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The Newsletter of the Cumbria Amenity Trust Mining History Society

Work in progress to stabilise the Lucy Tongue Level at Greenside Mine

No. 76 August 2004

Cumbria Amenity Trust Mining History Society
Newsletter No 76, August 2004.

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CAT web site: www.catmhs.co.uk

News

Eric Holland

On the eve of the NAMHO Conference, and just before this Newsletter was to be printed, we received the sad news that Eric Holland has passed away. Although he has not been a member of CAT for some years Eric was an initiator and founder member of our Society, and was it's first secretary. He was a pioneer of mine exploration and research, and he will be remembered for his publications, 'Underground in Furness', 'Coniston Copper Mines – A Field Guide', and 'Coniston Copper'. We extend our sympathy to his wife Maureen and to his children. He will be missed. There will be a proper obituary in the next Newsletter. IM.

NAMHO 2004

The Conference, held over the 23rd – 26th July, went smoothly, mostly due to superb organisation by Sheila Barker. No doubt she is glad it is all over! The venue in Coniston at John Ruskin School was very good and the catering was excellent. The high quality lectures were varied and interesting and the lecture programme ran to time, with only one or two electronic glitches! Another large and complex task was that of organising the field meet programme, carried out very efficiently by Jon Knowles. Again, it all went smoothly, and both meet leaders and participants were complimentary of one another. The weather was mostly kind, although those late back from their field trip on Saturday got some heavy rain, and on Sunday morning there was some Lakeland weather which could have spoiled things. However it all cleared by lunchtime to give a fine afternoon.

Many CATMHS members were involved in the organisation and running of the event, and it would be difficult to name them all. However well as thanking Sheila and Jon, mention should perhaps be made of the enthusiasm of Chairman Mark Simpson, who first took up the challenge and managed to get everyone on board, and to John and Lesley Aird, who spent the whole of the week before preparing for the event, played a full part during the weekend, and provided a splendid party for all the helpers at their rented cottage on the Sunday evening.

The next NAMHO council meeting is at Killhope on 13th November at 11am, plus a look round the site - lunch available. Please let them know if you want to attend. After lunch; a trip into Carrs Mine, Nenthead.

It is hoped in due course to publish all the lecture papers, perhaps on the internet. In the meantime here is a summary:

NAMHO 2004 Conference Programme

Extractive Industries of Cumbria

NAMHO 25 years anniversary lecture: Silver; a Contribution to British Mining History

Peter Claughton

Over the past 1000 years that area of northern England forming the modern, post 1974, county of Cumbria has made a significant contribution through mining, particularly in the mining of silver-bearing ores. However, to consider the role of silver in northern mining during both the medieval and the post medieval periods is to court controversy. Opinions can be divided over its impact, even its presence in the ores mined. So in NAMHO's 25th year, its silver anniversary, it is

appropriate to consider how we resolve such conflicts of opinion within mining history, and embrace the views and aspirations of the various interests that make up this diverse subject area.

Coniston Coppermines

Dave Bridge

An outline of the problems encountered while surveying the Paddy End mine workings at Coniston, which comprise seven sub-parallel veins with a total accessible height of 400 feet. Methods of data presentation will be described together with some of the conclusions, both geological and archaeological.

Conservation of Historic Mining Sites in the Lake District

Eleanor Kingston, LDNP Archaeologist

The paper outlines a brief history of mining and quarrying in the Lake District; why and how the LDNPA is involved in the survey and recording of mines and quarries - with examples; how sites can be damaged and the level of protection that exists; illustrated examples of conservation projects throughout the National Park and their interpretation. Finally, the paper ends with a look to the future and possible projects

Some Current Mineralogical Research in the Northern Pennines

Trevor Bridges

The removal of artefacts and mineral specimens from old mines causes much heated debate. Whatever your views, a great deal of mineralogical research cannot be done *in situ.* This talk, illustrated with slides, will outline some recent and ongoing research on quartz epimorphs after fluorite and barium materialisation in the Northern Pennines.

Dredging for Minerals in Northern England with particular reference to the Lake District in the 1960's

Ivor J. Brown

The 1960's were the end of an era for inland dredging and two of the last sites were Kentmere (diatomite) and Windermere (sand and gravel). This short paper is based mainly on the results of a study on these sites during this time.

1000 years of Lakeland Slate

Alastair Cameron

Lakeland's volcanic slate is unique and Coniston has been the centre of this industry for many years. This paper will tackle the vast subject of the history of slate quarrying and mining from its earliest beginnings over 1000 years ago, to the present day. It will also review, briefly, the huge amount of historical data that has been recorded recently.

Nenthead Smelt Mill

Peter Wilkinson

A chronological outline of the development of this large mill, giving brief details of the introduction of new processes, etc.

Originally built in 1737 by a famous Tyneside coal owner, it largely evolved under the control of the London Lead Co., but was later used by the Belgian Vieille Montagne Zinc Co. saved from total extinction by the North Pennies Heritage Trust, it has been partially restored as a tourist/educational facility at Nenthead Mines Heritage Centre.

The 18th Century Coal Mining Firedamp Crisis and Carlisle Spedding's Steel Mill Robert A. Kraftand and Robert H. Samay

Spedding's Steel Mill was his invention to solve the terrible problem of firedamp explosions already plaguing the coal mines of Whitehaven and Newcastle upon Tyne in 1735. Its

success was of course in and out of favour during the eighty years it was used. Spedding was killed in a firedamp mine explosion probably initiated by the steel mill. The Speddings were discarded after the safety lamps made an appearance and the few extant Spedding's are held today in larger museums.

Sandwith Anhydrite Mine

Prof. Tom Elliott & Jack Telfer

The authors were mine agent and mine manager respectively at Sandwith Anhydrite Mine for the owners Albright & Wilson from 1968 to 1984. When in production, this mine was the most productive underground mine in Britain producing annually, at peak, over 800,000 tons of mineral. A shale quarry was operated as a co-facility, making the total site mined output of over a million tpa.— one of the most important extractive operations ever in Cumbria.

The Haltcliffe Lead Smelting Mill

Richard Smith

The mill was situated to the east of the Caldbeck Fells and was built to treat lead ores from Driggeth and other mines in the Fells. Although little of the structure remains, the outlines of the original buildings can be traced and related to the sequence of construction. Between the late eighteenth and early nineteenth century, Haltcliffe Mill was used as a fulling mill, smelting mill, cotton mill and silver refinery. It was the subject of an interesting court case. There is a profusion of lead smelting slags which have been studied and compared with local bale smelting slags.

Little Limestone Coal of Alston

CliveSeal

With the exception of a few brief and often derogatory comments about 'a few small pits working inferior crow coal', the Alston Coalfield was scarcely given a mention within the great works on that area. How does it then come to have one of the only two pits working in the whole of Cumbria, Northumberland and Durham? And why is it that 'crow coal' is so valuable?

The Gunpowder Industry of Cumbria

Ian Tyler

A history of the local gunpowder industry; from John Wakefield an eighteenth century man of vision, who pioneered the erection of the first gunpowder mill in Cumbria, to the arrival of ICI around 1934. A real dead-end job; 102 deaths between the years of 1764 and 1937 in the gunpowder mills of Cumbria.

Conserving and Researching the Nineteenth and Twentieth Century Iron Industry of Furness

Richard Newman, Cumbria County Archaeologist

This will include a significant element on the excavations at the Barrow Ironworks.

The Lost German Mines atCaldbeck

Warren Allison

Research on the Caldbeck Fells over the past six years in conjunction with archival research by Dr S Murphy and Dr R Smith has for the first time located the main German workings during the Elizabethan period. This has led to the discovery of the three main levels, Fortune, Emanuel and New Stoln mentioned in Hochstetter the Younger, as well as the location of the dwelling house. This research has also located the probable site of the medieval mine workings dating to at least 1319. Recently further work may have uncovered evidence of a primitive underground railway system, which could be the earliest in the country and

is mentioned in Agricola as Rowle wagons.

Bringing Together the Evidence

Martin Roe

This paper will discuss how combining archaeological evidence from surface and underground sites with documentary sources can produce an integrated landscape history. Illustrated with examples from the Yorkshire Dales.

Honister Slate Mine

by owner Mark Weir

Mark Weir was born and brought up in Borrowdale on his family's farm at High Lodore. At an early age he was clearly destined to become somewhat of an entrepreneur, he set up a contracting business, ran a local restaurant and become a helicopter pilot, intending to arrange tourist flights over the Lakes.
Mark became interested in the Honister workings when he realised that they were virtually derelict. In 1996 he took over the lease. It took 18 months to get the site back into working order. Slate is now once more being obtained from the Kimberley Mine and processed at the Hause. The operation is very much a family concern. Mark's brother, sister, and in-laws all help, as does his mother, who originates from Coniston.

Meets List

You should find a copy of the new meets list enclosed with this Newsletter. Within the traditional framework of the meet programme we have made some innovations. First there is a pattern. Wherever possible meets have been scheduled for the third Sunday in each month. Secondly, whereas previously we have compiled a list of meets and then tried to find individuals to lead them, this time we have compiled a list of potential meet leaders and asked them to lead a meet of their choice. That way, rather than keep visiting the same old sites, we hope to tap in to their knowledge and enthusiasm and perhaps get some new ideas or visit recent discoveries. Of course it takes time for ideas to crystalise, and not all of the leaders have been able to finalise their plans, so watch the Newsletter for more information, and it is always wise (and polite) to telephone the Meet Leader to let him know you are coming and to get last minute information.

At the NAMHO conference there was a display by the Friends of Williamsons Tunnels. One of the largest subterranean follies in Britain they are located under the Edge Hill district of Liverpool and were the brainchild of rich and eccentric merchant Joseph Williamson in order to give work to men unemployed after the Napoleonic Wars. There are miles of underground passages chambers and caverns hacked out of solid sandstone and highly crafted arches lined with intricate brickwork, buttresses and spiral staircases cut out of stone. Many of the tunnels are filled with rubble dumped years ago, and the Friends of Williamsons Tunnels seek to rescue and renovate this fantastic and mysterious underground kingdom. There is a web site www.williamsontunnels.com. The FoWT are arranging special trips for NAMHO groups at the end of November, 27th – 28th, to see part of the system that is not normally available to the public. It would be nice to have a CAT visit, so if you are interested let me know by 17th September and I will co-ordinate it IM

Levers Water Mine

One of the conditions of consent to re-open Levers Water Mine was that when the job was finished it should be gated and locked. On Tuesday 11th May, with the end in sight, John Brown and Pete Blezard, together with Peter Fleming, Mark Simpson and Ian Matheson,

visited the mine to plan and measure up for the gate.

A problem is that the rock, particularly on the hanging wall side, is unsound and quite friable. Indeed, that was the cause of the blockage and the reason for constructing the timber frame-work which now protects the entrance, both from a safety point of view and from material which will undoubtedly continue to fall from the sides of the crater. There was no sound rock to which to anchor a frame to carry the door, so, after some deliberation, it was decided to erect three steel frames which would beef up the wooden structure, and locate the door in the middle frame. All the steelwork will be inside the present timber framework, and will be invisible from the outside.

Newland Furnace

A meeting of the Newland Furnace Trust was held on 18th May to view the design and specification for repairs to the Charging House roof and gable end as proposed by the consulting engineers, Blackett – Ord. The plans were welcomed by the Trust, but must be approved by English Heritage who are providing most of the money, before the work can be put out for tender.

It is intended to re-roof the existing building, and also to replace the missing north end, which once connected to the top of the furnace stack.. The new gable end will rest on the top wall of the stack so that eventually visitors will be able to walk through the Charging House onto the top of the stack and look down towards the blowing chamber, just as it was when the furnace was in use. It is hoped that the Charging House may contain a small exhibition of artefacts that can be expanded for open days and other occasions. The new gable end will be constructed of reclaimed bricks from the site, and will have a door leading onto the stack. The stack will eventually be capped and have a metal grill across the top

The work is expected to take about three months to complete, and it is hoped that it will be completed by November, for it is feared that the roof in its present condition will not last another winter. This means that there is only about three months in which to obtain English Heritage approval, obtain tenders, and get the contractors on site.

Newland Furnace Conservation Plan

In March 2004 following comments on the original plan Oxford Archaeology North have produced an appendix consisting of information regarding consultation with both local people and interested groups, considerations of future research proposals, ways in which the site could be presented to the public, and details of proposed costs for a structural appraisal.

A copy has been deposited in the CATMHS Library at the Armitt Museum in Ambleside.

CATMHS Book sales

Much of the Society's income is derived from the sale of books that have been written jointly or individually by members, and the proceeds donated to the Society. Currently in print are: Slate from Honister, Lakeland's Mining Heritage, The Mine Explorer Vol 5 and several trail leaflets. Materials for the re-opening and recent maintenance of Lucy Tongue Level at Greenside and the work carried out to open and stabilise Grey Crag Level and Levers Water Mine at Coniston have cost several thousand pounds, all funded by book sales. CAT is in the process of discussing a new publication, but for the moment sales have slowed down. It would help enormously if more people were to sell our publications to their

local bookshop, museum or other outlet, or to consider buying our publications for their own collection or as presents.

Mines Forum Meeting held at Murley Moss on Friday 14th May

This was the second of the newly revived mine forum meetings. It was attended by John Hodgson and Eleanor Kingston, National Park archaeologists, Jamie Lund, National Trust Archaeologist, a representative from Moles and six CATMHS representatives.
Mike Mitchell gave a PowerPoint presentation of the photographs he has taken during the work which we carried out to open and secure Levers Water Mine entrance. This was received without comment.

Jamie Lund reported on the National Trust development at Force Crag. Storms in February had damaged the roof of the dressing building but there was no internal damage. Some of the machinery has been re-installed in its original position. There had been rigorous recording and residues and waste materials were being conserved, Material which would corrode the machinery were removed and the machinery is to be waxed and then the deposits restored. Six removable interpretive panels had been agreed, and the mines forum were asked to vet them for accuracy. The names of Ronnie Calvin, Peter Blezard and Ian Tyler were put forward to do this. A leaflet is to be produced and there are to be open days in June and August. Both MOLES and CAT thought that the work had been well done.

John Hodgson reported that the new National Park Management Plan had been published. It outlined basic policy and described plans, intentions and strategy for the next five years. The National Park Authority would like to develop a Code of Conduct for Underground Archaeology based upon the NAMHO document 'Recording the Underground Archaeology of Mines'. The matter of insurance was discussed, including the National Trust requirement for £5 million indemnity. (The new BCRA insurance carries £3 million)

The National Trust are reviewing their policy regarding the standards of third party work on its land. They are likely to require evidence of Third Party Insurance for £5million, a Health and Safety policy and a risk assessment. They will require a project design and plan and an outline of standards.

MOLES are to start work on Yewthwaite Trustee Level shortly, apparently the start has been held up by insurance problems.

Mineral collection on Caldbeck Fells It was reported that the permit system was not working well, and that members of the Russell Society had been excluded when others had not

Greenside. The LDNPA has been monitoring the tailings dam No 1 for water pollution. The structure of Keppell Cove Dam was causing concern – one option was to demolish it. (The dam is a historic structure and is part of the history of Greenside Mine, so CATMHS resolved to send some photographs of the dam to John Hodgson together with a cas for it's preservation There is more on this elsewhere in this Newsletter. IM)

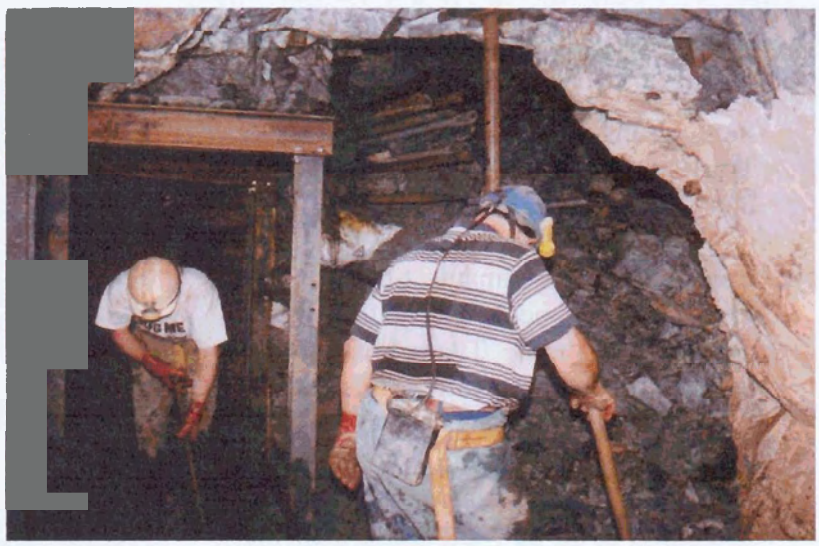
Additional fencing at Simons Nick, Coniston was reported. This is obtrusive and illegal, as Scheduled Monument Consent is required.
The next meeting was arranged for Friday 1st October, at the NT offices, The Hollens, Grasmere

Greenside mine

Conservation work on the Lucy Tongue Level

In order to save on time and cost the Lucy Tongue Level at Greenside was driven in following a clay vein, although it would require supporting the length of the drive. Following the closure of the mine in 1962 there were a number of collapses which blocked the level and caused the water to back up. Permission was obtained in 1992 to re-open the level, and this was accomplished in 1996 by the digging team of Peter Blezard, John Brown, Colin and Andrew Woolard, Peter Sedgewick, William Snaith and Warren Allison. Since then there have been further falls and it was decided to carry out some care and maintenance to clear them out and to strengthen the weak points. The work was done by the same team, working nearly every weekend for several months, and was finally completed early this summer. Peter Fleming and John Aird joined in the champagne celebration

Erecting steelwork



Andrew and Colin Woolard mucking out

The team celebrate

A job well done

Meet Reports

What with the NAMHO conference, holidays, etc it has been a very busy summer. Meet reports have been promised, so hopefully there will be some more information for the November issue of the Newsletter.

Eskdale iron mines, 21st March
Dave Bridge

Mid Wales Meet, 24/25 April
Jon Knowles

Duddon Furnace and Bluebell wood Quarry walk, 12th May
Mark Scott

Eagle Crag mine, 16th May
Peter Fleming

Stank and Yarlside meet, June 9th
Present: ML Peter Sandbach and dog, Mark Simpson, Mark Scott, Sheila Barker, Peter Fleming, Dave Robson, Alan Westall.

It was shirtsleeves weather with good visibility and the path from Newton soon led to fine views over Barrow. We looked at the collapsed engine bed at Yarlside No5, the better preserved one at Yarlside No4 and the two loading areas below Yarlside No3. There is a recent subsidence in this area, but nobody was keen to explore a vertical hole in loose pinnel. We headed for the extensive remains at No 11 pit, but as these are off the footpath, they were viewed from a distance.

We walked up the hill above the large subsidence and stopped at the top to admire the view and to wait for Mark Scott. He said that he had been misled by my inverted map reference. Then it was over the style near Yarlside No8, across a field and the road to Stank No5. The only scrap of historical information that I can add to this report is this: In May 1905, the pumping engine from Stank No5, "Sir James" arrived at James Pit No1, but Harrison Ainslie never got it assembled. The engine bed is still perched precariously above the collapsed shaft, now a pond.

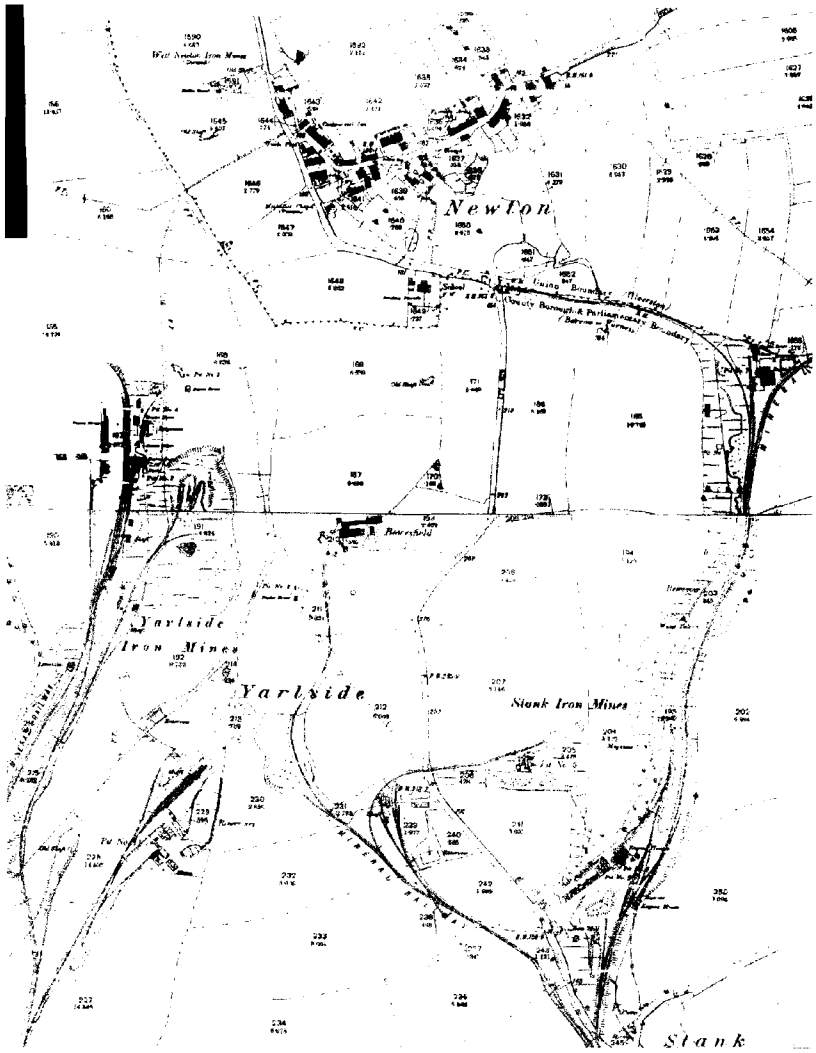
Permission to visit Stank No1had been given on condition that we do not stand too near it, on account of it's dangerous condition. The big Cornish engine house still looks as if it could fall down on you, but I cannot see any change in the last 15 years. The old Rover, the scrap metal pile and the manure heap are unchanged.

We then headed up the old railway line towards Primrose Pit, Stank No7. The valley contains a leat, still visible, taking water from "Sir James" to a reservoir at the head of the valley. Peter Flemming remembered a magazine standing on the other side of the steep valley. I went to look for it and found nothing but nettles and thistles. That was because I was looking in the wrong corner of the field.

At Primrose pit, there was a herd of excitable bullocks and a brick clad concrete engine bed. From Primrose pit, the railway branched. Right would take you to North Newton, where the mines have hardly been recorded. The left branch took us back to the road near Newton school. It is not recorded why this branch was built. We then adjourned to the wrong pub.

Further Reading:
Mine reports exist for Stank and Yarlside, and anyone prepared to spend a month in Barrow archives would have a tale to tell. The series

beginning in BMF 3 and 5, continuing in BD/BUC box 53-57 contains mine reports from J T Rigg to Wadham & Co for Stank and Yarlside. There are also mine reports for Stank in BDB47 box 6, written by J W Lawn to the Barrow Haematite Steel Company.



Stank and Yarlside mines on the 1889 OS map

Evening meet at White Oak Mine - Wednesday 8th July

White Oak lead mine is always worth a visit if only for its attractive setting in the Loweswater Fells with stunning views towards Grasmoor and Whiteside. Even better on a fine summer's evening, as this turned out to be despite the forecast. Roger Ramsden had gone to the trouble of re-arranging his shift to come along and show us a recently discovered part of the mine and it was disappointing that no other members turned up to the meet.

The mine is on a NW-SE lead vein that intersects the north spur of Gavel Fell and was worked by a consortium in the mid 1860's. Clifton Ward writing in 1876 says that a good deal of ore was extracted though the workings were not extensive. In the 1880's a new venture was started under the name of the Loweswater Lead Company, but that rapidly failed and it seems that no work has been carried out since.

The vein outcrops at 800ft OD where it was worked from the surface and from two shallow cross-cuts. A short level on the vein can be still be entered by climbing down into the open working. Below these workings there is an ore bin and the remains of a retaining wall to hold back the spoil. Nearby is the spoil of another cross-cut serving the upper part of the vein. It is not clear if or how ore was transported from here to the dressing floors beside White Oak Beck there being no obvious track or incline.

Some years ago Moles opened up a level further down the slope and a few moments hard graft saw us exploring the cross-cut to its forehead about 120ft inbye. About 40ft from the portal the principal vein is intersected. This is up to 8ft wide and driven along in a north-westerly direction, all the vein material being taken out. In the floor of the drive about 30ft from the intersection is an 8ft square shaft spanned from wall to wall by two massive timbers. Above the shaft a space about 10ft across has been opened up to a height well above the roof of the level as if to accommodate headgear, possibly a sheave wheel. The shaft reduces in width to about 3ft below and connects with adit level at about 80ft. The adit is blocked out-bye and waterlogged. During the early exploration a well-preserved kibble was discovered in the shaft. Also the continuation of the level was found to end at a forehead only a short distance beyond the shaft. There are signs of a tramway but no evidence of any winding gear.

This working is not connected to the higher workings on the vein and could well date from the unsuccessful venture of the late 1880's. From the impressive dimensions of the shaft top and its surroundings it seems that a substantial operation may have been planned but never came to fruition. According to the geologist J D Kendal (The Mineral Veins of the Lake District, 1884) ore in White Oak mine occurred as irregular strings which branch out from the vein into the vein walls suggesting that much of the material extracted would have had a low lead yield and thus be expensive to process. A 40ft waterwheel with 4ft breast was installed to power the dressing plant and a leat brought from a considerable distance up the valley, which is now almost impossible to trace when the bracken is high. When the mine was finally abandoned the waterwheel went to Threlkeld together with other plant and was re-erected at Woodend Mine. A photograph of the same from about 1890 showing it operating as a back shot wheel appears in Ian Tyler's book on Carrock etc.
Down by the beck we located the collapsed adit that still provides some drainage though allegedly walled up for hunting purposes to keep foxes out. Further down the valley are the dressing floors with little to show now apart from a depression in the fell side at the supposed site of the waterwheel, now being used as a repository for dead sheep.

As is often the case the more one investigates a mine the more questions one is faced with. It is unfortunate that other CAT members couldn't have been there to inspect and offer their views on the underground workings.

Dave Bridge

Below is Peter Sandbach's account of the NAMHO meet that he led at Roanhead:

Roanhead again

NAMHO Field Meet, 24th July 2004

Present: S Moran, E Cope, P Sandbach and dog.

The map looked well when viewed full screen in colour. Printed in back and white, it was useless. It did not help that my directions said turn left where it should have been right. Two members of the Friends of Williamsons Tunnels managed to find the site. That was fair enough. When Paul Timewell and I went looking for the Williamsons Tunnels, a road closure sent us circling through the

depths of Toxteth for what seemed like hours.

Having found some of the party, the next decision was whether to abandon the meet. The rain was not heavy, but it was horizontal. I thought that we could make a run for the store, talk for an hour or so and then head for a pub, but the party seemed keen, so we carried on. We followed the route described in the last newsletter, but there was less to see. The vegetation had grown to the point that it was hard to find Kathleen pit changehouse. It is still standing, just.

At Peggy Pit I saw nothing because my specs were fogged by rain but by the time we had crossed the road to Sandscale No1, the weather was fit to stop for lunch. The rest of the tour was completed in sunshine. On the last leg, a roe deer stood and watched us for a minute before wandering off.

Peter Sandbach.

Bonsor East at Coniston
NAMHO Field Meet, 24th july 2004

We were a bit more fortunate than Peter Sandbach & co, as this was an afternoon trip and the rain had ceased by lunchtime. There was however a good deal of water running down the footwall, and ones wellies tended to fill up at the re-belays!

The mine ropes had been rigged previously – one visit with Mark Simpson to put in safety lines and to arrange a safe take-off at the pitch head, and a second with John Aird to rig the pitch itself, 280 feet with two easy re-belays and one slightly awkward one.

Ten people turned up at the BMASC hut; all very competent. On the way up we examined Deep Level entrance, the fragment of 16th century pony track, the remains outside Cobbler Level before going into Old Engine Shaft adit to view the Victorian winding gear there with the aid of a powerful lamp.

Dropping in through the Bonsor East Entrance, we all went to view the pump rods which are still hanging from the old catchwing, and at this point Peter Fleming's group also came in to see them. There are over 200 feet of pitch pine rods about 8 inches square. Some years ago Mike Mitchell and I supported them with wire cable bolted to the rock wall. The catchwing has deteriorated further, and the wires are now under tension. I think they would have fallen without them, but they now need beefing up with additional wires.

Every one then descended the stope, the awkward re-belay causing only slight delays. The clean nature of the rock meant that it was safe for three people to descend simultaneously, one on each section. The delegates were then able to explore the Deep Level workings with the aid of a plan. Some of the keener (and thinner) delegates who were at the NAMHO conference here a few years ago ventured through the LMQT dig, expecting to be able to reach the bottom of the open stopes beneath the New Engine Shaft, but they reported that the way on was blocked beyond the dig.

Everyone was out of the mine by about 5.00pm, having viewed four centuries of mining remains. Thanks to John Ashby for his assistance.

Ian Matheson,

Some observations regarding the Bonsor mine at Coniston

In May, Mark Simpson and I were in the Bonsor East Mine at Coniston, doing some rigging for the forthcoming NAMHO Conference trip.
This mine covers a very wide time span, and has been developed on at least three occasions. In the early 17th Century the German Miners, working for the Company of Mines Royal sunk the stope at least 30 fathoms, and a lot of their hand picked work can be seen on the foot wall. They drove a coffin level near the side of Red Dell Beck, known as the Cobbler Level, in order to drain their workings and it is believed that they installed a dressing floor there, driven by a water wheel in the beck.

Mining had ceased by 1640, and little is known about the mine until about 1750, when Charles Roe began to develop it in order to supply his copper works at Macclesfield.

In the 1830's the Bonsor East was used again by John Barratt in order to remove waste rock obtained from sinking the Old Engine Shaft, driving a short cross cut from the head of Bonsor East to intersect the new shaft. He also re-used Charles Roe's iron water pipe as an outlet pipe for the pump which he installed in his new shaft.

In the 1950s Willie Shaw attempted to re open the mine by driving a level on the Dry Gill vein to intersect the old North Cross Cut. He found the workings beyond were collapsed and the project was not viable, but his action means that mining has taken place in this vicinity in each of the 17th, 18th, 19th and 20th Centuries!

Our observations concern the work done by Charles Roe. When he came on the scene the mine had probably been abandoned for a hundred years. Nevertheless he was able to make use of some of the Elizabethan structure. The old pack-horse track must have been either too narrow or in too poor a condition to use, for he built a new track a few feet lower down. A vestige of the old one can still be seen, with a hand chiselled drainage channel.

The Cobbler Level however, must have been re-used, as the floor of the hand cut level was deepened using gunpowder. This could only have been done in order to remove materials from the level, and it seems most likely the Roe too would have used the Elizabethan floor outside Cobbler Level for dressing, perhaps enlarging it. There are some structures in and beside Red Dell Beck at this level who's purpose has not been explained, though they could relate to the 19th C Taylors Level which is also nearby.

The head of Bonsor East Shaft is underground, and Roe established a water wheel outside which would have driven winding and pumping gear. He eventual reached a depth of 60 fathoms, both operations issuing from the Cobbler Level. The wheel-pit still exists, together with the leat and lagoon which supplied it. Inside the adit, which is partially blocked with fell-side debris, one can see the bob plat and a channel for the winding chain. The wooden bearers for the winding wheel are in place, with another pair beneath them, so at some stage it must have been decided that the original wheel did not give enough clearance.

Further up Red Dell, beyond the Old Engine Shaft wheel pit and launder tower, is Flemings Level outside of which are substantial waste heaps and dressing floors. These have been attributed in part to the 17th and 18th Century miners, but it seems to me much more likely that these operations would have been concentrated lower down, on the platform constructed outside the Cobbler Level.

Ian Matheson

Lindal Cote under Harrison Ainslie

High living and the New Zealand venture of 1870 left the Brogden companies so short of cash that the Ulverston Mining Company was behind with the ground rent, but in 1881, the mines seemed to be working normally. High Crossgates No2 was very productive and the Derby pit (High Crossgates No3, then 60 years old) was still being worked. The Cornish engine at Eure Pits was running. James Pit was active, with two levels being driven into new ground. Old ground was being worked through at Lindal Cote No1 and 2, Pindar Ring, No 50 and No 5 pits. The North Pits, situated across the road from Lindal Cote farm, were not mentioned at this stage, although there were references to North Pit ore in the Gawith notebooks in 1856. New shafts were being sunk at Grieveson and Bercune. The works were run down until December 1883 when the Lindal Cote pumps were stopped and the ore heaps sent away. In February 1884, only the exploratory drives in James pit were working, and after a last inspection by Mr Brogden, these too were abandoned,

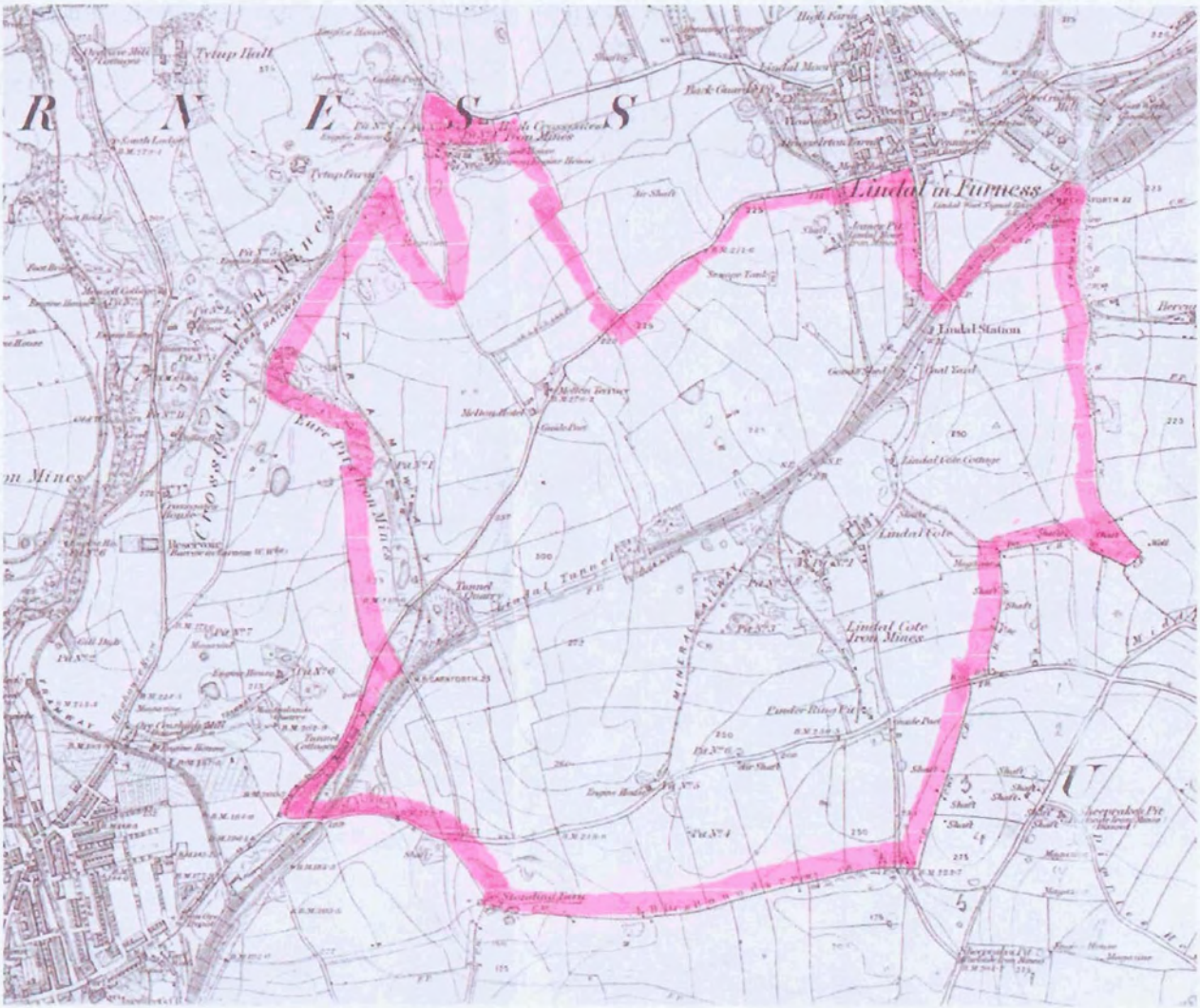
Harrison Ainslie bought the lease for £22,000 in 1885 and they began by opening up the High Crossgates No 2 pit and No 51 pit, though Mr Rigg reported that No 51 pit was never good for anything. In March 1886, they were sinking High Crossgates No1 and 2 and had a new winding engine at Pindar Ring. Lindal Cote No5 was reopened in December 1887. Mr Rigg describes the activities here as "plundering about wherever they can find a particle of ore, but there is not much to be found". Nevertheless, they had nine companies of men on tribute producing 30 - 40 tons a day. During the next year, Lindal Cote No6 pit was sunk, No5 deepened and Pindar Ring reopened. Lindal Cote North pit was mentioned for the first time. It did not last. In December 1890, Lindal Cote No2, 3, 4, 5, 6 and Pindar Ring were standing on account of the water and being so very poor, though No15, No1 North and No3 North were still working. The Company tried to re-negotiate the lease, stating that they had never been able to work the mines at a profit and as a result of rising costs in 1889, they were now unworkable. Besides a reduction in rent and royalty, they sought to abandon all but High Crossgates No2 and to end the commitment to send all the ore by the Furness Railway. Some concessions must have been gained, because only High Crossgates was worked for the next few years.

At High Crossgates No2, Mr Rigg regularly complained that the mine was worked all upside down, as the workings were all on a slope, 70yds below the pumping and winding level at 158Yds. The response was to sink another slope below the 238yd level. John Rigg rarely expressed strong views. The twisting shaft and intermittent flooding must have been something beyond the usual risks, because, his report for May 1895 states that "The mine is still worked in a most slovenly and reckless manner and the chief part of the main roads in the slope are almost impassable". A new shaft was started in January 1896 that was to become the Crossgates No5 pit, but in the meantime, the mine was worked in the same way, culminating in 1899 with a shaft to the 158Yd level followed by a slope 103Yds below the 158Yd level and a second slope 45Yds below that. The main pumps were only designed to work to 100Yds and the Tangye pumps in the slopes were inadequately supplied with steam through the unlagged 2 inch pipes. In his report for October 1900, Mr Rigg reported:

"High Crossgates mine is at present looking very poor indeed and there are no sign whatever for improvement at present. The No2 shaft is in a really shocking state, also the pumps are in a very bad condition, everything seems practically to pieces and in very bad repair, in fact I never saw a place in such a state in my experience."

And in November:

"High Crossgates Mine is at present in a state of collapse and looks very poor indeed, the shaft is still in a wretched state which causes the pumps to be continually out of repair, and are almost past working, the slope has been over half full of water now for some months and there is no likelihood of it's being got out during the present winter. The pumping



The Lindal Cote royalty, marked on the 1890 OS map, showing High Crossgates No5 and No3 North pits.

engine is also in a shocking state of repair in fact everything about the place is about in pieces".

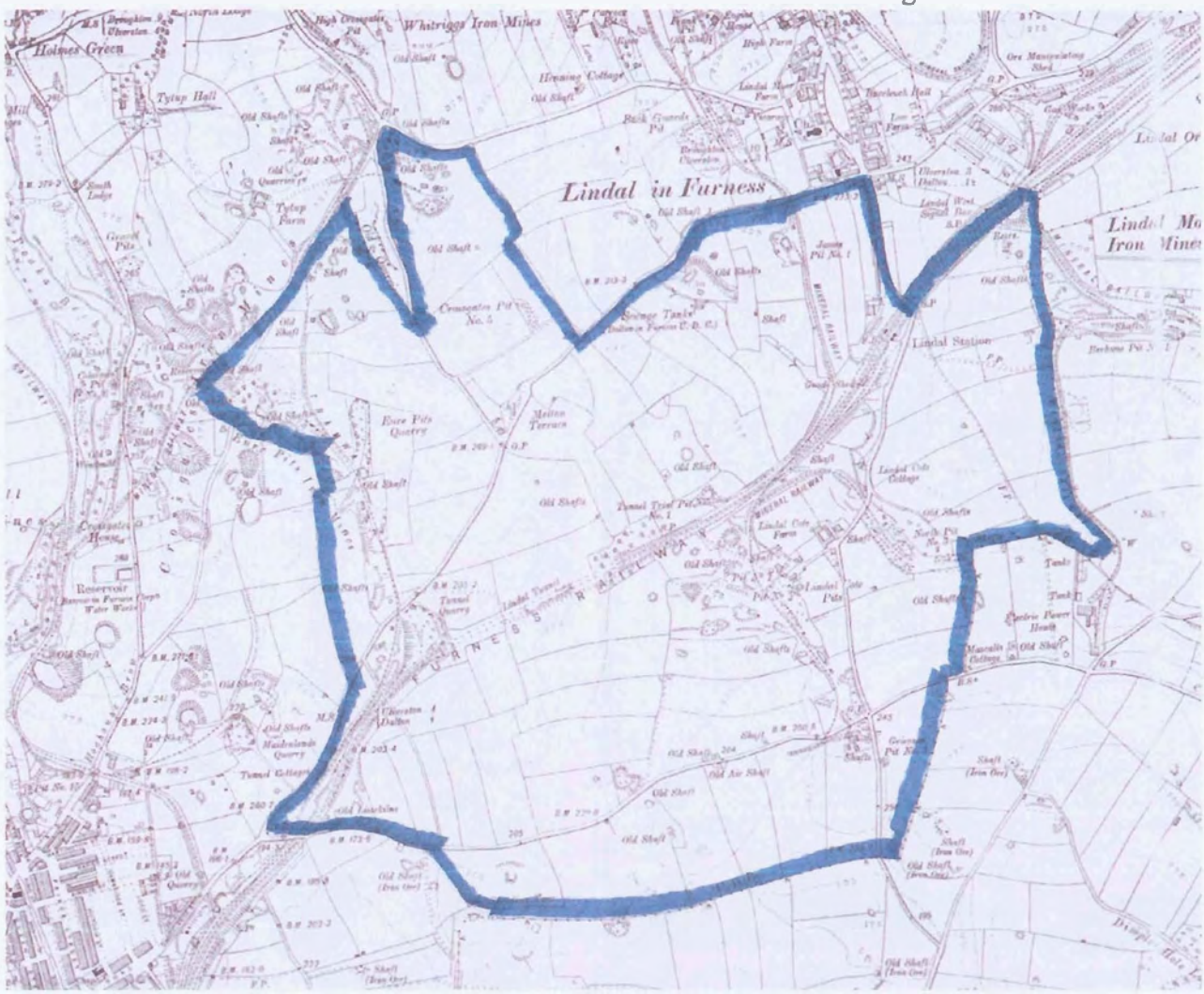
The report for January 1901 was even worse, but somehow they found a bit of ore above the water level until February 1903, when they stopped the pumps, salvaged as much rail and flat sheet as they could and boarded up the engine house. The No5 shaft had been abandoned in 1901.

The Eure Pits were not entirely abandoned. From 1893 there was a team of tributers working "in the black hole behind the engine house". That came to an end in December 1899 when their small shaft collapsed, taking their headgear with it down into the black hole. The quarry was not part of the works, it was leased to Coulton Walker Hunter.

After the stoppage in 1890, the workings at Lindal Cote were slowly brought back to life, beginning with Maskels pit (No5 North) in 1894, followed by No3 North and No15 pits. James pit No3, James pit No1, No1 North pit and Lindal Cote No4 were briefly reopened. Even Lindal Cote No5 was tried again as a gin pit. The pumps at Lindal Cote No1 and 2 were used to drain the mines, and as at High Crossgates, John Rigg complained in every report about the disorganised method of working. In December 1902, only the old ground in No15 pit was being worked, No3 North being flooded out again.

1904 saw the mines worked by a new company, though still in the name of Harrison Ainslie. Wadham & Co. were determined that the mines would be worked methodically and Mr Rigg was obliged to report weekly. Mr C E Ray, the new company's mine manager quickly re-opened No3 North and No15 pits. No 15 pit came to an end in February 1907 when the shaft collapsed.

It came as a surprise to Mr Rigg when work started at Grieveson pit in 1905. The large Davey engine from Lowfield and the winding



The Lindal Cote royalty marked on the 1914 OS map, showing Maskels power station and Grieveson Pit

engines from High Crossgates No2 were brought over to the site, and the Pindar Ring
pumping engine house was demolished to make way for the tramway. The shaft that the Ulverston Mining Company had left at 36Yds was sunk on three shifts until, in February 1907, it was down to 147yds. The water was drained at the 106Yd level, through the No15 pit workings to the pumps at Lindal Cote No1 and 2.

In May 1909, the Lindal Cote pumps were stopped and mothballed. During the previous month the rail, flat sheet, column pipes and two Tangye pumps had been removed from Lindal Cote No3 North, and the Tangye pump from No15 pit. The royalty seemed to be permanently abandoned, but the following month saw Grieveson Pit brought back to life. Two capstans were built to lower two electric pumps (The Davey engine was never assembled). The electricity supply was connected to Maskels power station and an electric air compressor was set up. The gantry carrying spoil over the road to the Pindar Ring area was begun in December. (It
was never intended to carry ore, as stated in the previous article) Lindal Cote No1 and 2 pumps were started again. If Mr Rigg expected the new rock drills to be employed on shaft sinking, he should have known Harrison Ainslie better by now. In April 1910 they were driving out from the 145yd level in three directions, their main effort was to get back into the ground worked by Pindar Ring and No15 pits. The first ore was sent to the grinding mill at Lindal in June. As the Lindal Moor nines were run down, the company moved more men to the Grieveson pit. The pumping arrangement was improved to the point where they could stop the Lindal Cote No1 and 2 Cornish engines in 1912. The boilers were scrapped in February 1914 and the scrapmen moved in on the engines in August. About that time, Harrison Ainslie were reverting to their usual method of working. Mr Rigg reported that they had sunk a weasel 25ft below the 145yd level in good hard blast ore, 5Ft wide.
The mine closed on 5th September1914. Mr Rigg suggested that the reason for closure was that the Maskels power station was being run solely for the one electric pump, and in his last report offered a rare accolade: "As far as the working of the mine is concerned, there is no reason for complaint, and the ore has been worked out in a practical and workmanlike manner".

References

CRO, Barrow, Bucchleuch records

Peter Sandbach.

"Lights, Sound, Action!"

Setting off into the interior of a mine comfortably illuminated by the beam from your electric headlamp, it is difficult to transport yourself back to the working conditions that prevailed underground when the mine was working. The only protective headgear you were likely to wear would be a felt hat, think of the number of times you've hit your helmet on the roof.

Even on the surface, the number of people who have lived in housing illuminated using flames, in the form of incandescent mantle oil lamps, oil lamps with wicks, or candles is falling rapidly. Though it may be many years ago, those who have done so will not easily forget the odour of paraffin, the soot and the constant danger of fire.

In mines with no gas problems the candle reigned supreme into the 20th century. In 1903 miners in the USA went on strike for 9 days when the mine owners attempted to replace their candles with oil lamps only returning to work when the lamps were removed.

So we have a form of illumination, that provides only a meagre amount of light, extinguishes at the drop of a hat and uses a naked flame while the work force is going to use black powder, a

remarkably incendiary material, for blasting. It is no surprise that the bulk of injuries sustained during powder manufacture were serious burns rather than the result of explosions. Until the invention of safety fuse only a single hole could be fired at a time because firing the charge was both difficult and risky while any attempt at timing was out of the question. With the development in the 1830's of safety fuse, burning at a constant rate of two feet per minute, it became possible to fire a group of shots in timed order producing great advantage in shaft sinking, level driving and in large stopes. However only the foolhardy would use their only candle to light the safety fuse, since the ignition of the gunpowder core could easily produce a gust strong enough to extinguish the only source of illumination at a critical juncture. The careful and conscientious shot firer would first ensure that all tools and equipment were removed from the area likely to be affected by the blast. He would then check the route that he would take to shelter as soon as the fuses were lit. He was now faced with a number of fuses hanging from the loaded holes, which had to be lit in a specific order and in a short period of time. (It must be remembered that the miner was charged for his use of candles, powder and fuse by the mining company so there was a direct trade off between safety, i.e. longer fuses and income). The process of lighting the fuses was carried out using a "spitter" a short length of fuse with evenly spaced notches cut through to the powder core; the same number as there were fuses to light. Leaving one candle at some distance the shot firer would use another to light the spitter and them work methodically lighting the fuses in the loaded holes in turn from the flame spurting from the appropriate notch. When flame appeared at the end of the spitter all the fuses should have been lit and it was time to retire to safety. This was done in a deliberate and careful manner for two reasons: falling over and injuring oneself was the last thing one wanted; and secondly rapid movement was likely to extinguish the candle. For the shaft sinker of course the only escape route was to be hoisted up in the kibble, so he was totally reliant on the winding man and the signalling system.

Having achieved safety it was vital that the firer listened carefully to be sure that all the charges exploded since it was essential that the next shift be advised of any misfires. This became even more important as dynamite and other high explosives came into use because the detonators, although still fired with safety fuse, were so much more sensitive to impact than black powder.

The following graphic account shows what could go wrong when multiple rounds were being fired.

"I had just spit seven or eight holes when the first of the Finlanders' shots blew out my light. I lit it again in time for his next shot to put me in the dark again. By than I knew this was no place for me, and I started down in the dark. I had to go down a sixty-degree slope, from stull to stull, and then across the same distance to a pillar that would protect me from my shots when they started to go. Before I started across, I lit a match and got the general picture of those three stulls ahead and started across. On the last stull and one jump from the pillar, the first of my shots went, peppering me with small stuff, but nothing big came my way, and before the next shot went, I was under the pillar. By that time shots were going all around, so I waited them out, lit up and went down to the level with murder in my heart for one Finlander"*

The simple experiment of turning ones cap lamp off underground and attempting movement even without the urgency induced by an imminent detonation will clearly demonstrate the skill and ability of our mining forebears.

William Bickford

CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY

Committee Meeting held on the Monday 10th May 2004 at the BMSC Hut at Coniston, starting at 6pm.

Agenda.

1	Apologies for absence	2	Minutes of the last meeting
3	Matters arising	4	Secretary's Report
5	Treasurer's Report	6	Membership Secretary's Report
7	Meet Report	8	Newsletter
9	Publications	10	Library
11	Coniston Coppermines	12	Hudgillburn
13	NAMHO 04	14	Date and venue of next committee meeting
15	Any other business		

Present M. Simpson (MS), S. Barker (SB), I. Matheson (IM), D. Bridge (DB), P. Fleming (PF), M. Mitchell (MM), M. Scott (MSc), A. Wilson (AW) & Jon Knowles.
The meeting commenced at 6.30 pm. 9 members attended.

1 Apologies for absence from: J. Aird (JA) & J. Brown (JB).

2 Minutes of the last meeting

The minutes of the committee meeting held on Monday 18th March had been previously circulated to members. It was **PROPOSED** by IM and **SECONDED** by PF that the minutes be signed by the chairman as a true and correct record of the proceedings. This was carried unanimously.

3 Matters arising

3.1 Item 3.1 PF had not received a reply from Levens Hall, he would contact Mr J Lampton.

3.2 Item 3.2 SB would bring the list to the Mines Forum meeting on 14th May at Murley Moss.

3.3 Item 9.5 IM reported that JA had delivered the books by hand.

4 Secretary's Report

Received since last meeting:

4.1 Information on the LD NPA Plan.

4.2 Received a reply from Mr. Beck (Woodbine Chimney), he does not want the chimney listed, but he will maintain it himself. SB to reply to Mr. Beck's letter and inform Richard Newman (CCC Archaeologist).

4.3 NAMHO AGM was held 13th March 2004. Mike Moore retired and Peter Claughton took over as chairman, with Steve Holding as vice-chair. Treasurer Roger Gosling also retired and George Price took over. The other Officers remained the same.

4.4 The Newland Furnace Trust held their AGM on 31st March, see the last Newsletter for report. An exhibition of the work to be carried out at the Charging House, would be held on 18th May.

5 Treasurer's Report

JA had sent his apologies as he was on holiday, he had sent his report and the balance sheet covering the period to the 26th April, the current a/c stood at 5573.1 and the Scottish Widow a/c at 10100.00. Expenditure included:

Laptop computer 964.55, BCA PLI premium 360.00 & Greenside Mine safety work 232.65.

The BCA public liability insurance (PLI): JA had sent a letter to all members who had not paid their PLI premium explaining the current situation.

JA wished to request that the committee would consider the following motions:

1) That a new class of member is created without voting rights or right to attend meets but who would receive the newsletter (NL), the subscription rate to be decided by the committee.

The committee decided that those not wanting to pay PLI could receive the NL (£12 per year), but would not be members. **PROPOSED** IM, **SECONDED** MS, all were in agreement.

2) To decide from 3 options regarding next years subs.
It was decided that the subscription rate for members would be:
Single member - surface £ 21 **underground £33**
Joint members - surface £ 32 **Surface/underground £44** **underground £56**
PROPOSED IM, **SECONDED** MS, all were in agreement.

3) That those attending NAMHO 2004 who had no PLI would be granted non-voting membership of CATMHS for the duration of the Conference, solely for the purpose of obtaining PLI from the BCA scheme. **PROPOSED** SB, **SECONDED** MM, all were in agreement.

6 Membership Secretary's Report
There were now 100 paid up members, plus honorary members. A discussion followed regarding if it be would best to change the subscription renewal date, to coincide with the PLI renewal date. To be decided at the next meeting, details will need to go in next NL (August).

7 Meets Secretary's Report
The next meets list would be discussed at the next meeting and go out with August NL.

8 Newsletter
IM was congratulated on the quality of the NL. The pictures of the Levers Water Mine dig had come out very well. IM needed copy for next addition. Carlisle Library, who needed 2 issues of the CAT NL to complete their collection, had contacted IM.

9 Publications
9.1 SB reported that the stock of CAT books consisted of: LMH - 444, Journal No.3 - 13, No.4 - 220, No.5 - 518, SFH - 300, CD' - 566.
SB had contacted the book wholesaler at Mealbank; MM had delivered their order.
PF thought more effort should be put in to selling our publications. MS thought we should produce a gazetteer of photographs of all the mine sites in Cumbria.

9.2 Furness Survey
MS has scanned the survey on to 2 CD's in PDF and JPEG files; he has incorporated maps and aerial photographs of the area. When It Is complete, R Newman to be given a copy for the County Record & ? Barrow in Furness Record Office

10 Library
MS to research digital cameras for the next meeting. IM suggested we should back up all the CD's and keep a copy off site. Any primary material should not be on loan, only copies. We need to buy CD storage containers-Action IM. It was agreed that SB should buy I. Tylers latest book for library.

11 Coniston Coppermines
MM reported that work was going well at Levers Water Mine. John Brown was to take measurements for the gate next week. More fencing had been erected around Simons Nick by ? Rydal Estates. More exploration was required in the mine. An interpretive notice (to include a reference to the 260ft hole) was discussed. Next work meets registered with EH are: 23rd& 30th May.

12 Hudgillburn Mine - Nothing to report.

13 NAMHO 2004
Arrangements for the event were going well, JK discussed who was leading trips, some of which were already booked up. Safety work still needed to be done. Sixty odd booking forms had been returned. The conference folders and contents were discussed. A date to be fixed to test equipment.

14 Date and venue of next Meeting To be held on 5th July 2004 at the BMSC Hut, Coniston, at 2.30PM.

15 Any other business
SB reported that Grove Rake Mine, Rookhope was being dismantled.
There being no further business the meeting closed at 9.30pm.

SB 18/5/04 Chairman

"A Mystery Solved"

Could the following explain the hard work and particular attention that the J Brown Heavy Mob has given to their splendid work at Greenside?

"A story is told of some miners who got a contract to drive a cross cut in one of the Reynolds properties. They had contracted to drive a crosscut into the hanging wall a certain distance to where they would encounter another vein if the calculations were correct. This they did and found the vein as predicted but about midway they ran into another vein no one had mentioned. Saying that they had run into some soft ground they put in sets of legs and head trees, and lagged off the sidewalls so well that nothing ran through. In later years it was reported that the miners who drove the crosscut got a lease on the mine on which they didn't do badly at all!"

William Bickford

CUMBRIA AMENITY TRUST MINING HISTORY SOCIETY

Honorary President:	Lord Egremont
Vice President:	Major J.W.B. Hext
Chairman:	Mark Simpson, 3 South View, Leeming Lane, Burton in Lonsdale, Lancs, LA6 3LE. Phone 01524 262824
Secretary:	Sheila Barker, The Rise, Alston Cumbria, CA9 3DB. Phone 01434 381903 Email: sheila.barker@cybermoor.org.uk
Treasurer:	John Aird, 1 Hillcroft Crescent, Ealing, London W5 2SG Phone 0208 997 5985.
Membership Secretary. **& Newsletter Editor**	Ian Matheson, 1 Rothay Holme Cottages, Ambleside, Cumbria LA22 0EE. Phone 015394 32957. Email ian@rothayholme.freeserve.co.uk
Meets Secretary:	Vacant!
Publicity Officer:	Alistair Cameron, Linden Lea, Pass Street, Eckington, Worcs, R10 3AX. Phone 01386 750494.
Librarian / Archivist:	Vacant!
Committee members:	John Aird Sheila Barker Dave Bridge John Brown Peter Fleming Ian Matheson Mike Mitchell Mark Scott Mark Simpson Angela Wilson
Honorary Members:	Sheila Barker, Peter Fleming, John Marshall, Mike Mitchell, Dave Bridge.