

Riverside Police Department - POST Course #21135

Riverside Police Department Driver Awareness Update (PSP) Expanded Course Outline

I. Introduction / Orientation

- A. Introduction, Registration and Orientation
- B. Course Objectives, Overview, Exercises, Evaluation and Testing

II. Basic Driving Principles

A. Steering Control

1. Seating position
 - a. Driver comfort
 - b. Efficient vehicle control
 - c. Wrist break over top of steering wheel
 - d. Seated 12" from air bag
 - e. Adjust mirrors
2. Steering Method – Two hand shuffle steering
 - a. Hand position at 9 and 3 or 8 and 4
 - b. Hands do not leave steering wheel
 - c. Maximizes steering accuracy
 - d. Safer and more effective recovery
 - e. Minimizes weight transfer
 - f. Minimizes air bag deployment injury
3. Steering Method – Backing
 - a. Body rotated to the right
 - b. Right hand placed on right headrest
 - c. Vision directed over right shoulder
 - d. Left hand on steering wheel at 12 o'clock position
 - e. Press left leg against bottom of steering wheel for stability
 - f. Left foot braced on floorboard

B. Roadway Position

1. Definition: The position of the vehicle on the roadway that maximizes speed with minimum steering and risk of loss of vehicle control while negotiation a turn
 - a. AKA – Driving line
2. Driving Advantages
 - a. Minimize and control weight transfer
 - b. Minimize steering input
 - c. Smoother vehicle operation

Riverside Police Department - POST Course #21135

- d. Maximum speed through turns in the safest manner
- 3. Driving Points in Turns
 - a. Entry (point #1)
 - b. Apex (point #2)
 - c. Exit (Point #3)

III. Policy Legal and Moral Aspects

II(f)

A. California Codes

- 1. 17001 CVC: A public entity is liable when caused by a negligent or wrongful act or omission in the operation of any motor vehicle
- 2. 17004.7 CVC: Vehicle Pursuit Immunity and Liability
- 3. 21052 CVC: All vehicles must comply with the same vehicle code regulations as everyone else
- 4. 21055 CVC: Emergency vehicle is exempt from traffic regulations if a situation meets certain requirements.
- 5. 21056 CVC: Driver of such emergency vehicles must still drive with due regard to the safety of exercise.
- 6. 21057 CVC: Emergency vehicles use of lights and sirens.
- 7. 21703 CVC: Following another vehicle too closely
- 8. 21806 CVC: Yielding to Emergency Vehicles
- 9. 21807 CVC: 21806 CVC shall not operate to relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of all persons and property
- 10. 22106 CVC: Starting, stopping, standing, backing and parking on a highway prohibited
- 11. 22350 CVC: Basic Speeding Law

B. Case Law

- 1. Traffic Accidents – Ramirez V. City of Gardena
- 2. Pursuits SB719 – Vehicle Pursuit Guidelines

C. Agency Policy

- 1. Vehicle Pursuit Policy
- 2. Vehicle Operations
- 3. Allied agencies will be directed to read and become familiar with their specific agency vehicle pursuit policy and procedure

D. Moral Aspects

- 1. Due Diligence
- 2. Consequences of reckless or unsafe driving

E. Occupant Safety Devices

- 1. Safety Belts
- 2. Supplemental Restraint System (air bags)

Riverside Police Department - POST Course #21135

IV. Defensive Driving Lecture

II(c)

A. Defensive Drivers

1. Avoid collisions regardless of right-of-way
2. React properly to hazards
3. Maintain a professional attitude
4. Commentary driving

B. Dangerous Driver Attitudes

1. Overconfidence
2. Self-righteousness
3. Impatience
4. Preoccupation

C. Collision Avoidance

1. Space cushion

II(d)

- a. Three second rule
 - b. Perception / Reaction Time (1.5 seconds)
 - c. When stopped, see rear wheels of vehicle to front
- #### 2. Intersections
- a. Clear left, right then left again
 - b. Cover brake on stale green light
 - c. Do not turn wheels until beginning turn
 - d. Look through turns
- #### 3. Maintain high visual horizon—Look beyond hood of vehicle
- #### 4. Consider steering to the rear of a conflict vehicle
- #### 5. Backing
- a. Large percentage of collisions involving LE vehicles
 - b. Use proper backing techniques
- #### 6. Lane changes
- a. Signal
 - b. Check mirrors
 - c. Check blind spots
- #### 7. Blind Spots
- a. More equipment in LE vehicles creating more and larger blind spots

D. Vehicle Dynamics

II(g)

1. Rear wheel cheat
2. Front-end swing
3. Over steer
4. Under steer

Weight Transfer

II(g)

1. Weight distributed between front and rear wheels
 - a. Vehicle is a sprung mass
 - b. Center of gravity shifts depending on height of vehicle
2. Engine location has greater part of weight distribution
3. Types of weight transfer

Riverside Police Department - POST Course #21135

- a. Lateral: Side to side
- b. Longitudinal: Front to rear / Rear to front
4. Lateral transfer occurs when vehicle moves left or right
5. Longitudinal transfer occurs when:
 - a. Braking (rear to front)
 - b. Accelerating (front to rear)
 - c. Decelerating (rear to front)
6. Cannot be eliminated in a moving vehicle
7. Minimized by good driving techniques and smooth operation

V. Maneuvering Courses Practical Exercises

II(a,b)

Each practical exercise is conducted utilizing a specific cone pattern that will teach the student each learning objective A-D. Each exercise addresses collision avoidance and backing. Each course is designed to test the student's judgment and decision making. The instructor will demonstrate each exercise.

- A. Offset Lane Exercise
- B. Turn-Around Maneuver Exercise
- C. Steering Course Exercise
- D. T-Driveway

A. Offset Lane Exercise II(e)

Goal

The student will gain the necessary skill and knowledge to control a vehicle while negotiating turning movements when driving forward or backward, under restricted road conditions.

Objectives

The student will drive a vehicle forward and backward through an offset lane representing impaired conditions, utilizing proper roadway positioning.

While driving through an offset lane exercise in either direction, the student will demonstrate proper seating position.

While driving through an offset lane exercise in either direction, the student will demonstrate proper steering techniques.

Introduction

- Emergency vehicle drivers are often required to execute precise turning movements while driving forward or backward. These turning movements may be necessary under restricted conditions.

Riverside Police Department - POST Course #21135

- The offset lane is designed to simulate some of the following:

Lane changes in heavy traffic.

Emergency lane changes.

Backing in parking lots or between buildings.

Maneuvering through congested areas, i.e., alleys, driveways, dead end streets, etc.

- The driver must be aware of the vehicle's dimensions.

The awareness of dimensions assists in determining the proper positioning of a vehicle on a roadway in a confined area

The awareness assists the driver in correctly determining the vehicle's position in relationship with the roadway and surrounding environment.

Distances between the front and rear bumpers and obstacles must be known when moving in restricted clearance.

Distances between the sides of the vehicle and any other obstacles must be of constant concern.

- Location of the wheels and the direction in which the front wheels are pointed is imperative.

The wheels of a vehicle are not on the four corners of the vehicle.

There is a definite front and rear chassis "overhang" which must be accounted for when turning.

- When driving forward and approaching an impaired clearance area, a driver must first estimate the width of the area to be traversed. It must be remembered that the average law enforcement vehicle is approximately six feet wide.

The driver must determine that the vehicle can safely pass through this area.

If not absolutely sure--stop the vehicle!

Depth perception and visual awareness are important.

Procedure to Drive Course

Riverside Police Department - POST Course #21135

- This exercise is divided into two phases

Driving forward.

Driving backward.

- Start in front of the starting delineator with the driver's seat and seat belt properly adjusted. Emphasis should be placed on students using the least amount of steering input, which will minimize rear wheel cheat, weight transfer and front-end swing.

- Driving Forward

Move forward, smoothly and quickly accelerating to approximately 15 mph and maintain speed.

Enter the lane on the extreme right hand side of the roadway to enter a left turn.

Stay to the right until approximately 18 feet into the lane.

A left turning movement is then made, directing the vehicle into the first opening and toward the offset portion.

The vehicle should be driven as close as possible to the left delineator at the opening.

As the vehicle enters the offset portion, the steering wheel is gradually turned to the right, making a transition from the initial left turning movement to a right turning movement.

- As the vehicle exits the first opening, steer to the left side of the offset lane.

Minimizes weight transfer.

Places vehicle in proper road position for the next running movement.

- The vehicle will continue in the right turning movement until it enters into the second opening.

The amount of steering should remain constant from the first opening to the second opening.

Allow for a smooth continuous right turning movement.

Riverside Police Department - POST Course #21135

- As the vehicle re-enters the original lane of travel, the steering wheel is smoothly turned to the left, keeping the vehicle as close as possible to the left delineator at the opening.
- The vehicle will exit the second opening and continue moving to the right perimeter of the course.

Minimizes weight transfer.

Places vehicle in proper road position to exit the course.

- As the vehicle is straightened out, it will remain on the extreme right side of the lane as it passes out of the exercise.
- Deceleration is not to occur until the vehicle is completely out of the laned area.
- The vehicle continues to the end of the course, stopping at the finish cone by utilizing the proper braking technique.
- Driving Backward

The gear selector is placed into "reverse."

Visual awareness to the rear will be obtained by properly turning to the right in the seat and directing vision through the rear window.

The vehicle will move back, entering the lane with a road position that will allow for front end swing.

The vehicle will enter the lane at just above an idle speed.

As the vehicle enters the lane, a slight left turning movement (right as viewed by driver) is initiated, "pointing" the vehicle toward the first opening.

As the vehicle enters the opening, the right delineator (left to driver) at the opening is used as a guide, and the steering wheel is smoothly turned to the right.

The vehicle passes as close as possible to the delineator during this transition from the left turning movement into a right turning movement.

- As the vehicle exits the first opening, steer to the left side (driver's right) of the offset lane.

Minimizes weight transfer.

Riverside Police Department - POST Course #21135

Places vehicle in proper road position for the next turning movement.

- The vehicle will continue in the right turning movement until it is pointed toward the second opening.
- The amount of steering should remain constant from the first opening to the second opening, allowing for a smooth continuous turning movement.
- As the vehicle enters the second opening, the right marker flag or delineator at the opening is used as a guide, and the steering wheel is smoothly turned to the left.
- The vehicle will pass as close as possible to this marker/delineator during the transition from right to left turning movement.
- The vehicle will exit the second opening and continue toward the right perimeter of the course.

Minimizes weight transfer.

Places vehicle in proper road position to exit the lane.

- If the vehicle is straightened it will remain on the extreme right side of the lane as it passes out of the exercise.
- Deceleration does not occur until the vehicle is completely out of the laned area.
- The vehicle continues to the end of the course, stopping prior to the starting delineator.
 - Visual awareness to rear will be maintained until the vehicle comes to a complete stop.

Practical Application Phase

- Each student will complete both directions of the "offset lane" exercise.
- The student will conform to all objectives and techniques presented.

Evaluation Phase

Student will be evaluated on practical application performance in both forward and reverse movements in the following areas:

- Steering control
- Throttle control

Riverside Police Department - POST Course #21135

- Speed control
- Rear wheel cheat
- Front-end swing
- Brake application
- Visual awareness of obstacles to rear
- Smoothness and coordination
- Use of road position

B. Turn Around Maneuver Exercise

Goal

The student will gain the necessary skill for maintaining maximum safe vehicle control while performing quick turn-around maneuvers.

Objectives

- The student will demonstrate three basic ways (Three-Point Turnaround, Modified Bootleg, Bootleg) to turn a vehicle so as to proceed in the opposite direction quickly and safely.
- While backing, the student will demonstrate maintaining constant visual awareness of objects to the rear and sides until the vehicle comes to a complete stop.
- The student will demonstrate reverse steering (sometimes referred to as "reverse rolling friction") technique.

Introduction

- Drivers of emergency vehicles are often required to execute quick turn-around maneuvers to change the direction of travel of their vehicles. These turnaround maneuvers may be necessary when:

A suspect vehicle is observed traveling in the opposite direction.

An emergency call is received which is in the opposite direction.

The driver observes an incident requiring investigation and must turn around to return to the location.

- Turning movements should never be made until a driver has a total view of the surrounding environment.

Oncoming traffic - speed.

Use mirrors to check for following vehicles.

Riverside Police Department - POST Course #21135

Look over shoulder(s) to check blind spot(s).

Sidewalks - pedestrians and bicycles.

Parked cars, etc.

Procedures to Drive Course

- In preparation for the exercise the vehicle will:

From outside the course, enter the roadway along the right side and on the roadside opposite the two driveways.

Have the seat and seat belt properly adjusted.

- The vehicle will move forward, staying as close to the right hand side of the street as possible, and reducing speed by braking prior to any turning.
- When the front bumper is opposite the leading edge of the first driveway a left turning movement into that driveway will be made.
- The vehicle will enter the driveway perpendicular to the street and as far to the right as possible.
- The vehicle is stopped prior to hitting any of the traffic cones or flags that outline the driveway, with its front wheels straight.
- Before initiating backing, look to rear and down the roadway in each direction to ensure that it is hazard free.
- The vehicle will be placed in reverse and backed out of the driveway.

While backing, the steering wheel will be turned slightly to the right so that the front end of the vehicle moves to the left.

Visual awareness forward until the vehicle, particularly the left front fender, is clear of all objects and out of the driveway.

- Upon exiting the driveway, the steering wheel is quickly turned to its full radius to the right.

Maintain visual awareness over the right shoulder and through the rear window until the vehicle is completely stopped.

Riverside Police Department - POST Course #21135

Prior to completing the backing movement and while the wheels are still rolling, the steering wheel will be turned in the opposite direction until the front wheels are pointed in the next direction of travel.

The vehicle proceeds to the extreme perimeter of the course (far side of road) and is stopped prior to hitting the marker flags or cones.

- The vehicle then moves forward as the steering wheel is turned to the left to avoid striking the cones along the perimeter of the course. This completes the "three-point" turn-around.
- The vehicle will continue toward the second driveway, keeping close to its right side curb line traffic cones.

This places the vehicle in a position to execute the next turn-around: "Modified bootleg."

When the vehicle's front bumper is approximately even with the leading edge of the opening of the driveway, the steering wheel will be turned sharply to the left.

The vehicle is stopped on the opposite side of the street and at a 45-degree angle to the opening of the driveway.

Vision to the rear is directed over the right shoulder and through the rear window; the vehicle is backed into the driveway, as straight as possible, and vision is to remain to the rear until the vehicle is fully stopped.

Prior to completing the backing movement, steer so that the vehicle's front wheels will be pointed in the next direction of travel.

The vehicle will then move forward as the steering wheel is turned to the left to avoid striking cones along the outside perimeter (vehicle's right) of the road.

- The vehicle continues on the right side of the roadway, 20 to 30 feet past the first driveway and then stops. The vehicle should be positioned closer to the center line than the right hand curb line. Thus, when the left backing motion is made, the front of the vehicle will not swing out and hit the perimeter cones.

Practical Application Phase

- The techniques and objectives presented will be demonstrated by the student.

Riverside Police Department - POST Course #21135

- The student practices proper utilization of the vehicle control techniques.
- The student should perform the exercise as many times as necessary to accomplish proficiency.

Evaluation Phase

Students should be rated on their performance in the following areas:

- Steering forward
- Steer while the tires are rolling
- Use of road position
- Brake application
- Front-end swing
- Rear wheel cheat
- Speed control
- Visual awareness of obstacles to rear
- Smoothness and coordination

C. Steering Course Exercise

Goal

The student will gain the necessary skill and knowledge to operate an emergency vehicle in both forward and reverse directions. using the proper steering methods for maximum vehicle control.

Objectives

- Given a steering course exercise. the student will demonstrate the proper application of the forward and reverse methods of steering.
- Given a steering course exercise the student will demonstrate proper coordination of steering and throttle control to minimize weight transfer during turning movements.
- Given a steering course exercise the student will safely maneuver around obstacles without striking them.

Introduction

- The steering course is designed to emphasize the importance of smoothness and coordination of steering and throttle control.
- Looking ahead to prepare for any turning movement is essential for maximum vehicle control and safety. A preoccupied or inattentive driver will experience a delay in the perception of, and reaction to, hazardous situations on the roadway.

Riverside Police Department - POST Course #21135

Procedure to Drive Course

- The course will be driven forward, then in reverse, with the driver properly seat belted. Emphasis should be placed on students using the least amount of steering input, which will minimize rear wheel cheat, weight transfer and front-end swing.
- Starting in the forward direction, the vehicle is driven at a speed of 5-10 mph, weaving in-and-out of the delineators, making a continuous series of "s" turns using the accepted steering method in conjunction with a smooth, steady throttle application.
- The vehicle's placement as it passes from one delineator to another should provide sufficient distance on the sides of the vehicle to avoid striking the delineators.

"Rear wheel cheat" is the tighter tracking of the rear wheels, as compared with the front wheels, in a turn. Allow for tighter turning of rear of the vehicle.

Judgment of distances can be more difficult on the right side of the vehicle, the side away from the driver.

- Once the vehicle has completed one pass in the forward direction, it will immediately be driven for one pass in reverse toward the original starting position, retracing the previous route.

The vehicle is driven at an idle speed, approximately 3-5 mph, while weaving in and out of the traffic delineators.

Proper hand positioning and body placement as described in the vehicle control techniques are extremely important to maximize vehicle control and rear vision.

The driver must also be careful not to steer too late in reverse, and allow sufficient distance between the vehicle and delineators.

Bring the vehicle to a complete stop, looking to the rear at all times.

Practical Application Phase

- The student will drive through this serpentine course forward, backward and forward again providing an opportunity to practice the accepted steering methods and proper throttle control.
- Smoothness and proper distancing between vehicle and delineators will be demonstrated.

Riverside Police Department - POST Course #21135

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Steering control forward and reverse
- Rear wheel cheat
- Front-end swing
- Speed control
- Visual awareness of obstacles to rear
- Smoothness and coordination

D. "T" Driveway Exercise II(e)

Goal

The student will learn the basic movements of a vehicle while maneuvering back and forth and turning in and out of tight environmental situations.

Objectives

The student will successfully demonstrate how to properly and safely maneuver a vehicle in and out of a "T" shaped driveway or blocked "T" alleyway where there is a minimum of space.

Introduction

- A vehicle will often be placed in restricted area situations, and it is important to safely maneuver both in and out of such circumstances.
- This training will instill confidence in the driver through successful completion of the task.
- It is essential to reduce vehicle and property damage, as well as potential liability litigation.
- The following are terms and concepts which will instill a basic knowledge of movement of various areas of a vehicle during tight maneuvers.
- Rear Wheel Cheat: The rear wheels track differently and tighter than the front wheels during steering movements.
- Front-end Swing: The front-end of the vehicle swings out during steering movements in reverse.
- Rear Vision: The critical importance of physically looking toward the rear of the vehicle while backing until the vehicle completely stops.
- Use of Mirrors: Normal vehicle mirrors are not of sufficient size or design to solely rely on for safe backing.

Blind spots due to vehicle design

Riverside Police Department - POST Course #21135

Curved mirror on passenger side distorts objects

- Road Position: Use of available roadway to fullest advantage; plan ahead in placing vehicle to ensure that once inside a driving problem it will properly and safely be able to exit.
- The student should learn to judge physical dimensions of a law enforcement vehicle.

Front-end push bars

Rear bumper

Right and left sides

Procedure to Drive Course

- The Approach

Road position on the approach road is critical before the left turning movement into the entrance of the driveway.

Look and plan ahead.

For a left turn - set up wide to right.

Keep speed down to ensure safety and control.

Tight area to maneuver requires slower speeds.

Increased speed can increase the radius of the turn.

Road position while in the entrance of the driveway is also important.

Set up by crowding wide to right for left turn into top of driveway.

This will compensate for rear wheel creep in turn.

- Driving within the "T" Driveway.

Steering accuracy into top of the "T" from the entrance is important.

Avoid hitting delineators at entrance.

Riverside Police Department - POST Course #21135

May require briefly straightening wheels in mouth of the "T."

Don't leave wheels straight too long to avoid hitting cones at the very top edge of the "T."

Judgment of front-end distance.

Leave sufficient room for front bumper and push bars at left end of top of the "T."

Straighten the vehicle's front wheels in the top of the "T" just prior to coming to a complete stop.

Backing within top of the "T."

Look to rear at all times while backing.

Smoothly steer the vehicle right to crowd it into the corner of the opposite end, allowing for proper road position to set up to exit the mouth of the "T."

The vehicle is stopped parallel with the top edge of the "T" with sufficient safe margin between rear bumper and right end of the "T."

- Exiting the "T."

Steering accuracy is important to compensate for rear wheel cheat while exiting left through mouth of the "T."

Avoid being too tight to delineators on inside of left turn.

Avoid excessive throttle which could widen exit path into delineators on outside of turn.

May require slight straightening of wheels just as the vehicle exits mouth of the "T," and then further left steering to enter the roadway.

Practical Application Phase

The techniques presented will be demonstrated by the student.

Riverside Police Department - POST Course #21135

Evaluation Phase

The student will be evaluated on performance in the following areas:

- Steering control
- Use of road position
- Rear wheel cheat
- Front-end swing
- Speed control
- Smoothness and coordination
- Visual contact with obstacles to rear

Instructors will evaluate each student during the practical exercises. The student must successfully complete each practical exercise. The student will be provided with an opportunity to re-mediate if required.

VI. Conclusion: Review and Oral Exam

- A. Student must successfully complete maneuvering practical exercises
- B. Overview of course objectives and oral exam