

Ever since the first travellers set out on a journey, they were interested in how to get home and where they were along their way. The invention of the magnetic compass was a huge advance and in co-ordination with stars and accurate time keeping, navigation became more reliable. It was still, however, a combination of science and art form, which took many lessons and much practice. There were electronic aids established during the Second World War and they helped the air and sea navigator. In 1978 the U.S. Defense Department launched its first navigational satellite and by 1994 it had 24 of these satellites in orbit. Initially it was purely for military purposes; however, the system is now available at no cost for civilian use.

The Global Positioning System, or GPS, works with these 24 satellites transmitting signals. Our GPS receiver then picks up three or more of these signals and triangulates on them. The system is extremely accurate; usually within 3 metres anywhere on earth. As I am driving down Hwy 401 I can even tell which side of the highway I am on! How can this new technology help us as hikers? Simply put, it will tell us where we are, where we are going and where we have been.

The big break through for Canadian hikers came in the spring of 2004 when digitized topographical maps of Canada became available to be downloaded into a GPS receiver. Until that time the hardware, i.e. the GPS receiver, was readily available but the system was only half way there. The product Topo Canada now has the 1:50,000 topographical maps of Canada on 4 CDs. The Bruce Trail Trail Reference, and many other trail guides, is based on these maps.

What do we need in the way of equipment then to take advantage of this “killer ap” or killer application of satellite, computer and digitizing technology? We need a GPS receiver that is “mapping”, that is, it should have the capability of downloading maps and storing them for the area that we want to hike in. My Garmin GPSmap 60C can hold 56 megabytes, which, if I am careful, will allow me to have the topographical maps that cover the entire Bruce Trail. If I choose to hike in a different area, for instance the Lynn Valley Trail [[www.kwic.com/~lynntail](http://www.kwic.com/~lynntail)], I must give up some of my Bruce Trail coverage maps and have the Simcoe to Port Dover area maps in my GPS. The way this is done is by loading the Topo Canada CDs onto your home computer and picking off what you need. Newer, and more expensive, GPSs have more memory.



My GPS has a number of screen pages that provide me with the data I need on a hike. The first page is the satellite page which shows how many satellites my GPS is seeing, the more seen the more accurate the readings. The next page I look at is the map and the GPS arrowhead moves along and shows me where I am on the map, it identifies the rivers and roads along the way. There is a trip computer page which is interesting, especially for a hike leader, as someone is usually curious as to “how far have we gone/how far do we have to go”. The trip computer has all that information and even how fast we are walking. At the end of the hike you can record your walk and at home download it to your main computer. Our hikes across England in the summer of 2004 and Scotland in the summer of 2006 were recorded this way. If I choose to walk across England or Scotland I can follow the exact route or I can transfer the route to your GPS and you can follow the identical route. In addition, the track data from your walks can be exported in a format that can be viewed in Google Earth if you have a high speed Internet connection and pay a nominal fee of \$20 per year to Google.

A good safety point is that you can put a way point mark, say at your car, and whenever you choose you can ask the GPS to “Go To” that point and it will steer you right back. The GPS receiver requires a clear view of the sky, so of course will not work indoors nor will it receive signals under a heavy forest of wet leaves. Garmin’s website has two excellent publications available at no cost for downloading (PDF files), one on how the GPS system works and the other “Using a Garmin GPS with paper maps for land navigation” – that’s us as hikers. [[www.garmin.com/aboutGPS/manual.html](http://www.garmin.com/aboutGPS/manual.html)]

The cost for a basic mapping GPS will be in the \$300.00 range, a more advanced one will be about \$500.00, and the Topo Canada maps (4 CDs) is about \$200.00.

The GPS is an excellent tool however the more you know about the basics of navigation, i.e. map reading and what a compass shows us, the more comfortable you will be with this new technology. Next time you are hiking with me please use my GPS – then people can ask you how much further we have to go!

As I write this article in December of 2004 it was exactly 50 years ago that I was a navigation student at the Royal Canadian Air Force's Air Navigation School in Winnipeg, Manitoba. [[www.cfans.com/index.htm](http://www.cfans.com/index.htm)] Time slips away.

I welcome your comments and questions.

Happy hiking,  
Greg



#### *About Greg*

Greg is an experienced and certified hike leader and instructor. He has been a long time member of the Bruce Trail Association ([www.bruce-trail.org](http://www.bruce-trail.org)), the Grand Valley Trails Association ([www.gvta.on.ca](http://www.gvta.on.ca)) and other hiking organizations. Greg has an extensive background in aviation and air traffic control. Greg has taught introduction to hiking courses and map and compass courses for several years. Currently his website, Greg Vincent's Hiking Site, resides at <http://home.golden.net/%7Egvincent/>

Other The Right Stuff articles are:

- "On the Up and Up" or Icy Walking
- Footwear - Boots & Socks (how to care for your feet & how to choose boots & socks)
- Clothing (how to keep warm & dry)
- Packs (what kind to carry & what to put in them)
- Bugs (how to avoid them & prevent their bothering you)
- Trail Safety (how to ensure you hike without incident)
- Trekking Poles (modern ones - what are they & why use them)
- Winter Walking (all the peculiarities of hiking in cold climes)
- Medical Emergencies (how to prepare for & respond to a medical emergency while hiking)
- Warm Weather Walking (the scoop on hiking in warm weather)
- Snowshoeing (If you can walk, you can snowshoe – no ifs, ands or buts.)