

**The Bill Blackwood
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**Policing in the 21st Century: Mobile Data Computers, a Cost Effective
Tool for Increasing Police Patrol Efficiency**

**An Administrative Research Paper
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ABSTRACT

Computer technology is a necessary aspect of life in the 21st century that people all over the world are utilizing in virtually all aspects of their lives, and law enforcement has to be prepared to keep up with the ever-changing technology. School children are now taught computer skills in elementary school and are encouraged to learn proficiency with the latest and greatest computer programs as they emerge. It is with this new philosophy on life that law enforcement must also use and become more proficient in computer technology to better serve the citizens of their communities.

Utilizing mobile data computers to increase police patrol efficiency is relevant to contemporary law enforcement because law enforcement must keep up with the demands of the citizens who expect the highest quality of service and professionalism from their police officers. The purpose of this research is to show that mobile data computers are a cost effective way for law enforcement agencies of various sizes to increase police patrol presence, productivity, and effectiveness. The method of inquiry used by the researcher included: a review of articles, Internet sites, periodicals, journals, and a survey distributed to 100 law enforcement agencies throughout the United States.

The researcher discovered that while the initial costs of obtaining the mobile data computer systems may be of concern to some law enforcement agencies, the increases in officer productivity, patrol visibility, officer safety, and decreased radio communication errors are worth the initial expense. The researcher also discovered that while 81% of the surveyed agencies utilize mobile data computers, they were not using them to their full capabilities. The researcher believes that to better serve the communities and

ensure the officer's safety, all law enforcement agencies should acquire mobile data computers and utilize them to the fullest extent that the individual departments deem appropriate for their agency.

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INTRODUCTION

Today, people live in a technologically advanced society where technology is involved in every aspect of daily life. This technology is used to enhance and make lives easier and more efficient. It seems odd to think that just 20 years ago, people conducted a productive life without being tied down by cellular phones, computers, and all of the modern technology that most of society cannot live without. With all of the technological advances in today's society, criminals and crime are becoming more advanced, which makes it necessary for law enforcement to keep up with these technological advances.

The problem or issue to be examined considers whether or not mobile data computers (MDC's) are a cost effective tool for increasing police patrol efficiency. The importance of mobile data computers to law enforcement is that they provide police agencies with a variety of information and other resources at the scene. Using MDC's decreases communication errors, time delays, and time spent in the office and increases officer safety, patrol visibility, and patrol efficiency. Mobile data computers can provide a law enforcement agency and its officers with vital information at the touch of a button. The purpose of this research is to determine if mobile data computers are, in fact, a cost effective tool for increasing police patrol efficiency.

The research question to be examined focuses on whether or not mobile data computers are a cost effective tool for increasing police patrol efficiency. The intended method of inquiry includes: a review of articles, periodicals, journals, internet sources, and current costs of available mobile data computers on the market. A research survey of 100 police agencies throughout the United States will include questions as to whether

or not the agency utilizes mobile data computers and the applications for which the MDC's are utilized. The survey will also ascertain whether or not the agency has noticed an increase in patrol efficiency or a decrease in radio communications while maintaining officer safety.

The intended outcome of the research is to provide evidence that mobile data computers, in fact, do increase police patrol effectiveness through their many uses and applications in lieu of the costs associated with obtaining, implementing, and maintaining the systems. The field of law enforcement will benefit from the research because of the many uses and applications that mobile data computers can provide to police agencies and the patrol officers on the street while increasing patrol visibility and effectiveness. The research will also provide evidence that the mobile data computers will allow for decreased radio traffic, allowing the dispatchers to place more emphasis on incoming emergency phone calls and higher priority radio traffic while still maintaining a high level of officer safety.

REVIEW OF LITERATURE

In today's society, officer safety is of the utmost importance to law enforcement agencies around the world. There are incidents reported by the media, on a daily basis, of situations when a police officer's safety was jeopardized. One law enforcement tool that could greatly enhance officer safety is the use of mobile computer technology. Computer technology is an ever-changing environment that impacts the world daily, and, as such, it is the law enforcement agency's duty and responsibility to be knowledgeable about this technology in order to better serve the citizens of the community. Mobile data computers allow the individual patrol officer to maintain a

higher level of safety when dealing with subjects on a daily basis by giving the patrol officer access to immediate and accurate information in the field ("Field Use of Portable Computers: Opportunities and Obstacles," 1995).

There are numerous ways in which mobile data computer systems can help to increase police patrol efficiency: one of which is by increased productivity. Because the factors that constrain officer-generated computer inquiries are ameliorated with the implementation of a well-designed mobile data system, agencies that have taken this step have experienced surges in officer productivity. In fact, one expert suggested that mobile data can increase patrol officer productivity by as much as 500% to 1000% (Patterson, 1994). The measure of increased productivity is determined by the individual agency and, as such, is up to interpretation. The researcher believes that in order to accurately judge the increase in productivity, the individual agency should review calls for service as well as time spent in the office away from the patrol officers' assigned area working on reports. Agencies should also review vehicle registration and drivers license checks prior to the implementation of the mobile data computers compared to after implementation. According to Schroeder (2005), the implementation of the virtual partner program by the Delray Beach Police Department resulted in an 84% increase in traffic stops and criminal citations, and the average time spent on a traffic stop decreased from 20 to 25 minutes to 10 to 15 minutes.

Another area in which mobile data computer systems can assist the everyday patrol officer is in the area of officer safety. Chu (2002) stated that known offender records, mugshot, CPIC/NCIC, motor vehicle, and CAD queries are available to the officer when it is often needed the most: on the streets at a critical incident or at a

serious crime scene. Having these timely information resources improves officer safety and enhances the ability of the police to identify and apprehend criminals. When a police officer stops a driver for speeding or some other traffic related offense, he usually does not know exactly what kind of person he is going to be dealing with. The driver could be a fleeing felon, a drug trafficker, or merely a careless driver. But the use of mobile data computers in the patrol vehicle allows the officers in the field to gather more information on the people they encounter before they have any physical or verbal contact with them, thereby increasing the officer's individual knowledge and awareness of potentially dangerous situations or encounters (Courret, 1999). This area of officer safety can also be greatly enhanced if, when responding to an active shooter situation or a bank robbery, the responding officers have access to the school or bank surveillance cameras on the mobile data computers in their patrol vehicles. A responding officer could bring up the security cameras and determine a variety of information such as suspect descriptions, locations, hostages, and the safest point of entry locations without jeopardizing officer safety. By having access to immediate and accurate information, the officer in the field is in a safer position when dealing with subjects on a daily basis ("Field Use of Portable Computers: Opportunities and Obstacles," 1995).

Overwhelming radio traffic coupled with the inability of officers and dispatchers to transmit vital information over the radio at critical times is another major concern where the use of mobile data computer systems can assist agencies. This system not only reduces radio traffic, it also provides the telecommunicator with more time to handle incoming and outgoing emergency telephone calls (Davis, 1995). The ability to reduce

air-time for more serious radio communication is also vital to the officer safety aspect of law enforcement.

METHODOLOGY

The research question to be examined considers whether or not the use of mobile data computer systems are a cost effective way to increase police patrol efficiency. The research is anticipated to show increases in police patrol efficiency in the areas of productivity, officer safety, and patrol visibility as well as decreases in radio communication errors. The decrease in radio traffic will further increase departmental productivity by allowing the dispatchers to concentrate on the other aspects of their job, such as handling incoming calls for service.

The researcher theorizes that the use of mobile data computers are a cost effective way for law enforcement agencies to increase police patrol efficiency. The researcher believes that law enforcement agencies can increase their police patrol presence, productivity, and effectiveness through the use of mobile data computer systems in spite of the normally high costs associated with obtaining and maintaining the mobile data computer systems for their patrol vehicles. In order for the mobile data computers systems to be cost effective, the individual agencies have to determine what capabilities their individual departments require and utilize the mobile data computers to their full capabilities.

The method of inquiry will include: a review of publications, articles, Internet sites, periodicals, journals, and a survey of 100 law enforcement agencies of varying sizes throughout the United States. The method of inquiry will also include a cost analysis and research of the various mobile data computers on the market and their

costs. The instrument that will be used to measure the researcher's findings regarding the subject of whether or not mobile data computer systems are a cost effective way to increase police patrol efficiency will include a survey of various law enforcement agencies.

The size of the survey will consist of ten questions, distributed to 100 survey participants from various law enforcement agencies located throughout the United States. The response rate to the survey instrument resulted in 48 responses from the 100 law enforcement agencies. The information obtained from the survey will be analyzed by creating a graph of the research findings that will allow the researcher to present the findings in an easily identifiable format.

FINDINGS

A research survey was composed and submitted to 100 law enforcement agencies across the United States, which related to their individual departments' mobile data computer system usage. The first question was whether or not the individual agencies utilized mobile data computer systems. The survey revealed that of the 48 agencies responding, only nine did not currently use any type of mobile data computer system in their patrol vehicles. The responding agencies also reported that their individual patrol officer's response to the mobile data computers has been very positive, and the officers commented on how much easier and more convenient the mobile data computers have made their daily patrols.

The survey inquired as to whether or not the individual agencies utilized the mobile data computer systems for report writing. Of the 48 responding agencies, 39 agencies advised that they used mobile data computer systems. Of the 39 agencies, 26

stated they used the mobile data computers for writing reports. The other 13 agencies advised that they were not currently using the report-writing capabilities on their mobile data computer systems.

The next question on the survey inquired as to whether or not the responding agencies utilized their mobile data computer systems for Texas Crime Information Center (TCIC)/National Crime Information Center (NCIC) checks. The 39 responding agencies with mobile data computer capabilities reported that all but two of them utilized the mobile data computers for TCIC/NCIC checks. The participating agencies were asked whether or not they utilized their mobile data computers for accessing departmental databases such as gang files, prior contacts with the agency, etc. Of the 39 agencies with mobile data computer system capability, it was reported that 24 of the agencies did, in fact, utilize the mobile data computers for accessing some type of departmental database.

The next inquiry was regarding whether or not the responding agencies utilized the mobile data computer systems for monitoring surveillance cameras. Of the 39 agencies with mobile data computer system capability, only four of the 39 reported that they did, in fact, utilize their mobile data computers for monitoring surveillance cameras at the local schools in their jurisdiction. One agency did advise that this capability was only available to supervisors.

The next question posed to the participating agencies was whether or not the department utilized their mobile data computer systems for accessing street maps, facility maps, and route information. Of the responding agencies, only 28 of the 39 that had mobile data computer systems reported utilizing these applications on their units.

The majority of the agencies that did use the applications reported that this capability was primarily used for finding address locations and street maps. The participating agencies were asked what type of mobile data computer system their individual departments utilized in their patrol vehicles. The survey results showed that the types of mobile data computers used by law enforcement agencies varied from Panasonic Toughbooks, Motorola, Integran, Coban, Data 911, and Dell brand laptop computers.

The participating agencies were queried as to whether or not their agencies had noticed an increase in their department's patrol presence and productivity. This particular question was subjective and, as such, the researcher received a lower than expected result of agencies that reported an increase in patrol presence and productivity attributed to the use of the mobile data computer systems. Of the 39 responding agencies that utilize mobile data computer systems, only 27 agencies reported an increase in patrol presence and productivity. This one particular question could have been influenced by a lack of any type of established measurable standard.

The agencies that reported an increase in patrol presence and productivity advised that the mobile data computer systems increased patrol presence by allowing the patrol officers to complete reports in the field while maintaining a visible police presence versus returning to the station in order to complete reports. These agencies also reported that the mobile data computer systems increased patrol productivity by allowing the individual patrol officers to conduct their own TCIC/NCIC, which resulted in more arrests of wanted persons. Additionally, the agencies reported an increase in patrol productivity in the recovery of stolen vehicles because of the individual patrol

officers utilizing the mobile data computer systems to run vehicle registration checks themselves while on patrol.

The last question posed to the participating law enforcement agencies in the survey was regarding whether or not they would recommend the use of mobile data computer systems to other law enforcement agencies. Every agency that participated in the survey reported that they would recommend the use of mobile data computers to other law enforcement agencies, including the six agencies that did not currently have mobile data computer systems.

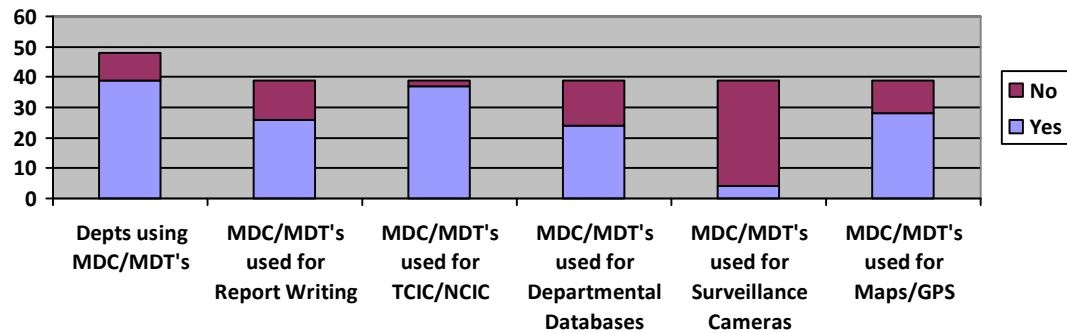


Figure 1. Results of agencies surveyed on the use of mobile data computers.

The researcher also discovered that the various mobile data computer systems available to law enforcement range in price from \$2,000 for a basic system with no upgrade options to \$9,000 for a top-of-the-line system with upgrade options. Some of the available upgrades include wireless capability, mapping/GPS, and departmental database support. The various manufacturers advised that the configurations of the mobile data computers are based off of the individual needs of each agency.

DISCUSSION/CONCLUSIONS

The problem or issue examined by the researcher considered whether or not mobile data computer systems were a cost effective way to increase police patrol efficiency. The purpose of this research was to provide evidence that the utilization of mobile data computer systems in police patrol vehicles would increase police patrol efficiency in a cost effective manner. The research question that was examined focused on the cost effectiveness of utilizing mobile data computers as a means of increasing police patrol efficiency.

The researcher hypothesized that mobile data computer systems were a cost effective tool for increasing police patrol efficiency. The researcher concluded from the findings that mobile data computer systems are of great benefit to officers in the field as well as to the departments and their citizens. Research showed that patrol officers were better informed and equipped to complete their assigned patrol duties in the field through the use of mobile data computer systems.

The findings of the research supported the hypothesis. The research showed that the use of mobile data computer systems increases police patrol visibility by keeping the patrol officers out in their assigned areas while allowing them the ability to complete paperwork in the field. Findings further supported that the use of mobile data computer systems provides the patrol officer with vital suspect and vehicle information while out in the field, thereby increasing officer safety. The research supported that the use of mobile data computer systems decreased radio traffic, thereby freeing up the dispatchers to handle incoming calls for service and higher priority radio traffic. As shown by the research, the use of mobile data computers improved response times by

allowing officers to input address locations and generating a map to show the quickest route to the address in lieu of the responding officer having to stop and look up the information in a key map.

Limitations that might have hindered this study resulted because of a lack of participation by the surveyed law enforcement agencies. Another limitation on the survey results was the lack of a defined measurable indicator of police patrol productivity and efficiency as determined by each agency and the various opinions of the respondents. Cost of the mobile data computer systems and funding are a major obstacle that prevents most agencies from implementing the systems into their departments. Each law enforcement agency should look for grants and other funding opportunities to take some of the financial burden off of departmental budgets for acquiring the mobile data computer systems.

The study of mobile data computer systems and whether or not they increase police patrol efficiency is relevant to contemporary law enforcement because the goal of every law enforcement agency is to provide the highest quality professional service to the citizens of its community, and the use of a mobile data computer system allows each agency to better serve its community through their use. The individual law enforcement agency, police officers, and citizens, as well as the law enforcement community as a whole, can benefit from the research of utilizing mobile data computer systems as a tool to increase their police patrol effectiveness.

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APPENDIX

Mobile Data Terminal Survey

1. Does your department currently use Mobile Data Computers (MDC's) in its patrol units? If not has your department researched using MDC's?
2. What has been the individual patrol officer's response to utilizing the MDC's?
3. Does your department utilize the MDC's for report writing?
4. Does your department utilize the MDC's for TCIC/NCIC checks?
5. Does your department utilize the MDC's for accessing departmental databases?
6. Does your department utilize the MDC's for monitoring surveillance cameras?
7. Does your department utilize the MDC's for street maps, facility maps and route information?
8. What type of MDC system does your department use?
9. Has the use of the MDC's increased your department's patrol presence and productivity? If so how?
10. Would you recommend the use of MDC's to other law enforcement agencies?

This survey is being conducted as part of a research project for the Law Enforcement Management Institute of Texas Leadership Command College and your participation is greatly appreciated.

Please return all surveys to:

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