

GPS Navigation: Maybe Less is Really More

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I have been thinking about GPS navigation and driving for weeks. The new GPS navigational computers are certainly magical bits of technology with a lot of promise. My problem comes from using one of these marvels while driving. Seems like a smart thing to do, right? Well, maybe not.



Consider the design of the standard instrument cluster in a car. It really is a masterful design of human/machine interfacing. As you throw a quick glance at the cluster, you can easily tell that no red lights are on. No need to bother you if all is well. If you want to know the speed, you have an analog dial with only numbers on it. Often you don't even need to see the numbers, just the position of the needle is enough.

The less important information like gas and coolant temp are smaller analog displays. Not a lot of color here either, just white needles, white numbers, and a black background. Easily visible in direct sunlight. Back lighting is added at night.

A small patch of color at the end of some analog dials makes it clear when some parameter is in a dangerous range. The effect is so natural that when I see a needle creep into that range, I feel it in my gut before recognizing it in my head.

The hallmark of these instrument clusters is simplicity. Decades of experience has demonstrated that this simple yet informative human/machine interface works so well that most people don't give it a second thought.



Now consider a top of the line automobile GPS navigation system, the Garmin® Nuvi® 760. Don't get me wrong, this is one amazing machine. Maybe too amazing.

It is similar to all such GPS in that it is packed with text, numbers, color, moving maps, and control buttons.

My problem with these navigational computers becomes evident when I compare it to the standard instrument cluster shown above. I throw a glance at this GPS screen and all I learn is it is... on. I must pause for many seconds to figure out what it wants me to do.

To the designer's credit, this unit also has an audio output which enables the driver to never look at the display. This is a great feature if you are comfortable with periodic voice commands guiding your route. That is a matter of personal preference so I will not say if it is good or bad for you. For me it is the only way I would use this unit while driving and then only if it had an earphone.



I own a hiking GPS from Garmin called an eTrex H[®]. The gray scale screen is 1.1" wide and 2.1" tall. I can select a screen format that show me a line that represents just my route. With the map scale set correctly¹, it just takes a quick glance to see what to do next.

¹ I prefer to set it to 0.8 miles/unit distance on the highway and 800 feet/unit distance on local streets.



I have built a holder for my eTrex H that suspends it to the right of the instrument cluster. It is on the same viewing plane as my cluster making it easy to see without refocusing my eyes. The uncluttered and small screen of the eTrex H is consistent with the simplicity of my instrument cluster.



The GPS is held in a fixture used for cell phones. It securely holds the GPS plus lets me angle it for best viewing.

This fixture is bolted to a bent piece of bent aluminum strap which is in turn bolted to a flat piece of steel. The steel is inside a length old jean leg. Pockets have been sewn into the fabric to hold the steel plate plus a few handfuls of steel rivets. This gives it weight. A piece of non-slip rubber is attached to the bottom of the fabric bag to prevent movement on sharp turns.

Lets shift gears and consider all of that functionality found in the navigational GPS boxes. Ya gotta love the idea of jumping in your car, punching a few buttons, and letting the GPS guide you to any location in the USA.

Reality, at least *my* reality, is a bit different. Sometimes my electronic map data is wrong. Sometimes the routing algorithm makes odd decisions. The sad truth is that

[any route worth driving in your car is worth “driving” on your computer first.](#)

The Garmin eTrex H is a basic unit with no ability to handle maps or do routing. It can, however, accept routes that are down loaded to it. I create these routes using DeLorme[©] Street Atlas 2009[©] (SA2009) which runs on my tower. It is amazingly powerful and easy to use. The navigational GPS boxes may have the same feature set but they don't have the big screen or a full size keyboard. With my slightly aged 1 GHz PC, it still can route a complex route across the USA in a fraction of a second. When the route is done, just connect the GPS to a cable, push a few buttons, and the route is safely stored in my GPS. The eTrex H can hold 20 routes but I rarely need more than 3.

What happens when I'm away from home and need to create a new route? Here is where things are not so easy but in all fairness, this rarely happens.

If I need a new route, I have two choices. I can use my Palm Zire 72 PDA with Street Atlas 2009 Hand Held (SA2009HH). It can do routing but I must pull over and let it crank for a few minutes. Furthermore, the PDA's screen is almost completely washed out in sunlight making its use suitable only for the navigator. The screen is also more cluttered than the standard navigational GPS boxes. Not great, but it will get me to my destination. It does give me the ability to review the route and force changes.

A second alternative is that I have SA2009 on my laptop². I can directly navigate with it or download new routes to my GPS. This too requires pulling off of the road and spending time fooling with the hardware and software.

If the laptop was running, I would use the audio output feature and not look at the screen while driving. Why not always just use this configuration? My eTrex H is ready to navigate in less than 10 seconds most of the time. I need at least 10 minutes to get the laptop ready to roll. It is also far easier to travel on a plane without the laptop given its size and weight. Then there is the problem of where to store it to minimize the risk of theft. This is why I tend to lean towards using the PDA as my primary back up system.

In all cases, I carry paper maps as my secondary back up system. This is true both when driving and when hiking in unfamiliar places. It is rare, but I have had times when I would have been lost had it not been for a lowly paper map. How embarrassing for a techno-weeny like myself!

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² The user agreement with DeLorme permits this arrangement as long as only one copy is running at a time.