

THE NAVIGATION CORNER: DON'T BLAME YOUR COMPASS IF YOU GET LOST

By Bob Myers, LTC Navigation Chair

As thoroughly prepared as Igor Skaredoff was for his recent backpacking trip into the Stanislaus National Forest wilderness, a disruption in the force — a magnetic force — helped turn a carefully planned journey with two friends into a harrowing 24 hours lost in tough, mountainous terrain.

“My compass got messed up by a magnetic piece on a hydration pack; the drinking mouthpiece (with a magnetic attachment) came in contact with the compass, and that isn’t good,” said Skaredoff, 75, a retired chemist from Martinez. “I was so screwed up I didn’t know where I was.” *Martinez Hiker Recounts Being Lost in Wilderness*, East Bay Times, August 18, 2017.

The recent newspaper story quoted above highlights the potential perils of interference with the magnetic needle of your compass. In August, a hiker claimed that the magnet on his water hydration system interfered with his compass and caused him to end up at the wrong location, initiating a search and rescue operation when he did not meet up with his camping companions. The lost hiker warned: “I would advise anyone who has (a magnetic device) to keep their compass the hell away from it.”

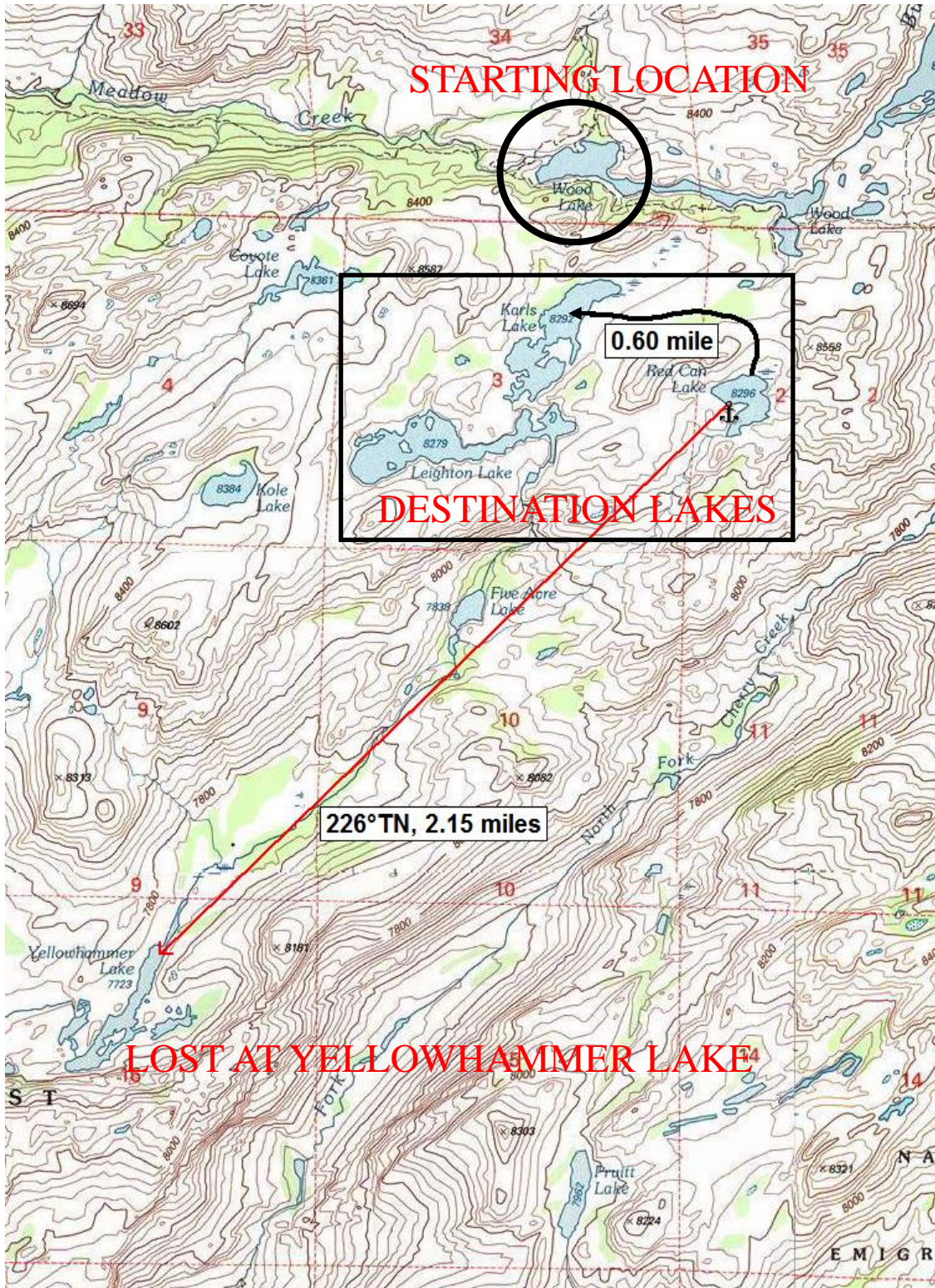
Compass inference can compromise the functionality of your compass and should be avoided. However, it is important to remember that your compass is only one of the navigation tools available to you. A careful examination of this incident reveals that the hiker made a combination of errors.

The hiker left camp at Wood Lake with plans to go to Red Can Lake, Karl’s Lake, and Leighton Lake before returning to camp. The hiker made it to Red Can Lake. However, he never made it to Karl’s Lake or Leighton Lake. Instead, he ended up at Yellowhammer Lake.

An examination of the topographic map suggests that a compass should not have been necessary to navigate from Red Can Lake to the Karl’s/Leighton Lakes area. The map shows that the travel from Red Can Lake to Karl’s Lake can be accomplished by a straightforward route of 0.60 miles using terrain features. This short distance could be travelled by most hikers in 12 to 30 minutes and does not require complex navigation. By contrast, a route from Red Can Lake to Yellowhammer Lake is not straightforward and requires advanced navigation skills. Given the distance of over two miles and cross-country terrain, the trip would take several hours.

As repeatedly noted in prior articles, time is one of the most important navigation tools available to a hiker. Given the short distance between the lakes, paying attention to time

travelled would have avoided the mishap of ending up at Yellowhammer Lake. The failure to arrive at the destination in under an hour should have been cause for concern that something was amiss.



Always use time and distance estimates as an early warning system to prevent you from going astray. This early warning system uses established rules for estimating the time while hiking.

The **Naismith Rule** is the principal method used to estimate travel time while hiking on a trail. Although the time calculated using the Naismith Rule often has to be adjusted upward because of difficult terrain features, it is a good rule of thumb. The Naismith Rule is expressed as:

$$t = 1/3 d + 1/2 h$$

t = time in hours

d = distance in miles

h = total elevation gain in thousands of feet

The Naismith Rule assumes a hiking speed of 3 miles per hour and adds 30 minutes for each 1,000 feet of elevation gain. **Example:** Your trip will cover 6 miles on level terrain. Your estimated time to cover the six miles, not counting breaks, would be 2 hours.

For those confused by math formulas that look like algebra, there are many ways to break down the formula. For example, under the Naismith Rule you can add 2 minutes for every tenth of mile you travel and 3 minutes for every 100 feet of gain.

The Naismith Rule usually applies to hiking with a daypack. When carrying a full pack, use the **Backpacker's Rule: $t = 1/2 d + h$** . The Backpacker's Rule assumes an average speed of 2 miles per hour and adds one hour for each 1,000 feet of elevation gain.

By estimating time to intermediate points along your route, you can ensure that you do not get off-route. Don't keep hiking if you have not reached an intermediate point in the estimated time. Stop, reassess, and go back to the last known location if necessary.