

BRITISH MINING No.23

MEMOIRS 1983



Challis, P.J. 1983
"The Snaefell Mine Accident"
British Mining No.23, NMRS, pp.20-23

Published by the

THE NORTHERN MINE RESEARCH SOCIETY
SHEFFIELD U.K.

© N.M.R.S. & The Author(s) 1983.

NB

This publication was originally issued in the A4 format then used by the society. It has now been digitised and reformatted at A5. This has changed the original pagination of articles, which is given in square brackets.

ISSN 0309-2199

THE SNAEFELL MINE: ACCIDENT 1897

P.J. Challis

In proportion to its area the metalliferous wealth of the Isle of Man was large. The two biggest mines, Laxey and Foxdale, ranked amongst Britain's largest producers, especially of zinc ore. On a much smaller scale was the Snaefell mine, situated on the eastern foot of Snaefell mountain about 3 miles northwest of Laxey village to which the mine was connected by a rough cart-track. In May 1897 the mine was the scene of a tragic accident, from which although it recovered to continue production for 11 years was to shorten the life of one of this country's most eminent mining engineers and geologists - Sir Clement Le Neve Foster (DNB).

The Snaefell lode was discovered in a stream bed and work commenced seriously in 1856 and continued with minor interruptions until 1908 when a fall blocked the shaft. Later, in the 1950s, the waste tips were re-worked by Metalliferous Holdings Ltd. who installed a crushing mill and flotation plant. Many of the present day remains date from this period (Ind. Arch. I.O.M.). The lode varies in width from 6 inches to 59 ft. and strikes approximately N-S, dipping at an average 150 from the vertical to the east. The following minerals have been recorded from the mine. Galena, blende, copper pyrites, iron pyrites, pyrrhotite, manganese, graphite, pearl spar and calc spar. The country rocks are clay-slates. Between 1870-1908 the mine returned 5333 tons of lead ore, realising 14-160zs of silver per ton and 13245 tons of zinc blende (Min. Stats.).

The property belonged to the Crown and originally it was worked by the same company as ran Great Laxey mine (Ind. Arch. I.O.M.) but at the time of the accident was leased to the Snaefell Mining Company Ltd.

Throughout its history the mine was worked from a main shaft which followed the vein and was 171 fathoms deep, measured along the dip. Levels were driven from the shaft at approximately 25 yds intervals. For the most part the shaft required to be supported by timbering and was divided into three compartments for winding, pumping and the ladderway. The upper part of the mine was drained by an adit, the lower levels by pumps driven by a water wheel at surface.

Ventilation, a constant source of complaint by the mines inspectors, was in the main natural. However in order to improve the circulation the adit was connected to a sloping wooden chimney 134 feet long erected along the hillside which created a difference in level of 95 feet between the top of the main shaft and the top of the chimney. The addition of the chimney greatly improved the ventilation and an inspection by an Inspector of mines three days before the accident reported the ventilation to be, "very good".

On the morning of Monday 10th May 1897 the first shift consisting of 35 men entered the mine shortly after 6am and began descending the ladderway. Very quickly several returned to the surface in an exhausted state and reported that the

mine was full of a foul gas. The mine manager, Captain J. Kewley, after sending for help to Laxey descended the mine to assess the situation and rescue the men still underground. He met a few men almost overcome making their escape and between the 40 and 65 fathoms level he came across others already unconscious. In an effort to improve ventilation he ordered holes to be punched in the compressed air pipes which powered the rock drills.

Rescuers from Laxey mine arrived at the shaft and set about hauling men up the ladderways and through the man-holes with the aid of ropes whilst being subjected themselves to the noxious effects of the gas. The kibble was replaced with a rectangular box, 6 ft long and just wide enough to take a man which was used in the event of serious injury. The 'box' was used in the successful rescue of three men. Although 65 years old, Captain Kewley risked his own life by descending ten times until the last survivor was brought to the surface at 5pm that evening.

The mines inspector, G.J. Williams, who had previously examined the mine earlier in the week was still on the Island and arrived at the mine not long after the last survivor had emerged. He immediately organised another rescue party and with Captain Kewley descended to the 74 fathoms level passing three dead bodies, they made their way to the 100 fathoms level passing more bodies to where the man-hole was obstructed by a further three bodies. Deciding on a return they found their own strength failing and had great difficulty climbing the ladders to the 60 fathoms level. Here the mines inspector applied a technique which was thought to have had no precedent in mining accidents.

On hearing that the accident was probably caused by gas poisoning the Inspector endeavoured to procure, without success, cylinders of oxygen. Instead he purchased 1½bs. of potassium chlorate with which to generate [20] oxygen. Whilst awaiting their ascent at the 60 fathoms level he set light to a heap of newspapers and throwing the potassium chlorate on the fire the rescuers leaned over the burning pile and breathed the life-giving gas thus partially regaining their strength, to enable them to ascend the remaining ladders to the surface.

The manager of Foxdale mine, Captain W.H. Kitto and a party of men from the mine worked with the mines inspectors' and others during the course of the following week and recovered 18 bodies. The last remaining body in the mine lay on the 130 fathoms level and this was found to be still full of gas. During sampling, a mines inspector nearly died and was only saved by having taken the precaution to tie a rope around himself with which, on falling unconscious, he was hauled to safety through 78 feet of ladders. His mouth was held to a punctured air-pipe until he had recovered sufficiently to be sent up to the surface in the 'box'. Further attempts to recover the last body were made by Captain Kitto, his assistant, Captain Lean and the Foxdale men but they were forced to retreat on each attempt.

Sir Clement Le Neve Foster, who was at the time of the accident Inspector of mines for North Wales, which included the Isle of Man, made his way to the

THE SNAEFELL MINE: ACCIDENT 1897

mine and upon his arrival set about testing the gas, which from reports that he had received he believed to be carbon monoxide. This he achieved by the simple expedient of lowering a mouse and lighted candle down the shaft by means of the winding rope. This confirmed the deadly nature of the air at and below the 130 fathoms level. Later armed with more mice and candles he made a visual inspection of the mine as far as the 115 fathoms level. He returned to the surface and had a fire lit at the foot of the wooden ventilation chimney which he observed to create a good draught. Further tests on successive days however proved that the air was still noxious and the ventilation doors on the 100 fathoms level were suspected of being open. Again Foster returned underground and closed the ventilation doors but further tests showed that the doors on the 130 fathoms level, which also still contained the last body, were open and it was decided to try both to recover the body and close the doors on that level.

The air had still not improved on the Saturday following the accident when a party which included the mine manager, Inspector Williams, Captain F. Reddcliffe (the mine's consulting engineer) and Le Neve Foster descended again to the 115 fathoms level. Leaving most of the party Le Neve Foster and his colleagues descended until they could see the body of the last miner in the mine. A rat (they had exhausted their supply of mice!) was lowered into the 130 fathoms level for 5 minutes and although not dead it was 'visibly affected'. One member of the party volunteered to descend to the body with an air-tube in his mouth but Le Neve Foster forbade this and instead it was decided to use a grappling iron to try and retrieve the body. In order to swing the irons without impediment the ladder above the body was pushed to one side and in so doing disturbed the gas. Immediately Captain Kewley felt ill and Le Neve Foster ordered, "all up at once". They returned to the 115 level where the 'box' awaited them. Captain Kewley was put into it and the signal given to wind him to the surface. Those who had remained at the 115 fathoms level set off up the ladders and the rest of the party who had descended to the 130 fathoms level and who were feeling the effects of the gas awaited the return of the 'box' as they felt they could climb no further.

However the box became jammed in the shaft at the 105 fathoms level when a chain link caught in the shaft sheathing. It would go neither up nor down and for an hour remained fast until Captain Kewley's son descended with some men to free the offending chain. Meanwhile Le Neve Foster and his companions were rapidly succumbing to the gas and during this period, giving himself up for lost, Le Neve Foster set about bidding his family goodbye and taking observations on his condition and reactions, taking over 30 pages of notes 'full of affecting pathos' (MJ). The box was eventually used to evacuate Le Neve Foster and his party from their ordeal, he emerging last of all and his first task on reaching the surface was to ask the doctor to take blood samples from him whilst he completed his notes!

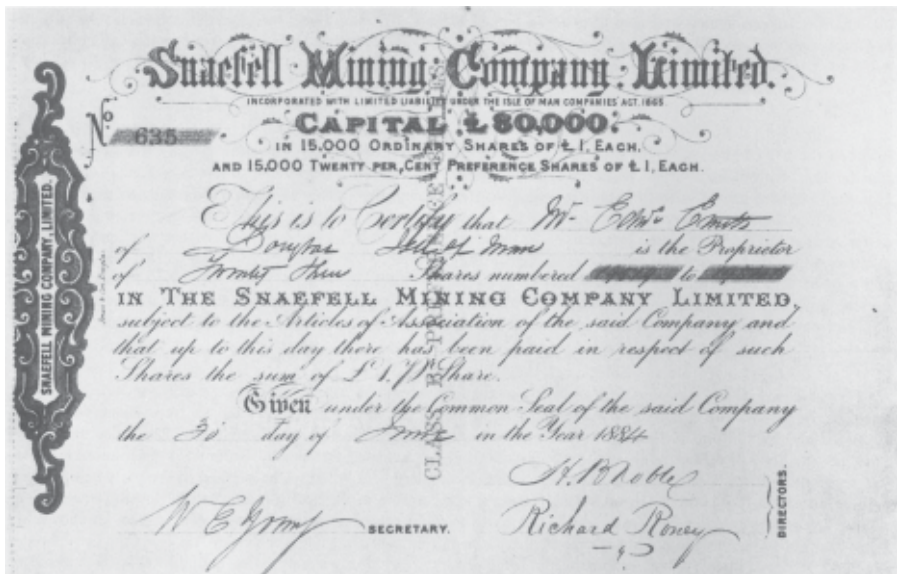
Le Neve Foster was taken on a pony and trap to his hotel in Laxey where he collapsed and was given further medical assistance. He left for his home in Llandudno a few days later but not before he had had "plain words" with one of the mine's directors and informed him that "the Company was expecting too

much from Government officials and that whilst they were ready to give advice and assistance, it was no part of their duties to superintend the recovery of bodies nor to put the mine in order again". He suggested that the services of a mining engineer who possessed more technical knowledge than the mine captain were required and eventually the mine's directors secured the services of N.R. Griffith from Wrexham who advised and superintended the erection of a ventilation fan and all work ceased underground until the fan was installed. A job made more difficult owing to the problems encountered preparing a site for the driving engine.

On reaching Llandudno Le Neve Foster complained of headaches, aching limbs and his heart gave him great cause for concern. For nearly a year he was incapacitated and he never recovered from the cardiac injury sustained during his investigations in the mine. He died aged 63 years in 1904 (DNB).

[21]

The air samples taken by Le Neve Foster's assistant, G. Williams, which nearly cost him his life when he too was overcome by the gas as he swung his collecting bottles under the man-hole of the 130 fathoms level were sent to the eminent scientist, J.S. Haldane at Oxford University for analysis. He confirmed the presence of carbon monoxide, the composition of the samples corresponding to a mixture produced by the combustion of wood or other similar materials. Haldane, renowned for his work on gases paid a visit to the mine at his own expense such was his interest in the accident.



Snaefell Mining Company Share Certificate
 (From the author's collection)

The seat of the fire was found in new timbers on the 130 fathoms level and extended for 33 yds. And although the cause of the fire was never precisely established the official report suggests the careless disposal of a candle end to have been the most likely cause. Le Neve Foster was convinced of this when informed by Captain Reddicliffe that he had experience of fires starting accidentally in no less than five cases of candles left in contact with timbering. It was assumed that because the fire occurred after the last shift on the preceding Friday of the accident the smell of burning timber dispersed before the first shift on that fateful Monday. Further, it was suggested in the official report that the miners', although aware that dimly burning or extinguishing candle spelt danger the candles continued to burn brightly and although some of the men noticed a smell and felt some warmth on entering the mine there was probably no awareness on the part of any Manx miner of carbon monoxide or its deadly effects. And not until realising that there was trouble and an ascent begun did the full effects of the gas take its toll. Due in all probability to the extra burden placed on their respiratory systems through the exertion expended climbing the ladders and by then, for 20 men, it was too late. Nineteen bodies were eventually recovered from the mine, the twentieth victim died of acute pneumonia six days after the accident.

A similar fire, though without loss of life occurred in Dolcoath mine in 1890 when a lighted candle was thought to have been responsible for starting a conflagration at the opening of a level on the 265 main level, west of the man-engine shaft. Several men were rescued by their fellow miners. A fire at St. Ives Consols c1850 did cause loss of life and a later fire at Tincroft mine was again thought to have been started by the careless disposal of a candle end.

[22]

The improvements suggested in the report included the use of non-inflammable materials to line shafts and support levels. The provision of mechanical ventilation methods and the inspection of the mine subsequent to any cessation of work (as already required by the Coal Mines Act). The report was particularly scathing about the "treadmill work of convicts", performed by free miners, in the latter part of the 19th century climbing deep shafts by means of ladders. "The work is unprofitable and exhausting; but, unfortunately, it is not illegal for a mining company to throwaway the money of its shareholders in this stupid fashion ... it cannot pay the nation in the end to allow unscientific mining, and as a taxpayer, I would far sooner see my share of the country's underground treasurers left in the earth for my descendents, than have the mine worked in so primitive a manner". Finally the report suggested the provision of suitable equipment for the penetration of noxious gases. Austrian coal-mines were stated to be obliged to have the 'Walcher Pneumatophor' in readiness but the Inspector having no practical experience of its use and doubting its efficiency because of the small man-holes employed in shafts gave more consideration to the development of a small apparatus for burning potassium chlorate and that the miners' be given instruction in its use at ambulance classes.

A fund for the dependents and relatives of those who lost their lives was launched and Captain Kewley and Inspector Williams were later awarded silver medals for saving life on land from the Chapter of the Order of St. John of Jerusalem.

References:

DNB - *Dictionary of National Biography, 20th Century, 1901-1911.*

Ind. Arch. I.O.M. - *The Industrial Archaeology of the Isle of Man*, T.A. Bawden, L.S. Garrad et al. 1972.

C. Le Neve Foster. *Report on the circumstances attending an Underground Fire which occurred at the Snaefell Lead Mine, Isle of Man, in the month of May 1897. c1880 1898.*

G.W. Lamplugh. *The Geology of the Isle of Man*, Memoirs of the Geological Survey 1903.

MJ – *Mining Journal*. May 22nd;29th: November 20th 1897.

C. Le Neve Foster and J.S. Haldane, *Investigations of Mine Air, 1905.*

P.J. CHALLIS,
43, Fieldway,
Liverpool,
LI5 7LU