C.A.T.

14

JUST FOR THE RECORD

by McF

The following is a detailed account of a heading blast in a Cumbrian slate quarry, recorded here purely for posterity and for the simple reason that no matter how assiduously you delve into your books and dusty tomes you will be extremely hard pushed to unearth even the vaguest of references to this dying art. For the day of the heading blast is nearly done, the men who pioneered and perfected this technique are dust, leaving behind a handful of tales and very little else.

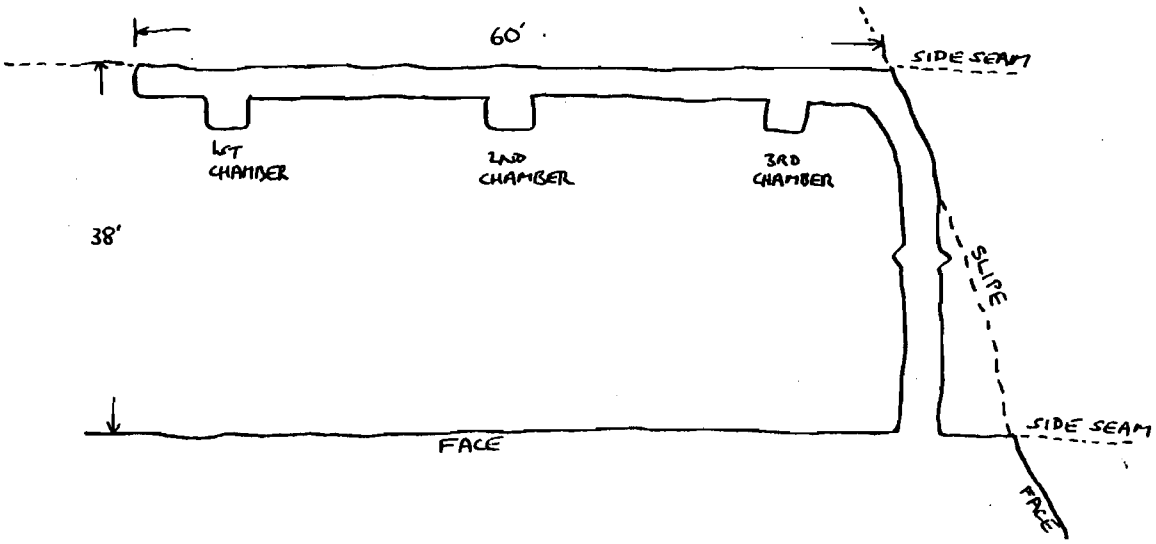
And just what, you could very well be asking, is a heading blast when it is at home? In a nutshell, it is a means of dislodging thousands of tons of rock by driving tunnels - or headings, or levels - under a quarry face, packing them full of explosives and stemming materials, and letting the whole thing go off with a bang. Actually it is a trifle more technical than that but you have there the fundamental idea. It is, in essence, a simple idea and one which has been practised up and down the county for many years and with varying degrees of success. But the death knell has sounded for the heading blast; it is no longer, what with recent technological advances, a viable method of dislodging rock. There are two main contributary factors to its downfall, the first and most often quoted being the expense of the tunneling operations; the second factor, and one seldom mentioned outside proffessional circles, concerns the unpredictable nature of the blast itself. To contain the colossal energy generated by a ton of explosives, and, more importantly, direct it in a direction where it will do some good, the tunnel has to be packed to the roof, and for its entire length, with walling stones and re-enforced with steel bars. If there is weakness the energy will find it and the stemming will be scattered as far as the eye can see. Reports of failures - unofficial reports that is - are as numerous as they are spectacular. Who would have stood in the boots of the shotfirer at Golmire Quarry, near Barrow, during the last war, when he beheld his tunnel spitting fire and his carefully packed tons of walling stones tearing across the valley in the direction of a passing munitions train? Not I for one. And there was the 'big' shot in a south Cumbrian slate quarry which not only disgorged its stemming and blackened the opposite face - a distance of two-hundred feet away - with a great smear of soot, but "roared like a dragon fo' lang ennuff."

The old timers claim that heading blasting was introduced into South Cumbria via the Furness limestone industry, the pioneering initiative taken up by Stainton Quarry, which was followed by Goldmire and, at a later period, the green slate quarries of the Furness fells and the blue slate quarries at Kirkby. If this is the case, and the old timers have their facts in order, then the sequence was roughly repeated for the abandonment of the practice in favour of more practicable, cheaper, and more reliable methods, leaving one solitary slate quarry to blast its way through the 1980s with this time-honoured but rather unpredictable technique.

The account which follows describes a heading blast which took place in December 1985. It is recorded here purely and simply because it is recorded nowhere else, and that is as good a reason as any. The tunnels were driven during September and October of that year. Between October and December the entire face was undercut with a wire saw to ensure the face, which was one-hundred-and-thirty feet high, would burst out cleanly and leave a smooth floor upon which vehicles could operate. By the afternoon of Wednesday the 11th of December the sawing apparatus had been removed from the tunnels and the level-drivers returned to mine out the three small chambers which would hold a total of 1·4 tonnes of black powder.

WEDNESDAY - The level-drivers arrive at the tunnel with their gear and on inspection discover that the sand deposited by the sawing operation has reduced the tunnel height to as little as four feet in places. The entrance level

has been driven along a slipe, an east-west running fault, and the back tunnel along a side seam, a mineralized joint running roughly at right angles; it is hoped the rock, when blasted, will break off by these two planes. Copious amounts of water are perculating down the side seam from the fell above. After several hold ups the level-drivers have time only to bore six 2' holes to break open the first chamber. These holes are charged with dynamite (special gelatine, 80% strength) and fired last thing at night.



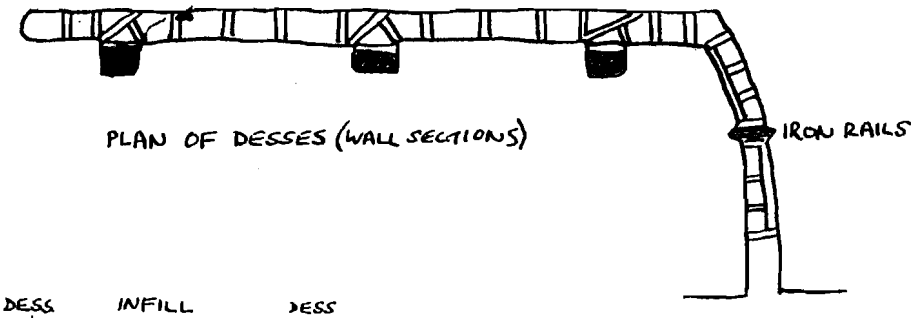
THURSDAY - Another round of holes and the first chamber is complete. It is just large enough for twenty 25kg bags of powder. The muck blasted from the chamber is used to backfill the dead heading at the forebreast instead of being carted out. The second chamber is well under way by evening, requiring one more round of six holes to finish it off.

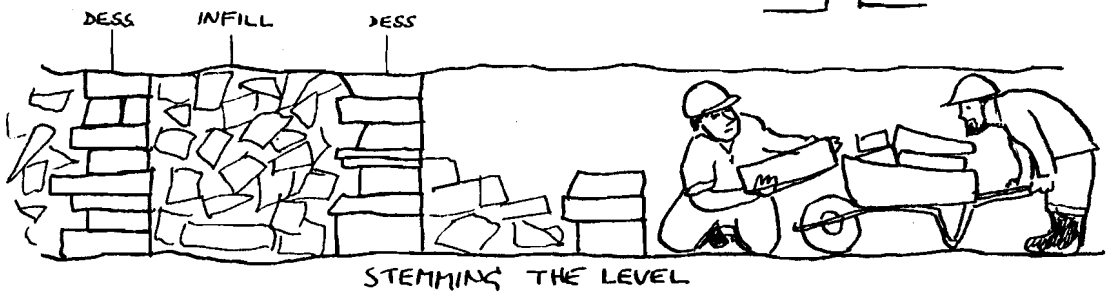
FRIDAY - The second chamber is completed and the muck left where it has fallen to form a sizable obstruction in the middle of the back level. It is possible for the level-drivers to crawl over the heap though problems will be created when the first chamber is ready to be charged. By evening the third and final chamber is thought to be complete. Here, too, there is a heap of muck almost blocking the level.

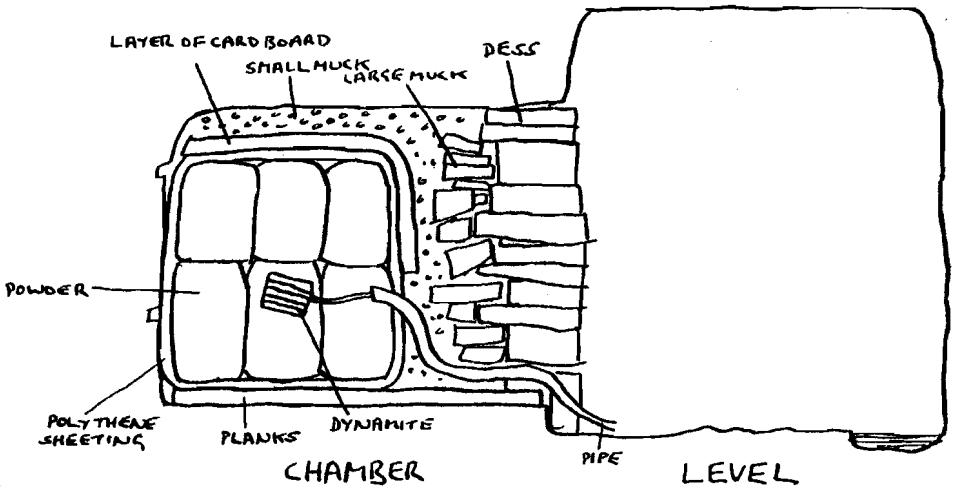
SATURDAY - The level-drivers are aided by two quarrymen. The second chamber is backfilled with its own muck to allow access to the first chamber. The first chamber is then totally cleared till the floor is spotless. The dead heading at the end of the level is then walled up with muck and walling stones as far as the first chamber. The first chamber is now ready to be charged but the level-drivers consider it to be too late in the day to be organising large quantities of explosives. They decide instead to muck out the remainder of the level, enlarge the third chamber with a round of short holes, and blast two recesses in the walls of the entrance level to accommodate the re-enforcing rails.

SUNDAY - The third chamber is backfilled with its own muck and the levels cleared to allow access for a wheelbarrow. Twenty bags of powder are packed in the first chamber, which has been lined with two layers of polythene sheeting. A bundle of dynamite, on a double length of Cordtex detonating fuse, is placed in the midst of the powder, the Cordtex inserted into protective alcathene piping and run out into the quarry. By evening the back level has been walled up to the second chamber, which has now been cleared, its muck being used as stemming material.

MONDAY - More powder arrives. The second chamber is charged in an identical manner to the first and linked into the Cordtex fuse running in the alcathene pipe. Muck stacked in the third chamber is then incorporated into the stemming







process. The team is made up to five with the addition of another quarryman whose task is to 'knock up' large blocks of stone with a tully, a heavy hammer with an axe-like edge, to render the walling material small enough to be handled with ease. By evening the level has been stemmed to within four feet of the third chamber.

TUESDAY - The level is soon walled up to the third chamber - but there is no more powder. Men in Land Rovers are dispatched to other slate quarries bearing begging letters. Torrential rain. The underground team rest in the cabin while Christmas draws nearer. After dinner there is still no powder. The level-drivers decide to wall up the sides of the entrance level, leaving barely enough room for the wheelbarrow to pass. Salvatory powder arrives at 2:30 from somewhere in the fells and by evening the third chamber has been charged up and securely walled in.

WEDNESDAY - The level-drivers are now stemming the wettest part of the tunnel and oilskin suits fail to repel the incessant water. Stemming has progressed round the corner by dinner time and the iron rails are in position and secured by evening.

THURSDAY - The stemming operation is complete by 11am. The level-drivers remove their equipment from the area. The directors assemble on the top of the quarry at 1:00pm, along with local dignitaries and other eminent persons, to witness the shot. At 1:10 the mist comes down. The level-drivers fire the shot at 1:15 and nobody sees a bloody thing.

BELAYS AND BELAY LOADINGS

by Anton D. Chenylle-Proctor-Thomas

Basically, a belay is subject to two forms of loading - (a) a static loading, eg. the weight of a caver plus any gear carried and (b) a dynamic loading.

Static loadings may simply be quantified in terms of units of force, Newtons (N)(after the bloke with a lump on his head and a bruised apple) by the equation Force = Mass x Acceleration. The acceleration in this instance being provided by the force of gravity which equals 9·81 m/s^2 (say 10 for ease of calculation) so a caver of mass 80kg complete with tackle etc. would exert a force of 80 x 10 or 800N on the rope and belay.

Dynamic loadings however are more difficult to quantify, as we'll see later, but the principle is as follows - if the momentum of a moving (or in our case falling) body or mass (eg. caver) is arrested by a member (in our case, the rope) then the kinetic energy lost by that body (ie. impact force) will be transmitted to that member. Also, as the rope will hopefully be attached to a belay, then the belay will also be subject to an increased loading. It is easy to visualize the magnitude of these dynamic loadings in comparison to static loadings if you conduct the following experiment. Spread your hand on a workbench and, if gently placed (ie. static loading) your hand will not too uncomfortably support the weight of a six pound sledgehammer. Compare this with the painful sensation you will receive if you give your hand a sharp rap with say a 2oz pin hammer (ie, dynamic loading) an object some fiftieth the weight of the sledge. A swiftly descending sledgehammer has the power to break up concrete. Imagine then what the kinetic energy of an 80kg falling caver can do (think in terms of rock anchors being rived out of the rock).

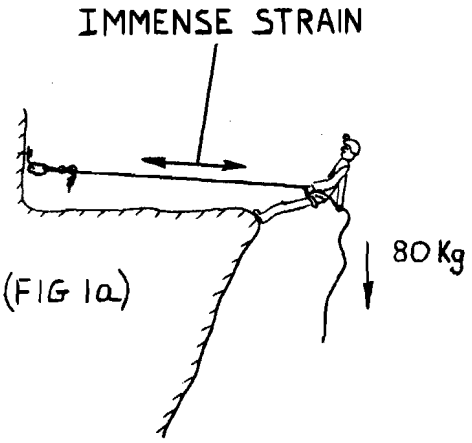
However, modern rope technology comes partially to our aid in that all modern caving (and climbing) ropes are required to have U.I.A.A.* approval. How this benefits us is as follows. To meet with U.I.A.A. requirements a rope when used for its correct design purpose (ie. caving rope for fall factor one situations and climbing rope for fall factor two situations) must limit the maximum potential peak impact force to 1200N (or 1200kg force approximately). This figure by the way is not derived in consideration of reducing the loads transmitted to a belay but is considered to be the maximum decelerative force that an average harnessed human body can sustain without serious damage to organs and bone structure etc. (this figure equates to some 15 times gravity - 15g - on your 80kg caver). To meet with this requirement these ropes are designed to absorb impact energy, which they do by elastic elongation, and it is this capacity to absorb energy and thus modify the peak impact force which makes it difficult to quantify the dynamic loadings of ropes (it also helps justify their high purchase price).

Now we know what static and dynamic loadings are, we can consider how they are induced, and, more importantly, how to account for and, whenever possible, eliminate them.

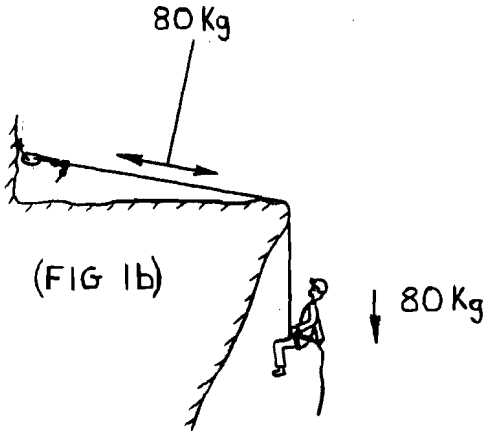
Static loadings need little explanation but there is one situation in particular where the magnitude of the forces involved may be overlooked.

Consider the situation in figure 1a, it sometimes crops up where the belay is low down or even at floor level, it might be a natural belay or a rock anchor, and to take off from the pitch head the caver leans out from the ledge and proceeds to walk down the rock face. The message here is beware! At the instant where you lean out you have a situation where you weight (acting vertically downwards) is supported by a member (the rope) acting horizontally and in theory at that instant the loading in the rope (and the belay) is infinate. What actually happens in practice is that rope modifies the load (by stretching) and you suddenly drop down a few feet with a twang but the load transmitted to the belay is still <u>very high</u>. Also consider that if the belay is a rock anchor, and it is driven into the rock directly away from you, then the bolt is not being loaded as it was designed (ie. in shear) but instead you are trying to pull it straight out of its hole. (Both the above mentioned con-

siderations also apply to traverse lines and Tyroleans). The safest method to descend from this stance, if it is not possible to arrange a higher belay, is to sort of slither over the edge and to keep the rope as near verticle as possible by keeping the rope down on the rock (with suitable abrasion protection as appropriate). Once you are supported by the rope vertically, the rope and belay system is subjected only to forces of conventional magnitude. (fig 1b)



(FIG 1a)



(FIG 1b)

Dynamic loadings are induced in several ways. In general they are imposed when a rope (and subsequently the belay) is required to absorb the energy resulting from a change in velocity of a caver. Dynamic loadings of varying magnitudes can and do occur when (i) abseiling, (ii) prussicking and (iii) intermediate belay failure.

(i) Abseiling

When you are simply hanging from your descender, you are applying a load on the rope equal only to your weight. As you begin to descend the load in the rope is less than that of your weight, simply because the rope is no longer supporting your whole weight. That's why you are moving. When you stop mid pitch however, the rope not only has to sustain your body weight, but an additional force created by the deceleration of your body to rest. If someone were to abseil uncontrollably and then manage to break his descent rapidly, or as sometimes happens, someone were to back off over a pitch before taking in all the slack, then very high forces (ie. forces approaching that of the U.I.A.A. peak impact force specification) may be applied to both the rope and the belay. Abseiling on a dry, unfurred rope, giving rise to a particularly jerky descent, or a novice descending may well give rise to high rope loadings.

(ii) Prussicking

Again, whilst simply hanging from your jammers, a simple static loading is applied. When you stand up in your foot loops however, you are imposing an additionally applied force created by the acceleration of your body mass upwards. I have read somewhere that a vigorous prussick can create loads of up to 200kg (ie. 2-3 times your body weight). It stands to reason therefore that a vigorous tandem prussick (not that tandem prussicks are recomended) may create loads of up to 400 kg and, if the frequency of the prussick cycles were to coincide with the rope stretch (bounce) cycle, even this figure may be exceeded.

Another way in which high loads can be created whilst prussicking is if your chest jammer were to fail or slip and you are brought up sharp on your safety link. Also if you were to stand up then go to sit down in your harness before ensuring that the rope has passed through your chest jammer without bringing up some slack, again a shock load will be created.

(iii) Intermediate Belay Failure

The nature of a re-belay is such that you need to leave slack in the rope above in order to negotiate it. When a re-belay fails, this slack will allow you to fall (approx 2m) until the rope becomes taut and arrests your fall. When it does the rope and belay will be subject to a high loading.

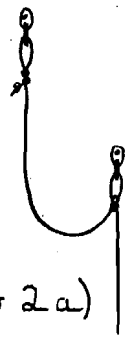
As can be seen, shock loadings can be created in every day caving situations and it is sobering to note that in the event of main belay failure

the only shock loading sustained will be by you, not the rope, when you hit the bottom so it is important when rigging a pitch to design the main belay such that it will sustain any possible shock loadings and, equally as important, be arranged such that it does not create any potential shock loading situations in itself.

It is generally accepted that if self drilling rock anchors are to be used for the pitch head main belay, then at least two should be used. Now the nature of rock anchors is such that there is no way of knowing what load they will sustain until one pops on you. All we know is that a well placed, recently installed anchor may take up to around 2000kg, and a badly placed one will take virtually nothing. The bolts you will be using then will range somewhere between these extremes and it is prudent therefore to account for the fact that their yeild load may be low.

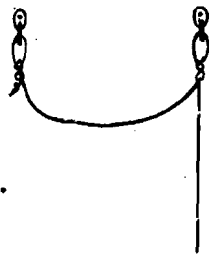
Figures 2a and 2b show two common belay situations. The way they are rigged is such that the full rope loading is borne by one anchor alone. Should that anchor fail under any of the loading situations as previously discussed, then the back up anchor will receive a severe shock loading by virtue of the slack between the two anchors. This last remaining anchor may not sustain a shock loading.

Figures 3a and 3b show an alternative rigging of the same situations such that any loading is shared equally between the two anchors thus a peak rope load of say 400kg will exert a force of 200kg on each anchor. Because the loading on each anchor is halved they are less likely to fail but, if one does go then the other, being already under tension, will receive no sudden shock as the full load is transferred to it.



(FIG 2a)

ALL LOAD ON ONE ANCHOR.
SHOULD FIRST ANCHOR FAIL
THEN BACK UP ANCHOR WILL
BE SUBJECT TO SHOCK LOADING.



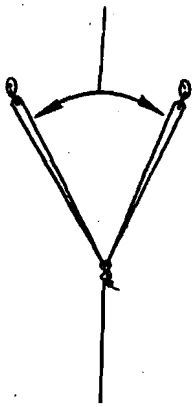
(FIG 2b)

Figure 4a shows a situation where the main belay is kept back in order to protect the approach to a tricky pitch head, where a pitch head belay allows an easy take off and free hanging pitch. Figure 4b shows how the load sharing priciple may be applied to this situation so reducing the possibility of pitch head belay failure and its attendant risks.

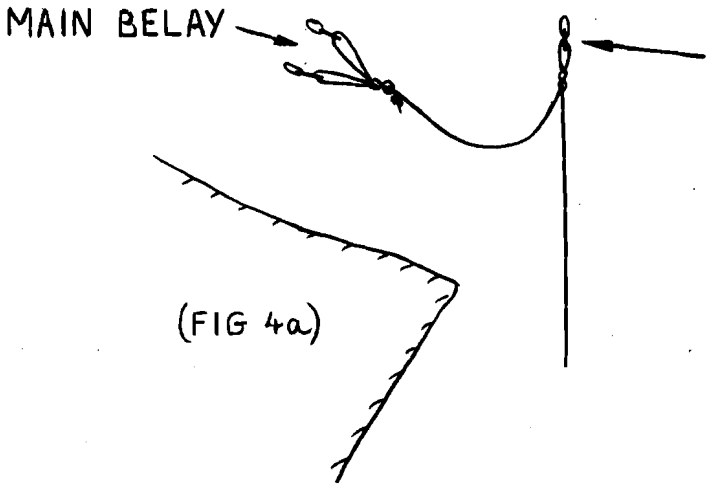
(FIG 3a)

LOAD SHARED BETWEEN
EQUALLY TENSIONED TIES SO
EACH ANCHOR LESS LIKELY TO
FAIL. SHOULD ONE FAIL THEN
THE LOAD WILL BE TRANSFER
ED TO THE REMAINING ANCHOR
SMOOTHLY WITHOUT SHOCK.
USE FIGURE 8 ON THE BIGHT
FOR THIS BELAY.

DO NOT EXCEED 90°
INCLUDED ANGLE

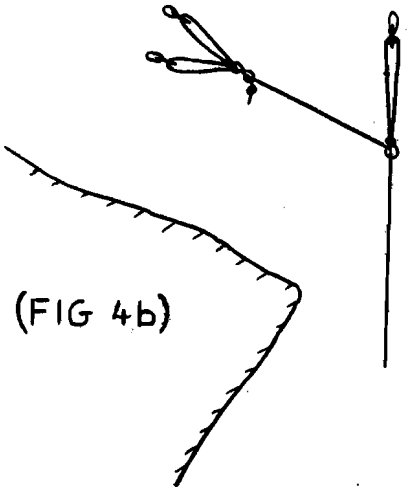


(FIG 3b)



(FIG 4a)

ALL LOAD ON ONE ANCHOR. SHOCK POTENTIAL ON MAIN BELAY.



(FIG 4b)

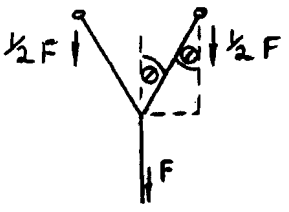
LOAD PATIALLY SHARED BY MAIN BELAY. IF PITCH HEAD BELAY FAILS THEN BACK UP ALREADY UNDER TENSION THUS REDUCING SHOCK.

When rigging shared belays ensure that the included angle between the Y-belay ties does not exceed 90°, an included angle of 120° for example will cause a force equal to that on the main rope to be exerted in <u>each</u> of the belay ties, an angle of 151° twice the force, 160° three times and so on (see fig 5) and any shock load forces will be similarly amplified.

This phenomenom accounts for the high forces exerted in Tyroleans and traverse lines where you have in effect a Y-belay with a large included angle. The high forces described in figure 1 are also developed this way.

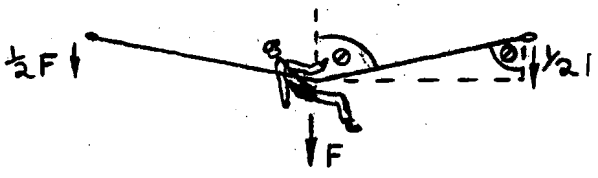
Figure 5 depicts these situations along with a table showing how the force is amplified as the included angle increases. Anyone wishing to varify this phenomenom for themselves may easily do so by simply drawing to scale a triangle of forces depicting any belay situation they wish and scaling off the resultant force H or alternatively, may calculate by trigonometry an example along the lines of the example give.

Y-BELAY



LOW LEVEL BELAY

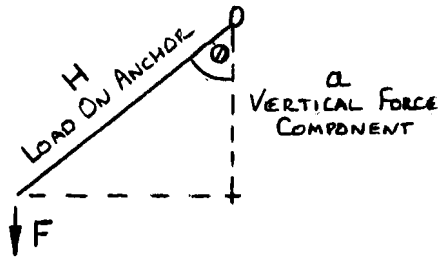
TRAVERSE/TYROLEAN



(FIG 5)

ANGLE Ø°	10°	20°	30°	40°	50°	60°	70°	80°	85°	89°	89·9°
AMPLIFICATION OF LOAD ON ANCHOR	1·015	1·064	1·155	1·305	1·556	2·00	2·923	5·759	11·47	57·29	572·9

WHEN Ø = 90° THE AMPLIFICATION OF THE LOAD IS INFINITE



$\cos Ø = \frac{a}{H}$ OR $H = \frac{a}{\cos Ø}$

TAKING a TO BE 40 Kg (ie 80 Kg DIVIDED BY 2 FOR SHARED BELAY) & ANGLE Ø OF 60° (FOR 120 INCLUDED ANGLE)

$H = \frac{40}{\cos 60°} = \frac{40}{0.5} = 80\,Kg$

* The U.I.A.A. (L'Union Internationale Des Associations d'Alpinisme) is a body whose function it is to develop standards for the performance of mountaineering and caving equipment. The U.I.A.A. stamp on any equipment eg krabs, helmets, etc, signifies that the performance of that equipment conforms to those standards.

NEWS FROM INDUSTRY

ALASTAIR LINGS

WALES

Anglesey Mining Co. Ltd. has submitted a planning application to develop an underground mine at Parys Mountain. The proposed mine is hoped to produce copper ore at a rate of 1000 tonnes per day for fifteen years or more. Access will be by a 540m deep vertical shaft.

SCOTLAND

The Colby Resources/East West Resoources joint venture are drilling on the river Almond gold prospect near Crieff in the Highlands. A talc-magnesite deposit at Cunningsburgh in the Shetland Islands is to be explored by Shetland Talc Ltd.

NORTHERN IRELAND

Jamex Resources Ltd. reports encouraging results from drilling on its gold prospect adjacent to Ennex International's deposit in the Sperrin Mountains. Other companies are exploring for gold in the area.

SOUTH-WEST ENGLAND

Amax has been granted planning permission to mine the tungsten/tin deposit at Hemerdon Ball, near Plymouth

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OPEN DAY

The British Geological Survey are holding an open day at their H.Q. at Keyworth, six miles south of Nottingham, on Sunday the 19th of October. Telephone Plumtree (06077) 6111 for further details.

KNOCK! KNOCK!
WHO'S THERE?
OH, OH, ANTON.
OH, OH, ANTON WHO?
OH, OH, ANTON EEO AND HIS ICE CREAM CART.

sorry about that.....had to fill this gap with something

Manx Wheel.

The unique example of Victorian water-powered engineering, the Laxey wheel, is again turning and doing the job for which it was intended. The wheel was made in 1854 to pump 250 gallons of water per minute from the 1200 ft. deep workings of the Great Laxey mine. Although the wheel, owned by the Manx government, has been turning for the last 20 years, its 185 h.p. has been re-connected to a bob at the top of the shaft some 600 ft. away from the wheel. The bob is connected to the pumps some 60 ft. below ground which last worked in 1929 by a new set of pump rods layed from the wheel, along the top of a 4 ft. wide viaduct to the shaft and hence down. The rods, of which 15,35 ft. long were needed are of pitch pine and were purchased in Kent after a nationwide search. The restoration work was carried out by Dorothea Restorations of Stockport (who restored the Wilkinson memorial in Lindale 2 years ago). The scheme is part of a 4 year restoration project costing nearly ½ a million pounds (poor old Manx taxpayer!) with the long term view of opening up part of the underground workings to what is recognised as one of the most important and best preserved mining sites in Europe.

1987 Meets.

Suggestions are required for 1987 (first 6 months) meets and also meet leaders prepared to take on the task of leading them.

Wharton Crag Mines.

As you may be aware from reading the minutes of the committee meetings of the last year or so C.A.T. has been negotiating with both the landowner and his agent of the beautiful and picturesque mine Wharton Crag, Lancashire (?). I am pleased to report that C.A.T. has taken on the access control and the upkeep (such as it is) of the mine. Members intending a visit to the area should contact the secretary before their trip to check up on the requirements which must be complied with.

Charity?

C.A.T. is seeking charitable status from the Charity Commissioners and this may require constitutional changes.

Copper Trials?

South Lakeland District Council is to ask the D.O.E. to change the status of the Coniston Copper Mines from an ancient monument to a building of historic and architectural interest. This is being done to safeguard the site. "The use of the building is being fundamentally changed and a great deal of structural work is beng envisaged" said the Chief Planning Officer. Councillors were told that this change of status would force stricter planning controls on the controversial plans to change the site into a 'field study centre'.

Safety First.

The committee wishes to remind C.A.T. members that they should always be mindful of the safety aspects of pitch rigging for S.R.T. Deviation belays and Re-belays should always be used where appropriate both to increase safety and to prolong the life of rope.

Book Review.

Don Borthwick.

Coals from Oxford.

The History of the British Coal Industry. Clarendon Press, Oxford.

In 1975 during his tenure as chairman of the N.C.B. Derek Ezra helped to initiate what will be a comprehensive history of the industry in Britain. It is planned to be in 5 volumes, the first, volume 2 was written by the late Michael Flynn and was published in 1984.This covers the period 1700-1830 and is entitled 'The Industrial Revolution'. Last month volume 3 was published, this by Prof. Roy Church covers the period 1830-1913 with the sub-title 'Victorian Pre-Eminence'.

It is not possible to offer a review of these here, Flynn's book is now valued reference and Church's is reviewed by Prof. Payne of Aberdeen University in the T.H.E.S. of 25.7.86.

All aspects of the industry are covered but perhaps with more of a financial bias than the shorter regional studies. Each volume is independent of th others and the structure is not uniformly rigid though there was some liason between individual authors. There are only 8 illustrations in volume 2 and the price is very steep.

Vol 2 460 pp ISBN 0-19-8282834 £35.00

Vol 3 790 pp ISBN 0-19-8282842 £55.00

Volume 5 covering the period 1946-80 by Prof. William Ashworth, assisted by Mark Pegg is to be published soon.

It is not unexpectedly sub-titled 'The Nationalised Industry' and has 670 pages of text and is expected to cost £48.00.

More Books.

Davis Books (reprints of Hunt, Raistrick &Jennings, etc.) are extending their range with the arrival (late Sept.) of Fynes, "The Miners of Northumberland and Durham". This was first printed in 1873 and reprinted in 1923 and 1971. The author, who spent most of his working life in the pits, records the life of the coal miner, the protracted struggle for decent conditions and the desire to improve safety in the pits. This too, is the story of the leaders of the struggle who often gave up everything in the fight to create a better life for the mine-workers and their families. Something of a classic.
ISBN 0-946865-05-1 Hardcovers, £15.00.

Hopefully early Dec. should see "Alston Moor, Its Pastoral people, its Mines and Miners" by W.Wallace back in print. A much quoted reference, originally published in 1890 and now scarce. The 'pastoral people' takes up the first 90 pages and the following 140 pages are taken up with mining matters. Again hardcovers, probably £15.00.

Austin's Level.

Albyn Austin, that noted West Cumbrian haematite collector has discovered yet another new level in Eskdale at 187 014. It was put in by the South Cumberland Iron Co. in 1881-82. He reports that there was very little in it only some "top hat" rails and a piece of lead sheet with something like putty squashed between the two halves folded together? After thourough exploration it was blocked up.

He has also been talking to an old Greenside miner who remembers working on the Glencoynedale level in the 1950's. He describes a compressor being sledged over the fellside using the motor to drive a winch with which it winched itself along using stakes driven in the ground. Further supplies were then brought over the top by pack-horse.

Rescued, at last!

COMRU have at last been out on a rescue. They were recently called out to a mine at Kirkland, West Cumbria. A local shepherd, out fox-hunting had followed his terriers into a mine. Friends (?) lowered him down to the fallen dogs but were unable to pull him out. They went for help and COMRU was called at around 3.00 a.m. Despite a

shortage of petrol at the Barrow end (thankfully rectified by Cumbria Constabulary) 9 members were on the scene by 4.45. Led by team leader Mike Mitchell,the two dogs and the poor fellow were finally hauled out to day at 7.30. Everyone then repaired to a local pub where tea and toast was laid on. By this time the team had reached 10 in number and the press had arrived on the scene. Several newspaper reporters and even BBC tv turned up to interview everyone in sight. An excellent rescue smoothly run.

Christmas Already.

We have decided to offer Dunham's "Geology of the North Pennine Ore-field"as a prize in our Christmas competition.

Journal No. 2

Due to a c*** up at our original printers the journal has been moved to another, it will be out soon.

News

THE CONISTON COPPER MINES SAGA took another turn in August when the planning committee of South Lakeland Council recommended that the Department of the Environment be approached to designate the remains of the Bonsor Mill complex as buildings of historical or architectural interest as opposed to the ancient monument status which the site was granted in July 1985. The Council feels that because the site is an ancient monument the development work planned by Mr Phillip Johnston, a businessman from Congleton, would not have to comply with building regulations or be examined by a building control officer.

Mr Johnston, who is determined to convert the Bonsor Mill into what he calls an interpretive centre, has already run up against the Lake District Special Planning Board who have thrown out an application to convert the powder house into staff accommodation and deffered an application to convert another building into residential facilities. Plans to turn the foremans' hut into an information booth have been accepted.

C.A.T.'s opposition to Mr Johnston's scheme has won support from other member groups of N.A.M.H.O., the National Association of Mine Historical Organisations. At the N.A.M.H.O. annual general meeting, in Matlock Bath on the 23rd of March, Dave Blundell distributed information sheets detailing Mr Johnston's activities since he arrived in Coniston, his treatment of the mine remains, and his attitude towards planning regulations and the Special Planning Board. As a direct result of this action many groups contacted the Planning Board and registered their opposition to development on what is one of England's most important copper processing sites.

The issue was again discussed in detail at the N.A.M.H.O. meeting on the 22nd of June, at Matlock Bath. Mr Johnston's views and opinions were put to the delegates by his representative, Roy Garner of the Lakeland Mines and Quarries Trust, a society striving to remain on neutral ground. At the end of the day, and after Dave Blundell had his say, the committee agreed overwhelmingly that, in the interests of industrial archæology, development work at the Bonsor Mill should be halted as soon as possible. The committee decided to approach English Heritage, the body controlling official ancient monuments, to ask them to freeze all development work at the site till a full archæological survey has been completed.

GWYNFYNNYD MINE, one of Wales' two modern gold mines, is again in full production after a winter of uncertainty. No.6 Level, the main adit for locos and wheeled vehicles, has been securely gated and a security system installed which has direct links to Dolgellau police station. All crushing and processing is being done underground and the waste rock being tipped by dumper on the fellside behind the office.

A CORE DRILLING FIRM FROM GLOCESTER has been sinking test holes into the sedimentary rocks of Kirkby Moor, in Furness, in search of a new 'blue' quarry for Burlington Slate Limited. Core samples from the top of the old High Gawthwaite Quarry, the fellside behind Low Lord Quarry, and the narrow vein upon which Crow Brow Quarry is situated, have so far revealed nothing that resembles slate. No further exploration is planned for the future.

On the 7th of August the Kirkby quarries were visited by His Royal Highness the Duke Of Edinburgh who toured the bottoms by Range Rover, entering through the Cavendish Deep Level and leaving via the new road over Lord's Main. He couldn't find any slate either.

Britain's production of finished slate increased from 1984's 157,000 tonnes to 190,000 in 1985.

THE UNIVERSITY OF OXFORD, in association with the Council for British Archæology, is launching a three-day conference to examine seaborne trade in metals and ingots, from the Bronze Age to the 19th century. This is the first conference to bring together leading experts to discuss this important

aspect of industrial archæology. Although not directly associated with the mining of metals, speakers will discuss ancient trading in bronze, copper and iron, the composition and origin of ingots, and excavations of the wrecks of trading vessels. The conference takes place between the 16th and 18th of January, 1987.

IAN TYLER IS CAUTIONING MEMBERS who intend to turn up for his meet on the 19th of October; the water level in Brandy Gill Mine is a shade higher than the average wellington boot. Ian adds that the water in Drygill Mine (misnomer), the second point of interest on the agenda, is even deeper still. For more details regarding Ian Tyler and water measurements read Calvin's notes in the Meets Review.

THE CHRISTMAS DINNER and annual general meeting will take place on Saturday the 13th of December at the Farmers' Arms, Lowick, between Ulverston and Coniston. The A.G.M. will begin at 6:45pm and the dinner at 8:00pm. A menu and return slip is enclosed with this Newsletter.

THE MEETS SECRETARY reports that the Log Book is far from being up to date. It is important that all meets are documented for future reference, recording new discoveries, noting the numbers of members present, and the activities which take place. Meet leaders are therefore urged to find the time (it only takes a few minutes) to jot down a few lines at the end of the day and forward them for inclusion in the book.

THE MEMBERSHIP SECRETARY would like to hear from members who have changed their address in the last twelve months. Please contact Lindsay Harrison at Ashgarth, 35 Newton Cross Roads, Newton-in-Furness, Cumbria, or ring 0229 62930.

THE TREASURER would like to hear from anyone interested in raising money for the club funds. Members with bright ideas please contact Maureen Stone at Old Stainton Hall, Stainton, Barrow-in-Furness, Cumbria, or ring 0229 62036.

OUR WEDNESDAY NIGHT SOCIAL EVENINGS are now underway again after the summer break. Activities commence at 8:00pm on the second Wednesday of every month at the Farmers' Arms, Lowick, and include members' slide shows and a raffle .....at least. Ken Battersby is organising a pub-type quiz (mining orientated of course) for later in the year and there is even a chance of mining film shows for those long winter nights. Members who know anything about film projectors (preferably members who possess one) please contact either Don Borthwick or Alen McFadzean.

THE EDITORS would like to extend their sympathies to member Albyn Austin who wasted several raw eggs while testing the Polar Foil sample in the spring Newsletter. The author of the Polar Foil article, the Maharishi Batahs Bhi - who is now in hiding in the golden temple on Sahl Tahs Road - recommends that the best thing for heating a raw egg is a good vindaloo. The editors recommend a frying pan.

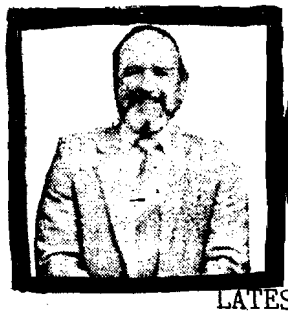
This extract from the Evening News and Star was spotted by Chris Moore. It appears we aren't the only ones who have trouble with the natives.

marras

When it comes down to understanding the accent peculiar to Cumbria, a translator is a must.

Whitehaven councillor Ronnie Calvin's accent foxed most in the chamber at County Hall.

"It's a bit like a comedy act," commented one female member as a helpful committee chairman rose to translate, declaring that he came from the same corner of the county.



CALVIN'S COLUMN

LATEST CRACK AT FORCE CRAG MINE. Following the visit of H.M. Inspector of Mines, senior management has been appointed at the above mine. Mr Michael Sutcliffe to mine manager and Mr Peter Blezard to under manager. Work is going ahead in the mill and at present a complete product of barytes is emerging, but only on a low key as yet. Underground, the barytes stope at 1500ft in, on No. Zero Level, is being opened up and good progress is being made. But the full length and height of the vein has not been proven yet; let's hope it goes up past No.1 Level. A second barytes stope will have to be started to keep the mill in full production.

FLORENCE IRON ORE MINE AT EGREMONT. The possibilities of the above mine becoming a major tourist attraction took a step forwards on Friday the 25th of July when the N.C.B. Enterprise Regional Manager handed over to Florence Mine safety equipment for the shaft and winder, and will send the area shaft team up to install the gear. If the finance can be put together work could start on a new 650ft drift into the mine which would enable visitors to walk into the workings then come up in the cage. The work should take about one year.

WHAT IS A STOWE BOGIE

When given the job of driving a new face line, or starting of a roadway, or it might be some Bottom Brushing, you required, some form of vehicle or means of getting rid of the dirt or coal, so you think I will make a Stowe Bogie. First you acquire a very sound wooden tram it had to be a good runner and as light as possible. This task could take you just a few hours and at times a few days before you got the right tram, for if you got the wrong tram then you were in for some right hard shifts. Some of you will know what it is like shoving a tub or tram with a bent boss or twisted axle and weighing a ton empty.

So now it is off to the Joiners Shop to get some nails and some wood cut, if you are lucky, if not scrounging four wooden rail sleepers and brattice boards. You may still have the steel sheet of your last Stowe Bogie hid away. Nail the four sleepers on the sides of the tram then cut and nail your brattice boards on two sides, and one end, leaving one end open, then the steel sheet laid on the bottom of the tram and you are ready (or are you). What about some rails and sleepers to run your bogie on. They didn't grow on trees. In the local mines, at times you laid light H girders on the floor to run your bogie on or just dragged it along on the floor.

So using your Stowe Bogie, you could make good progress you may just have to fill you bogie with stone, drag it out and pack it on the sides, maybe pull it out to a belt road and shovel all your muck onto a conveyor. Some times one man could get the full Stowe Bogie out, other times the three of you were killing yourselves dragging it out. Sometimes there was a spare belt drive available you would instal one of these in place of your bogie but like anything else belt drives were few and far between so a great deal of new ground was opened up using a Stowe Bogie.

ASPECTS OF GEORGE BORROW'S WILD WALES

GEORGE BORROW
1803-1881

1854

THE WELSH POTOSI

....I followed the path and in about half an hour saw what appeared to be houses at a distance. "God grant that I may be drawing near some inhabited place," said I. The path now grew very miry, and there were pools of water on either side. I moved along slowly. At length I came to a place where some men were busy erecting a kind of building. I went up to the nearest and asked him the name of the place. He had a crowbar in his hand, was half naked, had a wry mouth and only one eye. He made no answer but mowed and gibbered at me.

"For God's sake," said I, "don't do so, but tell me where I am!" He still uttered no word, but mowed and gibbered more frightfully than before. As I stood staring at him another man came to me and said in broken English: "It is of no use speaking to him, sir, he is deaf and dumb."

"I am glad he is no worse," said I, "for I really thought he was possessed with the evil one. My good person, can you tell me the name of this place?"

"Esgyrn Hirion, sir," said he.

"Esgyrn Hirion," said I to myself, "Esgyrn means bones, and Hirion means long. I am doubtless at the place which the old ostler called Long Bones. I shouldn't wonder if I get to the Devil's Bridge tonight after all." I then asked the man if he could tell me the way to the bridge of the evil man, but he shook his head and said that he had never heard of such a place, adding, however, that he would go with me to one of the overseers who could perhaps direct me. He then proceeded towards a row of buildings which were in fact those objects which I had guessed to be houses in the distance. He led me to a corner house at the door of which stood a middle-aged man, dressed in a grey coat, and saying to me, "This person is an overseer," returned to his labour. I went up to the man and saluting him in English asked whether he could direct me to the devil's bridge or rather Pont Erwyd.

"It would be of no use directing you, sir," said he, "for with all the directions in the world it would be impossible for you to find the way. You would not have left these premises five minutes before you would be in a maze without knowing which way to turn. Where do you come from?"

"From Machynlleth," I replied.

"From Machynlleth," said he. "Well I only wonder you ever got here, but it would be madness to go further alone."

"Well," said I, "can I obtain a guide?"

"I really don't know," said he, "I am afraid all the men are engaged."

As we were speaking a young man made his appearance at the door from the interior of the house. He was dressed in a brown short coat, had a glazed hat on his head, and a pale but very intelligent countenance.

"What is the matter?" said he to the other man.

"This gentleman," replied the latter, "is going to Pont Erwyd, and wants a guide."

"Well," said the young man, "we must find him one. It will never do to let him go by himself."

"If you can find me a guide," said I, "I shall be happy to pay him for his trouble."

"Oh, you can do as you please about that," said the young man;

"but, pay or not, we would never suffer you to leave this place without a guide, and as much for our own sake as yours, for the directors of the company would never forgive us if they heard we had suffered a gentleman to leave these premises without a guide, more especially if he were lost, as it is a hundred to one you would be, if you went by yourself."

"Pray," said I, "what company is this, the directors of which are so solicitous about the safety of strangers?"

"The Potosi Mining Company," said he, "the richest in all Wales. But pray walk in and sit down, for you must be tired."

* * *

I followed the young man with the glazed hat into a room, the other man following behind me. He of the glazed hat made me sit down before a turf fire, apologising for its smoking very much. The room seemed half compting room half apartment. There was a wooden desk with a ledger upon it by the window which looked to the west, and a camp bedstead extended from the southern wall nearly up to the desk. After I had sat for about a minute the young man asked me if I would take any refreshment. I thanked him for his kind offer which I declined, saying, however, that if he would obtain me a guide I should feel much obliged. He turned to the other man and told him to go and enquire whether there was anyone who would be willing to go. The other nodded, and forthwith went out.

"You think, then," said I, "that I could not find the way by myself?"

"I am sure of it," said he, "for even the people best aquainted with the country frequently lose their way. But I must tell you that if we do find you a guide it will probably be one who has no English."

"Never mind," said I, "I have enough Welsh to hold a common discourse."

A fine girl about fourteen now came in, and began bustling about.

"Who is this young lady?" said I.

"The daughter of a captain of a neighbouring mine," said he, "she frequently comes here with messages, and is always ready to do a turn about the house, for she is very handy."

"Has she any English?" said I.

"Not a word," he replied. "The young people of these hills have no English, except they go abroad to learn it."

"What hills are these?" said I.

"Part of the Plynlimmon range," said he.

"Dear me!" said I, "am I near Plynlimmon?"

"Not very far from it," said the young man, "and you will be nearer when you reach Pont Erwyd."

"Are you a native of these parts?" said I.

"I am not," he replied, "I am a native of Aberystwyth, a place on the sea-coast about a dozen miles from here."

"This seems a cold bleak spot," said I; "is it healthy?"

"I have reason to say so," said he; "for I came here from Aberystwyth about four months ago very unwell and am now perfectly recovered. I do not believe there is a healthier spot in all Wales."

We had some further discourse. I mentioned to him the adventure which I had on the hill with the fellow with the donkey. The young man said that he had no doubt that he was some prowling thief. I had scarcely finished my tale when the other man came in and said that he had found a guide, a young man from Pont Erwyd, who would be glad of such an opportunity to go and see his parents; that he was then dressing himself and would shortly make his appearance. In about twenty minutes he did so. He was a stout young fellow with a coarse blue coat, and a coarse white felt hat; he held a stick in his hand. The kind young book-keeper now advised us to set out without delay as the day was drawing to a close, and the way was long. I shook him by the hand, told him that I should never forget his civility, and departed with the guide.

After a short time we came to a road, which, however, we did not

reap the benefit of as it only led to a mine. Seeing a house on top of a hill, I asked my guide whose it was.

"Ty powdr," said he, "a powder house," by which I supposed he meant a magazine of powder used for blasting in the mines. He had not a word of English. We ascended a hill, passed between two craggy elevations, and then wended to the south-east over a strange miry place in which I thought anyone at night not aquainted with every inch of the way would run imminent risk of perishing. I entered into conversation with my guide. After a little time he asked me if I was a Welshman. I told him no.

"You could teach many a Welshman," said he.

"Why do you think so?" said I.

"Because many of your words are quite above my comprehension," said he.

"No great compliment," thought I to myself, but putting a good face upon the matter I told him I knew a great many old Welsh words.

"Is Potosi an old Welsh word?" said he.

"No," said I, "it is the name of a mine in the Deheubarth of America."

"Is it a lead mine?"

"No," said I; "it is a silver mine."

"Then why do they call our mine, which is a lead mine, by the name of a silver mine?"

"Because they wish to give people to understand," said I, "that it is very rich as rich in lead as Potosi in silver. Potosi is or was the richest silver mine in the world, and from it has come at least one-half of the silver which we use in the shape of money and other things."

"Well," said he, "I have frequently asked, but could never learn before why our mine was called Potosi."

"You did not ask at the right quarter," said I, "the young man with the glazed hat could have told you as well as I." I enquired why the place where the mine was bore the name of Esgyrn Hirion or Long Bones. He told me that he did not know, but believed the bones of a cawr or giant had been found there in ancient times. I asked him if the mine was deep.

"Very deep," he replied.

"Do you like the life of a miner?" said I.

"Very much," said he, "and should like it more, but for the noises of the hill."

"Do you mean the powder blasts?" said I.

"Oh no!" said he, "I care nothing for them, I mean the noises made by the spirits of the hill in the mine. Sometimes they make such noises as frighten the poor fellow who works underground out of his senses. Once on a time I was working by myself very deep underground, in a little chamber to which a very deep shaft led. I had just taken up my light to survery my work, when all of a sudden I heard a dreadful rushing noise, as if an immense quantity of earth had come tumbling down. 'O God!' said I, and fell backwards, letting the light fall, which instantly went out. I thought the whole shaft had given way, and that I was buried alive. I lay for several hours half stupified, thinking now and then what a dreadful thing it was to be buried alive. At length I thought I would get up, go to the mouth of the shaft, feel the mould, with which it was choked up, and then come back, lie down and die. So I got up and tottered to the mouth of the shaft, put out my hand and felt - nothing. All was clear. I went forward and presently felt the ladder. Nothing had fallen; all was just the same as when I came down. I was dreadfully afraid that I should never be able to get up in the dark without breaking my neck; however, I tried, and at last, with a great deal of toil and danger got to a place where other men were working. The noise was caused by the spirits of the hill in the hope of driving the miner out of his senses. They very nearly succeeded. I shall never forget how I felt when I thought I was buried alive. If it were not for those noises in the hill the life of a miner would be quite heaven below."

Meets Review

by McF

There was an air of expectancy in the snug of the Newfield Inn, an atmosphere of tension, nervous undercurrents crackling like loose connections on a power pylon. I glanced about apprehensively, clutching my free pint of Younger's with sticky hands. The others had sensed it too, this overpowering fear, they had lowered their voices and were talking in whispers, furtively peering into the shadowed bar where the silence was as solid as the slate flags on the floor. The window was black; I strove to look out into the night, to scour the fells for a sign of our companions, Moore and Austin, who had strayed in the forests, but some hideous force repelled me and turned my eyes to the spluttering fire in the corner of the room.

It had all begun early in the evening. Walking through the woods above the Duddon we had become aware of some strange being following us, a bear-like creature half-glimpsed through the trees and plodding behind us in the sighing ferns. Bigfoot, someone had said, Yeti, Grendel - the suggestions had come flooding out as our anxieties increased. Then Moore and Austin disappeared. They had been with us one minute, tagging along at the rear of the column. Now the two empty seats in the snug of the Newfield testified to their absence. The fire spluttered, and out in the dark night a sheepdog howled mournfully.

Suddenly I felt an ominous presence. I looked up, heart beating with fear, and there in the doorway stood a huge black shape. As it approached the yellow candle light revealed the great hulk of a man clad in tattered combat gear, black hair framing chiselled features, persperation glistening on rippling muscles. As he crossed the room his boots gouged grooves in the flags. I saw a machine gun swing in my direction, saw the bayonet's evil gleam as he held it clenched between his teeth. "It's Albert Schwatznegger," I heard someone gasp, "No, it's Camouflage," muttered another in answer.

This brute of a man shambled up to the table and towered over me, his body swaying like an oak in the wind. He ripped open an ammunition pouch and withdrew a yellow object which I immediately recognised as being a copy of the last Newsletter. "Read that!" he growled without removing the bayonet from his teeth, a meaty finger stabbing at a paragraph near the top of page fifteen.

"Never attended the Dale Head meet on the 16th of March," I stammered, "neither have I received a report from the meet leader, Secretary Blundell."

"Is that correct?" the voice roared.

"No," whimpered I.

"Had you received a report?"

"Yes,but I put it on the mantlepiece and forgot all about it."

The man screamed violently as he brought the bayonet down in a blur of precision, pinning the Newsletter to the tasteful reproduction table.

"Do you know what this means?" he shrieked, not waiting for an answer "It means that if there is no explanation in the next Newsletter there will be.....no more pleasant Sunday outings to Matlock Bath!"

I collapsed in terror, feebly uttering my deepest apologies. Blunbo spat in disgust, crashed through the wall and disappeared into the night.

By God, you need eyes in the back of your head in this job. The next member to suffer at the merciless keys of this seemingly uncontrollable and not particularly accurate typewriter appears to be Alastair Lings, who, in the following contribution from Ronnie Calvin R.M. which records the events of the first day of the Nenthead weekend, really gets it in the neck. Take it away Ronnie.....

The trip to Brownley Hill Mine was led by the intrepid explorer Black Mac Lings, known as Gold Finger to his bearers and underlings. He is a very select member of the age old Black Mac Puritan Society and is entitled to carry his large ceremonial hammer on all underground trips. We asked: "What's the water like?" "Oh, not too deep, wellies will do," came the reply. What fools we were. None of us knew CAT's water measurements were not imperial, Botswanna or Polish, they base their measurements on the height of water on Ian Tyler's legs.

So next time you get "It's only welly deep," add 2'6" for correction, for as I got further into the mine, wearing my new blue fashion wellies, the water soon came up to the Woodbines I had in my back pocket. Being wet's not bad, but soggy Woodbines are not on. So be warned about water measurements next time. It was a good trip, once Lings had arranged his bearers for all his gear.

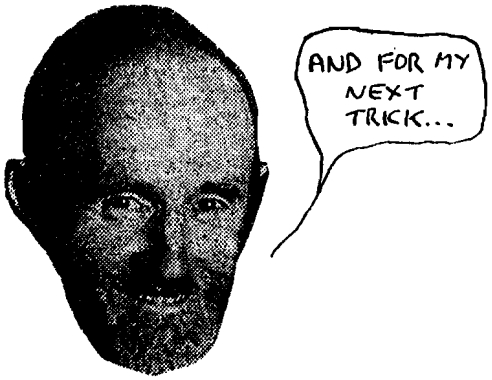
Some of us found the old wooden tubs and all the rails going into the drives just as the last miners had left them. One party led by Lings got up into the stopes but they should have checked who was up the ladder before they took it. We all found areas of the mine that none of us had been in before and maybe next time we will find the through route.

Sunday was a mavellous day, one of the few really summery days of the year. We split into three groups. One lot, led by Mike Maher, went into Haggs Mine, another group took a dog on a tour of Smallcleugh (Smallcleugh, in case you are unaware, is a lead mine in Nenthead village down which it is customary to take new members in preparation for their next visit to the same mine which is certain to occur on the next Nenthead meet. On this occasion the dog enjoyed itself immensely), and the third group, which was led by Martin Maher and turned out to be the largest, set out to explore one of those mysterious subterranean phenomena which falls neatly into the category of Wild Goose Mine.

So there was Group Three, about a dozen of us in number, warming ourselves in the sun on the side of a bleak moor a couple of valleys to the north of Nenthead. Weeks earlier Member Blezard had told us of this hundred-foot shaft that dropped onto a huge underground incline which in turn gave access to a gigantic level, driven in the 1960s and running for over a mile in the direction of Allenheads. Blezard had kindled our enthusiasm; we were eager to get down there and have a look around. Feverishly, and with the agility of a gazelle, Mitchell clipped on his descender and bounced down into the darkness, his abseiling gear completely useless because the rope was of the 'non-friction' variety and should only have been used for tethering goats to gate stoops. As we gazed silently down at the groaning Mitchell, whose crumpled body was snagged on a ledge thirty feet from the bottom of the shaft, it suddenly crossed my mind that Blezard had not turned up for the meet. Hmm, the rot had set in.

Presently the rest of the group joined Mitchell on the ledge and spent a very dirty and constricted twenty minutes poking about in some 19th century workings in search of the incline, the rest of the group, that is, with the exception of Jones and Gilchrist who fell asleep in the sunshine and, like Dorothy and the Scarecrow in the poppy field, could not be roused. The incline, you will have correctly concluded, remains undiscovered. Wild Goose Mine has evaded the pursuers as only Wild Goose Mine can. Blezard has yet to be confronted.

Abandoning the chase, Group Three drove over to the next valley to explore some old workings above Scraithole Mine, and, after abseiling down one of those narrow masonary-lined shafts, found themselves in the main level of Scraithole Mine itself. Surprised, but not daunted, we pushed the level through chest-deep water and tight crawls for over four-thousand feet. While Rummaging about in the old stopes Peter Fleming entertained us by falling down a shaft. "Watch this," he cried as he bounced up and down on a rotten plank at the top of this yawning black hole. "I once did this trick in Greenside....get your cameras out."



There was a splintering noise, a muffled howl, and a sound resembling a bin-liner full of spanners being dragged down an asbestos roof. When the dust cleared we peered anxiously into the shaft, fearing the worst. Fleming was fifteen feet below us and clinging sheepishly to an iron ladder. "Good grief," he spluttered, "I think I deserve my picture in the Newsletter for attempting such a daring descent."

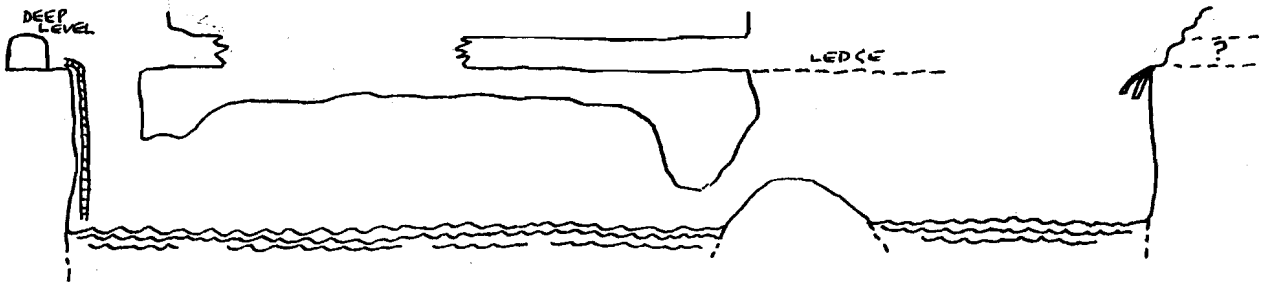
Saturday the 28th of June was the other summery day of the year. Thirteen members turned up at the Coniston Copper Mines to stand in the hot, breathless air and gaze balefully at the pile of life-jackets deposited on the parking area. "What are THEY for?" was the question so mechanically uttered by every member as he or she arrived. It was as if they had been programmed. They shambled up in their ones and twos, hands in pockets, feet dragging in the gravel, muttering: "What-are-THEY-for?-What-are-THEY-for?" The meet leader explained that they were for maintaining members' buoyancy while immersed in deep water. "Water?-Water?" came the pre-recorded replies. Obviously they had been programmed to resist; they hovered around the heap of gear rather like those tin men in the mashed potato adverts, tentatively nudging the yellow life-jackets with their feet as if they were expecting them to suddenly burst into life and scramble off into the mountains like neoprene haggis. "Water?-Water?-Bleep-Water?-Water?-Bleep." It dawned on the meet leader that he had his work cut out. He distributed the jackets amongst those members who appeared to be too confused to protest, pointed them in the direction of Taylor's Level and kicked them soundly to make their legs work. "Bleep....Bleep....Bleep...." and off they went.

Those of you who are avid followers of this column, and I know one or two of you are - well, one at least, my wife for instance who scours it to find the spelling mistakes - will recall that last December two of our more respectable members mounted an amphibious attack on the unexplored portion of Deep Level, west of the New Engine Shaft, in a rubber dinghy but were beaten back for want of a rope and a circus acrobat. This time we had a rope, but, despite having approached Thomas Chipperfield on my summer holls when his big top was pitched behind the carpark in Dolgellau and pleaded for a loan of the Duo Endresz (stars of the Hungarian State Circus), we had to forget the acrobat.

It was twenty-five feet from the floor of Deep Level down to the water in the flooded stopes. The meet leader removed his glasses, rattled down the ladder, and forced his teeth into a chattering grin as he slid below the surface. "Ah, the water's lovely," he exclaimed with delight. "Bleep....Bleep ....Bleep...." said the blank faces above him. Had they been fooled? Would they follow? After much spluttering and floundering he managed to rig a safety line from one end of the stope to the other - a distance of 130' - all the time wondering if the excercise would be in vain and filled with a nagging anxiety because the life-jacket (supplied by a shady character named Matheson) was only just keeping his nose above the water. And besides that there was this plastic tube thing poking him in the eye all the damned time. On the rubble heap at the foot of the New Engine Shaft, a thorough inspection of the life-jacket revealed a plastic tag attached to the tube which said "inflate here". There was time to sit and ponder over whether it would have been a good idea to have blown the bloody thing up before having plunged into the very deep and very cold water.

Shortly the meet leader was joined by a bedraggled looking Ian Matheson, a rather worried looking Mike Mitchell, a dangerously desperate looking Dave Bridge, and Anne Danson who gave the impression she did this kind of thing every morning before breakfast. Soon they had a rope rigged and were ready to attempt the climb back up into the continuation of Deep Level. But they never made it. They got about eight feet nearer than on the last visit

but were defeated by a wall totally devoid of hand holds or things to throw a rope over. They departed in silence, foiled but not yet beaten.



On the 20th of July a party met in Appleby then drove off into the mist to spend a day in the nearby mines. No reports have filtered back to this desk. Is this the second group we have lost in the Cross Fell area? Is the M.O.D. holding them in some underground bunker beneath the moors of Warcop? Answers please on a postcard.

We end now with a report of the Caldbeck meet of the 10th of August, kindly sent in by Alastair Lings, a rather decent chap (Public school, you know; Father owns half of Kent) despite what they say.

> The objectives were to examine some recent 'discoveries' in the barytes mines and if possible find the connection between the stopes of Sandbeds East Mine and the 67fm Level of Sandbeds West. Seven members turned up, and one guest.
>
> The 90fm crosscut to Sandbeds East Mine was blocked, so an open rise was descended. The first members down explored the intermediate level (80fm). To the west the level and stopes are blocked by an apparently major collapse. To the east a destroyed hopper was drawn, revealing a level about five metres up a steep loose funnel.This was not climbed.
>
> Members then descended to the 90fm Level and the 100fm Level. Alastair climbed along above the hopper of the 90fm Level (west) but again found the way blocked by earth, stones and fencing wire. The 90fm Level below is blocked at this point.
>
> On the 100fm Level Mike Mitchell and Anne Danson climbed into the stopes and saw a hole (covered) in the backs, a long way up. Members then toured the rest of the accessible workings.

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