CRIMINAL JUSTICE SENIOR SEMINAR HONORS SENIOR THESIS

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Vehicular police pursuits are a very complex and delicate matter concerning the daily operations of most every law enforcement agency throughout the country.

Maintaining a delicate balance between safety and the need to apprehend offenders lies at the root of police pursuits. However, when organized and regulated departments provide adequate policy and training, the responding officers are more able to accurately handle and effectively end practically all police pursuits without unnecessary force or injury. As the age of the automobile continues to evolve and provide opportunities for the hardened criminal or the common offender, so will the police conform their needs and requirements to successfully keep pace. The following research established the multiple variables of the police pursuit and more importantly, efforts made to make pursuits safer for all involved.

VEHICULAR POLICE PURSUITS

The police, given the power to apprehend criminals, sometimes enter ethical conflict with their governing public. Many of these ethical debates have surrounded the police for decades. These long-standing issues range from the role of the police themselves to the controversial use of deadly force. However, due to the rapid growth of the technological revolution, the police vehicular pursuit has been on many people's minds.

In some opinions, the police pursuit is one of the most complex and tasking duties the police undertake. A common slogan shared by many police departments, "To Serve and Protect", provides the root of the police pursuit problem. It is in pursuits that the two concepts, "To Serve" and "To Protect" are sometimes placed directly against each other. That is, the necessity to apprehend criminal offenders (or "To Serve") is mismatched with the public and police's need for safety (or "To Protect). This concept coincides with police pursuit expert Geoffrey Alpert, who states "On the one hand, too many restrictions placed on the police use of pursuit could place the public at risk from dangerous individuals escaping apprehension. On the other hand, insufficient controls on the police pursuit could result in needless accidents and injuries" (1997).

It is the purpose of this essay to examine the numerous variables associated with the police pursuit and the situations that arise thus creating ethical conflict. By utilizing recent research, police policy, State statutes, and other pertinent information, this essay will hopefully bring forth the main issues surrounding the pursuit.

Police Pursuits, Defined

Today, the common public perception of the vehicular police pursuit is that of a high-speed freeway chase often resulting in the crash of the offender. However, police pursuits encompass a wide-variety of occurrences. For example, Minnesota statute gives the following definition:

Flee; definition. For purposes of this section, the term "flee" means to increase speed, extinguish motor vehicle headlights or taillights, refuse to stop the vehicle, or use other means with intent to attempt to elude a peace

officer following a signal given by any peace officer to the driver of a motor vehicle (West's, 2003).

The Bemidji Police Department establishes a similar definition according to their policy manual:

Pursuit: a multi-stage process by which a police officer initiates a vehicular stop and a driver resists the signal or order to stop, increases speed, takes evasive action and/or refuses to stop the vehicle (City of Bemidji, 1999).

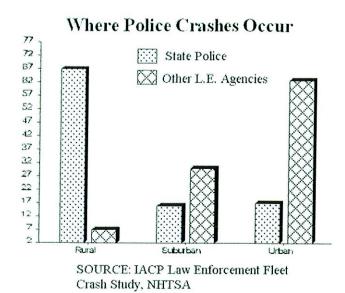
Basically, for a police pursuit to occur, two main elements must be present: an offender driving a motor vehicle and a peace officer attempting to stop said vehicle. However, if the police pursuit were this simple, there would not be such a large controversy surrounding occurrences where police pursue resisting offenders. This large "gray area" of the pursuit rests in the variables of the incident.

The variables of the police pursuit are at the center of the ethical debate. These variables can be broken down into four main categories, of which each has an equal effect on the pursuit itself: the situation, the police, the offender, and the public.

Situation

The pursuit provides a multitude of situations each resulting in different actions by both the police and offender. These situational differences play a major role in the pursuit. For example, the development of the incident itself provides a wide-spectrum of possibilities. A police officer may have stopped a vehicle for a minor infraction, such as speeding, and the driver decides to take off. Or, perhaps the police are chasing an escaped prison convict wanting to evade capture (Babin, 2002.). Because of the wide range of criminal offenses, it is impossible for law enforcement agencies to establish policy stating which violations to pursue.

The location of the offense may also play a key factor in the officer's decision to pursue. For instance, offenders are much more likely to be pursued in rural areas as compared to urban areas, as the risk of injury to pedestrians or other public is drastically reduced. However, rural pursuits are more likely to have increased rates of speed, as the roadways are typically straighter and longer. The increased rates of speed may correlate



with increased rates of injury resulting from crashes, for both the offender and pursuing officers (Weisheit et. al, 1994). Urban areas may also pose an increased risk. For instance, officers pursuing a vehicle towards a school zone are more likely to attempt to stop the vehicle prior to entering the area in order to prevent the unneccesary injury of those near the school facilities.

The time of day and weather-related conditions also play a heavy impact on pursuits. Just as these factors concern all motor vehicle operators, pursuits are also affected. For example, icy roadways or fog causing reduced visibility may increase the potential for a hazardous outcome of the pursuit, as objects or pedestrians on the roadway may not be clearly visible.

The vehicles involved may also play an important role in the pursuit. For instance, if the offender's vehicle is low on fuel, it is likely that the pursuit will end in a favorable fashion. One drawback, however, is that it is nearly impossible for the police to determine the amount of fuel remaining in an offender's vehicle. The officer's squad car may also be low on fuel. As such, without nearby backup to continue the pursuit, the officer may be forced to withdraw. One of the most famous pursuits directly relating to vehicle variables aired on the television series "World's Scariest Police Chases," whereas an individual used a military tank to evade the police. The tank was only stopped after it got caught up on a cement freeway-divider (Fox, 2002).

After the pursuit has been initiated, it is important to differentiate between the various types of pursuit. Routine pursuits, for example, do not resemble that of the typical chase. The routine pursuit is used in variety of police activities. These activities can include catching up to speeding cars in order to 'clock' their speed, intercepting vehicles for occupant checks, or apprehending law-breakers. These pursuits are typically

done without the activation of emergency lights or sirens (RCMP, 1999). Other routine pursuits may involve an offender evading arrest, but not posing a high-risk of injury.

The second type of pursuit, and probably most notable, is the hazardous pursuit. These pursuits are situations where the pursuing officers have activated their emergency equipment and are actively attempting to stop the fleeing motorist. These pursuits usually involve high-speeds and/or crashes resulting in injuries and deaths and will sometimes carry a wide-array of media coverage (RCMP, 1999).

Luckily, hazardous pursuits occur far less frequently than routine pursuits. In fact, most vehicle pursuits are short, lasting roughly five minutes and only traveling an average of 3.2 miles (Charles et. al, 1992). This is due to the fact that only a small portion of pursuits are a result of a felony-related crime (Charles et. al, 1992).

Police

The police have the biggest role in the pursuit. It is their duty to initiate, execute, and terminate every pursuit. When analyzing the police and their role in the pursuit, it may at first appear simple. That is, it is the job of the officer to follow and arrest the offender. However, numerous differences between individual pursuits require an indepth look at the role of the police, and more specifically, the individual officers. As such, the police's role in pursuits can be broken down into two main components: administrative authority and individual officer discretion.

Administrative Authority

The occupation of a police officer is perhaps one of the most discretion-orientated occupations today. However, in order to make individual officers accountable for their actions, law enforcement agencies have established numerous policies to guide and control their activity. Police pursuits are one category of policy that most every department in the country has implemented. Sadly, some of these policies giving direction for today's modern pursuits are guided by policy written in the 1970's (Alpert, 1997).

Modern pursuit policy from around the country is undergoing a sweeping change in response to the hazardous situations and public dissatisfaction when pursuits end in

disaster. In fact, many states have established statutes stating that law enforcement agencies *must* establish formal policy regarding police pursuits. Minnesota, for example, has such a statute, part of which reads:

- Law enforcement agencies shall make responsible efforts to guide their officers in the safe and responsible performance of their emergency response duties.
- 2. By July 1, 1999, the board shall adopt a new or revised model policy governing the conduct of peace officers who are in pursuit of a vehicle...(West's, 2003).

After a review of many official policy manuals for various law enforcement agencies, it is easy to see that the departments have established a certain format of policy regarding the police pursuit. For example, most every policy first contains a vehicular pursuit definition section, whereas key terms later used in the policy itself will be utilized. These terms include "vehicular pursuit", "great bodily harm", and "primary squad" (City of Minneapolis, 2000). The next portion of the policy typically contains that of the pursuit initiation. In this section, policy usually dictates when pursuits should or should not be carried out. Take for example the policy of Brooklyn Park's police department:

Vehicle pursuit is justified only when, prior to the activation of any signal to the operator of the vehicle, the officer has a reasonable and lawful basis according to Minnesota law to stop the vehicle. When such a vehicle fails to stop in response to clear direction from the officer, the officer must exercise discretion as to whether pursuit is appropriate (1985).

While Brooklyn Park's policy directly states that the pursuit is still left to the discretion of the officer, the Los Angeles County Sheriff's Office lists numerous items to be considered before entering into a pursuit, some of which cover the situational variables as previously described:

- 1. The seriousness of the offense.
- 2. The speeds involved
- 3. The safety of the public in the area
- 4. Pedestrian and vehicular traffic volume.

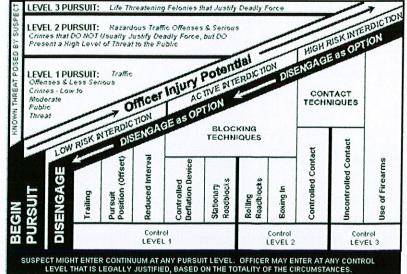
- 5. The time of day
- 6. Weather and road conditions
- 7. Familiarity with the area of the pursuit
- 8. The quality of radio communications
- 9. The capabilities of the police vehicle
- 10. Any other factor that would indicate that the interests of public safety and effective law enforcement would not justify initiation of a vehicular pursuit (2003).

As these two policies suggest, some departments establish differing official guidelines for officers to consider prior to engaging in vehicular pursuit. However, once a pursuit has begun, almost all policy follows a similar pattern. The first portion of the this pattern involves the procedure for the "primary pursuit unit" in the chase, otherwise known as the enforcement vehicle which first attempted to stop the offending vehicle (California Highway Patrol, 1998). In most policy, it is typically the duty of the pursuing unit to continue following the offender while ensuring the safety of others and maintaining contact with responding supervisors or a central communications (City of Bemidji, 1999).

The following sections of most policies then state the role of the responding

supervisors, and more importantly, the use of force on a fleeing vehicle in an attempt to stop it from escaping or causing injury to others. This use of force may range from using controlled technologies to deadly force, by

PURSUIT MANAGEMENT CONTINUUM URSUIT: Life Threatening Felonies that Justity Deadly Force



SOURCE: Steve Ashley, The Police Policies Study Council

either ramming the offender's vehicle or by means of a firearm.

At one point or another in an officer's career, it is practically inevitable that they will be involved in use-of-force situations involving vehicular police pursuits (Adams et. al, 1999). Although most use-of-force situations are dictated by state and federal statute, there still exists a fine line between justified and excessive actions concerning fleeing motorists. (Lanagan, 2001). Due to the numerous variables associated with the pursuit, it is often left up to the responding officer to determine the amount of force that is reasonable (Garner, 2002).

In response to the many variables and applicable force responses to pursuit situations, it is clear that many departments have developed a standard form of policy regarding pursuits. The above diagram is an example of such standards. Designed by Steve Ashley of the Police Policies Study Council, the *Pursuit Management Continuum* illustrates the various stages of a pursuit. When utilized by law enforcement agencies dealing with pursuit situations, this continuum provides multiple options and resolutions available to the responding officers in order to reduce the hazards associated with the incident (2003).

Regardless of the type of policy implemented by an individual department, all policy directed at vehicular pursuit aim to accomplish four main goals (Travis, 1996):

- 1.) To reduce the number of injuries and deaths.
- 2.) To guide officers in knowing how and when to pursue.
- 3.) To maintain the basic law enforcement mission to enforce the laws and to protect life and property.
- 4.) To minimize agency liability

Individual Officer Discretion

Even if law enforcement agencies have established comprehensive policies regarding the appropriate responses to police pursuits, it is still the individual officer who makes the ultimate decision, thus affecting all involved. As such, it is imperative for law enforcement agencies to not only provide policy, but to also adequately train their officers in pursuit driving tactics.

In some states, prior to a police officer even being hired, it is required that the individual go through law enforcement-orientated schooling. Minnesota has such a program, whereas all potential officers must complete schooling at an accredited "POST" school. The Peace Officer Standards and Training Board (POST) ensures that each individual successfully completes this education portion, then completes a hands-on skills portion, and finally a written examination prior to being eligible to become an officer within the state (POST, 2003). As such, during their training for becoming an officer, Minnesota provides required training to all potential recruits. For example, Minnesota statute requires the following of all law enforcement students:

- a.) By January 1, 2000, the board shall prepare learning objectives for instructing peace officers in emergency vehicle operations and in the conduct of police pursuits. The course shall consist of at least seven hours of classroom and skills-based training.
- b.) An individual is not eligible to take the peace officer licensing examination or the part-time peace officer licensing examination on or after January 1, 2000, unless individual has received the training described in paragraph (a) (West's, 2003).

Most every department in the country does have pursuit training. However, many departments have only taken limited steps in training their officers on skills and procedures involved with pursuits. As such, a lack of training can increase the risks of pursuit-related injuries (Alpert, 1997). In the past, agencies taught pursuit-driving techniques behind the wheel without classroom training. In this scenario, responding officers learned *how* to pursue but not *when* to pursue (Hill, 2002).

Today's law enforcement agencies have implemented training programs designed to better assist the responding officer to determine and conduct the pursuit. However, as a retired New Jersey police officer suggests, most training is only given to new recruits on the department leaving veteran officers without contemporary pursuit training (Hill, 2002). For those who do receive the training, it is likely that the trained responding officers will more closely follow policy and proper procedure. As a result of the increased awareness and knowledge of the officer, fewer risks of injury would occur (Babin, 2003). Also, most current training includes the use of advanced technologies and

maneuvers also aimed at reducing the risk of injury during a pursuit. These modern tactics will be described at a later point.

Offender

Although there has been a wide variety of pursuit research on the situation and police involvement in pursuits, little attention has focused on the offender. However, the article *High Speed Pursuit: The Offender's Perspective* brings forth several interesting points regarding the offender's perspective. For one, the article accounts for the most common responses for the offender's reasons for fleeing the police. These reasons include avoiding a DUI/drug arrest, citation, arrest for stealing a vehicle, or other penal code related incident. Surprisingly, another common response by pursuit offenders was that they were afraid of being beaten by the police after their capture (1998).

The article also compiled statistics on the common pursuit offender. The suspects who fled the police in a motor vehicle averaged 26.2 years of age, and 94% were male. When grouped by race, 57% were White, 7% Black, and 7% were Hispanic. Very few women were involved in pursuits, being apprehended 89% of the time. Blacks were apprehended 68% of the time while 60% of fleeing Hispanics were caught. (Dunhan et. al, 1998).

Although the information about pursuit offenders is important, it is imperative to realize that the data known on these offenders are a result of those being caught. Little or no data has been retrieved from offenders who have successfully evaded the police. However, a correlation can be made between pursuit offenders and other common criminals. Such traits of common criminals, including pursuit offenders, include those who are in the lower class, uneducated, and have a history of previous criminal offenses. (Siegel, 2003).

Public

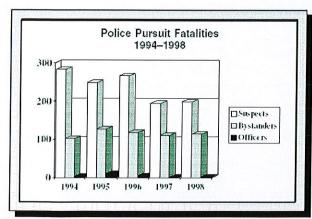
The issue of police pursuit incidents has received a great deal of high-profile media attention throughout the state and the nation in past years (Stanek, 2003). Pursuits involving a celebrity, crash, or fatality are perhaps the most publicized police occurrences today. Take for example the live broadcast of the O.J. Simpson police pursuit. This

chase perfectly gives an example of the media's ability to quickly discover and follow police chases, as most major broadcast news station now have the ability to follow news stories in private helicopters.

Because of the numerous sources of media the public has access to, it is no surprise that police pursuits are now a common occurrence on television. In fact, several made-for-television series have been brought forth to the public. Given such titles as "World's Scariest Police Videos" and "Cops", chases are being viewed and scrutinized by millions of viewers on a daily basis (Fox, 2003).

With the vast media coverage of one of the most delicate operations of the police, public sentiment is mixed as to how video crews may possibly affect decisions made by officers (Western Kentucky University, 2003). For example, in recent California police pursuits, fleeing motorists would often evade the police and circle the same block repeatedly while waving at the circling news helicopters above (Fox, 2003). However, some view that the addition of a taping news crew may influence officers to go above and beyond safety protocols (Western Kentucky University, 2003).

One of the most influential happenings of a police pursuit is that of a fatality. Whenever a pursuit ends in tragedy, public opinion towards the police generally declines,



SOURCE: FBI Law Enforcement Bulletin (71), 7

especially when the fatality involves that of a bystander not directly involved in the pursuit. (The Age, 2002). At left is an illustration depicting a recent study conducted by the Federal Bureau of Investigation. Although pursuit-related fatalities have declined over the past years, the numbers are still

fairly high, as pursuits always pose the risk of injury for every person involved.

Fatalities of individuals not involved in the pursuit, namely pedestrians or other motorists sharing the roadway, frequently arise in court. Numerous lawsuits have been filed against police departments who allegedly have exceeded reasonable force in attempting to stop fleeing individuals. Due to an array of governmental immunity

doctrines and the court's unwillingness to second-guess the police in the attempts to stop fleeing motorists, it is not often that injured parties win their attempts at prosecution (Savas, 2003). However, there are occasions when injured parties to a pursuit incident have legitimate arguments against the actions undertaken by the pursuing law enforcement agency.

According to a recent study, persons injured as a result of high-speed pursuit generally seek compensation against police officers and municipalities by alleging that the latter deprived the former's rights, privileges, or immunities as secured by 42 U.S.C, Statute 1983 (Savas, 2003). The primary concern in the litigation set forth against the responding officers or departments is how to properly balance the right of an individual to be free from arbitrary and unwarranted governmental intrusion of his person, against the interest of the state at securing the welfare of its citizens (Savas, 2003). Basically, when courts are left to decide whether or not the responding officer or department has committed a "wrong", they must determine if a constitutional right violation has been committed. Specifically, the court will most likely examine the 14th Amendment, whereas a deprivation of these rights (the right to life, liberty, and property) may have been infringed (Haddad et. al, 1998).

A prime example of such a scenario claimed by an injured party can be identified in the case *Trigalet v. City of Tulsa*, *OK*. In May of 1990, three family members were traveling together in a Ford Escort station wagon. As they passed through a stoplight-controlled intersection, a GMC Safari mini-van struck their vehicle. The GMC was being pursued by the Tulsa Police Department for a supposed stolen vehicle offense. However, the pursuing officers had no information that the suspects in the fleeing van had committed any violent felony or were known for violent behavior. No supervisor or commander was notified of the pursuit, despite the fact the policy provided that a supervisor was to be contacted. All three passengers of the Ford Escort were killed on impact (United States Court of Appeals, 1998).

The plaintiffs in the case (relatives of the killed party) brought forth 42 U.S.C. Statute 1983 action against a number of defendants, including the City of Tulsa, stating that their 14th Amendment had been violated. However, due to the immunities and previous case law, the court found in the defendants' favor since the pursuing officers did

not commit a constitutional violation. Despite the fact that the plaintiffs lost the case, it still brought forth a major issue to be addressed by law enforcement agencies nationwide: the need to adequately train and control for police pursuits (United States Court of Appeals, 1998).

On the other hand, in response to the high number of pursuits and their tragic results, some courts have taken measures to increase the penalties of such violators. For example, a recent Minnesota court case illustrates this fact. On October 15th, 1997, a Paynesville police officer was in pursuit of a drunk driver who had a revoked license. After a short while, the fleeing vehicle approached an intersection, stopped for the stop sign, and then continued through. However, the pursuing officer, who also stopped for the stop sign, was blinded by the evening sun and could not see the oncoming traffic on the roadway. Consequently, the officer's squad car was broadsided, resulting in the death of the other vehicle's driver and severe injury to the passenger (State of Minnesota, 1999).

Due to the fact that the fleeing motorist's actions indirectly lead to the death of an innocent party, the court found the individual guilty of criminal vehicular homicide, and went on to punish the offender longer than State Guidelines for punishment allotted. The individual was sentenced to 108 months in prison (State of Minnesota, 1999).

As it is clear, the public is often times placed directly in harm's way during police pursuits. As a result, the public plays an equally important role in the police pursuit as the other offender, police, and situational variables. Having now defined police pursuits and their extreme complexity and multiple variables, an in-depth look can be made at the technological advancements law enforcement agencies are utilizing to minimize the risks associated with police pursuits. Coupled with adequate training and proper usage, these instruments will ensure the safety of all involved in future pursuits.

Pursuit Technology

Once a police officer comes across a pursuit scenario, the officer has two basic choices: to pursue or not to pursue (typically based on the seriousness of the offense). More often than not, the officer will opt to chase the offender. And, in a few instances, even after the officer has initiated the pursuit, he still has the choice to terminate the

pursuit. However, in most chase scenarios, the pursuing officer does not back down (Hill, 2002). So, for officers who do pursue the offender, what options do they have to effectively and safely end the pursuit? The answer to this question comes in two basic forms: pursuit intervention equipment, and police innovations concerning procedure.

Pursuit Intervention Equipment

In an effort to reduce the pursuit's dangerous possibilities, recent technologies/equipment employed by law enforcement agencies throughout the country are able to effectively end or even prevent pursuits. These technologies serve as an alternate option to pursuing officers, rather than the continuos chase. However, it is again left up the pursuing officers as to what method of pursuit they will choose to follow. It is important to note that despite their positive purpose, the technologies available to officers are only effective when the officers are properly trained in their uses. The following are some examples of such instruments used to end or prevent pursuits being tested and used by various police agencies:

Spike Strips

Spike strips, otherwise known as stop sticks, are one of the most widely utilized pieces of pursuit intervention equipment. Usually stored in the trunk of a patrol vehicle, these retractable spiked barrier strips are usually deployed in the path of a fleeing suspect's vehicle. If the suspect's vehicle passes over the strip, the hollowed spikes within the strip cause a controlled loss of air from the suspect's tires. Once the vehicle has completed passing over the strips, the deploying officer can then retract the strip from the roadway, allowing pursuing police vehicles to pass (Hill, 2002).

The Idaho National Engineering Laboratory originally designed the spike strip in 1995, funded through a National Institute of Justice interagency agreement. Today, the portable spike strip serves thousands of agencies throughout the country. (Travis, 1996). However, the police and the public have recently scrutinized the retractable spike strip. For one, despite the fact that the spike strip deflates the fleeing vehicle's tires, this does not stop the offender. At times, the offender will continue the pursuit, even after the rubber on his tires has worn completely down to the rim. Once this occurs, sparks can

result as the metal from the rim of the tire make contact with the roadway. As a result, this may bring increased danger as the vehicle may now be uncontrollable and may pose the vehicle to the risk of fire or explosion (Fox, 2003).

Checkpoint Barrier Strips

Instead of providing a reaction to pursuits in progress, checkpoint barrier strips provide a preventative approach towards police pursuits. They follow the same conceptual design as retractable spike strips, causing the controlled release of air from the offender's tire. However, instead of placing the strip in front of a fleeing vehicle, the checkpoint barrier is placed in front or behind of a potential offender at vehicle checkpoints. As such, if the vehicle under inspection decides to flee the checkpoint, his vehicle has already been "spiked" (Travis, 1996).

Auto Arrestor System

Although still in the prototype phase of development, the "Auto Arrestor" provides a safer alternative to spike strips. The Auto Arrestor system, much like the spike strip, is a portable piece of pursuit intervention equipment. However, instead of utilizing spikes, the Auto Arrestor delivers short pulses of electric current to burn out or disrupt critical electronic components of modern ignition systems (Travis, 1996). Once a fleeing vehicle has passed over an active Auto Arrestor system, the vehicle will lose power and coast to a safe stop, similar to that of a car running out of gas. According to JAYCOR, the manufacturer of the Auto Arrestor system, the damaged part of the ignition can be replaced at minimal cost.

The Auto Arrestor system, although providing a seemingly safer alternative to spike strips, still has some problems with its design. For instance, the electronic pulse is would most likely only affect modern vehicles with electronic ignition systems. Older vehicles would not be affected by the electronic pulse, and therefore would not be stopped by the Auto Arrestor system. Furthermore, with the loss of engine power, other potentially dangerous situations may arise, such as the inability to steer or brake properly.

Road Patriot TM /Road Sentry TM

The Road Patriot is perhaps one of the more "awkward" approaches to disabling fleeing vehicles. In this system, a rocket-powered, automatically guided unit, mounted to the underside of a patrol vehicle, is launched at the offender's vehicle. Once the projectile has struck the vehicle, it emits an electronic pulse, thus disabling modern car's ignition systems. (Travis, 1998).

Obvious flaws are present with this system, such as the rocket's accuracy, range, potential danger of fire, and over penetration (or the penetration of an occupant of the offender's vehicle). Also, the system is again designed to affect the electronic system of modern cars only, leaving old model cars unaffected and unstopped.

The Road Sentry is identical to that of the Auto Arrestor system. The only major difference is the availability of the Road Sentry to be permanantly mounted on roadways, such as in high-traffic areas prone to pursuits. Sadly, stationary devices like this, unless used in preemptive mode, appear to have little potential affect on pursuits because of the delay required to set them up (National Institute of Justice, 1998).

Fleeing Vehicle Tagging System

This interesting system provides the pursuing officer with a response that satisfies both options of pursuing or not pursuing. A gun-like tool could be used by a single officer, whereas its projectile, once striking and being attached the offender's vehicle, emits a radio signal. The officer could then terminate the pursuit, thus ending the immediate threat of injury, and track the offender's vehicle via the transmitted radio signal. (Travis, 1996).

Like all other instruments, this one too, has faults. For example, the officer's projectile could miss the offender's vehicle, or even after successful "tagging", the radio reception or signal may be lost.

Radar Warning

Instead of focusing on the police or offender's vehicle, several electronics companies are designing radar-warning devices to be installed on all consumers' vehicles. When the police engage in a pursuit, a signal would be emitted from their

patrol car and received by other cars sharing the roadway within the area. These motorists could then more quickly and easily yield way to the pursuit. (Hill, 2002).

Pursuit Innovations

In addition to these examples of pursuit intervention equipment, there have been numerous other advances in police technology providing safer outcomes to vehicular pursuits. These innovations include the use of old inventions applied to the enforcement of criminal law to new technology providing law enforcement with an easier task of pursuing fleeing offenders. Some of these innovations include:

Helicopters and Fixed-Wing Aircraft

Although somewhat limited to large-budget departments such as state police or large municipalities, helicopters and fixed-wing have become widely used in assisting pursuit operations. Geoffrey Alpert, in his research *Helicopters in Pursuit Operations*, brings forth many advantages of the police helicopter. Alpert analyzed helicopter flight units from two major metropolitan areas: Baltimore City and Miami-Dade County. First, it is important to note that Baltimore has a discouragement policy against vehicular pursuits while Miami-Dade only conducts ground pursuits for violent felonies.

In both departments, when officers have located a fleeing suspect for a nonviolent felony, the officers pull back and disengage their emergency equipment and allow the helicopter air wing to take over, unknown to the offender. Once the fleeing vehicle has stopped, the helicopter crew relays the position of the vehicle to police units on the ground. However, if the offender does not stop his vehicle within a certain amount of time, the helicopter crew has several options:

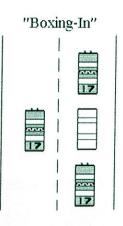
- 1.) Communicate to the ground units that the subject is accelerating fleeing activity.
- 2.) Make the suspect aware of the helicopter's presence in hope that the suspect will cease fleeing.
- 3.) Use the searchlight/Nightvision/Infra-Red to illuminate the suspect's position during night pursuits.

Alpert, after his study of both cities' helicopter units, concluded that helicopters provided a valuable service to law enforcement in general and to the pursuit function in particular. (1998).

Fixed-wing aircraft provide similar benefits as the helicopter, however are limited by means of speed and location. Also, fixed-wing aircraft usually do not carry the array of nightvision capabilities that helicopters present. Either way, by using fixed-wing aircraft or helicopters in pursuit operations, these innovations allow law enforcement to monitor fleeing suspects unobtrusively and provide vital information to ground units (Knight, 1998).

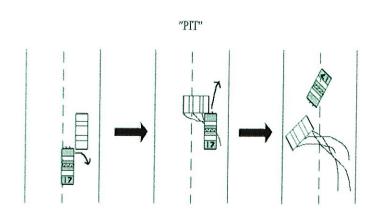
Vehicle Positioning

The squad car has been the pinnacle of the entire pursuit process. When coupled with a highly trained officer, it becomes an extremely effective instrument at ending or preventing pursuit incidents. Several options are available to the officer, dependent on the variables of the pursuit, whereas use of the patrol car itself provides an instrument to end the chase. In the cases where patrol vehicles are needed to stop a fleeing motorist, two main options of force become available: non-contact intervention, and contact intervention.



Non-contact intervention is most typically conducted with multiple police units. For example, the "Boxing-In" method, as shown at right, involves three police units trapping the offender's vehicle in a "box". The three police vehicles, after completing the "box" pattern, would then each decelerate in unison, ultimately bringing the offender to a halt. Of course, other variations of "Boxing In" can be done utilizing multiple units as well. A single patrol unit may attempt to utilize non-contact intervention, although this is usually less effective since the offender does not have as strong of sense of being "trapped".

Contact intervention is any physical use of force applied by the pursuing officer against the offender by means of his squad car. The preferred method of contact intervention technique is referred to as the Pursuit Intervention Maneuver, commonly



referred to as the "PIT"
maneuver. The PIT
maneuver involves a single
patrol car physically
engaging the offender's car
with intent to "spin out" the
fleeing vehicle. After
making contact with the

fleeing vehicle's read end, the patrol car proceeds to accelerate and turn into the other car, thus creating a "skid" of the offender's car. The patrol car would continue to accelerate through the entire skid process, until contact with the suspect's vehicle is broken. At this point, the patrol car would turn around and face the now disorientated and immobilized vehicle. This maneuver is even more perfected if a second police unit is following the PIT initiator, whereas after the skid of the suspect's car is completed, the two police vehicles are able to pin the offender's vehicle together, one at the vehicle's front and one at the rear, thus totally removing the possibility of further escape. The PIT manuever has its limitations as well, including the variables associated with the suspect's vehicle, speed, and other situational factors.

Although there are other types of technique officers can employ with their vehicles, they are too numerous to list and explain them all in this context. It is merely important to note that the officer's vehicle provides perhaps the most abundant and widely used source of pursuit intervention.

Conclusion

As this paper has hopefully established, vehicular police pursuits are a very complex and delicate matter concerning the daily operations of most every law enforcement agency throughout the country. However, when organized and regulated departments provide adequate policy and training, the responding officers are more able to accurately handle and effectively end practically all police pursuits without unnecessary force or injury. As the age of the automobile continues to evolve and provide opportunities for the hardened criminal or the common offender, so will the

police conform their needs and requirements to successfully keep pace. Now and well into the future, the vehicular police pursuit, despite the police's efforts at safety, will continue to bring the police's duties of "To Serve" and 'To Protect" into contrast.

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