

Accident Investigators

Rounds Green New Colliery Disaster, 1846: Teacher's Notes

This investigation gives an insight into living and working conditions in the 19th century. It can be treated as a purely historical enquiry, or as a cross curricular study, linking history with science.

By focusing on a specific, real disaster that occurred in the Black Country in the 19th century students can gain a deeper level of understanding of the social conditions and values of the time. This is enhanced through the study of primary sources and first person accounts, to create a relevant and meaningful learning experience that will enable students to:

- Think critically and analytically
- Build historical empathy
- Interpret historical events
- Question various perspectives of history
- Challenge assumptions
- Explore wider issues of social responsibility
- Develop oral and dialogic skills

Rounds Green New Colliery, Oldbury 1846

About the Mine

The Rounds Green New colliery was located on the slopes of the Rowley Hill, in Newbury Lane. It was accessed via a “skip” that was raised and lowered in a shaft by a winding engine, and used the traditional pillar and stall method of mining. (The Museum’s replica mine experience is set at a similar date and recreates the working conditions and methods experienced at Rounds Green.)

The colliery was owned by George Parker but operated for him by a chartermaster or “butty”. The Butty system was common in the Black Country and other mining districts in the early part of the nineteenth century:

- The mine owner left all the daily operation of the mine to the butty. He remained responsible for providing the mine shaft, drainage, ventilation system and winding gear. He also had to deal with unforeseen difficulties such as faults in the seams or flooding.
- The Butty employed the miners and paid their wages. He also provided all the necessary tools and equipment, including the horses. The Butty did not receive a wage from the mine owner but instead, received a set amount for each ton of coal delivered at the pit head. He employed a mine supervisor or “doggy” to assist in the management of the mine and the doggy took a share of the profits.

The Disaster

On the morning of Tuesday 17th November 1846 there was an explosion at the colliery killing 19 men and boys and seriously injuring another 5. Four inquests were held a few days later, all hearing the same evidence suggesting that the pit was well-known for difficulties with the accumulation of gas.

The colliery was mainly lit using candles. However it was the job of the “doggy” to test the workings for gas in the morning before the men had started their shift. He would do this using a safety lamp. There were two main gases to test for:

- Firedamp (referred to as “sulphur” by the miners).
Fire damp occurs naturally in coal seams and consists chiefly of methane. It is highly inflammable and can be explosive when present in the air in certain proportions. If the test flame on a safety lamp develops a blue gas cap, it is a sign that methane is present. Methane is colourless and has no smell. It is lighter than air, so will rise into higher points within underground workings. It is also affected by weather conditions – so a decrease in air pressure (when the barometer falls) can force methane out of the strata.
- Blackdamp.
This is a build-up of carbon dioxide – known as black damp – and can cause suffocation by replacing the oxygen in the air. A safety lamp can detect air with less oxygen: the flame will go out when oxygen reaches about 16% or less, but people will become affected when oxygen levels reach about 17% or less. Carbon Dioxide is heavier than air, so will lie in lower areas of a mine or in old, disused roadways.

If gases were detected, it was the responsibility of the “doggy” to organise their removal before work could commence. This was achieved by “brushing” (literally sweeping the gas out of the mine) or firing the gas. He should also inform the Butty and all men should be evacuated from the mine while gas was present.

It was apparent from the inquests that fire damp had been detected in the mine. It also seemed likely that recommended procedures were not followed: the “doggy” was testing for gas when the men were already in the mine ready for work, and once detected the men were not immediately evacuated until the gas was removed.

As all the men nearest the explosion were killed, it was difficult for the Coroners to identify the exact cause of the explosion and the procedures implemented. However, Thomas Haines, the mine surveyor (and responsible for the air ventilation system) was interviewed, and several of the survivors including John Holland, the son of the “butty”. Three of the inquests gave an overall verdict of “accidental death” and one found the Mine Surveyor guilty of Man Slaughter. He was later acquitted when he went before the Assizes in Worcester. The Coroner recommended a further investigation. As a result a special Government Inquiry was set up to look at the mine’s ventilation arrangements, which were found to be seriously inadequate. The accident was reported nationally, and was instrumental in instigating the first “Act for the Inspection of Coal Mines in Great Britain” in 1850 and the subsequent introduction of mine safety regulations.

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CHILDREN'S EMPLOYMENT COMMISSION 1842: OVERVIEW OF CONDITIONS OF WORK

The 1833 Factory Act stopped the employment of children under nine working in textile mills. Lord Anthony Ashley Cooper, later to become the 7th Earl of Shaftesbury, campaigned for similar protection for children in coal mines. His efforts brought about the setting up of a Royal Commission to enquire into the working conditions in coal mines, and in particular its effect on women and children.

The Commission was headed by Lord Anthony Ashley-Cooper and four commissioners were appointed to collect and compile evidence. Britain was divided into districts and each district was assigned a sub-commissioner. They visited collieries and mining communities gathering information, sometimes against the mine owners' wishes. The report was published in May 1842. It was the first of its kind to include engraved illustrations, as well as the personal accounts of mineworkers. It greatly shocked society with its findings – particularly the realisation that women and girls worked all day underground with half naked men.

The report led to the passing of a Bill on 7 June 1842 to secure minimum safety standards in mines and factories, and to regulate the employment of women and children in mines. Following fierce opposition from the House of Lords, an Act of Parliament was passed in 1842 prohibiting the employment of women and children underground. (A young child was then classed as being under ten years old – which explains why Rounds Green New Colliery was employing boys aged 10 in 1846.) The Act also required a winding engine man to be at least fifteen years of age and provided for the appointment of mining inspectors. It also supplemented the Truck Act of 1831 by prohibiting the payment of wages at, or near public houses.

The following extracts are taken from the "REPORT by JAMES MITCHELL. ESQ., LL.D., on the Employment of Children and Young Persons in the Coal and Iron Mines of South Staffordshire, and in the Iron Smelting Works of those Districts; and on the State, Condition, and Treatment of such Children and Young Persons."

1	Extract 1: <i>"Of the accidents in coal and iron mines"</i>	This is list of the different types of accidents encountered in the mining district of South Staffordshire. Number 8 in the list is <i>"explosions of carburetted hydrogen gas, which is usually called by the miners sulphur"</i> .
2	Extract 2: Statement, John Penn, Constable.	John describes his experiences as a Constable responding to mine accidents. He provides details on how the mining community reacted to accidents and the treatment of the injured.
3	Extract 3: <i>"The proprietors, the tenants and the butties or contractors"</i>	This explains the "Butty System" used in most South Staffordshire Collieries and implemented at Rounds Green New Colliery.
4	Extract 4: <i>"Description of a visit to a coal pit near Dudley - under the care of the trustees of the late Lord Dudley, at Broad Park, near Holly Hall, about half a mile from Dudley."</i>	This provides a vivid description of a mine similar to Rounds Green New Colliery. The extract includes reference to descending the shaft using a "skip"; the use of rails and horse-drawn carts; the different gases that could be encountered; and the system for "damming" up old workings.
5	Extract 5: Account of John Greaves	John Greaves was employed in a colliery in Dudley from the age of 7 years. He gives a description of the type of work and the wages earned. He also refers to the use of apprentices and the enforcement of the Tommy Shop – or "Truck System" - in which employees were paid in commodities or a currency substitute (such as vouchers or token coins) rather than money. Often tokens were only exchangeable for goods at the company store, at highly

		<p>inflated prices – benefiting the employer by disadvantaging and exploiting the worker.</p> <p>A series of Truck Acts were introduced during the 19th Century to make this practice illegal.</p>
6	Extract 6: Account of William Troughton	William Troughton started work in a colliery at the age of 15. His account describes the conditions in the mine, including the presence of vermin, the occurrence of accidents and how the colliery reacted to deaths at work. He also includes interesting domestic details such as washing and eating.
7.	Illustration: Mine Trapper	Most young children started work in the colliery as trappers, and then progressed through different roles as they grew older. The trapper was responsible for opening and closing the wooden doors (trap doors) that allowed fresh air to flow through the mine. They would usually sit in total darkness for up to twelve hours at a time, waiting to let the coal tub through the door. It was not hard work but it was boring and could be very dangerous. If they fell asleep, the safety of the whole workings could be affected.

NEWSPAPER REPORTS: GENERAL OVER VIEW

A selection of excerpts from Newspapers giving an overview of the accident and showing how widely it was reported.

1.	The London Standard 19 November 1846	The accident was reported in detail in the capital city – London. This report gives an insight into the effect of the accident on the local community – with a crowd of 1500 people amassing at the colliery.
2.	Berrow’s Worcester Journal 19 November 1846 The Daily News, London 20 November 1846	<p>Two short excerpts. Note the error in the Worcester Journal – stating 23 men killed on the spot (rather than 19.) This can be used as a reminder that although original sources, newspapers should not be accepted as factual accounts.</p> <p>The Daily News is particularly interesting as it was founded in 1846 by Charles Dickens. It highlights the social impact of the accident, pointing out the number of children left fatherless.</p>
3.	Caledonian Mercury, Edinburgh 26 November 1846	Evidence that news of the accident reached as far as Scotland.

THE INQUEST: LIST OF CASUALTIES AND WITNESS STATEMENTS

1.	List of Casualties	A list of all the men and boys killed in the accident, giving their names and ages.
1a	Worksheet 1	A worksheet to help students analyse the list.
<p>Three separate inquests were held as the men killed in the accident came from three different counties. The inquests were reported in local and national newspapers. The following excerpts provide the evidence given by key witnesses.</p>		
2.	John Holland	<p>John Holland was a key witness – not only did he survive the explosion, but he was the Butty’s son. He was 20 at the time of the accident. His account provides the following significant evidence:</p> <ul style="list-style-type: none"> • He descended into the pit on the same skip as his father at about 6.15am. There were already men in the pit at this time. • His father was aware that there was a potentially dangerous amount of gas in the mine as he warned John not to go

2.a	Worksheet 2	<p>anywhere near the coalface, about 150 yards away, as there was sulphur there.</p> <ul style="list-style-type: none"> The mine had two safety lamps and the Doggy used these each morning to test for gas – although John couldn't say for certain that this had happened on that morning. <p>After John's father had warned him of the gas, he returned in the direction of the coal face, but it is unknown whether he was returning to work, or to warn the other men in the pit. The fact that he didn't tell John to leave the mine, suggests that he wasn't about to evacuate all the men (the correct safety procedure for large accumulations of gas).</p> <p>A worksheet for students to use to help them study and understand the witness statement.</p>
3.a	3. John Shakespeare and Herbert Hampton	<p>Both these witnesses were miners at Rounds Green. John Shakespeare was working the morning of the explosion and was one of the few survivors. His account provides the following significant evidence:</p> <ul style="list-style-type: none"> He descended into the pit before the Butty – at about 6am. Smith – the doggy – was already in the mine and was seen using the safety lamp to test for gas. Smith had detected gas in the “crop” and warned John Shakespeare not to go there. John survived because he returned to the shaft just before the explosion. <p>Herbert Hampton was the father of two of the children killed in the explosion - William Hampton age 16 and John Hampton age 10. Herbert wasn't working on the morning of the disaster but his account provides the following significant evidence:</p> <ul style="list-style-type: none"> He had worked at the mine for 12 months. He had seen Smith – the doggy – regularly testing for gas in the pit using the safety lamp and believed he always did this. If gas was detected, Smith always reported this to all the men. He had assisted in “damming” up old workings and believed that this had been done effectively. (Old workings were blocked off to prevent gas accumulating and escaping into worked areas.) <p>A worksheet for students to use to help them study and understand the witness statements.</p>
4.	Edward Foley, William Clift & John Northam	<p>These three witnesses provide evidence on the state of the ventilation system in the mine.</p> <p>Edward Foley was a 19 year old miner working at the pit, but not on the day of the explosion. His account provides the following evidence:</p>

4.a	Worksheet 4	<ul style="list-style-type: none"> • He believed the mine was dangerously prone to build ups of gas – so much so that he mentioned it to other workers, and following a nightmare stopped working at the pit. • That the Doggy seemed “very careful” when testing for gas using the safety lamp. <p>William Clift was a miner who worked at the pit for just 3 days. His account provides the following evidence:</p> <ul style="list-style-type: none"> • When he first started working at the mine he thought it was more troubled with black damp. • On his third day working at the mine he encountered the sulphur. It was so bad, he asked the butty to test it with the safety lamp. • Although the butty didn’t think there was sufficient gas to cause a problem, William was not willing to work in such conditions and walked out. <p>John Northam used to work at Rounds Green although he was no longer employed there. His account provides the following evidence:</p> <ul style="list-style-type: none"> • He was an experienced miner having worked in a variety of different collieries for 28 years. • He only worked at Rounds Hill for 5 weeks – leaving after that time because he thought “the pit was so exposed to evils”. • He didn’t think the ventilation system was adequate. The airways didn’t reach as far as the workings and so most mornings miners were needed to “brush” the gas out. • When a lot of coals were about to be pulled down, the men were obliged to put out all the candles for fear of igniting the gas. (As methane is lighter than air, it would accumulate above). <p>These three witness statements are interesting as their evidence contradicts that of the mine surveyor, Thomas Haines (see below). It seems apparent that the air headways were not sufficient to clear the mine of gas. The Mine Surveyor – responsible for the design of the ventilation system – would not want to admit to any deficiency. However, it was the responsibility of the Butty to inform him if there were any issues with the ventilation system. It is unclear if Job Holland (the Butty) had done this – and it certainly seems from William Clift’s evidence, that Job was unconcerned about occasional build-ups of the gas.</p> <p>A worksheet for students to use to help them study and understand the witness statements.</p>
5.	Thomas Haines	Thomas Haines had been the Mine Surveyor for the pit for the last 6 years. He was responsible for ensuring that the air ventilation

5.a	Worksheet 5	<p>system was effective. His account provides the following evidence:</p> <ul style="list-style-type: none"> • The mine had been troubled with gas in the past but not recently due to the creation of more “headways” (air ventilation shafts) to keep the mine clear of gas. • He had examined the dams by the crop workings several times and thought they were effective in keeping the gas out. • The mine owner, Mr Parker, had recently spent £300 creating a gate-road to allow a greater body of air into the present workings of the mine. • In his opinion the gas that caused the explosion had been released into the mine by a section of the roof collapsing. <p>Worksheet to help students analyse the evidence in the witness statement.</p>
6. 6a.	James Stansfield Worksheet 6	<p>James Stansfield was a Butty at a nearby colliery. His evidence shows that on the same morning his pit was also troubled by sulphur. As a result, all the men left the pit and stopped work.</p> <p>Worksheet to help students analyse the evidence.</p>
7. 7a.	Expert Witnesses: Independent Mine Surveyors Worksheet 7	<p>As part of the inquest, independent mine surveyors were asked to visit Rounds Green New Colliery to inspect the air ventilation system. They all found the system deficient for the following reasons:</p> <ul style="list-style-type: none"> • The air headings did not circulate the air near enough to the area where the men were working. • That the air headings – particularly the troughs – were not cleaned out. <p>Worksheet to help students analyse the evidence.</p>
RESULTS OF INQUEST		
1.	Aris's Birmingham Gazette - Monday 30 November 1846	<p>This gives the verdicts of all four inquests:</p> <ul style="list-style-type: none"> • The inquest at Dudley found Thomas Haines, the mine surveyor guilty of man-slaughter. • The inquest at Oldbury gave a verdict of accidental death but censored the mine surveyor. • The inquest at Rowley Regis gave a verdict of accidental death but found the Butty partly to blame. • The inquest at West Bromwich gave a verdict of accidental death with no blame.
2.	Coroner's Comments, 27th November 1846	<p>Extracts from a letter to Sir George Grey from George Hinchcliffe, the Coroner for West Bromwich, who carried out inquests into some of the deaths at the Colliery, advising the use of independent mine inspectors.</p>

3.	Excerpts from Report from Geological Survey Office, 19 January 1847	<p>This was performed by Warrington W. Smyth in response to a request from the Home Secretary, Sir George Grey. He was asked to investigate serious accidents at two mines - Rounds Green New Colliery, Oldbury and Burgh Colliery, Coppull, near Chorlton, Lancashire. His report on Rounds Green highlights serious deficiencies in the air ventilation system:</p> <ul style="list-style-type: none"> • Although the colliery had two shafts, one raising the coal and serving as an upcast for the air, and the other for raising water and acting as a downcast, they were both at the same level and joined by a gate road. This meant that there was no change in air pressure to make the air circulate. • The air headings were too narrow, and at the same level as the gate road, which meant that the air did not disperse builds up of gas above the road (where it would accumulate being lighter than air.) • The air headings did not circulate the air right up to the crop face where the men were working – but fell short, allowing gas to build up. • The dams, blocking off worked areas, no longer in use, may not have been adequate, and may have allowed gas to escape.
4.	Extract from the Worcestershire Spring Assizes, March 1847 on the trial of Thomas Haines	<p>This is an extract from the Wolverhampton Chronicle, on 17 March 1847. It reveals that Thomas Haines was acquitted of manslaughter.</p> <p>The courts of assize - commonly known as the assizes - were courts held in the main county towns and presided over by visiting judges from the higher courts based in London. They were usually held four times a year, and had a jury of 12 locally picked men. Assizes were abolished by the Courts Act 1971 and replaced by a single permanent Crown Court.</p> <p>The report refers to the Fatal Accidents Act 1846 (9 & 10 Vict. c.93), commonly known as Lord Campbell's Act. This was an Act of Parliament that, for the first time in England and Wales, allowed relatives of people killed by the wrongdoing of others to recover damages. The Act came into effect in August 1846 and gave personal representatives the right to bring a legal action for damages where the deceased person had such a right at the time of their death. Compensation was restricted to the husband, parent, or child of the deceased and was for "such damages ... proportioned to the injury resulting from such death."</p>
5.	1850 Act for Inspection of Coal Mines in Great Britain.	<p>This provided for the appointment of expert mining engineers as inspectors, plans of mines were to be kept and produced on demand by an inspector and notice of every mining fatality was to be sent immediately to the Secretary of State. The Act was of experimental nature and was only to remain in force for five years.</p>

MAPS		
1	OS Map: Published in 1887 (Surveyed 1881-3). Scale: 6 inch	Showing Oldbury and Rounds Hill New Colliery.
2.	Plan of Rounds Green New Colliery (taken from plan supplied by the Surveyor of the Colliery at the inquest)	<p>This identifies:</p> <ul style="list-style-type: none"> • The two shafts • The crop working area • The ventilation system, including direction of air flow and creation of troughs • The main gate way • The dammed areas to old workings
CENSUS DOCUMENTS		
<p>A census is a count of how many people are living in the country at a set time. It is the most complete source of information about the population that we have. The first census was held by the British Government In 1801 and since then a census has been held every ten years – the only exception being in 1941, during the Second World War.</p> <p>By comparing the 1841 census to subsequent census returns, we can find out more about the families involved in the Rounds Green New Colliery accident. Two families have been chosen as case studies.</p>		
What is a Census?		This can be used as a PowerPoint presentation or an information sheet. It provides a short history of census returns , why they are taken, and how they can be used for research.
Family 1: The Holland Family		
<p>This family has been chosen for further research as Job Holland was the mine Butty, and his son, John, was a survivor of the accident, and one of the key witnesses at the inquests.</p>		
1	1841 Census	<p>This shows Job Holland (the Butty) living with his family in Oldbury Lane, West Bromwich.</p> <ul style="list-style-type: none"> • Job is recorded as a coal miner aged 45 • Also living in the house are: <ul style="list-style-type: none"> – Mary, his wife, aged 50 – John, son, aged 15 (and not listed as working) – Elinor, daughter and William, son, both aged 10. (Possibly twins – although it might just be the enumerator rounding down the ages.) – Mary, daughter, aged 5. – Sarah, daughter, aged 3. – Bessy, daughter, aged 1. <p>The census shows the Holland family to be a typical large working class family, living alongside other working class families.</p>
2	1851 Census	<p>Five years after the mine explosion, the family are still living in Oldbury Lane, West Bromwich. This census provides the number of the house – 20 - but we as this was not provided on the 1841 census we cannot be certain that they are living in the same property.</p> <ul style="list-style-type: none"> • Mary Holland is now the head of the family. She is a widow (following the death of Job in the explosion) and is aged 54. She is not recorded as working. • John Holland, now aged 28, is still working as a coal miner.

		<p>This may seem surprising having experienced such a traumatic event, but following the loss of his father (the main wage earner in the family) he would not have had much choice.</p> <ul style="list-style-type: none"> • Also living in the house are: <ul style="list-style-type: none"> – William, now aged 22 and working as a Labourer at a Forge. – Mary, now aged 20, and working as a dress maker. – Sarah, aged 13 – Betsy, aged 11 (notice the change to the spelling of her name) <p>Elinor is no longer living with the family. This may be because she has married, gained work elsewhere (perhaps in service) or that she had died.</p> <p>Notice the discrepancies in ages from the 1841 census. This is as a result of the enumerator rounding down the ages – and reinforces that census documents are not totally reliable.</p>
3	Worksheet	A worksheet to help students retrieve information from the two Holland family census documents.
<p>Family 2: The Windmill Family</p> <p>This family has been chosen for research as they were identified as one of the larger families left fatherless after the accident.</p>		
1	1841 Census	<p>This shows the Windmill family living in Meeting Street in Oldbury. They are a large family (12 members in total) all relying on the wages of just two workers. (Note that the family are listed at the bottom of one page, and the top of another).</p> <ul style="list-style-type: none"> • John Windmill is the Head of the Family, aged 40 and working as a coal miner (at Rounds Green New Colliery). • His wife, Mary, is also listed as aged 40. • Robert Windmill – presumably John’s son – is aged 15 and also working as a Coal Miner. • There are 9 other children living in the house – 5 boys and 3 girls. The youngest is aged just 1 year old. <p>It is worth noting that in the 1841 census the ages of anyone older than 15 were to be rounded down to a lower multiple of 5. So John and Mary may well be over 40 years of age (but under 45). Robert Windmill could be older than 15.</p>
2	1861 Census	<p>We have not been able to trace the 1851 census, so the next information we can gain about the family is 15 years after the accident.</p> <ul style="list-style-type: none"> • The family are now living at 49 Queen Street, in Oldbury. • Mary Windmill is now the Head of the Family. She is listed as a Widow (following the death of John Windmill in the mine explosion) and she is a Publican at the Rising Sun. This is one of the few occupations a woman could have followed that would have provided a living wage and home. Mary is 62.

		<ul style="list-style-type: none"> • Three of Mary’s sons are still living with her. They are all working: <ul style="list-style-type: none"> – Thomas, now aged 26 and working as a Bundler in an Iron Works – Elijah, aged 24, working in a rolling mill. – Edward, aged 24, working as a labourer. • Mary also has two grandson’s living with her, also working: <ul style="list-style-type: none"> – John, aged 19 and working as a labourer – Thomas Boden, aged 16 and also working as a labourer • The family also have a 14 year old servant – probably to assist in the pub.
3	Worksheet	A worksheet to help students retrieve information from the two Windmill family census documents.

ADDITIONAL RESOURCES

Students could use the results of their investigation to hold their own inquest. This could include taking on the role of the Coroner, the jury and key witnesses. The following worksheets can be used to help collate information discovered about four key characters who had responsibility for the management and safety of the mine.

1.	Profile Template: Job Holland	Job Holland was the Butty, managing the mine and employing the miners.
2.	Profile Template: Joseph Smith	Joseph was the Doggy. He was responsible for testing for gas in the morning before any of the men started work.
3.	Profile Template: Thomas Haines	Thomas was the Mine Surveyor, responsible for the air ventilation system.
4.	Profile Template: George Parker	George was the Mine Owner.