

# Social Impact of the Global Positioning System (GPS)

A Paper Submitted to

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By

Writing 2E (11:00-12:50)

February 15, 2005

## **GPS – A Navigational Improvement**

Up to now, navigation has been considered a skill. It took work and knowledge to use a map and compass. In fact, during America's colonial period, only gentlemen were allowed to learn such techniques. For example, if an ordinary British redcoat was spotted attempting to learn to navigate, he would be hung. Only the officers who were considered gentlemen were allowed to conduct such education [Norman, 1998]. However, as we enter the twentieth century, a new technology emerges to cover the distance between a knowledgeable navigator and an ordinary person. This technology is Global Positioning System (GPS).

With a click on a screen, an ordinary person can find his or her way via a complex system involving satellite technology. Essentially, the GPS satellites transmit a signal to receivers on Earth; the GPS receivers then compare the time the signal was transmitted to the time it was received [Leick, 2004]. The results proved extremely precise. However, the new technology not only improves society but hinders it as well. GPS technology improved navigational accuracy significantly in the military, in the economy, and in our ordinary lives; however, it may cause problems for people who don't have the required knowledge to navigate and it offers an easier way for criminals to accomplish illegal tasks.

### **Military Success**

Like the internet, GPS was a military creation with huge civilian potential. So it is no surprise that the first proof that GPS worked was during a military campaign. The 1991 Gulf War was a very quick war, thanks to advance technology such as GPS [Norman, 1998]. The desert terrain where American troops operated was almost impossible to navigate due to lack of landmarks. However, with GPS technology, American forces were able to navigate successfully and hit targets precisely. Friendly fire was cut down significantly as well. In fact, captured Iraqi forces stated during interrogation that they did not guard their rear because they thought that the desert was impossible to navigate [Norman, 1998]. The pin-point accuracy and the successful navigation through an otherwise anti-navigational terrain illustrated the power of the arising GPS technology.

### **Business Boast**

Even the economy is affected by GPS technology: "...companies are turning to the satellite technology [GPS] to collect accurate and useful geographic information critical to improving their market edge." [Girard, 1998]. An example of this can be drawn from the airport businesses. With GPS technology, an airline company can find the shortest possible rout to a destination. In other words, less fuel is used, more flights are conducted, and finally with short flights more satisfied costumers. Thus, GPS technology increased profit overall.

But GPS goes beyond the airport. For example, Kentucky Fried Chicken uses GPS to analyze their competition and decide where to build new restaurants; the Pacific Gas &

Electric Company uses GPS to map down gas lines; and Boston's ambulances uses GPS mapping to cut their response time to 911 calls in half [Girard, 1998]. Once again, the satellite technology creates a more efficient and profitable business, while at the same time creating satisfied customers.

### **GPS can find you!**

The ability to find a location goes extremely far, especially if you're lost. In 1995, Scott O'Grady's F16 was shot down over Bosnia-Herzegovina [Norman, 1998]. Luckily, he was carrying a GPS unit and was able to transmit his precise location to rescuers. Before GPS, he would have to resort to visible signals like smoke, which would give off his position to both his rescuers and enemy. But with GPS technology, he could give his rescuers his exact, secure information. In the case of this American pilot, GPS technology perhaps saved his life.

Another feature of GPS includes backtracking. For example, you can save the location of your car while you wander through the woods. Once you're done, you can find the location of you and your car through the GPS unit. This GPS feature is extremely valuable because it can direct rescuers to the scene of a disaster. An example of this occurred when a fisherman who happened to carry a GPS unit signaled rescuers to the ValuJet airliner crash site [Norman, 1998].

### **Or can it?**

However, the GPS unit does have its disadvantages. For example, GPS gives location in terms of longitude, latitude, and altitude. This information is great for a man who has a map but, for a man without a map, they're just numbers. A specific example occurred to a hiker in the White Mountains of New Hampshire. He eventually became lost even though he had a GPS unit. The problem was that he could not recognize the terrain even though his GPS unit was giving correct directions [Norman, 1998].

GPS is also not a compass. The unit can find north but you would have to walk around to find it. A compass is needed for direction, while a map is needed to know the surroundings. "If you already know how to use a map and a compass in the woods, then with a GPS in your inventory, you will be unstoppable" [Norman, 1998].

### **Bad Guys Exploit Hi-Tech**

Of course, there's always technology that falls into the wrong hands. GPS is no exception. Drug dealers, for instance, use GPS units to transfer their inventory. They drop the drugs on a specific location; they record the location on the GPS unit; and they tell their mule, who has his own GPS unit, where to pickup the drugs [Norman, 1998].

But the abuse of the GPS unit goes beyond sneaking around illegal substances. Stalking, for instance, is incredibly easier. A stalker would just connect a GPS unit to a hidden spot in the victim's car. A stalker would then know the victim's location all the time. This

makes stalking incredibly easier because now the stalker does not even have to leave the house to stalk the victim.

### **Technology Changes Everything**

Essentially, GPS technology changed society both positively and negatively. GPS made navigation extremely easier. However, navigation remains an art because the proper use of a map and compass remains essential even with a GPS unit. On the positive side, GPS bolstered economic growth. On the negative side, illegal and criminal activities entered the high-tech age. Therefore, “a new technology does not add or subtract something. It changes everything” [Postman, 1992].

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