

How to use a compass on an orienteering course

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When people run an orienteering course they usually use compass with the map for navigation. Very seldom does somebody run an orienteering course without a compass. But the problem is that many people don't know how to use compass correctly. They have it because they heard somewhere that every orienteer must have it. In this article I'll try to explain *why to use the compass, when to use the compass and how to use the compass*.

It happened many times in my practice that when people came to their first orienteering training they asked me to give them a compass or brought their own. I think that it is bad idea. If you were a beginner in orienteering I would not recommend you to take a compass for the first 3-4 months of your training. This is because there are a lot of more important things for beginner to learn, such as how to read map, how to read the terrain, how to orientate the map and so on. The compass may interfere with technique development and prevent the beginner from getting a clear understanding of orienteering basics. For instance, if you used a calculator on your first lesson on calculus you would never understand how to do differentials. Or if I gave a hockey-stick to a beginner who did not skate before he most likely would not become a great hockey player because of he would lean on the hockey-stick and would not learn how to skate properly. So if you just started doing orienteering *don't use compass before you get comfortable with map and terrain reading and can complete any orienteering course of your level without compass*.

Suppose you have already passed the first stage of your orienteering career. You understand map and terrain and completing of an orienteering course of your level is not a big deal for you. So it is time to take compass. On an orienteering course *you will use the compass in 3 ways*:

1. to orient map;
2. for direction control;
3. to perform direct compass bearing or azimuth.

Whatever you do with compass keep in mind that **the map is the primary thing; everything else is secondary**. You will not be able to complete a course even if you use a compass if you get just a white paper sheet with control points on it instead of complete map. I know there were some people who ran and won world champs without compass but nobody could do it without the map. So the compass is a secondary thing, but the compass is your friend who *helps you to work with map*. I want to emphasize it again **compass helps** you to work with map but **never substitutes for it**.

Now let's discuss the 3 actions the compass is used for in detail.

1. **Map orientation.** As you know it is good idea to keep your map oriented correctly all the time you running an orienteering course. As you also know you can orient the map using linear objects¹. To do this you should match the direction of any linear feature on the terrain with the direction of the corresponding symbol on the map. With a compass you can do it faster and more precisely. All of you have to do is adjust the direction of the magnetic meridian lines on the map with the direction of the compass arrow (Fig 1). You can do it any time, even if there are no linear objects around.
2. **Direction control.** You should know all the time exactly in what direction you are going. Every time you make a turn you should control your direction. Unlike map orientation action the direction control action cannot be performed without compass. Keep your map oriented

¹ By linear objects I mean all objects, which have a length, e.g., roads, trails, field boundaries, marsh boundaries and so on. I distinguish also dot objects like stones, trail intersections, pits and area objects like fields, lakes, vegetation.

correctly all the time and you should see where the point that represents you on the map is moving. For example, if you come to a road you should match the real road direction with the road direction on the map before you take any other action. When you are going away from a control also check your direction. You should perform direction control automatically. The direction control is extremely important on terrain where a system of branching ridges is present. In this case it is very easy to turn onto the wrong ridge and the time loss due to this error might be huge. The situation becomes worse in the case of strong vegetation and bad visibility. In this case direction control is even more important.

3. **Exact compass bearing or Azimuth.** In principal it is possible to perform azimuth using the map only without compass² but practical use the compass is necessary. This complex action consists of 2 almost independent non-connected actions:

- 3.1. **Azimuth taking.** The azimuth taking technique is shown on Fig 2. At first you impose your compass plate on the map so its edge line connects start and end points of the azimuth (a). Then you rotate the compass capsule so the direction of the lines on it coincides with the direction of the magnetic meridian lines on the map (b). Then you turn so the direction of the compass arrow coincides with direction of the lines on the compass capsule. Now the direction of the compass plate edge shows the direction of the azimuth where you should move (c). You should be able to take the azimuth while you run without slowing or stopping. It is good idea to dedicate one day in a class and then in a forest to learn how to do this action. Do it many times in different situations.

- 3.2. **Azimuth keeping.** In order to keep azimuth in the woods you prolong the compass edge line forward and then run along this imaginary line. There are a lot of techniques for azimuth keeping and it does not matter which one you use. I want to emphasize one thing. Remember *the map is primary and all maps are not ideal*. **A map is ideal if any three points, which lie on one straight line on the map lie on one straight line in the forest and vice versa. No one map in the world satisfies this condition.** So if you run straight according your compass some objects that you should pass according the map will appear aside of you. In this case you must come to the object and then continue your azimuth. **Don't loose contact with the map when you do azimuth.**

Now 2 final notices regarding the azimuth:

a) When should azimuth be used? The answer is always when you have to run a significant distance without linear features. Significant distance means you can't see your destination object³.

b) Azimuth is a precise action. It means that you can't use azimuth to run from nowhere to somewhere. To perform azimuth you must know your start and finish points exactly.

Finally, let's summarize when you should use the 3 actions with compass been discussed. Map orientation: you should try to keep your map oriented correctly all the time on the course. Direction control: should be performed every time you make a turn.

Azimuth: should be used always when you run without linear objects and don't see your destination point. In other words refer to your compass as often as possible. Don't be too lazy to look at the compass and don't worry that it might reduce your speed in the woods. As you use the compass more, the faster you can work with it. Believe me, with just a little practice you can achieve the level of performing the three actions of the compass so that it does not take time or slow your pace at all⁴.

² This can be done using the map orientation by lengthy objects technique

³ If you can see the destination object you should just check direction to it (see i.2)

⁴ More information regarding compass and other orienteering techniques you can read in my article "System of Actions", which you can find in HVO Navigator or on junior web-site at <http://www.thewaterstop.org>