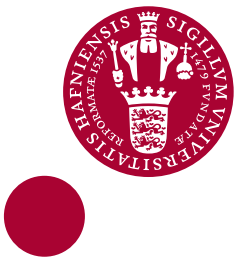

Climbing into the crown 2

tree climbing using the prussik knot

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CLIMBING INTO THE CROWN 2.

Tree climbing using the prussik knot

compiled by

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DANIDA FOREST SEED CENTRE

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CONTENTS

The climbing system described in this note is widely used by tree surgeons in England. This system has proved useful when collecting cones or seeds, especially in trees with open crowns. The terms of different safety equipment have been briefly described in Technical Note No. 10.

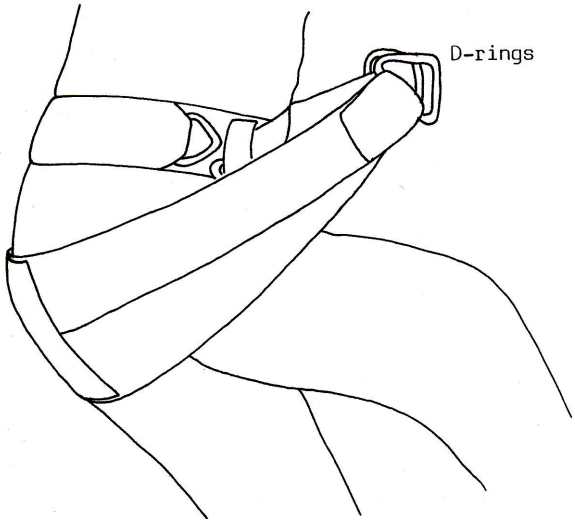
1. Equipment

The climbing system involves the following equipment:

1. Tree Surgeon Harness

There are various harnesses on the market, some rather dubious in safety. Through personal experience I would like to recommend the harness produced by M. Richmond (supplier updated 2014 see below). Mainly because of its very wide comfortable "seat", and because it does not give any pressure on the kidneys and lower ribcage. Furthermore there is no strap to go between the user's legs, which may otherwise be rather uncomfortable. - There are D-rings and hooks on both sides of the harness for cone bags.

Fig. 1.



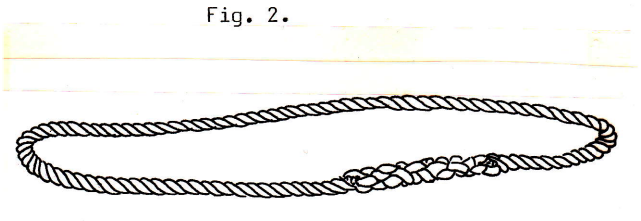
2. Safety Line

The safety line should be a firmly laid 3-strand nylon rope of 12 mm diam., and the length should be twice as long as the working height. The use of nylon is important because it will extend up to 50% before breaking, thus giving a softer "landing", if an accident should ever occur. One end of the safety line should be eyespliced.

3. The Loop

The loop should be made of the same material as the safety line. It should be roughly 1.2 m in circumference, and it is best if it is spliced together instead of having an inconvenient knot.

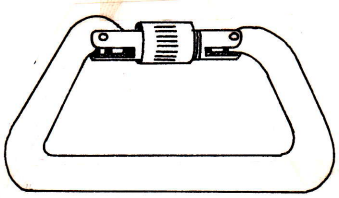
Fig. 2.



4. Karabiners

There are many types of karabiners, but it is essential to use one with a screwgate and to tighten the screwgate safely at all times. It is best to have three karabiners: one for the safety line and two for the short safety strop. Karabiners can be purchased from most firms selling safety equipment.

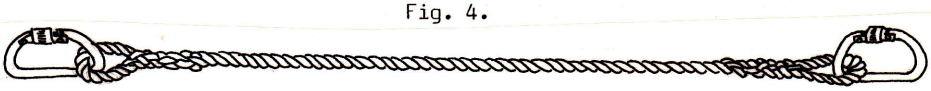
Fig. 3.



5. Safety Strop

A safety strop can be very useful whilst climbing up a tree or in an awkward position where both hands are needed. The safety strop should be eyespliced at both ends and have a length of approx. l.4 m. When not in use, the safety strop is secured at one end to the D-rings at the front of the harness with a karabiner while the other end goes over the shoulder and is secured with another karabiner to the D-ring, at one side of the harness.

Fig. 4.



2. Climbinq Technique

To reach the lowest branches of the crown, a ladder, climbing spurs or other devices are used. - 0nce in the crown the following technique is applied: One end of the safety strop is fastened to the D-rings at the front of the harness with a karabiner. The other end is then passed over a stout branch as high as possible and secured with another karabiner to the harness. Then the climber is secure and can climb on top of the branch to pass another safety strop over a branch higher up and fasten it with karabiners to his harness before releasing the first strop. By fastening and releasing the safety strops alternately he works his way in the crown, always being securely fastened with one safety strop.

Instead of using two safety strops, it is more practical to substitute one of them by the safety line and the loop. When the safety line has been passed over a stout branch and the eyespliced end attached with a karabiner to the D-rings at the front of the harness, the loop is attached (Fig. 5) to the safety line by putting it through itself twice, thus forming the Prussik Knot. The free end of the loop is secured in the same karabiner (see Fig.5). When the knot is tightened, the climber will be secure and can release the strop below.

Fig. 5.

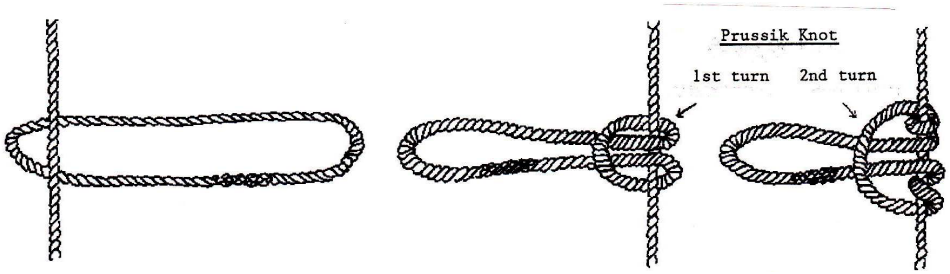
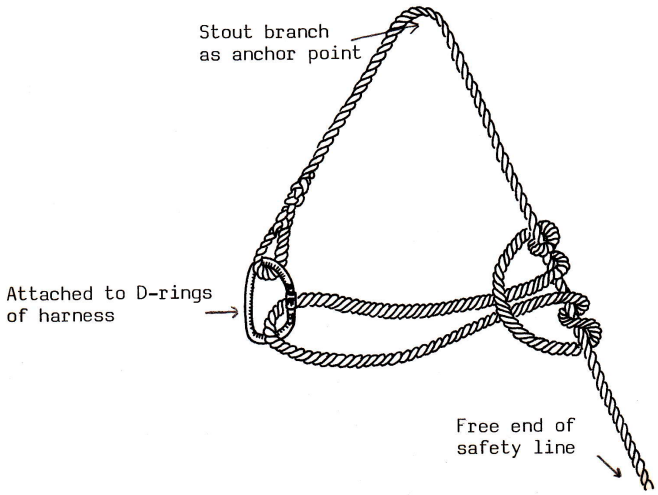


Fig. 6.



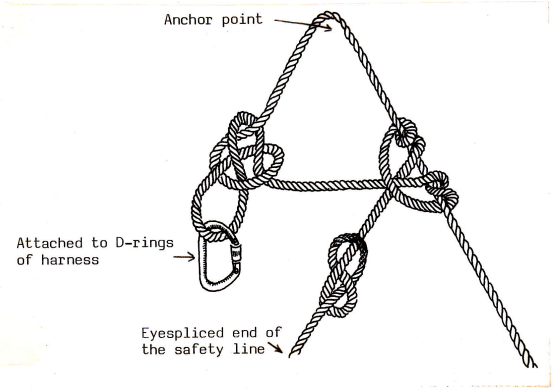
If the climber wants to ascend, he pulls down the free end of the safety line while pushing his stomach upwards and pushing the knot up the rope. By releasing his grip on the knot, the knot will tighten around the rope and hold him.

If the climber wants to descend, he pulls down the knot on the free end of the safety line. This permits him to descend at a controlled speed, as the knot will tighten on the rope when he releases his grip on the knot.

The anchor point (a fork or stout branch) must be strong enough to hold the climber if he falls. If it is necessary to work above the anchor point, then the climber should use the safety strop to secure himself, but he should still be attached to the safety line below him.

It is possible to leave out the use of the loop. Then the climber ties a bowline knot leaving a 1.2 m length of rope free and ties the same knot on the safety line as with the loop. (Fig. 7).

Fig. 7.



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