
Make Your Own Ranger Beads

You can make your own Ranger Beads with any stout cord and any beads that fit snugly. Cut the cord to twenty-eight inches, fold in half and tie a knot one inch up from the free ends. Slide nine beads onto this knot. Tie another knot above the beads, five inches from the bottom knot. Slide four more beads onto the second knot, and tie a third and final knot three inches above the second. This last knot forms the top loop needed to hang your Ranger Beads.

For More Information

Most hiking or backpacking books include rudimentary information on land navigation. The best references however, are those describing the sport of *orienteering*, which is competitive land navigation. Comprehensive orienteering books describe the many techniques of land navigation, including dead reckoning. The U.S. Army's Field Manual 21-26 is also an excellent land navigation reference. Some recommended books include:

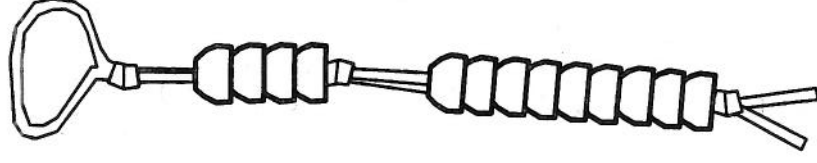
Be Expert with Map and Compass
by Björn Kjellström

This is Orienteering
by Rand and Walker

Orienteering
by Bengtsson and Atkinson

FM 21-26 Map Reading and Land Navigation
Headquarters, Department of the Army

Ranger Beads



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Ranger Beads

Ranger Beads are a tool used by hikers, orienteering competitors, soldiers, and others who need to keep track of the distance they have traveled during *land navigation* on foot across country. They consist of a series of thirteen beads laced on a cord. This cord is usually hung from the shoulder, looped through a D-ring or button hole, which allows the beads to hang within easy reach and view. The name 'Ranger Beads' originated at the U.S. Army Ranger School, Fort Benning, Georgia.

How Do I Use Ranger Beads?

Ranger Beads are a simple *abacus*. The upper four beads each represent one thousand meters or one kilometer. The lower nine beads each represent one hundred meters. To start out, push both sets of beads up against their respective topknots. After walking your first hundred meters, slide one bead of the lower nine down. For each additional hundred meters you walk, pull another bead down. The beads pulled down now represent the distance you have traveled. After all nine beads of the lower set have been pulled down, and you have walked an additional hundred meters, pull the first bead of the upper set down. This represents one kilometer. Reset the lower beads by pushing them all up. Continuing in this manner, the maximum distance your Ranger Beads will record is 4900 meters.

At any time during your movement, you can check the distance you have traveled by counting the number of beads pulled down. Count the number of upper beads as thousands, then add one hundred meters for each lower bead — two upper beads and six lower beads is 2600 meters.

Land Navigation

Land Navigation is the art of finding your way in the wilderness using only a map and a compass. There are scores of land navigation techniques. Ranger Beads are usually used when *dead reckoning*. They can also be used as a backup technique to record distances during *terrain association*.

What is Dead Reckoning?

Dead Reckoning is a land navigation technique. The term has nothing to do with being dead. It is a corruption of *deduced reckoning*, a method of estimating, or deducing, your location by noting two simple facts: the direction and distance you have travelled from your original location. Direction is measured using a compass, distance is measured by counting the number of steps you take.

If you traveled 800 meters directly east from a known point, you should be able to pinpoint your location fairly accurately on a map by measuring 800 meters on your map along a line drawn from your original location directly east, or 90°. This is the basic procedure for dead reckoning.

Dead Reckoning is the primary land navigation technique used when no landmarks are visible — in fog, at night, in flat forest, jungle, or desert, or any other area with very few terrain features. Dead Reckoning should not be done for very long distances because accuracy degrades over distance.

How do you know when you have traveled 800 meters on foot? To record how far you have traveled, you must know your *pace count*.

What is Pace Count?

Pace Count is the number of steps you take to walk one hundred meters. Everyone's pace count is different. To find yours, measure out 100 meters. Walk this distance, counting the number of times your left foot hits the deck. This number of double-paces is your *pace count*.

For a more accurate pace count, walk a longer measured course across terrain similar to that on which you plan on travelling.

Everytime you walk this number of paces, you have traveled 100 meters. To walk 800 meters, simply walk your pace count eight times. To walk distances of less than 100 meters, divide your pace count. 50 meters is one-half of your pace count, 25 meters is one-quarter of your pace count.

Pace Count is affected by wind, slope, surface, elements, clothing, visibility and the stamina of the traveler. An experienced walker will learn to add or subtract paces to account for these variations. An average pace count while walking on flat ground is 66.

Two thousand years ago, roman soldiers on the march measured distance by counting the millia passuum or "thousand paces." This distance came to be known as the "mile."