

How to Generate Routes on Google Earth[®] and send them to a Garmin[®] GPS as a track

Version 2

By R.G. Sparber

11/11/2007

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Overview

I own a Garmin eTrex H[®] GPS. This is a great "bottom of the line" unit. It can store routes, waypoints, and tracks but cannot handle maps. Not to worry, I also have access to Google Earth. This article explains how to generate routes on Google Earth and ultimately download them as tracks into this GPS.

Software Tools

Three tools are used in this process. Routes are generated in Google Earth. The format is converted to one usable by my GPS using GPSbabel, and the file is managed and downloaded using Mapsource. Google Earth is free but web based, GPSbabel is free but a donation is appreciated and runs on my PC, and Mapsource is a commercial product from Garmin. The following procedure assumes you have these software tools in hand. If you have another brand of GPS, GPSbabel can probably hand it and you probably have software similar to Mapsource available.

The Procedure

This is one way to get the job done. The software tools are very flexible and many equally good ways exist. No doubt, some procedures are better than the one shown here.

1. using Google Earth,
 - a. generate directions between two points and note that the route will show on the map

- b. inspect the route to be sure it is sane; if not, it may help to adjust the end points
 - c. right click on the route text in the left column and select "Save As"
 - d. provide a file name and set file type to ".kml"
2. using GPSbabel (verify steps are probably only needed the first time),
 - a. set input format to Google Earth (Keyhole) Mark up Language
 - b. browse to the file defined in Google Earth
 - c. click input options button and verify nothing is selected
 - d. set output format to "Garmin Mapsource - gdb"
 - e. click output options button and verify nothing is selected
 - f. define a location and file name for output file
 - g. click "Filter" button and verify nothing is selected
 - h. click "let's Go" to start the conversion process
 3. using Mapsource,
 - a. open the file generated by GPSbabel
 - b. note the track name and rename it if desired by double clicking on it
 - c. plug in GPS and power it up
 - d. select "send to device"; If GPS not shown, hit "Find Device"
 - e. send what you want to the GPS (waypoint can be selected but track must be selected)
 - f. disconnect GPS

Variations

GPSbabel is amazingly flexible. You can, for example, take Google Earth routes and convert them to GPS routes. Time spent studying the user's manual will not be wasted. Mapsource is also feature rich. You can edit waypoints and modify routes with it.

A Few Lessons Learned with my GPS when driving

I don't like moving map displays if I'm driving. They are great for the navigator but far too "busy" for a quick glance during rush hour. The GPS compass dial is clean and simple, more like the other indicators in my car's instrument cluster. So my initial goal was to convert routes generated in Google Earth to routes in my GPS. This is not hard to do but I have come to the conclusion that it is more trouble than it is worth. Nice directions are included in waypoints by Google Earth. Sadly, my GPS truncates these

directions to 6 characters making them at best, worthless, and at worst, destructive to the route.

I recently ended up with a route that looked more like the laces on my sneaker than the straight-line path sent to me by Google Earth. The problem was that many waypoints were reduced to the same name even though they had different coordinates. These sort of duplicate waypoints were on my GPS when I downloaded the route. The GPS put all waypoints with the same name in the route. Of course I didn't discover this problem until the traffic became thick and there was no time to puzzle it out.

There are three Options here. One is to edit each waypoint that has a direction sentence and generate a cryptic 6 character word that is unique. For example, I could take "turn left at 22nd Street" and create "L_22A". The "A" at the end identifies the route so I don't mix together other waypoints that have L_22. This works but adds even more steps to the above long process. A simpler approach is to just name the waypoints with a unique route letter and a sequence number. This will prevent the duplicate waypoint names but does not give you any turn information. I find it hard to see the waypoint name so this latter approach is not giving up much.

The second option is to delete all waypoints on the GPS before each route download. This avoids the duplicate waypoint names problem. The down side is that any waypoints that you count on periodically will be lost.

The third option is to forget about routes and just stick with tracks. Use the track display and be done with it. The problem with tracks is the selection of scale factor. If the scale factor is set for maximum resolution, you do not get enough time to react before your exit flies by on the freeway. If the scale factor is set for too large a scale factor, I can't tell if the turn is down this street or the next one. In the end I found that it is best to set the scale factor so it matches what you see in front of you in the center third of the GPS screen. The top third then shows you what is coming up.

At 35 MPH, I use 500 or 800 feet.

At 50 MPH, I use 0.8 miles

At 65 MPH, I use 0.8 or 1.2 miles depending on how many lanes I must change to reach an exit

It is a bit of a pain changing the scale but it is far less trouble than playing with each waypoint in a route.

Maybe someone has written a filter to automatically crunch directions into 6 characters. That would be very useful to me.

I welcome your insights and experiences. All of us are smarter than any one of us.

Rick Sparber

Rgsparber@AOL.com

Web site: rick.sparber.org