



Moving Up to Intermediate Courses

Congratulations! If you're reading this, you presumably now feel comfortable on beginner courses and ready for some added challenge. Which intermediate courses will certainly provide, since they force you to leave the security of the trail network and strike off cross-country, navigating using the contours and other less obvious aspects of the terrain. To successfully meet these challenges, you'll naturally have to learn to read all the map symbols, not just those which were necessary to get around beginner courses. You'll also benefit from learning a grab bag of techniques, the most common of which are listed below:

Following Handrails - 'handrails' are linear features in the terrain that you can follow, i.e. this is what you were doing following trails on the beginner courses. On intermediate and advanced courses, the most efficient route usually involves leaving the trails so you have to find other handrails, e.g. streams, the edges of fields, marshes and other water features, fences, ditches, distinct vegetation boundaries, ridge lines, valleys, etc.. Contouring is a particularly subtle variation on the theme in which one essentially follows a contour line by moving along a slope while being careful to stay at the same elevation. It is often possible to link a series of more or less subtle handrails to cover most if not all of a leg between controls both confidently and at high speed.

Aiming Off - where you can't go following handrails alone, aiming off will often take you. In aiming off, you use your compass to take you to a linear feature in the terrain. To ensure that you find a particular desired point along that linear feature, you aim slightly to one side or the other of the desired point so that you know which way to turn when you reach the linear feature, i.e. if you aim off to the right, turn left at the linear feature; if you aim off to the left, turn right. Aiming off allows you to cross areas without distinct features. It can also allow you to cross areas with distinct features without taking the time to identify each one on the map and in the terrain as you pass them.

Collecting Features - this is the practice of making note of features encountered along the route to a control and, when possible, anticipating them. This allows you to keep track of your location more precisely and keep thumbing along on the map. Failure to see an anticipated feature can also alert you if you start to drift off course, allowing you to take corrective action.

Attack Point - this is the name orienteers use for a feature near the control location from which they plan to make the final 'attack' on the control. A good attack point should be distinct, easy to find and fairly close to the control location, close enough that it is possible to navigate to the control location purely by following a compass bearing.

Catching Features - these are features you'll see if you overshoot the control location or your attackpoint or any intermediate point along your route that it's important to your plan to find, or if you drift off course. Encountering the catching feature, often a linear feature beyond the control point, alerts you to your having gone too far or off course so you can take corrective action. The presence of a strong catching feature, such as a trail or stream, just beyond the control location can give one the confidence to attempt a riskier attack on a control than one otherwise might, since the cost of missing will be minimized by being able to quickly regroup and attack the control again from the catching feature.

Pace Counting - another method of knowing whether you've gone too far or not far enough is to count paces. The normal technique is to count every second pace, i.e every time your right foot hits the ground, or every time your left foot does so. One must, of course, determine in advance how many such paces you take to cover a certain distance by pacing a known distance while running or walking at about the speed you travel while orienteering. Some orienteers know their pace counts for many



different gaits and terrain types, uphill, on the flat and downhill. Since it is difficult to be precise while running at high speed, most simply know their approximate pace count while walking and at a typical running speed in open forest terrain and make slight adjustments to the number in more difficult circumstances.

CAR - this is a simple acronym - Control-Attack point-Route - to remind you that it is usually best to plan how to find the next control in reverse. First, consider what the Control feature you'll be looking for it and where in relation to it the clue sheet says the control will be hung. Next, in light of that, decide what Attack point to approach the control location from. Only once you've selected that attack point, should you plan your Route. By going through these steps, you avoid the pitfalls of running off in the general direction of your next control without a plan and having to generate one while moving. It's usually possible to run through the steps of CAR for each leg in the time between seeing the previous control from afar and punching but you're well advised, when facing a complex route choice, to take more time if you need it to come up with a plan before starting the next leg.

Precision Compass Technique - to follow a bearing over a short distance to a precise spot, usually from attack point to control:

- hold your compass on the map with its straight side edgepass or direction-of-travel arrow parallel to the line from where you are to where you want to go.
- holding the compass steady on the map, rotate the bezel (the housing for the needle) until the parallel lines inside it line up with the black parallel north lines on the map.
- holding the map and compass level in front of you ROTATE YOUR WHOLE BODY until the floating red needle comes into alignment with the parallel lines inside the bezel.
- when red needle is in alignment, the arrow on the rectangular base plate points in the desired direction of travel.
- to follow the compass bearing you've just taken, sight along the baseplate direction-of-travel arrow and pick out a significant object in the distance (a striking tree, bush, boulder). Move to that object - a straight line isn't necessary. When you reach the object, repeat.
- since words alone rarely succeed in explaining how to take a compass bearing, you might want to supplement that explanation by watching one or both of the following videos - [Map and Compass 101](#) [1] or [Silva 1-2-3 Compass System](#) [2]

Rough Compass Technique - to follow a bearing over shorter or longer distances with less precision, often while aiming off, most orienteers dispense with the process of taking a precise bearing and simply run at approximately the desired angle with respect to their compass needle as they see on the map between their desired direction of travel and the magnetic north lines. Most also use the technique of running to an object visible in the distance and taking another look at the compass to maintain the desired direction once they reach it but in lower visibility areas they may keep their direction simply by taking frequent looks at the compass to verify that the right angle is being maintained. This is a good habit in any case as it makes it more likely that you will detect if you accidentally drift off course or mistake a feature you see in the terrain for a similar but differently oriented feature on the map.

Note: in the interests of letting a hundred flowers bloom and cats of all colors catch mice, this seems like a good place to mention that longtime QOC member, Diana Todd, has covered much of the same technical ground in her article [The Five Key Skills](#) [3].

Other valuable advice for intermediate orienteers:

The Crucial Importance of Contour Interpretation - reading the contours on the map and visualizing what the corresponding three dimensional terrain will look like come more naturally to some people than to others. If it doesn't come so naturally to you, you may have easily completed beginner courses without paying much attention to the contours. This will get a lot harder to do on intermediate courses but not necessarily hard enough to stop you from trying to navigate using other information on the map, likely with a heavy reliance on very precise compass technique and pace counting. However, this



is potentially a blind alley - you may develop into someone who's very good at slowly and painstakingly navigating without relying much on contour information while others orienteer much faster thanks to their ability to visualize the lie of the land based on contours. If you haven't already done so on the beginner courses, intermediate courses are the place to develop this ability into a useful navigational tool. The [QOC Library](#) [4] contains some books that may help with this, particularly Winnie Stott's Armchair Orienteering series.

Parallel Error - one of the most common types of error in typical Mid-Atlantic terrain is the dreaded parallel error. This occurs when you get at least slightly off your intended course and encounter a feature which you then take for a similar feature you expected to see on your intended course. You can then spend a long time figuring out that you're in the next stream valley (or other feature) over from the one you believe you're in. Your mind can perform wonders when it comes to twisting the terrain you see to make it conform to your expectations. This is another reason why it's good to look at your compass frequently since it will often show that the features you're seeing aren't oriented the way the map says they ought to be, forcing you to the realization that you aren't where you think you are. Your only other protection, aside from never straying off course, is to pay constant attention to whether the details of the terrain match up to your expectations.

Relocation Technique - When you realize you've made a parallel or other error, there is sometimes a tendency to panic and run around in circles looking for a distinct feature or, if you were attacking the control location, the control. Running around in circles may work if you only missed the control by a little bit but most variations on being lost require more discipline to recover from. The following steps may be useful to keep in mind for the next time you realize the terrain really isn't what the map says it ought to be:- stop, orient the map using your compass, and look at all 360 degrees of the terrain around you. Look at the map in the area around where you expected to be based on what you've done since you left your last definitely known location and see if you can figure out where you are. If you can, plan a new route to the next control from that spot and proceed. If there's more than one plausible spot you could be, you may have to go look at other nearby features to determine which one you're at. It may be possible to do this by heading in the general direction of the control, in which case it's certainly to your advantage to do so.

- if you fail to find a matching spot, try again considering a larger area of the map - you may have made a larger error than you initially thought plausible.

- if you can't determine your current location, then either try to return to your last known location or bail out to a catching feature. The latter option is generally better if there are good catching features that you can be certain you haven't already crossed between you and the control since backtracking involves an unavoidable loss of time and isn't guaranteed to succeed in any case. If you pay attention en route and are fortunate, you may even be able to relocate based on distinct features you encounter and plan a more efficient route to the control than going all the way to the catching feature.

Route Gadget - the [QOC Route Gadget installation](#) [5] contains the routes orienteers have taken in many past QOC events, as drawn by the orienteers themselves or as recorded by GPS, and can present them either statically or as an animation. New events will usually be available in Route Gadget within a day or two after the event so you can draw your route and compare it to that of others on the same course. This can be very educational with respect to what are good route choices and what are less good route choices. It can also be a revelation to see what kinds of errors people make.

QOC Library - the [QOC Library](#) [4] has a lot of material on orienteering technique, much more than is presented here and often with excellent illustrations. You can, of course, reinvent most of orienteering technique yourself and/or pick it up in conversation with other orienteers but you'll have a hard time, assuming you and books (or videos) get along, learning it all as rapidly or as systematically as you can from materials in the library.

Moving up to Advanced Courses - eventually, you are likely to develop a decent level of comfort with intermediate orienteering and start thinking of moving up to the advanced courses. It is highly advisable, if you have competitive aspirations, not to do this until you can complete intermediate



courses close to error-free while running near the limits of your physical ability. If you move up while you still have to do intermediate courses slowly and carefully or make sizable errors, you're likely to continue doing advanced courses slowly and carefully without ever developing the ability to navigate smoothly at high speed - fine if you enjoy it, potentially frustrating if you aspire to be competitive with a peer group on the same course.

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Links:

- [1] <http://www.youtube.com/watch?v=3mtZDBJTb0E>
- [2] <http://www.youtube.com/watch?v=-Mh5NB0KuEg>
- [3] <http://qocweb.org/content/five-key-skills-orienteeing>
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