OFFICER SAFETY ON THE HIGHWAY: TECH AND TRAINING SOLUTIONS

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Reducing Risk While Improving Officer and Community Safety.

Powered by innovative and proven leaders in Training, Management and Technology, Pursuit Response is dedicated to improving law enforcement and increasing community safety for high-risk vehicle events.

This advisory group delivers the latest research, advocacy, education, training, and technology resources to law enforcement and the communities they serve.

To learn more on how Pursuit Response is using the latest education resources and technology to improve officer and community safety, visit PursuitResponse.org.
EDITOR’S NOTE:

Getting into a squad car may be the most dangerous thing a cop does during a shift. With multiple distractions from MDTs and cell phones, police officers (especially those in one-man cars) face increased risks of being involved in a motor vehicle collision.

In 2017, traffic-related fatalities were the leading cause of law enforcement deaths. Of the 47 traffic-related incidents, 33 were automobile crashes involving a collision with another vehicle or fixed object, nine officers were struck while on the side of the road, and five officers were killed in motorcycle crashes. Of the 33 automobile crashes, 14 were single-vehicle crashes.

When you couple that with the fact that cops are sharing the roads with a civilian population increasingly distracted while driving, you have a recipe for disaster. Each day in the United States, approximately nine people are killed and more than 1,000 injured in crashes that are reported to involve a distracted driver.

While smartphone technology is contributing to distracted driving, technology is also being used to improve police officer safety. When that tech is combined with proactive, progressive training, we can start to make real inroads into reducing the number of officers injured on our roadways.

In this digital edition we explore how telematics can improve driver performance and help reduce the possibility of vehicle collisions; we consider the need for strategic assessment of the impact of autonomous vehicles on law enforcement; we review how agencies can maintain adequate levels of training for the one activity cops do more than any other while on duty – driving; and we share lessons learned about cops’ close calls on the roads from LEO Near Miss, a non-punitive, anonymous reporting system.

Nancy Perry
Editor-in-Chief, PoliceOne

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Reducing Risk While Improving Officer and Community Safety.
HOW TELEMATICS CAN SAVE POLICE LIVES ON THE ROAD

- TRACKING
- DISTANCE: 11.6 km
- TAKE TIME: 26 min
- SPEED: 43 km/h
- AVERAGE SPEED: 38 km/h
- HEIGHT DIFFERENCE: 19 m
Technology can be used to improve driver performance and safety, help reduce the possibility of vehicle collisions, and improve wear and tear on your agency’s fleet

By James Careless

Car crashes were the second leading cause of U.S. police fatalities between 2008 and 2017, second only to gun-related deaths. Of the 1,511 law enforcement deaths over that 10-year period, 364 officers were killed on the road, according to the National Law Enforcement Officers Memorial Fund (NLEOMF).

At least some of these deaths were related to driving at high speed, with risks potentially exacerbated by police cars suffering from mechanical and maintenance issues. Other deaths were due to officers not wearing seat belts.

In a report released in 2016, NLEOMF noted that of the 167 fatal automobile crashes between 2011 and 2015, officers were not wearing seat belts in at least 38 percent of crashes.

SAVING POLICE LIVES WITH TELEMATICS

There is a way for police departments to make officers safer on the road, and it is called “telematics.”

Telematics is a vehicle-based car monitoring system that keeps a constant eye on the car’s performance and driver decisions using a set of onboard sensors located on and in the vehicle.

Items that can be monitored by telematics include:

- A police car’s speed/acceleration, direction, and location (using GPS);
- Anti-lock brake usage;
- Engine RPMs and trouble codes;
- Seat belt use and airbag deployments;
- Operating status of the vehicle’s gun lock, light bar and siren.

Periodically, this data is transmitted by the vehicle’s cellular telephone link to an external server or cloud storage system such as the kind used by OnStar to monitor passenger vehicles and trucks, and by FedEx and UPS to monitor their fleets.

The data is then correlated with each of the vehicle’s users and analysed to create individual driver profiles. The results provide police commanders with precise, accurate histories/assessments of their officers’ driving habits and risk-taking behaviors – and proof as to whether they are wearing their seat belts.

Of course, not every officer likes the idea of their driving habits and seat belt usage being tracked, recorded and compiled. But those who aren’t doing anything wrong have nothing to fear.

The upside: Telematics can also be used to provide data proving the innocence of responsible drivers beyond a shadow of a doubt. This matters during routine driving duties and high-speed pursuits where officers may have to justify their driving decisions after the fact.

HOW ‘BEING WATCHED’ MAKES OFFICERS SAFER

Most officers will tell you, knowing they’re being watched is often enough deterrence to make potential perpetrators behave themselves.

The same is true for drivers of telematics-equipped vehicles. Even the most rebellious of drivers are more likely to drive safely and wear their seat belt knowing their bosses are monitoring.
There is no doubt that police commanders need to know the driving habits of their officers, given how much can go tragically wrong when a person drives faster than their ability to control their vehicle. One wrong move can affect the driver, passengers and anyone in the vicinity.

When poor driving goes unchecked, it can lead to horrific fatalities that scar the department and the community. Police-caused auto fatalities can ruin lives, generate costly lawsuits and damage the department’s vitally-important public reputation.

Telematics can provide commanders with the tools to address such problems proactively, specifically by motivating their officers to drive more safely on the road.

And make no mistake: The technology works.

In addition to potentially improving safety, telematics can reduce operating costs, vehicle emissions, and identify fraud and waste, according to a 2015 analysis prepared for the City and County of San Francisco Board of Supervisors.

“Such results were realized in Yolo County in 2012, when the Yolo County Sheriff’s Department used speed data collected from their vehicle telematics system to coach deputies’ driving practices, specifically targeting unjustified high-speed driving above 90 miles per hour.

“Once the system was implemented they reported that over half of the deputies dropped their incidents of unjustified high-speed driving to zero, and the rest had two or fewer incidents.”
OTHER BENEFITS OF TELEMATICS

Assuming telematics exist for commanders to play “Big Brother” misses the point of this technology, and the many benefits it can provide to officers in their cars.

For instance, the same sensor technology that monitors how each car is being driven, also keeps a close eye on vehicle maintenance and operating faults. If this data is automatically relayed to the department’s automotive service division and used to schedule maintenance, it would mean better-maintained, more reliable and more responsive police cars on the road. Better-maintained cars are safer for officers to drive, and less prone to get into crashes.

The data gathered by telematics can also help teach officers more fuel-efficient driving strategies, which would mean lower fuel costs. Less money spent on maintaining a fleet of cars could mean more funds available to the department for other things – including measures to enhance officer health and safety on the job.

When used in real-time mode, telematics can help police departments monitor their cars on an ongoing basis, and spot officers who may need assistance. If an airbag deploys in a car, dispatch can be alerted immediately and send life-saving help without delay.

A SMART INVESTMENT

The bottom line: Telematics saves police lives. This technology truly can keep officers safer in their cars and keep the public around them safer as well.

James Careless is a freelance writer with extensive experience covering computer technologies.
WILL AUTONOMOUS VEHICLES IMPROVE HIGHWAY SAFETY?

By Joseph J. Kolb, MA

It may be years before there is large-scale proliferation of autonomous vehicles on America’s roads, but the reality is this emerging technology will have an impact on highway safety. But how will these vehicles affect safety, driver responsibility, and law enforcement tactics and strategies?

What is an automated vehicle?

The National Highway Traffic Safety Administration (NHTSA) identifies five levels of what constitutes an autonomous vehicle, which forms the basis for delineating potential accountability between the driver and system manufacturer:

1. **Level 1: Driver Assistance** - The vehicle is controlled by the driver but includes some driver assist features in vehicle design

Autonomous vehicles show promise in decreasing motor vehicle collisions, but the need for strategic assessment of their impact on law enforcement is great.
• **Level 2: Partial Automation** – The vehicle has a combination of automated functions – like acceleration and steering – but the driver must be engaged in monitoring the driving environment.

• **Level 3: Conditional Automation** – The driver is necessary, but not required to monitor the driving environment. The driver should be prepared to take control always, with notice.

• **Level 4: High Automation** - The vehicle can perform all driving functions under certain conditions. The driver may have the option of controlling the vehicle.

• **Level 5: Full Automation** – The vehicle operates independently, performing all driving functions under all conditions. The driver may have an option to control the vehicle.

A 2016 Rand Corporation Report – “Autonomous Vehicle Technology: A Guide for Policymakers” – estimates automated vehicles will have a significantly positive impact on collision rates, traffic congestion, fuel consumption, emissions and even parking space congestion. This latter point conjures images from the 1960s TV cartoon “The Jetsons” where the vehicle can drop a worker at their office then self-drive to a parking facility.

One of the main benefits of automated vehicles is they can help combat driver distraction. Automated technology has been gradually integrated in most vehicles over the past two years to include:

- Forward collision warning and braking;
- Rear cameras for vehicle reversing;
- Lane departure warning systems.

The Insurance Institute for Highway Safety estimates the above technology can decrease accident rates by one-third, which could even reduce insurance rates.

Lawmakers are weighing dealer and driver regulations, vehicle road specifications, tort guidelines and costs. There has been little discussion about the public safety implications of this technology.

With this technology still in its infancy, it is an opportune time for law enforcement to analyze risk factors and make specific recommendations that address the following three areas:

### The dangers of driver complacency

Arguably one of the most fundamental downsides to this technology is how driver complacency overshadows driver distraction. Rather than texting and peeking at traffic, vehicle operators will now be totally immersed in most previously citable driver distraction activities and disengaged entirely from the driving process. What happens if there is a system failure and the driver is called upon to quickly respond to traffic conditions?

In these instances, if the vehicle crashes, lawmakers are going to have to weigh the culpability of software/technology failure over the fundamental responsibility of a vehicle owner. Is the manufacturer or the vehicle owner culpable? NHTSA currently avoids addressing this concern, which will ultimately impact insurance rates either for the owner of the vehicle or the manufacturer. If it does affect the latter, these costs will undoubtedly be passed along to the vehicle owner.

“These are among many important questions beyond the technical considerations that policymakers are working to address before automated vehicles are made available,” states NHTSA on its website. “We are still many years from fully automated vehicles becoming available to the public.”

This raises the point of licensing what will now be called vehicle operators, especially in Level 3 and 4. What safety mechanisms are in place for an operator to override the system and manually take control of the vehicle? What is their proximity to controls? The reality is, technology has its benefits but regardless of manufacturer promises and claims, will always be prone to failure.

Tragically, such a failure occurred on March 18, 2018, when a self-driving car operated by Uber struck and killed a pedestrian who was walking her bicycle in Tempe, Arizona. The car was in autonomous mode, but had a human riding along to take control of the vehicle if necessary, according to the Tempe...
Police Department. A week later Arizona Gov. Doug Ducey suspended Uber’s ability to test self-driving vehicles in the state. In a letter sent to Uber CEO Dara Khosrowshahi, Ducey called the incident an “unquestionable failure” to meet public safety expectations. The NTSB is investigating the incident.

3 The potential for cyberattack

Similar to the threat of national or corporate computer hacking or a cyberattack on financial institutions and the national power grid, self-driving cars can be hacked. The question then becomes: Which mechanisms are in place to protect vehicle directional systems? Think of the chaos that could be caused with a cyberattack on vehicle directional systems. A vehicle thief would no longer need to break into a car and hotwire it as they can simply hack into the vehicle’s computer system and drive the car without even touching it. So while other traffic indicators may decrease, there could be disturbing spikes in vehicular thefts.

According to NHSTA, a multi-layered approach to cybersecurity is being promoted by focusing on a vehicle’s entry points – both wireless and wired – which could be potentially vulnerable to a cyberattack. NHTSA claims a layered cybersecurity system will reduce the possibility of a successful vehicle cyberattack, and mitigates the potential consequences of a successful intrusion. This approach to vehicular cybersecurity is predicated on:

• A risk-based prioritized identification and protection process for safety-critical vehicle control systems
• Timely detection and rapid response to potential vehicle cybersecurity incidents on America’s roads;
• Architectures, methods and measures that design in-cyber resiliency and facilitate rapid recovery from incidents when they occur;
• Methods for effective intelligence and information sharing across the industry to facilitate quick adoption of industry-wide lessons learned. NHTSA encouraged the formation of Auto-ISAC, an industry environment emphasizing
cybersecurity awareness and collaboration across the automotive industry.

**4. DUIs and drug smuggling**

The Rand report specifically identifies automatic vehicle technology as contributing to lower DUI rates since the driver is not behind the wheel operating the motor vehicle. But what if a “driver” is impaired? How will they program their destination unless it is pre-programmed before they partake in drug or alcohol use?

As farfetched as it may seem, this technology could be conducive to narcotics smuggling, especially in a Level 5 vehicle where there is no driver. Law enforcement will need to revise its strategies and technologies to allow for traffic stops of automated vehicles if there is a suspicion of narcotics trafficking, as well as tracking of who actually would be responsible for the crime. Will law enforcement be able to override an AV system to pull the vehicle over? Since there is no driver to question, this could be an arduous process.

While automatic vehicle technology purports to promise a reduction in MVAs and highway congestion, there is still much that needs to be considered strategically and technologically for law enforcement to effectively adapt to this unique challenge.

Joseph J. Kolb, MA, is the executive director for the Southwest Gang Information Center, master instructor for the New Mexico Law Enforcement Academy and instructor in the Criminal Justice program at Western New Mexico University.
By Tim Dees

Driver training has always represented a paradox in law enforcement. Cops arguably spend more time driving than any other single task, but the topic gets a small fraction of the total time in basic academy training, and seldom comes around for in-service training. With the exception of state police and highway patrol academies – where the driver training tends to be excellent – most recruits don’t get enough training in emergency vehicle operations.

The need for this training is evident. Of the 134 line of duty law enforcement deaths in 2017, 35 percent were vehicle related – even more than gun-related deaths. This statistic hasn’t changed much from year to year. The unfortunate facts are that the roads are a dangerous place, and many cops aren’t the expert drivers they would like to think they are.

**Driver training is hard on the cars**

Getting police administrators to authorize or put on more driver training can be a hard sell. The usual approach is to set up a day course on an unused aircraft runway, big parking lot, or housing development under construction. The cops may or may not get a classroom session, followed by a day of racing around cone patterns and quick reaction/lane change courses.

When the cars come back from the course, they need new tires, brakes, maybe an alignment, and occasionally new transmissions. This gets expensive quick, and taxes a fleet that might already be aging and short of working cars.

There are other approaches to driver training that don’t cost as much, and may be more effective. They usually combine classroom, online and behind-the-wheel time into a blended format.

**Use multiple media and formats**

The classroom portion is the one most often neglected, and it’s the simplest to present.
Most of us learned to drive instinctively, and have never been taught the physics associated with motor vehicle operations.

Understanding concepts like threshold braking, understeer, oversteer and turn apexes often comes from watching NASCAR and lacks depth and context. A knowledgeable instructor with some suitable training aids can make your officers a more informed corps of drivers.

The ready availability of dash cam videos offers opportunity for real-world examples. Having the instructor break down some portrayals of mishaps and successes reinforces the lecture portion and provides a foundation for discussion and later consideration when the officer is on the road.

Emergency vehicle operation is also a good topic for roll call training. Broken up into brief segments of five minutes or so, the trainer defines and gives examples of key concepts, or shows a video of a pursuit or accident and invites discussion as to what went wrong. Given that the officers will be going directly to their cars when the training concludes, they can put the new information to immediate use.

**Think about sharing a simulator**

Driving simulators are far more advanced and realistic than was the case even 10 years ago. The video game industry has advanced simulation technology far more than might have been possible if this was only an industrial application.

Some simulators are configurable to show streets and landmarks in the area where the student works. The instructor can set up virtually any situation in advance or on the fly, and, of course, the student can run the scenario as many times as desired, and never so much as dent a fender.

The limitation, as usual, is money. The best simulators have price tags that run well into six figures, and efforts to make them portable have not gone well. The components are usually sensitive enough that they get damaged if installed in the back of a truck, or if they are torn down and re-assembled repeatedly at remote locations. It’s usually best to find a fixed location to install driving simulators, and then to bring the students to the facility.

If your agency has a regional academy within a reasonable distance, that might be the most logical place for a simulator installation. Academy students can use it, and time can be set aside for local agencies to train their own officers. Fire and EMS agencies might also be interested in participating, especially if the vendor has simulations tailored for those roles.

The cost of these setups makes them a good choice for a cooperative purchase and maintenance agreement with the academy sponsor and other local agencies.

**Practical training doesn’t have to be high speed**

Finally, behind-the-wheel training doesn’t have to be all run-and-gun stuff that wears down the cars.

A precision driving course, laid out with traffic cones, might not see speeds exceeding 45 mph or so. Many patrol car crashes are low-speed incidents, sometimes with the cars moving backwards, because the drivers have not had extensive training in safe backing techniques.

If nothing else, officers need to be cognizant of their own skill levels, the performance their vehicles are capable of, and environmental factors like weather and traffic conditions. If you can get them to consider these things instead of just flooring the accelerator and moving as fast as they can en route to a call, they’re far more likely to arrive safely, and to arrive at all. 

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“Near misses” often closely resemble situations where officers are seriously injured or killed, so it is equally critical to share these incidents and learn from them.

By Police Foundation

“As I proceeded to make the U-turn, my vehicle was now perpendicular to the eastbound traffic, and a Ford F-350 work truck loaded with construction supplies attempted to pass my vehicle in the oncoming lane. The F-350 then collided with the driver side of my patrol vehicle at an estimated 50 MPH. The collision caused me to lose consciousness and the patrol vehicle was totaled.”

As we say, “hindsight is 20-20,” and the above description of an officer involved in a vehicle collision may just save your life. A national initiative – LEO Near Miss – aims to help all law enforcement benefit from the 20-20 vision that results from a near miss.

In 2017, 47 officers died in the line of duty from automobile or motorcycle crashes. Twelve officers have lost their lives in similar crashes thus far in 2018.[1] Many more lose their lives while operating on the side of the roadway as the job requires.
If you've been on the job for even a short period of time, you've experienced one or two close calls you were thankful to walk away from. You may have shared these stories with a few close friends or side partners, but rarely are these incidents and the valuable lessons learned from them shared with officers across the country.

**WHY STUDY NEAR MISSES?**

Each year, thousands of officers are almost seriously injured or killed in vehicle-related incidents while conducting traffic stops, participating in pursuits, managing traffic, or responding to calls for service or other incidents.

These close calls, referred to as “near misses,” often closely resemble situations where officers are seriously injured or killed, so it is equally critical to share these incidents and learn from them to prevent tragedy.

Take, for example, this story shared anonymously on LEO Near Miss of an officer pursuing a suspect in hazardous road conditions:

*During a traffic stop, a patrol officer determined that the driver was wanted on a misdemeanor warrant. The suspect fled the scene, and the patrol officer began a vehicle pursuit. The weather conditions at the time were poor, and the street surface was covered by snow and ice. The suspect vehicle crossed a major intersection, with the officer close behind. The suspect made it through the intersection, but the officer's vehicle failed to stop at the stop sign and slid into the intersection. The officer's car was then struck and run over by a semi-truck and trailer, crushing the officer's car.*

Thankfully, the officer and civilian involved did not sustain any serious injuries, but the incident offers valuable lessons learned that should be incorporated into officer training. The officer sharing the story suggested:

*Don't pursue. The subject's identity was known, so officers could have apprehended the subject at a later date. Officers should conduct a risk assessment regarding immediate apprehension versus the danger caused by pursuing.*

The officer further pointed to decision-making as the primary contributing factor to the incident.

A similar look at other driving-related near misses where officers were not seriously injured or killed uncovers a recurring theme: the accidents were preventable. In each story shared by the officers involved, the officers’ decision-making was the primary contributing factor to the vehicle accident, and a consistent lesson learned was shared – officers should weigh the risks of a given action versus the rewards, echoing the Below 100 tenet of “What's Important Now?”

**USING NEAR-MISS DATA TO DIRECT POLICE TRAINING**

Using near-miss data, we can examine vehicle-related near-miss incidents in important ways. For example, many vehicle-related near misses involved no pursuit and very few involved inclement weather. The majority did, however, occur in low-light conditions or at night.

The officers reporting near misses were asked to identify any risk factors that may have contributed to the near misses in their view. The top three risk factors officers reported were:

- Decision-making (50%)
- Human error (41.6%)
- Proximity to roadway (41.6%)

Additional risk factors reported by officers include:

- Low visibility
- Distraction
- Lack of appropriate equipment
- Lack of communication/ability to communicate:
- Excessive speed
- Equipment malfunctions
For each near-miss report, officers are given the ability to indicate any protective factors that prevented the near miss from becoming more serious. The most common protective factor reported by these officers was maintaining situational awareness (25%), followed by the presence of back-up officer(s) and the use of a seat belt. Not all submitting officers provide protective factors.

While stories of close calls and the lessons learned from them may not always be new or unique, they can serve as invaluable reminders for officers and help them maintain situational awareness and appropriate officer safety tactics to keep them safe.

Unfortunately, we as a law enforcement profession need to do a better job of sharing these near misses with officers across the country and learning from them.

About Police Foundation

The Police Foundation is a national, nonpartisan, nonprofit organization dedicated to advancing policing through innovation and science. Established in 1970, the Foundation has conducted seminal research in police behavior, policy, and procedure, and works to transfer to local agencies the best new information about practices for dealing effectively with a range of important police operational and administrative concerns.

References

1. As reported by the National Law Enforcement Officers Memorial Fund (www.nleomf.org) as of March 23, 2018.
2. See https://www.leonearmiss.org/tag/driving-safety/ for more information.

About LEO Near Miss

LEO Near Miss is a non-punitive, anonymous reporting system that allows law enforcement officers to share near-miss stories and lessons learned with officers across the country to improve officer safety.

The system is maintained by the Police Foundation in partnership with other national organizations committed to officer safety such as Below 100, Concerns of Police Survivors, National Law Enforcement Officers Memorial Fund, Officer Down Memorial Page, National Tactical Officers Association, Motorola Solutions Foundation, and the Office of Community Oriented Policing Services, U.S. Department of Justice.

Anonymously share your near-miss story at www.LEOnearmiss.org to improve the safety of your fellow officers. Near-miss details are reviewed before they appear on the site to remove any identifying details, and even once published, a visitor must be vetted before accessing near-miss details. A mobile app is also available for iOS and Android devices.
Stop Sticks Malfunction during Vehicular Pursuit of Shooting Suspect

Event Summary

At 0100 HRS, dispatch aired a vehicular pursuit following a shooting that had just occurred in the area. The pursuit was heading onto a nearby highway at approximately 100 plus mph. I was able to get into the area of [the interstate] and drove southbound down the northbound off-ramp to get into position. I grabbed the Stop Sticks from the trunk of my patrol car as the pursuit was quickly approaching. As I attempted to deploy the Stop Sticks, the line jammed. I was standing just on the shoulder of the roadway near the solid white line and kicked the Stop Sticks out onto the roadway at the last second, which effectively worked in deflating the suspect’s tires. I managed to pull the Stop Sticks back and ran off the shoulder of the road as all of the pursuing vehicles sped past. In hindsight, I placed myself in an unsafe situation by being too close to the roadway and by kicking the Stop Sticks in front of the suspect’s vehicle.

Contributing Risk Factors

- Decision-making
- Equipment malfunction

Lessons Learned

- Stay off the highway when deploying stop sticks.
- Be mentally prepared for the possibility of your equipment failing, and be ready to back out if that situation arises.

Please share it at www.LEOnearmiss.org
Increased fidelity training scenarios and smart integrated tech tools are helping police make pursuits safer

PoliceOne Brandfocus staff

New technologies and tactics can decrease the danger of high-speed vehicular pursuits. Pursuit Response is a collective dedicated to improving law enforcement and community safety during high-risk vehicle events.

PoliceOne sat down with representatives from FAAC, OnStar and StarChase, the founding members of PursuitResponse.org, to talk about the latest tools and techniques for police pursuits.
Here’s what they had to say:

**WHAT ARE THE NEWEST TECHNOLOGIES ENHANCING OFFICER SAFETY IN VEHICULAR PURSUITS?**

**Chuck Deakins, FAAC:** I believe there are two technological advances enhancing officer safety during pursuits. The first is the ability to link the environment of the “human interaction” technology of the use-of-force simulator with that on the driving simulator. We call this DrivingForce. This connection raises the intensity of driver training to a more realistic level and allows the student to honestly apply “de-escalation” principles where they belong first – the response to the scene. If an officer can de-escalate their driving response, they increase their own safety and survival and arrive in a much more controlled capacity to handle the situation.

The second advancement is in the actual assessment of a student’s driving in the driving simulator with a program called VITALS (Virtual Assessment Training and Learning System). VITALS goes beyond scoring: The instructor has the ability to modify the program to meet departmental policies. The software is built so an agency can input its standards, policies or criteria for safe driving, and VITALS reports on how the student’s performance compares to the standards with colored zones of green, yellow and red. These colors represent the student’s performance and are reviewed by the instructors.

**Officer survival starts with better driving. Remember, we lose almost as many officers to driving each year as we do to guns. We should respect our driving training as much as we respect our weapons training.**

**Sherry LeVeque, OnStar:** Stolen vehicle assistance technologies and services offered by connected vehicle companies, such as OnStar’s Stolen Vehicle Slowdown, have been around since 2008. OnStar’s Stolen Vehicle Assistance, Remote Ignition Block and Stolen Vehicle Slowdown help reduce pursuit risks and increase officer safety, suspect apprehension and vehicle recovery. While these technologies have been around for a few years, they are definitely underutilized.

Leveraging a stolen vehicle’s GPS location provided by OnStar to police, coupled with the signals that can prevent a stolen vehicle from being restarted and/or slow down the vehicle, can only serve to help officers, as well as the public.

Additionally, companies continue to enhance and expand these offerings. For example, OnStar recently launched Theft Alarm Notifications, which send owners a notification if their car alarm sounds, which may increase the chances of recovering a vehicle or personal property by involving local law enforcement earlier.

**Dave Respess, StarChase:** Pursuit safety in modern policing is about leveraging smart technology like StarChase to focus on three key areas: force multiplying with multiple jurisdictions, management of agency resources when responding to pursuit events and effectively improving officer decision-making and response while reducing the probability of harm to the officer, the criminal and the community. StarChase positively impacts these critical areas, and more, by enabling agencies to have a much clearer “sight picture” when dealing with high-risk or potentially high-risk events via the real-time tracking capability.

StarChase also enables agencies to share tracking information seamlessly across jurisdictions to enable better tactical coordination. Ultimately, this level of visibility promotes smart resource allocation for a given event. An overarching benefit is a measurable reduction in speeds, as well as a subsequent increase...
in positive behavioral responses such as reduced adrenaline, better tactical decision-making based on data and more time to respond and evaluate conditions and tactics.

When smart technology like StarChase is used, an agency has the offensive advantage to continually look and re-examine their specific sight picture multiple times during a critical event. Ultimately this leads to safer results and lower risk for first responders and the communities they serve.

**HOW CAN THESE TECHNOLOGIES BE INTEGRATED WITH OTHER POLICE TOOLS?**

**FAAC:** The “DrivingForce” system can also be linked to a physical exertion or stress component. The connection between the two systems allows students to transition back and forth, starting with human interaction and then transitioning to a driving scenario, or by beginning with a driving scene and then simulated human interaction. Transitions between human interaction and driving can be further enhanced by encompassing a physical exertion or workout to enhance the training event. This increases the heart rate of the trainee and puts them in a condition that is closer to what they would encounter in an actual event.

For example, one of our scenarios has the suspect suddenly run “through” the student-officer, creating a fight situation. The student is taken to the mat and fights for 60 seconds, then is redirected back to the screen where the suspect is shown getting into a car and leaving the scene. The student-officer transitions into the driving simulator and is now expected to drive a pursuit while stressed or exerted.

This is a much more realistic test of an officer’s ability to recall safe vehicle operations that are traditionally second nature. The biggest area of concern is the seat belt. Officers are forgetting tactical seat belt usage followed by calm radio communications, all while pursuing a vehicle. All of these skills add to increasing officer safety and survival.

**OnStar:** An agency’s SOP is the principal guiding tool, but as technology evolves, policy should also take into account any impacts from these new technologies. For example, GPS tracking technologies available to law enforcement (including those that may be located on the suspect vehicle) should also be considered as a non-lethal intervention prior to initiating a pursuit. Stolen vehicle policy updates, beginning with when a report is filed, can incorporate such technological advances, helping to limit liability.
OnStar’s Stolen Vehicle Assistance and Slowdown are only effective if leveraged by law enforcement. They are tools that enhance the agency’s existing procedures and technology used for handling stolen vehicles and potential pursuits. Slowing down a stolen vehicle is as simple as having an on-scene officer confirm sight of a stolen vehicle and working through dispatch with OnStar to send the signal to slow the vehicle to an idle speed. OnStar also automatically sends a signal to block the ignition (and prevents the vehicle from being restarted) when stolen vehicle tracking is initiated.

Technology is only going to continue to evolve, so OnStar maintains partnerships with law enforcement to share new developments.

**StarChase:** The No. 1 smart tool that StarChase integrates with is the officer and all branches of support during an event. StarChase delivers the ability for a single field officer to, in many cases, reduce a risky event before it becomes a high-risk, high-adrenaline, high-speed event. This smart technology is quickly becoming the go-to tool for agencies that want to provide virtual backup to their line officers during all critical phases, including the pursuit phase.

Another area where StarChase adds value is when combined with license plate readers on vehicles and highway cameras. When the LPR identifies a stolen vehicle, probable cause then prevails, and having StarChase as part of the equation allows the officer to tag proactively and reduce or eliminate the need for traditional pursuit.

Tire deflation is also enhanced with StarChase technology. Findings from an NIJ study revealed that tagged fleeing suspects return to within 10 mph of posted speed limits, allowing officers to manage the event more strategically with tire deflation devices. Significantly lower speeds lead to safer conditions for the officer during deployment.

**HOW CAN POLICE DEPARTMENTS INTEGRATE THE LATEST TECHNOLOGIES INTO OFFICER DRIVER TRAINING?**

**FAAC:** Agencies that are fortunate enough to provide driver training simulators have a designated area that allows for this advanced level of training. Agencies that cannot provide simulator tools can still apply the training concept of “simple to complex” and “realistic interactive training” with the facilities that they do have.

We understand that you can’t train true intersection clearing with actual vehicles, as no one could afford the liability and expense, but you can at least train with mock vehicles or mock interference. If you
have the facilities and personnel available, you can link your track training with some form of human interaction or use-of-force training – but beware: This form of training almost always results in diminished importance of and focus on driving training and results in more shoot-outs than anything else.

**OnStar:** With the abundance of information and evolving technologies available to public safety, the true challenge is staying up to date. In addition to receiving periodic training on the agency’s pursuit policy and safe driving tactics, an overview of available tracking technologies can keep officers well informed.

For example, realistic driver simulation, scenario-based training and case studies from other agencies using these various technologies can be effective training strategies at periodic departmental trainings, as well as during initial academy training. Formal training materials (videos, literature, live demonstrations, etc.) are also available by contacting the manufacturers of the technology, such as OnStar, StarChase and FAAC.

**StarChase:** Working with technology partners, departments need to empower their workforce through education, training and practice. Driver training programs need to adopt progressive technology and the associated paired tactics. The more realistic conditions integrated during training, the more prepared officers will be when responding to high-risk vehicle events on duty.

Technologies such as StarChase do not obviate the need for well-prepared drivers. What StarChase does allow for is an environment, in most cases, where a well-trained officer can apply trained driver skills in an environment with lower adrenaline with respect to speed and decision-making. When smart technology like StarChase is coupled with proper training, the result is more time on the officer’s side when it becomes necessary to make those critical tactical decisions.

**WHAT PURSUIT TECH INNOVATIONS ARE ON THE HORIZON?**

**FAAC:** I see a real future in what most officers are calling virtual reality training. The true definition of virtual reality is what is taking place already in our driving and use-of-force simulators. The best part of virtual reality is that the officers and students are excited about the technology – they have an
understanding of it. That means a more engaged student and therefore increased learning, resulting in enhanced officer safety and survival.

The more powerful element of simulation training is in the after-action scenario review or debrief – this is where the actual learning occurs. New innovations are being completed to offer actual replay/debriefing feedback to not only the individual students, but to the observing ones as well. There is also progress with the manipulation of weapons and vehicle controls that align trainers with the principles of muscle memory and skill building without leaving negative training scars.

The future is bright for advanced forms of simulated training to increase officer safety and survival. We should really embrace it!

**OnStar:** With the future implementation of technologies such as FirstNet and vehicle-to-vehicle (V2V) communications, the innovations will continue to evolve focusing on ways to aid law enforcement efforts. OnStar will keep the lines of communication open as the future unfolds.

**StarChase:** With insight from law enforcement, this year alone we have expanded our portfolio of solutions to include handheld tagging technology and an app-based solution that enables an agency to have cost-effective, location-specific information on their most critical assets and people.

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**About Pursuit Response**

Pursuit Response is dedicated to improving law enforcement and community safety during high-risk vehicle events. This advisory group brings the latest research, advocacy, education, training and technology resources to law enforcement and the communities they serve.

FAAC Inc. creates simulation technology that provides law enforcement officers with a life-like virtual training environment. To learn more, visit [FAAC.com/Police/](http://www.onstar.com/publicsafety)

OnStar is a wholly owned subsidiary of General Motors and offers emergency, security, navigation, connections and vehicle manager services in Chevrolet, Buick, GMC and Cadillac models. To learn more, visit [http://www.onstar.com/publicsafety](http://www.onstar.com/publicsafety)

StarChase provides pursuit management and GPS tracking technology to public safety and government agencies worldwide. To learn more, visit [https://www.starchase.com/](https://www.starchase.com/)
PRODUCT SHOWCASE

Pursuit Response: Improving officer and community safety

Pursuit Response is dedicated to improving law enforcement and community safety during high-risk vehicle events.

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While You Protect & Serve, We Equip & Protect You

StarChase provides technology to LE and the communities they serve so that you can protect, serve and get home safely.

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FAAC Continuum of Training: The Complete Set of Training Simulators for Law Enforcement.

Drive. Respond. Command. By combining driving, use-of-force and incident command training simulators officers can train to make critical real-life decisions.

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OnStar offers emergency, security, navigation, connections & vehicle manager services to nearly 14 million customers in North America, Europe, China & South America.

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Driving simulators can place trainees in a simulated but realistic environment, from which they can emerge better prepared for scenarios on the road.

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Sergeant Lou Maldonado of the Las Vegas Metropolitan Police Department discusses how his agency changed the way its cops drive – from seat belt use to speed.

Driving simulators: Integration is key in officer training
Utilizing simulation in a blended fashion with real driving is key to improving officer safety behind the wheel.

5 things to improve squad car safety
Our profession has done a terrible job regarding car interior safety, and we need to remedy it.

POLICEONE REALITY TRAINING VIDEOS

How cops can stay safe on the road
One of the most dangerous activities for law enforcement officers is driving. There are a whole lot of risks out there on the road; here’s how to stay safe.

Why communication is key in police pursuits
Analysis of footage of multiple police pursuits that emphasize the importance of communication to maintain control during these unpredictable and dangerous situations.

Risk awareness on an active roadway
Half the battle we face in law enforcement is staying vigilant, and that’s especially true when you’re on an active roadway.

A vehicle as deadly force
What’s your agency’s policy on using a vehicle as deadly force? Dave Smith outlines key considerations and tactics.

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