

VEHICLES TECHNOLOGY

By Jonathan Kozlowski



Slowing the pursuit

Far too often high-speed police chases end in a fiery crash, serious property damage or needless injuries to innocent bystanders, officers and suspects.

Pursuits are often begun by non-violent misdemeanor offenses such as persons: with expired drivers' licenses; who had too much to drink and afraid of a DUI charge; carrying contraband; driving a stolen vehicle; or driving an improperly licensed vehicle.

According to a report for the National Institute of Justice (NIJ), "Police Pursuit: Policies and Training," by Dr. Geoffrey Alpert, expert on high-speed pursuits at the University of South Carolina, in 40 percent of high-speed pursuits reported, the primary vehicle resulted in an accident.

"As the number of vehicles involved in police pursuits increases, the likelihood of apprehension and the chance of accidents,

injuries and property damage increases," says Alpert.

The system has the potential to impact pursuits, risk management, liability issues and safety concerns for the community at large.

— Sgt. Dan Gomez,
Los Angeles Police Department

The StarChase Pursuit Management System, from StarChase LLC of Virginia Beach, Virginia, enables suspect tagging and tracking for a more safe and controlled interdiction strategy.

Conceptually, a low-speed pursuit.

System start

The StarChase system concept consists of a projectile attached to the suspect vehicle acting as a tracking device for law enforcement to ultimately back-off the accelerator and safely control the situation without the dangerous factors hand-in-hand with high-speed pursuits.

"StarChase is a tagging and tracking technology," says Sean Sawyer, company president. "Our system is designed to forestall dangerous high-speed pursuits of fleeing vehicles under the principle of if an officer tags it and tracks it, that officer doesn't have to chase it."

But the StarChase concept doesn't end with high-speed pursuit management. It also can be used for automatic vehicle location (AVL), anti-theft protection and real-time tracking of assets and targets.

"StarChase's core technology is the firing and tagging of a tracking device to a suspect vehicle through a launching device installed in the police vehicle's grill," says Sawyer.

The tag contains a miniaturized global positioning system (GPS) module, global system for mobile communications (GSM) transmitter and built-in lithium battery power supply. It adheres to the suspect vehicle by a very aggressive adhesive that dries almost immediately.

The tag is targeted by a laser intended to be sighted or lined-up by a joystick-like control within the police vehicle.

The laser-guided tag launches from a safe, less-lethal, compressed air-activated launcher mounted on the police vehicle. Tags are front-loaded into the dual-barreled launcher for the extra shot at the suspect vehicle when needed.

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Installation includes a heavy-duty construction with a small installation footprint designed for over-the-road conditions and fits most law enforcement vehicles.

Inner workings

The system is similar to an AVL system, however designed for a hostile scenario instead of the friendly confines of a department's garage or lot.

Suspect tracking technology uses assisted global positioning system (AGPS) techniques utilizing GSM communication frequencies to transmit a suspect's coordinates.

AGPS is capable of using cellular towers to augment GPS signals. Therefore, tracking continues through typical "dead zones" between steep urban canyons, amid tall buildings or under leafy canopies that might disrupt the typical GPS signal.

The tag computes its position from GPS satellites which, from the radio transmitter within the tag, transmits that position's coordinates to a StarChase Control central computer server. The server then displays the tracked suspect's positions in a typical view like any other GPS readout.

The current version of StarChase has tagged information accessed by the department dispatcher through a secure Internet portal into the StarChase Control central computer server.

"Security is built into the connection portal and limited only to authorized access," says Sawyer.

StarChase utilizes an extensive 100-percent Internet Protocol (IP) portal for end-to-end law enforcement communication administrator control. The digital roadmap computer displays real-time suspect/asset location. Security protocols are built into the vehicle transmissions to the server and the IP connection from the server to the dispatcher.

Affecting the future

As the StarChase system has the potential to be a vital tool for law enforcement, beta testing is in development. The Florida State Highway Patrol and Los Angeles (California) Police Department (LAPD) are performing field tests beginning early 2007.

"We would like to pair it to some of our license plate recognition technology," says Sgt. Dan Gomez, officer in charge of the LAPD Tactical Technology Unit. "That technology seems to have the highest likelihood of find-

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The laser-guided launcher (above) discharges a tagging projectile (left). The tag adheres to the suspect vehicle and transmits its GPS coordinates to a computer server.

ing a stolen vehicle, so combining the two technologies seems to be a good fit.”

A common strategy is to have a helicopter communicate suspect ground movements from the air.

“High-speed pursuits in which a helicopter was involved to track the suspect ended successfully in the suspect’s apprehension in, on average, 95 to 98 percent of the cases involved,” says Alpert.

However, a helicopter can only track; a potentially dangerous pursuit may still be required.

One more in the tool box

“When this technology was introduced to the department, Chief Bratton recognized it for its potential to give yet another tool to the officers in the field,” says Gomez.

“The end result would be that law enforcement would be able to deploy the device and hopefully slow down in pursuit and be able to track the suspect.”

The system has the potential to impact pursuits, risk management,

liability issues and safety concerns for the community, adds Gomez.

StarChase LLC is a company specializing in tagging and tracking pursuit management solutions for the law enforcement sector.

The privately held company has been in operation since 2001. The StarChase products are patent protected in several countries, including the United States

“We see the high-speed pursuit as a national issue,” says Sawyer, “not only in large urban areas but in all cities around the country.

“It’s a solution so scalable that it fits any police department from the county sheriff to a big city department, from a highway patrol to federal agencies like border patrol, customs and homeland security. We see StarChase as part of an entire range of law enforcement tools.” ■

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