

Safety Article of the Month

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GPS Navigation Systems

Global Positioning System (GPS)

The Global Positioning System (GPS) is a network of 27 satellites orbiting the Earth at an altitude of about 12,000 mi. The system was originally developed by the US government for military navigation. It was afterwards made available for civilian use. Now anyone with a mobile phone or standalone GPS unit can receive the radio signals that the satellites broadcast.



GPS Satellite

GPS Navigation

The most essential function of a GPS unit is to figure out its position on Earth. The GPS unit determines its position by measuring its location with respect to multiple satellites thru a process called trilateration. Once the GPS unit makes this calculation, it can determine the latitude, longitude and altitude of its current position. The GPS unit uses maps stored in its memory to display its position with respect to said map. Additionally, the GPS unit also traces its path across said map as it moves. This enables the GPS unit to determine travel distance, travel time, speed, and path.



Garmin Zumo 959LM

GPS Standalone Units

GPS standalone units offer the advantage of pre-installed maps which free the unit from having to be near a cell tower or have internet access to download the map. GPS standalone units are available from multiple manufacturers, such as Garmin and TomTom.

The Garmin Zumo 959LM offers a high resolution transreflective touchscreen 5" display in a rugged and weatherproof case that works under all weather conditions and under heavy vibrations. It offers the ability to stream music from services such as Spotify and Pandora. It can link with its Smartphone Link App via Bluetooth for live weather and traffic updates, which is used to provide rider alerts, such as upcoming hazards, sharp turns, animal crossings, and nearby red light and speed cameras. It will even warn of helmet law changes as it crosses state borders.



Tom Tom Rider 400

The Tom Tom Rider 400 comes in a compact weatherproof design, with a crisp display and a capacitive touchscreen, and with an easy to navigate user interface. It includes portrait and landscape screen orientations. Audio instructions and hands-free calling via Bluetooth are also available, which enable real-time traffic updates.

Smartphone Apps

Converged devices, such as Smartphones, offer GPS as a feature. Smartphone operating systems offer mapping and navigational services that require a data connection to download maps. That is why in areas of poor cell reception the smartphone can show its location, but not the map to reference the position of said location. Some of the GPS Navigation Apps include inRoute, and Scenic.



inRoute GPS App

The InRoute App offers voice guided navigation of up to 150 locations with automatic weather alerts. It includes the option of importing from XLS, GPX and KML file formats. Interactive charts show route elevation, temperature, precipitation, etc.

The Scenic App offers multiple options to plan a ride, and enable the importing of routes through multiple file formats, such as GPX, KML, KMZ, GDB, etc. The navigation screen has been especially designed for use on the motorcycle, with large fonts, a clear route line and a screen layout that enables to see next turns in a quick glance. Scenic also provides voice instructions. Scenic has special features to guide to the start point of a route and skip via points if a (deliberate or accidental) detour is taken.



Scenic GPS App