Chapter 13
Component anchor points--equalization

A component anchor point is an anchor point which cannot support an anchor system by itself. Examples include a single cam and two equalized cams. Single anchor points are covered in chapter 12. This section deals with the process of equalizing two points to form a component anchor point.

Recall the anchor principles: anchors should be **S**olid, **R**edundant, **E**qualized, and have **N**o **E**xtension (**SRENE**) or alternatively **E**qualized, **R**edundant, **N**o **E**xtension, **S**olid, and **T**imely (**ERNEST**). Although a component anchor failure by definition is backed up by at least one other component anchor, the following equalization techniques exhibit various degrees of redundancy, equalization and extension. In addition, the angle between the two legs of the anchor should always be less than 90 degrees, preferably less than 60 degrees.

Sling with a sliding X (also known as a "Magic X")
Redundant: No.
Equalized: Yes.
Extension: Yes. It is best to use short slings for the sliding X to limit this extension.



Sling with one overhand knot
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally.
Extension: None.
Comments: Start by tying a loose overhand in the middle. Find the equalization point before tightening up the overhand. Best to position knot away from the rock to minimize abrasion.

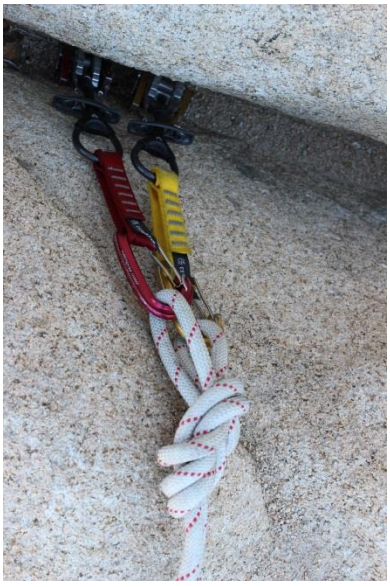


Sling with two overhand knots (load limiters)
Redundant: Yes.
Equalized: Yes, but limited by the distance between the knots.
Extension: Some, but limited to a portion of the distance between the knots.
Comments: Tie the overhands loosely before starting, then adjust their position according to the required equalization point. Employ sliding X when clipping master point biner(s).

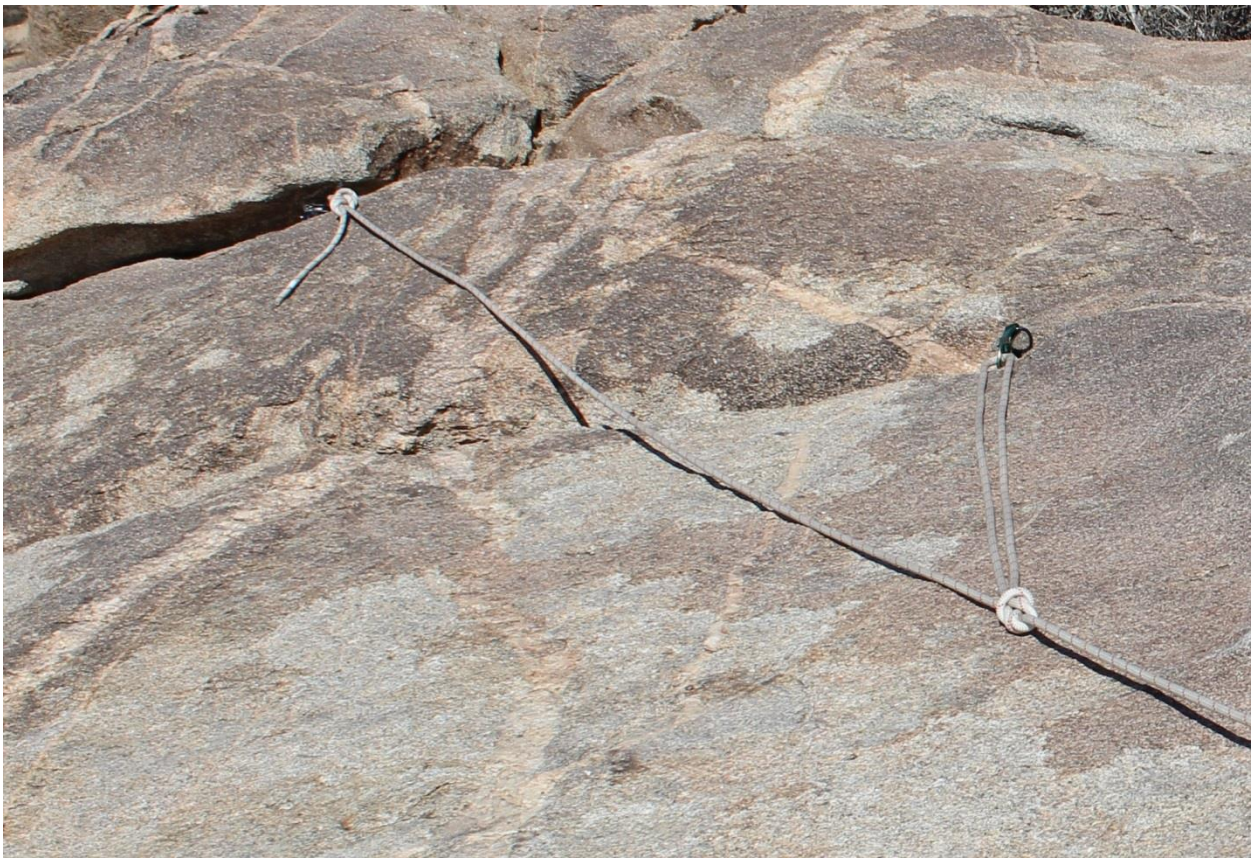


Cordelette (closed)
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally.
Extension: None.
Comments: Tie an overhand knot to create a redundant master point. Alternatively, if it is desired to shorten the anchor, tie a figure 8 knot to use more material.

Rope with two-loop figure-8
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally.
Extension: None.



Rope with figure-8 on a bight, in-line figure-8
Redundant: Yes.
Equalized: Only in one position; any side-to-side movement will shift weight unequally.
Extension: None.



American triangle – *DANGEROUS – Do Not Use!*
Redundant: No.
Equalized: No.
Extension: Some.
Comments: This is a very dangerous anchor due to the multiplication of force on the anchor. *It should never be used*.