

**The Bill Blackwood  
Law Enforcement Management Institute of Texas**

**Using Pursuit Alternatives To Limit Civil Liability.**

**An Administrative Research Paper  
Submitted in Partial Fulfillment  
of the Requirements for the Institute**

**by  
Robert E. Dahlstrom**

**Austin Police Department  
Austin, Texas  
June, 2000**

## **ABSTRACT**

Pursuits are one of the most dangerous actions that any police officer will become involved in. It is also very dangerous for the public and suspects. Collisions during pursuits cause millions of dollars in property damage and often personal injury or death. This research is being done to encourage every law enforcement agency to actively take action to end pursuits as quickly as possible. Every second that a pursuit lasts makes it very dangerous to all those involved or that could be involved.

This paper was written by doing research in the library as well as several interviews and a survey that this writer used. Twenty six agencies throughout Texas were surveyed to get feedback on the use of tools to end pursuits as quickly as possible. Results of the survey and research show that there are several tools immediately available to law enforcement and many others under development. Some of the best methods of making pursuits safer are not just the use of tools but the departments policy and training in regards to pursuits. Both of these must be aligned with current legal laws and court rulings.

The results of this research shows that every unit on patrol should be equipped with a tool to end pursuits. It is imperative that pursuits are ended as soon as practical. The longer the pursuit goes the more likely a tragic ending could occur. Beside being equipped with individual tools; in-service training, policy, and helicopters can all enhance the outcome of pursuits. There is also a lot of research going on to enable law enforcement to stop the vehicles involved with electrical impulses or pager type devices that would cause the car to come to a slow controlled stop that would not cause danger to any participants or innocent civilians.

## Table of Contents

	Page
Abstract	
Introduction.....	1
Review of Literature.....	2
Methodology.....	9
Findings.....	11
Conclusions.....	16
References.....	18

## INTRODUCTION

The headlines in newspapers often show the tragedies associated with high-speed police pursuits; "stolen minivan...killed a nine year old girl" (Associated Press 1999). While research of this report was being gathered the Austin American Statesman headlines read, "17 year-old dies in chase with deputies" (Powell, 1999). Pursuits are a very dangerous part of police work that occurs daily across the world of law enforcement. Except when the use of physical arrest is used, pursuits are the most common high liability area of law enforcement (Travis, 1999). With literally millions of dollars being paid out to settle liability claims involving pursuits other methods must be employed to end them, other than chasing the vehicle until it stops.

There are many methods that are available today to help agencies stop pursuits quickly before a collision occurs that could cause injuries and or property damage. There is also a lot of technology that is being developed. Some of this technology is very expensive but when compared to liability costs, it can be absorbed easily. Along with physical methods to help with pursuits, policies and training can also be of assistance to make pursuits as safe as possible. The research in this subject is endless and changes daily as different court cases rule on policies and state law.

The research will include books, journals, personal letters, department policies, case law and a survey done of law enforcement agencies in Texas. Some departments have very extensive policies while others give very simple guidelines on how to conduct a pursuit.

The intended outcome of this project is to express the immediate need for all agencies across the world to become very proactive when chasing a fleeing motorist. There are many

means available to make this situation safer for all involved. In Canada, the Toronto Star reported, "The province is also considering stiffer penalties and increased funding for helicopters and other tools that could help police catch fleeing suspects. ....a pursuit technology must be able to be very rapidly deployed and used in order to have a significant impact on preventing pursuit related collisions." (Duncanson, 1998). Liability issues are the ones of most concern in pursuits. These are issues of personal injury and death. The Metro-Dade Police Department cites four variables when predicting personal injury in pursuits.

1. The greater the number of police cars the greater the likelihood of injury.
2. Involvement of other police agencies also increased the likelihood of injury.
3. High speed chases result in more injuries than low speed chases.
4. Chases in residential areas resulted in more injuries than those conducted in non residential areas (Alpert, 1997).

Many different people will be effected by this project. Law enforcement agencies can use this project to determine whether pursuit alternatives are a viable option as well as to become informed of the available technology. Citizens will also benefit from the pursuit being ended quickly by law enforcement personnel. Many cities will save millions of dollars in liability suits by ending these chases before they end in a tragedy.

### **Review of Literature**

There are many different opinions dealing with pursuits as to when to pursue, how long to pursue, when to cut off a pursuit, are pursuits dangerous, strict or non-strict policies as well as lenient and tough laws against the violators. There are also many different methods of stopping pursuits that are currently available and others that are just in the development stage.

Department policies can be one of three different types; judgmental, restrictive or discouragement (Crew, 1992). Judgmental allows officers to make all major decisions relating to initiation, tactics and termination. Restrictive places certain restrictions on officers judgments and decisions. Discouragement severely cautions or discourages any pursuit except in the most extreme situations. Harris County Sheriffs Department Manuel states "pursuit driving should always be governed by common sense and concern for accidents." (Harris County, 1999). What this does is inform officers that even though the manual has specific guidelines. to follow they should always keep safety in mind. Dallas Police Department General Orders phrases the same intent a little differently when they state, "a pursuit will be terminated when the danger to the public and officers exceeds the need to apprehend the fleeing suspect" (Dallas Police, 1996). Due to research gathered for this report the Austin Police Department changed its policy to be more restrictive than before. Due to statistics showing that over 60% of pursuits happening at the Austin Police Department were beginning with Class C traffic violations, the restriction was added that they would not pursue when the "suspect is committing, or has committed, only Class C or non-hazardous traffic violations." (Austin Police, 1999). Many departments are going the opposite direction of Austin by being more aggressive in pursuits and possibly allowing units to box suspects in while driving down the highway (Wigtil, 1999). Travis County Sheriff's Office Pursuit Policy is very specific in the types of pursuit and when to pursue. It has the following chart in the policy and then defines that if it is a high risk you may not pursue for anything but a violent felony. Felony property crimes may be pursued if it is a moderate risk and misdemeanors and ticket violations can only be pursued if it is a low risk (Travis County, 1999)(See Table 1)

Table I

<b>Degree of Risk</b>	<b>Low</b>	<b>Moderate</b>	<b>High</b>
Violent Felony Imminent Threat	May pursue Assess Risk	May pursue Assess Risk	May pursue: discontinue of risk exceeds known threat to public safety if capture delayed.
Felony Violent	May pursue Assess Risk	May pursue Assess Risk	May pursue discontinue of risk exceeds seriousness of the offense.
Felony Property	May pursue  Assess Risk	May pursue  Assess Risk	Do Not Pursue
Misdemeanor	May pursue Assess Risk	May pursue Assess Risk	Do Not Pursue
Citation	May pursue Assess Risk	May pursue Assess Risk	Do Not Pursue

One other area that policy address is what are supervisors responsibilities. Many departments require a control supervisor for every pursuit. The rare exceptions to this are those departments (usually Sheriff's Departments) that may not always have a supervisor available. The following are examples of the different roles a supervisor has during a pursuit (Beach, 1993).

- Monitor and control the pursuit
- Approve and coordinate tactics

- Approve or disapprove your leaving the jurisdiction to continue the pursuit
- Have the final say in the decision to initiate, continue or terminate the pursuit
- Conduct a post-pursuit review and analysis

There are many case laws dealing with pursuits. These court decisions both restrict pursuits and give officers immunity which lessens liability for the individual officer. The most prominent case that allows an officer immunity to civil liability in a pursuit is the case of *County of Sacramento v. Lewis* (1998). In this case a police unit chased a motorcycle for a short chase of 75 seconds. The motorcycle tipped over while going around a curve throwing Lewis off of the bike. The patrol unit then hit Lewis killing him instantly. The court ruled that "high speed chases with no intent to harm suspects physically or to worsen their legal plight do not give rise to liability under the 14th Amendment, redressible by an action under D.S.C., Sec. 1983. The Court concluded, therefore, that Deputy Smith's conduct failed to meet the shocks-the-conscience test." In the case of *Brower v. County of Inyo* (1989) the officers were held liable for the pursuit they were in because of actions that they took. They used an 18 wheeler to block the road and effectively concealed the truck around a curve with limited lighting. The suspect was killed when he struck the truck. The courts ruled that the individuals freedom of movement through "means intentionally applied' caused his death. The difference in the two cases is that in *Brower* the police officers caused a seizure and misuse of power by putting the 18 wheeler in the path of the car. The court ruled that if a suspect loses control and crashes during a pursuit it is there own action and does not constitute a seizure. Case law on this subject can change daily and effect department policies and training. Every department has got to stay updated to current case law.

There are hundreds of article and texts on the issue of pursuits. Several of the problems encountered in this situation is that no one keeps national statistics to count how many pursuits



happen each year, how many deaths, injuries or wrecks occur and there is nothing in place to make sure statistics are kept equally. One study from Metro Dade states that less than 5% of all police accidents occur during a pursuit. This study also concluded that it is very rare for a serious injury or death to occur (Payne, 1996). Other authors show that pursuit accidents happen more often than shootings and that the police vehicle should be considered a deadly weapon (Barker, 1998). One of the most thorough studies of pursuits and what we can do to make them better was done in 1998. The "Pursuit Management Task Force Report" has the most current information about statistics and methodologies of ending pursuits. One of the most important statistics that this report shows is that more than 50% of all collisions in pursuits occurred during the first 2 minutes of the pursuit. This information is critical as it shows that whatever methodology a department used must be readily available to the pursuing officers or those that are nearby. Otherwise it will not have a significant impact on cutting down the liability a department will suffer (Osborne, 1998).

There are very few acceptable methods of ending pursuits at this time. There are several that can lessen liabilities. Recommendations of different technologies consist of training the officers better and retraining officers on a yearly basis. Strict laws involving pursuits can lessen the gain a suspect has of getting away from the officer. Adding a helicopter to assist with pursuits can help let the officers back off of the chase. It is imperative that the chopper can join the pursuit within the first several minutes of the chase to be effective. Department policies and multi agency agreements can make any pursuit safer by letting officers know just how far they can go and to what extent. Multi-agency agreements focus on the "outcomes of fewer accidents, improved decision making, increased arrest/conviction rates, lower injury rates and improved management of pursuits" (Moose, 1997).

As far physical methodology techniques available there are not very many at this time. What is truly needed is an "efficient, non lethal method for law enforcement to stop fleeing vehicles that minimizes risk of death, injury, property damage, and liability to the agency, yet provides a high probability of making an arrest and recovering the vehicle" (Travis,1996)

Combined statistics show that collisions occur in 32% of all pursuits. 20% will result in property damage while 13% will result in personal injury. Fatalities occur in 1.2% of all pursuits. 70% of all pursuit related injuries and fatalities will involve the suspect's vehicle occupants. 14% involve the law enforcement agency while 15% involve the innocent bystanders (Travis, 1996).

Sometimes the injuries that are recorded as involved in a pursuit collisions are actually injuries that occur after the pursuit is actually over. About 30% of injuries suffered by suspects occurred after the vehicles had stopped and the suspect was being taken into custody (Alpert, 1997).

There are many systems to end pursuits being looked at currently. They include the checkpoint barrier strip which is a permanently installed spike strip. It is used mainly at border check points. There is also a fleeing vehicle tagging system. This is a tag that is launched by a projectile that tags the vehicle to be tracked down with receivers mounted in a police unit. Spike strips are used world wide and are portable and go in the trunks of police cars. These are launched by the officer throwing or dragging the strip across the road in the path of the car.

There are other tracking devices that can be triggered by a pager like device that causes a sensor to go off and be tracked by either a satellite or trackers installed in the police units.

Methods for use in the future include Electrostatic Discharge Devices (ESD), Non-nuclear Electromagnetic Pulse Device (EMP) and the High-power Microwave (HPM) or Radio Frequency (RF). The ESD produces a rapid high voltage transfer of charge to a targeted vehicle upon direct physical contact with the vehicle. The EMP radiates a solitary pulse of energy omni

directional through the atmosphere to a distant target vehicle. The HPM or RF radiates continuous or repetitive pulsed projected energy devices that radiate continuous or repetitive pulsed energy directionally through the atmosphere to a distant targeted vehicle (National Institute of Justice, 1998).

The PMTF classified several specific technologies to consider in their report to attempt to come up with the best and safest method. Those classifications were electrical, mechanical, chemical, cooperative and sensory. Electrical use direct injection or radioactive energy to upset or destroy a fleeing vehicle's electrical components resulting in loss of power. Mechanical, such as spike strips, barriers, nets and tagging systems, are physical ways of slowing down or tagging the vehicle for apprehension. Chemical agents interfere with the fleeing vehicles internal combustion by inserting one or more non-hazardous chemicals into the combustion system. Cooperative systems are pre-emplaced by the vehicles owner and allows law enforcement to either track the vehicle, turn it off, or both. Sensory technology impairs a drivers optical, auditory or other senses non chemically. This can also include advanced warning devices for innocent bystanders (Osborne, 1996).

One of the most important areas in pursuits that must be considered is that there are four distinct phases during a pursuit. These are the pre-pursuit phase, communication phase, arrival of resources phase and post pursuit phase. Each of these areas have very important elements in the prevention of liability for departments. The pre-pursuit phase occurs between the time an officer makes the decision to stop a vehicle and the officers recognition that the vehicle is not going to stop. Many factors can occur during this time that could prevent a pursuit from happening. The officer should try to get the best description of the driver and vehicle possible. He should also chose the location for the stop if possible. If the vehicle is a known felony vehicle then the officer

should wait until other units close in on the area, possibly even preparing to deploy spike strips in front of it if time permits. The communication phase is the period between the start of the pursuit and arrival of other units and resources. The reason for the stop, direction of travel and any other known information should be broadcast to the responding officers. The third phase of the pursuit is the arrival of resources phase. During this phase attempts are made to terminate the pursuit as quickly and safely as possible. This is where most methods of terminating pursuits would be deployed. The final phase is the post pursuit phase. This phase encompasses any actions taken or needed after the suspect is captured or has eluded the officers. Detailed reports for future training and policy decisions are also very important. These reports would also be used for court testimony on the criminal and civil side of any incidents. Each of these areas should be examined to assist agencies in developing their training and policies.

### **Methodology**

Pursuits are extremely dangerous. I cannot think of any time that a pursuit could be labeled safe. The violator disregards the safety of the public and tries to get away at all costs. Often they purposely cause accidents to try and slow the pursuing officers down. The officers have to rely on experience and skills to avoid collisions and try to apprehend the violator. When an officer gets tunnel vision he disregards the bystanders and just tries to stay up with the violator. This is a formula for disaster. The question for this paper is how can law enforcement develop and use alternatives to end pursuits safely for everyone involved. This includes the violator as the violator can sue the department if they are injured or have property loss in a pursuit just as easy as an innocent bystander can.

The methods that law enforcement must use to accomplish this are many. There is not one single place to look for answers. Policies must be reviewed and legislation must be passed.

Policy must address when an officer should and should not pursue and what methods can that officer use to make a safe apprehension. Some departments allow boxing in and using rolling road blocks (Wigtil, 1999). Other departments go to the other extreme and do not allow pursuits of any type. The best solution is to have a restrictive policy with available alternatives (spike strips, helicopters) that can end a pursuit safely. Legislatures need to make evading police a high felony classification so the suspects realize the seriousness of the situation.

A survey was done that 26 agencies responded to. There were approximately 50 requests mailed out to agencies across Texas requesting that they be filled out and returned. The surveys included departments from Texas that ranged in size from 6 officers to 2900 officers. It asked if the department had a pursuit policy and if supervisors were required to take control of those pursuits. The survey addressed the number of collisions, injuries and fatalities incurred by each department along with the total number of pursuits in the year 1998. Methods available to each agency were addressed as well as what caused the pursuits to end.

Geoffrey Alpert is as an expert in many areas of law enforcement including pursuits. A letter was sent to him in regards to this report and he sent back several pamphlets along with a personal letter which contained valuable information to the report. Continued information has been sent to Alpert through email communication. The results of the survey done for this report were sent to him for his use.

All of this information will be combined with the other statistics found during the research of this project. The large amounts of material covering this subject make it difficult to defend just one answer to any questions about pursuits. All responses indicate that pursuits are very dangerous and there must be methods available to law enforcement across the world to end a pursuit quickly and safely. Quickly is very important due to research that shows that 50% of

collisions in pursuits happen in the first 2 minutes of the pursuit.

### **Findings**

The overall result of the research for this project shows that there are many different ideas across the world on how to make pursuits safer. One death or one injury can cause departments to make drastic changes in their policy or methods used in a pursuit. The survey that was done among Texas departments had very similar results to national studies (Alpert, 1999). One problem is that there is not anyone that keeps a total of national statistics. This causes inaccurate figures to be put out to the public which can cause them to put pressure on public officials to strictly limit pursuits or to allow pursuits when they should not occur. The results of the survey with Texas departments are combined for the following results.

The total number of agencies that responded was 26 with a combined population of 11,585,425 people. The total number of sworn officers in these agencies in this survey was 16,501. Of the 26 agencies 24 of them allow pursuits while the other 2 allow pursuits only when it is a very serious felony. All 26 agencies have some sort of pursuit policy while 22 of the agencies require a supervisor to be in control and 4 did not require control supervisors. The total number of agencies that allowed some sort of terminating policy was 19 while 7 had nothing in their policy allowing officers to stop the vehicle. The most common type of technology used by these agencies was spike strips with 15 agencies allowing their use. In Houston, only supervisors could use the spike strips. No one else used that restriction. One agency allowed boxing in while four others allowed road blocks. When training was addressed the responses varied from 40 hours during cadet class to 0 hours. In-service training on pursuits varied from 24 hours of followup training to 0 hours. The total number of pursuits for all these agencies in 1998 was 1389. The methods that the suspects stopped were, stopped voluntarily, 435, had an accident, 275,

terminated, 168, used technology, 141, and other ways 167. These numbers vary since some departments answered this section and others did not. Only six fatalities occurred out of the 1389 pursuits. Three were suspects and three were innocent bystanders. No officers were killed. This is far below the national average of 1.2% fatalities. It is actually .03% fatality rate. Only one agency had addressed the state legislature asking for stricter penalties.

The statistics for the Austin Police Department during 1998 showed that there were 116 pursuits with no fatalities(Austin PD, 1998). There were 27 accidents, 46 stopped voluntarily, and 39 were terminated. Four pursuits were ended with stingers. Only about 1 of every patrol cars has a stinger in it which causes an availability problem of getting the stinger to the proper location in a timely matter. Statistics from other studies show similar figures (Alpert, 1997)(See Table 11).

Table 11

Agency	Number of Pursuits	Accidents	Injuries	Fatalities
Miami-Dade	952	364 (38%)	160 (17%)	7 (.7%)
CHP	683	198 (29%)	99 (15%)	7 (1%)
Minnesota	764	307 (40%)	205 (27%)	1 (.1 %)
Illinois	700	273 (39%)	77 (11%)	12 (1.7%)
Austin (1997)	133	45 (33%)	12 <.09%)	0

Statistics show that a very small number of actual fatalities occur during pursuits. One is too many. What statistics do show is that there are very many injuries and property damage that can all be lessened by more restrictive policies and more aggressive law enforcement tools used to

stop the offender quickly. The quicker the suspect is stopped then the less likelihood a collision will occur. Researchers all agree that the quicker a pursuit is stopped, the less likely death, injury and property damage will occur.

Looking at all the available methods available for law enforcement the stinger spike system is probably the most affordable and simplest to use in ending pursuits (Stinger Spike, 1997). This system is deployed by a single officer standing beside the road by either dragging it across in front of the suspect vehicle or by sliding it out across the road. After the suspect vehicle drives over the spikes then the officer quickly drags it off of the road so the officers unit is not damaged. This can be done with a 1-5 second follow time. There is research being done on a spike system that stays in the road and the spikes are exposed or hidden by a mechanical device a single officer operates. The company developing this device is having trouble with the mechanical device working properly. The "Stop Stick" of "Stinger Spike" are the two most well known current models in use. The Austin Police Department uses the "Stinger Spike" system after analyzing both of them. The stinger system brings the car to a safe controlled stop by placing sharpened hollow spikes into the tires. The hollow part allows the air to slowly escape the tire taking about 20 seconds for the tire to go flat. Due to liability reasons it should not be used on motorcycles or off road vehicles. Its use should also be restricted on use towards buses or 18-wheelers. It can take upwards of 25 minutes to flatten a large tire on an 18 wheeler. They are very small and easily fit in the trunk of any patrol car. Cost is about \$500 dollars for each unit. Maintenance is easy as it comes with a tool to replace spikes that are used in tires.

There is also a device called a "Road Patriot". This device attaches to the front bumper of the pursuing police car. It has a rocket attached that will go 20mph faster than the police car and must go under the pursued vehicle (Road Patriot, 1999). When it goes under the car it discharges



an electrical current that disables the car. The police car must be within 100 feet and directly behind the car it is chasing. While this tool is currently on the market it is not very practical. The cost is about \$8,000 per unit. That is a large added expense to any departments budget. It also is not practical to follow a car with only 100 feet of clearance in between while in a pursuit. The odds of the car that the police are chasing staying directly in front are very slim. This same company has permanently mounted systems for about \$6,000 that are the size of a trash can lid and are mounted on the street. This could be used for major streets that pursuits end up on after statistics from the department were gathered. This too is not very practical due to the expense and the odds that each pursuit would end up on just a few streets.

Helicopters, while expensive, may be one of the best current solutions to ending pursuits safely. The key to using helicopters is that they must be quickly available 24 hours per day. Once a helicopter is involved in the pursuit the marked units can back off and do not need to drive so fast that it endangers the public and officers. Often times the suspect slows down when the marked units back off and it makes it much safer for everyone involved. The helicopter can radio to the marked units where the suspect goes. Police helicopter flying is unique due to low altitudes and directional changes. If the department is considering any type of electrical disabling device the helicopter would need to stay far enough away that it would not encounter problems if the device was activated. The biggest downside to using helicopters is the expense. Large metropolitan areas use them far more often than small urban departments (Osborne, 1998). A solution to this problem is to have several departments combine their resources to work together on forming a helicopter unit.

The future use of developmental methods should not be confined. In today's methods of high technology there has to be a system of pointing at a car and disabling it. This system is

currently available except it cannot be limited to just the car it is pointed at. Any car in the vicinity will be disabled and it costs money to get these vehicles back on the road. There needs to be ways developed to specifically target an individual vehicle and disable its electronic components. The method must be available to law enforcement only and must be kept away from the common criminal or the tool will be reversed and used against unwilling motorist to rob or harm them. Other encouraging systems are those that are activated by the owner or a law enforcement agency similar to a pager. The pager is activated and it can either cause the car to be disabled or a tracking device goes off so the vehicle can be tracked and does not have to be pursued. This helps find the vehicle but does not assist in directly arresting the violator. This device is good for stolen cars and their recovery (Osborne, 1996).

Some scientific solutions that sound like science fiction instead of truth are names like plasma beam technology, radiative systems and direct injection systems. Plasma beam sends high voltage RF currents at a fleeing vehicle and destroys the electronics. This could be costly to repair and more information is needed to see if it is effective. Radiative and direct injection both take out the electrical systems. Direct injection works best from a fixed point which cause limitations while radiative can be mounted to the front of a police unit. The disadvantage to both of these is the collateral damage to other devices in the area. It could even cause damage inside of buildings to their computers and other electronic devices (Osborne, 1996).

All of this information needs to be looked at by law enforcement agencies. There needs to be a national center that keeps all statistics on pursuits and also looks at all available technology to make them safer. One life lost is too many. Each department needs to look at what they can afford in their budget remembering what one major accident with serious injury or death could cost them in the court system. The department must be able to provide training on whatever

device it used and have the public acceptance of the device. All the statistics gathered show that pursuits are very dangerous and the sooner we end the actual pursuit the quicker we lesson liabilities for the departments.

### **Conclusion**

The purpose of this study is to show the importance that each department needs to develop methods of stopping pursuits as quickly as possible in order to avoid liability costs to be so high. The question is to review all alternative methods that are currently available to use to obtain this and briefly mention those methods that are being looked at for future use.

Policies should be evaluated to make sure that there is a control supervisor assigned to every pursuit when one is available. Some agencies will have a hard time doing this due to the size of the agency and availability of a supervisor. Policy should not just protect the department but also protect the officer involved in the pursuit and the public. This needs to be done by having a restrictive policy that explains when an officer can pursue and when the officer should not pursue. The policy should also address specifics that an officer should not do such as pursue the wrong way on a freeway. Policy should address the fact that it is necessary to have proper reporting procedures in order to evaluate if pursuits are occurring safely and if there are any other methods that should be used to stop them safely. Each department should have a pursuit review board of some sort to review the chain of command decisions to make sure they are being evaluated in the same manner throughout the department.

Training is an essential function of pursuit driving and decision making. Every officer needs to be reminded of what departmental policy is on pursuits at least every 3 months in roll call training. This can be done by supervisors. The cadet class should have at least 40 hours of training on how to drive in pursuits along with help in what decisions to make during pursuits.

Whatever methods the department uses to end pursuits need to be addressed during this time with proper training administered. Any training that is done should be documented for any future court needs.

Current methods available to law enforcement include, helicopters, spike strips, tracking tagged vehicles, nets, road blocks, and pager systems. Currently the best systems in use are the use of helicopters and spike strips. Both of these systems can quickly end the danger of a pursuit and minimize the results of the endings. An important part of this scenario is that all cars must be equipped with a stinger spike system and not just a few of them. Communication with the helicopter is also essential.

Pursuits will always be dangerous until a method is developed to end them as quick as they start. This method may not be that far away but until it does get here all policies, training and methods used must take public safety as a high priority. The quicker the pursuit is ended the less likelihood of civil liability.

## REFERENCES

Alpert, G., & Dunham, R., & Kenney, D. (1997). Police pursuits and the use of force. Justice Quarterly 14(2), pp372-385.

Alpert, G., & Kenny, D. (1997). A national survey of pursuits and the use of police force: Data for Law Enforcement Agencies. Journal of Criminal Justice 25(4), pp-315-323.

Alpert, G., University of South Caroline, Letter, November 1999.

Associated Press. (1999, March 29). Fatal accident call police chases into question. The Daily Camera. <http://bouldemews.com/news/news/statewest/39cchse.htm>.

Austin Police Department. Cumulative Pursuit Statistics. Austin, TX 1997.

Austin Police Department, Cumulative Pursuit Statistics. Austin, TX 1998.

Austin Police Department. Cumulative Pursuit Statistics. Austin, TX 1999.

Austin Police Department General Orders. B103.02.B. Austin, TX 2000.

Austin Police Department Training Manual for Stinger Spike Systems. Austin, TX 1997.

Barker, T. (1998), Emergency Vehicle Operations, Springfield, IL.: Charles C. Thomas.

Beech, R. & Morris, E. & Smith W. (1993) Emergency Vehicle Operations, Tulsa OK: Pecos Press.

Brower v County of Inyo, 109 S. Ct. 1378 (1989).

County of Sac rem en to v Lewis, 118 S. Ct1728 (1998).

Crew, R. (1992). An effective strategy for hot pursuit. American Journal of Police, 11(3), pp 89-95.

Dallas Police Department General Orders 301.07.10 Dallas TX: 1996.

Duncanson, J. (1998, November 27). Let's talk on chase rules. Toronto Star, <http://www2.thestar.com>.

EI Paso Sheriffs Pursuit Policy Appendix C. EI Paso, TX: 1999.

Harris County Sheriffs Manuel Chapter III 5.2.B.2. Houston, TX 1999.

Houston Police Department Pursuit Policy. Houston, TX 1995.

Moose, C (1997). Multi-Agency Agreements-Valuable Tools in Portland. The Oregon Police Chief Home Page, <http://www.policechief.org/multi-agency.htm>.

National Institute of Justice. (1998, July). Evaluation of vehicle stopping electromagnetic prototype devices. <http://www.ojp.usdoj.gov/nij>.

Osborne, R (1998). Pursuit Management Task Force Report~ National Law Enforcement and Corrections Technology Center. pp.ix-xiii, 1-99.

Payne, D. & Fenske, J. (1996), An Analysis of the rates of injury and fatal accidents in Michigan State Police. American Journal of Police 15(4), p-96.

Powell, T. (1999, November 7). 17-year-old dies in chase with deputies. Austin American Statesman, pp. B1,B7.

Road Patriot, (1999), Non Lethal Technologies, Inc. Algonquin, IL. (PampWet).

San Antonio Police Department Pursuit Policy 609, San Antonio, TX 1996.

Stinger Spike (1997). Federal Signal Corporation (Pamphlet).

Travis County Sheriffs Department Pursuit Policy. Austin, TX 1999.

Travis, J. (1996, October), High-Speed Pursuit: New Technologies Around the Comer, National Law Enforcement and Corrections Technology Center, <http://nlectc.org/txtfiles/speed.html>.

Wigtil, B. Houston Police Department, Personal Interview, November 1999.