

Care, Inspection and Use of Climbing Equipment



Introduction

This is the first edition of the factsheet, providing guidance on the care, inspection and use of climbing equipment. The points raised are of importance not just to those directly involved in climbing, but to all who may carry or use climbing equipment for safety, confidence or river crossings.

Further editions may be issued in the light of experience from this edition. Publication of further editions will be notified in SCOUTING Magazine, *Talking Points* and the Activities Newsletter.

General

A factsheet such as this can only deal with care and inspection in general terms. Where a manufacturer's instructions differ from this factsheet those instructions must take priority. Those responsible for purchasing equipment for Scout use must have sufficient knowledge to select the item(s) most suitable for their needs. Not all retailers have detailed knowledge of all the products they sell nor to advise on what is best for Scouting use. Some items of climbing equipment have for a number of years been marked UIAA to indicate that they have passed the tests of that body. This mark is gradually being replaced with the European Community CE mark. Both marks are equally acceptable as a standard.

Scout Association Leaders and Instructors do have a 'Duty of Care' for those members for whom they are providing instruction or supervision. It is therefore extremely important that the storage and maintenance of equipment used in a potentially hazardous activity is well documented and available for inspection when required.

Equipment use record

It is now accepted that a record of usage of climbing equipment (including the items mentioned in this factsheet) must be kept.

It is prudent to include other Scout activity equipment such as pioneering ropes and pulleys, and in particular any equipment used in the construction of aerial runway systems in such a record system.

Because of the wide variation in the quantity, frequency of use, storage conditions, etc. of Scout owned climbing equipment no national system can be laid down. It is for each Group, District or County/Area to determine what is best for them. Any system devised must be simple and understood by all. It is not the responsibility of the Quartermaster alone.

As a minimum the following information must be recorded:

- Date purchased and means of identification e.g. number, letter, etc. applied.
- Date of any repairs or modifications.
- Date and number of hours each time the equipment is used, by whom and for what purpose if leading, abseiling, etc.
- Date of routine inspections based on a time interval rather than a record of actual usage.
- Remarks on any unusual incidents e.g. a fall (long, short, etc.).

All users must accept the discipline of recording usage after every activity.

None of the above replaces the long-standing tradition that ALL climbing equipment is inspected just before each time it is used.

Where a 'life' is quoted below, that should only be considered as a very rough guide. An item of

equipment can be damaged beyond further use the first time it is used.

Rope identification

Probably the best identification method is to tape over the rubber 'whipping' at each end of the rope with plastic tape and to use a spirit based felt pen to mark the number etc. Those with a frequent use of ropes, e.g. County, Area or Camp Site, should consider a regular replacement plan, with each replacement being ropes of the same colour. Part used ropes might be downgraded to second ropes while the new ropes would become the lead ropes. This is unlikely to be a sensible plan for Groups or Districts. Ropes may be cut down in length to remove any damaged part. The log must then clearly show the new reduced length and the rope could have a tag on it to warn potential users of this.

Rope inspection

Ropes should be visually inspected over their full length for cuts and serious abrasion and also run through the hands to detect any local swelling indicating damage to the core. All ropes become 'furry' with use but this is not a reason to discard them. All rope lengthen slightly with use and this is acceptable. Ropes can be washed in hand warm water and this is particularly necessary for ropes used on gritstone or sandstone or after contact with salt water. Special rope wash liquids are available from climbing equipment shops. Drying should be at room temperature and storage should be in a dark, dry, cool (20°C) place. Sunlight, heat and chemicals all damage nylon

Rope replacement

For average Scout use a 'life' of up to five years has been suggested. For the bureaucratically minded a 'life' of up to 19,000 metre usage has been quoted for an 11mm rope! Users should budget for a regular replacement programme and have a contingency budget in case replacement is required as a result of damage.

Rope use

The Association's current policy on climbing ropes (dynamic ropes) is to require the use of 'Single Ropes (minimum 10 mm) of kernmantel

construction or No. 4 hawser laid ropes. Single Ropes are designated by the manufacturer with a '1' on the rubber whipping at each end of the rope. The reasons for this are as follows:

- In their booklet **Ropes** the Technical Committee of the British Mountaineering Council recommend these ropes for 'Rock climbing - Straightforward routes' and for 'Alpine/Snow and ice - Straightforward routes.' Almost without exception Scout climbing falls within these definitions.
- In their **Mountaineering Equipment Guide**, Edelrid (a well-known manufacturer of ropes) recommend a 10-12 mm rope for 'Rock climbing - lower and middle grades.' Again, most Scout climbing falls within this definition.
- Although there are several factors in the construction of a rope which affect what might loosely be called its 'strength', in general terms, 9 mm ropes (which are sometimes referred to as 'Half Ropes' and are designated with a '½' on the rubber whipping at each end of the rope) only have about two-thirds the 'strength' of Single Ropes. Taking figures from the 1997/98 Cotswold Camping catalogue the figures for static breaking of single (11mm) ropes is 2200 kg and half (9 mm) ropes in the range 1480/1540 kg. Should the worst happen and an explanation has to be given in a Coroner's Court it would be difficult to convince him of the sense of using a weaker rope when a stronger one is readily available from climbing shops. Cotswold now include a warning about using the wrong rope in their catalogue.
- There is an argument that a Half Rope **used correctly as a twin rope** is stronger and safer than a Single Rope. The Association has to bear in mind that some of its leaders are limited in their technical knowledge and expertise and there is a risk that someone, some day, somewhere will use a Half Rope (9 mm) **as a single rope**. The requirement to use Single Ropes (min. 10 mm) eliminates this possibility.

Ropes sold as Static, Tensile or 'low-stretch' have adequate 'strength' compared to dynamic ropes

but **are not** recommended for the following reasons-

- Because the 'safety' as opposed to the 'active' rope for an abseil must always be a dynamic rope (to absorb the energy of a possible fall) there is the risk of mixing up the two types of rope at the same location and, indeed, on the same abseil. By advising against the use of such ropes this possibility is avoided for leaders with limited technical knowledge. The same mistake could be made when taking ropes, possibly in a hurry, from a Group stores or Headquarters.
- The National Mountain Centre (Plas y Brenin) in their booklet **Rock Notes** has the following on page 12, 'When abseiling, be very careful not to bounce as you start - there is not much rope to absorb the shock loading on the anchors, particularly if you are using doubled ropes. **THIS APPLIES PARTICULARLY IF USING "STATIC" ROPES.**' (Their capitals.)
- While there is a slight cost advantage, but only against the more expensive dynamic ropes, this is not believed to outweigh the possibility of using the wrong rope for an abseil safety rope.
- Verbal advice from the former Executive Secretary to the Mountain Leader Training Board is that all dynamic Single Ropes (10 mm min.) are suitable for abseiling despite what commercial suppliers may say.

The 3rd Edition of the Association's booklet **Single Pitch Climbing and Abseiling** has been totally rewritten by the Executive Secretary of The Mountain Leader Training Board to take account of modern climbing thought and practice insofar as these are acceptable within the confines of Scout activities. We still mention No. 4 hawser-laid rope which, despite it being a somewhat outdated type of rope, is still 'stronger' than a Half Rope although not as 'strong' as Single Rope.

It is appreciated that the above does not recognise the undoubted technical skill and experience of some of our leaders and instructors but they are asked to realise that the Association must always cater for those making

activities available but with no great technical knowledge. This means that rules and advice must always be written for those with the least ability. It is not possible to frame such rules to allow 'let out clauses' for those with adequate skills and experience. The local interpretation of such clauses would soon lead to widespread anomalies and exemptions.

Confidence ropes

It is always advisable for the hill walking party to carry a rope even though it is seldom, if ever, used. These ropes are usually referred to as Confidence Ropes. Their use is strictly limited to giving confidence to a nervous walker for a few metres of exposed ground, or for lowering/safeguarding someone down a difficult section. They are **NEVER USED FOR ROCK CLIMBING IN THE NORMAL SENSE OF THE TERM**. Providing these limitations are clearly understood and adhered to, 30 metres of 8 or 9mm dynamic rope is permissible as a confidence rope.

Slings and harnesses

These must be inspected, cleaned and stored as for ropes with the important addition that all stitching needs careful inspection and buckles need checking for mechanical damage. They can be identified by directly marking the tape with a spirit based felt pen or by the use of tape as for ropes. Should stitching need repair or renewal this is a job for the manufacturers not the home sewing machine.

Helmets

Inspect the shell for cracks or chips. It is difficult to say at what point these render a helmet unsafe to use but certainly major defects should mean the helmet is discarded.

Check the integrity of the internal padding, if fitted, and the straps for security of fixing to the shell. No stickers, etc., should be stuck on the shell **nor should it be marked externally with felt pens**. A helmet should never be repainted because of possible reaction of the paint with the shell material and the chance of covering hairline cracks. Although they appear robust, helmets should be treated with care and not be dropped, thrown, etc. It is suggested that the 'life' for a

plastic helmet is four years and for a composite helmet 10 years.

Identification marks should be made on or attached to the internal webbing.

Karabiners and other climbing hardware

Inspect to ensure that any hinged or cammed parts move freely. WD40 is a suitable lubricant. Check for hairline cracks on all metal items and excessive wear on descendeurs. Hidden stresses can be set up if metal items are dropped onto a hard surface so treat them all with care. Nicks in ice axes can be removed and crampon's points sharpened by the careful use of a fine file. Grinding wheels are not suitable. Rust should be avoided by the application of a fine oil such as WD40. Identification marks can be applied to adhesive tape.

The above guidance is for those items where failure could be life-threatening. It therefore follows that they need the maximum amount of care and control. Where leaders use their own personal equipment for Scout activities the same standards must be applied.

Disposal of equipment

When equipment comes to the end of its usable life it is important that the disposal is carried out in a manner that ensures it is not salvaged and mis-used by another person or Group.

Conclusion

The inspection and care of equipment for outdoor activities is a continuous process. Those using such equipment must constantly watch for signs of weakness or failure. A failure can sometimes have tragic results but even in the best circumstances there will be discomfort and a possible curtailment of long-cherished plans. Knowledge of equipment should always be personal, not gained at secondhand from friends or shop assistants. Study the catalogues and plan your needs with care so that you have precisely what is best for any specific activity.

Publications cross reference

Single Pitch Climbing and Abseiling - The Scout Association ISBN 0-85165-294-8.

Rock Notes - Plas-y-Brenin.

Ropes - British Mountaineering Council, Technical Committee.

Mountain Guide - Elderid.

Cotswold Camping Catalogue.