

April/May 1988
Newsletter No. 16.



THE CLUB CHRISTMAS ? DO

As usual the 1987 xmas do was held late (or was the 1988 xmas do held early?) It took place at the Wilkes' Head, Leek, and a good time was had by all. Congratulations to all who took part in its organisation. Excellent entertainment was provided by our very own Mark Lovatt and friends. Thanks are due to Cliff for his presentation of the Whalley Awards. Zig came first for causing complete havoc at a recent cave meet, with Kev a close second for his various antics throughout the year. Both proved their capabilities by managing to lose their trophies before the evening expired. (Zig's still hasn't been recovered!) - It would appear that they both intend becoming strong contenders for '88 (or will it be 89?)

"T'OWD MEN LOSE TACKLE IN MEREGILL"

DURING A RECENT TRIP INTO MEREGILL IN WET CONDITIONS, RALPH AND / OR ROSS MANAGED TO DROP A FULL TACKLE SACK INTO THE STREAM JUST BEFORE THE SECOND PITCH - IT WAS PROMPTLY SWEEPED AWAY BY THE STRONG CURRENT AND ATTEMPTS TO RIG THE PITCH TO RECOVER IT HAD TO BE ABANDONED. BLAME WAS PLACED ON A KNOT COMING UNDONE ON A HAULING CORD FASTENED TO THE SACK, BUT RUMOUR HAS IT THAT THIS MIGHT BE RALPH'S BEST EXCUSE YET FOR NOT CARRYING HIS TACKLE SACK OUT !!

FORTUNATELY THE GEAR WAS RECOVERED THE NEXT DAY - THANKS MAINLY TO GEORGE'S AQUATIC ACCROBATICS !! P. TON ADVISES THAT CORDS BE REGULARLY CHECKED ON ALL SACKS - NOT ONLY GEAR CAN BE LOST, BUT A FALLING SACK COULD EASILY INJURE A FELLOW CAVER.

.....

STOP PRESS

THERE HAVE BEEN TWO FURTHER REPORTED INCIDENTS OF CORDS COMING UNDONE ON TACKLE SACKS. IN EACH CASE THE KNOT USED WAS A FISHERMANS - THE TYPE USED ON THE NEW COWS TAIL!!
BE WARNED. P.TON

Equipment Column

C.J. Danilewicz
12 Grasscroft Road
Marsh
Huddersfield
W. Yorks.

B.C.R.A. Equipment &
Techniques Officer

COW'S TAILS AND DROP TESTS

Rudy Scheffer & Anne Terpstra,
Speleo Nederland, P O Box 19177,
2500 CA The Hague, Netherlands.

A simple drop test rig proved once more its usefulness and fun. After testing a lot of cow's tails and ropes, it must be concluded that 'single rope' 9mm cow's tails are not safe enough. Apparently dynamic rope is deteriorating rapidly if used for a cavers cow's tail.

Alarmed by conflicting stories on the safety of cow's tails - an essential part of a caver's personal equipment - we decided to build a simple device that allows for testing of ropes, cow's tails, etc. with a variable fall factor. The fall factor (F) is the length of the fall divided by the length of the rope available to intercept the fall. Fall factor F and the weight of the caver are the factors determining the peak forces in the system.

A steel weight of 80kg (made out of four blocks to facilitate transportation) was used for all tests. A steel beam served as the fixed point - see figure 1. This simple set-up proved to be a useful tool to obtain information on practical breaking strength of caving equipment. During the last two years, we used it intensively with sometimes surprising results, disturbing our peace of mind about 'common practice'.

For instance, of the 17 single-rope cow's tails tested and with a fall factor of $F = 1.8$, seven failed at the first fall. The others failed at the second fall. In contrast, several double-rope cow's tails always passed at least one fall ($F = 1.8$); see table (Test No. 1-28) and figure 2 and 3. Therefore, we cannot recommend the 9mm cow's tail of the familiar model (figure 2) any more. A few old-fashioned cow's tails made of tape webbing or twined rope also stood up to their reputation and failed at the first fall (Test No. 40-42).

The 11mm cow's tails did better in our tests, as did the double ones. The double cow's tail, according to figure 3, was 'invented' to circumvent the bulky knots that come with the 11mm rope and because some old slings made of static rope (!) tied with double fisherman's knots did so well (Test No. 22-23). The double cow's tail shown must be tied according to figure 4. After over a year of intensive use within 'Speleo Nederland', it becomes clear that this cow's tail is practical. However, it is also becoming clear that the strength of these cow's tails, made of dynamic rope, declines rapidly. A new one, tied according to figure 3, was still intact after five falls ($F = 1.8$, Test No. 25). Another one, made the same way of the same length of rope, but used intensively for one year, failed at the second fall (Test No. 26). So, the well known advice to buy a new cow's tail every year still holds! Interesting is, that the strength of a "No Brand" cow's tail (sold as such by a caving shop) did not decline so much; a new and a used one both failed at the second fall (Test No. 27-28).

Our rope tests were a lot more comforting, see table. Dutch cavers usually rely on Edelrid caving ropes, mainly because of their excellent abrasion resistance. Technical data from the manufacturer shows that the 10mm Superstatic should withstand seven falls with $F = 1$ and the 9mm Superstatic, four such falls. Testing with $F = 1$ turned out to be tedious; a 9mm rope was still intact after seven falls. Tests with the highest fall factor ($F = 1.8$) showed a remarkable consistency; only a 13 year old rope of unknown make, failed at the first fall. The others, all Edelrid, usually failed at the second fall. Apparently, this kind of rope is made to close tolerances and ageing has only a limited affect.

In these tests, we probably stumbled upon a general point that ageing is more pronounced for dynamic rope than for static. Probably, the tests leading to the advice to use a single 9mm dynamic rope, were performed on a new rope? It would certainly be interesting to see more tests focused on the differences between new and used material. Also, it would be interesting to revive the discussion on the use of dynamic versus static rope for cow's tails. Is it really true that the maximum shock load on a 'real body' (in contrast to a block of steel), is significantly higher if a cow's tail is made of static rope instead of dynamic? And, is the dynamic rope retaining its dynamic properties or does the rapid decline in breaking strength reflect a loss of 'elasticity'? We would certainly welcome the opinion and test results of the readers!

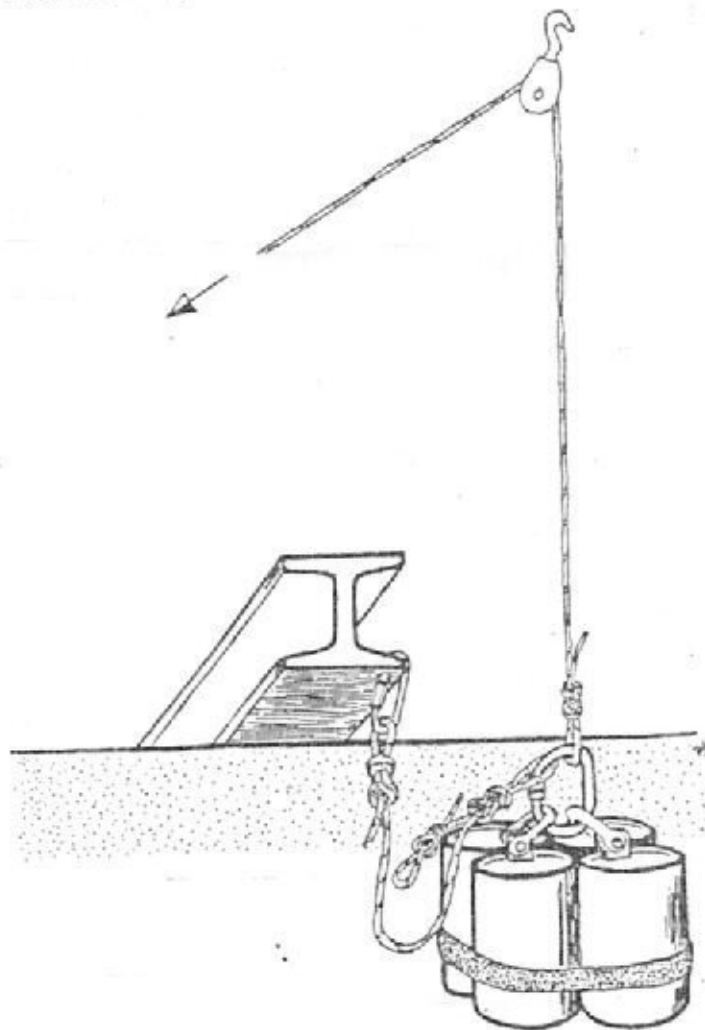


Figure 1. Drop test rig. Four blocks of steel, securely tied together, with a total weight of 80kg, were hoisted with a Landrover winch and dropped by disconnecting the rope from the winch cable. A steel beam, bolted to the balcony of the house served as the fixed point. The 8mm stainless steel maillon rapide, used to fasten the rope to be tested to the beam, can still be screwed open by hand, but the five-ton steel karabiner on the steel blocks recently failed.

Table Showing Results of Cow's Tail and Rope Tests

COW'S TAILS TIED FROM SINGLE ROPE (as shown in figure 2)

Nr.	used for	F	remarks
1	15 mo	1.8	fails at 1st fall 9 mm dynamic Edelrid classic Halbseil
2	15 mo	1	fails at 2nd fall part of same rope
3	15 mo	1	fails at 4th fall part of same rope, used less intensively
4	1 yr	1.8	fails at 1st fall 9 mm
5	6 yrs	1.8	fails at 1st fall 9 mm dynamic
6	6 yrs	1.8	fails at 1st fall 9 mm dynamic
7	2 yrs	1.8	fails at 1st fall 9 mm dynamic
8	6 mo	1.8	fails at 2nd fall 9 mm dynamic Edelrid classic Halbseil
9	approx. 3 yrs	1.8	fails at 2nd fall 9 mm dynamic
10	approx. 3 yrs	1.8	fails at 2nd fall 9 mm dynamic
11	3 yrs	1.8	fails at 2nd fall 10 mm dynamic
12	1 1/2 yr	1.8	fails at 2nd fall 11 mm dynamic
13	1 yr	1.8	fails at 2nd fall 11 mm dynamic
14	1 yr	1.8	fails at 2nd fall 11 mm dynamic
15	1 1/2 yr	1.8	fails at 2nd fall 11 mm dynamic
16	1 1/2 yr	1.8	fails at 2nd fall 11 mm dynamic
17	2 yrs	1.8	fails at 2nd fall 11 mm dynamic
18	approx. 4 yrs	1.8	fails at 1st fall 9 mm dynamic; old club material
19	approx. 4 yrs	1.8	fails at 1st fall ditto
20	approx. 4 yrs	1	fails at 2nd fall ditto
21	approx. 4 yrs	1	fails at 2nd fall ditto

DOUBLE COW'S TAILS

22	approx. 11 yrs	1	intact after 5 falls 9 mm Joanny rope sling
23	approx. 4 yrs	1.8	intact after 3 falls 9 mm Edelrid rope sling
24	approx. 4 yrs	1.8	fails at 3rd fall same as 18 - 21, tied according to fig. 3
25	new	1.8	intact after 5 falls 9 mm Edelrid classic Halbseil; tied acc. to fig. 3
26	1 yr	1.8	fails at 2nd fall ditto, intensively used for 1 yr; tied acc. to fig. 3
27	1 yr	1.8	fails at 2nd fall 9 mm dynamic; tied acc. to fig. 3
28	new	1.8	fails at 2nd fall 9 mm dynamic; tied acc. to fig. 3

ROPE

29	5 yrs	1.8	fails at 1st fall 10 mm static; used from 1973 to 1979
30	5 yrs	1	fails at 2nd fall ditto (same rope)
31	6 yrs	1.8	fails at 2nd fall 10 mm Edelrid superstatic; used from 1977 to 1983
32	6 yrs	1.8	fails at 2nd fall 10 mm Edelrid superstatic
33	6 yrs	1.5	fails at 2nd fall ditto (same rope)
34	6 yrs	1	intact after 2 falls ditto (same rope)
35	4 mo	1.8	fails at 3rd fall 10 mm Edelrid superstatic
36	10 mo	1.8	fails at 2nd fall 10 mm Edelrid superstatic
37	6 mo	1.8	fails at 2nd fall 10 mm Edelrid superstatic
38	2 mo	1.8	fails at 2nd fall 9 mm Edelrid superstatic
39	2 mo	1	intact after 7 falls ditto (same rope)

OLD-FASHIONED COW'S TAILS

40	approx. 2 yrs	1.8	fails at 1st fall 45 mm tape cow's tail; rivets tear webbing
41	approx. 2 yrs	1.8	fails at 1st fall 45 mm tape cow's tail
42	approx. 4 yrs	1.8	fails at 1st fall rope with spliced eyelets; steel eye fails

STOP PRESS

.....

If you are intending to use this type of cows tail it is essential that all of the knots are correctly tied and the last one particularly is tied off very tight (use a vice and a couple of strong mates to help). There have been alarming reports of the last knot coming undone, and on my last visit to Inglesport they had stopped selling them. Ed.

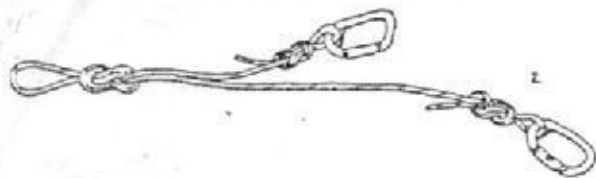


Figure 2. Typical single rope cow's tail of which we tested 21 for this report. Three figure of eight knots are used.

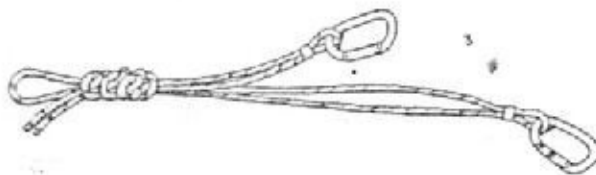


Figure 3. Double-rope cow's tail as currently advised within Speleo Nederland. The knots must be tied according to figure 4.

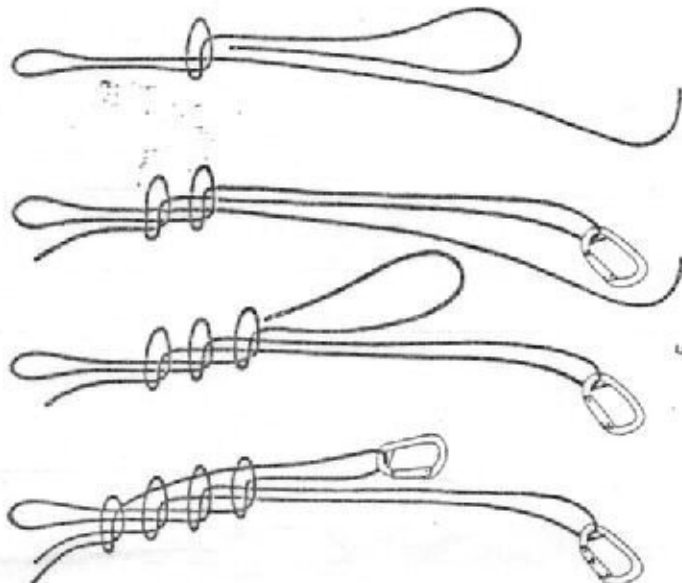


Figure 4. Tying the double-rope cow's tail. The knots, essentially fisherman's knots, must be tied in this order. The last knot must be tightened very well. For the cow's tail, 2.5m of 9mm dynamic rope is used, but for tall persons, up to 3m may be necessary. This is not much different from the amount of rope necessary for the more common single-rope cow's tail as shown in figure 2.

THERE ARE TWO PLACES FOR THIS YEARS TRIP TO PICOS DE EUROPA STILL AVAILABLE . WE WILL BE TRAVELLING DOWN TO PLYMOUTH IN A TRANSIT VAN (OR POSSIBLY A MINIBUS) AND TAKING THE FERRY TO SANTANDER IN NORTHERN SPAIN . THE TRAVELLING WILL BE MINIMAL AND THE COST OF THE TRIP (EXCLUDING SPENDING MONEY) SHOULD BE ABOUT £150 BELOW IS A MAP SHOWING THE AREA AND THE HIGHER PEAKS ARE RINGED. IF YOU ARE INTERESTED RING DEREK OR IAN EDWARDS AT WORK (0274 597037)

BERGER

THERE ARE ALSO A FEW PLACES (2 I THINK) FOR THE GOUFFRE BERGER THIS YEAR IN AUGUST. I DON'T HAVE ALL THE DETAILS BUT IF YOU CONTACT LIAM HE WILL LET YOU KNOW

CONGRATULATIONS TO LIONEL AND JENNY HOWARTH WHO HAVE JUST GIVEN BIRTH TO A BABY BOY.....

5000' = 1524M
5000' = 1830M ±
7000' = 2134M
8000' = 2438M
9000' = 2743M



SAFE LIFELINING

It would appear that some of us are using a novel technique for ascending pitches involving parallel bars of metal spaced about 10" apart linked by two lengths of wire. Presumably the technique is still in its infancy because the pitch is also rigged by a length of rope which can presumably be used for the more common SRT should the metal device fail.

Rumour has it that some people are actually using the rope as a backup and are lifelining club members as they climb the pitch. I would like to remind club members of a few points and to make some suggestions.

1. Round the waist / over the shoulder lifelinning techniques are basically unsafe and are **NOT RECOMMENDED**, endless articles have been published on this and I don't propose going over this ground again.
2. Ropes designed for S.R.T. are low stretch and are not designed to take a shock loading. If you are going to use a rope for lifelinning make certain it is designed for the purpose - ask the equipment officer for the correct rope.
3. Self-lifelinning techniques are advised wherever possible. This involves using a jammer which can be towed by the climber. This jammer must be linked to a sit harness and never to just a chest harness or belay belt (suspension from a chest harness alone causes rapid unconsciousness followed by death- I lost a colleague this way!!).
4. If you are lifelinning your colleagues then I suggest a Sticht plate or learn how to do an Italian Hitch-It's your life!!

P.TON

P.S. I can't see that these metal devices becoming very popular as a means of ascending a pitch until a way is found of preventing climbers falling off them.

FOR SALE

WE HAVE THE USUAL :

T Shirts, Sweatshirts

Ammo boxes

Troll leg loops

Personal S.R.T. sacks

Plus THE NEW CLUB JOURNAL at £2.50 (well done Liam excellent reading Ed.)

Contact Ralph or Liam.....

BRAIN DRAIN EQUIP

On our last visit to the Mendip Hills (and after many desperate and strenuous trips of course) we managed to locate a Scrumpy Cider Farm at MUDGLEY, which is well worth a visit. We bought an incredible 5 GALLONS of Dry Cider for an equally incredible sum of £11. (We supplied our own barrell.) Which works out at approx 27p per Pint ! The address for anyone interested is:-
Roger Wilkins

(Hic) Derek

CAVING COTTAGE - SOUTH WALES

CROYDON CAVING CLUB, GONDRE PENTRE, YSTRADFELLTE, SOUTH WALES.

This Hut will take upto 12 people and costs £1.50 per night. It has coal fired central heating, Gas cooking (utensils provided), shower, and even a Flush Toilet (luxury), but the most important thing is there is a pub just down the road.

Nearby caves include Porth Y Ogof 10 mins walk, Little Neath / Bridge Cave, O F D, Dan Y Ogof 15 mins drive. there are also lots of good walks on moors and waterfall valleys in this area.

The hut is opposite the New Inn car park on the Pont Neath, Vaugan road.

Apply to:- The Cottage Warden,
Tel Chris Crowley

or Croyden Caving Club Sec - Paul Stacey,

Tel (W)
(H)

MEETS LIST

MAY

Spring Bank Holiday- 27/28/29/30 Lake District
Camping at Wasdale

JUNE

Sat 11th Ogof Hesp Alyn/ Poachers Cave+
Sun 26th Out Sleet's Beck+

JULY

8/9/10 S.Wales OFD/DYO
Sun 24th Black Shiver/ Meregill

+ DENOTES TRIPS SUITABLE FOR BEGINNERS UNDER INSTRUCTION

CREWE CLIMBING AND POTHOLING CLUB
28th February 1988

THERMAL BLACKMAIL AT IREBY FELL CAVERN

In a desperate attempt to find something to fill the Newsletter, Derek caught me in a moment of weakness (standing in a freezing wet suit in a snowstorm with no change of clothing) and offered me a Furry suit in exchange for a short description of the club trip to Ireby Fell Cavern from my point of view. This was an offer which I could not refuse, so here goes.

Liam and Paul Johnson (Eldon) picked me up before the crack of dawn after a night on free beer. After a greasy breakfast at the Fountain Cafe, we lost our way to Ireby Fell. I was assured that this was quite OK as "it always happens." I felt like the Bionic Man; "barely alive."

We changed at about 10:30 am, just as Jane and Derek arrived. I immediately felt 100 times better when I saw Jane; she had also had a skinfull the night before and looked like a corpse. In fact, she decided against going caving and opted to sit in the van instead.

We proceeded to the entrance, a huge shakehole at the end of a blind valley and cautiously scrambled down. I accidentally dislodged a fair sized rock which Liam somehow managed to avoid. It was just one of those mornings!

The cave had been rigged the previous day. We climbed down through the shored up entrance to the first three short pitches, Ding, Dong and Bell, each quite interesting in its own right and offering three completely different situations. This was followed by a short scramble to a roomy aven with a vertical "letterbox" on the right. A thrutch through this led into a maze of dissolved shatter passages and a 20 ft easy climb over flowstones and gour pools.

The stream passage enlarged to a pleasant comfortable walking size with only a minimal amount of water. It meandered for several hundred feet of easy going vadose section with only a smattering of minor inconveniences including two short crawls under massive flowstones and small downstream cascades. The passage exhibited some fine decorations in the form of red-brown curtains and huge calcified chockstones which would do credit to many a show cave. After two short sporting pitches in rapid succession; one rigged and the other with an ancient handline, the passage began to flare out into truly colossal proportions. This surprisingly reduced again before we entered Duke Street, the master cave.

Duke Street was a monotonous railway tunnel affair leading to a very black and uninviting sump. There was some evidence that someone had tried to siphon this with a length of garden hose! ambition knows no bounds!

By this time I got the impression that Paul was getting bored with such easy progress and was succumbing to a condition which he describes as "cave drunk." The symptoms include climbing everything in sight and trying to squirm up any passageway even when it is obvious to all that it is impossibly tight. Our return journey was slowed down considerably when Liam also began to develop this mysterious malady and he and Paul squirmed off up a fissure known as North East Inlet, their bodies completely filling the hole. Derek and myself waited for about twenty minutes before deciding to casually make our way out.

The handline pitch proved quite amusing on the return journey as there just didn't seem to be that vital last foothold. Despite my pioneering 'head jamming' technique, I kept sliding back down until Derek's sense of humour was replaced by sympathy and he gave me a much appreciated hand.

By the bottom of Bell pitch, we could hear Liam and Paul behind us, so we quickened our pace somewhat as we had eaten Liam's Mars Bar. The head of Dong pitch also lacked footholds and I had visions of Liam going through my pockets as I lay in a crumpled heap at the bottom.

We exited into sleet and snow and set off in completely the wrong direction. When we found the van, Jane was feeling (and looking) better. As I couldn't find Paul's car keys, I was offered a Furry suit and so this article came into being.

To conclude, our part of the club trip to Ireby Fell was very enjoyable. The pitches were well rigged and the system has plenty of interesting features and an atmosphere I can best describe as friendly, which is quite surprising considering its accident record. Derigging is not particularly difficult due to the nature of the pitches and the fact that 80% of the pitches and therefore 80% of the tackle are within 50 horizontal feet of the entrance.

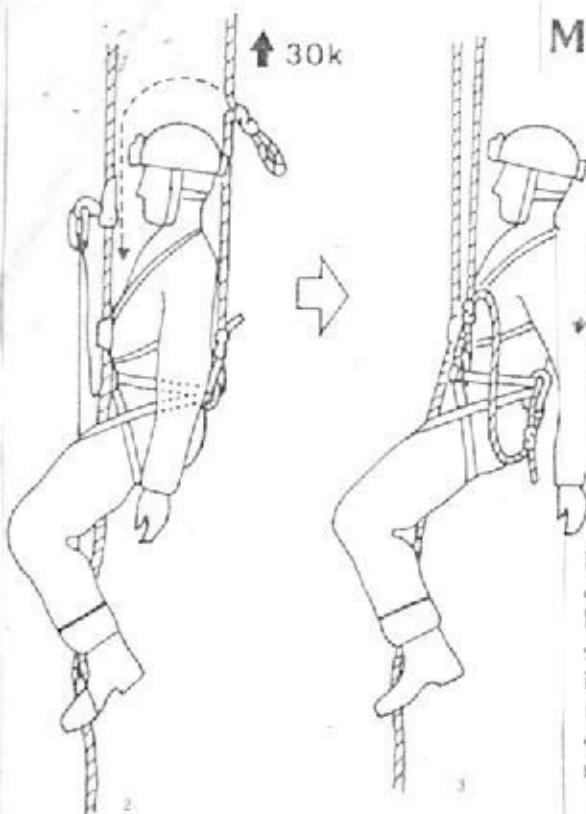
Mark Lovatt
14th April 1988

GEAR HIRE IF You hire gear from Ralph, can you please note the following points;

LAMPS: These are supplied charged (some may disagree!!) with a knot tied in the cable. If the lamp is not used, please leave the knot tied, if the lamp is used, do not tie a knot in the cable when returning it.....the reason should be obvious, it avoids lamps being a) unnecessarily charged b) lamps being issued with insufficient charge. If a lamp proves faulty, return it with two knots tied in the cable.

SUITS: Will you please return suits turned the right way out, ^{and} whenever possible clean and dry. These are expensive items and are only intended to be used for introducing beginners - ie after a couple of trips you should be thinking about buying your own.

Mini-rescue



Prussiking is tiring. If necessary, it is better to give a hand to a tired caver rather than waiting until he cannot climb any further and must be hauled up bodily. A rope attached behind [2] with a constant tension of around 30Kp makes it much easier to climb. A knot in the rope just above the caver allows the system to be changed [2, 3] should it be necessary to haul him up. At the pitch-head, a pulley-ascender assembly can be installed, which can be changed if necessary to a pulley system.

Imagine that one of the team in a pitch is injured following a stone-fall. He does not reply to your shouts: he is unconscious. The rest of the party are a long way in front or a long way behind: you are alone. You do not have any special equipment: only your normal abseil/prussik gear and the rope already in the pitch. Your friend may be bleeding or have difficulty breathing: he needs help immediately. Hanging on the rope is no place to do proper first aid or to wait for the arrival of a rescue team: you must get the injured caver off the rope.

All competent cavers should be capable of helping a colleague in difficulties.

Admittedly the situation described above is the most difficult. If you can cope with that, you can deal with anything easier.

The normal technique

In order to reach the injured person, it is often necessary to use the rope on which he is already hanging. Climb or descend with ascenders (prussiking system, in reverse to descend). Before moving your ascenders past his, clip a cows-tail into his harness.

There are various ways of getting an injured caver out of a pitch. It is best to use the normal techniques of abseiling and prussiking, but modifications are needed to cope with the additional weight.

When abseiling, additional friction must be added to the descender, for example a complete turn on a karabiner [1].

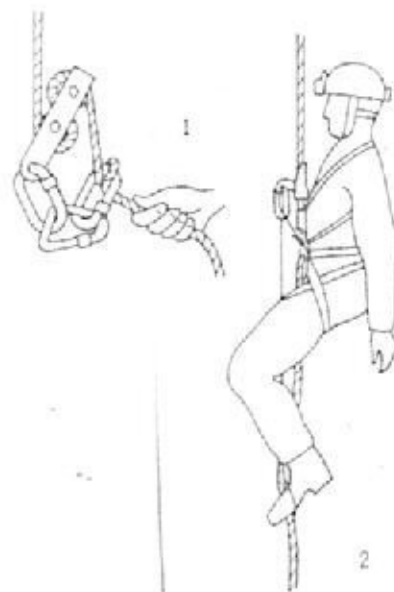
Use a Shunt if you have one, but have an ascender with a foot-loop handy because it is almost impossible to unlock a Shunt with the weight of two people.

The prussiking system is modified by passing the foot-loop through the karabiner (use a pulley if available) attached to the ascender and clipping it into the harness, [2] preferably to the top of the chest ascender. Prussiking becomes less strenuous but slower.

It is almost always necessary to lift the weight of the injured person in order to remove his gear from the rope. While clipped in to the victim, change your prussiking system as necessary. Clip his harness into your maillon rapide with either a karabiner or using one of his cows-tails. Against a wall or if the victim may have difficulty breathing, a karabiner is better [3]. In a free-hanging pitch or in a narrow pitch it is better to use a cows-tail [4]. Climb up a little to take

his weight and remove his equipment (ascenders, descenders, etc) from the rope: keep them with you—you may need them later.

Although it is possible to climb up with the victim, passing intermediate anchors normally, it is tiring and slower than abseiling down. In addition you may have enormous problems getting the victim off the rope at the pitch head. It is better to change from prussiking to abseiling: don't forget the extra turn on the karabiner [1]. Intermediate anchors can be undone. If this is not possible (knot too tight, second rope added), pass the intermediate anchor using the foot-loop to unfasten your cows-tail.



Hauling from the pitch-head

Occasionally it may be preferable to lift the victim on the rope to the top of the pitch, rather than to go down to him. This is not possible if there are intermediate anchors, it implies a longer delay in giving first aid, it is slow and tiring, and there is a serious risk that you will not be able to get the victim off the rope at the pitch head. But it may be a valuable technique in certain cases, for example, if lifting the victim a couple of metres gets him out of a waterfall.

It is necessary to use the legs to lift the rope, with the help of inverted ascenders. The chest ascender is reversed [5] and the other ascender is installed on the rope, attached to the anchor [6]. Position yourself at the top of the pitch, cows-tail clipped in, standing on foot-holds or in the foot-loop; if you use the foot-loop, it is worthwhile adjusting the cows-tail so that you can sit down with your feet in the foot-loop [7]. With the rope in the chest ascender, use a prussiking action, except that it is the rope which rises in the reversed ascenders. The slack rope must be pulled through the upper ascender.

If a pulley and a third ascender are available, a pulley-ascender assembly can be installed as soon as there is sufficient slack. It is now possible to construct a pulley system or to "prussik up" the rope coming through the pulley-ascender see ch. IX [8].

Self-rescue

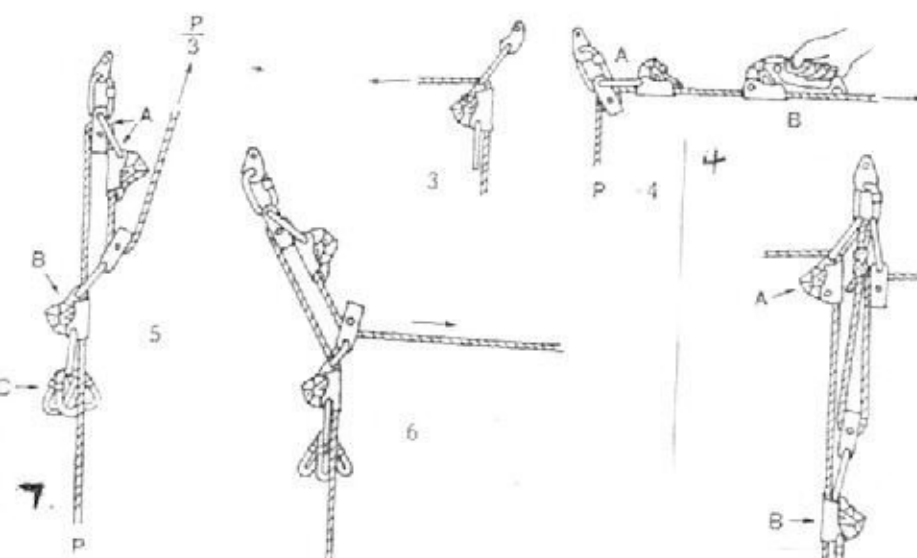
With sufficient equipment and man-power it is possible to haul an injured person up a pitch with the techniques already described ch. IX *Tackle (below)* Transport, but it is generally better to leave this to an experienced rescue team.

Pulley systems

An ascender fixed at the top of the pitch [3], preferably with a pulley [4A], avoids the load being dropped accidentally and allows the hauling team to rest. It is often difficult to grip the rope, which may be wet or muddy; use an ascender, preferably one with a handle [4B].

The classical pulley system [5] requires two pulleys and two ascenders; to the pulley-ascender assembly [5A] is added a second pulley attached to a second ascender [5B]. The operation is easier if a weight (spare karabiners, for example) is attached to the second ascender [5C], to pull this down automatically when the hauling team pays out some slack rope. The classical pulley system works well with an upward pull. With a sideways pull [6], much easier for the hauling team, it is much less efficient.

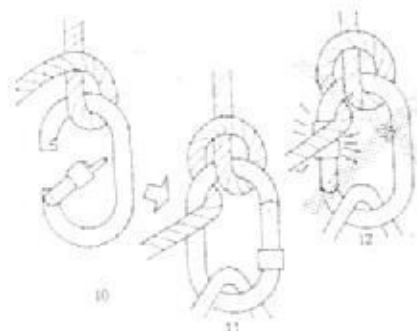
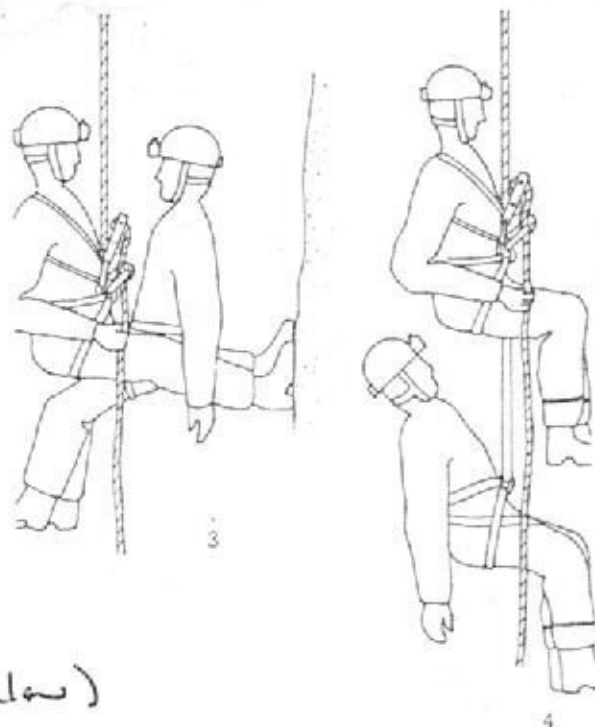
With the same ascenders and pulleys, an Obendorf pulley system can be set up [7], using a separate rope or possibly the other end of the hauling rope.



Sometimes it is possible to use the pulley system to pull the slack rope into the ascender [4A], but it is a good idea to have someone here to assist, who can see down the pitch and relay the necessary instructions to the hauling team.

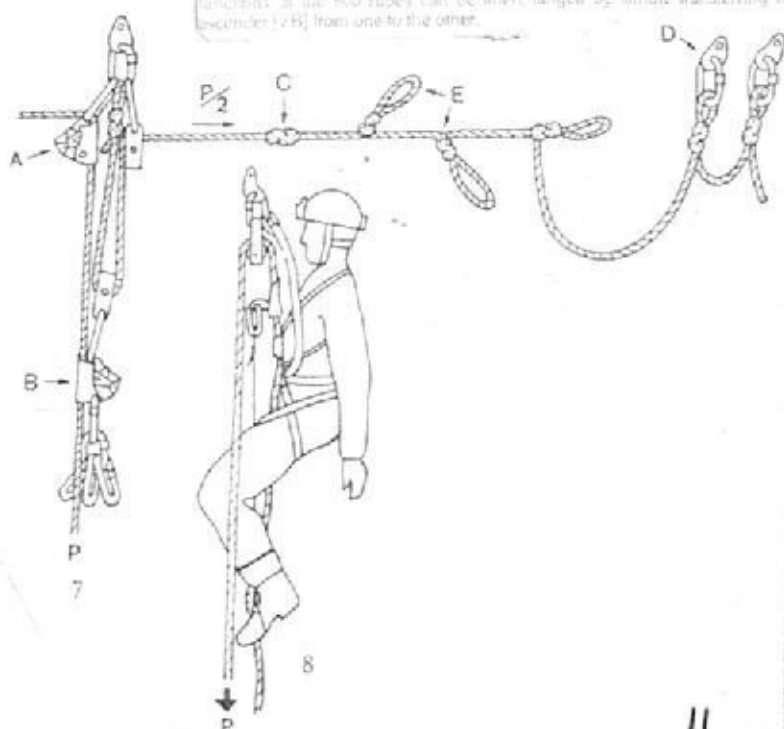
The Obendorf system is best for a large team, while the classical pulley system is better if there are only two or three people at the top of the pitch.

With sufficient man-power, a considerable load can be hauled up a pitch. For example, suspended from a cows-tail, to move the rope through a pulley and "prussik up" the other side [8].



ITALIAN HITCH.

A simple ascender is sufficient as a safety device [7A], but a pulley-ascender assembly or a self-locking knot can also be used depending on the equipment available. The self-locking knot has the advantage that, should it be necessary to lower the load, it can be easily transformed into an Italian hitch (see page 48). The team pull on a rope which moves backwards and forwards [7C-D] as a result of a prussiking action [7E]. A knot which will not pass through the pulley forms an additional safety factor [7C]. By anchoring the end of the rope, this becomes a safety line into which the hauling team can slip over their shoulders [7D]. During a rescue, when a life line is used as well as a hauling rope, the functions of the two ropes can be interchanged by simply transferring the ascender [7B] from one to the other.



Crewe Climbing & Potholing Club Members 1988

	Work	Home
Chairman:	Paul Holdcroft	
Secretary:	Liam Kealy	
Treasurer:	John Shenton	
Tackle Officers:	Paul Holdcroft	
	Ralph Johnson	
	Liam Kealy	
Training Officer:	Kevin Mountford	
Assistant Training Officer:	Jane Brookes	
Meets Secretary:	Paul Shenton	
Newsletter Editor:	Derek Brookes	
Unofficial Club Heckler:	Tony Reynolds	
Adrian Hanson		
Dave Bailey,61		
Ron Beckett,Ne		
Rodney Beaumont		
Melvyn Bratt,13:		
Jane Brookes,11		
Derek Brookes,1.		
Ian Copeland,34:		
Russel Copeland		
George Crane,10		
Nigel Cooper,52,		
Ross Evans,45 A		
Pete Forster,8		
Ian Freeman,c/o.		
John Gillet,34		
Caroline Green,		
Mick Green,????		
Ian Grindey,56		
Paul Holdcroft,.		
Ian Housley,3 B		

Ralph Johnson,
Marguerite Johnson,
Cliff Jones,
Steve Knox,
Liam Kealy,
Brian Kirkland
Mark Lovatt,
Kevin Mountford,
Phil Marsden,
Geoff Millington,
Steven Miles,
Lionel Parkinson,
Tony Reynolds
Alan Scragg
Martin Soliman,
Paul Shenton,94
John Shenton,3
John Smith,3 Li
Pete Steadman 1
Alan Steele,57
Alan Walker,30
Paul Wightman,3
Zig Wozasek,51B

Past Members

Barbara Allwright,Pe

Pete Allwright,1

Steve Browett,24
Bill Bentley,26
Neil Clamp,66 M
Paul Cooper,Flat
Chris Daniels,66
Alastair Eld,57
Barry Holly,17
Chris Holly,17
Lionel Howarth,1
Ricky Kearney,16
Andy Martin,16
Christine Scragg,90
Stan Kowalik.

Redacted