WHAT HAPPENED?
A LOOK INTO THE VIRTUAL RIDE-ALONG OF THE FUTURE

by

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September, 2011

COMMAND COLLEGE CLASS 49

The Command College Futures Study Project is a FUTURES 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 journal 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 Command College Futures Project and journal article are those of the author, and are not necessarily those of the CA Commission on Peace Officer Standards and Training (POST).

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Police officers in America are faced with the demanding task of responding to critical incidents in an environment that is unpredictable and dangerous. To help law enforcement organizations better prepare their officers for the environment, new methods to increase officer safety and efficiency have been continuously developed for the last 125 years. These efforts continue today, driven by the demands of law enforcement and the communities they serve.

Consider a vignette regarding officer safety that could occur today; think about it in the present; as if you were the Police Chief, or watch commander, or shift supervisor, or even a fellow patrol officer…

Officer Today notices a call for service on her Mobile Digital Terminal (MDT) instructing her to respond to a report of a suspicious subject in the downtown area. Officer Today acknowledges the receipt of the call by activating the "en route" key on her MDT and responds to the area. Upon arrival, Officer Today pushes the "arrival" key on the MDT to notify the dispatch center that she has arrived at the location. Five minutes later, after no additional radio transmissions from Officer Today, dispatch attempts to contact her on the radio and her cell phone, but receives no response. Assisting officers are sent to her last known location. Upon arrival, they are unable to locate the now missing officer. After an area search, Officer Today is found on the ground in an alleyway two blocks away. She is unresponsive, and also appears to have sustained critical injuries.

In this hypothetical, yet realistic situation, personnel on scene have very limited information to help determine what happened to Officer Today. Certainly, the lack of information hinders

their situational awareness, and mitigates their ability to effectively take the appropriate investigative actions to determine what happened to her.

Now take the same hypothetical situation, now looking five years into the future…

Officer Future notices a call for service on her Mobile Digital Terminal (MDT) instructing her to respond to a report of a suspicious subject in the downtown area. Officer Future acknowledges the receipt of the call by giving an audible response and responds. Upon arrival, she gives an audible command to notify the dispatch center that she has arrived at the location. Upon exiting her patrol car, she is immediately confronted by four subjects. The subjects are hostile towards her; however before a confrontation can occur, assisting officers arrive and all four are taken into custody without any further problems. The additional officers responded to assist Officer Future based on the data collected by her Personal Data Retrieval System (PDRS), or black box, which is monitored by the dispatch center. The PDRS data (consisting of her increased breathing rate and heart rate, real-time video and audio, and Global Positioning System (GPS)) alerted dispatch personnel to send additional officers to assist. The black box's facial recognition functions also assisted in the identification and capture of the officer's aggressors.

The Virtual Ride-Along

Both of the scenarios described the same general set of circumstances; yet each had significant differences in the outcome. For example, there are many unknowns regarding Officer Today's situation. It is unknown how Officer Today was critically injured, or how she ended up in an alleyway two blocks away from her patrol car. In Officer Future's situation, the facts are known, and disseminated in a way to prevent injury to the officer or others. Why were the outcomes so different? The outcomes were different due to the black box worn by Officer

Future. It allowed the proper situational awareness to occur in real time; therefore, the proper resources were deployed to overcome the conflict.

This article will provide insight to the patrol officer's disconnect due to a lack of available data, and also explore ways we might develop methods and strategies to provide effective data collection from a personal system that is worn as part of the daily equipment or uniform. The adoption of technology-based data from a "virtual ride-along" will not only enhance officer safety, but will provide the public with the most efficient service possible. It would also allow new means by which we can address concerns regarding demeanor and professionalism which can be evaluated and corrective measures can be implemented to correct the behavior. Each of these goals can be accomplished through the use of an idea first pioneered in aviation; the capture of essential data to determine the truth of a critical circumstance.

History of the Black Box

"Once upon a time, an inventor had an idea. He would create an electronic device that could tell investigators why planes crashed." (Craig, 2008, p.1) This was the beginning of the "black box", or flight data recorder, a device that could record data from the pilot and the aircraft. This black box idea became so important in the investigation of airline crashes, that in 1964 the Federal Aviation Administration (F.A.A.) mandated black boxes be utilized in all commercial aircraft (Craig, p.4). Eventually, the black box concept made its way into other forms of transportation, including our current personal cars, which collects data associated with the speed of the vehicle and whether or not specific lighting equipment was utilized prior to an accident or the data being reviewed. The motivation to incorporate the black box idea into different environments is the on-going focus on acquiring data to find out what precipitated or preceded an incident or collision. Car manufactures and auto insurance companies are interested in the

data for car related concerns, in the same manner that the airline industry and its governing organization were interested in their efforts. Law enforcement is not an exception to this need for using technology pioneered by the aviation community to improve situational awareness. GPS, in-car cameras, radar guns, and radios are examples of technology that has found its way from the airplane to the patrol car.

The increasing use of in-car video systems to capture officer's activities, once seen as a threat by patrol officers, is now welcomed by them. A veteran Oakland, CA. officer recently stated that he "feels uncomfortable" when he did not have his video camera while on patrol. Many officers see the video obtained from their in-car camera as protection against false complaints. In fact, the results of a recent study by the IACP confirmed that when video evidence was available, the officer was exonerated 93 percent of the time (Law Enforcement Technology, 2011, p.28). According to a recent panel of police experts tasked to discuss black box technology concerns, the use of GPS technology to track the location and movement of patrol vehicles in the past two decades was also "not welcomed" by the officers working on the street at the time. The panel agreed that the technology has now become part of the culture and is better tolerated by officers working today.

The capabilities of the in-car camera and the GPS described above are limited to the vehicle location. When the officer leaves the patrol vehicle, the technology capabilities is significantly reduced. There have been recent incidents where an officer was assaulted away from the patrol car and the arriving officers were unable to locate the officer, as described in the opening scenario. If these capacities were incorporated into the black box system worn by the patrol officer of the future, they could both improve the officer's awareness of the environment and

provide a record of their actions for others. Although our use of technology to capture environmental data from officers on patrol is ever increasing and improving, it is still insufficient. The implementation of black box technology will allow others to go where the officer goes.

Law Enforcement Black Box Technology Capabilities

The motion picture industry has attempted to depict the future of technology for many years. These possible future technologies have included ideas from which the law enforcement community could benefit; many are examples of personal data retrieval components. An example of this was in the movie *RoboCop* (1987). The character of Officer Alex Murphy was "Part Man. Part Machine. All cop. The future of law enforcement". Officer Murphy had audio and video data capture capabilities, as well as many other enhanced senses. In more recent times, the movie *Star Trek* (2009) had a scene in which Captain Robau had his heart rate remotely monitored by the doctor on board the USS Kelvin while the Captain was aboard a different vessel. Is this possible at the present time? The answer is "Yes"; the military is testing a "suit" that will enhance the strength and speed of the wearer (Reed, 2008, p.2), and firefighters are testing bio-metric sensors to allow data to be remotely monitored while they search the interior of a building on fire (Stone, 2010, p.38).

The current level of awareness of a patrol officer's day to day activities is compromised by the lack of information, or data, obtained from technology based systems. The ability to acquire personal data consisting of bio-metrics (heart rate, body temperature, respiration, and blood pressure), real-time location through GPS, live video and audio, and a positional tilt feature would positively impact officer safety, the safety of the public, and the efficiency of the officer and police

agency. The data received from a technology based system worn by the officer would provide an instrument to obtain the needed information and provide a link between the officer and the Department. This link would allow for situational awareness that is critical when factual data is required. As technology matures, it could even allow the data to be monitored and displayed on a three-dimensional map of the community located in a dispatch center.

Unfortunately, the current focus on technology to improve officer safety and efficiency is fragmented, at best. We already have the ability to acquire personal data consisting of bio-metrics (heart rate, body temperature, respiration, and blood pressure), real-time location through GPS, live video and audio, and a tilt feature, but not in an integrated system. Many agencies use GPS technology in their patrol cars. The Arizona Department of Public Safety is even currently testing a portable device that shoots a small GPS-equipped dart that attaches itself to a vehicle attempting to flee (Pittman, 2010, p.16). The Whitewater Police Department is also currently using ear-mounted cameras that capture the officer's view point (Wethal, 2011, p.24). It is time to consolidate those efforts into comprehensive systems to move policing into the future.

The black box of the future will seamlessly enhance officer's performance in a number of ways. They will have the ability to have real-time information like facial and voice recognition to assist in identifying a possible suspect. The capacity for language translation will allow for direct communications with persons that speak any number of languages. They will have immediate access to critical information to resolve conflicts quicker and more efficiently. The black box technology can also be the mechanism by which supervisors exercise command and control over their personnel and equipment. The data can assist in work to effectively evaluate and review conduct, and help form a foundation for corrective action and training. The black box would be

an unbiased witness to the officer's activities; it would ensure accountability, and serve to maintain the integrity of the officer.

An IACP research document states, "Although the "virtual ride-along" can never, nor should it ever, take the place of the personal contact between supervisor and subordinate… a review of the data by a supervisor cannot be overvalued" (2004, p.25). Rather than relying on third-hand information, data collected during an incident can objectively view concerns regarding officer safety, demeanor, and professionalism. It can also be an early warning indicator for an officer who is experiencing performance or personal problems. An officer whose behavior has suddenly become aggressive or is easily agitated can benefit from the early intervention before a critical incident occurs. In effect, the black box can provide an added level of supervision while also providing some protection for the department against liability.

The most obvious benefit of the use of a black box is the transparency of the organization and the officer's actions during high profile and critical incidents. The evidentiary value of the data collected during these type of enforcement activities, as well as the community trust that would be enhanced based on the transparency, are the foundation from which we should continue efforts to implement the black box technologies into an integrated system. This goal, though, is not without possible obstacles in its path.

Black Box Issues and Concerns

An expert panel was convened to study the possible integration of black box technologies into a police officer's wearable equipment. One of the outcomes of the panel's work was the identification of possible concerns a set of recommendations for policing as it moves towards the future of a virtual ride-along.

The first area of concern is that law enforcement needs to continue to adapt and become an integral part of technological advances. There needs to be a focus on developing the power and leverage to encourage the technological community to "champion" technological ideas focused on public safety. This can be achieved by bringing the technological community into the law enforcement world by building relationships and showing the economical possibilities to be gained by the technological companies.

The second area of concern is the lack of personnel to analyze and monitor the data, and the capacity to store the data. With the black box becoming a reality in the future, there will be an increase in the amount of data retrieved. This will only exacerbate the problem. According to Tony Hey of Microsoft, "We have reached a point where even the experts are drowning in data. Digital information is streaming in from all sorts of sensors and instruments overwhelming our capacity to organize, analyze, and store it" (2010, p.56). Law enforcement will need to focus on developing alternatives in dealing with this issue.

The third area of concern is training. Technology has significantly enhanced an officer's abilities and efficiencies, but there is a need to continue a high level of training. Ronnie Garrett, former editorial director of the Cygnus Law Enforcement Group, emphasizes the need to focus on training by stating, "The future may be now in terms of technology, but correct application of the technology still has its roots in the past where training, not technology, was the name of the game" (2010, p. 16.).

Privacy concerns related to the officer will also need to be resolved. A look at history shows that the implementation of a technological system to monitor an officer's activities has initially met with resistance. This was exhibited with audio recorders, video recorders, and most recently GPS. In each case, the technology has been ultimately accepted by the officers. There will need

to be an effort to include representatives for the patrol officers and officers themselves to be included in the development of the new technology based black box.

Lastly, how will this new technology be funded? Officers are required to have specific equipment like a firearm, ammunition, and less-lethal weapons. In the future, there may be a mandate that all officers have a black box. Law enforcement will need to accept the black box as a required item, and not optional, for the future to be a reality.

This still will not guarantee a future for organizations to have the black box technology. In the current environment, it is not realistic to believe that all law enforcement organizations will be able to benefit from it immediately when a majority are still striving to obtain less-lethal capabilities and other essential equipment. Funding sources will need to be actively sought and acquired.

Conclusion

The quality of services delivered by a patrol officer will be enhanced and the efficiency of the organization will be improved. This is based on; enhanced officer safety, improved accountability, reduced liability, improved officer performance and professionalism, advanced prosecution and case resolution, and improved community and media relations.

So the initial question of "What happened?" can be answered in the future through the data collected from the virtual ride along. The black box technology cannot solve the problem of poor judgment, compensate for inferior training, make up for poor leadership, substitute for basic police procedures, or replace the knowledge of experienced police officers. What it can do is increase efficiencies for those who use the technology. It can also provide the means for a safer work environment, safer community, and increase the effectiveness of patrol officers, police supervisors, and management. The implications of utilizing the black box could potentially have

a dramatic effect on the policing profession in the future. It can be "a game changer for law enforcement" similar to the implementation of the wireless police radio in the 1920's and 1930's.

Although it is impossible to accurately quantify all of the benefits of an improved, efficient, and integrated data retrieval system to increase situational awareness of a patrol officer; it is evident that the value of saving an officer's life and improving our ability to better serve the community is immeasurable.

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