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Expanding a Finite Resource in Law Enforcement: A Multi-Discipline Approach Involving Crime Analysis and Tactical Operations

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Abstract

Strategic analysis deals in crime trend forecasts, resource allocation, and situational analysis. The crime analysis process includes data collection and management, data scanning, pattern/trend analysis, information dissemination, strategy development, and strategy evaluation. (Massachusetts Association of Crime Analysts, 2001).

Crime analysis has the ability to provide that opportunity. Can a crime analysis unit answer that question? Other readily identifiable products of crime analysis include crime bulletins and MO Files. MO Files assist in identifying probable offenders in pattern/series crimes.

Reaction to an identified crime pattern/series becomes pro-active. Some agencies have specialized units that deal with the crime patterns. Crime analysis examines offenses for patterns and then patterns for a series.

Can small and mid-size agencies benefit from crime analysis? Criminal intelligence and crime analysis provide decision making tools, not magic bullets. Statistics identify the probabilities for a crime event. The primary problem with a crime analysis program is getting started.

Crime analysis: Tactical and strategic aspects. (1998) Crime Analysis: From first report to final arrest. Crime analysis and the struggle for legitimacy. International Association of Crime Analysts: Author. Mapping crime: principles and practice. Massachusetts Association of Crime Analysts (2001). Crime Analysis. Local Law Enforcement & Intelligence Led Policing. Crime analysis: Administrative aspects. Tactical Crime Analysis (2000).

Table of Contents

Introduction

The world of today is a troublesome place. Calls for service and citizen expectations increase every day. Persons who commit crimes for a living do not respect city limits, county lines, or even state/national boundaries. They move freely from one jurisdiction to another without missing a beat. Today the small to mid-size agency provides service to the majority of citizens, and many of these agencies are already operating at their maximum capability. Personnel are the costliest and most finite of all resources available to the police community. Police agencies of all sizes face a basic fact; none will ever have enough personnel. If the police community, particularly smaller agencies, is to be successful in meeting increased demands, they must learn to work smarter.

Technology is able to make up for some of these shortages. Computerized records management systems are available that allow officers to complete reports from the car. The system design is to increase the amount of time an officer actually spends on the street. Vast quantities of information are stored rapidly and efficiently in this manner. Information equals knowledge and knowledge equals power. Is this knowledge and power consistently used for the maximum benefit of our citizens? "Clearly, the intelligence process is a fundamental element in the overarching mission of any law enforcement agency, and is an essential tool in the criminal investigation" (Hunt, 1997, 47).

This project will examine a multi-discipline approach to working smarter. Can small to mid-size agencies benefit from a combined multi-jurisdictional crime analysis unit in a geographic area? Berkeley, California's Police Department began using Pin Maps, Method of Operation (MO) files, and Known Offender files as early as 1909 (Spelman, 1988). An examination of the capabilities and advancements in crime analysis and criminal intelligence is the first order of business. A review of available literature will examine each process and its

products as they relate to increased effectiveness. A survey to determine current usage of crime analysis products and multi-jurisdictional units was conducted.

Next, an examination of methods available for the exploitation of knowledge gained from both the crime analysis and criminal intelligence processes. However, are these methods productive across the board as they relate to multiple smaller jurisdictions? Is it enough? Do these models satisfy the expressed need to work smarter?

Finally, this research will examine a model for a multi-discipline, multi-jurisdictional approach that may well provide the expanded coverage required for pro-active use of the information provided by crime and intelligence analysis. It is hypothesized that this model will offer agencies in a defined geographic area the opportunity to maximize the potential of crime and intelligence analysis.

Law enforcement has an obligation to protect and to serve the citizens of our cities, counties, and state. An increase in cooperative efforts is required to provide the increased level of service and protection our citizens deserve. Innovative solutions are required to take advantage of these cooperative efforts. It is hypothesized that the evidence will demonstrate that the use of intelligence and analysis will provide street officers and investigators with an invaluable set of tools. The identification and implementation of these types of cooperative solutions have the ability to affect society in general with lower crime rates. Individual officers involved in a successful project experience greater job satisfaction. This in turn benefits the citizens again with increased productivity.

Review of Literature

Crime analysis as a law enforcement tool, both formally and informally, has existed since the 19th century. French cartographers created hand-drawn maps of crime locations (National Partnership for Reinventing Government, 1999). Scotland Yard created a modus operandi

classification for criminals in 1896 (Bureau of Justice Statistics, 1994). Police in Berkeley, CA used both of these techniques; in addition to Known Offender files as early as 1909 (Spelman, 1988).

The difficulty in maintaining and updating hand drawn maps and even pin maps, coupled with an increased emphasis on social environment and individual development removed statistical data from the forefront (National Partnership for Reinventing Government, 1999). However, it lingered in the background hidden from view. Crime analysis units of varying sophistication are springing up all over the country (Haley, Todd, & Stallo, 1998). Essentially, the old has become new again. The law enforcement community is rediscovering some of their roots, giving them new names, and taking them into the 21st century.

Crime analysis means using information that is collected by law enforcement agencies to facilitate "strategic planning, manpower deployment, and investigative assistance" (Bureau of Justice Statistics, 1994). The ultimate replacement of the Uniform Crime Report (VCR) with the National Incident Based Reporting System (NIBRS) will expand the ability of agencies at all levels to collect information (Bureau of Justice Statistics, 1994). The collection of information, in and of itself is of limited value. The analyst examines, questions, and reports information creating a knowledge base for sound decision making. Without the analyst, little is gained (Phelan & Fenske 1995).

Crime analysis can be separated into three areas: administrative, strategic, and tactical (Haley & Stallo, 1998). Each of these areas provides a specialized functionality for the Agency's use. Administrative functions generate statistical studies that provide the Agency Head with information needed to make and support the decision making process. Strategic analysis deals in crime trend forecasts, resource allocation, and situational analysis. Tactical analysis seeks to identify patterns/series offenses, probable offenders, and potential targets of

criminal activity. Each process adds to the knowledge of the decision-makers as well as to each officer exposed to the process.

The development of crime analysis units is divided into three distinct levels of operation: Informal, Basic, and Advanced (Haley & Stallo, 1998). Informal analysis occurs on a daily basis by individual Officers. The basic curiosity of an Officer creates a desire to understand and know what is going on in his/her area of operation. Basic analysis is found at all levels of an Agency's operation; occasionally organized, but more often of a more informal nature with limited dissemination of information throughout the agency. Advanced analysis, with dedicated personnel, is growing in usage. It is difficult to visit an agency website without finding some form of analysis and/or crime bulletin information.

The crime analysis process includes data collection and management, data scanning, pattern/trend analysis, information dissemination, strategy development, and strategy evaluation. (Massachusetts Association of Crime Analysts, 200 1). If that sounds like a handful, it is. Perhaps a smaller definition of the process is problem identification and solving. Problem identification consists of data collection, management, scanning, and analysis. Dissemination, strategy development, and evaluation are the second phase of the process. It is important here to stress the importance of the evaluation process. Is the developed solution working? Can the solution be modified or improved to obtain the desired results? These are a couple of the questions that need to be continuously asked.

COMST AT is an example of an advanced and formal usage of crime analysis. Developed by Jack Maples, New York Transit Police, COMSTAT is a four-step process (Haley, Todd, Stallo 1998 / McGuire 1997). Criminal intelligence is the jumping off point for the COMST AT process. Criminal Intelligence creates a knowledge base to make viable decisions. The next step is to place police where and when they can be most effective. Identification of

high crime areas and/or crime patterns provides the basis for this assessment. Recognition of the most efficient manner of working the problem is the third step. Targeted Patrol, decoys, surveillance and sting operations are some of the options available to the tactician. . Last, and then again first, is the continued re-evaluation of the intelligence, tactics and results obtained by the operation. Is the problem being effectively addressed? Are the tactics creating a new or larger problem?

New Orleans takes serious advantage of COM STAT to improve morale and reduce crime in their city (Gurwitt, 1998). Evaluation of available data places individual officers and units in a position to be successful by providing valuable information on crime trends, potential targets of crime, and probable offenders.

The National Incident Based Reporting System [NIBRs] is on the way. "The ability to link information about many aspects of a crime to the crime incident marks the most important difference between NIDRS and the traditional UCR." (Bureau of Justice Statistics, 1993). The Uniform Crime Report [UCR] currently used to measure crime is based on a hierarchy of seven (7) Index Crimes and only the most serious in a crime event is reported (Spelman 1998). For example, take a case involving a car jacking in which the driver/victim is shot to death. In this instance, the UCR would only register the most serious index crime, murder. NIBRs would record both the murder and the auto theft. In evaluating crime data, each element of the event is a critical part of understanding the method of operation, determining probable future victims and events, and identifying the perpetrator.

"The main stages of the system are targeting, gathering, analysis, and dissemination (including the issue of the relationship between intelligence and action), each of which provides the site for clashes of power and resistance as police seek the control of information (of. Wilsnack 1980)." (Dintino & Martens, 1983). "Knowledge is power" is an old and accurate

statement of fact. However, hoarded information becomes useless to other officers in the same and neighboring jurisdictions. For information to become knowledge, and in turn – power, it must be shared.

"Policing tends to be a very secretive business, in which the common operating philosophy is the exclusion of people from sharing information, says Bratton" (Gurwitt 1998). With law enforcement charged with the protection of life and preservation of property it seems more logical to work together. (Gottlieb 1998) A criminal is not the exclusive property of any agency or officer (National Partnership for Reinventing Government, 1999). Criminals do not observe city limits, county lines, state borders, or even international borders. The collapse of information sharing results in mission failure.

Each day crime is identified as a problem by the print and broadcast media. Daily, somewhere, a citizen is victimized by crime and a problem that never ends, begins yet again. Many agencies assign follow-up investigations based on solvability factors. Informal discussions with investigators from local agencies [Sheriffs Office / Municipal Police Department] indicated that each had several hundred active cases. Each reported being overwhelmed by the sheer volume at times. "Never overlook the obvious" becomes a statement of wonder. Perhaps the answer is in working the problem instead of clearing a crime. By shifting the focus from clearing an individual crime to solving a problem created by a series of crimes the opportunity presents itself to reduce the number of crimes to be investigated (Laing, Gerondale 1999).

Problem-oriented criminal investigations create "three areas of opportunity for substantial improvement". (Laing, Gerondale 1999) Increased coordination with other officers, divisions, and the public in general can result in better identification of associated incidents and offenders. Shifting the focus of investigations from cases to larger pattern/series offenses targets the

problem and potential offender. Investigators are then able to take full advantage of available resources. These resources include MO Files, Field Interviews, and other sources of information. (Laing, Gerondale 1999)

Placing the emphasis on problem solving, rather than case clearance, plays into the strong suit of crime analysis. The analysis of crime provides a basis for decision making. A crime analyst can be invaluable in detecting a crime series/pattern, identifying suspects by MO, creating profiles of targets and suspects, and generating forecasts of probable crimes. (Phelan, Fenske 1995)

Historically law enforcement agencies rely heavily on reactive and preventative patrol techniques. This method relies on the observational capability of officers and the luck involved in being in the right place at the right time. Using crime analysis to identify the problem, apply appropriate resource levels, and constantly re-evaluating the results provides a more productive and economical outcome. Decidedly, crime analysis is a cost-effective means of obtaining a desired result. (Haley, Todd, Stallo 1998/ Walker 1992) A fundamental element of leadership is to give personnel the opportunity to be succeed. Crime analysis has the ability to provide that opportunity.

Methodology

Pressure continues to mount on the single most expensive resource available to the law enforcement community, personnel. Does a method exist that will allow officers to work smarter? Can a crime analysis unit answer that question? Will a crime analysis unit provide a demonstrable benefit to patrol officers and investigators in the prevention, detection, and investigation of crime? How can small to mid-size agencies take advantage of COMSTAT type technology?

In short, can small to mid-size agencies band together, share data, and benefit from a multi-jurisdictional unit in a geographic area? It is hypothesized that applying crime analysis and criminal intelligence analysis techniques across a wide spectrum of data from multiple agencies III a given geographic area will provide valuable tools for patrol officers and investigators.

To determine the validity of the stated hypothesis a survey of thirty-three agencies from across the state of Texas of varying sizes, geographic regions, and missions was conducted [Appendix A]. This group consisted of attendees of Module I [September 2000] and Module II [May 2001] of the Leadership and Command College. Attendees, a total of 33, completed a single survey for each agency. The attendees were, for the most part first and second tier line supervisors.

Type	Sworn	Reserves	Total	# Agencies
Sheriffs Office	2,380	473	2,853	4
Municipal PD	1,791	67	1,858	21
University PD	135	10	145	4
School District PD	294	14	308	3
Constables	90	15	105	1
Total	**4,690**	**579**	**5,269**	**33**

Table 1: Agencies Participating in Survey by Type [includes number of sworn and reserve officers]

A second survey was conducted using the same format [Appendix A] with distribution to the Sheriff-elect and eleven Chiefs' of Police from municipal police agencies in Galveston County, Texas. This group provides a basis for comparison between Chief Executive Officers of agencies and the first/second level line supervisors identified in the first group. The 2000 Census (U.S. Census Bureau Quick Facts) lists Galveston County with a population of 250,158 people occupying 398 square miles. Galveston County has three distinct landmasses, Bolivar Peninsula, Galveston Island, and Mainland Galveston County. In a report prepared on May 29, 2001 [see

Appendix C] the Texas Commission on Law Enforcement Officer Standards and Education [TCLEOSE] provided the following list of agencies and personnel in Galveston County.

Agency Type	Sworn	Reserves	Total	# Agencies
Sheriffs Office	264	65	329	1
Municipal Police	497	43	540	13
University Police	64	0	64	3
School District Police	25	0	25	4
Constables	49	1	50	9
Fire / Arson Units	25	18	43	8
DA / Port / Marshal	23	0	23	3
Totals	**947**	**127**	**1074**	**41**

Table 2: Galveston County Agencies by type with Sworn and Reserve Officers

The areas covered by the survey included staffing [sworn, reserves, civilian], the availability of computerized records management, and whether staffing included either a criminal intelligence analyst and/or a major crimes analyst. Additional areas of the survey dealt with the generation and usage of crime analysis products including pin maps, known offenders' comparisons, and publication of crime bulletins. The final area of the survey dealt with how the agency responded to an identified crime pattern or series and whether the individual agency would benefit from a unit with tactical capability to respond to such patterns or series.

Data developed from the surveys will determine the mean and median averages for sworn and reserve officers, as well as civilian personnel. Usage of computerized records management systems and the availability of criminal intelligence and major crimes analysts data will determine the probability for a successful crime analysis function. Regarding the viability and benefits of a tactical arm, it will be important to contrast the responses of line supervisory personnel from the thirty-three responding agencies with the twelve chief executive officers that responded.

Findings

Forty agencies responded to the survey ranging in size from 5 to 1500 Sworn Officers. While the overwhelming majority of agencies use some form of computerized records management [93%], only a small percentage employ a Major Crimes Analyst [15%]. In most cases the intelligence analyst and the crime analyst are the same employee. The law enforcement community is moving closer to incident based reporting, with the collection of additional data in computerized records management systems. Massive amounts of information are stored in these systems. Is that information used effectively?

Agency Type	# of Agencies	Median Sworn	Average Sworn	Computerized Records	Intelligence Analyst	Crime Analyst
Sheriffs Office	4	450	597	3	1	1
Constable's Office	1	90	90	1	1	0
School District PD	3	74	98	3	1	1
University PD	4	55	34	4	0	0
Municipal PD	28	84	76	26	7	4
Total/Average	**40**	**50**	**125**	**37**	**10**	**6**

Table 3: Agency by Type, Sworn Officers, CRMS, and Analysts Usage

Examination of some of the identifiable products of analysis by a major crimes analyst identifies some interesting inconsistencies. Pin Maps identify locations of crimes and can be found in two formats, manual and computer generated. In manual systems someone physically inserts a colored pin representing a crime location into a map. Computerized systems require data entry of information relating to crimes from which a map is generated. Based on the responses received some confusion seems to exist in the law enforcement community regarding crime analysis products. In this instance, a review of the survey responses indicates that some agencies use both manual and computer generated Pin Maps.

Pin Maps - Overall Usage	75%	30 Agencies
Manual Systems	50%	20 Agencies
Computer Generated	50%	20 Agencies

Table 4: Pin Map Usage

Other readily identifiable products of crime analysis include crime bulletins and MO Files. Information passed by word of mouth tends to become corrupted by the interpretation of the listener. Arguably, the most effective method of getting the word out concerning a crime pattern/series is through a bulletin. Everyone, from civilian employee through sworn officers and even the public, receives the same information. Each then can act upon that information with reasonable confidence. MO Files assist in identifying probable offenders in pattern/series crimes. Another valuable asset to law enforcement is Violent Criminal Apprehension Program [VICAP]. VICAP provides access to a national database of violent crimes and offenders. Regular sharing of information both in-house and with other agencies, whether formal or informal in nature, is critical to any effort to solve problems caused by criminal acts and their participants. Again, knowledge shared provides the opportunity to interdict a crime pattern/series.

Agency Type	#of Agencies	Crime Bulletins	MO Files	VICAP	Regular Info Sharing
Sheriffs Office	4	1	1	2	3
Constable's Office	1	0	0	0	1
School District PD	3	1	1	1	2
University PD	4	2	2	1	4
Municipal PD	28	10	15	11	26
Total	**40**	**14**	**19**	**14**	**36**

Table 5: Crime Bulletins and MO Files VICAP and Shared Information

Reaction to an identified crime pattern/series becomes pro-active. Identification of resources and methods available to interdict the pattern/series points strongly to the need to that most finite resource, personnel. How an agency reacts to a pattern/series offense is dictated by a number of

issues. Task forces funded by the Texas Narcotics Control Program [TNCP] and the Texas Auto Theft Prevention Authority [A TP A] provide funding for specialists in these areas. Narcotics and Auto Theft are not the only crimes these groups deal with. In both instances necessary sub specialties range from misdemeanors of all varieties to capital murder and from individuals to organized groups each requiring a variety of skills and techniques. Some agencies have specialized units that deal with the crime patterns. These units go by many names, Hot Spots, Metro, Street Crimes, and Special Crimes to name a few. The principal is the same, identify an area with a problem and dedicate additional resources to resolve the situation.

Agency Type	#of Agencies	TNCP	ATPA	Other	Would Benefit from CA Unit
Sheriffs Office	4	4	4	0	3
Constable's Office	1	0	0	0	1
School District PD	3	1	0	0	3
University PD	4	0	0	0	4
Municipal PD	28	21	10	9	23
Total	**40**	**25**	**14**	**9**	**34**

Table 6: Participation in TNCP/ A TP A Project, Specialized Unit, would benefit from a Tactical Crime Analysis Unit.

While specialized units exist, overtime and compensatory time are the methods used by most agencies to address a pattern/series offender. How effective is this method of dedicating finite resources? Crime analysis examines offenses for patterns and then patterns for a series. MO Files identify probable offenders. Field Interview Reports, traffic citations, and other sources identify available transportation for the offender. Information and experience create knowledge and knowledge is power.

Agency Type	# of Agencies	Overtime	Comp Time	Other
Sheriffs Office	4	2	3	0
Constable's Office	1	1	1	0
School District PD	3	2	2	0
University PD	4	2	0	0
Municipal PD	28	21	14	9
Total	**40**	**28**	**20**	**9**

Table 7: Overtime, Compensatory Time, and Special Unit to Respond to Pattern/Series Offense

Discussion / Conclusion

Will the law enforcement community ever have the resources necessary to achieve its goals, "the protection of life and the preservation of property"? (Gottlieb 1998) Advances in technology have certainly made the concept that Big Brother is watching (Orwell 1949) seem all too real for many. Economic and social pressures place a strain on government's fiscal resources. Elected officials come under increasing demands to hold the line and or reduce taxes. Can the law enforcement community amplify the effectiveness of their current resources? Is it even practical to identify new programs?

The most finite and costliest resource of all, personnel, is still a critical issue. Can small and mid-size agencies benefit from crime analysis? Approximately 83% of the respondents to the survey indicated that their area would benefit from a crime analysis unit with a tactical capability. Crime analysis provides an opportunity to identify a problem area and effectively dedicate resources to the solution, doing so increases the perceived level of security by the public in general.

Criminal intelligence and crime analysis provide decision making tools, not magic bullets. The heart of analysis is founded in knowledge and statistics. Knowledge provides the framework for understanding the crime event. Statistics identify the probabilities for a crime event. The who, what, when, where, why, and how of a crime pattern/series can be revealed

through analysis. Together they offer a window of opportunity that can be exploited by pro active means.

It is difficult to find fault with the concept of intelligence and analysis as tools for effective decision making. It is also difficult to conceive of the existence of a productive organization of any kind that does not engage in information gathering, analysis of that information, and dissemination to support effective decision making. Law enforcement does not have to be reactive all of the time. Crime prevention and community oriented policing are not just meetings and cops on bikes; it is pro-active enforcement.

The clearance by arrest of a single burglary or theft requires a great deal of effort for this minimal result. The majority of crimes are committed by a relatively small number of offenders. (Earls Reiss 1994) It would seem to be a better use of resources to identify and target the problem rather than the symptom. Effective use of analytical techniques and tactical planning based on that analysis creates an opportunity for success.

Evaluating a subject like this presents some problems. It is difficult to identify negative aspects. Available literature contains no horror stories of absolute or even limited system failure. It becomes difficult to maintain objectivity when each source suggests that this ancient technique has made a comeback and is the wave of the future. Computer hardware and software has created the ability to rapidly identify the problem and suggest possible solutions. It is left to the analyst and the agency decision makers to respond in a creative and pro-active manner.

The primary problem with a crime analysis program is getting started. Initial costs may appear prohibitive, however creativity is not the sole province of starving artists. COMSTAT type operations do not have to be on the massive scale portrayed on television. Analytical software, with. mapping and predictive capabilities, can be relatively inexpensive. How an agency responds to a pattern does not have to mean assigning large numbers of personnel. The

review of literature seems to suggest a movement to regional sharing of data. New records management software provides the opportunity to share data between agencies, while still maintaining that critical issue - individual ownership.

The law enforcement community again finds itself on the verge of a new age. This new age of sharing secrets, providing tools to patrol officers and investigators, and working toward the solution of problems is built on a firm foundation of old concepts and ideas, e.g., pin maps, "MO: and Known Offender Files, and the application of statistics to determine the probability of where and when an event will occur. The next generation of agency chief administrators is in place and each ultimately will face the dreaded budget hearing. Each will be required to defend and justify the request for additional personnel, equipment, and overtime. Analytical techniques found in crime analysis provide the required information to each level of decision maker.

The average citizen should not be overlooked in this area. Crime patterns and series offenses affect the sense of security of everyone. Published bulletins on web sites, neighborhood watch meetings, and press releases potentially create thousands of extra eyes searching for the serial offender. Information does not have to be a secret to be effective, and knowledge shared is knowledge increased.

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Tables