



## Emergency Vehicle Operators Instructors Course

Crash Prevention

C1





# Crash Prevention

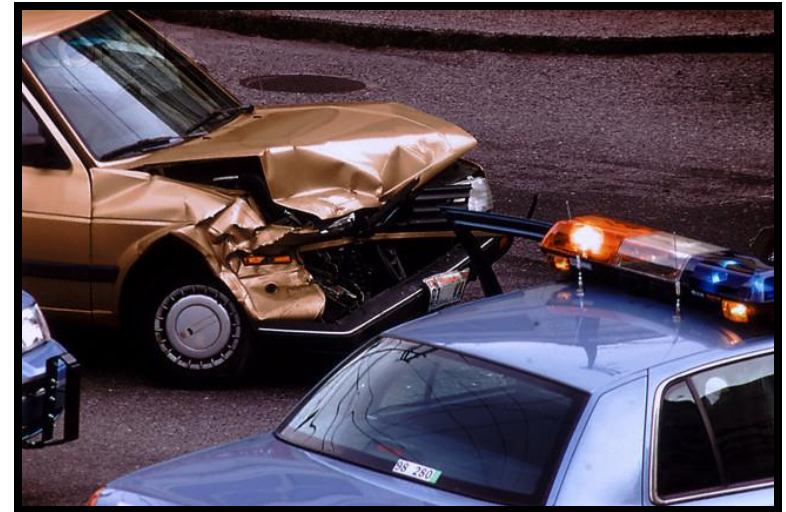
## The Need for Driver Training

**One Out of 5 to 10 Drivers is involved in a collision annually**

**One out of 15 drivers is involved in a REPORTABLE crash annually**

**For every age group the fatality rate per 100,000 population was lower for females than for males.**

**50% of fatal crashes occurred on roads with a speed limit of 55 mph or more.**





# Crash Prevention

## The Facts

### NHTSA - 2014

Traffic fatalities 32,675

90 persons each day

6,405 persons injured each day

61% of Fatal Crashes involve only a single vehicle

68% of all crashes occur during daylight conditions

There are common factors associated with many of these crashes

Not wearing a seat belt

Distracted Driving 10% of all fatal crashes

Speed / Loss of control (9,262 fatal)

contributing factor in at least 28% of all fatal crashes

Night-time

Weekends





# Crash Prevention

## The Need for Driver Training 2014

**6.1 Million Police Reported crashes**

**2.3 Million Injuries**

**4.3 Million Property Damage only Crashes**

**Alcohol Impaired Driving Fatalities 9,967**

**31% of all traffic fatalities**

**52% of occupants killed in traffic crashes were unrestrained.**





# Crash Prevention

## The Need for Driver Training

### Population

**319.9 million** (2014 Estimate)

### Licensed Drivers

**214 million** (2014 Estimate)

### Registered vehicles

**274 million** (2014 Estimate)

### Vehicle Miles Traveled (VMT) Per Driver

**14,000** per year

**Fatality Rate per 100 million vehicle miles traveled 1.14**





# Crash Prevention

## What are the odds of dying?

**Heart Disease**

**1 in 5**

**Stroke**

**1 in 23**

**Transportation Crash**

**1 in 100**

**Assault (firearm)**

**1 in 325**

**Plane Crash**

**1 in 20,000**

**Natural Disaster**

**1 in 80,000**





# Two Kind of Drivers, Which One Are You?

## **Those that believe that driving is not hazardous:**

Their own driver error will not cause a major traffic crash.

These driver's don't realize they are part of the problem.

There is no need to adopt or follow safety precautions.

Think bad luck or defects in the road or car causes potential collisions.

## **Those that believe that driving is inherently hazardous:**

That fault could lie with themselves or another driver.

Crashes are typically not caused by an external condition or bad luck.

Most collisions are caused by preventable mistakes committed by all drivers involved.





# Senseless Loss

**What are the odds of dying?**

**Police - 2015**

## **128 Officers Killed in the Line Of Duty**

47 Died from Traffic related accidents.

Second lowest total in the past 15 yrs.

27 died as the result of a automobile crash.

12 were struck and killed while outside their vehicle

3 were motor officers

5 in vehicle pursuit

41 Were killed during shooting incidents.

23 Succumbed to job-related illness (17 due to heart attack)

6 Bomb

3 Assault







# Senseless Loss

**What are the odds of dying?**

**Fire Service - 2014**

**91 Firefighter Fatality Notices Posted**

**(30) Career firefighters**

**(56) Volunteer, seasonal, and part time**

**(5) Wildland Agencies**

**Firefighter Leading Causes of Deaths by Nature (2014)**

**25 died while engaging in activities at the scene of a fire**

**24 died after returning from the emergency**

**13 died while responding to or returning from incidents**

**13 died other on duty activities**

**9 died while they were engaged in training activities**

**7 died on-scene (non-fire)**





# Senseless Loss

**What are the odds of dying?  
EMS Service - 2013**

## **19 EMS Killed in the Line Of Duty**

**EMS Leading Causes of Deaths by Nature (2013)**

**8 Died involved in motor vehicle incidents**

**8 Died in Med Flight related incidents**

**3 Died due to health related incidents**





# Crash Prevention

**Crashes are preventable.**

**So what's causing these crashes?**

**Emergency Vehicle – Causal Crash Factors:**

**Pursuits**

**Speed / Loss of control**

**Ran into another vehicle**

**Ran into a fixed object**

**Avoiding another object/animal**

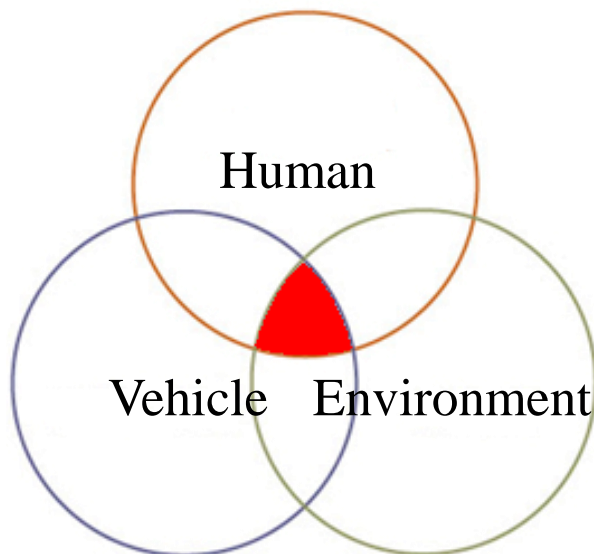
**Fell Asleep (fatigue)**

**Backing Up**





# Definition of Driving



Driving a motor vehicle consists of taking skilled and properly timed actions under varying road and traffic conditions based on decisions that depend on:

Realistic Perceptions

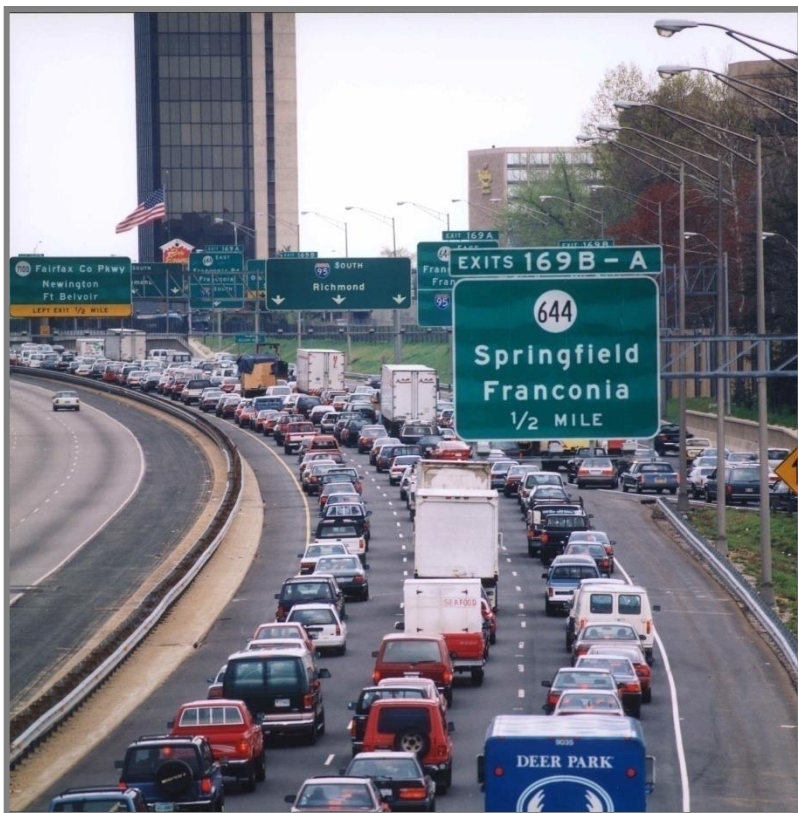
Learned information

Sound Judgments





# Perception versus Reality



Perception is the process by which an individual receives or extracts information about the environment and attaches or assigns meaning to it.

Reality is the state of things as they actually exist, rather than as they may appear or may be thought to be.

**Perception: Driving is not a hazardous activity**

**Reality: Driving is a hazardous activity**





# What is Risk?

Risk is defined as; The chance of injury, damage or loss

Is driving a vehicle risky business?

Does that risk increase when driving an emergency vehicle in a code response?





# Assessing Risk When Driving

**The amount of risk can seldom be determined with complete accuracy.**

**Is RISK present in everything we do?**

**Is driving a RISKY business?**

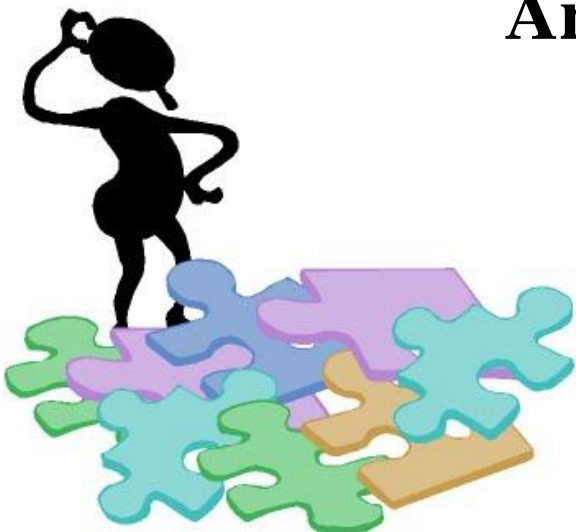
**Is operating an EV in the emergency mode even RISKIER?**





# Operational Risk Management

Are you using ORM today?



Of course you are...

ORM may be known by other names or processes, we will address this in a later module.





# Characteristics of Risks and Hazards



Task Loading  
Distracted Driving  
Driving while Fatigued  
Complacency/Routine

Excessive Speed  
Following Too Close  
Driving Under the Influence





# Factors to Evaluate for Better Risk Management

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## Probability

What is the likelihood of a dangerous event occurring?

## Manageability

What is the manageability of the dangerous event?

## Consequences

Identify and consider alternative actions.





# Factors Affecting Decision Making and Risk Management

Sensory modalities

Sight

Smell

Touch

Movement

Hearing

Taste

Level of awareness

Fatigue, physical wellness

Drugs

Over-the-counter

Prescription

Illicit

Alcohol





# Factors Affecting Decision Making and Risk Management

Laws of Learning

Recently

Level of training

Use

Transfer of training

Classroom to car

Vehicles

Environments

Motivation

Attitudes, emotions, need





# Reducing the Probability That a Dangerous Event Will Occur

Direct: driver performance

Manipulative competence, maximizing visibility, and vehicle performance

Indirect: influencing behavior of other highway users

Signaling, horn, obey traffic laws, do the expected, headlights, eye contact, position of vehicle, flashers, blind spots, reduce time of involvement

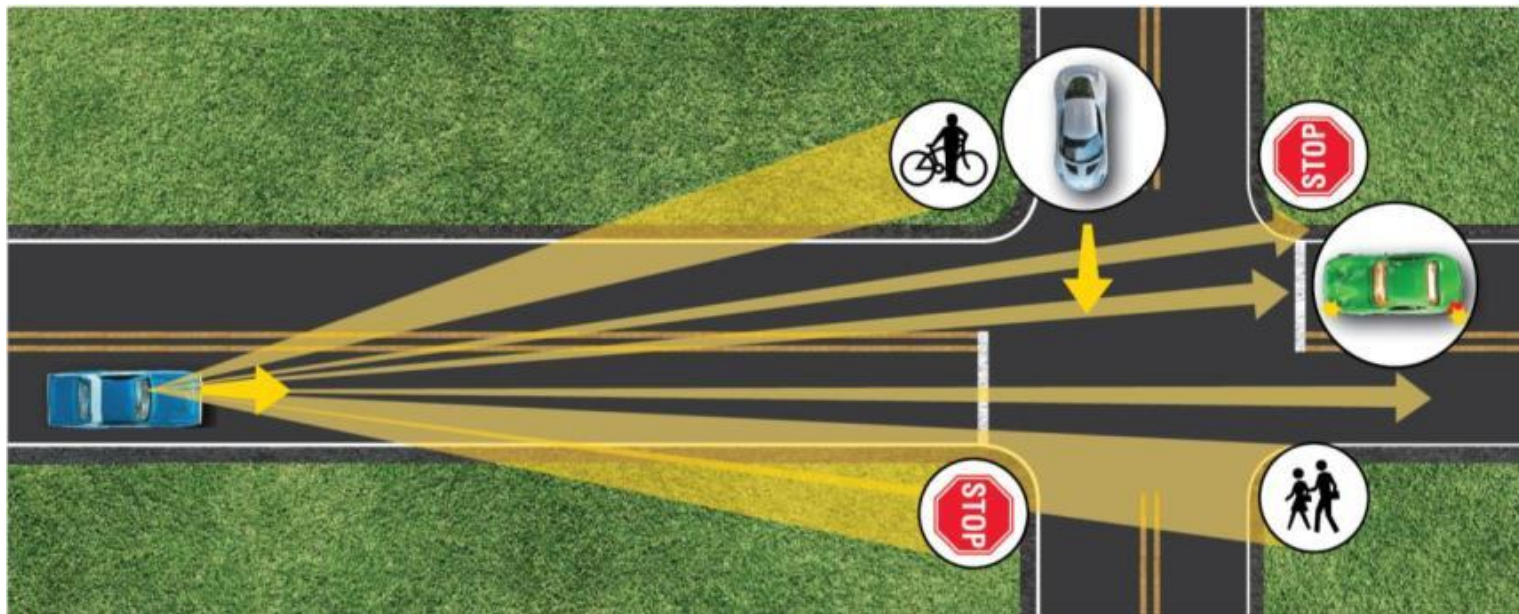




# You can manage RISK by:

**Use ORM to perform the following:**

1. Perform an aggressive visual search.
2. Make good decisions with the information gained from the visual search.
3. Act on your decisions appropriately.





# Costs Connected with Crashes

Vehicle Damage

Mechanical

Body

Vehicle Downtime

Personal Hours Lost

Investigations

Review Boards

Hearings

Suspension

Injuries/deaths

Litigation

Funerals

Personal Injury

Worker's Comp

Medical Bills

Hospital Visits

Delay in Service

Lower Crash Rate Benefits:

Improved Vehicle

Condition

Better Employee

Relations

Reduced Operating

Costs

Improved Vehicle

Appearance

Better Driver Attitude

Lower Driver Turnover





# Crash Costs

**The highest price we pay for car crashes is in the loss of human lives, however society also bears the brunt of the many costs associated with motor vehicle accidents.**

**\$600,000 per single MV fatality**

**\$126,000 per injury crash**

**\$1,522 per person**

**\$299.5 Billion Annually**

- **Fleet-crashes represent 25% of all worker compensation claims.**
- **A comprehensive safety or training program can save over \$50,000 for every million miles traveled.**







# Reducing the Consequences of a Crash

Never hit anything head-on

Always drive off the road rather than skid off the road

Always hit something soft rather than something hard

Always hit something going your way

Always hit something stationary with a glancing blow

Always hit something stationary before hitting something coming toward you

Steer to the right whenever possible





# Crashes are Preventable

**So what are some other things we can do to reduce the number of these crashes?**

## **Planning & Training:**

**Incorporate state and local traffic laws into guidelines / SOPs**

**Adapt course material to parallel local EV guidelines.**

**Incorporate or review command policies**

**Assign a EVOC Coordinator / Trainer**

**Establish an EVOC Training Council**





# Crash Prevention

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## EVOC Training Council:

**Should consist of both DoD and Outside agencies.**

**All divisions with EVs (i.e.. Fire, Police, EMS EOD etc..)**

**Meet once a quarter or prior to either a joint exercise or base open house (i.e.. Air show, auto show etc.)**

**Establish or review MOUs**

**Review joint response SOPs**





# Crash Prevention

## EVOC Training Council:

**When should MOU's or SOP's be reviewed developed?**

**At least annually**

**When federal, state or local laws change**

**When federal, state or local laws are vague**

**Mishap or crash data indicates a issue.**





# Crash Prevention

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## **EVOC Training Council:**

**The EV training council can be very productive in selecting topics and providing the necessary expertise pertaining to EV training and response.**

**Instructional method & strategies' for presenting lesson plans.**

**Up to date innovative techniques to help students learn how to safety operate emergency vehicles**





# Crash Prevention

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## EVOC Additional Resources:

**Web Sites**

**Professional Publications**

**In Service / Phase Training**

**Roll Call**

**Word of mouth**





## REVIEW QUESTIONS

1) What are some of the common factors associated with crashes?

2) What are the two types of Driver's?

3) Risk is defined as what?

4) What are some things that you as the operator can do to reduce the consequences of a crash?

