

3. The inspection of the pump house by the experts after the fire was deficient. The experts stated that there was no evidence of any electrical fault, yet clearly there had been a massive electrical fault that blew the 700-amp fuses on the main feeder into the mine.¹⁰⁹ The winder driver opened the main switch as soon as he was aware there was a fire in the mine, but it was subsequently determined that the fuses had already blown.¹¹⁰ Evidence of that was not in dispute. It is difficult to determine whether the fault that blew those fuses was the cause of the fire or whether the fire caused the fault. A large fault, however, did occur and the experts failed to identify its location.

The Company carried out various electrical tests in the workshop and submitted the results to the Royal Commission. One test was to pass current through an auxiliary resistor to show that there was no significant heat generation. This test simply emulated normal working conditions and did not simulate what would happen with either an open circuit or short circuit fault in the resistor itself, or defects in other circuit components. Such faults would allow an electric arc to establish with a concentrated heat point.

Tests were also carried out to demonstrate that the heat generated in the fuse was insufficient to cause a fire by passing high currents through fuses till they blew. This test, while quite valid for the fuse itself, did not show what effect that current might have had on other components connected to a fused circuit.

The Royal Commission was quite impressed and influenced by the tests,¹¹¹ but they were a non-technical group, as were the Union’s lawyers, all being unable to effectively appraise the effectiveness or validity of the tests.

Conclusion

The Company's mining operation was not safe, as illustrated by the 16 mining fatalities that occurred on the mining lease in the previous six years. The Company did not respond to the requests of the Mine Inspector and the Unions for the provision of an additional exit. The Company, the Inspector and the Unions knew that the shaft was in bad ground. Had the engine winze been open it would have provided an escape way with less smoke than the non-functioning main shaft.

The evidence given by the Company's electrical experts was flawed and orchestrated to mislead. Excluding an electrical fault as a likely cause of the fire was largely a result of the lack of expertise in the defence lawyer and the Commission itself. On the balance of probability the October 1912 tragedy was the result of an electrical fire. It was improper for the Royal Commission to allow innuendos of incendiarism and the name of the suspect to be recorded in their proceedings when there was no supporting evidence.

There was no evidence of criminal negligence by the Company, but it was careless in failing to provide a second exit and in not addressing the causes of previous fires. These deficiencies may have led to successful civil action and significantly more compensation would have been paid to the victims and their families. The amounts paid under the provision of workers compensation legislation and the Disaster Relief Fund were generally low, being roughly equivalent to one year's earnings for a miner.

For the families of North Lyell fire victims, justice was not served. This was not just a case of the Company's legal defence denying families potential financial compensation. In order to avoid possible prosecution, the Company unjustly accused Robert Stone of incendiarism and belittled employees who testified to the Royal Commission. Those who died in the service of the Company, those who survived the fire and the families of both groups deserved better treatment and understanding.

The aftermath.

The Union had considered civil action, but because of the Royal Commission findings and a shortage of funds it saw little hope of a positive outcome. It had been necessary for the Union to place a levy on the miners so they could be represented at the Royal Commission. The upside for them was that the mine soon reopened and employment was assured.

Sticht found himself out of favour with the board for his poor management of the mine before the disaster, and while he still held the position of General Manager until his retirement in 1921, he was obviously sidelined, with Basil Sawyer being employed to run the mining operation. Sawyer's engagement by the board was without any consultation with Sticht.¹¹²

After the disaster, as before, Sticht still wanted to rebuild the pump station using timber and a pine lining, apparently to validate claims that it was a safe installation. However, the board overrode him and insisted that it be reconstructed in concrete.¹¹³

The positive outcome of the disaster was that it prompted a major change in the way the Company operated, it being accepted that there had been problems with the

mine and its management. From that time on the Company improved conditions in the mine and living conditions for its workers. There was help with housing, power and firewood, recreation clubs were built and a holiday camp established at Strahan. The Company assisted with schools and provided health benefits for the workers.¹¹⁴ R.M. Murray, a great humanitarian who later served as both Mount Lyell General Manager and local mayor, planned many of those changes even before all the bodies were recovered from the mine. Instead of lagging in the provision of a safe work place and good living conditions for its workers the Company led the way, setting a fine example for the Australian mining industry for the next 53 years.

Endnotes

¹ As an electrical engineer with the Mount Lyell Company for 26 years, the author is familiar with the old style electrical equipment and the North Lyell Mine itself and is qualified to carry out a professional analysis of the technical aspects of the fire.

² 1 foot = 0.3048 metres.

³ Indicated in 'Deaths in Tasmanian Mines', compiled from Tasmanian Parliamentary Papers 1907-12.

⁴ Geoffrey Blainey, *The Peaks of Lyell*, 2nd edn, MUP, Melbourne, 1959. It might be noted that the author was fortunate to have access to all Company documents as they had been placed in the MU Archives after Mount Lyell was taken over in the 60's. Blainey did not have that facility when he wrote the Peaks of Lyell.

⁵ This section of the report is drawn from evidence provided to the Royal Commission and published in the *Zeehan and Dundas Herald*, during the period 14 – 17 October 1912.

⁶ This figure varies in different accounts of the disaster. The figures used in this report are from the Company's Annual Report dated 14 November 1912, Mount Lyell Company Papers, Melbourne University Archives [MLC-MUA].

⁷ Full details given in *Royal Humane Society of Australia* Annual Report, no. 2863, 1914, p. 34.

⁸ *Zeehan and Dundas Herald*, 14 October 1912, lists members at the mine planning the rescue, also some information is given in W.H. Twelvetrees, 'North Lyell Mining Disaster Field Notes', Tasmanian Mines Department.

⁹ R.M. Murray, cited by David L Hopkins, in *The Golden Years of Tasmania*, St John's Park, Hobart, 1991, p. 91.

¹⁰ Considerable evidence of this discord is contained in Blainey, *The Peaks of Lyell*, and in Charlie Fox, 'Through Engineers Eyes: courage safety and the Mt Lyell disasters of 1912', *Tasmanian Research Association Papers and Proceedings*, vol. 344, no. 2, 1997.

¹¹ 'Deaths in Tasmanian Mines', table compiled by Ian Parker from Tasmanian Parliamentary Papers 1907-12, in 'The North Lyell Mining Disaster' (unpublished paper in author's possession).

¹² The strike of 1911 is detailed in Blainey, *The Peaks of Lyell*, pp. 198-203.

¹³ The prime reason for the strike was claimed to be over working excessive hours and the ultimate outcome was that the Company agreed that contract miners work no more than eight hours a day. The Company also promised to discuss other grievances that included safety issues. The eight-hour day never really eventuated, as the men liked longer hours to increase earnings. The workers unrest really arose from jealousies between the contract miners and miners not getting contract work.

¹⁴ Blainey, *The Peaks of Lyell*, p. 195: 'He expelled most of the leading unionists no matter whether they were industrious miners or mere slovens'.

¹⁵ Sticht to Secretary, 1 October 1912, General Managers Correspondence, 5/1/1 5/1/1, MLC-MUA.

¹⁶ Fox, 'Through Engineers Eyes', p. 144.

¹⁷ *Ibid.*

¹⁸ Sticht to Secretary, 1 March 1912, 5/1/1 GMC MLC, MUA.

¹⁹ *Ibid.*

²⁰ A series of letters between Mount Lyell and the Mines Department, NS1711/821, Mt Lyell Collection, Tasmanian Archive and Heritage Office (hereafter MLC-TAHO).

²¹ Inspection report by Gadd and Simons 7-8 October 1912, in Union Letter to Mines Department, 10 June 1912, NS1711/821, MLC-TAHO.

²² Chief Inspector of Mines to Secretary for Mines 21 November 1912, NS 1711/821, MLC-TAHO. There are numerous other letters in this file concerning Blocks mine exits.

²³ NS1711/821, MLC-TAHO.

²⁴ *Ibid.*

²⁵ *Ibid.*

²⁶ See Fox, 'Through Engineers Eyes', particularly p.144.

²⁷ Curtain to Twelvetrees, 13 June 1912, NS1711/821, MLC-TAHO, indicates that no water was available for the drills; A Union letter to the Mines Department, 10 June 1912, in the same file, complains about this, as does a miners' inspection report dated 7-8 October 1912.

²⁸ Yolande Collins and Sandra Kippen, ' "A social disease with medical aspects": Miners' phthisis and the politics of occupational health in Bendigo, 1880s-1910', *Journal of Australasian Mining History*, vol. 6, September 2008, p. 76.

²⁹ Mount Lyell Company Board to Sticht, 9 October 1912, 5/1/1, MLC-MUA.

³⁰ *Ibid.*

³¹ *Ibid.*

³² Letters from Minister for Mines to Sticht and the Union 10 October 1912, NS1711/821, MLC-TAHO.

³³ Twelvetrees to Secretary of Mines, 13 October 1912, was printed in the *Zeehan and Dundas Herald*, 19 October 1912, p. 2.

³⁴ Those at the mine were listed in the *Zeehan and Dundas Herald*, 14 October 1912, p. 18.

³⁵ Murray's evidence to the Royal Commission, Royal Commission Transcript [RCT], NS1711/420, p. 214, TAHO.

³⁶ In a document titled 'Notes supplied by Mr Murray re former fire in the Pump-house', Murray stated 'the resistance was shifted well away from the wall and all the timber near the resistance was lined with asbestos', see MLC 5/1/1, MUA. In evidence by Murray in RCT, NS 1711/820, p. 213, MLC-TAHO, his description does not indicate any asbestos other than a small piece sitting on a resistor, details that were corroborated by other witnesses.

³⁷ *The Age* (Melbourne), 18 November 1912, p. 2, MLC-MUA.

³⁸ Ryon's evidence RCT, NS1711/420, pp. 331-39, TAHO. This changed evidence was corroborated by platman Robert Friday, 5/1/4, MLC-MUA.

³⁹ *Launceston Examiner*, 14 October 1912, p. 2.

⁴⁰ Memorandum from Curtain to the Mines Department, 3 October 1912, NS11177711/821, MLC-TAHO.

⁴¹ Curtain to the Secretary for Mines, 23 November 1912, reply 3 December 1912, advising that the Solicitor General would be attending, NS1711/821, MLC-TAHO.

⁴² Sticht to Secretary, 29 October 1912, p. 8, 5/1/1, MLC-MUA.

⁴³ A copy of a confidential Company report undated and unsigned was sent from the Queenstown lawyer Ambrose Winch to Hobart lawyers Butler McIntyre and Butler. See NS1711/821, MLC-TAHO.

⁴⁴ See, for example, Mount Lyell Company Secretary in Melbourne to Secretary of the Company's office in London, 6 February 1913, 5/1/4 MLC-MUA.

⁴⁵ A dilapidated set of the Royal Commission transcripts formerly owned by R.M. Murray came into the possession of the Tasmanian Archives in recent times. No other set could be found in Tasmania. A clearer set is held in the Melbourne University Archives.

⁴⁶ Ambrose Winch to Robert Sticht, 22 October 1912, NS1711/833 TAHO. Winch was a Queenstown solicitor who assisted the Company in conjunction with Butler McIntyre and Butler of Hobart.

⁴⁷ The Commission's Report, p. 3, stated 'We consider especially useful the evidence and report of Mr Medhurst'.

⁴⁸ The author is conversant with such matters having served 11 years in the State Parliament.

⁴⁹ Quotation from a Company letter. These general matters were decided at the Royal Commission immediately prior to witnesses being examined, see RCT, NS1711/840, pp.4-7, TAHO. It is not clear who actually subpoenaed the witnesses, though surmised it was the Royal Commission. As it was not a trial, there was no formal prosecution or defence that would have had the right to do so. While prevented from hearing the evidence, individuals were sometimes called to give testimony. An exception was Albert Gadd, who was allowed in to hear some of Murray's evidence, but only after a special request by the Union lawyer.

⁵⁰ Curtain to Twelvetrees, 8 October 1912, NS1711/821, TAHO.

-
- ⁵¹ In Gadd's evidence to the Royal Commission, pp. 350–60. Also detailed in the *Zeehan and Dundas Herald*, 19 December 1912, p. 2.
- ⁵² Sticht to the Minister for Mines, 7 October 1912, written as a result of criticism in Parliament about mine exits, NS1711/821 TAHO.
- ⁵³ Extract from Workmen's Inspectors' Report, 5/1/4, MLC-MUA.
- ⁵⁴ Secretary in Melbourne to London Office, 12 February 1913, p. 2, 5/1/4, MLC-MUA.
- ⁵⁵ The Royal Commission Report stated 'at the time of the disaster there were no connecting ways fitted with ladders from the 500 to the 300 feet levels', NS 1711/838 TAHO.
- ⁵⁶ Mining engineer Harold Greenway gave evidence that a number of mainland mines had only one exit and that this was a usual practice where that exit was in solid ground.
- ⁵⁷ Russell Murray's evidence to the Royal Commission, RCT NS1711/840, p. 203, *passim*, TAHO.
- ⁵⁸ At the request of the Union's Lawyer Albert Gadd was permitted to attend the hearing while Murray was claiming there were alternative exits, see *Zeehan and Dundas Herald*, 18 December 1912. part way through Gadd left the hearing apparently disgusted with those claims, see RCT, NS1711/841, p. 211, TAHO.
- ⁵⁹ Employees who gave evidence of electrical problems and fires in the pump station were pump attendants Tom Burns and Richard Lonsdale, electrical mechanic Richard Trembath, engineer James Kirkland, miners Stan Legge and Thomas Ryan, and electrician Alfred Clay, NS1711/841 and NS1711/842, TAHO.
- ⁶⁰ This evidence was given by a number of employees to the Royal Commission, NS1711/840-841, TAHO. The evidence was also fully detailed and corroborated in notes supplied by R.M. Murray to the Company lawyers, 22 October 1912, NS1711/821, TAHO. In this note Murray was more accepting that it might have been an electrical fire than he was in the evidence that he gave to the Royal Commission.
- ⁶¹ Tom Burns gave evidence that he was able to run the pumps at a greater output after the fuses had been changed, without the fuses running hot. He believed that nine 3-amp wires were used. See RCT, NS1711/840, p. 35, TAHO. Alfred Clay, who changed the fuses, said that he had changed them to make them weaker, and denied that he had made them stronger, even though the change was so they would not overheat. Clay said that Burns was wrong about the strands being 3 amp, and that they were about 9 amp, which is heavier! Clay's other evidence was faulty. When asked how many poles the pump motor had, he said one, which is like saying a magnet only has one pole! See RCT, NS1711/841, pp. 531-32, TAHO.
- ⁶² Trembath gave evidence indicating that water getting on the equipment was the likely reason for electrical fires in the pump station. See RCT, NS1711/840, p. 290, TAHO.
- ⁶³ Kirkland evidence, RCT, NS1711/840, pp. 313-14, TAHO.
- ⁶⁴ *Ibid.*, pp. 316-17.
- ⁶⁵ Richard Lonsdale described the 'flaring', RCT, NS1711/840, pp. 193-94, TAHO.
- ⁶⁶ Sticht to the Board, 19 November 1912, 5/1/3, MLC-MUA.
- ⁶⁷ *Ibid.*, 29 October 1912.
- ⁶⁸ *Ibid.*, 24 November 1912, NS1711/833, MLC-TAHO
- ⁶⁹ Linden Harris evidence RCT, NS1711/840, p. 575, TAHO.
- ⁷⁰ James Fraser evidence, RCT, NS1711/840, pp. 612-16, TAHO.
- ⁷¹ Frederick Medhurst evidence, RCT, NS1711/840, pp. 669, 672, TAHO.
- ⁷² R.M. Murray evidence, RCT, NS1711/840, p. 234, TAHO.
- ⁷³ It is clear from reading the Royal Commission transcripts that people of such eminence as the R.M. Murray were treated 'kindly' by both the Royal Commissioners and the lawyers, whereas miners faced harsh cross examinations.
- ⁷⁴ No further reference for this publication and this is how the reference appeared in the transcript of the Commission.
- ⁷⁵ Company lawyer Mr Crisp's summing up, RCT, NS1711/840, p. 782, TAHO.
- ⁷⁶ The Royal Commission Findings are in TAHO and MUA Archives as well as in '*North Lyell Mine Disaster*', Galley Museum Queenstown publication, n.d. [GMQ NLMD], pp. 201-205.
- ⁷⁷ The Commission's Report, p. 3.
- ⁷⁸ See, Frederick Medhurst, NS1711/833, MLC-TAHO.
- ⁷⁹ Described by Ryan in Royal Commission transcript, pp. 331-39.
- ⁸⁰ An example was the interrogation of Burns, Royal Commission transcripts, pp. 14 to 51.
- ⁸¹ Fox, 'Through Engineers Eyes. pp. 132-47, where extensive information is provided on the class structure of those times.
- ⁸² Robert Stone was named in RCT, NS1711/841, p. 775, TAHO.
- ⁸³ Mount Lyell Company to London Office, 6 February 1913, 5/1/3, MLC-MUA.
- ⁸⁴ Mount Lyell Company letter to London Office, 5/1/3, MLC-MUA.

⁸⁵ Letter from the Minister for Mines, 12 June 1913, MLC 5/1/3, MLC-MUA.

⁸⁶ In the opening address at the Australian Mining History Association Annual Conference held in Queenstown in October 2008.

⁸⁷ See, for example, Blainey, *The Peaks of Lyell*, p. 195.

⁸⁸ *Ibid.*, p. 220.

⁸⁹ This unsigned undated report was sent to the Company lawyers apparently before the Royal Commission hearings. See NS1711/821, MLC-TAHO.

⁹⁰ *The Zeehan and Dundas Herald*, 11 November 1912, reported that ‘On Saturday evening news went around that a discovery had been made at the Mount Lyell Mine which had some bearing on the disastrous fire’. This was outlined by Blainey in the *Peaks of Lyell*, p. 220, it closely followed details in a Company report.

⁹¹ Blainey, *The Peaks of Lyell*, p. 220.

⁹² *Zeehan and Dundas Herald*, 12 November 1912, p. 2.

⁹³ *Ibid.*

⁹⁴ Sticht to the Board, 12 November 1912, under the heading ‘Suspected Incendiarism’, 5/1/3, MLC-MUA.

⁹⁵ Reprinted in GMQ NLMD, p. 109.

⁹⁶ Kerry Pink’s article in the Advocate publication 6 September 1986 stated ‘A month after the fire, a heap of oily cotton waste was found beneath the splintered timber of the old pump house’.

⁹⁷ This is confirmed in the statement made by Russell Murray and reported in the *Zeehan and Dundas Herald*, 12 November 1912, p. 2.

⁹⁸ Blainey, *The Peaks of Lyell*, p. 219.

⁹⁹ As well as being recorded in the Royal Commission transcripts this statement was reported in the *Zeehan and Dundas Herald*, 8 January 1913, p. 4.

¹⁰⁰ Timekeeper Gillies’ statement, 23 November 1912, 5/1/3, MLC-MUA.

¹⁰¹ In a letter to Twelvetrees, 28 September 1912, Curtain assured his boss that there were other means of escape out of the deeper levels of the North Lyell Mine. This information was apparently passed on to the Minister. Then in a telegram dated 8th October 1912 Curtain advised Twelvetrees, ‘I am wiring Mr Wallace [Mines Department director] to instruct the Minister to delete from my general report any reference to exit through B stopes as I learned yesterday it is not serviceably available’. Both the letter and telegram are in NS1711/821, MLC-TAHO.

¹⁰² Cox’s evidence, RCT, NS1711/841, TAHO, is also recorded in the *Zeehan and Dundas Herald*, 8 January 1913, p. 4.

¹⁰³ As well as being documented in the Royal Commission transcripts, both of Cox’s statements are reported in the *Zeehan and Dundas Herald*, 8 January 1913, p. 4.

¹⁰⁴ Geoffrey Blainey, *The History of Mount Lyell*, Masters thesis, University of Melbourne, 1955, p. 354.

¹⁰⁵ NS1711/1/47, MLC-TAHO.

¹⁰⁶ Figure from www.qecservices.com.au

¹⁰⁷ 5/1/1, MLC-MUA.

¹⁰⁸ This is so even today, when high speed fuses and fast acting circuit breakers are commonly used.

¹⁰⁹ Linden Harris, evidence to the Royal Commission, RCT, NS1711/841, p. 601, TAHO.

¹¹⁰ K.B. Hinsby, winder driver, evidence to the Royal Commission, RCT, NS1711/841, p. 161, TAHO.

¹¹¹ The Royal Commission report stated, ‘The reports of the experts are unanimous that the fire was not electrically caused’ and, ‘We consider especially useful the evidence and report of Mr Medhurst.’

¹¹² Outlined in Blainey, *The Peaks of Lyell*, p. 220, and detailed in various letters in the MUA.

¹¹³ Letter to London from the Board dated 4 June 1913, advised that timber should not be used in the reconstruction of the pump house.

¹¹⁴ The reforms are outlined in Lou Rae, *The Lost Province: Exploration, Isolation, Innovation and Domination in the Mount Lyell Region 1859-1935*, Ph.D. thesis, School of History and Classics, University of Tasmania, Hobart, 2005, pp. 115-16, and further detailed in Chs 6, 7.