

**How Will Intelligent Systems Impact the Safety of Law Enforcement
and Civilians in Tactical Responses to Critical Incidents by 2020?**

Police Departments in 2020: Robots and Intelligent Systems

By

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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.

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**How Will Intelligent Systems Impact the Safety of Law Enforcement and
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Police Departments in 2020: Robots and Intelligent Systems**

Technology is arriving in the near future that will change the way law enforcement handles critical incidents. Robots, drones, and remote controlled intelligent systems are replacing human faults, sometimes providing a safer response for citizens and law enforcement (Blake, B.) These intelligent systems will impact the safety of officers and civilians in tactical responses to critical incidents within the next decade. In fact, robots and similar technologies have already been used in the aftermaths of many subsequent disasters since September 2011 (IEE Spectrum Magazine).

The technology coming to the forefront of police work is becoming more intelligent and more self-sufficient; it is starting to replace some of the functions of daily police work (Platypus Magazine, 2007). Robotics and other man droid technologies are increasingly emerging into critical incident use, as well as for other critical functions in law enforcement. For instance, Spanish researchers have carried out a study looking into the potential future impact of robots on society. Their conclusions show that the enormous automation capacity of robots and their ability to interact with humans will cause a technological imbalance over the next

12 years between those who have them and those who do not (Science Daily, 2008).

Robots for Police Organizations

According to IEEE, **the world's largest professional association for the advancement of technology, robots** have been used in the aftermath of many disasters; such as hurricanes, building collapses, and most recently, in the nuclear plant meltdown at Fukushima. They utilize the intelligent systems to minimize the high risk it would pose in sending in human beings. Without the use of these robots, they may not have been able to enter the reactor at Fukushima due to the high risk of radiation exposure. Robots are already in use in manufacturing and in health care and medicine. In the past year, self-driving vehicles have completed successful urban and long-distance challenges that were unapproachable 10 years ago (IEEE Spectrum).

In policing, robots are the future of S.W.A.T. (Special Weapons and Tactic Teams). With movies like Robocop and The Terminator, some may question whether or not we could save lives by creating machines to do the dangerous jobs found in law enforcement (Blake, B.). The answer is **yes. For instance, the** Avatar remote control robot has been used by SWAT for the past couple years. The robots get shot at instead of the officers when entering the situation at hand. Bomb robots have been used for years preventing explosives going off in the hands of

human operators.

Intelligent systems will significantly impact the safety of officers and civilians in tactical responses to critical incidents by the year 2020 (Harper, R., 2008). After 9/11, remote camera robots were deployed to the rubble site to assist. These robots allowed personnel to see into areas where they could not get a search team. The robots were equipped with day and night cameras as well as audio capabilities. While they saved no one, these robots were able to traverse some of the vast debris field, going where humans and dogs couldn't or wouldn't. This indisputably demonstrated they weren't toys or expensive curiosities, but viable machines capable of standing in for humans in dangerous situations. Before 9/11, the idea that intelligent robots could help save lives at disaster sites was dismissed as science fiction, but not afterward (Hassler, 2011).

In his book "The Green Spin" John Pilmer discusses the tactics and decisions that law enforcement officers make when faced with the challenge of a hostage situation (J. Palmer, 2010). Such situations, where men or women directly threaten the lives of others, are some of the scariest situations we could ever face. In his book, we can see the effects of a very important part of S.W.A.T. teams as they are today: they have the ethical decision making ability we as humans possess.

The European Robotics Network has raised concerns in that utilizing robotic

technology, we take the **human decision-making** capabilities out of the equation. The people will be concerned with whether not an intelligent system can make the intelligent and ethical decision in a situation when they don't have feelings. This element of law enforcement is crucial to getting the job done, and getting it done right. But there are citizen groups who argue that the possibility of bad decision making and emotional compromise is what worries them about giving men and women so much power in law enforcement. This is especially true when there have been many publicized "bad judgment calls" in the media. (Blake, B.) With that said, there are pros and cons to implementing robotics use for law enforcement purposes. There are, though, more pros than cons.

How Robots Work

There are so many different functions for which police and first responders use robots. SWAT teams use them when they have a hostage situation, barricaded subject, or any event that poses a great risk to human life. For instance in Waverly, Ohio SWAT officers sent a remote controlled camera robot into the residence where an armed subject was barricaded. The subject ended up shooting and damaging the robot however no police officers were injured. The use of the robot allowed to see the layout of the interior of the house as well as where the subject may be barricaded. In this instance the robot was shot; however, the police were able to defuse the situation and take the subject into custody. Although the subject shot

the robot, it was much better than having an officer shot and killed. By staying on top of future robotic technology law enforcement agencies will be better prepared for what lies ahead. The need for this type of technology may save lives as robots can enter into situations where a human could face grave consequences. Take for instance a hostage situation, or a barricaded subject who would be willing to die by suicide by cop, or the subject who is violent and says he is going to take someone with him (i.e. kill a police officer). Other critical incidents such as when the Japanese nuclear reactor was leaking are ideal situations to send in an intelligent system to handle the crisis (Nosowitz, D., 2011). IRobot's **used in that crisis were able to determine the radiation levels were too high for humans to sustain once they entered the crippled plant.**

Emerging **technology will allow** us to pinpoint people trapped below something without having to just dig until we find someone, **before it is too late.** This technology will not only assist law enforcement, the military and firefighters, but the increased artificial intelligence will be used to help surgeons with their **work. SWAT and search and rescue** teams are currently utilizing some of the newer intelligent systems that are available now. An example is the Robotex Avatar that is a remote controlled track vehicle about a foot and a half long. The robot has day and night cameras as well as audio capabilities. Teams have utilized this piece of equipment several times in a variety of different critical incidents

(Tejeda, G. 2010).

Robots May Save Lives – But They Are Expensive

Every year technology is advancing at what some may see as an alarming rate, almost to the point where financially strapped cities and counties cannot keep up with purchasing it. Police Departments need to continue to seriously research and explore utilizing robotic technology for the safety potential of civilians and officers involved in critical incident. There are numerous grants available to law enforcement agencies to procure these various technologies. There are also government programs which allow local and state agencies to get equipment and technologies that are being passed down from the criminal element of today and probably in the future is getting more and more violent. Weapons are being utilized in more crimes, and these same weapons are being used on law enforcement officers (Piquepaille, R.).

There are many new and different intelligent systems emerging now and there will be significantly more advancement within the next five to ten years. For a Police Department to make the transitional change into the future, they need to include line staff and middle managers along with senior management to develop a strategic plan to research and implement emerging technologies. Adding a new intelligent system, such as robotics for law enforcement, it is a changing phenomenon. It will take time for us to adapt and requires flexibility and

understanding due to the speed in which technology changes.

Conclusion

Law enforcement agencies need to start preparing now for the future; this includes getting their agencies current with the technologies available to them. There are many technologies, robotics, and other hi-tech tools that are currently being utilized to reduce the risk to law enforcement, civilians and other first responders. It is incumbent on the agencies to acquire the technology as if it is available, the public will expect it. The upfront costs of getting the technology will be costly; however agencies will need to weigh the costs of getting the technology versus the loss of human lives. There is no comparison for saving lives.

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