How to Find Your Way: Navigate on Trail Using Orienteering Skills

Could you be better with map and compass? Take a new look at navigation through orienteering, a navigation sport that can help you find your way anywhere. WTA member, volunteer and Cascade Orienteering Club board member Rebecca Jensen helps you find your way.

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by Rebecca Jensen

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Master navigation before you need it

Runners cherish race bibs, musicians collect vinyl records, and hikers, we love maps. Hiking maps carry an emotional significance, storing memories of hikes past and places been, and beckon us to plan new adventures. Tacked to our walls, we revere their rivers, lakes and flowing contour lines as if pieces of fine art.

Yet too many hikers don't utilize their maps' practical purpose: to tell us where we are in a landscape. Of the Ten Essentials, the map and compass are often the most neglected. They're often buried in the backpack, only to be consulted in case of an emergency. The problem with this scenario is that navigation is not "CPR for the lost." If you haven't engaged in any navigational thinking during your hike, the odds that you'll figure it out once you are lost are not likely.

Orienting the Map

When you read a map, how do you hold it? Do you keep north at the top? That would make sense, since every map we've seen tacked to a wall is oriented

that way. However, when navigating, we need to assist our spatial reasoning, so it's best to orient the map to match the terrain.

To orient the map, rotate it so that it matches the direction you're traveling. For instance, if you're traveling south, the map should be "upside down," so that the south side of the map is at the top of the page. Now, when you look at upcoming features on the map, they will also be the features ahead of you in the landscape.

Thumbing the Map

It's a simple concept, but it works well: pinch your location on the map, and then continually update your thumb (your location) as you go. Start when you're in the parking lot, not when you're lost! When you arrive at a turn* in the trail, find that turn near your thumb and pinch it.

Keep checking off features as you encounter them. Did you crest a large hill? Find it on the map

and put your thumb there too.

Another advantage to this technique is that should you get confused as to where you are, you at least know that you are somewhere near your thumb!

*Many hiking maps cover large areas, so switchbacks may be generalized into a few squiggles instead of showing every turn.

Catching Features

You may have done this when giving urban directions: “If you see the ice cream shop, you’ve gone too far.”

The same applies to wilderness navigation, just with different features: “If I see the creek, I’ve gone too far.” Catching features should be broad, distinctive and just beyond the feature you’re actually looking for.

Know What You’re Working With

When was the last time your map was updated? Was it in this decade? What could have changed between the publish date and today?

The date your map was last updated should be printed in the bottom margin of your map. If you have an old map (say, from the 1950s), travel with skepticism and don’t be surprised if you see a new road or find that a trail on the map has disappeared!

Generally, contours are the most reliable feature since they don’t ordinarily change, although USGS maps are notoriously “general” in their description of the landscape, leaving out many features.

Learning good navigation can be a challenging effort. Navigation is not just for emergency situations, but also to prevent them, and offer a deeper insight about your surroundings. It helps us choose proper routes according to our abilities, enriches our hiking experience by telling us what features surround us and, where appropriate, enable us to travel off-trail in the backcountry with confidence, discovering the truly un-beaten path.

Reading a book or taking a class on navigation is a good start, but a class taught indoors or lessons learned between the pages of a book are not sufficient to make navigation “click.” Real navigation skills are developed with hands-on practice and immersion into real and diverse scenarios.

If you’ve ever tried “shooting a bearing” you know how technical this form of navigation can be. It’s a skill that’s hard for novice navigators to understand, and doing it well takes a great deal of practice. If not done correctly—or even just well—it can lead you miles away from where you wanted to go without the skills to troubleshoot the error. Even if you do shoot a precise bearing, without a broader comprehension of navigation, you could end up bushwhacking

through gullies instead of smartly bypassing them, stuck on the wrong side of a cliff, unnecessarily gaining elevation, or just unsure whether you've stopped short or blown past your destination.

There are simpler ways to navigate that aren't so confusing or intimidating and it starts with the practical skills found in orienteering.

What is orienteering?

Orienteering is a navigation sport utilizing map and compass. GPS devices are not allowed, but instead you must rely on interpreting the map and relating it to the landscape to navigate unknown terrain—from urban environments to wilderness locations. It begins with a detailed topographic map with checkpoints ("controls") circled on it.

There are two common formats of orienteering. One requires you to find the checkpoints in a prescribed order as quickly as possible, while the other has you find as many as you can in any order, but within a time limit. Orienteering events can be competitive, but many enjoy the navigational challenges at a hiking pace, and apply the practices to their wilderness adventures.

As you make your way from control to control, the challenge is not just in navigating to each point—though that can be challenging in itself—but also in choosing the best route between them. An orienteer has to weigh various factors that will impact their travel, such as distance, elevation gain or loss, how passable the vegetation is, whether obvious terrain features will be nearby, and even their own fitness and skill level. These are the kind of contextual questions that are learned through orienteering that help hikers make more informed navigation decisions, rather than blindly following a bearing.

Begin with map reading

The skills learned in orienteering are more applicable and easier to understand and remember than fancy compass tricks—and the most useful and learnable skill of all is being able to "map read." Map reading is a two-part skill. First, you must be able to interpret what the map conveys: "these contour lines tell me that two ridges are intersecting." Second, you need to be able to find it in the landscape: "I see these two ridge lines intersecting up ahead in the landscape."

A lot of navigation, even advanced navigation, can be done by map reading alone since one can move through the terrain by simply observing features in the terrain then checking them off on the map. In addition, learning to map read is a concept that is easier to grasp and remember than drawing lines and angles across a map without really understanding why. Then once you've mastered the reading skill, you'll have a much better context for learning advanced maneuvers—like shooting those pesky bearings.

A direct route is not always the answer, since fitness, grade, vegetation, footing, impassable obstacles and availability of prominent features all play a role in route selection. Making a good route choice takes practice. Through experience you can learn what cliffs are likely to be passable, where vegetation tends to collect and what distant or prominent features can simplify

your navigation. Every navigation puzzle you encounter will inform the next. And by learning navigation on an orienteering course, you have the peace of mind of learning with others in a controlled environment without risk of serious consequences.

Solving the puzzle

Some invaluable skills can only be learned through experience, such as the ability to identify and correct mistakes while under pressure. Certainly there are common navigation mistakes: mistaking where you are for some nearby similar place, reading the map first then convincing yourself that it matches your surroundings (rather than observing the landscape first, then finding it on the map), misreading contours (what goes up and what goes down?), misjudging distances, 180-degree errors (going north instead of south!), and simply not keeping in mental contact with the map (keep the map in your hand, not at the bottom of your pack). The un-teachable lesson, the one only experience can describe, is being able to recognize that turn in your stomach, that tap on your mental shoulder that says, “Hey, not so fast, something is not right here.”

Recognizing those mistakes is challenge enough, but the harder battle is fixing it while the building panic of being “lost” courses through your body. With orienteering experience you have the tools necessary to calmly solve your navigation problem, as you can tick through a mental flowchart of possible errors and potential solutions: Is my map oriented? Did I look at the map first instead of the landscape? Is there something nearby that I could have mistaken for where I am? Being able to tackle a problem methodically and while under stress is one of the most powerful and relevant tools that orienteering offers.

A safe learning environment

Problem solving can be a rush, but it’s not a rush you want to experience for the first time while on a remote hike. During an orienteering course, there are precautions in place to help prevent you from getting truly lost. Events usually take place in parks with trail networks and are often bordered by roads to keep you from wandering off. Plus, you’ll come across other participants who can help you if you’re in a bind. Once you graduate to more rugged events in remote areas, a sign-in is required at each checkpoint so that volunteers can efficiently find you should an emergency occur. Then once you’re done, you’ll find plenty of orienteers who are eager to help you learn from your experience and compare notes.

Learn at your own pace

Even if you are completely green to navigation, newcomers are enthusiastically welcomed as most events provide a beginner instructor should someone just like you arrive. You’ll even find a broad spectrum of courses, from beginner to advanced, so you can build your navigation skills at our own pace instead of jumping into a high stakes wilderness situation. If you’re still feeling timid, bring a friend, since two heads are usually better than one, and you’ll have more fun too!