## Chapter 13.5: – Electronic Navigation<sup>1</sup>

With the advent of GPS, navigation has entered the electronic age. For most people it has moved from the map and compass phase to GPS navigation systems and Google Maps ®. That is if they were ever in the map and compass phase in the first place. The center piece of electronic navigation is GPS and the navigational systems that rely upon it.

GPS Navigation – GPS stands for global positioning satellites (Figure 13.37). The primary function of

GPS is to determine the location of objects on the ground. Coupled with navigation programs it has become a sophisticated and articulate navigation system. Many people rely on it for the automotive navigation. In this respect, it is extremely valuable. However, there are stories of people being misdirected by GPS. One is provide in the next section on Google Maps.

Regarding emergency situations, GPS may not always be available. If there is a major war, the next major battlefield is said to be on outer space where the objective is to knock satellites out of service. Major solar flares from the sun could affect satellites and GPS services. In contrast, GPS will most likely be unaffected by natural disasters on the ground such as hurricanes, floods, and tornadoes.



Figure 13.37: GPS Satellite

People blindly plug the destination into their navigation system and off they go to their destination. When the computer tells them to turn left, they do so. When it tells them to turn right, they do so. In doing so, they abandon all other types of navigation including natural signs. In the hustle and bustle of today's fast paced society, it is convenient. However, in time of emergency you may not have it rely upon. You may need to familiarize yourself with more traditional forms of navigation.

<u>**Google Maps**</u> — Google Maps and similar internet services provide mapping opportunities that were unavailable several years ago. This author uses Google Maps to identify unique recreation and park features in a location and then print out a series of maps that enable finding the location easily when arriving in the new city.

In determining your "bug-out" route, a series of Google Map print outs can outline your route using primary and secondary roads. The maps allow you to home in on critical junctions and avoid errors. This author participates in a yearly event near Belvidere, New Jersey (Figure 13.38). It has an interesting twist in that the GPS will take you 20 minutes off course to the destination. In plotting the course from Martin's Creek, Pennsylvania to Belvidere, New Jersey, Route 611 takes a sharp left turn. For the past three years, this author has made the correct turn onto the Belvidere-Martins Creek Highway. Actually, it

<sup>&</sup>lt;sup>1</sup> This section was written by Robert B. Kauffman who is solely responsible for its content. This section is copyrighted © Robert B. Kauffman, 2016.

is really going straight onto the road. Traveling separately and relying on his GPS for navigation, a friend missed the turn for two successive years. He turned left and missed the correct route. His GPS took him twenty-minutes out of his way to the final destination. This year with map in hand and considerable prepping, he made the correct turn onto the Belvidere-Martins Creek Highway.

It is this type of mapping that can greatly aid you in reaching a "bug-out"



**Figure 13.38: Martin's Creek** – Rt 611 takes a sharp left turn. The Belvidere Martins Creek Highway, the desired route, goes straight. The GPS keeps you on Rt 611 and 20 minutes out of your way. – file: \MAP-MartinsCreekIntersection[20].jpg

destination in time of crisis, even if you are familiar with the route. It can show you alternative routes in case your usual route becomes blocked. Also, it never hurts in case someone unfamiliar with the route is along in the vehicle.

One last suggestion. Print out your maps prior to the emergency. If there is a power outage, you may not have the opportunity to print your maps.

**<u>Rand McNally</u>** — Rand McNally maps were the old standby. The old version of the maps have been mostly replaced by electronic mapping. Regardless, these maps still serve a useful purpose in navigation, particularly if you need to seek alternative routes. For the most part, this author has replaced his Rand McNally with a series of Google Maps. Regardless, it is still a staple that fills a niche.

<u>Map Quest</u>  $(\mathbb{R})$  – For many, Map Quest and it similar variations have provided specific directions to a destination. This author doesn't particularly care for Map Quest. It is too anal retentive in how it provides its directions. The main problem that this author has with the map quest approach is that if for any reason you get off course, you are lost and the directions are virtually useless until you get back on track. In summary, the directions assume that you are remaining on course.

<u>Summary</u> – GPS and the navigation systems associated with it have significantly changed navigation for most people. Regardless, in times of surviving an unexpected emergency, these tools may not be available to you. For this reason, an understanding of more primitive versions of navigation such as maps and compass may be needed.