

THE DRIVER & DEFENSIVE DRIVING CONCEPTS

Emergency Vehicle Operator Course
Module 4





DRIVER TRAITS

- What to do
 - Laws
 - Procedures
 - Guidelines
- How to do
 - Skills matched with the vehicle capabilities
- When to do
 - Making efficient and effective decisions

DRIVER TRAITS



Clarity

Knowing the mission &
correct objectives

Competency

Knowledge and ability
to complete tasks

Effective Driving

ATTITUDE



- Arrive safely despite the incorrect or unexpected actions of others
- The right of way isn't yours until it is given to you
- Knowledge and skill are cancelled out by the wrong attitude

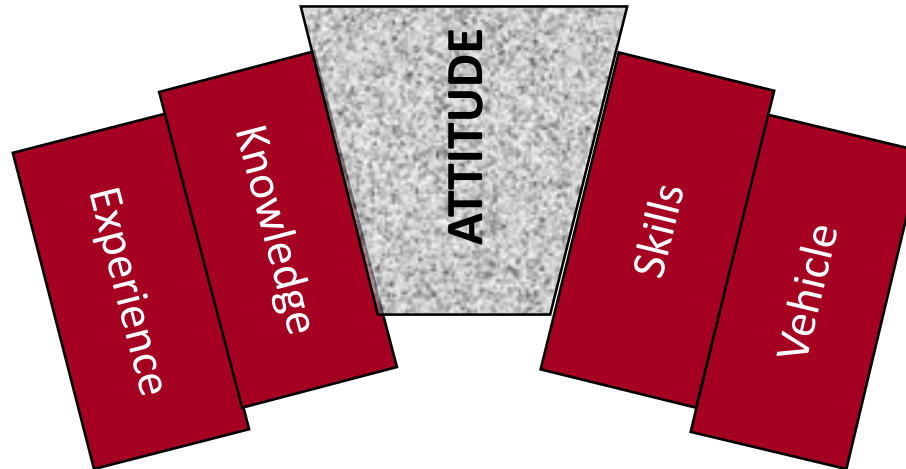
**The public has high expectations of the fire service.
It must be your desire to meet them.**



DRIVER TRAITS



Driver attitude is the keystone that holds everything together



LOGIC



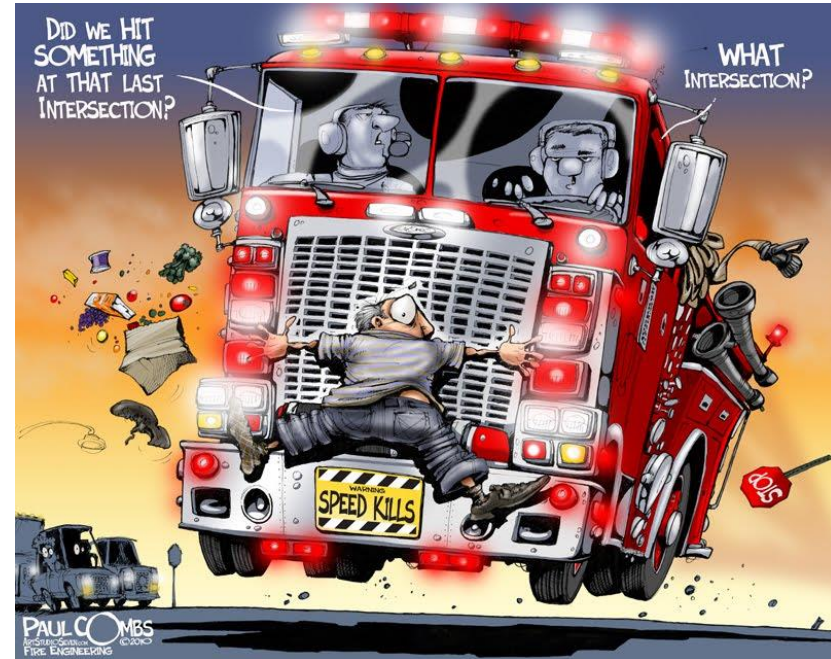
*“YOU HAVE NO RIGHT
TO RISK PEOPLE’S
LIVES ON THE HIGHWAY
TO SAVE
PEOPLE WHO MAY BE
TRAPPED IN A FIRE”*



CONTROLLING THE BEAST

- Since recruit school the emphasis has been SPEED
- When the tones drop the emphasis is SPEED
- Going down the road the emphasis is.....

Being the driver you have to learn to control the aggression and focus it in order to deliver the apparatus safely.



EMOTIONS



- Aggressive drivers/Road rage
- Response to siren – “sirencide”
- Call type
- State of mind/Outside influences
- Shift dynamic/communication skills

A yellow starburst graphic with a red and orange gradient border, resembling a flame or explosion.

**CHECK
YOURSELF
BEFORE YOU
WRECK
YOURSELF!**

EMOTIONS

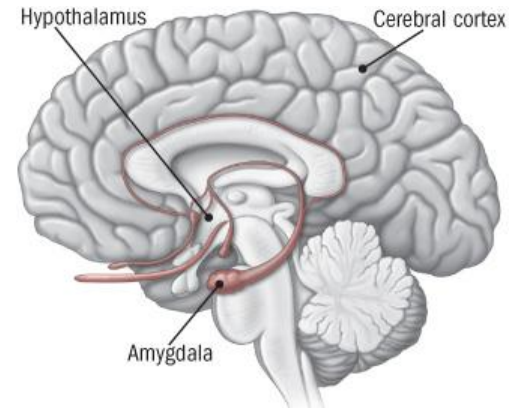
When emotions overwhelm the operator:

- Tunnel vision/mission fixation may develop
- Vehicle speed increases
- Ability to prioritize actions appropriately is lost
- Communications break down

A little stress is good – a lot is not

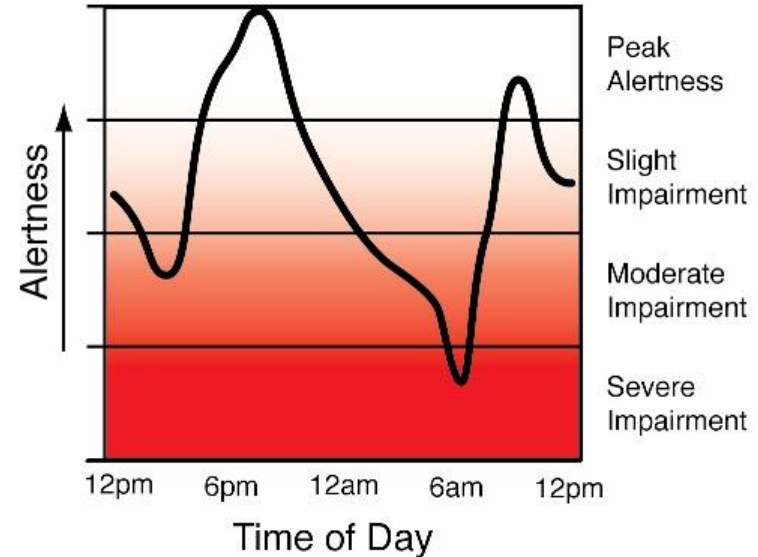


Smith System “E.D.G.E.” DVD



DRIVER FATIGUE

- Not just falling asleep at the wheel
 - Falling asleep is an extreme form of driver fatigue
- Fatigue is tiredness, weariness or exhaustion
- Behavioral signs
 - changes in mood and motivation
 - failure to complete routines and
 - slower responses to questions or requests



DRIVER FATIGUE

CAUSES



- Stress
- Lack of quality sleep or interrupted sleep patterns
 - apnea
- Substance abuse
- Prescription medications
- Irregular work hours
- Irregular meal times/eating habits



DRIVER FATIGUE

EFFECTS



- increasing reaction time
- degrading attention and vigilance
- increasing distractibility and confusion
- decreasing motivation, and
- increasing the probability of driving performance errors



DRIVER FATIGUE PREVENTION



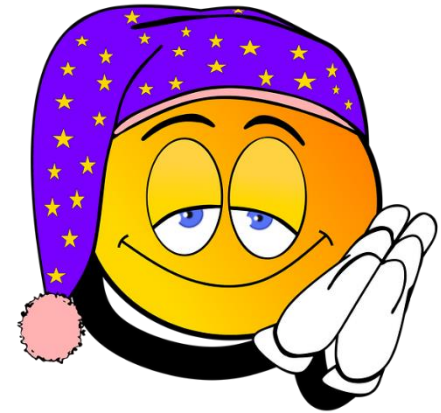
- Sleep schedule
 - Have a routine
- Sleep environment
 - Remove distractions
 - Dark, cool, clean
- Pre-bed snacks/drinks
 - No heavy foods or alcohol
 - No caffeine
- Exercise
 - Allow 3 hours for cool-down
- Diet
 - Avoid fatty or sugary food
- Naps
 - Not a substitute for night sleep
 - 20-30 minutes is good
 - >45 minutes is not good
- Shift schedule
 - Should you be working OT?

DRIVER FATIGUE

ON THE ROAD



- Get fresh air into your vehicle
- Keep your eyes moving
- Vary the siren pitch
- Maintain a conversation
- STOP



No remedies fully offset the need for restful sleep!



OTHER IMPAIRMENTS

- Substance abuse
- Prescription medications
- Over-the-counter medications
- Physical issues
 - Vision
 - Hearing
 - Orthopedics

YOU judge your readiness to drive.

Remember – it is not just YOU who is effected by your driving – it is your crew and the other vehicles around you. Don't be selfish.

SAFE DRIVING PRINCIPLES

PHILOSOPHY



We will drive safely despite the incorrect or reckless actions of other roadway users.

Assume the other driver....

-does not see you

-does not hear you

-will not yield to you

-will put their vehicle in your path

SAFE DRIVING PRINCIPLES

RESPONSIBILITY



Drivers are responsible for:

- Ensuring the apparatus is ready for service
- Ensuring the apparatus is maintained and mechanically sound
- Developing and maintaining their own skills and knowledge
- Anticipating lack of skill and knowledge of pedestrians and other drivers
- Maintaining situational awareness to predict hazards and take action to mitigate them
- Knowing and complying with applicable laws and policies

MCFRS DRIVER QUALIFICATION

POLICY 23-07AMII



Driver Certification Procedure

- Outlines application, training, and examination procedures
- Addresses career and volunteer members
- Establishes driving history parameters
- Identifies pre-requisites for qualification on breeds of apparatus
- Basic guidance on collision reporting



TRAINING REQUIREMENTS

§ 16-102. Persons exempt from licensing requirements

(b) Regulations.

(1) The Administration shall adopt regulations that establish *mandatory training and testing requirements* that a political subdivision that operates a fire department, rescue squad, emergency medical services unit, or volunteer fire department must implement before the political subdivision may authorize an individual to operate an emergency vehicle in accordance with subsection (a)(12) of this section.

MCFRS GUIDANCE

POLICY 808



Driver's licensing

- Must possess a valid non-provisional motor vehicle operator's license
- License status changes (revocation, suspension, disqualification, downgrades) must be reported to a supervisor and cease driving fire apparatus
- Convictions for any moving violation must be reported to a supervisor

Fitness for duty

- Physical conditions
- Medications
- Fatigue or psychological impairments

COMMERCIAL DRIVER'S LICENSE



- United States Department of Transportation (DOT) establishes requirements for commercial motor vehicle drivers
- Each state adopts the USDOT standards as a baseline and may choose to have additional requirements
- USDOT requirements for drivers include:
 - Fitness for duty
 - Drug testing
 - Hours of service tracking
- MCFRS provides direct support for obtaining a CDL under very specific and limited circumstances

COMMERCIAL DRIVERS' LICENSE EXEMPTION



§ 16-102. Persons exempt from licensing requirements

(12) A member or employee of a fire department, rescue squad, emergency medical service unit, or volunteer fire company while driving an emergency vehicle if the driver:

- (i) Holds a valid Class C license issued to the driver under section 16-104.1 of this subtitle;
- (ii) *Has been authorized by the political subdivision that operates a fire department rescue squad, emergency medical services unit, or volunteer fire department to operate the type of emergency vehicle being driven; and*
- (iii) Is driving the emergency vehicle in the performance of the official duties of the driver in or out of state.

DEFENSIVE DRIVING TECHNIQUES



SMITH SYSTEM



Aim High in Steering

Get the Big Picture

Allow an Out

Keep your eyes moving

Keep your vehicle visible



**Smith System
"Street Smart" DVD**

AIM HIGH

SMITH SYSTEM



- Look at the area 8 to 12 seconds ahead of your vehicle
- Center your vehicle in the driving lane
- Find the path of least resistance
- Adjust your following distance
- Blend into the flow of traffic



GET THE BIG PICTURE

SMITH SYSTEM



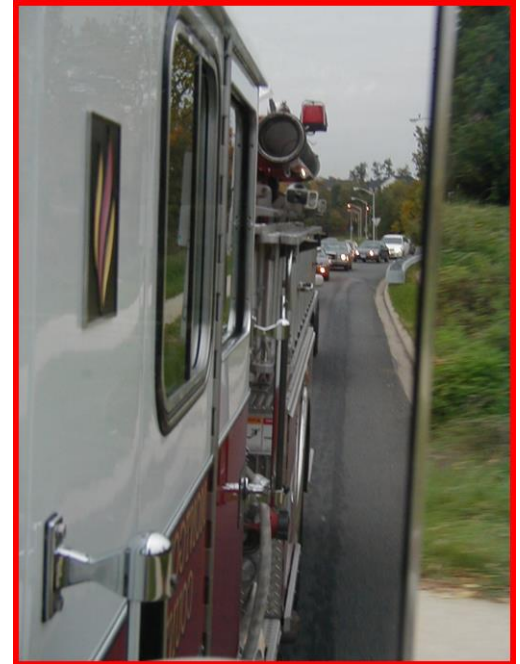
- Know what is ahead, beside, and behind you
- Predict other drivers' actions
- Hear the radio traffic
 - What other units are enroute?
 - Are there other calls in the same area?
 - Is there a true emergency?
- Listen for other sirens
- Find trouble before it finds you

The “big picture” is vital to safe driving

BESIDE AND BEHIND YOU

THE BIG PICTURE

- Always know what's happening beside you
- Check mirrors before slowing down, stopping, decelerating
- Check mirrors on long or steep hills
- Convex mirrors tell a bigger story
- Depth perception can be altered by mirrors
 - Know landmarks on the apparatus to aid with depth perception

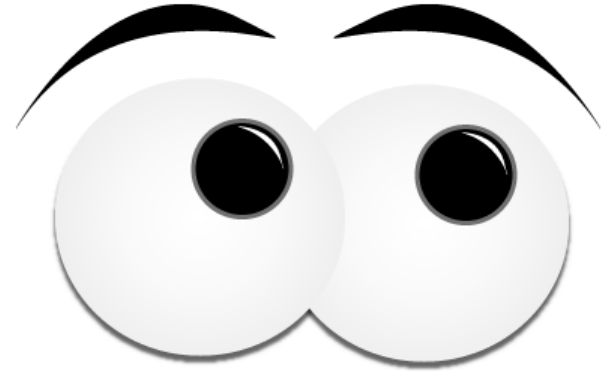


KEEP YOUR EYES MOVING

SMITH SYSTEM



- Do not fixate on one area or object
- Key to remaining alert and engaged
- Check the mirrors frequently
- Becomes difficult at night or when fatigued
- Random eye movement is bad
- Staring at an object also leads to drifting toward the object



ALLOW AN OUT

SMITH SYSTEM



- Maintain adequate following distance
 - "Decision Space"
- Be prepared to yield
- Don't get boxed in
- Time your passing moves
- When stopped in traffic, keep a gap ahead of you to allow a lane change



COVER THE BRAKE

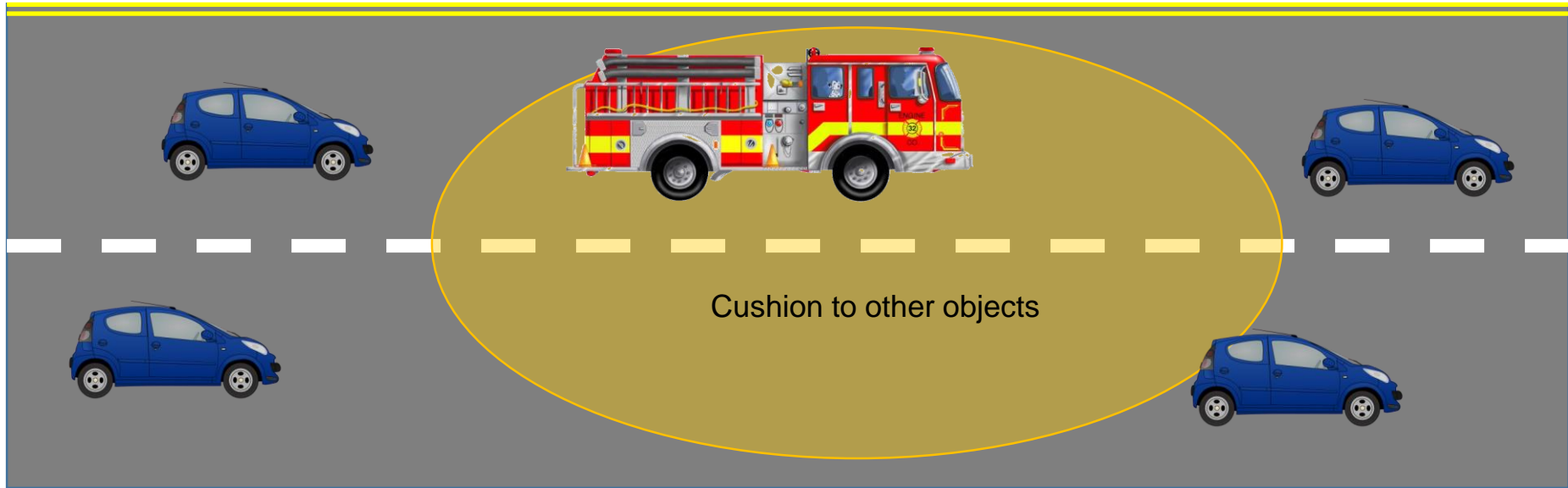
IN TRANSIT



- Cover the brake when you identify a probable hazard
- Approaching, entering, or traversing intersections
- Remove foot from accelerator and prepare to brake
- Advantages
 - Immediately decreases speed – auxiliary braking engages
 - Stopping distance decreases
 - Reduces reaction time
 - Requires a pause to accelerate

DECISION SPACE

ALLOW AN OUT



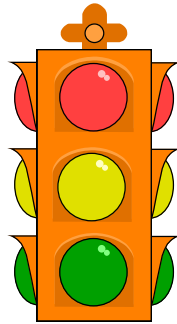
Impossible in the DC Metro area?

DECISION SPACE

ALLOW AN OUT



Perception Time +
Reaction Time +
Braking Time =



Stopping Distance

Perception $\frac{3}{8}$ to $\frac{3}{4}$ second

Reaction $\frac{3}{4}$ second

Add $\frac{1}{2}$ to 1 second
for air brake lag time

Braking $2 \frac{1}{2}$ seconds

Stopping Time 5 seconds

Based upon 40 mph on wet roads.



STOPPING DISTANCE

ALLOW AN OUT

Dry road; 25mph = 38 ft/sec

Perception 28 ½ feet	Reaction 66 ½ feet	Braking 32 feet	≈	Stopping Distance 127 feet
-------------------------	-----------------------	--------------------	---	-------------------------------

Wet road; 25mph = 38 ft/sec

Perception 28 ½ feet	Reaction 66 ½ feet	Braking 56 feet	≈	Stopping Distance 151 feet
-------------------------	-----------------------	--------------------	---	-------------------------------

Dry road; 40mph = 59 ft/sec

Perception 44 ¼ feet	Reaction 103 ¼ feet	Braking 78 feet	≈	Stopping Distance 225.5 feet
-------------------------	------------------------	--------------------	---	---------------------------------

STOPPING TIME – AIR BRAKE UNIT

ALLOW AN OUT



Vehicle Speed		Dry Pavement Coefficient of Friction = 0.7		Wet Pavement Coefficient of Friction = 0.4	
MPH	Ft/S	Stopping Distance	Stopping Time	Stopping Distance	Stopping Time
60	90	407 ft	4.5 sec	542 ft	6 sec
45	66	262 ft	4 sec	336 ft	5 sec
35	51	185 ft	3.6 sec	229 ft	4.5 sec
25	38	127 ft	3.4 sec	149 ft	4 sec

How do you measure your decision space?

DECISION SPACE – 4 SECOND RULE

ALLOW AN OUT

<40mph

4 seconds

Each additional 10mph

1 second

Poor Road Conditions

1 second

Apparatus traveling on wet
pavement at 60mph

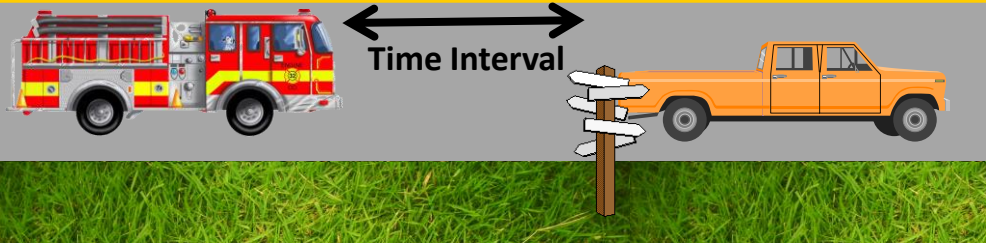
4 seconds

1 second

1 second

1 second

= 7 seconds



DECISION SPACE

ALLOW AN OUT



Vehicle Speed	Dry Pavement	4-Second Rule	Wet Pavement	4-Second Rule
	Stopping Time	Interval Time	Stopping Time	Interval Time
MPH				
60	4.5 sec	$4+1+1 = 6 \text{ sec}$	6 sec	$4+1+1+1 = 7 \text{ sec}$
45	4 sec	$4+1 = 5 \text{ sec}$	5 sec	$4+1+1 = 6 \text{ sec}$
35	3.6 sec	4 sec	4.5 sec	$4+1 = 5 \text{ sec}$
25	3.4 sec	4 sec	4 sec	$4+1 = 5 \text{ sec}$

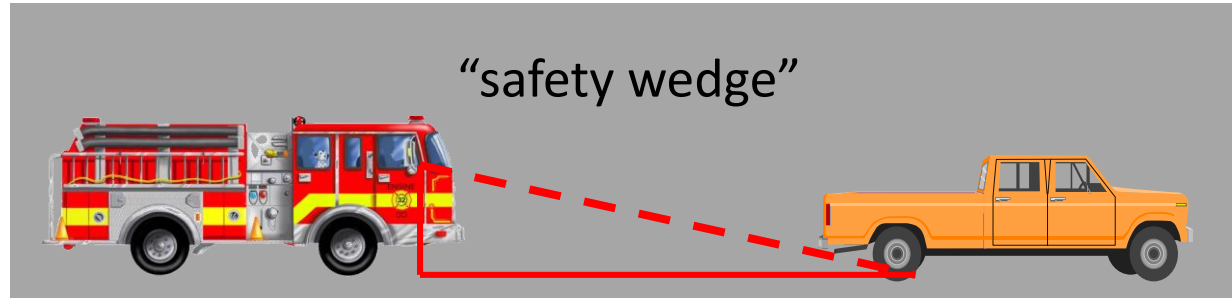
In each situation you have enough time to perceive the hazard, react, and stop.

DECISION SPACE

ALLOW AN OUT

Even when stopped, leave sufficient space between your vehicle and the vehicle ahead:

- Vehicle in front starts to roll back
- Car behind needs more space to stop
- Car ahead becomes disabled
- You get a call!



KEEP YOUR VEHICLE VISIBLE

SMITH SYSTEM



- Know where you are going
- Pick a lane early and stick with it
- Signal your intentions
- Make eye contact
- Pay attention
- Slow down ahead of gridlock



SIPDE

PROACTIVE DRIVING FORMULA



- Sense
 - You need to see/hear/smell/feel it
- Identify
 - Your brain needs to recognize it
- Predict
 - Your brain needs to figure out what is going to happen
- Decide
 - What are your options based upon your prediction?
- Execute
 - Make it happen

DECISION MAKING



seeing
Hearing
Feeling

Knowledge - Training
Experience - Attitude



DECISIONS

BEING THE DRIVER



- Driving an emergency vehicle is the most frequent and one of the most high-risk assignments you can be given.
- Every few seconds there is an independent decision to make that can effect multiple lives.
- Being an emergency vehicle operator can be a fun and exciting assignment – *when taken seriously*.
- Be a student of the profession – absorb knowledge and experience; apply the information!