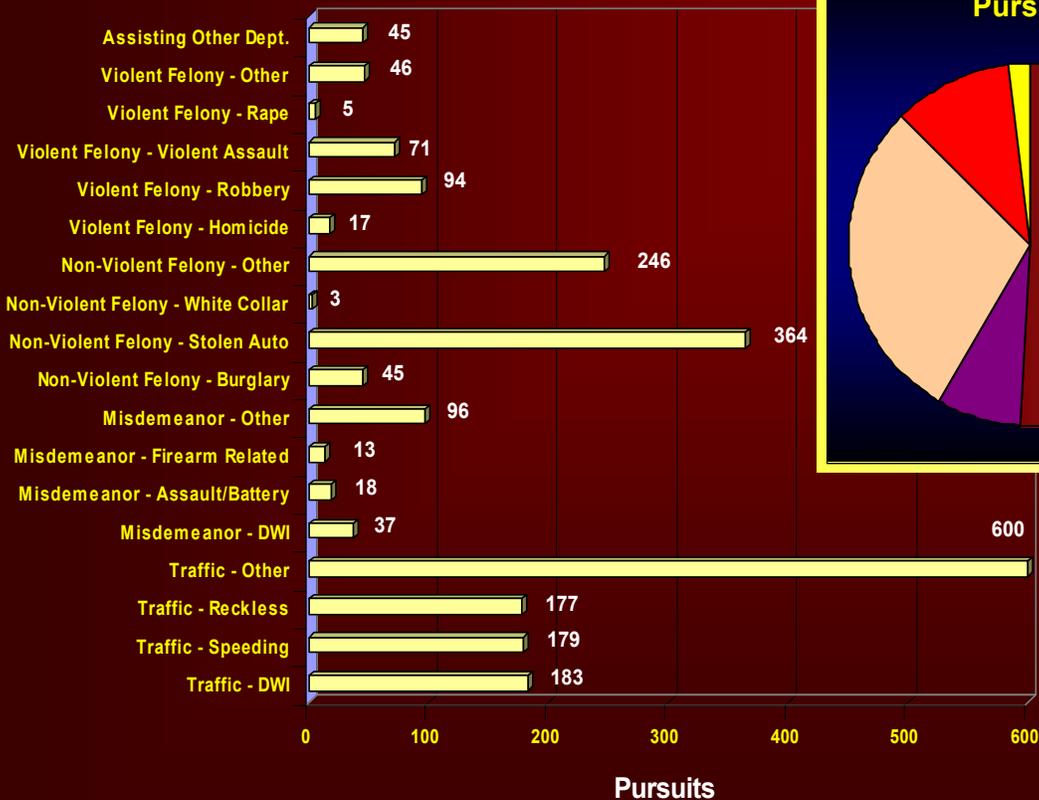


CUTTING EDGE OF TECHNOLOGY

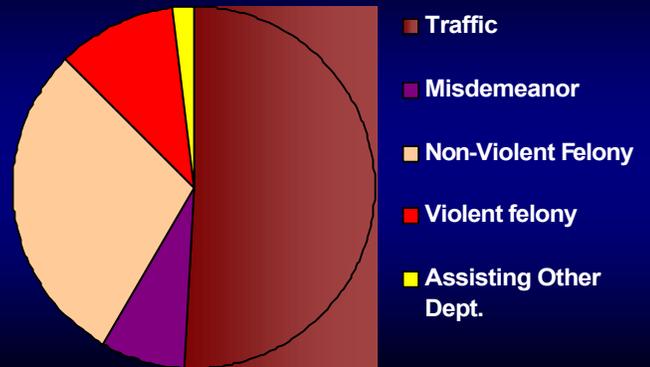
Managing Police Pursuits

Findings from IACP's Police Pursuit Database

Initial Violation - Reason for Pursuit



Pursuit Reason by Category



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Inside this Issue...

The primary focus of this brief is to present data from IACP's Police Pursuit Database. In it, you will find information about the database and sample data from over 40 participating agencies. Other pursuit-related topics are included:

- Data-mining
- Liability
- Pursuit Ending Technology

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www.theiacp.org

This brief is an intermittent publication of the International Association of Chiefs of Police, in collaboration with the National Institute of Justice, Office of Science & Technology, written to inform and educate law enforcement leaders about current and future technology trends.

Cutting Edge of Technology - Project Update:

Pursuit Database: IACP's Internet-based Police Pursuit Database has been constructed, tested, and is available for use by participating law enforcement agencies. **For more information contact Al Arena at ext. 240 or Arena@theiacp.org.**

Coming Soon: We will be surveying the field and convening an advisory board meeting to identify future technology initiatives. Look for our Web site survey to provide input on technology needs in law enforcement! Our next initiative, the development of standards for in-car cameras, begins soon.

Use of Video Cameras in Law Enforcement: Our May 2001 Executive Brief, contains results of a law enforcement survey to assess the application of video in the field. Now available on our Web site under Research Center, Projects, Cutting Edge of Technology.

Harnessing 21st Century Technology to Reduce Police Liability: This regional training, delivered periodically, focuses on police liability in four subject areas: Use of Force, Information Practices, Search and Seizure, and Pursuit. This course will soon be available through our Training Division. For more information please contact Shirley Mackey at ext. 221 or MackeyS@theiacp.org.

More IACP Technology-related Initiatives...

The new **Nationwide COPS/IACP Technology Technical Assistance Program** is a nationwide initiative that will assist local agencies in making comprehensive assessments of their technology needs and facilitating recommended processes of change from beginning to end. For more information contact John Firman at ext. 207 or firmanj@theiacp.org.

The **IACP Technology Center** manages the IACP's Communications and Information Sharing Technology initiatives. Primary outreach mechanisms are the Technology Clearinghouse Web site (www.IACPtechnology.org), **Police Chief** magazine's Tech Talk column, IACP's Technology Institute (held during the annual IACP conference), and the IACP Law Enforcement Information Management (LEIM) Section conference. The center coordinates the activities of the Technology Coordination Panel, IACP's oversight body for all IACP technology initiatives. For more information contact Tom Robey at ext. 387 or RobeyT@theiacp.org.

In-Car Camera Evaluation: This eighteen month project examines the impact of in-car video systems on law enforcement in specific focus areas including liability, citizen complaints, court pleas and outcomes, officer misconduct, and operational policies and procedures. A best practices guide and technical assistance (to selected agencies) that facilitates the efforts of law enforcement agencies undertaking or managing in-car video programs will soon be available. For more information contact Grady Baker at ext. 839 or Baker@theiacp.org.

Law Enforcement Information Technology Standards Council: LEITSC is a Bureau of Justice Assistance funded program whose mission is to educate and involve the nation's law enforcement executives in the development, implementation and maintenance of information technology standards. For more information contact Jennifer Hicks at ext. 275 or HicksJ@theiacp.org.

Police Pursuit from a Leadership Perspective: A Word from Chief M. Douglas Scott

In 2000, while under the leadership of my predecessor, Edward A. Flynn, the Arlington County Police Department was invited to join the advisory group for IACP's new project to build a police pursuit database. The most challenging task before this group was identifying specific characteristics involved in police pursuits and determining how to use this information to aid departments in studying this vital subject. Our goal in participating in this project was to help devise a system that would allow departments across the country to actively learn from their own vehicle pursuits and those of other departments. Armed with this knowledge, individual departments could then critique their own responses and develop effective policy and training in this area. Lieutenant Donald Grinder was assigned by our department to be a member of the IACP advisory board for this project.

Lieutenant Grinder and the advisory board selected twenty-seven elements that should be identified and captured for every pursuit. A pursuit report form, developed to facilitate data entry and which mirrors the database, has been used by our supervisors and officers since 2001. This report is forwarded and reviewed through the chain of command to ensure that the pursuit was in compliance with our departmental directive governing pursuits. The report eventually reaches the Internal Affairs Section, where it is maintained and used for data entry into the IACP Police Pursuit Database. The Internal Affairs Section is then able to access our department's pursuits from one central area and can provide command staff with up-to-date analysis and additional information about pursuits when necessary. This data is used to compile our yearly pursuit report that is prepared by the Internal Affairs Section and presented to our department's Command Focus Group. This report allows us to compare our pursuit statistics from year to year. The report also satisfies a specific CALEA standard for analysis that is required for accreditation. Additionally, this reporting system allows us to examine our pursuit training and modify it when issues arise. We can examine when, where, who, and why we are pursuing, potentially leading to policy alterations or highlighting the need for additional training.

One other benefit of the database is how we currently use it in conjunction with the program we utilize to gather internal affairs and use of force case information. These two programs are used in conjunction to identify candidates for our department's Early Intervention Program (EIP). Since pursuits are included as a criterion for our EIP, the ability to look at our pursuits quickly is essential. We can easily identify which officers are involved in pursuits which assists us in determining who is suitable for EIP during each quarter of the year.

Additionally, the database may be used to aid our department during civil litigation. Since the program allows us to compare our pursuits with other agencies, it might help defend the department in the event a lawsuit is brought against the officers involved in the pursuit, the police department, or Arlington County. In 2002, information from the database was used after a controversial pursuit to show the public that our Department has actually reduced the number of pursuits it has been involved in over the past several years. This helped defuse an emotional news item rather quickly.

We hope more departments will join and participate in this database. The more departments that utilize the database, the greater use the data will be to the participants. The possibility exists where regional partners could use the database as a source of dialogue to study pursuits geographically as they draw up pursuit policies. I would highly recommend that departments take the opportunity to utilize the system as we have had a very positive experience with this project.

About the Database...

Project History

It has been more than six years since the publication of the *Pursuit Management Task Force Report*, a study on nationwide pursuit trends commissioned by the National Institute of Justice, Office of Science & Technology. Among the recommendations proposed by the authors and contributors of this report was that a model for the collection of pursuit data be created. This data would encourage and facilitate research and expand pursuit-related knowledge in law enforcement.

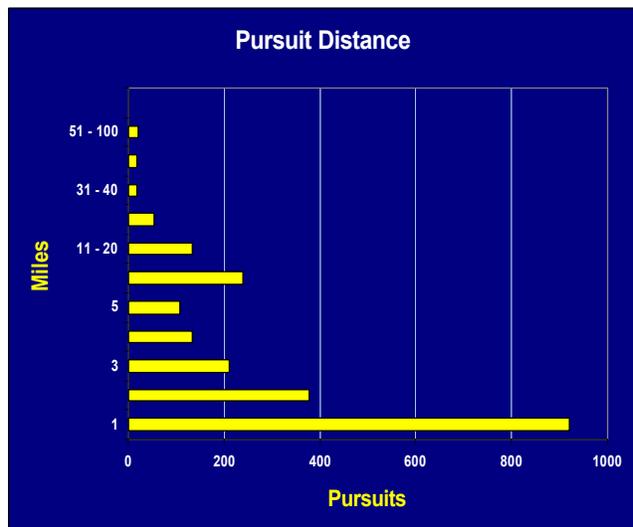
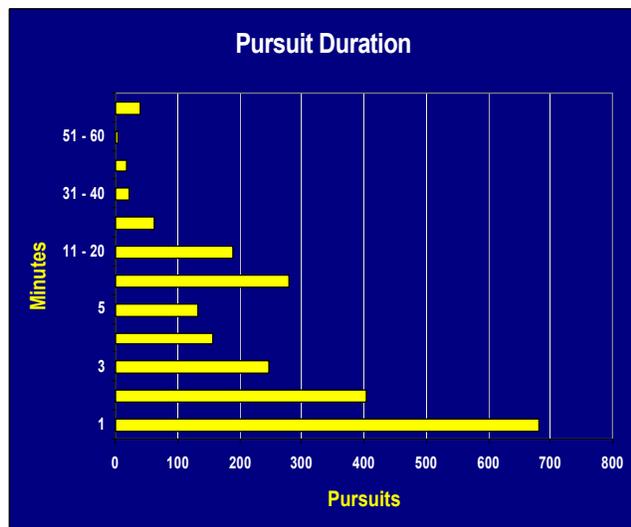
IACP undertook this task as part of the Cutting Edge of Technology project, also funded by NIJ's Office of Science & Technology. We convened an advisory group composed of local and state law enforcement officials that guided us through database creation. The group was tasked with achieving several important objectives including determining database approach and goals, considering the potential value for law enforcement, and identifying database field elements.

The database was tested by ten selected agencies over one year. It now contains over 2,200 police pursuit records, is utilized by over 40 agencies, and is accessible at no cost to all law enforcement agencies that choose to contribute data. This Executive Brief will provide details about the database, outline some of today's pursuit issues, and present pursuit data from the database.

Database Goals/Purpose

The database was constructed to provide law enforcement leaders with information that facilitates effective pursuit-related training and policy decisions. This management tool makes police pursuit data available to police leaders who will utilize pursuit information, from both their own jurisdiction and others, to guide management decisions and enable informed assessments of their pursuit-related activities. It can also be utilized to identify and respond to training needs, reduce liability, dispel false information, and inform the public (see page 11, *Also of Note*).

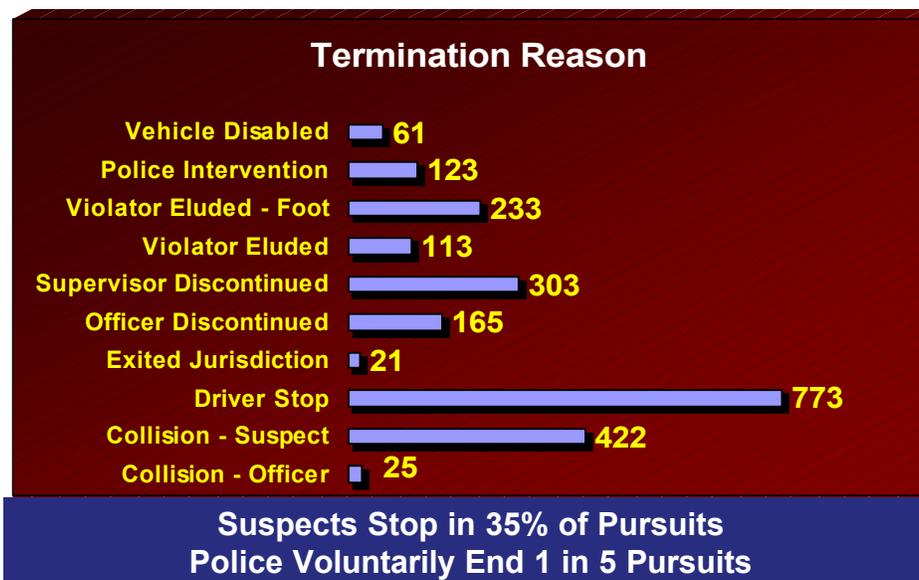
60% of Pursuits End in Three Minutes or Less; 67% Cover Three Miles or Less



Database Characteristics

The two primary tasks before the advisory board were how - software vs. Internet - and what - data element selection. We selected an Internet-based approach to gain these advantages:

- Instant access by participating agencies with little or no installation
- Database administration, updates, and modifications from one centralized location
- Immediate access to comparable data from other jurisdictions
- Publication of periodic reports that inform the field
- The ability to expand with relative ease, making the database available to a greater number of agencies



Twenty-eight final data elements were selected by the advisory board and one was added during the pilot. That element, Officer Identification Number, is the one optional element in the database. It enables police leaders to examine pursuit activity by officer to identify training needs and pursuit patterns. Recognizing we would not be able to meet every request for specific data elements, we attempted to select those common elements wanted by most law enforcement officials. Those final database elements are:

- Report/Tracing Number
- Supervisor Monitored
- Additional Units
- Additional Agencies
- Starting Date & Time
- Termination Date & Time
- Initial Violation
- Road Type
- Light Conditions
- Sex of Initiating Officer
- Average Speed Above Limit
- Traffic Conditions
- Road Conditions
- Maximum Pursuit Speed
- Termination Reason
- Termination Method
- Police Intervention Method
- Distance Trailed
- Arrest/Charges Filed
- Property Damage
- Initiating Officer Age
- Officer Years Service
- Officer ID Number
- Suspect Sex
- Suspect Race
- Suspect Age
- Suspect Licensed
- Suspect Impairment
- Injury (minor, serious, fatal)

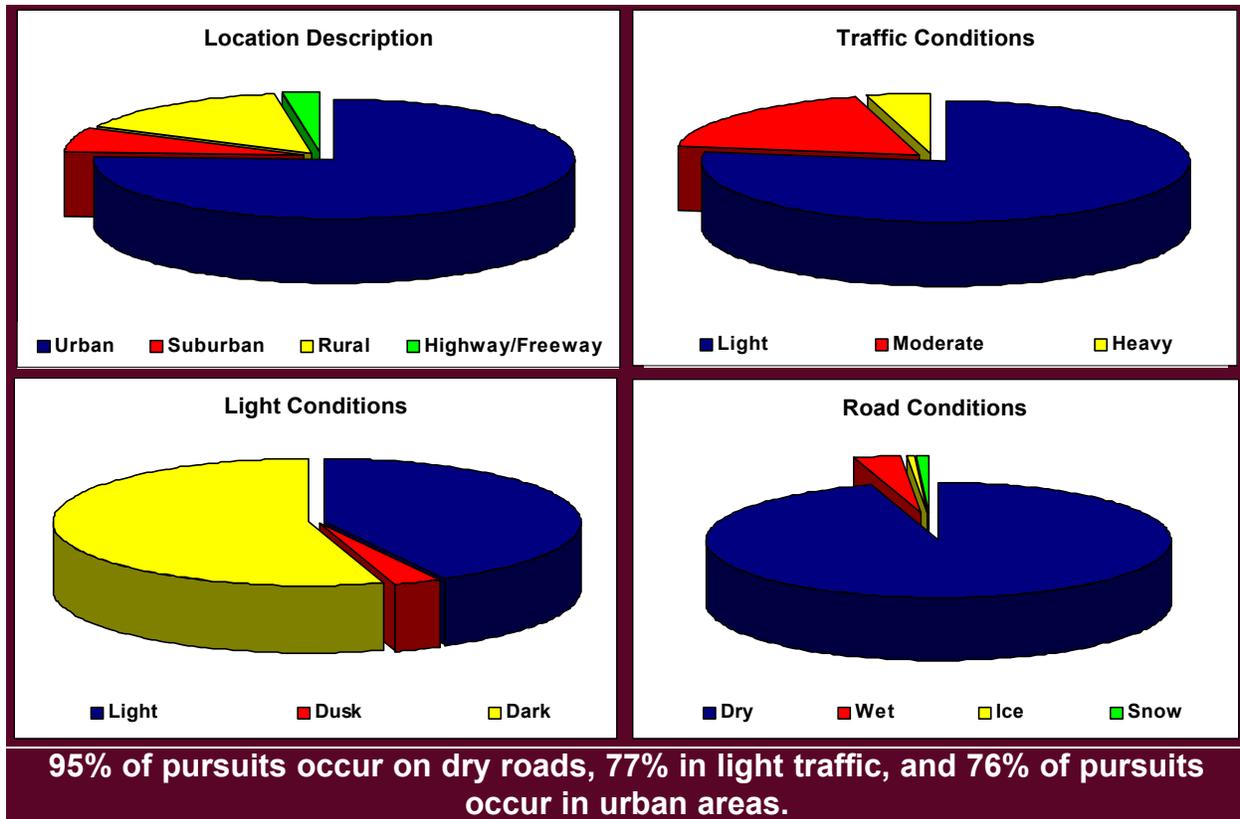
Pursuit Reports

Reporting Options

There are currently seven reporting options for pursuit reports. Each participating agency may choose any of these options when requesting data, and can access data from anonymous participating agencies. A typical report provides the requested data element, the number in a particular category (e.g. duration: 1, 2, 3, etc. minutes) and the percentage of that category as related to the total number of pursuits. The data populations are defined as follows:

1. User's Jurisdiction
2. Statewide - All Participating Agencies within a Selected State
3. Nationwide - All Participating Agencies
4. Comparable Jurisdictions by Population Served
5. Comparable Jurisdictions by Population Density
6. Agency Type (e.g. State, Municipal, County, Sheriff, Port, etc.)
7. International - Outside the United States

Reports can be generated for all categories or particular ones (e.g. Environmental Conditions, Termination Reason, Suspect Information, etc.). Date ranges can be specified providing police leaders with the option of obtaining more focused pursuit reports. For Risk Managers, statistical reports will soon be available (see back page, *What's Next*).



Police Pursuits from a Research Perspective:

A Word About Data-Mining from Dr. Colleen McCue and Paul McNulty

Data mining represents an extremely powerful tool that can be used to analyze law enforcement data and guide the creation of sound policy. In the following article, Dr. Colleen McCue and United States Attorney Paul McNulty outline an innovative application of data mining technology in violent crime. Similar applications and approaches are being developed currently for use in the analysis of the IACP police pursuit database.

Crime analysts make great historians. Traditional crime analysis focuses almost exclusively on review and analysis of an event or a trend that has already happened. These approaches are like attempting to drive a car by using only the rearview mirror for guidance. Emerging technologies may change that. Data mining and artificial intelligence have received considerable attention recently for their ability to predict future events. This is a true paradigm shift in the field of analysis. These powerful tools offer law enforcement professionals something that they have not had before - the ability, however limited, to predict the future.

Briefly, data mining uses automated methods to discover patterns, trends and relationships in data not readily apparent. Exploiting artificial intelligence technology, accurate models can then be developed and used to anticipate or predict future events. Knowledge and foresight of events likely to occur gives law enforcement professionals the unique opportunity to not only anticipate crime, but even to respond proactively; clearly representing a huge tactical advantage in the fight against violent crime in our communities.

Once exclusively in the domain of academic research centers and large federal agencies, these tools now are available in the desktop PC environment. The Richmond, Virginia Police Department has been exploring the use of this technology in local policing, and is sharing its expertise with the United States Attorney's office in the Eastern District of Virginia as the Project Safe Neighborhoods (PSN) Research and Evaluation partner. As part of our PSN Research and Evaluation program, we are using data mining and predictive analytics to examine gun-related violent crime. This approach has given us the opportunity to more completely characterize, understand and predict violent crime. These models then can be used to anticipate, and even prevent violent crime through the selective deployment of police personnel, and other violence prevention strategies - the very type of intelligence-based law enforcement strategy envisioned in the PSN initiative. The following is an example of our modeling and predictive work in the area of robbery-related gun violence in Richmond.





Example

Most would agree that while armed robberies are serious offenses, robberies associated with victim injury are worse. Therefore, we examined armed robbery data in Richmond, Virginia, in an effort to develop a model of armed robberies likely to escalate into gun violence. Using Clementine from SPSS Inc., a preliminary model was developed that characterized

the factors associated with an increased likelihood of a robbery-related firearms assault. The results were then deployed in a map for use by patrol services and tactical units.

Our results indicated that the "higher risk" areas were similar, but not identical to the overall distribution of armed robberies. The highlighted areas were not necessarily associated with an increased prevalence of armed robberies; rather they are associated with an increased likelihood of escalation, or riskier armed robberies. This finding highlights the subtle difference between relative frequency of crime and the risk for serious escalation. The higher risk areas also encompassed a smaller geographic area in the city, further defining the areas of risk and facilitating the use of increased patrol or the deployment of tactical units in a more concise, targeted manner. Given today's resource environment, strategies that enhance decision-making and increase our ability to efficiently deploy scarce resources hold huge value for law enforcement agencies.

These models need to be updated or refreshed periodically, approximately every six months. Unlike the retail or business community where customer and demographic information are expected to remain relatively stable over time, our models should change as suspects are identified and apprehended. In fact, the successful use of data mining might increase the need for more frequent updates as violent crimes are anticipated, and the associated suspects are apprehended.

Summary

Traditional crime analysis and mapping focus on what has happened. By using data mining and predictive analytics, we are able to forecast what is likely to happen based on an analysis of recent history, and respond proactively. It is important to note the subtle differences between the distribution of armed robberies and the areas associated with an increased risk for robbery-related gun violence described above, subtle differences that might be overlooked if deployment decisions are based exclusively on the review of crime frequencies and historical data. The ability to predict where crimes are likely to occur can enhance deployment decisions, significantly reducing response times. Advanced placement of tactical units in locations associated

with an increased likelihood of violence also enhances our ability to rapidly identify and apprehend suspects, getting violent criminals and illegal guns off the streets in a timely manner. Ultimately, this type of "risk-based deployment" holds the promise of meaningful violence prevention as crime patterns and trends are anticipated, and a stronger police presence is proactively deployed in these areas, thereby resulting in the deterrence of violent crime and increased public safety. Far from being a crystal ball, data mining puts more science and less fiction into crime analysis. *Kelly McCue earned her doctorate from Dartmouth College and is currently the program manager of the Crime Analysis Unit in Richmond (VA) Police Department. Paul McNulty is currently serving as the United States Attorney in the Eastern District of Virginia.*

Police Pursuits from a Legal Perspective: A Word About Liability from Randy Means

High speed pursuit driving creates enormous civil liability exposures for police officers and agencies and can result in criminal prosecution of police officers as well. Few areas of police work involve higher stakes. The need to conduct some high speed pursuits is obvious to most. Equally obvious is the need to protect the public (and police officers themselves) from unnecessary risks created by indiscriminate high speed chases. Today, the progressive law enforcement agency uses policy, training, supervision, discipline, and technology to manage these risks and balance the need for criminal apprehension with the need to protect the public in a larger sense.

Many contemporary policies prohibit high speed chases over comparatively minor subject matter on the theory that the risks generally outweigh the importance of apprehension. Virtually all modern policies create a list of factors that officers and supervisors are to consider in determining whether or not a pursuit should be initiated and continued. Supervisors are charged with the duty of close involvement in pursuit decision-making and driving behavior. Some departments require written reports of all high speed chases and some conduct automatic investigation and review of pursuits. Technologies in aid of supervision and management include data collection and analysis, in-car cameras (on during chases),



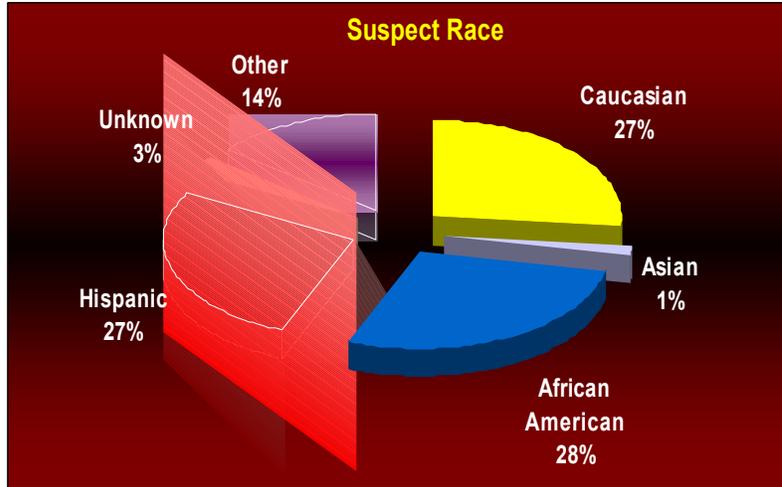
99% of pursuits end with no injury to law enforcement or uninvolved persons, 95% end with no injury to suspects.

technograph, automatic vehicle locators, global positioning satellites, aircraft, and - for that matter - algebra. None of these initiatives will be as important, however, as convincing all officers that the words "protect and serve" mean much more than the immediate apprehension of law violators at whatever risk. *Randy Means is a principal at Thomas and Means, LLP, specializing for more than 20 years entirely in police operations and administration.*

Pursuit Policy Issues

Statewide Pursuit Policy

Police pursuits have long been a concern to many local jurisdictions and, more recently, some states have taken measures to become more involved in the management of pursuits. Sixteen states have mandated that all jurisdictions must have a written pursuit policy that governs all pursuit-related activities, and specifies whether to initiate a pursuit, who to pursue, why and when to end a pursuit, and how to report a pursuit:



- | | | | |
|-------------|---------------|----------------|----------------|
| California | Missouri | New Mexico | South Carolina |
| Connecticut | Nebraska | North Carolina | Utah |
| Georgia | New Hampshire | Ohio | Washington |
| Minnesota | New Jersey | Pennsylvania | Wisconsin |

The state of Connecticut has one statewide mandated policy that all jurisdictions must adopt and similar legislation for a statewide policy is pending in Kentucky. Jurisdictions in the 33 remaining states determine themselves whether or not to codify and adopt pursuit policies.

Statewide Data Collection

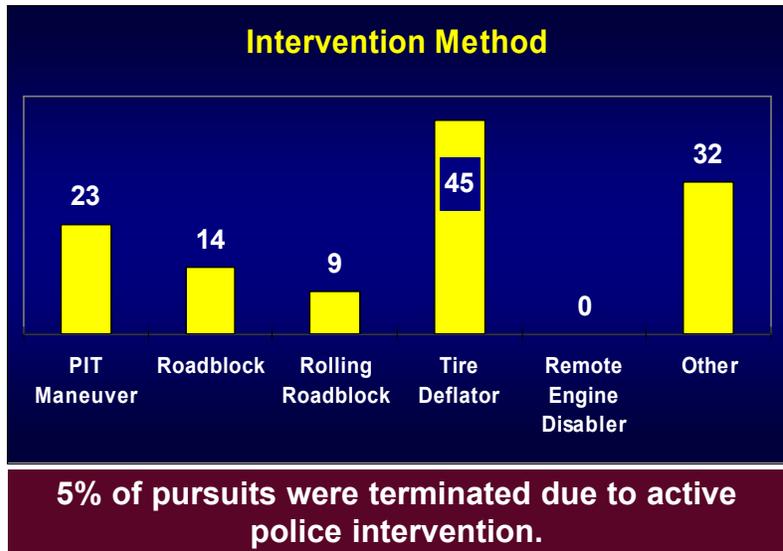
The collection of pursuit data also varies across the nation. Ten states have passed legislation that requires centralized statewide collection of pursuit data as illustrated below. There may be additional states that collect statewide data, however, they are not legislatively mandated to do so.

State	Collecting Agency
California	California Highway Patrol
Kentucky	Justice Cabinet
Minnesota	Commission of Public Safety
New Jersey	Attorney General
Pennsylvania	State Police
Rhode Island	Attorney General
South Carolina	Department of Public Safety
Tennessee	Tennessee Bureau of Investigation
Utah	Department of Public Safety
Wisconsin	State Patrol

Pursuit Ending Technology

There has long been an effort to produce and utilize pursuit-ending technology that safely ends police pursuits. Agencies have been employing existing technologies with varying levels of success. The most commonly used pursuit-ending technology is spike strips or tire deflators.

123 of the 2,239 pursuits represented in this brief ended from an active and intentional police intervention. The methods employed are illustrated at the right. 45 of those 123 interventions were completed utilizing tire deflators. Efforts to improve current and develop new technology continue. Intervention data presented here provides one example of how information can be utilized to inform a police chief or budget manager considering the acquisition of pursuit ending technology.



Also of Note

Data was first released to law enforcement officials at the annual IACP conference in Philadelphia in 2003. Dr. Colleen McCue (Richmond, VA, Police Department) and Captain Robert Osborne (Los Angeles County Sheriff’s Department) facilitated a workshop discussion on pursuit related topics centered around the presentation and analysis of the data from the database. Our primary goal was to discuss these findings and their implications for law enforcement, and solicit reactions from police leaders. We examined the data to assess the general approach to pursuit management, take note of potential alarming practices, and determine if and when data should be released to the public.

Two main reasons for creating this database were to inform the public and dispel false information. It was agreed upon at the workshop that we would wait to release data, in its aggregate form, to the public until more data was amassed and preliminary conclusions could be verified. Further analysis and discussions about releasing data will occur at the next annual IACP conference in Los Angeles, 2004. Data, if and when released, will always be published in an aggregate and anonymous format.

Please plan on attending this important conference workshop in 2004. Your input is essential!

What's Next

Statistical Analysis: We will be adding user-friendly statistical analysis software to the database that will enable police managers to identify pursuit trends through the scientific analysis of pursuit data, patterns, and other variables that so often affect pursuit outcomes.

Database Expansion and Modification: We will continue to invite agencies to utilize the database, to enhance its capabilities and provide law enforcement leaders with the information they can use to guide their policy and training decisions.

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IACP Net - Police Chief Magazine - Technology Clearinghouse - Training Keys**

**Regional Resources - Links to State Associations - Mentors
National Resources - Links to Grants and Programs for all departments**

IACP HISTORY

The IACP is a not-for-profit organization of approximately 20,000 members from the world's law enforcement community. In operation for over a century, the IACP's mission is to lead and support the efforts of police administrators around the world in advancing the science and art of police services; to enhance the cooperation among all police administrators; to bring about the best possible recruitment and training of qualified person into the police profession while adhering to the highest professional standards of conduct; and to provide quality products and services to membership.

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