

Ambulance Safety



Pea Ridge Fire Department EMS refresher

Introduction

- Today's emergency vehicles are equipped with state-of-the-art technology.
- Driving an emergency vehicle requires good technique and judgment.

Emergency Vehicle Design

- Current specifications for emergency medical transport vehicles were originally developed in the early 1970s.
- Design and manufacturing guidelines were reviewed and updated every 5 years.
 - Outlined by the DOT KKK 1822

Emergency Vehicle Design

- Two specifications are being considered as replacements for the GSA KKK 1822 guidelines:
 - The National Fire Prevention Agency (NFPA)
 - The Commission on Accreditation of Ambulance Services

Emergency Vehicle Equipment

- Every inch of space on an emergency vehicle stores and secures equipment.
- Organizations influence the list of supplies and equipment that should be carried.
 - OSHA
 - ACS

Checking the Emergency Vehicle

- Crew members are responsible for ensuring:
 - Unit is capable of responding.
 - Proper equipment and supplies are available.



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Checking the Emergency Vehicle

- Any threat to one of the “four Ss” should put the vehicle out of service:
 - Start
 - Steer
 - Stop
 - Stay running

Checking the Emergency Vehicle

- Warning signs
 - Belt noise
 - Break fade
 - Brake pull
 - Drift
 - Steering pull
 - Pulsating brake
 - Steering play
 - Tire squeal
 - Wheel bounce
 - Wheel wobble

Emergency Vehicle Staffing and Development

- Maximize productivity and minimize response times by analyzing:
 - Response times
 - Productivity
 - Unit costs
 - Taxpayer subsidies

Emergency Vehicle and EMS Systems

- In US, most first-response EMS are delivered by the fire department.
 - Other models include:
 - Private, for-profit agencies
 - Public agency
 - Public-private partnerships

System Status Management (SSM)

- Goals:
 - Maximize efficiency
 - Reduce response time
- Considerations:
 - Peak loads
 - Strategic deployment

Emergency Vehicle Stationing

- Goals:
 - Maximize efficiency
 - Reduce response times
- Factors include:
 - Distance vs call volume
 - Special facilities
 - Need for maintenance
 - Storage
 - Disinfection facilities
 - Classrooms
 - Sleeping quarters

En Route to Scene

- Prepare to respond.
- While en route:
 - Prepare to assess and care for the patient.
 - Review dispatch information.
 - Assign duties and tasks.
 - Decide which equipment to take.
 - Decide which stretcher to take.

Securing Equipment

- Make sure all equipment is secured before placing a vehicle in motion.
 - Poorly secured items can shift or break.
 - Some equipment can become lethal projectiles if not secured properly.

Arrival at the Scene

- Perform scene size-up and report to dispatch.
- Look for safety hazards.
- Evaluate the need for additional units.
- Determine the MOI or nature of the illness.

Arrival at the Scene

- Evaluate the need for specialized equipment or additional response vehicle.
- Follow standard precautions.
- If you are the first at a scene with multiple patients, estimate the number of patients.

Traffic Control

- Ensure orderly traffic flow, and prevent another crash.
- Place reflectors and other warning devices on both sides of crash.

Safe Patient Transfer

- Excessive speed is unnecessary and dangerous.
- Secure the patient with at least three straps across the body.

Postrun Activities: Restocking, Cleaning, and Disinfection

- Clean and disinfect emergency vehicle and equipment used.
- Restock supplies.
- Perform routine inspections.
- Decontaminate the emergency vehicle.



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Defensive Emergency Vehicle Driving Techniques

- More than 6,000 crashes per year
- Knowledge of proper vehicle operation is critical.



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Driver Characteristics

- Diligence and caution
- Positive attitude about your ability
- Tolerance of other drivers
- Physical fitness
- Emotional fitness
- Proper attitude
- Good judgment and knowledge

Safe Driving Practices

- Route planning and navigation
 - Have access to street and area maps
 - Become familiar with the roads and traffic patterns in your area.

Safe Driving Practices

- Fatigue
 - Place yourself out of service until fatigue has passed.
- Distractions
 - Never attempt to:
 - Type
 - Text
 - Operate personal data devices
 - Listen to music
 - Eat or drink

Safe Driving Practices

- Use safety restraints.
- Always drive with caution.
- Siren risk-benefit analysis
 - Never use to transport a nonemergency patient.

Safe Driving Practices

- Driver anticipation
 - All other drivers are unpredictable.
 - Maintain a safe travel distance behind vehicles.
 - Do not respond aggressively to drivers.
 - Do not accelerate through intersections.

Safe Driving Practices

- Driver anticipation (cont'd)
 - Make eye contact with fellow drivers.
 - Use turn signals.
 - Never force a vehicle into oncoming traffic.

Safe Driving Practices

- Cushion of safety
 - Maintain a safe distance from vehicles.
 - Avoid being tailgated.
 - Be aware of blind spots.

Safe Driving Practices

- Vehicle size and distance judgment
 - Vehicle length and width are critical when:
 - Maneuvering
 - Driving
 - Parking
 - Braking and passing

Safe Driving Practices

- Backing up the emergency vehicle
 - Use a spotter.
 - Do a walk-around before getting in the vehicle.
 - Do not rely on a backup camera.



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Safe Driving Practices

- Parking at an emergency scene
 - Allow for efficient traffic control and flow.
 - Do not block other emergency vehicles.
 - Park uphill or upwind.
 - Stay away from structures that might collapse.
 - Always use your parking brake.

Safe Driving Practices

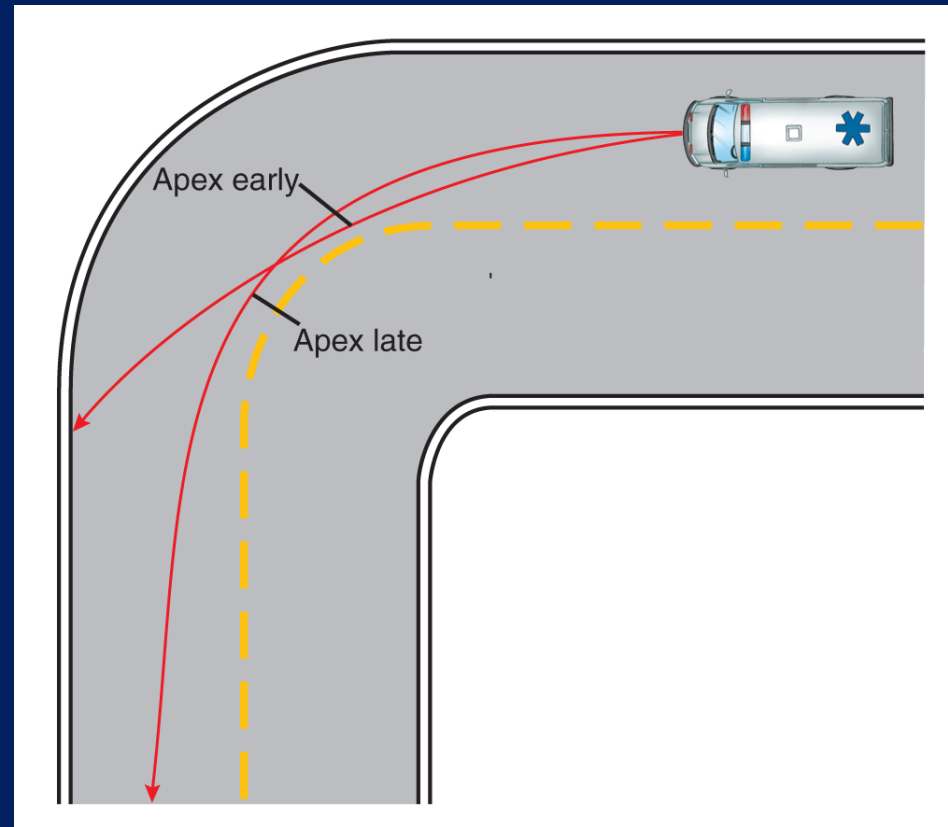
- Parking at an emergency scene (cont'd)
 - Park as close to the scene as possible.
 - Park where your departure will not be hampered.
 - Be aware of terrain.
 - Turn off headlights to avoid blinding oncoming traffic at night.
 - Always wear visible protective clothing.

Emergency Vehicle Control

- Two ways to control a vehicle:
 - Changing directions
 - Changing speed
- Drivers must constantly evaluate the road surface.

Emergency Vehicle Control

- Road positioning and cornering
 - Take corners at the speed that will put you in the proper road position.



Braking

- Getting a feel for brake pressure comes with experience and practice.
 - Types I and III vehicles have heavier feeling brakes than Type II vehicles.

Controlled Braking

- Weather and road conditions
 - Weight distribution should be taken into consideration during inclement weather.
- Hydroplaning
 - Gradually slow down without slamming on the brakes.

Controlled Braking

- Water on the roadway
 - Lightly tap the brakes several times after driving through water to dry them.
- Decreased visibility
 - Use low headlights during fog, smog, snow, or heavy rain.
 - Use headlights during the day.

Controlled Braking

- Ice and slippery surfaces
 - All-weather tires and appropriate speed will reduce traction problems.
 - Be especially careful on bridges and overpasses.

Laws and Regulations

- Vary from state to state and city to city
- Emergency vehicle drivers have certain limited privileges.
 - Privileges don't lessen liability in a crash.

Laws and Regulations

- Right-of-way privileges
 - Only use when necessary
 - Some states allow you to proceed through a red light or stop sign after stopping.
 - Some states allow you to proceed through controlled intersection “with due regard.”

Laws and Regulations

- Use of warning lights and sirens
 - Unit must be on a true emergency call.
 - Audible and visual warning devices must be used simultaneously.
 - Unit must be operated with due regard for the safety of others.
 - Siren is most overused piece of equipment.

Laws and Regulations

- Use of escorts
 - Generally not a good idea
 - Leave space between vehicles.
 - Instruct family members not to drive closely behind you.

Laws and Regulations

- Intersection hazards
 - Look for other motorists and pedestrians before proceeding into the intersection.
- Unpaved roadways and rural settings
 - Operate the vehicle at a lower speed.
 - Maintain a firm grip on the steering wheel.

Laws and Regulations

- School buses
 - Never pass a school bus that has stopped.
- School zones
 - In many states it is illegal to exceed the speed limit in school zones.
- Funeral processions
 - Most states offer no exemption.
 - Out of respect, most drivers turn off audible devices.

Thank You



Please continue to the next section