

**The Bill Blackwood
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**In Car Police Video:
New age of Digital Cameras**

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ABSTRACT

The purpose of this paper is to compare and contrast the Police In-Car Digital Video Systems to the analogue systems many police agencies still use.

The goal is to show the advantage digital video systems have that outdates analogue video systems.

A survey of 23 police agencies throughout the state of Texas and one agency from the state of Alaska varying in sizes from under fifty officers to agencies with over 250 officers. The survey inquired the agencies what type of video systems they were currently using and the benefits and drawbacks to the video system being used.

The agencies participating in the survey, who are currently using the digital video, state that the digital video is superior in many aspects, including cost saving, storage capability and clarity of the video itself. Some agencies also reported easier operation and maintenance of the digital systems over the analogue systems.

While there are many positives aspects to the utilization of digital video, one negative factor that appeared during the research was the cost of the digital system. The digital video system, on average, will cost approximately twice as much as an analogue system.

The author has determined, from the information obtained during the research of this paper, the utilization of digital videos instead of analogue video systems should be encouraged to police agencies due to positive aspects digital video can offer over the analogue systems still widely used today.

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INTRODUCTION

In the past several years, law enforcement has become increasingly dependant on the use of in-car video systems. The beginning of this age included the analogue system using VHS tapes. This type of system has been the predominant one used in the past several years by many police departments worldwide. Similar to most technology, this system is becoming more and more out of date and being replaced by the new and improved digital systems recording systems.

The new age of digital recording components are now being integrated in police departments, sheriff offices and many different law enforcement agencies throughout the world, replacing the old and outdated analogue systems. The new digital systems are proving to be invaluable to law enforcement agencies for preservation of crucial evidence (which any law enforcement officer or prosecutor will attest to preservation of evidence being key to any successful prosecution) storage capabilities and time saving arenas.

There are many different types and models of digital video systems available to law enforcement today. An agency will spend a considerable amount of time and money doing the testing and research on each system they choose to determine if that particular system is appropriate to fit their logistical and budgetary needs.

The overall purpose of the research is to show how the new digital recording systems are better for the new age of law enforcement. The Texas Code of Criminal Procedure Section 2.131 (d) states that a law enforcement agency shall examine the feasibility of installing video cameras in their patrol vehicles. This will allow an agency to accurately portray an event to a governing body that examines such videos. The research will also assist a perspective agency as to what system made would be best suited for that department. The research also will intend to show that digital system can also provide a better training environment for future law enforcement officers.

This research will include a review of literature, along with a survey. Information was obtained from several sources including journal articles and magazine articles from publications, specifically targeting law enforcement strategies.

The research is anticipated to show that many departments are abandoning the out-of-date method of utilizing the analogue method and turning to the more up to date digital method, along with reasons for the change. This research is intended to demonstrate how digital technology is permeating the law enforcement community leaps and bounds and proving itself worthy of the challenge. The benefit of this research is educating other law enforcement agencies on the best method for their specific department on the use of recording equipment. It will also provide an agency a better insight as to what the digital recording system really is capable of accomplishing in contrast to the analogue system.

REVIEW OF LITERATURE

The first in car video was used in the United States in the mid 1960's. The first system required two officers: One to drive the car and one to operate the camera. The technology revolving around police in car video since that time has changed dramatically. There are now "stand alone" units that require only the touch of a button to operate. The new systems are so elaborate to the point that a camera can be turned on when an officer is not even in his patrol unit.

Initially these cameras were widely thought by police officers as "Big Brother" (Edwards, 1999). However a man by the name of Jim Kuboviak summed up it best when he stated these cameras are the best form of "CYA" (cover your assets) available to law enforcement officers. In either situation an agency chooses to use today, analogue or digital, an "in-car video system in police vehicles monitor the behavior of police officers and have actually

proved to be police officers best in many unwarranted law suits (Douglas, 2004)". Since the inception of the in car video, this author believes officers have become more dependant and reliant on the video in precarious situations. An allegation against an officer can now be easily disproved, or proved, just by simply playing back the video of the event. This also reduces the liability an agency can take on by allegations of misconduct.

The in car video has also provided law enforcement worldwide with an objective look into training. Officers from other agencies have the ability to study and critique officer's actions by the use of the video. This has improved officer conduct, officer safety and the community's belief on police activity. "Citizens generally support the use of in- car cameras as a means of providing greater accountability for behavior by both officers and citizens involved in traffic stops (Westphal, 2004). Also by making the citizen aware a camera is being utilized during their contact with the officer, the urge to lodge unfounded complaints against officers has greatly reduced.

Making the transition from analogue to the new and improved digital recording systems can be a time consuming and costly process for a police agency. Therefore, an agency must believe the research being conducted is beneficial to their perspective department. An agency must be shown the biggest advantage to digital video is the consistency it provides. There are many factors that must be considered when an agency is making the transformation. The in car video is used in a multitude of functions such as recording of crime scenes, traffic stops and the interview of witnesses, victims and suspects alike. These factors demand the system being used be of high quality, dependability and consistency. "The biggest advantage to digital video is its consistency (Paytner, 2004). The digital system is far more versatile and mobile than the old analogue systems. An officer can now remove a camera from their car to record an event where

as the person or object used to have been brought to the police unit on order for the recording to be effective.

Digital video also offers such items as the “pre-event” recording, which simply means that the system actually recorded an event anywhere from 25 seconds to 4 minutes prior to the system being activated. “The development of “pre-event recording” also makes digital video imaging more effective in gathering evidence (Dees, 2004). This can be crucial in several circumstances when if an event goes before and judge and jury. Most times, there is vital information that occurred just prior to a camera being activated. The creation of the “pre-event recording” is an invaluable tool to law enforcement. This benefit has never been available in the analogue systems of any kind. Most times in law enforcement, volatile situations happen with no warning and indication. This feature can now allow persons to see what happened prior to the event that may have lead to the situation occurring.

Although digital video cameras do provide a superior product, there are limitations to the system when it comes to clarity and resolution. A digital video can be distorted due to what is known as “compression”. This is when a video file is saved to a database and the image resolution has been reduced due to being compressed. “The biggest problem with digital video images is compression; today’s technologies sacrifice the amount of detail retained in the image for the sake of storage capacity (Garrett, 2004). This is an issue that departments need to consider when looking for a video system to activate in their patrol vehicles.

By using the new digital video system a police agency should experience advantages when it comes to storage and the use of personnel to maintain the system. A digital system does not require the “man hours” to store and sort the tapes that the analogue system demanded. The digital system also does not require the same amount of space for storage that the analogue

system required. All the video files from the digital system can be stored into a server or separate hard drive that will occupy only a small space in a room, where as the analogue system required the use of an entire room for the tapes. “Space and personnel for storage are reduced with digital video and server-based video can be viewed from any computer networked to the system (Dees, 2004)”. An article in the International Association of Chiefs of Police also outlines just how expensive the allocation of resources to handle and maintain VHS equipment is extremely costly to agencies. Thus integrating the use of digital, while initially more expensive, will in the long run, is much more cost effective.

METHODOLOGY

The purpose of this research paper is to determine whether or not digital video system is better suited. This author believes through the findings outlined in this article that today’s law enforcement would be better suited through the use of digital video systems.

A survey of 23 police agencies from within the State of Texas and one agency from the State of Alaska was conducted while gathering information for this research. The agencies polled in the survey ranged from departments containing less the fifty personnel to large metropolitan agencies.

The agencies were asked if their particular department was using digital video and if so, what were the benefits and drawbacks when the change was implemented and how the digital system has performed since the integration. Of the 23 surveys questionnaires sent out, there were 20 agencies that responded.

Thirteen of the departments in this survey still utilize analogue systems. The department sizes range from less than fifty to over two hundred and fifty personnel in the department. There were five agencies that participated in the survey that had made the change from analogue to digital.

All the agencies participating in the survey that had made the change reported quality and storage of the video files has greatly improved. One agency stated that not only has the picture quality improved, but the audio portion of the video has also improved. These are the two main points the participating agencies stressed to the author.

No agency in the survey reported any storage problems with the digital systems. All the agencies involved in the survey stated that their storage problems have since been greatly reduced by the use of digital system. Agencies reported they are now able to utilize entire rooms for other purposes when the old VHS tapes used to be stored.

FINDINGS

The research conducted in the paper has been obtained and produced in an effort to show the benefits and problems with the integration of digital in-car video versus the analogue video system.

Through the research conducted by the author, it has been determined that agencies throughout Texas are slowly but surely making the change to digital video systems for the patrol cars. The author has discovered that there are limitations on many departments that keep them from making the change. Agencies currently using the digital system over the analogue are stating that digital is a much better alternative to the old analogue system. While the analogue system still has its place in law enforcement, the digital system is increasingly becoming the wave of the future for many Texas law enforcement agencies based on several factors.

The author has discovered that many agencies that have made the change from analogue to digital have praised the quality of the digital system over the analogue. The resolution and quality of the pictures has been greatly enhanced. Agencies are opting to use the digital systems based a lot on this fact despite the increased cost digital system sometimes present.

Agencies are also applauding the time saving methods the digital systems are providing. The use of personnel is being reduced to maintain the integrity of the video due to the storage capabilities of the digital system. A person will no longer have to dedicate most of their time to changing out and rotating the old VHS tapes. The same person can now let the computer do all the work just by simply pressing a button. This will allow a person devote time in other areas of their assignments and be more productive to the agency.

Along with the time saving benefits of the digital system, the issue of storage has also been dramatically improved. Agencies and articles alike has reported that the storage of video files logistically more smart than the analogue system. Where the analogue mostly required an entire room to maintain the tapes, the new digital system now only uses a portion of that same room thus opening up a precious needed area that most departments will utilize for the good of the agency.

The issue of quality was also discussed within the research. The agencies that participated in the survey commended the greatly improved quality of the digital video over the analogue. Not only in the picture has quality digital provided, but also in the audio quality as well. The improved quality has lead to better evidence preservation and presentation during prosecutions.

Agencies also reported that the use of the digital systems is far easier to utilize in the field for the officers. The officers are no longer responsible for the upkeep of video files. The new digital system will download into a mainframe hard drive, thus releasing the officer of the

responsibility of logging a tape in and out. This also contributes to the time saving method this author believes that digital video will offer agencies.

A problem that was reported in the research that digital video files can sometimes be what is called “compressed”. This is when a digital file is downloaded into the main hard drive and the file is basically compressed into a smaller file sometimes corrupting the images recorded. This will produce an image that is much more blurred than originally recorded. The images can sometimes be reinstated to their original quality, but sometimes they cannot. This most times occurs when an agency puts more file footage in storage than the storage area is designed to maintain. While this is not a common occurrence, agencies need to be aware of the possibility of this flaw while considering a digital system.

The issue of training was also discussed within the research. Officers today will have better material in their training environment. The days of viewing blurred images that were difficult to make out or determine what had actually occurred are all but over. Officers can now view a situation accurately and objectively thanks to the technology digital systems bring to the law enforcement arena. This will benefit all of law enforcement that are currently performing their duties as well as the future of law enforcement.

The cost effectiveness of digital is a source of discussion. It is widely agreed upon that digital video is more expensive than analogue. However, the cost of the system is one of initial cost and not long term. An agency must look at the overall cost of each system to determine what would be more financially acceptable to their budgetary needs. The analogue and digital systems have what is called reoccurring cost. While the analogue systems main reoccurring cost is the replacement of videotapes and the cameras themselves, the digital system has proven the only reoccurring cost to that system is the purchase of additional computer memory. While the camera

if a digital may fail and require replacement, it was the authors' findings in this research that agencies who utilize digital video have not encountered that reoccurring cost to date. In the long run, the digital system is a much more cost-effective measure in this author's opinion.

DISCUSSION/CONCLUSION

The purpose of this research was to ascertain the benefits, if any, to the implementations of the digital in-car video system. This author believed that the utilization of digital technology in police cars would be beneficial to law enforcement agencies. Although the costs of these systems are initially higher than the dated analogue system, the cost overall would be reduced due to space saving and not having to purchase video tapes any longer.

Based on the information obtained in this research, this author believes that the utilization of digital video systems would be greatly beneficial to law enforcement. While there were few draw backs to the belief this author has, the overall material obtained suggest the digital system would be a great asset for an agency to obtain.

The findings outlined in this research, in this author's opinion, has supported the idea that digital video is a superior alternative to analogue video that is still widely utilized by agencies today. The cost effectiveness, space saving capabilities and superior output of a product show that the digital system should become the future of in car video systems of police agencies around the world.

The author was not able to conduct a larger study of law enforcement agencies throughout the Unites States due to travel limitations and time constraints.

The author hopes that the information included within this research will be used by law enforcement agencies when considering the implementation of digital recording equipment to

their departments. While the author agrees that not every agency may have the budgetary means and needs for such a system, the author believes that agencies investigating the usage of the digital systems will find the information included in this research will be helpful in their determination.

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