# KENTUCKY LEAGUE OF CITIES INSURANCE SERVICES
# KENTUCKY ASSOCIATION OF COUNTIES

## DRIVER TRAINING WORKBOOK

**Introduction:**

Driving Law Enforcement vehicles has never been more challenging. With the amount of traffic on the roads increasing and the everyday stress of doing our jobs well, we need to understand the science as well as the logic of safe driving.

First, all professional Law Enforcement drivers must be proficient in the actual operation of their vehicles. But beyond that, Law Enforcement drivers must understand and practice defensive driving techniques based on their specific equipment and situation. The operators of large and/or specialized vehicles must also understand the inherent characteristics that are common to their type of vehicle.

By completing this series of lessons we hope to assist you in doing your jobs by providing information and practical tools for driving safely, even in potentially unsafe conditions.

**Course Goals:**

Upon completion of these lessons the student should learn:

- The characteristics of a defensive driver;
- The methods of determining a safe following distance;
- Potential hazards of entering intersections and define appropriate actions to prevent collisions;
- The advantages of a two-handed shuffle steering technique;
- The loss of peripheral vision in relation to speed;
- How ABS brakes work;
- The purpose of emergency vehicle driving;
- Siren syndrome and its effects on the driver in emergency response and pursuit;
- How vehicle pursuit situations can be more dangerous to officers and the general public;
- The issues that need to be considered before initiating a vehicular pursuit;
- The intent of emergency response driving; and
- The three personal factors involved in emergency response driving.

**Source Credit:**

Kentucky League of Cities Insurance Services would like to thank The Texas Association of Counties (TAC) for allowing us to model their Driving Simulator Workbook.

# TABLE OF CONTENTS

Dear Law Enforcement Officers:

Did you know that one out of every 100 pursuits results in death and that one out of every 20 pursuits results in a collision? For this reason, we encourage law enforcement officers to utilize this specialized driver training program to help reduce the number of casualties and collisions.

The Kentucky League of Cities Insurance Services (KLCIS) and the Kentucky Association of Counties (KACo) recognize this problem and have partnered together to provide their agencies with driver training. This training will provide the opportunity for law enforcement officers situations to discuss that they may encounter while on the road.

Our goal is to use this program to enhance law enforcement drivers' ability to make life-saving, split second decisions in hazardous driving conditions. Since our unique driver training program incorporates classroom and experiential learning, drivers will study effective solutions to common and uncommon problems that affect them on a daily basis.

The Texas Association of Counties (TAC) has been utilizing this unique program since 2000. TAC has traveled through 225 Texas counties teaching safe driving practices to over 5,600 drivers. We are grateful to TAC for letting us model their highly successful program.

Thank you for working with us as we strive to reach every law enforcement driver with our specialized driver training program. Together we are encouraging vehicle safety and reducing the number of on-the-job vehicular accidents and deaths.

As always we are working together to keep law enforcement drivers safe.

Sincerely,

William Hamilton
Executive Pool Administrator/
Chief Insurance Services Officer

Joe Greathouse
Director of Insurance Programs

# LESSON I

# PRINCIPLES OF DEFENSIVE DRIVING

## Learning Objectives

The list below identifies the student learning objectives for this lesson:

A. Define a defensive driver;
B. State the three primary components for defensive driving;
C. Identify a method for determining a safe following distance to allow for an appropriate front space cushion; and
D. Recognize potential hazards of entering intersections and define appropriate actions to prevent collisions.

## Training Philosophy

A. Create a positive attitude toward vehicle operation;
B. Increase officer survival and public safety;
C. Increase awareness as a driver;
D. Evaluate judgment and decision making skills; and
E. Experience consequences of decisions.

# Components of Defensive Driving

## Introduction

Safe driving habits can reduce risk and stress during vehicle operations. Good driving habits provide a foundation for sensible decision-making when a driver is faced with a suddenly changing traffic situation.

## Definitions

**Defensive driving** is more than just looking out for other drivers. It involves operating a vehicle in such a manner as to be able to avoid involvement in a collision, no matter what the conditions.

A defensive driver is one who:

- Drives in a manner to avoid collisions;
- Avoids mistakes made by other drivers; and
- Drives carefully under **ALL** conditions.

## Characteristics of a Defensive Driver:

Defensive drivers achieve the highest level of results with the lowest level of risk to themselves, others, and their vehicles.

***"Drive to Stay Alive"***

Defensive drivers:

- ✓ View the safe operation of their vehicle as a personal responsibility;
- ✓ Maintain a professional attitude;
- ✓ Demonstrate good judgment and decision making skills;
- ✓ Recognize potential hazards, decide how to avoid them, and react in a timely manner;
- ✓ Drive at a speed that is reasonable and proper for existing conditions;
- ✓ Allow for adverse conditions or for another driver's mistake;
- ✓ Yield the right-of-way when necessary;
- ✓ Drive not only to avoid collisions but also to minimize damage if a collision is non-preventable; and
- ✓ Incorporate defensive driving habits and skills into their regular driving habit both on and off duty.

## Primary Components

The three primary components of defensive driving include:

1. The ***driver***;
2. The ***vehicle***; and
3. The ***driving conditions***.

## Level of Control Over Each Component

Drivers have varied amounts of control over themselves, the vehicle, the driving conditions, or any combination of these.

| Driver Control Over Defensive Driving Components | | |
|---|---|---|
| Drivers *can* control their own: | Driving **"to stay alive"** | • Knowledge and skills;<br>• Overconfidence;<br>• Attitudes and emotions; and<br>• Physiological factors. |
| Drivers can only *partially* control: | The vehicle's | • Care and maintenance. |
| Drivers *cannot* control: | Driving conditions | Such as:<br>• Road conditions; and<br>• Weather conditions. |

## Hazardous Attitudes and Emotions

Your judgment and decision-making process is directly affected by your driving attitude. Attitudes are not inborn or inherited; rather they evolve and become reinforced through repetition. This means a ***poor attitude*** can be modified. Improper attitudes can cause **poor judgment** and poor judgment leads to **poor decisions.**

A poor driving attitude contributes to more collisions than does lack of skill. The following table identifies results of positive and poor attitudes.

| A *positive* attitude may lead to: | A *poor* attitude may lead to: |
|---|---|
| • personal safety;<br>• safety of others;<br>• job security;<br>• financial security;<br>• a good reputation;<br>• professionalism;<br>• well maintained vehicles and equipment; and<br>• being a positive role model for society. | • personal injuries;<br>• loss of life;<br>• loss of job security;<br>• financial crisis;<br>• a poor reputation;<br>• lack of professionalism;<br>• damage to vehicles and equipment; and<br>• being a poor role model for society. |

**Defensive drivers can use a number of techniques to avoid potential hazards under all driving conditions**

## Space Cushion

A **space cushion** is the clear area and maneuvering room surrounding a vehicle while it is in motion. It includes the area to the front, rear, and sides of the vehicle. To maintain a space cushion is to have an escape route to take evasive action if the vehicle in front suddenly stops, slows, or skids.

When driving in traffic, it may be difficult for a driver to maintain an adequate space cushion completely surrounding the vehicle (front, rear, and both sides). If a driver cannot maintain a space cushion in one direction, the driver should be aware of it and leave an escape route in as many other directions as possible.

## Following Distance

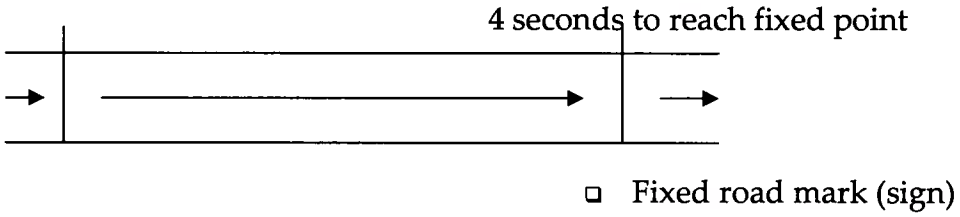
**Following distance** is the distance maintained between a vehicle and the vehicle immediately in front of it. The old rule of thumb of one car length for every 10 mph as a safe following distance does not take into account driver perception, decision, and reaction times.

A *safe minimum following distance* is at least **four seconds of time between vehicles**. The four-second gap will provide time to react if the car ahead suddenly brakes. When traveling at higher speeds or under adverse conditions, a longer time span will provide a safer space cushion.

## Estimating Safe Following Distance

To maintain an adequate **space cushion** in front of your vehicle, drivers can calibrate **following distance** using the following method:

1. Fix a reference point in the road ahead such as an overpass or a sign;
2. When the car in front passes that point, start counting seconds (i.e. *"one-thousand-one, one thousand-two, one-thousand-three"* and so on); and
3. If your vehicle passes the same point in four or **more** seconds, the following distance is adequate.




## Visual Horizon

Most drivers do not look far enough ahead when operating a vehicle. By maintaining a high **visual horizon**, searching ahead and focusing your eyes down the road instead of just beyond the vehicle's hood, drivers have a better opportunity to recognize potentially hazardous conditions.

## Headlamps

**Do not overdrive your headlamps**. Always drive at a speed that allows you to stop within the distance that you can see.

**Increase your sight distance**. Keep panel lights on the dashboard dim. The less light you have inside the car, the better your eyes will adjust to the limited light outside. However, you must be able to easily read the speedometer at all times.

**Allow a greater margin of safety**, especially when overtaking and passing other vehicles. Also maintain at least a 4-second following distance.

**Avoid staring at bright lights,** especially headlight glare from oncoming vehicles. The human eye takes about 7 seconds to fully recover from being blinded by a bright light. At 60 mph, a car will travel 616 feet in 7 seconds.

**Never wear sunglasses at night.** After dark, they significantly reduce your ability to see.

## Intersections

Intersections pose the greatest potential for collisions. Drivers must establish and maintain the habit of visually clearing intersections of cross traffic **before** entering.

The following table identifies a number of factors drivers should consider while entering and leaving an intersection.

| Potential Hazard | Actions |
|---|---|
| Clearing the intersection | On a standard two-way intersection:<br>• scan from the driver's left, to front, to driver's right, then look to the driver's left again;<br>• Clear intersections lane by lane if necessary;<br>• Both hands on the steering wheel; and<br>• Prima Facie speed limit (Blind Int. 15mph; & Stop if necessary). |
| Red light changing to green | • After stopping for a red light and the light turns green, drivers should wait at least *two seconds* before entering the intersection. This will allow red-light runners, as well as those lawfully in the intersection, to clear. |
| Other vehicles | • If a larger vehicle obscures the view of a signal light while waiting at an intersection, allow the other driver to start moving first, before proceeding. |
| Stale green light | • When approaching a green light, drivers should consider the amount of time the light has already been green. A *stale green light* can change, forcing the driver to stop abruptly. |
| Left turns | • When stopping in an intersection to make a left turn, drivers must signal and make sure other traffic is aware of the driver's intentions.<br>• Do not turn the vehicle wheels to the left while waiting. A rear-end collision could push the driver's vehicle into opposing traffic.<br>• Look for eye contact from opposing traffic or pedestrians who appear to be yielding to the vehicle making the turn. |
| Right turns | • A driver may make a right turn against a red light, *after first coming to a complete stop*, if it is safe to do so and there are no prohibitive signs. |

**By covering the brake when approaching the intersection the defensive driver can reduce their reaction time and distance, thereby avoiding the dangers that may occur.**

Every 24 hours, in the United States, 10 people are killed and 300 are injured in intersection collisions.

## Backing

Almost one-third of all collisions occur while the driver is driving in reverse.

When backing a vehicle, you should:

- Position yourself for backing so that you are able to look over your right shoulder and out the rear window;
- Never rely solely on the vehicle's mirrors; you should turn around and look; Note: Truck drivers must learn to utilize mirrors, but should check area before backing and use a guide if available;
- Check the position of the front of the vehicle frequently;
- Use your left leg for stabilization; and
- Continue looking backwards until the vehicle comes to a complete stop.

*If drivers do not know what is behind their vehicle, they should get out of their vehicle and look---or get someone to assist them before backing.*

## Specific Backing Situations

The following table identifies specific backing situations that peace officers may encounter:

| Potential Hazard | Considerations |
|---|---|
| High speed backing (10 mph or greater) | • Avoid unless absolutely necessary;<br>• Back in a straight line when possible;<br>• Use a minimum of steering action; and<br>• If steering is required, do it smoothly. |
| Backing on a roadway | • Use the shoulder of the road if at all possible;<br>• Try to avoid erratic movements that could confuse other drivers;<br>• Back slowly and smoothly, stopping as necessary to let traffic clear; and<br>• Be aware of signs, reflector posts, ditches, or abutments that may be below the driver's line of sight. |
| Backing into parking space | • Be aware that:<br>➢ The rear overhang of the vehicle is considerably longer than the front; and<br>➢ The curb or parking bumper might not stop the wheels before the vehicle contacts an obstacle. |
| Backing into possible traffic | • Backing out of parking spaces, driveways, or carports can be hazardous; and<br>• When possible, do necessary backing when arriving at a location rather than when ready to leave. |

# LESSON II

# VEHICLE DYNAMICS

## OVERVIEW

The professional county driver must be proficient in the actual operation of the vehicle, and knowledgeable about the dynamic forces at work. Proper application of steering control, speed judgment, and brakes enhances the driving expertise of the driver and will reduce the number of traffic collisions involving the professional county driver.

### Learning Objectives

The list below identifies the student learning objectives for this lesson:

A. Be able to identify the advantages of using a two-handed shuffle steering technique;
B. Be able to classify the loss of peripheral vision in relation to speed;
C. Be able to indicate the distance a vehicle will travel in relation to speed and reaction time; and
D. Be able to explain how ABS brakes work.

### Steering Control

### Introduction

Proper steering technique is critical regardless of the type or speed of the vehicle. Smoothness and coordination of steering will aid in obtaining maximum control of the vehicle at all times. **Keep all steering inputs smooth and gradual.**

## Driver Seating Position

When properly seated, drivers should be able to extend their arms forward comfortably. The following table identifies additional positioning recommendations.

| Adjustment | Recommendations |
|---|---|
| Driver posture | • Sit upright, but not rigid;<br>• Place hips back in the seat;<br>• Keep thighs resting on the seat;<br>• Flex knees slightly; and<br>• Flex arms at elbows. |
| Seat position | • Adjust for maximum control and comfort; and<br>• With seat belt fastened, driver should be at least 12 inches from the air bag. |
| Steering wheel | • Adjust to allow view of speedometer and instruments while seated comfortably. |
| Mirror | • Adjust for maximum visibility while seated comfortably. |

## Adjustable Steering Wheels

Most vehicles currently in use are equipped with adjustable steering wheels. While there is technically not "right" or "wrong" position for the steering wheel, the driver should select a wheel position for comfort and steering efficiency. The steering wheel should not obstruct the driver's view of the speedometer.

## Two-Handed Shuffle Steering

There are a number of advantages of using a two-hand shuffle steering technique over other methods of steering.

The two-handed shuffle technique:

- ✓ Maximizes steering accuracy;
- ✓ Allows for safer and more effective recovery from steering input;
- ✓ Provides maximum vehicle control by minimizing weight transfer;
- ✓ Prevents radio cord from wrapping around steering wheel; and
- ✓ Minimizes air bag deployment injury.

The following table further defines the two-handed shuffle method for steering.

| Activity | Recommendations |
|---|---|
| Hand positioning | • Places hands at 9 o'clock and 3 o'clock positions;<br>• Keeping hands lower on the steering wheel is more natural and comfortable; and<br>• Places less strain on the driver's shoulder muscles.<br><br>**NOTE:** The more traditional 10 o'clock and 2 o'clock hand position can prove dangerous if the air bag is deployed.<br><br>• Hands do not leave the steering wheel; and<br>• Both hands do an equal amount of work. |
| Turning maneuver | • Right hand operates the right side of the steering wheel;<br>• Left hand operates the left side of the steering wheel;<br>• Neither hand should cross over the 12 o'clock or past the 6 o'clock position on the steering wheel; and<br>• Use a push/pull technique to shuffle steering wheel between hands. |
| Vision direction | • Concentrate on the areas in front of the vehicle; and<br>• Scan side and rearview mirrors as a reference. |

# Throttle control and speed judgment

## Factors That Affect Acceleration and Deceleration

The operation of a vehicle's throttle has a definite and immediate effect on vehicle weight transfer. There are a number of factors that can affect a vehicle's response to acceleration and deceleration. The following table identifies the primary ones.

| Factors | Examples |
|---|---|
| Vehicle capabilities | • Vehicle weight;<br>• Distribution of weight;<br>• Tires; and<br>• Engine responsiveness. |
| Road/weather conditions | • Ice or snow;<br>• Wet or dry; and<br>• Loose gravel or hard surface. |
| Road characteristics | • Curve or straight;<br>• Radius or curve;<br>• Uphill or downhill; and<br>• Open highway or city. |
| Traffic conditions | • Density; and<br>• Speed. |

**Speed is a contributing factor in 7% of all fatal collisions.**

**For every 10-mph of speed you double the possibility of death in a collision.**

## Speed and Turning Maneuvers

If a turn is entered at an unsafe speed, the driver can only attempt to keep the vehicle on the roadway. Proper positioning of the vehicle on the roadway through the turn will become impossible. At excessive speed, a vehicle can under steer or over steer and swing wide as it goes through a curve.

## Vehicle Over Steer and Under Steer

**REAR WHEELED VEHICLES**

| | Vehicle Over Steer | Vehicle Under Steer |
|---|---|---|
| Description | • loss of traction to the rear tires of the vehicle;<br>• rear of car skids toward outside of the turn; and<br>• turning radius tends to tighten. | • loss of traction to the front tires of the vehicle; and<br>• vehicle forced to continue in a straight line. |
| Cause | • excessive speed in a turn;<br>• sudden and/or excessive steering input; and<br>• over-braking in a turn. | • acceleration too early in a curve; and<br>• negotiating a curve at too high a speed. |
| Recovery | • reduce throttle;<br>• counter steer; and<br>• do **not** brake.<br><br>Remove the counter steer when the vehicle begins to recover to prevent a secondary skid. | • allow vehicle to slow.<br><br>Traction will be restored and steering regained. |

## Peripheral Vision

Peripheral vision is the lateral degree of perception present when the eyes focus straight ahead. An average driver with good peripheral vision can see about 180 degrees laterally when the vehicle is stationary.

Peripheral vision is reduced significantly as vehicle speeds and driver stress increase. The reduction of peripheral vision is known as **tunnel vision**.

| Speed | Peripheral vision |
|---|---|
| Stationary | 180° |
| 40 MPH | 120° |
| 50 MPH | 90° |
| 60 MPH | 60° |
| 80 MPH | 30° |

## Remedial Action Time

The driver's remedial reaction to a hazard or danger can be separated into two distinct phases:

- Driver perception phase; and
- Driver decision/reaction phase.

## Perception Phase

Before drivers can react to the hazard, they must first perceive it before they can make a decision and react to it. The average driver's **perception time** is ¾ of a second (.75 seconds).

The distance traveled during the average perception time can be estimated by:

- Taking the first digit of speed traveled; and
- Adding it to the vehicle's speed.

| Speed | Distance traveled in average decision/reaction time |
|---|---|
| 10 MPH | 11 feet |
| 55 MPH | 60 feet |
| 80 MPH | 88 feet |

## Decision Reaction Time

The average driver will take another ¾ of a second (.75 seconds) between the perception of a stimulus (a hazard) and making a decision and initiating a reaction (braking, steering, etc.).

The distance traveled during the average decision/reaction time can be estimated by:

- Taking the first digit of speed traveled; and
- Adding it to the vehicle's speed. **(see chart in perception phase)**

## Total Reaction and Distance Traveled

The distance traveled during an average driver's **total reaction time** will vary with the speed the vehicle is traveling. During the average driver's remedial action time, ¾ of a second for perception and ¾ of a second for decision/reaction (1.5 seconds), a vehicle will travel **2.2 feet for every 1 MPH of speed.**

| Speed | Distance traveled in average total time lapse |
|---|---|
| 10 MPH | 22 feet |
| 55 MPH | 112 feet |
| 80 MPH | 176 feet |

The following formula can be used to determine the distance traveled during the time lapse based on the speed of the vehicle.

*Speed (miles per hour) x 2.2 feet = Distance (in feet) traveled in 1.5 seconds.*

# Braking

## Introduction

Control of a vehicle during braking and cornering maneuvers is most difficult because that is the time when the physical forces acting on the vehicle are at their greatest. Proper brake application is essential to safe and efficient vehicle operation.

## Braking Dynamics

### Straight Line Braking!!

Drivers should be aware of the following dynamics of vehicle braking.

- Brakes do not stop the vehicle – they slow or stop the vehicle's wheels from rotating;
- The stopping of a vehicle in motion is a result of deceleration of wheel speed in relation to vehicle speed;
- The maximum amount of friction between tire and road occurs just before tire rotation ceases completely; and
- Friction produced by a brake application will generate heat within the components of the braking system.

### Straight Line Braking!!

## Foot Positioning

When applying pressure to the vehicle's brake pedal, it is recommended that drivers:

- ✓ Apply pressure on the brake with the upper half or ball of the **RIGHT** foot; and
- ✓ Use the **LEFT** foot as an anchor to support the body.

(Left foot braking is not recommended)

**NOTE: In a panic situation all drivers will attempt to brace themselves in anticipation of the impact. This requires both hands on the steering wheel and both feet on the floor.**

## Anti-Lock Brake System (ABS)

Anti-lock brakes are a computer-assisted enhancement to a vehicle's existing braking system and can be a significant safety feature.

In an emergency situation, many drivers will react by applying maximum pressure to the brake pedal, causing the brakes to lock. In order to have steering, the front tires of the vehicle must be rolling (rolling friction). When the brakes are locked, the tires skid and the vehicle continues to travel straight ahead, regardless of the amount of steering input.

The main feature of an ABS is to prevent **brake lockup**, while stopping the vehicle as quickly as possible. Sensors in each wheel transmit information to a computer that modulates (pulses) braking pressure. With ABS, no matter how hard the driver presses on the brake pedal, rolling friction is maintained and the ability to steer the vehicle is seldom lost.

## Pumping Anti-Lock Brakes

ABS produces a pulsation of the brake pedal and makes a noise similar to that of the metal-to-metal sound of worn brake pads on more conventional braking systems. If the driver is not familiar with these sounds and the feel of ABS, the driver may believe the brakes are failing, and begin to *pump* the brakes. Pumping the brakes **OVERRIDES** the ABS feature and braking efficiency will deteriorate.

Once ABS is applied, the braking pressure should be held steady, letting the system work.

# LESSON III

# EMERGENCY DRIVING OPERATIONS

## OVERVIEW

Law enforcement officers must recognize that emergency driving demands a high level of concentration and instant reactions on the part of the driver.

All officers who operate law enforcement emergency vehicles must recognize that even though the purpose of pursuit driving is the apprehension of a suspect who is using a vehicle to flee, the vehicle pursuit is **never** more important than the safety of officers and the public.

## Learning Objectives

The list below identifies the student learning objectives for this lesson.

A. Identify the objective of emergency response driving;
B. Define siren syndrome and identify its effects on officers in emergency response and pursuit driving conditions;
C. Describe how vehicle pursuit situations can be more dangerous to officers and the general public than emergency response driving situations;
D. Identify issues officers should consider in a balancing test before initiating a vehicular pursuit; and
E. Identify conditions that could lead to the decision to terminate a vehicle pursuit.

## Emergency Response

Emergency response means that a situation exists that requires immediate law enforcement attention for the protection of persons or property. An emergency response is also known as a Code Three call.

## Objectives of Emergency Response Driving

Law enforcement officers must be aware of the objectives of emergency response driving. The following chart identifies these.

| **The purpose of emergency response driving is to:** | **Examples** |
|---|---|
| Get to the scene of a *life-threatening* situation quickly and **safely;** | • Traffic collision involving serious injury; |
| Get to the location of a *serious crime* quickly and **safely;** and | • Homicide; and<br>• Robbery in progress; |
| *Assist other officers* quickly and **safely.** | • "Officer needs assistance"; and<br>• Report of shots fired. |

## Driving Tactics

The most important factor in any emergency response-driving situation is the individual driver's calm demeanor and common sense in the application of proper driving techniques and tactics.

## Officer Control

Unlike pursuit driving situations, law enforcement officers have control over a large number of factors affecting safety in emergency response driving.

Officers can:

- Select the route;
- Control the speed; and
- Adjust the speed according to weather conditions and other factors.

## Other Considerations

Safety should be an officer's most important concern. When making decisions related to emergency response driving, officers must consider the following factors:

| Factor | Consideration |
|---|---|
| The vehicle | • Officer pre-operational vehicle inspection; and<br>• Knowledge of vehicle performance characteristics. |
| The environment | • Weather (i.e., rain, snow, fog);<br>• Pedestrians (i.e., school zone, residential area);<br>• Time of day (i.e., rush hour, night, sunset); and<br>• Visibility |
| Route considerations | • Traffic conditions (i.e., congested, accident area);<br>• Road conditions (i.e., surface, hill, curves);<br>• Construction;<br>• Intersections; and<br>• Other vehicles. |

## Personal Considerations

When operating a law enforcement vehicle under emergency conditions, an officer must consider personal factors as well.

| Factor | Consideration |
|---|---|
| Skill | • Driver training, expertise, and experience; and<br>• Proper estimate of personal abilities in dangerous situations (i.e., skid recovery, speed, cornering). |
| Physical condition | • Psychomotor coordination;<br>• Physical strength;<br>• Vision;<br>• Hearing;<br>• Fatigue; and<br>• Reaction to stress. |
| Attitude/emotion | • Impatience;<br>• Anger;<br>• Aggression;<br>• Over/under Confidence;<br>• Self-righteousness; and<br>• Fear. |

## Siren Syndrome

Officers must be aware of the fact that the excitement of the moment can adversely affect a driver's ability to concentrate and safely operate a vehicle under emergency response or pursuit driving conditions. This condition is referred to as **siren syndrome**. The heart rate of an individual can increase up to 60% as a physical response to the sound of a siren.

The following chart further describes the effects of siren syndrome:

| Affect | Recommended Response |
|---|---|
| Increased adrenaline flow | • Remain calm;<br>• Take deep breaths to overcome shallow breathing; and<br>• Drive with deliberate caution. |
| Tunnel vision | • Keep eyes moving;<br>• Look in all directions;<br>• Use entire head to look; and<br>• Don't just scan with the eyes. |
| Loss of speed reference | • Lost due to the elimination of the sounds of speed (wind, engine noise, etc.); and<br>• Glance at the speedometer periodically. |
| Post-pursuit discipline | • Exercise self control;<br>• **Think!! Don't do something irrational!!;** and<br>• If possible, allow another officer to arrest the suspect. |

## Route Considerations

Officers should know the area they are patrolling. When responding to an emergency call, officers should be prepared to use the most desirable, safest route of travel.

Officers should consider the:

- ✓ Quickest, most direct route;
- ✓ Intersections that have acceptable line-of-sight and right-of-way;
- ✓ Interference to the vehicle's warning devices;
- ✓ Number of curves in the road;
- ✓ Amount of steering and speed adjustment required;
- ✓ Availability of escape routes; and
- ✓ Alternative routes if something unexpected hinders the original route selection.

## Intersections

Many serious collisions occur at intersections. The following table identifies a number of precautions that officers should take when clearing an intersection during an emergency response situation.

| **Guidelines for entering intersections under emergency conditions.** | |
|---|---|
| Approach carefully | • Observe traffic conditions at cross streets before entering;<br>• Clear the intersection lane by lane; and<br>• Adjust speed and lane position to line-of-sight and path-of-travel. |
| Clear carefully | • Allow for other motorists to adjust to the responding unit's approach;<br>• Use quick, thorough, searching methods to make sure the intersection is clear to the left, front, and right;<br>• Look in all directions; other motorists approaching the intersection may not always see the emergency vehicle; and<br>• Be alert and look for additional response vehicles because of visual impairments such as buildings or vegetation. |
| Slow down | • Enter intersection at a *safe speed;*<br>• *When necessary* come to a full stop;<br>• *Never assume emergency lights and siren will give sufficient warning* to other motorists;<br>• Other drivers with a green light *may assume* they have the right-of-way; and<br>• *Never* enter an intersection at a speed faster than would permit a safe stop. |
| Fluctuate siren | • By fluctuating the pitch or changing the pattern of the siren, the chances of persons in or entering the intersection hearing the siren *may be* greatly increased. |
| Mobile Digital Terminal (MDT) Usage | • Refrain from using any equipment that requires taking eyes from road while driving; and<br>• Collisions while using M.D.T will usually be preventable. |
| Radio Usage | • Do not utilize the radio at the same time you need to clear the intersection or make other immediate decisions;<br>• We all have "one track minds" and cannot make two decisions at once; and<br>• Prioritize when and where you talk on the radio. |

## Pursuit Operations

There are few situations in law enforcement operations that require **a higher degree of experience and sound judgment** than high-speed vehicular pursuits. Officers must effectively perform in an atmosphere where long-range consequences may hinge upon the soundness of split-second decisions.

## Definition

A **vehicle pursuit** is an event involving one or more law enforcement officers attempting to apprehend a suspect who is operating a motor vehicle.

The suspect is attempting to avoid arrest by using high-speed driving or evasive tactics such as:

- Driving off a roadway;
- Turning suddenly; and
- Driving in a legal manner but willfully failing to yield to the officer's signal to stop.

## Vehicle Operation Tactics

- Close distance before attempting to stop;
  - ***Potential immunity & liability*** issues;
  - Activation of lights and siren;
  - Vary pitch of siren approaching intersections;
- Consider backing off if an air unit is present; and
- Offensive tactics.

## "Follow your individual agency's pursuit policy !

### Pursuits are following actions:

- No caravanning or paralleling by non-involved units;
- No passing unless requested; and
- Spacing of units to ensure safety;
  - Proper braking distance;
  - Sufficient reaction time/distance; and
  - Avoid tracking & tunnel vision.

### Options:

- Roadblocks;
  - Last resort;
  - Generally ineffective and a very high potential of liability if not set up correctly.
- Road Spikes;
  - Time and availability of equipment;
  - Controlled direction of travel;
  - Potential danger to pursuing units.

### Blocking Public Access:

- Intersections;
- On and Off Ramps;
  - For public and officer safety;
  - Coordination/communication between units; and
  - Still **no guarantee** of safety through intersections.

## Pursuit Requirements

A vehicle pursuit must be a managed event requiring:

- Knowledge of and compliance with state statutes;
- Knowledge of and compliance with department policy;
- Trained personnel operating as a disciplined unit;
- Supervisory control (if available);
- Effective coordination and good communication;
- Sound decision-making by all personnel; and
- An assessment and evaluation of the event.

## Pursuit vs. Emergency Response

**Pursuit driving** can be more dangerous for the law enforcement officer and the general public than **emergency response driving**. The following table identifies why.

| Pursuit | Emergency response |
|---|---|
| • Safety is not the suspect's concern; evading law enforcement is; and<br>• The suspect is not a trained, professional driver. | • Safety is the officer's primary concern; and<br>• Officers are professional law enforcement drivers, trained for the job. |
| • Usually initiated by an officer (unless dispatched as "assist" call). | • Usually initiated by dispatch in response to a serious crime, rescue, or injury. |
| • Involves two or more vehicles. | • Usually involves one vehicle; and<br>• If more than one vehicle is responding, efforts are coordinated to ensure safety. |
| • The suspect's speed is based on the desire to escape. | • Officers have control of their speed. |
| • The suspect determines the route without regard to safety. | • Officers determine the best route based on due regard for the safety of others and themselves. |
| • The suspect may deliberately lead pursuing officers into dangerous situations to enhance their chances of escape or cause injury to the officers; and<br>• The suspect may be irrational and out of control. | • Officers are driving with confidence based on knowledge of the area, professional training, and experience. |

## Impact of Vehicle Pursuits

Vehicle pursuits can involve more than just the officer(s) involved and the suspect.

- A pursuit may expose the public to a high risk of loss of life, serious personal injury, or loss of property;
- A pursuit may result in a direct loss to the agency if officers are injured or killed; and
- If individuals are killed or injured, the officer, the agency, or the government served may be liable to civil actions, especially if the victims are innocent bystanders.

### The 3 charts below offer statistics and insight to the Consequences of Vehicle Pursuits

#1

| |
|---|
| **1 out of 100 pursuits results in a death** |
| **4 out of 10 pursuits results in a collision** |
| **Collisions: 1 out of 10 results in an injury** |

#2

| Year | Officers Killed in the Line of Duty | By Gunfire | By Vehicle/Motorcycle Collision or Pursuit |
|---|---|---|---|
| 2008 | 132 | 38 | 72 |
| 2007 | 188 | 65 | 79 |
| 2006 | 146 | 52 | 63 |
| 2005 | 151 | 52 | 57 |
| 2004 | 155 | 53 | 66 |
| 2003 | 146 | 47 | 70 |
| 2002 | 159 | 57 | 60 |
| 2001 | 237<br>72 on September 11 | 63 | 63 |
| 2000 | 163 | 50 | 66 |

Per the Officer Down Memorial Page (www.odmp.org)

#3

## Pursuit Percentages

**40% of all pursuits end in a CRASH**
**15% end in an injury**
**1% end in DEATH**

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**50% of the collisions occur in the first 2 minutes**
**70% of the collisions occur within 6 minutes**

## Balance Test

If a driver fails to yield, officers must consider what is known or suspected regarding the suspect's offense. Officers should apply a **balancing test**, weighing the *seriousness of the crime,* and the level of a *threat to the public safety* from a vehicle pursuit. The following table identifies crime-related and safety issues that an officer should consider in a balancing test.

| Seriousness of the crime | Public safety |
|---|---|
| Crime-related issues officers should consider, but are not limited to, include:<br><br>• the nature of the known or suspected offense;<br>• the form of response the officer would be willing to make if the driver fails to yield;<br>• the length of pursuit that would be reasonable for the crime and circumstances, such as:<br>➢ immediate termination;<br>➢ reasonable short distance and then termination; and<br>➢ termination only when conditions become too dangerous. | Safety issues officers should consider, but are not limited to include:<br><br>• vehicle and pedestrian traffic volume;<br>• weather/visibility/roadway conditions;<br>• proximity to school, residences, or crowded business areas;<br>• the presence of non-law enforcement passengers in the officer's vehicle;<br>• a reasonable speed within the existing driving environment;<br>• the officer's familiarity with the surrounding area; and<br>• the quality of radio communication. |

## Terminating a Pursuit

The dynamics of a pursuit involve rapidly changing conditions and require officers and supervisors to constantly evaluate the risks and the decision to continue a pursuit.

## Factors for Terminating a Pursuit

Officers must consider several factors in determining whether a vehicular pursuit should be continued. These factors are similar to those that must be considered when initiating a pursuit, and in determining a reasonable sped for the pursuit. The decision to terminate a pursuit maybe based upon, but is not limited to, those factors listed below.

A pursuit should be terminated or abandoned when:

- There is a *clear and unreasonable danger* to the officers or other users of the roadway;
- The officer or suspect's *speed dangerously exceeds* what would be reasonable for the existing flow of traffic;
- *Traffic necessitates dangerous maneuvering* which is likely to exceed the performance capabilities of either the vehicle or the driver;
- There is *no compelling need for immediate apprehension* and the violator can be identified to the point where an arrest can be more safely made at a later time;
- Appropriate and necessary radio communication or emergency *equipment ceases to properly operate;*
- The pursuit *violates agency policy; and*
- A supervisor has reason to believe that the *pursuing officers are no longer in control* of the situation.

# KLC and KACo Staff

**Mark Filburn** has been with the Kentucky League of Cites Insurance Services (KLCIS) since May of 2005 as a Law Enforcement Specialist in the Western Kentucky region. A graduate of Indiana University, Mark has a BA in Police Administration. He has been a Lieutenant with the Jefferson Country Police Department as well as a Special Agent with the United States Secret Service. He finished his police career with the Louisville Metro Police Department. With 20 years of experience in law enforcement, including assignments with the Patrol Division, the Training Unit (firearms instructor), Metro Narcotics, Riot Squad, and the SWAT Team, Mark is a vital part of KLCIS.

**Brian Roy** is currently the Product Development Manager and law enforcement coordinator for the Kentucky Association of Counties. He previously served over twenty three years in law enforcement as both a deputy sheriff and Sheriff in Marshall County, and also served as United States Marshal for the Western District of Kentucky during 1998-1999. He is a graduate of the F.B.I. National Academy's 161st Session, the National Sheriff's Institute, and holds both a Bachelor of Science degree in Criminal Justice and Master of Arts degree in Organizational Communications from Murray State University.

**Tony Hampton** has been with Kentucky League of Cities Insurance Services (KLCIS) since 2005 as a Law Enforcement Specialist in the Eastern Kentucky Region. A graduate of the Kentucky Department of Criminal Justice and Training, Tony has 14 years of law enforcement services. He has served as Chief of Police in the city of Stamping Ground, as well as Patrol Officer and Field Training Officer with the Georgetown Police Department. He has also been the Deputy Sheriff and the Second Shift Patrol Sergeant with the Scott County Sheriff's Office. In 2005, Tony was named Scott County's "Best public servant."

**Shawn Weir** has been with the Kentucky Association of Counties for eight years and currently serves as the Risk Manager. The primary focus as the Risk Manager for KACo is the implementation and coordination of the loss control and safety efforts for KACo member insureds. Weir has been involved in the risk and insurance profession for over 30 years as a Risk, Claims and Loss Control Manager in both the public and private sector. He attended the University of Kentucky and has a background in Accounting and business Administration.

# Rob Miller
# Instructor

Crash Analysis & Reconstruction, LLC was created in May 2009 as Kentucky's choice for motor vehicle collision reconstruction. Rob Miller has over 31 years of investigative experience. He retired from the Kentucky State Police in 2004.

Rob retired at the rank of Lt. Colonel, assigned as Director of the Technical Services Division. He served as Commander of the Traffic Accident Reconstruction Program and initiated and directed the development of the Regional Reconstruction Teams. Rob has investigated or reconstructed over 1,500 motor vehicle crashes. He lectures and teaches nationally and internationally and is recognized as an expert in traffic collision reconstruction in state and federal court.