

**“CAR 54 WHERE ARE YOU?”
THE FUTURE OF THE POLICE VEHICLE**

by

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The Command College Futures Professional Article is a study of a particular emerging issue of relevance to law enforcement. Its purpose is not to predict the future; rather, to project a variety of possible scenarios useful for strategic planning in anticipation of the emerging landscape facing policing organizations.

This article was created using the futures forecasting process of Command College and its outcomes. Defining the future differs from analyzing the past, because it has not yet happened. In this article, methodologies have been used to discern useful alternatives to enhance the success of planners and leaders in their response to a range of possible future environments.

Managing the future means influencing it—creating, constraining and adapting to emerging trends and events in a way that optimizes the opportunities and minimizes the threats of relevance to the profession.

The views and conclusions expressed in the professional article are those of the author, and are not necessarily those of the CA Commission on Peace Officer Standards and Training (POST).

“CAR 54 WHERE ARE YOU?” THE FUTURE OF THE POLICE VEHICLE

The world is changing. Tactics and techniques, in not only the application of crime but also in the eradication of crime, evolve as well. As such, there is a need for police management to effectively create, implement and monitor crime fighting strategies. Gone are the days of the “foot beat officer” who strolls around the community and reports into the precinct house every half-hour for assignments. While that form of policing was the true community policing for its time, the 21st Century calls for a different approach.

Officers in their cars were the focus of the 70’s and 80’s—with rapid response being the primary function of law enforcement. Gone was the day-to-day interaction with the majority of the community who was not labeled as “victim” or “suspect”. What is needed now is the hybrid—the officer back into the patrol vehicle but also with the effective use of technology in that patrol vehicle to provide to the community what it expects, demands, and deserves—just like the days of the footbeat officer. With the implementation of increased vehicular technological enhancements, the strongest implication for law enforcement is both the reduced need for classic brick and mortar facilities as well as an increase in the individual officer’s effectiveness in the field.

Changes Abound

The past decade has brought about unparalleled changes to the profession of law enforcement. Starting with the terrorist attacks on the East Coast on September 11, 2001, this Country saw its vulnerability exposed. In its aftermath, legislators focused on the strengthening of the homeland and the protection of the infrastructure and all under its

umbrellaⁱ. This increased demand for preventative protection coincided with the first of two significant declines in money markets in 2003, resulting in a substantial decline in budgets and relied-upon governmental funding beginning. As the economy slowly rebounded, the real estate correction of 2007 shattered the rebounding efforts of all agencies and businesses—public and privateⁱⁱ. Again, valuable resources (governmental dollars) were a cherished commodity and those without were left to pick up the pieces and do the unimaginable—a forced reduction of workforce, streamlining (or eliminating) services, and revamping the business aspect of policing—and all at a time of increased responsibility, and an increased demand for professional services by the community.

This “revamping” comes at a time when the deployment of new technologies in policing are increasing at an exponential rate. Decades ago, the invention of the portable (hand-held) radio was seen as a major breakthrough. Today, we have agencies that operate in the field with smart phones, tablet computers, electronic citation writers, in-car video systems, global positioning satellite (GPS) readers, and a whole host of technological enhancements from the way law enforcement operated just a decade ago. The police vehicle is seen as the platform for these enhancements—it can hold the necessary hardware and turns today’s mode of transportation into the officer’s virtual office.

It is the police vehicle that will bring about the most significant change in policing. The patrol car of tomorrow will be the precinct of today –the officer’s workspace or rolling office. It will be equipped with all the necessary tools for the law enforcement officer without the need for present day brick and mortar facilities.

Technological Advancements

The practice of law enforcement has evolved from the days of the foot beat officer and patrol cars where the two-way radios and a red light/siren combo were the state of the art. Fueling the need to embrace technology, as well as a robust economy and a desire for more transparency led agencies to expand their technologies. Amongst the most suited for use in the patrol vehicle of the near future are four systems that will allow the officer to work with great autonomy from the police facility:

- In-car video systemsⁱⁱⁱ were touted as the required technology that not only documents the actions of the criminal element, but also to catch the errant law enforcement officer when violating the rights of the citizenry. Present day systems allow continuous recording while the vehicle is being operated. Future systems could have biometric capabilities, employing facial recognition software to identify those in the database simply as the officer drives down the street.^{iv}
- Automated License Plate Reader (ALPR) system^v that captures each license plate it “sees” and checks it against a database of stolen and wanted vehicles. The system also stores the license plates (and their locations) for future searchability. This should significantly lighten the workload for dispatch and support personnel to search database systems on the officer’s behalf.
- Facial Recognition Biometric Systems^{vi} are seen as the next technology to be used widely throughout the profession—much like the in-car mobile computer.^{vii} This system works much like the ALPR system; a set of cameras from the police vehicle capture the biometric data of everyone the car drives by and compares that data to known quantities from a database. This technology is currently in use by

the military and by private companies (mainly casinos), but can be expanded to law enforcement. Once again, the officer's presence is multiplied in that persons in his or her view are queried automatically, thus saving time as well as increasing safety.

- Electronic Citations^{viii} (e-Citation) has only been recently used and are gaining in popularity. The present day e-citations typically are of a “word-processor” type where “qwerty” mini-keyboards and drop-down menus are utilized to print out the traffic citation. Law Enforcement agencies ranging from San Jose, California to the Maryland State Police are using e-citations and have reported increased efficiency in the time it takes to issue a citation to an offender (three minutes from eight minutes) and also in reducing errors due to poor handwriting.^{ix}

In addition to these advances, there are a host of emerging practices and technologies that can be leveraged to enhance the effectiveness of the patrol unit of the future. Some states configure their driver's licenses with a magnetic strip on its back which holds all licensure propriety data and the e-Citation writer can be equipped with a card-swipe function which would populate the citation with the license information. States also supply bar-coded registration stickers, which can also be read by newer generations of e-Citation writers. Finally, the e-Citation writers could be formatted with a digital camera and recorder to capture video and audio of the occupants—and all can be downloadable into the Cloud.

Eyewear^x is also emerging as a piece of equipment for law enforcement. Present day specialty eyewear consists of stronger frames and break-resistant lenses for the active

patrol officer. Furthermore, they can also have special lenses fitted to allow the operator to view the vehicle's computer screen clearly, thus allowing for more in-car use of the computer. This creates a foundation for the "virtual assistant" of the future that can consolidate ALPR, Facial Recognition and similar data for immediate access.

Another emerging technological trend is the In-Car Tablet PC^{xi} which is slowly starting to replace the Mobile Data Terminals (MDT) now in general use in a majority of police vehicles in the US. The Tablet PC (e.g. Ipad®) has the capability for 3G/4G wireless communication, can be used with any standard Report Management System (RMS) software (New World Systems®, Oracle®, etc.), can hold video/audio files and can be configured to use Dragon (voice recognition) software for dictating documents (reports, statements, etc.). Additionally, it can also hold applications that allows for immediate translation of documents into different languages. The Tablet PC, with its communication and video system can allow for video conferencing to anyone who has a compatible system—courts, police supervisors, City Council, etc. Finally, all data can be instantaneously uploaded into the Cloud.

Vehicle Tagging^{xii} is another emerging technology that could end the phenomena of police pursuits, which could truly save lives. The *StarChase* system allows the police vehicle to "shoot" a device at a fleeing car. The device sticks to the car with an epoxy-like substance and that fleeing vehicle can be tracked through GPS navigation. With this technology, there is no need for the police to actively chase fleeing vehicles—which often end up in catastrophe to not only all involved, but also to the general public. These are some of the developing/emerging technologies that are on the forefront for law enforcement. Sometimes, however, finding the newest technology is the easiest part of a

tech overhaul. Vendor issues always seem to arise when embarking on new technological systems (hardware, software or a combination of both). One universal challenge is to find the right vendor—to find the company that not only has the right system for your agency, but also has the necessary support systems for your hardware platform and for your personnel.

The most significant breakthrough in technology and one that will transform the need for the standard brick and mortar facility is The Virtual Partner,^{xiii} a series of technological upgrades to the vehicle's computer system that allow the single-assigned officer to have virtual back-up through a number of applications. Some have already been mentioned, and could be considered a manager of all other systems present in the car. The Virtual Partner already employs e-Citation software and RMS capability for the efficient completion of reports and documents. For approximately \$12,000,^{xiv} The Virtual Partner responds to queries with a voice response so the officer can keep their attention on the offender and the public, and gives an audible alert tone to signify a hit in a database. The applications can also allow for a direct and accelerated response to queries from criminal history and driver history databases. Finally, the Virtual Partner has a program that has geo-mapping which displays the current call (or a queried call) on a map with terrain and historical data pertaining to the location. This not only allows the officer to respond with the most direct route, but also provides information on prior calls for service to that location.

As we have seen, there is no shortage of enhancements or breakthroughs from the technological field—new ideas are being created constantly. However, dealing with the

gap from innovation to implementation can sometimes be a challenge. The successful manager is the one that knows how to bridge that gap.

Funding Issues

Funding is a major component and although it can be a major challenge, avenues exist to obtain that desired funding. Technology is not cheap, and the start-up costs associated with the implementation of new technological enhancements can be astronomical—even for reduced sized “pilot-projects”. With the ever-shrinking municipal budget phenomena, the savvy manager must find alternative funding sources to secure the business model that the public and the employee demands—yet does not come at the expense of other priorities. Those alternatives consist of:

- Grant-Funding –the use of dedicated monies from the State and/or Federal Government that are earmarked for specific purposes; COPPS is one such example.
- Foundational-Funding –the vehicle that allows private/corporate donors to contribute to specific law enforcement projects; a foundation that is set up by the law enforcement agency, and Target© are such examples;
- Capital Improvement Funding –the line-item in the budget that allows a municipality to set aside funding for long-term projects.

These are just some examples of Non-General Fund dollars that can be found and utilized to fund special projects. Certainly, as new technologies emerge and mature, the streams of project funding for implementation will open. The astute manager will plan ahead and then be first in line with a proposal for implementation when that occurs.

IMPLICATIONS ON THE FUTURE OF POLICING

Using existing and emerging technologies, the patrol vehicle of the near future will be the law enforcement officer's rolling office, complete with two-way communication, wireless data feeds, GPS technology, report management, video conferencing—in other words everything that can be found in a fixed facility. Although the real estate market has softened somewhat in the past few years, the reduction in land holdings (and the reduction in fixed infrastructure) may very well be the impetus for funding the necessary technological enhancements for the patrol officer. One can also envision a future that allows these advancements to be funded through a reduction in physical space needs for both officers and the public.

There will not be a need for “precincts” as reports, testimony, calls for service and interviews can be all done in the field—negating the need to return to an office. In its place could be smaller “pod”-type buildings (about one-tenth the size of current precincts) that will hold “upload” systems for data collection into the cloud. The pods could have recharge stations attached to it for various green technology devices (hybrid-electric cars, rechargeable batteries for video systems, etc.), Bluetooth technology (for wireless communication systems), and miscellaneous supplies. The need for large report storage rooms, expansive dispatch centers and even a physical “front desk” would be minimal, if not eliminated altogether.

Another implication will be the need for less support staff—particularly with the closing of unneeded offices. No longer will a front desk staff be required because calls for service will be routed directly to the patrol vehicle. Any document the officer needs

to see can be scanned and sent to the on-board computer system for review. No one will walk into a police precinct for service—it will come to them. Detroit has already begun experimenting with this as they have closed police offices in the evening, eliminated desk jobs, and offer reporting through “virtual police precincts”.^{xv} This decrease in general support staff should yield substantial savings, particularly in decreased personnel costs, which can then be put into the technology budget.

With the vehicle being the office, it is possible the number of police officers as compared to the present complement in many municipalities could be reduced. Some cities have pre-set minimum numbers for the police force, which can be legislatively amended based on the needs of the community or the population-to-officer ratio. While not compromising officer safety, the use of technology (particularly the Virtual Partner) will allow an agency to provide the same level of service only with fewer officers. That, too, translates to fewer general fund dollars being spent on public safety.

Staff that will increase, however, is specialized IT staff. There will be a greater dependence on technology to do the daily job—ranging from the desire for video conferencing systems to work correctly (officers speaking with the public and with counterparts/supervisors), to the need to file reports expeditiously (upload requirements), to voice recognition software being accurate (Dragon & Virtual Partner). As technology increases, an officer’s reliance on it also increases, and the demand for a functioning system also increases—all exponentially. Therefore, one personnel cost that will increase is the hiring of trained, competent, IT staff to make sure the systems are always running at peak performance level. The savings from fewer support staff and fewer officers should more than amply make up for the increased expenditure.

Recommendations For Plan Of Action

The following are recommendations for agencies to explore, develop and implement the addition and upgrading of technological enhancements in their police vehicles:

- The identification of funding for the increased use and purchase of technology must be undertaken—and must have a commitment from all stakeholders. Politicians, civil libertarians, the public and the executive must all be committed to this project—and must “put their money where their mouths are”. It is simply too easy for a politician to say they support a project, but then not budget for its implementation—the same for the chief executive. Hard choices sometimes have to be made. Additionally, the type of funding should include not only line-item General Fund dollars, but also the many facets of grant-based funding. There are grants that specifically cover technology for homeland security, emergency management, joint State & Federal investigations, and “green” technology—and ALL must be explored and considered.
- The hiring of IT Staff is essential to the success of any technology project. Choosing the right vendors, recognizing the appropriate benchmarks during the implementation, and making sure the hardware and software is always communicating are critical components and can lead to the downfall of any project—but an IT project in particular.
- Obtaining public support for the IT enhancements should be a priority in that a negative public campaign could/would lead to the removal of the project. Correctly identifying the public sector as a stakeholder and bringing them on

board for input will lead to a smoother transition during the development-to-implementation phase. The general public may have concerns about the data that is being recorded, as well as for the cost of technological implementations.

Conclusion

Police work in the future will be done differently than by today's standards. While the underlying goal of law enforcement has not changed over time (that being the protection of life and liberty), the manner in which it is done is a constant changing set of systems. Law enforcement has evolved from the beat officer checking in every hour on a "call box" phone to the radio car patrol officer having two-way communication. Today, some cars have video systems and license plate readers which capture data faster than the human eye—and stores it for possible analysis and collection at a future date.

The management of law enforcement has changed as well. Gone (for now) are the days of unlimited resources and ubiquitous trust and approval from the community. While the community demands that law enforcement maintain the highest professional standards, they are also looking at agencies with a wary eye. The everyday taxpayer wants crime to be solved using the latest technology, but they do not want to pay anything over what they are required to pay.

The future holds a leaner, refined, professionally adept law enforcement officer who has grown up with technology—texting constantly on a smart phone, battling with aliens on a X-Box, writing term papers on a computer with clip-art, wave files and video clips inserted. This individual will excel at a job that employs enhanced

technology –and demands it from the job market they enter. Management should recognize the talents of an emerging generation and proactively give them the tools they desire by implementing technology projects.

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