

Common GPS Related Terms

Accuracy – A measure of how close an estimate of a GPS position is to the true location.

Bearing – The compass direction from a position to a destination, (also called an azimuth). In a GPS receiver, bearing usually refers to the direction to a waypoint.

Coordinate Systems – Such as latitude/longitude, represent your position on the earth to a flat surface like a sale map.

Course – The compass direction you are trying to follow from your starting point to the point you are trying to reach.

Course Over Ground – see Track

Declination Setting - GPS units can be adjusted to the amount of magnetic declination in the area of use.

Differential GPS (DGPS) - An extension of the GPS system that uses land-based radio beacons to transmit position corrections to GPS receivers. DGPS reduces the effect of selective availability, propagation delay, etc. and can improve position accuracy to better than 10 meters.

Direction – The direction between two locations is usually called a bearing, azimuth, or course.

Error – Measurement of horizontal position error in feet or meters based on a variety of factors including Dilution of Precision (DOP) and satellite signal quality.

GOTO – The selected point you wish to travel to or find. It may be a position fix or part of a route or track.

Heading - The direction in which you or your vehicle are moving. For boat or airplane operations, this may differ from actual Course Over Ground (COG) due to winds, currents, etc.

Latitude - A position's distance north or south of the equator, measured by degrees from zero to 90. One minute of latitude equals one nautical mile.

Location – The actual physical place you occupy. The difference between a position fix and location is that a location is where you really are and a position fix is where a GPS unit says you are.

Longitude - The distance east or west of the prime meridian (measured in degrees). The prime meridian runs from the North Pole to the South Pole, through Greenwich, England.

Magnetic Declination – The difference between true north and magnetic north at a specific location.

Navigation - The act of determining the course or heading of movement. This movement could be for a plane, ship, automobile, person on foot, or any other similar means.

NAVSTAR - The official U.S. Government name given to the GPS satellite system. NAVSTAR is an acronym for Navigation Satellite Timing and Ranging.

Position fix - The GPS receiver's computed position coordinates.

Precision – Measure of the “repeatability” of the data. Taking repeated readings from a point will improve the precision of the sample mean.

Route - A group of waypoints entered into the GPS receiver in the sequence you desire to navigate them.

Track - Your current direction of travel relative to a ground position (same as Course Over Ground).

Waypoint/Landmark - Waypoints are locations or landmarks worth recording and storing in your GPS. These are locations you may later want to return to or avoid. They may be check points on a route or significant ground features such as a campsite, the truck, a cultural resource, or a favorite fishing spot). Waypoints may be defined and stored in the unit manually by taking coordinates for the waypoint from a map or other reference. This can be done before ever leaving home. Or more usually, waypoints may be entered directly by taking a reading with the unit at the location itself, giving it a name, and then saving the point.

Wide Area Augmentation System (WAAS) - A system of satellites and ground stations operated by the Federal Aviation Authority that provide GPS signal corrections for better position accuracy for airplanes. WAAS consists of approximately 25 ground reference stations positioned across the United States that monitor GPS satellite data. Two master stations, located on either coast, collect data from the reference stations and create a GPS correction message. A WAAS-capable receiver can be adapted to ground use and give you a position accuracy of better than three meters, 95 percent of the time.

Definitions courtesy of Garmin International, Inc.