SOUTH WALES CAVING CLUB

NEWSLETTER

NUMBER 25. OCTOBER 1958.

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1. CLUB NEWS

CAVE DIVERS AT O.F.D.

Shortly after the publication of the last Newsletter we were pleased to receive a visit from the Cave Diving Group, of which two members made an attempt on the sumps discovered by Gordon Clissold and helpers in the Boulder Series extension of O.F.D. Having the Cave Divers is on a par with paying a visit to the dentist: one may be glad to see them personally, but not their apparatus: however, a large band of willing cavers soon made short work of the transport of kit (which included a car battery and festoon of headlights not belonging to the divers) and were safely seated in a sort of natural balcony above the sumps, to view the proceedings.

Later reports speak of "the discovery of a diving site in South Wales which at first sight seems to rival even Wookey Hole in the size of the passage and in the crystal clarity of the water." (C.C. Wells.) It seems that we may expect a further visit at some future time to continue the exploration of yet another extension of O.F.D. - that part which lies underwater.

NEWSLETTER No. 24 : ERRATA.

The Editor regrets having to admit to the following mistakes in the last Newsletter:

Ann Williams, Hon. Records Officer, address is 207 (not 217) Cathedral Rd., Cardiff.

The names of David Hunt and W.H. Little were omitted from the list of Committee Members.

NEW MEMBERS.

We welcome the following new members to the Club:-
Jean A. Austin (Miss), 134, Kingstanding Road Perry Bar, Birmingham.
T.B. Grohmann, 287, Robin Hood Lane, Hall Green, Birmingham 28.
G.T. Stark, 20, Penydre, Clydach, Swansea.
H.J. Williams, 91, Essex street, Wash Common, Newbury, Berks.

OGOF FFYNNON DDU LEADERS.

Tom Davies has been elected to the above list.

CAVE RESCUE ORGANISER.

At the last Committee Meeting the Cave Rescue Organiser asked again for a notice to be put in the Newsletter, requesting members to send him information on the time it would take each member to reach the Club's H.Q. in the event of a rescue Call Out. The notice first appeared at the end of the report on the recent accident in O.F.D. but so far there has been only a very poor response to this request. Members are asked to send this information as soon as possible to

the C.R.O. & Tackle Manager, G.L. Clissold, Caravan, c/o Plasnewydd, Llwydcoed, ABERDARE, Glamorganshire.

2. AN EXPERIENCE IN LLETHRID SWALLET (18th OCTOBER 1957)

Note:- Llethrid Swallet, with its very restricted entrance series, has long been regarded as a cave to be avoided in wet weather, although until fairly recently, the exact extent of flood conditions in the cave was unknown. The Hereford Caving Club has now published an article describing the experiences of two of its members (Inett Homes and Paul Hartwright) who were in the cave when heavy rain brought about extreme flood conditions.

Our thanks are due to the Hereford Caving Club and to Paul Hartwright by whose kind permission this article is reproduced.

(Les Hawes)

On the 17th October Inett and myself arrived at the village of Llethrid and went down to the swallet to inspect the water level.* The following day, the 18th, we decided to enter the swallet if conditions were favourable. They were - the water level had dropped two inches, and the weather appeared settled. Only Inett and myself were able to go down as the cavers from Aberdare could not come.

We took with us a complete set of dry clothes each, and wore just our boiler suits and a vest to negotiate the wet stream passage. For illumination we had three Nife batteries and a 3-cell rubber torch. We each used one of the Nife batteries for helmet lamps. We told Mrs. Harry and the people at the farm that we intended to visit the cave and we also left a yellow duster on the ground outside the entrance.

We entered the cave at 10 o'clock without getting wet. This did not last very long however, as we had to lie in the water to pass several obstructions. The water was sufficiently high to make it necessary to go through 'the squeeze'. Here we climbed into the top of the passage and explored a chamber up above. There appeared to be two ways out of this, but both were tighter than 'the squeeze'. Inett had some difficulty in passing through it. In the narrow rift passage at the foot of the small ladder, the water reached waist high.

We climbed up into the large chamber after about an hour in the stream passage. After changing into dry clothes, we spent the next hour and a half admiring the wonderful formations. We were interested to note the 'high tide' mark shown by mud on the walls. The whole cave was wet. We climbed down into the stream passage again with the intention of visiting the sump. Inett noticed a small pool which overflowed as we were watching into a dry hollow. It did not take many seconds for us to realise that this could be due to the water level rising. We hurried back to where the stream passage enters the large chamber and were shocked to find that the water had risen about five inches. We placed a piece of calcite at the edge of the water and were able to watch the level rise. It rose at the rate of one inch in about three minutes.

We realised that we were likely to have a long wait, but we went back and changed into our wet clothes again in case the water stopped rising immediately. The reason for changing was that we wanted to keep our clothes dry while we waited.

* The flow was moderate and we marked the height of the water with a stick.

In our wet clothes we intended to enter the passage and inspect the height of the water at the first obstruction. Changing also gave us something to do while we waited for a definite indication of the water continuing to rise.

We found that we were able to think clearly and could weigh up the advantages and disadvantages of every possibility. On returning to the water after about 10 minutes we found that it had risen approximately one foot above its level when we came in. It was now impossible to think of entering the passage.

In the large chamber about 20 feet above the stream we found a plastic container, full of water, which had been left by the Taylors. In it was a bottle of paraffin, a lamp, about a dozen candles, two tins of carbide and a ball of string. We were disappointed to find there was no food. We decided we must get as high as possible above the water level, so we made two journeys, with all our clothes and the plastic container, to the top of the third chamber. We chose this because (a) it is probably the highest part of the cave; (b) it was the driest place; (c) we were out of the sound of the water, which made quite a noise in the lower chambers. We then changed into our driest clothes and prepared to wait. Inett changed the 0.3 amp bulb from the rubber torch into the helmet lamp operated by a Nife cell. We calculated that we had approximately 100 hours light - probably more than we should need if we stayed there.

We sat close together, with a towel round our shoulders for two hours. During this time we got rather stiff and were glad to move. We descended to the stream level again and found that the water had risen about 3 feet above its original level. Even the high part of the passage was nearly full to the roof, and the force of the water was very strong. The noise was deafening. Though the water had risen this amount we knew that it was either at its peak or falling, because it had not continued to rise at its previous rate.

We went back to our high-level encampment and dozed slightly for another two hours. We were even more stiff this time and when we looked at the water again it had fallen about 18 inches. In another hour it had fallen twelve more inches. We were now feeling much happier and hoped to attempt the passage in an hours time.

The last hour seemed a long one. Much of the time was spent in listening to the drips falling from the roof all around us. One drip regularly fell on my shoulder and when we changed places Inett got it.

At half-past six we decided that we should try to get out. The water was about 6 inches higher than when we had come in, but if we waited there was always the risk that it might rise again and stay up for a few days. We did not change again. We left in the cave the large towel, a boiler suit and a haversack, which we could not attempt to take with us. We did, of course, take the four lights. Soon after we entered the stream passage it became obvious that the stream was indeed higher. This made the whole place look different and the extra height of water made it smaller.

The first major obstacle was the narrow rift passage at the foot of the small ladder. At first, we had difficulty in finding our way into it, because the water was only about 12 inches from the top, and the 12 inches was concealed by white froth floating on the water. To progress along the passage it was necessary to sweep the froth out of the way. The water was up to our necks. We had

difficulty in climbing the little ladder as the pressure of the water pushed us from it.

We now had the pleasant thought that if the water rose again we should not be able to go back to the high chamber and we certainly could not have gone on. From here we met one difficulty after another. Some places where we had previously come through were now full of water. Many times we had to search for another way through and Inett certainly found some of them tight.

We could not go back through the squeeze and here we spent about 10 minutes looking for another way. We finally found a hole above the stream. By standing precariously on mud and loose rocks I managed to move some boulders so that we could get through.

In some of the holes where we had to push through against the pressure of the water I found that the water piled up in front of my face. I had to go through these holes fast so that the water would not have time to reach my nose. As we neared the entrance the waterfalls became more of a nuisance. At one point we came to a place where the passage divided into two, and both ways were blocked with falling water. I attempted one of these and half way through, holding my breath at the time, I found progress barred by some logs. We tried the others with no success at all and came back to the first one again. This time I was desperate and the logs were forced out of the way. I gave Inett the signal to come through by repeatedly flashing my light. The next obstacle that comes to mind is a hole through which the water flowed, level with the top. Here, though, Inett's previous knowledge of the passage was useful and he found the way past this.

A few yards from the entrance we felt the cold wind rushing in with the water. Here, for the first time, I began to shiver uncontrollably, but it was no good we had to keep going. We came under the place which Inett supposed to be the entrance and found water pouring in from all directions, but three in particular.

We were afraid that the entrance might have been blocked by branches and logs, and the water looked terrifying as it poured in a solid mass through the hole. Once again I plucked up courage and taking a deep breath I pushed my head into the water. I could not see anything, and the effect of the bitterly cold water beating on me made me retreat again. However, this did not last long. We knew that this must be the entrance and that we had to get out somehow. Without a helmet I could not have done it. The force of the water on my unprotected head would have made it impossible.

I carefully planned what footholds I would use and tried again. This time I pushed up further, and came out above the water. There in my light I could see the trees, the stars and the water rushing towards me from all directions. In a few seconds I was out and was flashing the light furiously for Inett to follow. He came up above the water and fell back under again. He was soon out, though, and we hurried to tell Mrs. Harry that we were out. As one can imagine we looked a little damp and tired. Mrs. Harry told us later that at 4 o'clock there had been no sign of a hole and she thought that perhaps we had not gone in after all. Back at the caravan we stripped off and dried ourselves.

An interesting day's caving - a little wet and a little wiser, after ten hours underground.

Paul E. Hartwright.

3. RUNG FIXING WITH GLASS FIBRE

Perhaps a new and unusual method of fixing ladder rungs is by the use of Cataloy Glass Fibre. This provides a quick, easy and sound joint on the larger diameters of tube. Even so it is not the final answer to a much discussed problem.

The following data resulted from tests carried out on $\frac{5}{8}$", $\frac{1}{2}$", $\frac{3}{8}$" dural tube.

TUBE O.D.	FIXING A	B	C	WEIGHT OF 25 ft.	COILED DIAMETER.
$\frac{5}{8}$" DIA.	140 lb.	285 lb.	325 lb.	2 lb. 4 oz.	$4\frac{1}{2}$"
$\frac{1}{2}$" DIA.	160 lb.	550 lb.	650 lb.	3 lb. 1 oz.	$5\frac{1}{4}$"
$\frac{3}{8}$" DIA.	175 lb.	-	850 lb.	4 lb. 3 oz.	$6\frac{1}{2}$"

FIXING:- A. Glass fibre around wire.
B. Pin through wire.
C. Glass fibre through wire.

10 cwt. Preformed Aircraft Cable .110" diameter, 7/14 ord. lay., was used in conjunction with both the $\frac{3}{8}$" and $\frac{1}{2}$" tubes. Holes for this cable drilled $\frac{1}{8}$" diameter. 9/64" diameter cable was used for tests on the $\frac{5}{8}$" O.D. tube, holes being drilled No.24. or 5/32" diameter. The centre of all holes drilled $\frac{1}{4}$" in from the ends of 6" long rungs.

The material used in these tests was a Holt's Cataloy Glass Fibre Kit No.1. costing 18/8d., obtainable from Halfords etc., containing one tin of powder, one tin of liquid, a 24" length of 2" wide ribbon, a sheet of glass fibre 12" x 24" and full instructions. The sheet of glass fibre included in some kits is very coarse and fibrous, being unsuitable as it cannot easily be cut up into small pieces. The material should look more like a blanket. This latter type, and cataloy can be obtained seperately if necessary.

Tests on $\frac{3}{8}$" tube.

A. In this case the wire was merely threaded through the rung and glass fibre packed on either side of it and flush with end of tube.

B. Here the lay of the wire was parted by forcing the point of a scriber through it, then a $\frac{5}{8}$" long x 1/16" diameter steel pin was pushed through until flush with the end of the rung. The various surfaces were then coated with cataloy and cataloy coated glass fibres pushed at the side of the wire and around the protruding part of the steel pin.

C. A scriber was forced through the wire until the strands followed the bore of the tube leaving a gap of about $\frac{1}{8}$" diameter. After coating with cataloy a bunch of fibres were partly coated with cataloy and pushed through about half-way, the remainder of the end was then filled up with cataloy and glass fibre, pushing a little at the sides of the wire.

Tests on $\frac{1}{2}$" tube.

* See note at foot of page 7.

A. Fixing as for $\frac{3}{8}$" diameter tube.

B. Again the lay of the wire was parted with a scriber, a $\frac{3}{8}$" long x 1/16" diameter steel pin pushed half-way through and the whole cavity filled with cataloy and glass fibre.

C. Here the wire was parted as much as possible, first with the aid of a scriber, then a centre punch screwdriver, etc. A length of glass fibre (blanket type) $\frac{5}{8}$" wide x 1" long was cut and the centre portion coated with cataloy and then pushed V fashion, half-way through the centre of the wire, the two extreme ends (left protruding) are coated and then pushed around the sides of the wire. The whole joint should previously be coated with a little cataloy , and after inserting the glass fibre through the wire the whole end should topped up with glass fibre strands and cataloy.

Tests on $\frac{5}{8}$" diameter tube.

Here again plugs were used about 3/16" behind wire, no tests were made omitting them, but it should prove possible.

A. As previous.

B. Tests were not made here, as results were not expected to be much improved on $\frac{1}{2}$" rungs.

C. As for test C on $\frac{1}{2}$" tube, except that the glass fibre strip was about $\frac{5}{8}$" wide and 1" long.

Further Notes.

It is quite satisfactory to omit plugs, but if used, (either cardboard, wood , cork, metal or rag) care should be taken when opening lay of wire not to force them further down tube.

In each case the bores of tubes were about 8 thou. under the nominal sizes of $\frac{1}{4}$", $\frac{3}{8}$", 7/16". It is doubtful, but if one wished, the ends could be drilled one of the above sizes to a predetermined depth and blanks parted off rod or punched, could be pushed in.

Glass fibre ribbon (included in the kit) was used in experiment C. $\frac{1}{2}$" tube, and proved inferior, failing at 500 lbs.

The general instructions issued should be followed as closely as possible. The whole operation of one mix and filling should be completed within about 10 mins., This should give one experienced person sufficient time to complete one side of a 15 ft. ladder - 2 or more people working on a 25 ft or 30 ft. The ladder must be left still for a further 20 to 30 minutes while the catalytic action will cause it to set rock hard.

When filling the ends the ladder should be stretched out with the rungs vertical and the lay of the wire opened out. Very shortly after filling, the ends of the rungs may need topping up. In all cases the tube and wire should first be coated with cataloy.

A rough estimate for $\frac{1}{2}$" tube:- the kit contains sufficient glass fibre 'blanket' to complete about 600 ends and cataloy to complete only 300 ends. The price of the two tins separately is almost as much as the kit. The price appears to compare favourably with that of dural for normal insets . One may add the price of a small tin of Loy Solvent as I doubt most people will approve of walking about with fingers and finger nails cataloy'd up for weeks.

All tests on $\frac{3}{8}$" tube were made without plugs.

In very few of the failures under load was there any damage to the wire and further tests made on $\frac{1}{2}$" tube provided very consistant results.

The strength of this type of joint depends upon the quantity of glass fibre cataloy that can be inserted between the lay of the wire. In all cases the glass fibre must be thoroughly impregnated with cataloy. A rasp or file is the best tool for trimming the ends on completion. The fact that boat hulls are built out of this material will give some idea of its resistance to water.

A few notes that may be of help when using $\frac{3}{8}$" tube.

After cutting, the ends of the wire are tinned by dipping alternately into Bakers Fluid and molten solder, afterwards trimming off the surplus solder. The previously drilled rungs are threaded on to the wire and supported at both ends 6" above the ground. Work along the wire inserting pins, using 12" rule for spacing, hammer and pointed tool 1" long x $\frac{1}{8}$" diameter, fitted into a good handle. Mix a very small amount of cataloy and mix in a few finely 'chopped' fibres. Force this mixture into the ends of the rungs until it starts to ooze out by the wire.

When pushing the glass fibre in, the following tools will be found useful if wiped clean after every mix:-

A 15/32" diameter rod in wooden handle, the end of which is drilled 3/32" diameter x $\frac{3}{8}$" deep, and countersunk slightly to clear the pin in the wire

A guide about $\frac{5}{8}$" diameter x 1" long, drilled $\frac{1}{4}$" diameter through the centre one end countersunk for glass fibre, and the other end opened out to $\frac{3}{8}$" diameter x $\frac{1}{8}$" deep to fit over the end of the rungs.

Summing up, the ideal size of tube appears to be $\frac{1}{2}$", omitting the plugs, using type C. fixing.

$\frac{5}{8}$" tube - results are excellent again using type C. fixing.

If $\frac{3}{8}$" tube is used, type B. fixing is recommended (as method C. is very fiddling.)

Tom Round.

4. PRUSSIC KNOTS

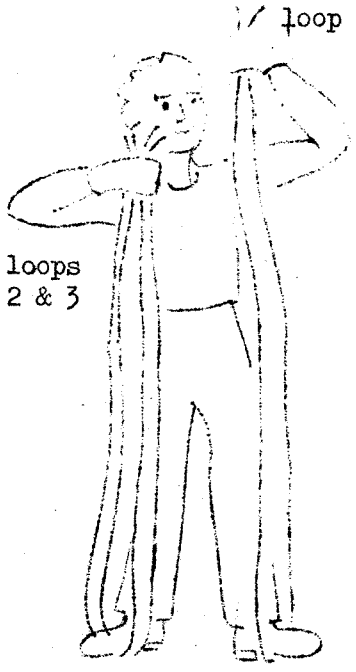
The following notes on Prussic Knots have been sent to us from the Library of the National Speleological Society of the U.S.A. They are reproduced from the pages of "The Troglodyte" Vol. 1. No.9. p.4-5, Sept 1955, under the title 'Rope Notes The Fourth Sling Works Again'. by Cord H. Link, of the Cumberland, (Tennessee) Grotto of the N.S.S.

Full credit is due to Mr. Link as author of this information and it is hoped that cavers on this side of the pond will also find these notes useful. Further notes will be published in the next issue showing how to rappell (or abseil) upwards!

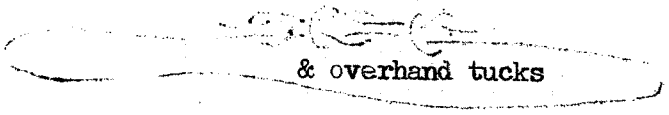
* Plugs were used about 3/16" behind wire for the above results, but tests made omitting these in case C. resulted in failure at about 600 lbs. therefore it will be quite satisfactory to dispense with the additional operation of fitting them.

MAKING THE PRUSSIC KNOTS. (Use $\frac{3}{8}$" manila, 1350 lbs. test.)

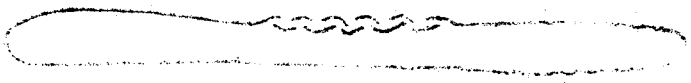
MEASURING THE ROPES
(whip the ends)



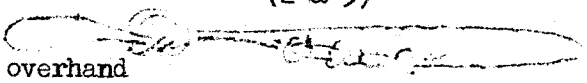
Tie into loops with square (reef) knot

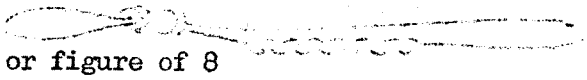


or splice



After tailoring to fit, put in foot loops (2 & 3)

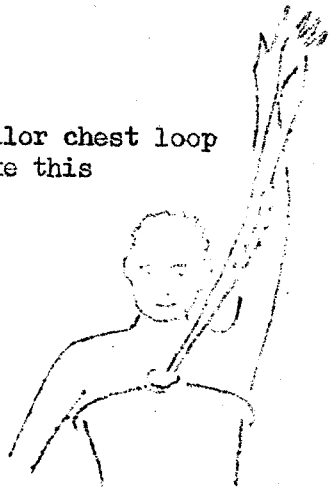


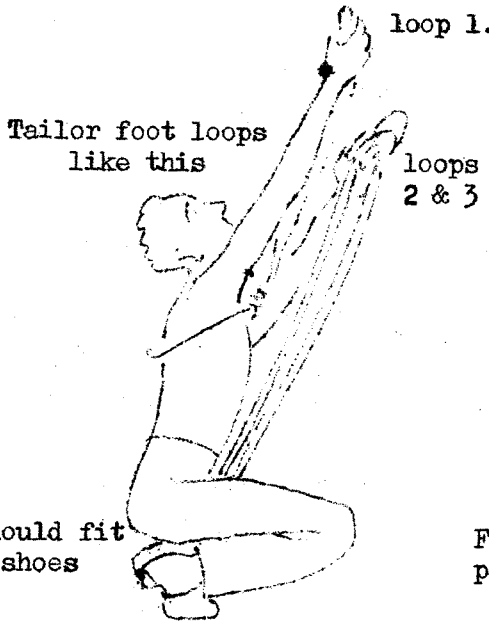


or figure of 8

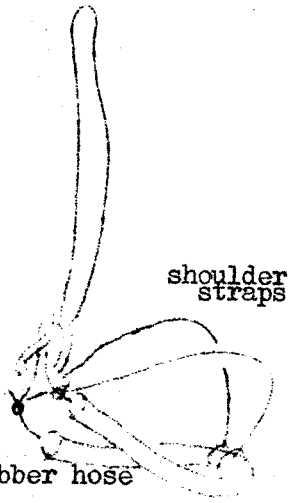
Next make the chest loop (1)

Strength of knot } is 60% } of rope
splice } 90% }





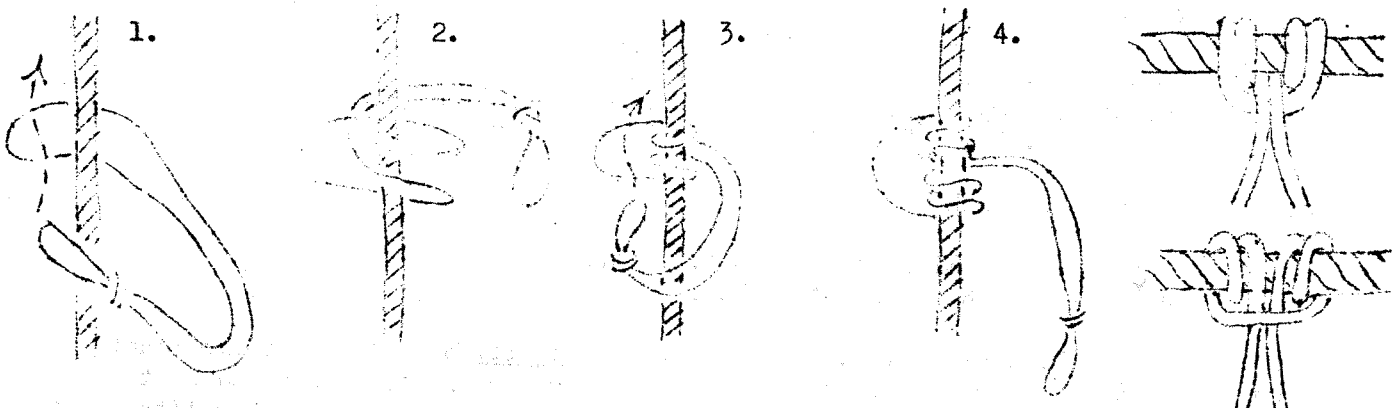
Foot loops should fit tightly over shoes



For comfort & convenience pad loop & add shoulder straps

Make up the FOURTH SLING in form of loops 2 & 3 but as long as loop 1.
It has several uses. (For further details see next issue.)

TYING THE PRUSSIC KNOT

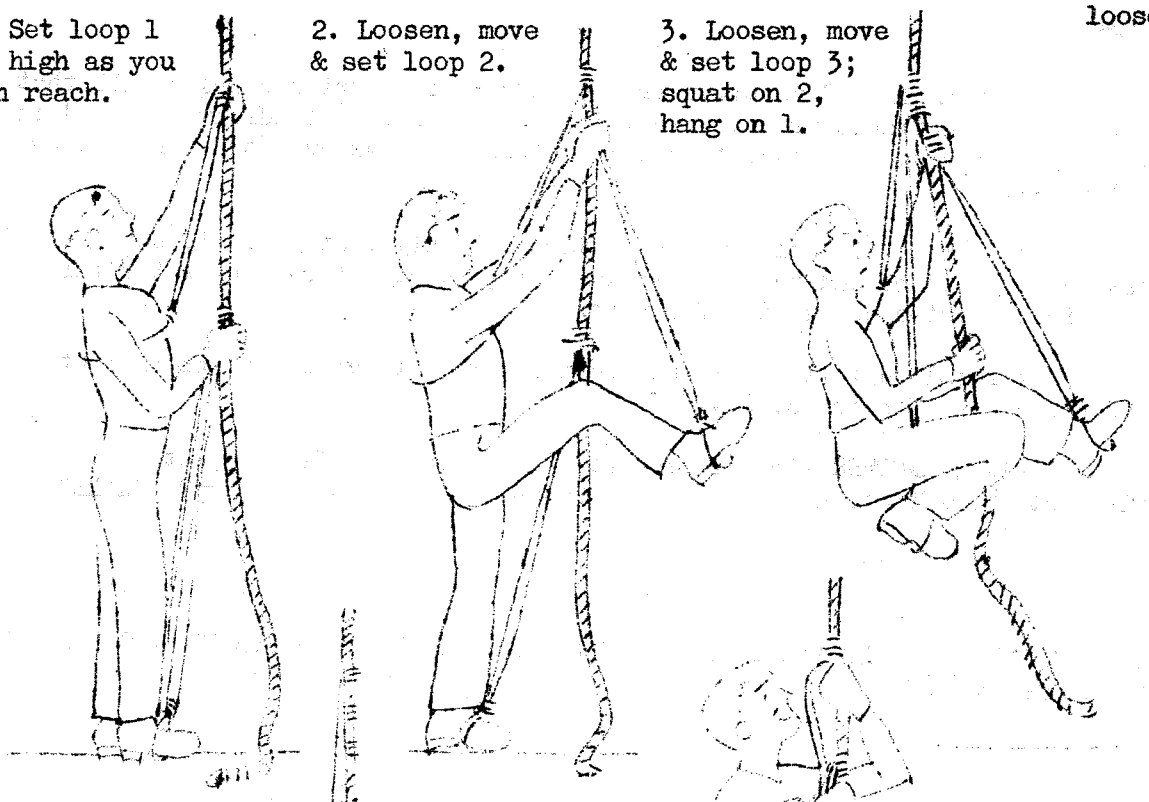


CLIMBING ON PRUSSIC KNOTS

1. Set loop 1 as high as you can reach.

2. Loosen, move & set loop 2.

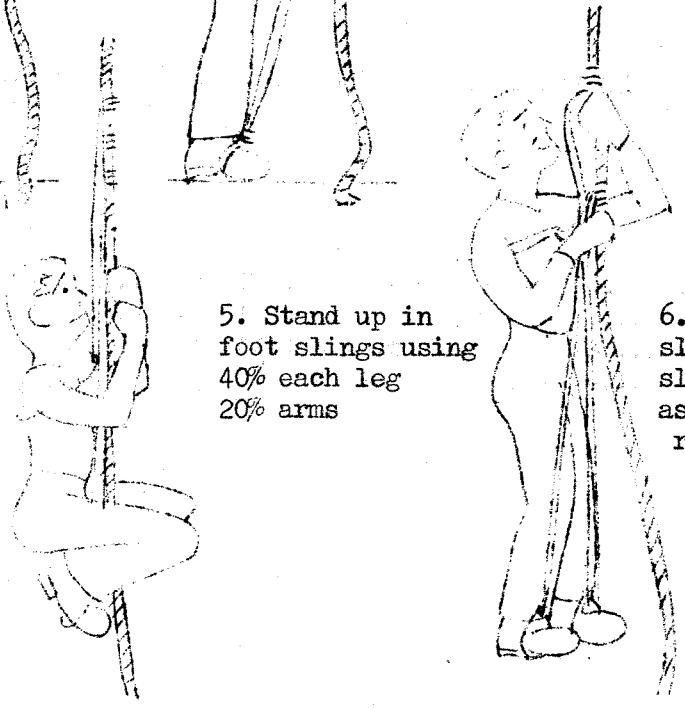
3. Loosen, move & set loop 3; squat on 2, hang on 1.



4. Centre weight over foot slings (loops 2 & 3)

5. Stand up in foot slings using 40% each leg 20% arms

6. Standing in foot slings, slide chest sling (i.e. loop 1) as high as you can reach.



You're on your way-
Good Luck!
C.H.L.

CHANGES OF ADDRESS.

Hawes L.A., 4, Connaught Road, Fleet, Hants.
Platt J., 303, George Road, Erdington, Birmingham 23.
Woods.B.J. " " " " "

CHANGES OF NAME AND ADDRESS.

Nobel. J.A., (Miss) to Hawes, L.A. (Mrs).
4, Connaught Road, Fleet, Hants.

- and here, of course, we have what has <u>really</u> been the most important event in the Club during the last three months. Our congratulations and best wishes go to Les and Jan on their marriage, which took place on September 13th. last.

TO LET -

to bona fide Cave Diver Trainees or newly married couples, all that well appointed and desirable property known as WEIGHBRIDGE, splendidly situated in a quiet rural area above Penwyllt, with magnificent views over the surrounding countryside.

The property, enlarged and modernised only last year, is substantially constructed of stone and has its own unfailing supply of running water laid on, and is in a first-class state of repair.

For full detailed particulars and permit to view (by appointment) apply: the Hon Sec. and Hon Treas. S.W.C.C.

also, ANOTHER similar property only very recently completed to an equivalent specification by the same firm in the DAN-YR-OGOF (dry?) VALLEY.

CONTRIBUTIONS REQUIRED PLEASE DURING THE NEXT THREE MONTHS FOR THE JANUARY ISSUE OF THE NEWSLETTER!

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Hon. Editor.....B. de Graaf, 5, Tai-north, Pennorth, Brecon.
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Manager