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Navigation tools

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- Gear reviews and tests -



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Description :

Tools to navigate.

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Garmin GPS II plus, Metallic compass with lens and wire sight, Silva plastic compass with mirror sight



GPS The most useful and immediate tool is probably the GPS.

The GPS provides immediate navigation data and aid. It is only limited by being an electronic device, thus subject to battery life and failures. An article on GPS considerations is [here](#).

A proof that a GPS is not a compass, check the bearings, north for the GPS, and you can see where the real north is



Compasses

I have owned a good number of compasses, including electronic compasses in watches.

A few remarks:

Metallic case compasses need to be properly compensated to be accurate. Compensation is done in factory, by adding a small magnet at the right position on the needle casing.

High quality metallic case compass (Price:15 Euros)

Navigation tools



The same closed



The same taking bearing of a sight



The lens/visor wire sighting of this compass is quite precise. The metallic casing makes it virtually indestructible. I have broken a few plastic Silvas needle cases in the past by compressing gear on them, and while the compass can still be used, it leaks oil...

Mirror sights are also precise sights. They also offer a mirror which can double as an emergency signalling device.

A Silva with mirror sight (Price 15 euros)



This compass is a very flat and light device, simple to carry.

Electronic compasses are precise enough (one degree precision) but they need perfect flatness to be totally reliable, as they use fixed solenoids to measure the magnetic field. So the system must provide a way to check the level, either with a bubble level, or an inclinometer.

A Suunto x6 watch (Price 340 euros)



A review of the Suunto watch is [here](#).

Podometers

A good way of counting distances without relying on a GPS, when walking is a podometer. Some are available for a little as 10\$, and for that price, they give the hour, provide a chronometer, count the number of steps, and convert them to distance using your average step size. Podometers do not work in clumsy terrain, where a manual counter or a chronometer may replace it, depending on the exact environment.

A podometer needs to be calibrated to your personal step size to provide accurate distance information. This is done by walking with it along a known distance, and divide this distance by the number of steps recorded, the result is your average step size.

For some applications where the speed is constant, it is easier to work with a chronometer.

If there is relief, then none of these are needed.

A small podometer closed



The same in step counting mode



Maps Maps are the tool to use with all the previous. As a backup device for the GPS, they are mandatory. In mountain landscape, they show you which road can be followed, on sea you can draw your road to pass various detours, etc.. Depending on what you do, different scales are available. For hiking or mountain biking use, on land, 1:25000 is convenient. Less resolution is needed on sea.

Of course if you use a map and a GPS, it is better if one of the coordinate systems of the map matches the one of those from the GPS, and let me tell you, it is not obvious! I sure get the classical ddd,mmm system, but it does not give immediate reading, so I switched to UTM/UPS, which gives a better resolution on my maps. On 6 grids given on French IGN 1:25000 maps, 3 are outdated old French-only stuff, known to be erroneous (lambert system), one mostly useless (gradient), One with a too big scale (on the map, the graduation being half a meter-long map, not good for positioning!) (degrees-minutes), which leaves UTM/UPS... At least nautic maps are WGS84 and degrees/minutes.

Plan a transparent waterproof plastic protection.

Conclusion

There are lots of useful devices for hiking and outdoors in general. They all have advantages and inconvenients. I always double electronics with a non electronic system, the compass still have a long life to live [\[1\]](#).

[\[1\]](#) By the way, I have recently read that the magnetic declivity is slowly going down, and will annihilate, and then reverse in the next 100 years