

Getting There from Here with TravTek

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**An
excursion
in Orlando
with the
aid of an
automobile
on-board
computer.**


ILLUSTRATION BY
RICK EWING

As we venture farther and farther away from home, we require more sophisticated equipment than that which nature has built into our systems. We don't possess a "sense" of latitude or longitude. We don't directly perceive the earth's magnetic field, or the clockwork patterns of the planets. And so we build sense-extenders, the better to perceive our environment, the easier to get around: telescopes, compasses, space shuttles, gyroscopes, canoes, radar, bicycles, wings – maps and clocks. Each has allowed us to find our way into undiscovered territory; each has enhanced our potential for getting lost.

K. C. Cole, *Finding Your Way*
(San Francisco: Exploratorium, 1992)

THE FOLLOWING IS A BRIEF ACCOUNT of our experiences while participating in General Motors' TravTek Demonstration Project. TravTek is an advanced navigation system for automobiles. This system consists of a color CRT unit used to display various maps for general navigation and locating specific attractions and services, as well as voice guidance. The system we used was housed in a rental car, presenting an ideal situation for the evaluation because drivers of rented cars are often unfamiliar with both the geographical area (hence the desire for a guidance system) and the particular display/control interface of the rented vehicle (an argument against added complexity).

DATeline: ORLANDO, FLORIDA

In the beginning our task seemed quite clear and simple: pick up the *Sun* (the UK's finest newspaper) at a nearby newsstand, avoid paying any tolls, and return to our hotel within 20 minutes. In the end, not only did we get lost, but we had to pay four tolls to boot! Eventually we did, however, manage to pick up the paper.

Everything started off OK. We were heading east on a frontage road parallel to the expressway to avoid paying tolls – an attractive menu option worth noting. Suddenly we were warned by a not-so-intelligible computer-generated voice, "You may be off your planned route." (*May be off our planned route? This is a Global Positioning System – are we off or aren't we?*) Within seconds, all eyes (including those of Peter, who was driving) were focused on the moving map display. Meantime, Peter veered toward the right shoulder of the roadway. This happened every time he focused on the TravTek display, which was located to his right.

Our next vocal alarm instructed us to press the "OK new route" button to put us back on a correct course. The problem was that we couldn't find the "OK new route" button. It wasn't one of the dedicated switches adjacent to the display unit, nor was it presented as a touch key on the screen, our usual form of input. We carried on.

No sooner had we decided to keep to our present course than we were again

reminded that we “may” be off our planned course. (*How can this be?*) All of us were familiar with the area – and, in fact, with the precise location of our destination. But who would you listen to: us, or a high-tech computer navigation system?

🚗 NO FREE RIDES

Assuming that we were traveling in the wrong direction, we turned around and headed the opposite way. To make up for lost time, we decided to forego our original plan of a free ride and got onto the tollway.

Five miles and \$2 later, we were alerted by our electronic friend and the unfamiliarity of our surroundings. “OK new route?” the TravTek system asked. “Leaving Orlando County” the sign read. “Enough of this,” Peter said, as he proceeded to pull over and park the car (not on the shoulder of the road, mind you, but in the middle of the right lane). This was the only way we knew at that time to reprogram the computer. This time we selected “fastest route” from the display menu.

With our destination programmed again, the TravTek system, oddly enough, instructed us to maintain our current course. We forged ahead. But something strange was happening: the display was indicating that we were on course but getting increasingly distant from our destination. (*Hello? Anybody in there?*) We carried on.

Some miles and another \$2 later, we were instructed to exit the tollway, turn around, and get back on going the other way. At this point we were 24.9 miles from our destination (*!#%!?&*!). Finally, according to the display, we were getting increasingly closer to our destination. (*Orlando or the newsstand? We forget.*)

Some 20 minutes and another \$2 later, we were within one block of our destination. Actually, we were somehow “within 0.0 miles” according to TravTek, only seconds later to be “within the vicinity” of our destination as we pulled up to the newsstand. (*Say what?*) Needless to say, we found our way back to the hotel without the services of our electronic friend.

Coincidentally, our unplanned tour of Orlando and beyond kept us from participating in the morning session of the “Situation Awareness in Complex Systems” conference we were attending at the time. But what better way to learn about that very topic!

👁️ SOME POSTSCRIPTS

The “OK new route” button was actually located on the steering wheel. We didn’t notice the steering wheel controls for two reasons: (1) we failed to read the instructions (an important issue that designers of these systems must address), and (2) the labels for these controls were not very visible during the day; in fact, we assumed that they were for the climate control system or the radio, as on most other cars.

The reason for our getting lost had to do with the accuracy of the Global Positioning System (GPS). Though initially we were traveling on the frontage road, the GPS system assumed we were on the adjacent Beeline Tollway – hence the “you may be off your planned route” warning. We knew we had turned on to the instructed road but assumed we were going in the wrong direction (the GPS had never been inaccurate in our earlier travels). As a result, we turned and headed in the opposite direction of our destination.

👁️ FOR THE RECORD

Our overall opinion of the TravTek system is that it is a marvelous and well-designed technological achievement, although we’re not convinced that such systems in general are necessary – or safe – for use on the road.

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