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**A Safer Ending:
Use of Tire Deflation Devices
to Help Safely End Pursuits**

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ABSTRACT

Tire deflation devices are quickly becoming very useful as standard equipment for most of today's police departments. Some of the many issues concerning tire deflation devices include acquiring, proper training, and the ever-increasing liability of any actions used to end pursuits. The methodologies used in this study include visiting with administrators from various agencies, personal experience as a field level officer, and manufacturer's information. Tire deflation devices seem to be a very useful addition to police officers to help safely slow and or end pursuits. The ending of pursuits as well as the liability issues seems to go hand in hand with proper officer training and use of the device as prescribed by the manufacturer as well as department policies. When done properly and per policy, the tire deflation devices seem to greatly enhance the safety of all parties involved in the pursuit, there by limiting liability of both officer and department. And in conclusion, tire deflation devices as well as policies governing them, would be an asset to departments of all sizes.

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INTRODUCTION

One of the scariest and hardest events that can occur in law enforcement today is the motor vehicle pursuit. This is a situation that no modern day office should want to be involved in for numerous reasons. The pursuit is more times than not a lose-lose situation not just for the officers involved but also the suspect, the possible passengers in the suspects vehicle, and the innocent public that is probably totally unaware that they are in the midst of an extremely dangerous and possible lethal situation.

Also controversy over pursuits and the policies governing them grow as well as the litigation scene, the officers are finding themselves personally liable as well as the department for the unpredictable outcome of the pursuit and more and more often being themselves sued for damages. More and more the office is being sued for negligent or violating the departments policy manual. Departments on the other hand are usually sued for a lack of or outdated policy or poor and improper training of the officers.

Pursuits are a dangerous and very unpredictable event, one possible tool that police have and is being more widely used and accepted is the tire deflation device. It is a proven fact that there are going to be pursuits as long as there are police and offenders in society. Pursuits have been going since the beginning of law enforcement and will in most likelihood continue as long as law enforcement does.

There is a strong possibility that tire deflation devices will become as asset to law enforcement. Not as a tool that will magically end pursuits, but a tool that will slow down the suspect vehicle in the pursuit. Any reduction in speed will greatly reduce the chances for a violent outcome that in many cases injures people both directly involved with the pursuit as well as the totally uninvolved innocent party. In order to better answer

this question, many methods of research have been employed. Information has been gathered from law enforcement periodicals, numerous books from very knowledgeable and experienced professionals, as well as several local departments' policy manuals, and in speaking with and directly working over the years with local law enforcement officers in this area.

This study will hopefully show that tire deflation devices are a beneficial means of not only slowing down the pursuit but a viable means of also reducing the risks and liabilities that go along with the pursuit. Any safe and low cost tool that can do all of this should prove beneficial to departments of all sizes in all different types of locations both rural and urban. The two specific types of tire deflation devices that will be covered in the paper are the Stop Sticks and the Stinger Spike Systems. These are the two most common and most widely used and accepted in this area. There are other systems available but they are not as widely used or researched.

REVIEW OF LITERATURE

From an administration standpoint, pursuits propose a very complex and multifaceted set of questions. Do you pursue at all, how long do you pursue, and for what types of offenses do you pursue? According to the International Association of Police IACP a pursuit is defined as: an active attempt by an officer in an authorized emergency vehicle to apprehend fleeing suspects who are attempting to avoid apprehension through evasive tactics (McGue, 1996).

According to the City of New London Policies and Procedures Manual, an authorized emergency vehicle is: only those vehicles equipped with a siren, and with red

and/or blue lights installed in a manner approved by the Chief of Police. No other vehicle will be used or operated in an emergency manner. All emergency or pursuit driving will be conducted in accordance with all applicable Texas Traffic laws as stated in the Texas Transportation Code. In all cases of emergency or pursuit vehicle operations, the officer must determine the seriousness of violation, roadway and traffic conditions, which include volume and type of traffic, direction and speed of traffic, type of roadway and degree of marginal development and weather conditions. At all times emergency vehicles must be operated in a reasonable and prudent manner with due regard for life and property (New London Police 1).

The New London Police Policy forbids high speed pursuits when:

- a) Sight contact with the violator has been lost
- b) Known hazards are highly exposing the officer or public to unwarranted risk.
- c) Conditions clearly indicate the futility of further pursuit.
- d) There shall be no attempt to stop pursued vehicle by boxing in, heading off, ramming, bumping, or driving parallel to the pursued vehicle.

At all times the operator of a New London Police Department vehicle is responsible for the operation of the vehicle in a safe, reasonable, and prudent manner for the existing conditions. Driving reckless or negligent manner, without due regard for life and property is strictly forbidden by this policy (New London Police 2). As you can see by policy, there are not many available options in slowing or stopping a pursuit.

So what do we do about this complex problem concerning vehicle pursuits? Do we do away with pursuits totally and just let the offenders know if they run they will get

away? Do we restrict pursuits to the point where officers are afraid of doing what is right and what needs to be done fearing they will violate some obscure policy or misinterpret it? Or do we come up with and implement tools and policies that can and are being proven to slow down and greatly increase the safe outcome of pursuits?

According to Jan Lewis, an author of the 1993 Exchange Report in the United States, more than 300 people die each year as a result of high-speed pursuits. Thousands of others are injured. Between 18 and 44 percent of all pursuits end in collisions. Most pursuits are triggered by simple traffic violations. Suspected felons are involved in only about 15 percent of all pursuits. (Lewis 1993) Another study done by Ronnie Paynter showed similar results. Collisions occur in 32 percent of police pursuits; 20 percent of these collisions will result in property damage; 13 percent will result in personal injury; a fatality will occur in 1.2 percent of all pursuits. Approximately 70 percent of all pursuits related injuries and fatalities will involve occupants in the pursued vehicle; 14 percent will involve law enforcement; and 15 percent will involve innocent parties (Paynter 2000). Most of the information and literature available on pursuit seems to agree on the point that there are strong and growing probabilities that not only are pursuits inevitable and going to continue, but that the risks involve and potential for a dangerous and highly litigated outcome are on the rise.

Pursuits seem to be one of the most highly publicized police incidents in law enforcement today. It has gotten to the point where if there is a pursuit anywhere in the United States, it is on every channel on television regardless of time of day or where it is occurring. These televised pursuits range from the high-speed action packed bank robbery suspect down freeways at 100 MPH or more to the ever infamous O.J. Simpson

pursuit at low speeds for an incredible amount of time. No matter how or why it started, pursuits seem to grab the nation's attention. And sadly to say, it seems like the general public is usually watching these media events to see one of two things: the suspect gets apprehended or the unforgettable traffic collision usually ending up in serious injury or death to someone.

Traffic crashes are by far the least desirable outcome of any pursuit (Auten 44) Any death or injury is hard to justify, especially when the violation is minor. (44) Law enforcement has and will welcome any safer and more efficient means to assist in the slowing and possible safe ending to pursuits. There are few alternatives in law enforcement to aid in the endeavor of slowing pursuits that are by their own means very dangerous, ineffective, and high in liability. Some of the methods used in the past include: ramming the suspects' vehicle with the patrol car, attempting to shoot the tires out on the suspects moving vehicle, and the PIT maneuver (pursuit intervention technique).

In today's society these procedures are way too costly and unpredictable to be used in most areas. First and foremost, no agency can afford the expensive litigation associated with these procedures. Secondly, with shrinking budgets and tax bases around the nation, agencies cannot afford the damage to police vehicles these procedures can cause as well as time off from officer injuries related to these procedures. And lastly, no agency of officer wants any part of the injury or death of any person or property due to the volatile and unpredictable nature of these procedures. One device that has somewhat recently come into the hands of law enforcement is the increasingly popular tire deflation devices. These are devices that are deployable by an officer ahead of the pursuit in a safe

manner and in sufficient time to get him and others safely out of the way of the oncoming pursuit. Most of the devices only require a single officer to deploy which is a big issue in most departments.

The two systems researched in this paper are the Stinger Spike System and the Stop Stick System. The one common aspect of both systems is they both rely on a hollow stainless steel spike to puncture the tire of the suspect's vehicle when ran over and then slowly release the air in the tire so as not to cause a blow out, but rather a controlled release of air causing the vehicle to become harder to handle thus slowing down the vehicle in a safe and efficient manner. Both of the systems claim that generally within 20 to 30 seconds the punctured tires are deflated and the vehicle must begin to slow down due to a loss of stability from the deflated tires. Both the Stinger and the Stop Stick systems appear to be a very affordable alternative to agencies both small and large. Both companies have systems in the range of \$300-\$400 dollars.

If these systems can shorten, slow, or stop a pursuit before it goes wrong that is a very small price to pay. Any type of controversy or litigation would be astronomically more expensive and time consuming than that. At this price range and with proper budgeting and presentation to governing bodies, departments should be able to acquire such systems over a relatively short period of time. Clearly, as more units are equipped with tire deflation devices, the chances for the device to be effective increases (Eisenberg, 1999). Because of the flat tires, within a short distance the fleeing vehicle is forced to both abort the escape and stop, or at least significantly reduce its speed.

With the positives of the uses of controlled deflation devices coupled with the relative inexpensiveness of the devices as compared to the final average costs of a

pursuit, it is no surprise that many law enforcement agencies are acquiring an disusing the devices to their officers (Brave & Edblad, 1996). “The only way they work is if they have a high likelihood of being expeditiously deployed.” (Brave, 2000). Tire deflation devices do not stop vehicles, but when deployed effectively the vehicle speed is reduced (Gallagher, 1998).

One of the largest agencies in the State of Texas, The Texas Department of Public Safety has adopted a policy for the use of road spikes. It begins with the following statement: “The purpose of deploying spike systems is to safely and quickly end pursuits to minimize the risk of personal injury or property damage” (Texas 1). This is a very well thought out and important statement as it reinforces safety on all sides and reduced damages to persons and property. At one point in time, the Texas DPS was known for bold maneuvers such as ramming vehicles and shooting out the tires of moving vehicles to end a pursuit.

Most of the literature reviewed seems to be in somewhat of an agreement. If used properly tire deflation devices seem to be an effective alternative to reduce the speed and dangers of a high-speed pursuit. None of the devices reviewed are designed by themselves to stop the pursuit but to quickly and safely bring it to an acceptable conclusion.

METHODOLOGY

Police pursuits are inevitable. There is no way to predict when or where they will happen nor is there a way to prevent them. There are no set reasons who or why anyone runs from the police. There seems no common factor on the evading suspect. Police have been faced with the problems involving pursuits for a long time and will probably

be facing them for a much longer time. What options are available to police to assist them with the fleeing suspect? The one option that seems to be gaining popularity among many agencies is the tire deflation device. This seems to be an effective, safe, and affordable solution for slowing down and in turn safely ending the pursuits today. As with any law enforcement, practice pursuits are highly controversial and an increasingly litigated problem for all police agencies. It is hypothesized that when tire deflation devices are used according to the manufacture's specifications, department policies and procedures, and with proper training for the officers in the field who are actually using the devices, they are extremely useful and effective in slowing down or not completely stopping the pursuits in a much shorter time and also when a collision does occur the likelihood on injury, death, and property damage is greatly reduced.

All of the research and information used for this study has come from numerous periodicals, books, policy and procedure manuals, other research papers, and the internet was used to look up certain facts and to contact two manufacturers of such devices. Also used was extensive personal contact with other officers and officials along with personal experience both from in the field police training and numerous training schools on pursuits and the use of both the Stinger and Stop Stick systems provided by the manufacturers directly.

FINDINGS

Pursuits and liability go hand in hand. In today's society you can't have one without the other. As one goes up, so does the other in proportion. No department whether large or small wants to or can afford either. From an administration standpoint, pursuits are one of a chief's worst scenarios. They usually start over some minor traffic

type or misdemeanor violation. They usually end up with some sort of problem or incident that has to be handled very carefully to avoid being made into some larger ordeal. When a pursuit is picked up by the media, it almost always seems to be used in a negative context and is more often than not used against the police. Almost anytime there is a collision, any type of injury, death or property damage everyone wants to put the blame on the police officer involved and the department. Rarely is the focus kept on the suspect who started and continued the pursuit, regardless of all the warnings and opportunities given by the police to simply stop running and face the situation.

Until the appearance of the tire deflation device as a useful tool in the pursuit, all other options were both very dangerous to all involved but were also very expensive to the departments in way of damaged or destroyed police units from ramming or other types of vehicle to vehicle contact, or possible excessive injuries or damage to people or property from procedures such as shooting out tires. Both procedures above are just too costly and dangerous for today's police work. The tire deflation device is a remarkable tool safely and quickly slow a pursuit to a workable speed until a safe ending can be reached. The devices do not only provide the suspect with the safety of not being shot at or the tires just being blown off of the vehicle, but it has given the officer in the field a safe tool that when used properly will do what it is designed to but also keep the officers, the suspect, and the innocent public safer than before. The devices can be placed in the roadway in front of and in advance of the pursuit and from a great enough distance to provide the officer with an increased safety zone. Both devices, after being thrown into the roadway have a rope to remove the device after use that is from 50 to 80 feet in length. This is usually a sufficient distance for the officer to get safely out of harms way.

It is a proven fact that in all cases speed increases danger in all cases involving automobiles. Whether it is crash testing cars for safety or testing seatbelts and airbags in crashes one thing is always the same, the faster the speed of the vehicle the worse the outcome and the more damage involved. It only makes sense that if there is a tool available at a reasonable expense to law enforcement it should be used to its full potential. Departments need to grasp any options they have to reduce liability and provide a safer environment to its officers and the general public. These devices can be used to promote and enhance a department's public image. Anything a department can show the public that it is concerned for all parties involved in an incident and that it is doing everything within its means to not only prevent these incidents but also control and safely end them when they do occur is greatly beneficial for the department. Good public relations can go along way when tensions or doubts are high and also is a great tool when requesting money to buy such items and doing budgets.

Research has proven the tire deflation devices to be an inexpensive and very versatile tool in the safer ending of pursuits. The more widely accepted and used the devices become the more effective they will be. When tire deflation devices are available in all departments and hopefully all vehicles, they will be not only more effective but will hopefully become an excellent deterrent to the suspect who is thinking about evading in the first place. The safest pursuit is one that never occurs.

CONCLUSION

Pursuits are an inevitable fact in the world today. They occur everyday and everywhere there is law enforcement, suspects, and vehicles to drive. There has never been and will probably never be a way to prevent them. At best we can try to persuade

suspects not to flee by using good public relations, good tactics, and the tools that are being offered to law enforcement on a continually changing basis. How do we stop a vehicle traveling over 100 MPH with a highly volatile suspect behind the wheel? You probably can't without excessive force and tragic outcome. But with today's training and technology maybe we can greatly decrease the speeds at which the vehicles can travel while fleeing. The tire deflation device seems to be just that tool. The devices seem to be very effective in the design and produce safe reliable results when properly used and trained with. When properly deployed, the devices are able to in most cases greatly slow the vehicles speed, provide a safe means of doing so for the officers involved, and reduce the risks and injuries to all parties both directly and indirectly involved. All of the research found seemed to support the hypothesis that when used correctly the tire deflation device can and do greatly decrease the negative effects of both the high-speed pursuit itself as well as its tragic ending. Several studies and surveys from previous papers and authors were read and researched but no survey could be used in the writing of this paper due to time constraints.

Hopefully a small part of the use, effectiveness, and training required in the use of the tire deflation devices was covered in the research and paper. The projected outcome of this paper is for a well written policy on the use of tire deflation devices for all patrol units. This will greatly enhance the ability of the department to continue to progress and provide a high level of service and protection for our community.

Devices such as these are often very misunderstood by the local communities especially in the rural settings. People are often a little scared of technology and think that things like pursuits only happen in the "Big Towns." When it does happen in a rural

community, it catches people off guard and then they wonder what could have been done to help or prevent it. This information will be used not only to inform the community as a whole, but our governing city council to assist in the money and budgeting side of the devices. Keeping people informed is an ongoing and complex task in law enforcement. More often than not law enforcement has to play “catch up” instead of being allowed to be progressive and up to date.

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