

## July-Aug 2001

—Tom Strat

Reprinted from the July 1992 BAOC Bulletin. Tom Strat, then the BAOC Training Director, is now a member of Quantico Orienteering Club.

One common orienteering problem is that of traveling from a known point to another point without terrain features to guide you. In this situation, a compass bearing can be used to guide yourself directly to the control point.

An orienteering compass can be quickly used to accurately determine the bearing to follow (without first orienting the map). Shooting a bearing from a known point to another is a quick three-step procedure:

Step 1) Align the side edge of the compass with your desired route of travel on the map. Usually this will be the line connecting your current control with the next one.

Step 2) Rotate the compass housing so that the orienting lines inside the housing are parallel to the magnetic north lines on the map. Disregard the compass needle!

Step 3) Taking the compass away from the map, hold it at waist level so the front of the compass is pointing straight in front of you.

Now, turn your body, along with the compass, until the north end (the red end) of the needle is centered over the orienting arrow inside the compass housing.

The compass is now pointing in the direction you should travel. If you were to hold your index finger along the side of the compass, it would be pointing directly at the control!

If you're not accustomed to this procedure, try it out! Practice it a few times before your next O' meet and you will quickly develop confidence to do it routinely while orienteering.

For more tips on using a compass, see Kjetil Kjernsmo's web page at <http://www.uio.no/~kjetikj/compass/>.

## Sept-Oct 2001

by Steve Gregg

READ THE MAP!!! The most surprising thing I learned during my orienteering trip to Scandinavia this summer is how elite orienteers are being trained nowadays. They do not pace count at all, and rarely even use a compass. Instead, they are trained to make their way around the course almost entirely by detailed map reading. The Finn who won the short course championships at WOC was quoted as saying that he never takes a compass on any of his training runs, as he feels that spending time looking at his compass "just slows him down". Orienteering primarily by means of compass and pacing is considered "old school". The younger runners are not taught in this way.

Granted, Scandinavian terrain is flatter and more detailed than our terrain, and the maps are generally more accurate over there as well. It's more difficult for us to rely solely on the map to get around. For example, on our typical steep, bland, forested hillsides, pacing is often important to help you decide whether that big reentrant you just crossed is on the map or not. But I think it's generally true that many of us use our compasses too much, when we should be concentrating more on matching what we see on the map to what we see as we run. So think about this at your next event. You might be surprised at the difference it makes in your orienteering.

## Nov-Dec 2001 Scandinavian Orienteering Part 1

by Steve Gregg

This summer I took an orienteering trip to Scandinavia for the first time, attending the Fin5 in Raisio, Finland, the O-Ringen in Mårsta, Sweden (the largest orienteering event in the world, with 20,000 people in attendance), and the Tampere Games held in conjunction with the World Orienteering Championships in Tampere, Finland. Although several BAOCers have made similar trips in the past, I have never read anything in the club archives explaining what these events are like and what to expect when you get there. So I plan to write a series of articles about my experiences for the bulletin. Hopefully they will be useful to others considering such a trip in the future, and at least somewhat entertaining for everyone else.

I had the good fortune to plan my trip at a time when two BAOCers were already in Finland. Tapio Karras usually travels to Finland every other summer to visit relatives, and Panu Haaramo had just moved back to the Helsinki area in March after a two year stay in the Bay Area. So I had a local with a car to pick me up at the Helsinki airport, plus a bed to sleep in for the first few nights before heading off on my own to the orienteering competitions. I highly recommend this if you can arrange it. But even if you are flying into an unfamiliar airport on your own, it should not be difficult at all to figure out how to get from there to your orienteering event. Although Scandinavians are not 100% fluent in English as a general rule, almost all of them understand enough of the language to make basic conversation and answer travel questions.

Tapio told me that automobile rental is somewhat expensive in Scandinavia and that I would have no need for a car anyway. This certainly turned out to be the case. Trains, busses, and ferries will take you absolutely anywhere you want to go, and with the exception of the overnight ferry between Finland and Sweden, none require advance reservation. I took a large suitcase on the airplane since I knew I could leave it at Panu's house while I was at the orienteering events, but when I was on the road I was easily able to fit everything I needed into a large internal frame backpack and one of those smaller Scandinavian orienteering backpacks that unfolds into a little chair. I wore the smaller backpack on my chest as a "front pack" when walking around and was quite comfortable with this travel setup. I was able to get in and out of all the busses, trains, and ferries with ease.

At the large multiday Scandinavian events you will encounter references to the "Event Center" and the "Competition Center". The Event

Center is where everyone camps out for the week. At the O-Ringen in particular this area is quite a sight, with tents and trailers stretching out as far as the eye can see. At the Event Center you will also find restaurants (at which I ate almost all my meals), restrooms, showers, souvenirs, vendors selling orienteering equipment, and the like. The Event Center will probably be within walking distance of a town and I made a trip to town almost every day to buy snacks and look for English newspapers.

The Competition Center is where each day's orienteering events take place. Sometimes the Competition Center is within walking distance of the Event Center, but more typically it will be at a site 10 to 40 km away. So a large fleet of busses are used to take everyone from the Event Center to the Competition Center. When you pay your fees for the event you can also buy a bus ticket good for the entire week, which you must show to the driver before you can get on the bus. At the O-Ringen a steady stream of large busses runs back and forth from the Event Center to the Competition Center for a five to six hour time period every day, requiring policemen to man all the major intersections and direct traffic. I was very glad I had my orienteering backpack with me, as that's the easiest way to get all your orienteering equipment from the Event Center to the Competition Center and at the same time, you get a chair to sit on while you are there. The vast majority of Scandinavian orienteers own such backpacks and take them on the bus to the Competition Center.

One of my biggest surprises in Scandinavia was to see the size of the Competition Centers and how many amenities are offered there. All the orienteering vendors show up there with large tents to try to sell you stuff--even more so than at the Event Center. There are food vendors there selling everything from snacks to full meals. The current results of the competition are posted on large boards. Music plays from large speakers and there is an announcer there to talk about the event and interview the top competitors. Showers are available to let you clean up immediately after you finish. It's easy to hang out at the Competition Center both before and after your run to socialize with others and just check out the scene. We Americans sometimes seem to take pride in holding our events in the most primitive, out-of-the-way locations you can imagine. Orienteering in Scandinavia is much more "civilized" and not at all designed to give you a solitary, alone in the deep woods experience.

(To be continued...)

## **Jan-Feb 2002 Scandinavian Orienteering Part 2**

*by Steve Gregg*

In Part Two of my series of articles on Scandinavian orienteering, I will describe how the major Scandinavian events are organized. I will give my impressions of the actual orienteering in Part Three (and maybe Part Four as well).

The first thing you must decide when entering a Scandinavian event is which course to run. At the events I attended there were three different courses offered for each five year age group, plus a full complement of open courses. The names of the age group courses vary from country to country--to keep the discussion simple, I'll call them A, B, and C in what follows.

The C course is very short and the control locations are not as technically difficult as the other courses. This course might be a good choice for an intermediate level orienteer. The C course did appear to be a bit more technically difficult than our "Orange" courses in the US, but the controls are all at reasonably obvious locations and the physical demands are definitely minimized. I assume, however, that most American orienteers thinking about a trip to Scandinavia are running advanced courses in the US, and for those people, the C course would not be a good choice.

The A and B courses are both of full technical difficulty. The A course is longer, but only by about 10% or so. The main difference between the two courses is the caliber of people that are running each course. Although you can sign up for any course you want, it's clear that in general, only the very best people put themselves on the A course. Not knowing any better, I signed up for the A course at the Fin5, and it was a humbling experience. When I had a good run by my standards (which in Scandinavia meant no MAJOR errors) I would beat maybe three or four people out of 40 or 50, and if I made any big mistakes, I would invariably be at the very bottom of the standings. The worst part about this is that it made my split times meaningless, as each of my individual splits was always at or near the bottom of the list too, whether or not the leg was good or bad by my standards.

At the O-Ringen I signed up for the B course and had a much better competitive experience. Although I still finished in the bottom 50% of the field overall every day, I was never close to last place, even if I made major errors. And when I looked at the split times afterwards, several of my individual splits always wound up in the upper half of the field. This made looking at the splits much more educational, since it was clear at a glance which legs I ran well and which legs I ran poorly in comparison to everyone else. I would think that most if not all BAOCCers going to Scandinavia for the first time would be happiest in the B category too.

So now you have signed up for an appropriate course and you have arrived at the Competition Center. What should you expect when you get there? Well, the first thing you probably want to do (especially at the O-Ringen) is to look for the long lineup of flags of each participating country and head to the American flag. That way you will be sure to meet all the other Americans who have also made the trip to Scandinavia for the event. At the O-Ringen I met James, Peter Gagarin, Jeff Watson, and several other Americans whose names I have forgotten in this way. Otherwise the crowds are so large that you might not happen to run into the other Americans in attendance, unless you know they are there and arrange ahead of time to meet them somewhere.

The next thing you will do is attach your competitor number to your uniform. You will notice right away that there is a large sponsor logo alongside the actual number. You will get to know your sponsor's name and logo very well by the end of the event! At the Fin5 there were 6 major sponsors (mine was "Turku Energia"), and at the O-Ringen there were 8 sponsors (mine was "Tork"). Each sponsor pays for the right to have a starting location and a finish chute named after them. When you walk to the start you will see your sponsor's logo on a little sign every hundred meters or so, and you just follow the direction arrows corresponding to that logo to get to your start. Then right before the finish, you have to enter the correct finish chute (they all run parallel to each other and are separately streamered off for about the last hundred meters of the course), and you know which one to enter because a giant banner with each sponsor's logo is hung above the start of each chute. Finally, when you go to the results boards after you finish to see how you did, you look for the board with your sponsor's name and logo prominently displayed at the top. The other interesting thing about the numbers at the O-Ringen is that they have all your start times for the week and the lengths of all the walks to the start printed right on the number itself. So if you forget either of these things, all you have to do is look down at your chest to remind yourself.

I will close this article by making a few remarks on the weather. I got lucky. I never had to walk to the start in a downpour, and since my understanding is that they rarely if ever have clothing drops at the start in Scandinavia, that could have made the walks to the start quite unpleasant. I never finished a run in the pouring rain either. And at the O-Ringen I wound up in the midst of a regular Scandinavian heat wave,

with virtually no rain and above average temperatures all week. This is quite the contrast to Dan Stoll's experience the previous year, where they had record rainfall totals the entire summer. (This story was confirmed by every single local I asked about it, so it turns out that Dan was not exaggerating!) So as far as clothing goes, come prepared for anything and hope that you will be able to leave your cold and wet weather gear in your pack most of the time, as I did.

## **Mar-Apr 2002 Scandinavian Orienteering Part 3**

*By Steve Gregg*

The first two articles in this series described the organizational aspects of Scandinavian orienteering. I will now start to give my impressions of the orienteering itself.

The events I attended in Scandinavia all had fairly long walks to the start every day--almost 3 km in some cases. This was not much of a problem, though, as these walks were almost always on wide, flat farm roads, which made it easy to get in a nice easy warmup jog on the way to the start. More specifically, most of the maps I ran on were surrounded on all sides by roads, and the walks to the start took the competitors around the outside of the map on these roads until the remote start area right off the road was reached. There were always toilets and water available on the way to the start, and one day at the O-Ringen we even walked by a Swedish farmhouse with an entire family outside, providing entertainment to the competitors in the form of singing and accordion playing.

You were expected to be at the first call up line 3 to 5 minutes before your actual start. The process of getting all the competitors to the starting line was always extremely efficient, as you would expect at events with several thousand competitors. The one-minute staging areas were always right next to each other (no ridiculous long jogs from each one-minute line to the next, as we often see in the US), and generally they first took your number, then made sure your E-punch card was cleared, then let you look at a blank map for a minute, then directed you to the box your particular map was in.

Then you grabbed your map and took off--along with at least 3 or 4 other people. In the events I attended there was always a streamered run of at least 50 meters on a trail to the actual start triangle. And, just as some of us compete at our local events to see who has the fastest finishing split, in Scandinavia everyone seemed to compete to see who could get to the start triangle the fastest. I am used to starting off relatively slowly in such a situation, looking at the map and planning my route to the first control as I jog to the start triangle. Nobody did this in Scandinavia! They all charged full-speed ahead. Of course the less-accomplished orienteers then stopped dead at the start triangle to take their first look at the map, but the more elite competitors who had been reading their maps while running at a full sprint scarcely slowed down.

So what was the terrain like? Well, in Finland the terrain was thick and physically difficult to run through. There was a lot of slash on the ground (worse than Washington state in some areas), and the pine trees all had their branches extending out at precisely the height of my eyes, it seemed. After my second day at the Fin5 my eyes were so red and sore from the constant contact with the vegetation that I bought a protective clear plastic visor to use for the rest of the events. I still clearly remember hearing Mikell Platt speak at our Sierra 2000 event and telling us that he wasn't attending the WOC because he wouldn't have any fun in that kind of terrain. I now understand exactly what he meant! I knew I was going to have lots of navigational difficulties in Scandinavia but wasn't expecting the physical challenge that the Finnish terrain also presented. And even the Swedes thought the terrain was a bit extreme! Panu took me to the awards ceremony in town for one of the races, and when the pompous announcer in suit and tie asked the Swedish winner what he thought of Tampere's "fine Finnish terrain" he said, in English and loud enough for the entire crowd to hear, "It was SH\*\*!"

As a result of the thickness of the terrain I sometimes had trouble finding the bags, even when my navigation was accurate and I was within 5 meters or so of the control. The controls themselves were sometimes on such small features that when the terrain was thick, you had to be practically right on top of the bag to see it. These controls struck my untrained American eye as being somewhat bingo, but as none of the Scandinavians seemed to have any particular trouble with these controls, it must have been me. No one could tell me what I was doing wrong, though. I even talked to Pam James (Canada's top woman orienteer) more than once about my problems and she wasn't able to give me any real good advice. I was told by a Swede that the Finns actually practice quickly scanning the terrain in the immediate vicinity when they KNOW they must be very close to a bag but can't immediately spot it. Whether this is actually true or was just a Swedish disparagement of Finnish terrain, I wasn't quite sure.

I'll talk about the Swedish terrain in the next installment of this article. It definitely was cleaner and more runnable than the Finnish terrain, and more closely matched what I imagined the best Scandinavian terrain would be like.

## **Jul-Aug 2002 Scandinavian Orienteering Part 4**

*by Steve Gregg*

I will finish this sequence of articles by talking about the O-Ringen. The terrain there came closest to my expectations of what "classic" Scandinavian terrain would be like. The forest was generally nice and runnable, and the maps were loaded with subtle detail that was often challenging to read even while walking. I had some fairly good runs at the O-Ringen, though. On the most technical map of the week I had a basically error-free run, although in the detailed areas I was never moving faster than a walk-jog. But I can see how you could eventually reach the point where you could run at speed through these areas, given enough practice.

I had heard before my trip that mapping of rock features is the most difficult thing to get used to on Swedish maps, and that certainly turned out to be the case. In particular, rocky ground and bare rock are often not mapped with special symbols. If the rocky area contains differences in elevation, that will be shown by bends in the contour lines, but the rock itself won't be shown on the map at all. I am used to seeing many little black dots on a map in an area of rocky ground and gray overlay on a map in an area of bare rock. More than once I ran into an area of rocky ground and was sure I had gotten lost, since there was no rock mapped anywhere near where I thought I was. It turned out that I wasn't lost at all. The large area of rocky ground simply wasn't mapped.

Additionally, I had to keep remembering that a "spur" could be a small strip of rock at a higher elevation than the surrounding terrain, and a "reentrant" could be the side of a "spur" as described above. On the first day I lost nearly 15 minutes at one control looking for a bag in such a "reentrant". I was looking for a dip in the ground itself, and when I finally found the bag, it turned out to be hung on the side of a rock that was mapped as a spur. There really was no corresponding "reentrant" as I am used to seeing them in the U.S.

Another point of interest was the mapping of rock faces. Here the shape of the rock is the key to whether it will be on the map or not. If the rock rises at a right angle to the ground, it will generally be on the map, even if it is only a couple of feet high. Many controls in Scandinavia are hung on these kinds of vertical rock faces. However, a much larger piece of rock that rises gradually from the ground instead of perpendicularly will likely not be mapped at all. So I found myself examining all the rock I encountered very carefully, trying to decide if the angle at which it rose from the ground was close enough to 90 degrees for it to be a mapped feature.

Although there are thousands of people in the woods at any given time at the O-Ringen, I never found myself in a position where following was particularly helpful or possible. There are dozens of different courses at each event, and just because someone just punched at the same control you did doesn't mean that they will have the same next control too. Also, the controls are generally hung in clumps. That is, you might go several hundred meters without seeing any controls at all and anyone else you see will be running fast through this "green light" area, in many different directions. Then you might start to see some controls and more people moving more slowly. Encountering this situation was actually a confidence boost for me when approaching the area of my control, since I could be pretty certain that the control I was looking for was somewhere in this "clump". But it was rarely the case that I could simply follow someone to my particular control, since there were many controls close to each other and it was impossible to tell who was going where. I felt like I did almost all the navigation on my own at every event.

After seeing how orienteering is done in Scandinavia, I have some very specific thoughts about why orienteering will never be as popular in the U.S. as it is in Sweden and Finland. It's mostly due to the more socialist nature of Scandinavian society and their conception of property rights, I believe. I was told that almost all Scandinavian maps are on private property, not state-owned land. Maps are usually first produced for a big event like the O-Ringen. They almost always get permission from the landowner to map the area and hold a huge event there, and the landowner expects little if any payment in return. The map is then available to use for local events and for training (Scandinavian "training events" often attract as many participants as one of our A-meets). More specifically, Scandinavian countries have a "law of the forest" which states that individuals are entitled to access private property without seeking permission from the landowner at all. Panu tells me that it is not clear legally how many people can be on a piece of property at once before permission needs to be obtained, but in practice, there is never a problem if even a couple of dozen people show up for a run on a map on private property. (They even do this at night in the middle of winter!) Obviously such a thing is unthinkable in the United States, where landowners shoot first and ask questions later and even our areas of "public land" are subject to onerous access restrictions. I've come to the conclusion that although living in a capitalist society does have its benefits, socialism is a much better system from the point of view of producing world-class orienteers.

I've enjoyed writing this series of articles and hope people found them interesting and entertaining. I'm already thinking about returning to Scandinavia for the O-Ringen and the World Masters Championships in the summer of 2003, and I hope anyone interested in making a similar trip will contact me.

## Sep-Oct 2002

*by Steve Gregg*

Once again this summer I had occasion to see how elite orienteers rely almost entirely on detailed map reading to make their way through the terrain. At the 1000 Day in Wyoming I spent a great deal of time with Marcus Pinker, one of Ireland's best orienteers. Marcus never pace counts, and rarely bothers to take an accurate compass bearing. Instead, his general strategy is to read every little feature of the map and keep constant map contact.

At the 1000 Day I made a 10-minute mistake in a detailed rocky area. My main strategy to find the control was a "bearing and pace" approach, which was not successful. Marcus had the same control on his course, and he told me he found it easily. He glanced at his compass once as he left the previous control to make sure he was going in the right general direction, and then just read map features all the way to the bag, never looking at his compass again.

So my goal for this year is to try to get myself to stop using my compass so much during my runs. I am even thinking about running the Orange course at local meets without using a compass at all, just to force myself to concentrate more on the map. In my last training tip I mentioned the Finnish orienteer who is famous for never using his compass. After he won the short course at the World Championships last summer, he was asked how many times he looked at his compass during the race. His response was "twice, as a backup." I have been told that this guy is an anomaly even among the elites, but I think that his approach to orienteering is more standard these days than the "bearing and pace" approach than many of us rely on.

Recently I heard James Scarborough say that a lot of people mistakenly view orienteering as an engineering exercise, concerned with numbers and accurate manipulation of equipment (i.e. the compass). Instead, James likes to talk about "flowing" across the map, running fast when you can, and slowing down to read the map more carefully when nearing the control. I'm hoping to put more "flow" into my orienteering this year.

## Nov-Dec 2002

*—by Steve Gregg*

Very few of us do any training off-trail on a real orienteering map. Obviously there are good reasons for this. One is that our best terrain is generally far away from where most of us live. But the other reason is that there is confusion about whether it is actually permitted to go off-trail in our parks at times other than an actual orienteering event. This issue was briefly discussed on the O-net a couple of weeks ago and I'd like to further discuss it here.

My view is that a single individual or a group of two or three should not hesitate to train off-trail at the majority of our parks. The exceptions would be the crowded parks that are always full of people, since even though it is probably not actually illegal to go off-trail, the possibility of being seen and hassled by other park users is too great. When I was vetting courses a couple of weeks before the event at Annadel last spring, I was accosted by a couple of rude horseback riders who tried to lecture me about how "no one is ever allowed off-trail at this park". I have no idea if they tried to "turn me in" to the rangers later but they certainly were the kind of arrogant people who would have done that. I think it's best for us to try to avoid confrontations like this whenever possible, even though in most cases we have done absolutely nothing wrong.

So my advice to you intrepid off-trail runners is as follows: (1) Pick a park that is generally uncrowded and where you are unlikely to be seen off-trail. For example, this rules out Golden Gate Park and Big Basin (too crowded) and Coyote Hills (too open). There are exceptions to this

rule, of course—I understand that the rangers at Calero are very sensitive about off-trail use so you probably don't want to go there, and conversely, the rangers at Point Pinole have no problems with off-trail running even though it is a very open area. Use good judgment and ask other orienteers if you are not sure. (2) Make yourself as inconspicuous as possible. It's probably wise to not wear your club orienteering top. I would also suggest that you pretend you are a hiker until you are well away from the parking lot, and then start your orienteering training out in the woods.

It's difficult enough as it is to try to do specific orienteering training in this country, and I don't think you should let the vague fear that "off-trail running is somehow not OK" further discourage you. Go for it!!!!

## Jan-Feb 2003

by Steve Gregg

I have decided to write a few articles oriented more towards beginners, which will discuss some of the fundamental ideas and vocabulary of the sport. I will start with the terms "attack point" and "handrail".

An "attack point" is an easy-to-find location in the terrain which is close to the control point you are looking for. Of course, the meaning of "easy-to-find" depends on your level of navigational skill. An attack point for an advanced orienteer might be an actual control location for an orange-level runner, and an attack point for a yellow-level runner might be an actual control location for a white-level runner. In any case, when planning your route to a control, it is generally a good idea to work backwards from the control. First look for a good attack point, then figure out the best way to get there from where you are now.

An orienteering leg will often have more than one choice for the attack point. In this case, if the leg is designed well, the safest, closest, and easiest-to-find attack point will not be on the straight-line route to the control. In that case you need to make a decision: Should I lose time in the interest of safety, or should I take more of a risk and attack the control directly from further away? Your confidence in your fine map-reading skills plays a major role in this kind of decision.

A "handrail" is an easy-to-follow linear feature in the terrain. Again, the meaning of "easy-to-follow" depends on your level of navigational skill. For a beginning orienteer, a trail might be the only feature that could be used as a handrail. Advanced orienteers start using less well-defined features as handrails: major spurs, major reentrants, and the tops of ridge lines, for example.

The existence of a reliable handrail can affect your choice of attack point. If you can run on a trail several hundred meters to your attack point, that is often preferable to taking a shorter route through terrain. The whole idea of a handrail is that you should be able to run along it very quickly, without needing to slow down much at all to look at your map to verify your location. We are often presented with that kind of route choice in the Bay Area. Should you go somewhat out of your way to be able to run on a trail, or should you stay on the straight-line path? Again, your confidence in your fine map-reading skills and your relative running speed on a trail versus in the terrain can help you make this kind of decision.

*(To be continued...)*

## Mar-Apr 2003

by Steve Gregg

This month's training tip will discuss two more fundamental ideas of the sport: "Collecting features" and "catching features".

A "collecting feature" is a large, easy-to-find feature between your current location and the control. Again, the meaning of "easy-to-find" depends on your level of navigational skill, but a true collecting feature should be impossible to miss unless you are completely going in the wrong direction. Collecting features are important because they allow you to ignore fine detail on the map between your current location and the collecting feature—a process that orienteers call "simplifying the map." For example, I had a control at the O-Ringen two summers ago that first required you to run 300 meters through flat terrain with a lot of detailed rock features. It would have been a slow, difficult process to keep track of exactly where I was in this area. Fortunately I didn't have to, as a large hill was at the end of that 300 meter run. So I could just run fast to the hill and then start navigating more carefully from there.

**WARNING:** It is sometimes dangerous to use long linear features (like trails) as collecting features. You will, of course, know when you hit the trail, but if it is in a featureless area and has no obvious bends, you may find it impossible to determine where you are on the trail. In this case the "collecting feature" was useless, as it hasn't allowed you to pinpoint your position precisely. More precise navigation before reaching the trail is perhaps needed in this case.

A "catching feature" is a large, easy-to-find feature past the control. Catching features are important because they allow you to navigate more confidently from your attack point to the control, knowing that if you should miss the control for some reason, you will soon hit the catching feature and know you have gone too far. In fact, a catching feature can be thought of as being an attack point past the control. If a control has an obvious catching feature behind it, you can take advantage of that to use a more risky attack point on your initial approach to the control, knowing that if you miss the control and have to go back from the catching feature, you have lost little if any time over people who took the safer initial approach.

## May-Jun 2003

by Steve Gregg

The last important orienteering technique that I will discuss here is the concept of "aiming off". That's the idea of purposely aiming to the right or left of the exact spot on a linear feature you are heading towards, so that when you hit the linear feature, you will know which way to turn to reach the precise location you are looking for. This technique is most commonly used when you are running fast on rough compass towards the linear feature, with the intent to use something on the line to precisely reestablish your position. After all, there is no need to aim off if you are orienteering precisely and know exactly where you are on the map at all times. So aiming off is a strategy that is either used in VERY bland

terrain where it's difficult or impossible to keep track of your exact location, or is used at the start of a long leg in complex terrain where you want to be able to run fast without slowing down to read the map precisely. Just don't get too sloppy with your compass work when aiming off! This strategy is a spectacular failure if you end up to the left of the location you are trying to find, even though you intended to aim off to the right.

## **Nov-Dec 2003**

*by Steve Gregg*

No map is perfect. On our local maps in particular, the mapper may have never bothered to go into the steep, nasty areas, so if the course setter sends you there, you might see lots of large unmapped features. Additionally, the mapper must always make judgment calls about which features to put on the map and which features to leave out. In particular, the general rule is that boulders less than 1 meter in size are not mapped, but that unmapped 0.95 meter boulder will probably look a lot like that 1.05 meter mapped boulder.

So it's a good idea to always use multiple sources of evidence when trying to determine your location on the map. There are three types of map information to be thinking about: (1) Contours, (2) Point features (boulders and the like), and (3) Vegetation. I have arranged these from most reliable to least reliable. Generally speaking, the contours should always take priority when you encounter map ambiguity, and the bigger the contour feature, the more likely it is to be correctly mapped. For example, if you stumble upon a large boulder which does not seem to be on the map, but you can also see a large reentrant in the distance which does seem to be mapped, it's likely that the mapper just missed the boulder or decided to leave it off the map, and you should at least temporarily assume that you are where you think you are and keep going.

Vegetation, on the other hand, can be notoriously inaccurate, even on otherwise very good maps. All experienced orienteers have been on maps where the difference between dark green and light green or even the difference between white and light green is not clear at all. It can even be difficult if not impossible to pick out clearings in the midst of sparse white forest. So if everything seems right on the map except for the vegetation, you should probably just keep going until you have more conclusive evidence that you are lost.

Good orienteers are always examining the map carefully to get all the information they can from it, and are always using that information to locate themselves on the map as precisely as possible. When the map is so poor that the puzzle of figuring out where you are is not possible to solve at all (major portions of Nisene Marks, for example), then orienteering becomes more a matter of luck than skill.

## **Jan-Feb 2004**

*by Syd Reader*

Look up. In this training tip, I'll talk about sighting the immediate path in front of you. Most intermediate and advanced orienteers know that they should try to determine a route that will get them from one control to the next. This decision can be affected by elevation change, vegetation, rocky/uneven footing, catching features/handrails/attack points, and other factors. These factors help determine the general path one will take to reach the next control.

Perhaps more obvious, but less often talked about (at least in my experience), is looking up and observing your surroundings to choose your immediate path. There are any number of small obstacles that can slow you down if you aren't paying attention to your immediate surroundings. Individually, they may not delay you by much, but if you find yourself dodging lots of deadfall, or having to zigzag quite often, you are probably losing time and energy rather needlessly.

When you are not reading your map, look up and scout the terrain in front of you, trying to identify the best path to take to go in the direction you are heading. Some people, like me, pay a lot of attention to the next few footsteps, to make sure the footing is good. Looking forward about 30, 50, or even 100 steps, though, can help you find a better path to follow. In Sweden, I found myself getting slowed down by the abundance of low brush on the maps out there. The person shadowing me told me that they call this 'junior orienteering,' and that I should pay more attention to my immediate surroundings.

Look up, and you should be able to identify the easiest way through the terrain within sight. When in thicker vegetation (even if it is just low brush that only slows you a little), you may find a clearer path off to one side or another. Finding an animal track can make for easier running, through brush, or contouring along steep hillsides.

## **Mar-Apr 2004**

*by Syd Reader*

Be confident! I've found that the controls I have the best split times on are those where I executed my route confidently. You may already know that the best route is not always the most direct. Beyond that, though, the best route for you should be the one that you can do with little or no hesitation. By hesitation, I do not mean taking time to plan your route or read the map - that should always remain an important part of your process. I mean taking considerable time to have to look for smaller details, or to second guess your route.

Many of the technique tips that have been given here help you reach the control quicker by increasing your confidence in taking a particular path. If you know that you can look for a great big linear feature that will cross your path, you can be less careful (but not completely careless) about all the details in between. Finding a handrail (a trail, a ridge, a long distinct vegetation boundary) can help guide you to where you are going.

Also - read the course setter's notes. They can tell you what features on the map are reliable, and which ones are not so reliable. You may also get some sense of what kind of orienteering decisions you'll need to make out on the course. The map may have a dense trail network, so you may be making more choices on which trail to take to get near a control. Or the vegetation may be particularly important to making route choice decisions. These notes are generally what the course setters have noted out there in thinking about designing their courses, so take advantage of what information they may contain for you.

If you are confident about how you should execute your route to the control, you can focus more on the physical effort of getting there. Since your mind will probably be working a bit less while you're running, make sure you have a good plan that you can follow.

And when you find yourself on a trickier leg, slow down (I'm still trying to learn this one). Try to identify which legs are going to be more difficult for you and be a little more cautious on those. Going a bit slower on a tricky control should be worth the minutes you could lose if you

misplace yourself. Don't just try to execute a poor plan with confidence. Identify the best way to get yourself quickly into the control circle using the information available to you. And then follow the plan you have identified.

## May-Jun 2004

by *Steve Gregg*

Although this is not a “training tip” per se, I have decided to put down some thoughts about vision, as orienteering is a pretty difficult sport is you can't see your map! I'll discuss both “protection” and “correction” here.

Fortunately in the Bay Area we do not have a great deal of threatening, eye-level foliage. So few of us feel the need to wear glasses strictly for purposes of eye protection. Things are a bit different in other parts of the O-world, though. On my recent trip to the Flying Pig, I took a hit in the eye bad enough that I had to see a doctor, who pulled about a dozen little pieces of Indiana vegetation out of the white of my eye (Ewww...). And at the world championships in Finland in 2001, many of the top elite runners wore safety glasses, and I was certainly wishing I had a pair myself after a couple of days in those woods. After my eye injury, I went to Wal-Mart and bought a \$30 pair of athletic safety glasses (designed primarily for racquetball, I think), and wore them during my run the next day. They were quite comfortable and I didn't even notice I had them on for most of my run. You will need to decide for yourself if you want to experiment with something like that, especially if you plan to travel outside of the Bay Area for orienteering.

A bigger problem we will probably all face as we grow older is vision correction. At age 47 I am finally starting to feel my once-perfect vision fade a bit, so this is an issue that concerns me personally. An O-friend of mine recently told me that his orienteering suffered for a couple of years while he was still in denial about his deteriorating vision, and I don't intend for that to happen to me. So here are a few ways I have seen or heard about to make your map easier to read. I intend to experiment with some or all of these over the course of the next few years. (1) The special Joe Scarborough screw-on magnifier attachment to your thumb compass. Very popular among BAOCers, although I have not personally tried it yet. (2) Bifocals made with no correction at all on the top, and enough correction on the bottom to make the map clear at short range. (3) Ordinary reading glasses, perched right on the end of the nose (the Ron Hudson method). You look over the top of them when examining the terrain, and look down through them when reading the map. (4) A special Scandinavian orienteering product, consisting of reading glasses attached to a headband. The glasses are hinged and can swivel up and down. This let you drop the glasses down as if they were perched on your nose, but with no actual contact with the nose. I have recently purchased a pair of these and will try them out in local events. (5) I have heard it is possible to “make your own bifocals”, by going to a drug store and buying strips of special magnifying material, that can be stuck to the lower part of an ordinary pair of sunglasses or safety glasses. I have no idea how well this actually works.

Finally, I have nothing to say to those of you whose vision is so poor that you can't even see the woods in front of your face without glasses. Perhaps someone else in the club can provide insight into that particular problem!

## Jul-Aug 2004

by *Tom Strat*

[This article first appeared in the November 1992 BAOC Bulletin]

Once you're able to read a map and associate its features with the terrain, you have begun to master the most important skill in land navigation. In addition, an accurate technique for measuring distance traveled across the ground is often needed.

The best method of measuring distance is by counting your steps, or “pacing.” The most common method of pace-counting is the double-step method —i.e., count one pace each time your left (or right) foot touches the ground. The first thing that you need to do is measure the number of double-steps that you take to travel 100 meters. Then, when you're orienteering, it is easy to determine mentally how many paces are necessary to travel a given distance. For example, if you want to go 300 meters and you normally take 40 double-steps per 100 meters, you will need to count 120 paces.

Of course, you must remember that variation in slope, soil conditions, and vegetation can affect your pacing considerably. As you become a more experienced orienteer, you'll want to know your uphill and downhill pace-counts. Distance covered on level terrain will also vary, depending on whether you're running on a trail, through open woods, or thick brush. Determine your 100 meter pace count for each type of terrain. The following chart gives a general idea of pace counts for different-sized people in different terrain.

Paces per 100 meters	Small under 5'7"	Average 5'7"-6'0"	Tall Over 6'0"
Trail	38	36	33
Open Ground	43	41	38

<b>Open Forest</b>	51	47	44
<b>Dense Forest</b>	59	52	48

Don't under estimate the value of pacing. Make a habit of pacing all the time. Even when the map features tell the orienteer exactly where he is, pacing provides a form of insurance. It's the easiest way to avoid many costly navigational errors.

[This article first appeared in the September 1992 Bulletin.]

Most orienteering compasses come with a scale at one end that can be used to measure distance. If this scale happens to be the same as the scale on your orienteering map (usually, but not always 1:10000), you're in good shape. All you need to do is lay the compass on the map and read the distance in meters between the two points. With this information, you can then pace-count that same distance across the terrain. If your compass does not have a scale, or if the scale does not match the scale of the map, it is easy to make one. Simply put a strip of white adhesive tape across the end of your compass, and mark off 100 meter segments using the map scale printed on the map.

## Sep-Oct 2004

by Steve Gregg

How can you avoid making navigational errors? Well, the short answer is that you can't avoid errors completely. What separates the very best orienteers from the rest of us, though, is their uncanny ability to immediately correct when they stray off-course and thus measure time lost in seconds, not minutes. Much of this is psychological, I think. You need to stop and think calmly about where on the map you really are as opposed to where you think you are, instead of panicking and wandering around in circles looking frantically for something in the terrain that makes sense (which is what I tend to do). With that in mind, here are some of the most common orienteering errors, and some advice about what to do in each situation.

**Losing map contact.** This has happened to all of us. All of a sudden, nothing you see in the terrain matches up with what you see on the map. What you need to make yourself do in this situation is STOP IMMEDIATELY and try to determine where on the map you really are. If you stop the moment you lose map contact, chances are you are no more than a hundred meters away from where you think you are, and a calm, systematic scan of a relatively small portion of the map will very often yield enough clues to pinpoint your precise location again. What you don't want to do is just keep blindly plowing ahead (or even worse, wandering in circles), hoping you will run into a feature big and obvious enough to get you back on track. The farther you run blind on a map, the harder it becomes to regain contact, and this is the sort of thing that can turn 1 minute errors into 5 minute errors.

**Parallel errors.** These are the most insidious sorts of errors, as it might take you quite a while to realize that an error has even been made. Especially in the Bay Area, it can be very easy to go several hundred meters up the wrong reentrant before anything starts to really look wrong on the map. I think the best way to avoid parallel errors is to try to anticipate ahead of time when they are a possibility, and take particular care in those situations. I ran on a glaciated map this summer with all sorts of little hilltops and depressions, and what I tried to do (not always successfully) is to have a dialog in my mind something like this: "I think I am at the base of this hill. Is it possible that I could be at the base of this other hill instead? What are some other map features that I can use to be 100% sure of my current location?" In other words, try not to focus in on the narrow strip of the map where you think you are currently located (I call this "tunnel vision"). Be looking around to the left, to the right, and in front of you all the time and try to anticipate possible problem situations before they even arise.

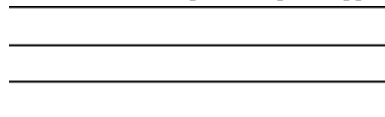
**Misjudging height.** This happened to me several times this summer. Let's say the control is on a rock in a reentrant. You KNOW you are in the correct reentrant, but can see no bag. Well, that means you are either too high or too low, and all of a sudden you are forced to make a decision about whether to go up or down to get to your control. Again, it's easy to panic and do the wrong thing. As usual, if you stop and calmly examine the map, there will very often be enough clues available to tell you with almost 100% certainty which direction to proceed. If you make a blind, irrational decision to go up or down, you might get lucky, but it's just as likely that you will only compound the original mistake. And NEVER run in circles! Once you have made the decision to proceed in a given direction, stick to your guns until you either see a bag or have absolute proof that you went the wrong way. There is nothing worse than to run back and forth across the same terrain, hoping that perhaps you just didn't see the bag the first time you were there. It's much more likely that you have been wandering back and forth above or below the bag the entire time and again, you have just turned a 1 minute error into a 5 minute error.

## Nov-Dec 2004

by Steve Gregg

Some orienteers have a natural ability to quickly and correctly interpret even the most confusing contour detail. For most of us, though, it is more of a struggle to determine which way is up and which way is down. What makes this task particularly difficult in a complex area is the need to examine portions of the map several hundred meters away from your current location. In other words, as is so often the case in orienteering, you need to try to take a "global" view of the map, not a "local" view.

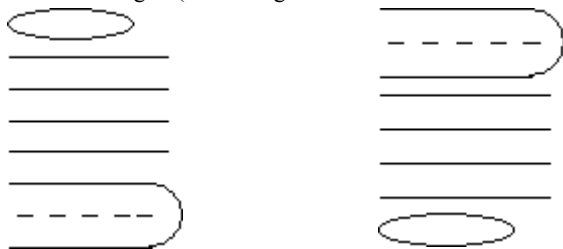
I'll start with a simple example. Suppose that you are in an area where the contours look like this (north is up):



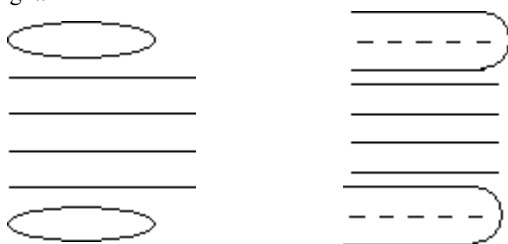
You are heading north. Are you going uphill or downhill? Answer: It depends! If there is a hilltop to your north, and a reentrant to your south, you are going uphill, as shown on the left. If instead, the hilltop is to your south, and the reentrant to your north, you are going downhill,



as shown on the right. (I am using a dotted line to indicate a stream in a reentrant here)



These two cases are exceedingly common in the Bay Area and are usually not too hard to interpret correctly. The more difficult cases occur when there is a hilltop on both sides of you. In that case, as you head north, you are going down and then up a valley between the two hilltops, as shown on the left. Similarly, if there is a reentrant on both sides of you, you are going up and then down a ridge as you head north, as shown on the right.



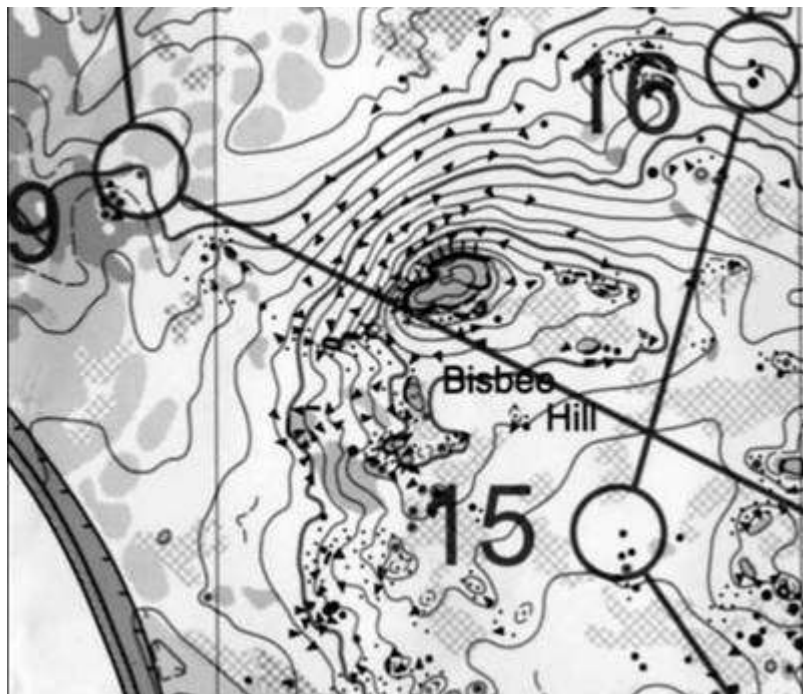
Next time I hope to give examples of difficult contour situations from actual orienteering maps that I have run on recently.

## Jan-Feb 2005

by Steve Gregg

As promised in the last bulletin, I will discuss contour reading on some actual maps for the next few months. I don't know if the maps will show up in the bulletin at a resolution at which they are actually readable, but I'm going to give it a try anyway.

Below is a portion of the map of Bisbee Hill, in Laramie, Wyoming. Ignore the actual course—suppose you are trying to go from control 9 to control 15. What will you see on your way there? In particular, does the contour line wiggle directly north of the “1” in “15” denote a spur or a reentrant?



This part of the map has always given me problems, since the black rock detail hides the contours directly northwest of the “1” and makes it hard to easily see what is going on. But if you look carefully, you can see that there is a narrow spur to the south extending off of the main Bisbee Hill, and so the contour line wiggle in question is a spur going back downhill towards control 15.

So to navigate from control 9 to control 15, you first climb the steep hill. The top of the hill is somewhere on the narrow spur extending south from Bisbee Hill itself. You then want to find the spur heading back downhill to the east, and look for the rock on that spur (almost directly north of the “1”). That is the closest obvious attack point, so take a careful bearing from there to 15 (perhaps aiming off a bit to the south, to make sure you will not miss the rocks), and with any luck, either the control itself or the rocks will soon be visible.