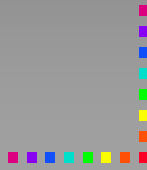


# Safe & Defensive Driving

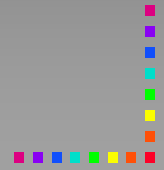


Adapted from the International Law Enforcement Educators and Trainers Association



# Defensive Driving

- So, how does one avoid it? The DDC Formula!
  - Recognize Hazards
  - Understand the Defense
  - Act correctly and timely

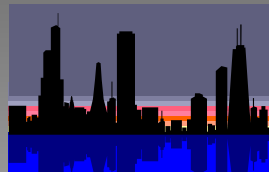


# Defensive Driving

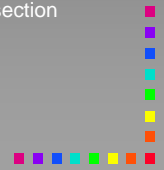
- Definitions
  - Accident - An unplanned, unavoidable event resulting in injury or property damage
    - lightning
  - Collision - An event that is usually avoidable by one or more drivers. That is,
    - one or more drivers **FAILED** apply every reasonable effort to avoid it.



# Defensive Driving



- To recognize the hazards,  
Scan the road in the city
- 1 block ahead
  - or to the next intersection

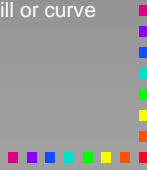


## Defensive Driving



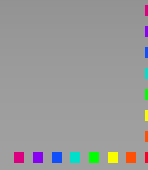
To recognize the hazards,  
Scan the road in the rural  
areas and expressways

- long distances
- next hill or curve



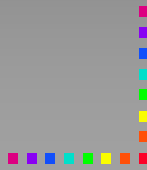
## Defensive Driving

- Understand the Defense
  - After alerted to a hazard -
    - What are you going to do to avoid a collision?



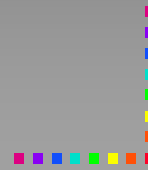
## Defensive Driving

- In all cases, maintain traffic about you,  
checking side and rear view mirrors every  
5 seconds.
  - Be alert
  - Be aware
  - Be prepared
  - No surprises



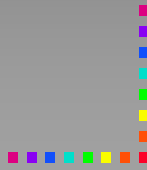
## Defensive Driving

- Act correctly **AND** timely
  - After alerted to a hazard and mentally selected  
a course of action -
    - You must act correctly and timely to avoid the  
collision



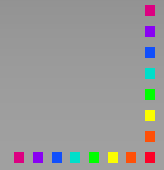
## *Defensive Driving*

- Occupant Protection
  - Manual safety belts
  - Automatic safety belts
  - Airbags
  - Head Rests
  - Child Restraints



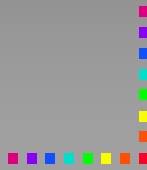
## *Defensive Driving*

- Automatic safety belts
  - You must fasten the lap belt, as the shoulder belt will not do the job alone in a collision



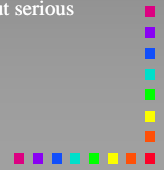
## *Defensive Driving*

- Manual safety belts
  - It's the law for installation, front and rear occupants
  - It's the law for use, front and rear occupants



## *Defensive Driving*

- Safetybelt Information
  - Securely fastened to:
    - Attenuate
    - Keep vehicle control by keeping you in place
    - 45% better chance of survival
    - 50% better chance of survival without serious injury



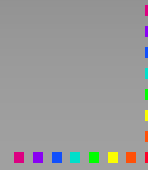
## *Defensive Driving*

- Excuses/Myths
  - Good Driver - 1:3
  - Brace - 30 m/h, 165 lb., 3 tons. 10 m/h, 200 lbs. cement, 1 story
  - Trapped/Submerged - 0.5% involve fire or submersion
  - 25x greater probability of being ejected
  - Forget - 23 consecutive times, it's a habit



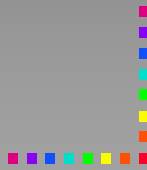
## *Defensive Driving*

- Headrests
  - Padded area even with back of head



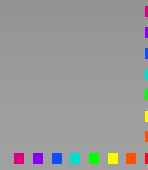
## *Defensive Driving*

- Air Bags - Not intended to work alone
  - Offer supplemental protection for front occupants in an head-on collision
  - 12 m/h, 0.01 second inflation
  - NaA z - N<sub>2</sub> (78%)



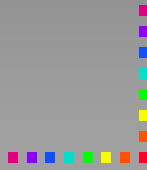
## *Defensive Driving*

- Child Restraints
  - 50 States - it's the law
  - Birth - 9 months, infant. Backwards and reclined.
  - 9 months - 40 lbs., toddler
    - harness in wrap around
    - Shield
    - Booster
  - > 4 years, use car safetybelts



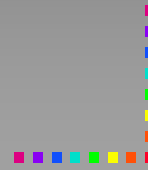
## *Defensive Driving*

- The Driver's Age
  - <25, 28%
    - quicker to react, BUT
    - slow to detect or recognize hazards



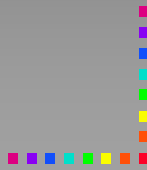
## *Defensive Driving*

- The Driver's Age (Continued)
  - 54 and older
    - 2020, 20% > 65
    - more experience
    - stress/fatigue influenced
    - 33% > 55



## *Defensive Driving*

- The Driver's Age (Continued)
  - 25 - 54
    - destination tend to have a purpose
    - more experience
    - stress/fatigue influenced



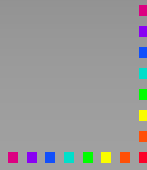
## *Defensive Driving*

- The Driver's Hearing
  - Inability to hear emergency vehicle sirens.
  - Difficulty hearing horns and traffic sounds.
- To compensate for hearing impairments:
  - Keep the volume of the radio down.
  - Keep the level of conversation low.
  - Check the mirrors more frequently, every three to five seconds.



## *Defensive Driving*

- Illness
  - Lower attention level
  - Slower response time.
  - Concentration on driving less acute.
  - Medications to alleviate symptoms affect mental functions.



## *Defensive Driving*

- Fatigue and drowsiness
  - Fatigue - a weakness or weariness resulting from physical exertion or prolonged stress.
    - both physical and mental (psychological)
  - Drowsiness - a state of lowered consciousness, reduced alertness, and dulled perception.



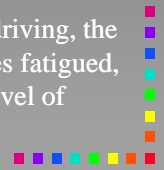
## *Defensive Driving*

- To compensate for illness
  - If you are not feeling well, don't drive.
  - If you must drive, be especially cautious.
  - Don't drive long distances, if possible.
  - If you are taking medication, know the side effects and potential affects on driving ability. Do not drive if the prescription advises against it.



## *Defensive Driving*

- Causes
  - Monotony
  - Tight schedules
  - Heavy traffic
  - Bad weather
- After 2 - 4 hours of continuous driving, the Central Nervous System becomes fatigued, senses become dulled, and the level of perception is lowered.



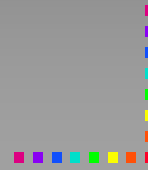
## *Defensive Driving*

- Highway Hypnosis
  - A state of drowsiness caused by lack of visual and physical stimulation while driving.
    - Straight, monotonous roads.
    - Driving alone at night.
    - Being surrounded by the monotonous engine sound.



## *Defensive Driving*

- If you are the driver, you will be more likely to become drowsy if passengers are sleeping.
  - Ask the person in the passenger seat to stay awake and talk with you to keep you alert.



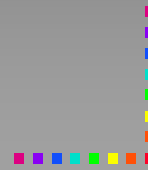
## *Defensive Driving*

- Defenses for fatigue and drowsiness
  - Recognize the characteristics of fatigue and drowsiness.
  - Allow enough time for travel and rest periodically.
  - Take rest breaks.
  - Adjust the seat and use firm pillows to support your back.
  - Open the window for fresh air.
  - Listen to the radio.



## *Defensive Driving*

- Psychological Conditions
  - Stress
  - Emotions
  - Attitude



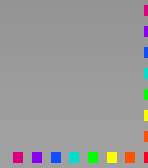
## *Defensive Driving*

- Stress
  - Reduces your concentration on the driving task.
  - Creates mental fatigue slowing reaction time.
  - Causes erratic or irrational maneuvers.
  - Causes intolerance of other drivers.



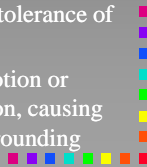
## *Defensive Driving*

- Attitude
  - Aggressiveness (Me-first)
  - Inattentiveness



## *Defensive Driving*

- Emotions
  - Any strong emotion, even positive ones, can affect driving.
  - Worrying can cause the driver to be preoccupied with the problems, not driving.
  - Anger can cause impatience and intolerance of other drivers.
  - Positive emotions, like a job promotion or raise, can result in mental distraction, causing the driver to be unaware of the surrounding traffic environment.



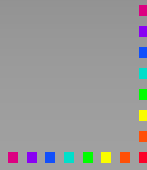
## *Defensive Driving*

- What can you do to keep stress, emotions and attitude from affecting driving?
  - recognize your frame of mind. If highly emotional, agitated or stressed out, don't drive.
  - Talk out the situation.
  - Let someone else drive. If you must drive, sit in your vehicle for a while before you start out.
  - Take deep breaths and calm down.
  - Once on the road, keep your speed down and add a second or two between you and the vehicle ahead of you.
  - If you can, avoid driving in congested areas - aggravation.



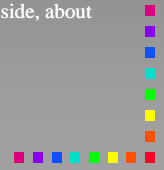
## *Defensive Driving*

- 5 characteristics of a defensive driver
  - Knowledge
  - Alertness
  - Foresight
  - Good judgment
  - Skill



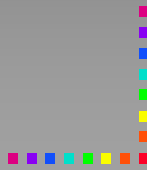
## *Defensive Driving*

- Alertness
  - Aware of how our own physical or mental condition could affect driving.
  - 100% of our attention. Staying alert to the traffic situation by
    - checking your mirrors, rearview and side, about every five seconds.



## *Defensive Driving*

- Knowledge
  - Knowing the traffic laws.
  - Knowing how to avoid a collision.
  - Knowing how to recognize hazards.
  - Knowing how to act correctly in time.



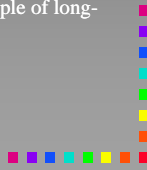
## *Defensive Driving*

- Foresight
  - The ability to anticipate and prepare for hazards.
  - Sizing up traffic situation as far ahead as possible.
  - Anticipating hazards that are likely to develop.
  - Deciding whether changes in the driving situation will be a threat to your safety.



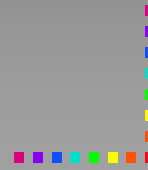
## *Defensive Driving*

- There are two kinds of foresight:
  - Immediate.
    - Scanning the road ahead is an example of immediate foresight.
  - Long-range.
    - Wearing a safety belt is another example of long-range foresight.



## *Defensive Driving*

- Skill
  - The ability to operate a vehicle properly and safely.
  - There is only one reliable substitute....



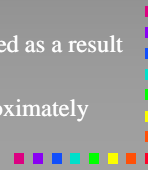
## *Defensive Driving*

- Good judgment
  - Looking for alternatives in any traffic situation.
  - In control of their behavior.
  - Passing when it is safe.
  - Not making risky maneuvers.
  - Sometimes those actions and choices are limited, but good judgment means using good sense and intuition to choose wisely and quickly.



## *Defensive Driving*

- Drugs and Alcohol
  - At anytime in the U.S. one out of every 50 drivers on the road is not just impaired but illegally intoxicated.
  - During the weekend nights the number is closer to 1 in 10.
  - Last year, 16,000 people were killed as a result of impaired driving. (EtOH only)
  - The national average/state is approximately 7,500 DUI convictions/annum.



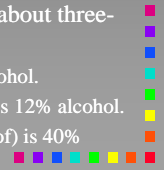
## *Defensive Driving*

- Myths about alcohol
  - Drinking coffee will sober up the drinker.
    - Coffee only makes a wide awake drunk.
  - Strenuous exercise will make the drinker sober.
    - Exercise makes a hot, sticky, drunk.
  - Cold showers will make the drinker sober.
    - Makes a cold, wet drunk.
  - A cold swim will sober up the drinker.
    - Sometimes, could make a dead drunk.



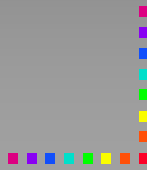
## *Defensive Driving*

- What is alcohol?
  - Alcohol is a depressant that affects the CNS.
  - Principal ingredient is "ethyl" alcohol.
  - Regardless of the drink, beer, wine, or distilled spirits, the chief components are ethanol and water. The typical drink contains about three-fifths of an ounce of alcohol.
    - one twelve ounce beer that is 5% alcohol.
    - one 5 ounce glass of table wine that is 12% alcohol.
    - one ounce of distilled spirits (80 proof) is 40% alcohol.



## *Defensive Driving*

- What sobers up a drinker?
  - A drinker will only sober up after the liver has processed the alcohol, and that takes time.



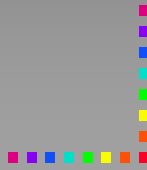
## *Defensive Driving*

- The Process
  - When alcohol is ingested, 5% enters the blood stream directly through mouth/throat tissues.
  - The small intestine absorbs the largest percentage (80%).
  - Less than 10% is eliminated by the kidneys, lungs, and skin.
  - 2 - 5% is passed unchanged by bodily functions.
  - Liver eliminates the other 90% through oxidation.



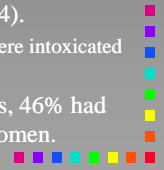
## Defensive Driving

- Alcohol and Driving
  - How can drinking alcohol affect Driving ability?
    - Judgment
    - awareness (cognitive functions)
    - vision
    - response time



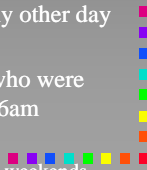
## Defensive Driving

- Alcohol and Driving Facts (Continued)
  - Impaired driving contributes to nearly 50% of all fatal collisions.
  - Alcohol related crashes more likely to involve men than women.
  - Rates are highest for males (21 - 24).
    - For drivers in that age group, 35% were intoxicated with a BAC > 0.10%.
  - Among fatally injured male drivers, 46% had BACs of 0.10 or more, 23% for women.



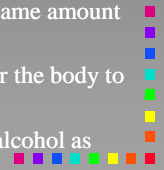
## Defensive Driving

- Alcohol and Driving Facts
  - Alcohol involvement increases greatly at night and on weekends.
  - 48% of all motor vehicle deaths occur between 3 p.m. and midnight.
  - More occur on Saturday than on any other day of the week.
  - Among passenger vehicle drivers who were fatally injured between 9 p.m. and 6am
    - 63% have BACs at or above 0.10%.
    - 50% have BAC at or above 0.10% on weekends



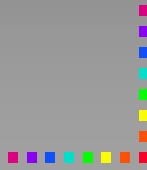
## Defensive Driving

- Alcohol and Driving Facts (Continued)
  - A drink is defined as:
    - a 12 oz. can of beer (5% alcohol content)
    - One and one half oz. of 80 proof distilled spirits
    - a 5 oz. glass of 12% alcohol content wine.
  - Each of these drinks contains the same amount of alcohol.
  - It takes approximately one hour for the body to eliminate one drink.
  - Lite beer has the same amount of alcohol as regular beer.



## *Defensive Driving*

- Judgment
  - It can affect spatial perception.
  - Impaired judgment can result in greater risk taking, like pulling out in front of another vehicle when it is not safe to do so.



## *Defensive Driving*

- Cognitive Functions (Continued)
  - Impaired drivers tend to stare at objects, unable to maintain mental focus.
  - Impaired drivers change speeds without reason and make frequent lane changes.
  - They may overshoot a stop sign or completely disregard it.



## *Defensive Driving*

- Cognitive Functions
  - Impaired drivers tend to scan their environment less often.
  - Have difficulty dividing attention and competently performing more than one task at a time.
  - Impaired drivers frequently forget to turn on headlights, or lower their brights.



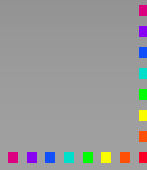
## *Defensive Driving*

- Vision
  - Impaired vision affects normal rapid eye movement. REM assists in peripheral vision.
    - Impaired rapid eye movement results in tunnel vision. This can cause a driver to see less on either side or to be less attentive to what the eyes see.
  - Alcohol impaired vision may also cause night blindness or glare blindness. It takes longer for eyes to readjust from partial darkness to a brightly lit environment.



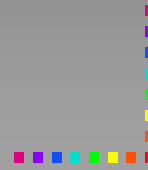
## *Defensive Driving*

- Response time.
  - Response time is profoundly slowed.
  - Driver's critical thinking skills inhibits quick decisions.



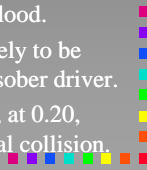
## *Defensive Driving*

- Drugs
  - There are five basic groups of drugs.
    - depressants
    - stimulants
    - narcotics
    - hallucinogens
    - cannabis



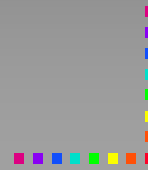
## *Defensive Driving*

- Measured in BAC
  - BAC refers to the % of alcohol in the blood.
  - Measured by the concentration of alcohol in the breath, blood or urine.
  - A BAC reading of 0.10 is like having one drop of alcohol in 1,000 drops of blood.
  - BAC of 0.10, seven times more likely to be involved in a fatal collision than a sober driver.
  - BAC of 0.15, 25 times more likely, at 0.20, 100 times more likely to have a fatal collision.



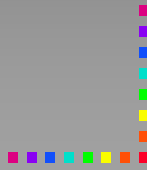
## *Defensive Driving*

- Depressant
  - Affects the CNS, depresses cardiovascular and pulmonary functions. Some depressants are:
    - alcohol
    - antihistamines
    - barbiturates
    - tranquilizers



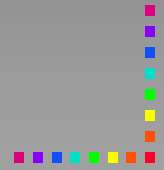
## *Defensive Driving*

- Depressants can affect driving ability by:
  - Slowing down reaction time.
  - Depressing motor skills.
  - Causing drowsiness.
  - Reducing alertness.
  - Impairing coordination.



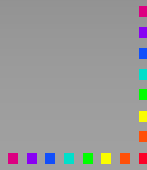
## *Defensive Driving*

- Many drivers use stimulants to "help them stay awake." However, stimulants mask natural fatigue.



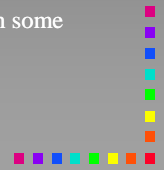
## *Defensive Driving*

- Stimulants
  - amphetamines
  - cocaine
  - caffeine tablets
  - diet pills



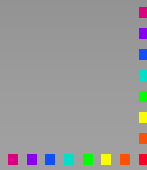
## *Defensive Driving*

- Stimulants can cause a driver to:
  - overreact.
  - feel a false sense of driving capability, leading to high risk behaviors.
  - be aggressive and hostile toward other drivers.
  - become impatient and impulsive in some situations.



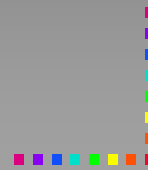
## *Defensive Driving*

- Narcotics
  - heroin/opium
  - morphine
  - methadone



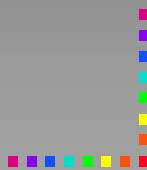
## *Defensive Driving*

- Hallucinogens
  - LSD
  - Mescaline
  - PCP



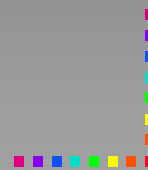
## *Defensive Driving*

- Effects on driving:
  - high risk behavior resulting from the drugs' tendency to release inhibition.
  - difficulty in focusing because of constricted pupils, impairing vision.
  - loss of concentration.
  - slowed reaction time.
  - blurred and/or double vision
  - visual distortion
  - impaired motor skills



## *Defensive Driving*

- The effect of these drugs on driving are:
  - unpredictable reactions.
  - high-risk behavior.
  - aggressive, violent behavior.
  - visual distortion.
  - time and distance distortion.
  - impaired short term memory.
  - delayed reaction time.



## *Defensive Driving*

- Synergism -
  - For example, alcohol and sleeping pills are both depressants and the ingestion of both would intensify the effect of depressing the CNS.
  - Never combine prescription drugs unless your physician has prescribed them together.
  - It is YOUR responsibility to refrain from driving under the influence of any drugs that impair driving skills.



## *Defensive Driving*

- Defending against impaired driving and drivers. (Continued)
  - overshooting or disregarding traffic control signals.
  - approaching a traffic signal with an uneven motion.
  - driving at night without lights.
  - failure to dim lights to on-coming traffic.



## *Defensive Driving*

- Defending against impaired driving and drivers. Watch them!
  - unreasonably high & inconsistent driving speeds.
  - frequent lane changing at excessive speed.
  - improper passing (not enough room to pass).
  - slow driving or excessive swerving when overtaking or passing.



## *Defensive Driving*

- If you observe an impaired driver:
  - if ahead, maintain a safe following distance.
  - don't try to pass, as they may swerve into you.
  - if behind you, turn right at the next intersection and let them pass.
  - if coming toward you, slow down, move right.
  - report suspected impaired drivers to the nearest law enforcement agency.
  - **always** wear your safety belt.



## Defensive Driving

- Laws and consequences of a DWI
  - You can be charged and convicted of DWI at any BAC level if driving indicates that they are under the influence or impaired. In Texas, the illegal BAC level is 0.08.
  - Penalties for DWI include:
    - fines (first offense misdemeanor).
    - possible dependency assessment and counseling.
    - suspension of driving privileges.
    - possible jail time
    - insurance, **AND**

## Defensive Driving

- Driving Conditions - Stopping distance
  - Varies as a function of speed, condition of the driver, the road, the weather, and the vehicle.
  - To determine the average stopping distance of a passenger car when all conditions are good, add reaction distance and braking distance.

## Defensive Driving

*Attorney fees*

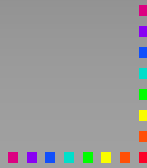


## Defensive Driving

- Reaction distance
  - Measured in feet, defined as the length of time it takes the visual information to be processed, and motion/action begins.
  - Average reaction time is approximately three quarters of a second. To convert  $t - x$ ;
  - Take the first digit of your speedometer reading and add it to your total speed.
    - At 20 mph, your vehicle will travel 22 feet
    - At 55 mph, 60 feet
    - At 65 mph, 71 feet

## Defensive Driving

- Reaction distance (Continued)
  - This is the number of feet the vehicle will travel between the time you perceive a hazard until you get your foot on the brake. Once your foot reaches the brake pedal, you must overcome the vehicles inertia.



## Defensive Driving

- Following Distance
  - The faster you drive, the longer it takes you to stop.
  - To measure, front bumper of your vehicle to back bumper of the vehicle ahead.
  - The two second Rule
    - Enough time to stop in case the driver ahead stops suddenly.



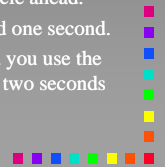
## Defensive Driving

- Braking Distance
  - The distance the vehicle travels once the brake is applied. Function of  $m$ ,  $v$ ,  $F_k$ .
    - At 20 mph, reaction distance = 22 feet. Add 18 to 20 feet for braking distance = 40 to 42 feet total stopping distance.
    - At 55 mph, reaction distance is 60 feet, braking distance is 132 to 164 feet, = total stopping distance is 192 to 224 feet.
    - At 65 mph, reaction distance is 71 feet, braking distance is 196 to 245 feet = total stopping distance is 267 to 316 feet.



## Defensive Driving

- Following Distance (Continued)
  - Two second plus rule
    - If you are being tailgated by another car add two seconds from the vehicle ahead of you.
    - If you are being tailgated by a tractor-trailer or bus, you'll need six seconds from the vehicle ahead.
    - If you are following a motorcycle add one second.
    - Only under perfect conditions should you use the two second rule. Any other time use two seconds plus.



## *Defensive Driving*

- Following Distance (Continued)
  - You also need to add following distance whenever you are towing a trailer.
    - add one second following distance for every 10 feet of additional vehicle length. However, never add less than two seconds.
  - Add one second for loss of traction due to wet pavement.
  - Add one second for reduced visibility.



## *Defensive Driving*

- Conditions of the Vehicle
  - The vehicle and the driver are the only conditions that we can control. Before getting into a vehicle,
    - walk around it and check the tires.
    - check for leaks under the engine that may have dripped onto the pavement.
    - Give your vehicle a once over look for any obvious problems that could cause a breakdown.



## *Defensive Driving*

- Conditions that affect Driving
  - Vehicle
  - Light
  - Weather
  - Road
  - Traffic



## *Defensive Driving*

- Vehicle conditions that could cause a collision
  - Worn tires
  - Dim or non-functional head and tail Lights.
  - Bad or faulty brakes.
  - A poorly maintained vehicle might not respond properly in an emergency.



## Defensive Driving

- It is your responsibility to maintain your vehicle. Even if you are not a "mechanic" there are things that you can check every time you get into the car
  - Horn
  - Windshield
  - Wipers
  - Washer fluid
  - Taillights



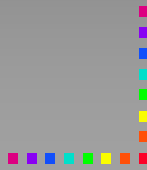
## Defensive Driving

- Light conditions affecting driving
  - > than 50% of fatal collisions occur at night.
    - Not enough light.
    - Too much light.
- When would you encounter Insufficient light conditions?
  - At night, dusk, dawn



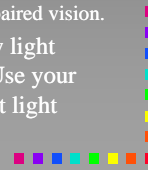
## Defensive Driving

- Head lights
- Hazard lights
- Directional signals
- Tire pressure
- Engine fluid levels
- Safety belts



## Defensive Driving

- Light conditions affecting driving
  - Common error - over driving headlights.
    - stop in the distance lighted by your headlights.
  - If an oncoming vehicle's headlights blind you;
    - it could take your pupils 4 -7 seconds to readjust.
    - If driving 55 m/h, 360-560' with impaired vision.
  - The most important defense in low light conditions is to **see** and be **seen**. Use your headlights whenever you think that light conditions are poor to be seen.



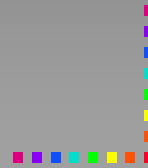
## *Defensive Driving*

- Oncoming vehicle has brights on;
  - Slow down, increase your following distance.
  - Look right for the white line or road edge until the vehicle has passed.
- Vehicle behind you has brights on;
  - Adjust your rear view mirror, slow down to allow the driver to pass



## *Defensive Driving*

- Snow glare.
  - Wear sunglasses and use your sun visor.



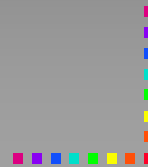
## *Defensive Driving*

- Too much light at dawn, daytime, or dusk.
  - If you are driving into the setting or rising sun, reduce speed.
  - Adjust sun visor down and forward to block the sun.
  - Wear sunglasses to combat the glare.
  - Be sure your windshield is clean, both inside and out.



## *Defensive Driving*

- Weather conditions that affect Driving.
  - Weather conditions can affect visibility and the road surface. Again, you want to be able to see, be seen, and recognize the condition of the road.
    - Rain
    - Snow
    - Ice/sleet
    - Wind
    - Fog, smoke, dust



## *Defensive Driving*

- Rain
  - Rain, snow, sleet, and fog all make the road slick, inducing hydroplaning.
  - Occurs when tires are not in full contact with the road, but riding on a layer of water and/or oil on the road.
  - When water first hits the pavement, it enters the pores of the concrete or asphalt, forcing up the oil that collects in the pavement.



## *Defensive Driving*

- Rain (Continued)
  - To prevent your vehicle from hydroplaning:
    - Keep your tires properly inflated and be sure they have good tread.
    - Slow down the minute it starts to rain.
    - Drive in the tracks left by the vehicle ahead of you.



## *Defensive Driving*

- Rain (Continued)
  - Hydroplaning occurs frequently in a light mist or drizzle.
  - Hydroplaning develops from a combination of factors:
    - Speed
    - Water or an oil slick on pavement
    - Poor tire tread depth and pressure
    - Road surface



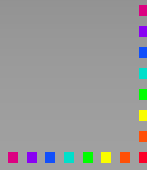
## *Defensive Driving*

- Rain (Continued)
  - Be aware of signs that your vehicle is hydroplaning:
    - Absence of a slushing sound
    - Decrease in steering or braking ability.



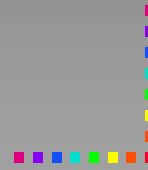
## *Defensive Driving*

- Rain (Continued)
  - If your vehicle is hydroplaning:
    - Slow down immediately by easing your foot off the accelerator.
    - Don't make sudden moves that could cause you to skid.
    - Don't hit the brakes.



## *Defensive Driving*

- Snow (Continued)
  - Improve visibility:
    - Clear the entire car of any accumulated snow.
    - Clean the roof.
    - Clean all windows and wipers.
    - Clear all lights, front and back.



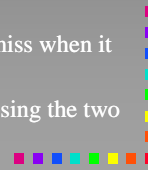
## *Defensive Driving*

- Snow
  - Reduced visibility and traction.
    - When a vehicle begins to skid, turn the wheel in the direction you want your vehicle to go.
    - If your vehicle continues to skid, take your foot off of the brake.
    - Have the necessary equipment in your trunk in case you get stuck.



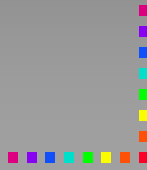
## *Defensive Driving*

- Snow (Continued)
  - Turn on the front and rear defrosters to reduce condensation.
  - To be seen in falling snow, use your low-beam headlights, even in the daytime.
    - Avoid using high beams.
  - Slow down. Hazards are easy to miss when it is snowing heavily.
  - Increase your following distance using the two Second plus rule.



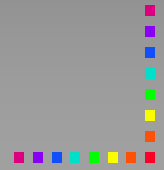
## *Defensive Driving*

- Ice and sleet
  - These conditions can reduce or totally eliminate your traction.
  - Ice is twice as slippery at 30°F as at 0°F.
  - Know where to expect ice:
    - Bridges
    - Overpasses
    - Shady areas
      - cold air circulating around the surfaces.



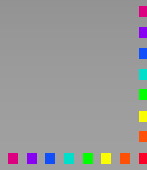
## *Defensive Driving*

- Ice and sleet (Continued)
  - Two basic rules:
    - slow down. Your braking distance will be doubled
    - don't make any sudden movements.
  - When you see a patch of ice ahead:
    - let up on the accelerator.
    - keep your speed and direction.



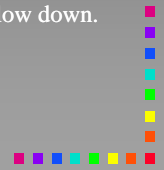
## *Defensive Driving*

- Ice and sleet (Continued)
  - Look ahead, know what is going on in advance.
  - Watch other drivers who may be experiencing trouble.
  - Increase your following distance.



## *Defensive Driving*

- Wind conditions
  - Headwind - Slow down, keep a firm grip on the steering wheel.
  - Tailwind - Tend to build vehicle's velocity. Brake earlier.
  - Crosswinds - Grip wheel firmly, slow down.
  - Blocked wind gusts:
    - a large vehicle
    - a building, or an underpass
    - tops of hills and bridges.



## Defensive Driving

- Fog
  - Low areas, near bodies of water
  - If the fog is light:
    - Slowdown.
    - Increase your following distance.
    - Be prepared for vehicles, pedestrians or animals to appear out of nowhere.
    - Keep as far to the right as you can in case an on-coming vehicle is crowding the centerline.
    - Use your low beam headlights and wipers.



## Defensive Driving

- Condition is the road.
  - Physical Characteristics of the road
    - Shape
    - Surface
    - Shoulder



## Defensive Driving

- Fog
  - If the fog is thick:
    - It would be best to get off of the road.
    - Signal your exit off the road.
    - Flash your brake lights several times to warn the drivers behind that you are going to stop.
    - Get off the road completely, into a safe spot, out of the traffic lane.
    - Make your car visible (emergency flashers)
    - Keep your safety belt fastened even if you are not moving.



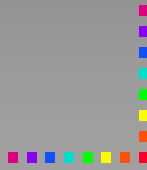
## Defensive Driving

- Condition is the road.
  - Shape of the road
    - hilly, flat, narrow or wide, twist and turn or is it straight?
    - Hills and curves, which may hide hazards.
      - Blind intersections.
      - Stalled vehicles.
      - Stopped school buses.



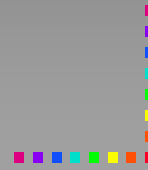
## *Defensive Driving*

- Condition is the road.
  - Surface of the road
    - The surface affects the driver's ability to control the vehicle.
    - Different road surfaces require different speeds and maneuvering.
  - Shoulder of the road
    - emergency.



## *Defensive Driving*

- Condition is the road.
  - Road construction
    - Other drivers may become impatient and act irresponsibly and impulsively.
    - Stay at the posted speed limit, may be ticketed at double the normal fine.



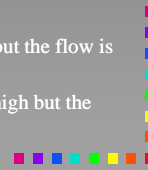
## *Defensive Driving*

- Condition is the road.
  - Road construction
    - Slow down and increase following distance.
    - Lane markings may be changed, unclear, or not there.
    - Lanes may be narrower.
    - The shape, shoulder and surface could change.
    - There may be construction workers and barricades lining the construction zone.



## *Defensive Driving*

- Traffic.
  - Most dangerous - midnight until 2:00 a.m. Sunday
  - Impaired drivers. 1:3
  - Traffic conditions are also determined by the area.
    - In rural areas, the speeds are higher but the flow is lighter.
    - In urban areas the speeds are not as high but the traffic is dense.



## *Defensive Driving*

- Traffic.
  - Traffic pace is determined by speed limits.
    - It is important to keep up with the traffic flow, but
    - It is not legal or safe to exceed the speed limit.
  - The vehicle mix also can affect traffic.
    - Large vehicles require a greater distance to stop at any speed.
      - Give them plenty of room (twice the distance as normal)



## *Defensive Driving*

- Head-on Collisions (Continued)
  - One of the most common causes of head-on collisions is improper overtaking or passing.
    - Unsafe or illegal to pass another vehicle;
      - Stopped school bus with signals.
      - No-passing zones.
      - School zones.
      - On railroad crossings or 100 feet on either side.
      - In intersections or 100 feet on either side.
      - In tunnels or 100 feet on either side.



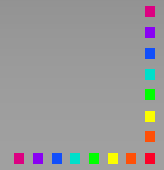
## *Defensive Driving*

- Head-on Collisions
  - Last year, 5,100 people died in head-on collisions.
  - Some not wearing their safety belts.
  - Some did not know how to act correctly in time to avoid a fatal head-on collision.



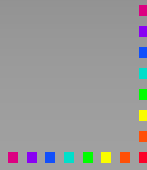
## *Defensive Driving*

- Head-on Collisions (Continued)
  - On many bridges or 100 feet on either side.
  - In curves with passing restrictions.
  - On highways with solid lines (yellow or white).
  - Within 100 feet of the crest of a hill.



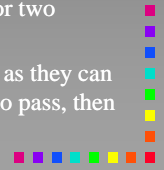
## *Defensive Driving*

- Why do people pass ?
  - Late for work.
  - Emergency.
  - Habit.
  - Leader of the pack.
  - The other driver is going too slow.
  - A "me-first" attitude.



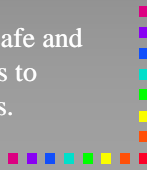
## *Defensive Driving*

- Maneuvers of a safe pass
  - Maintain a proper following distance.
  - Proper following distance is determined by the conditions, the type of vehicle that is ahead of you and the vehicle that you are driving. Remember to use the two second or two second plus rules.
  - Frequently, drivers get up as close as they can behind the vehicle they are going to pass, then dart out from behind.



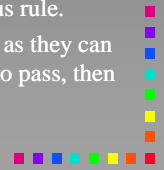
## *Defensive Driving*

- Majority of passes are not necessary.
  - Before you begin, ask yourself, "Is this pass necessary?"
    - In other words, by not passing what are you going to lose?
    - Are you going to cause a hazard?
- If making the pass is necessary, safe and legal, there are 3 basic maneuvers to execute to complete a proper pass.



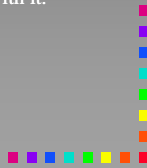
## *Defensive Driving*

- Maneuvers of a safe pass (Continued)
  - Maintain a proper following distance.
  - Proper following distance is determined by the conditions, the type of vehicle that is ahead of you and the vehicle that you are driving. Remember, use the two second plus rule.
  - Frequently, drivers get up as close as they can behind the vehicle they are going to pass, then dart out from behind.



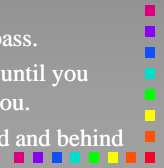
## Defensive Driving

- Maneuvers of a safe pass (Continued)
  - Why is this hazardous?
    - Because the closer you are to the vehicle ahead the less you can see down the road ahead.
    - If the vehicle ahead suddenly stops, you will be too close to stop safely before colliding with it.



## Defensive Driving (Continued)

- Maneuvers of a safe pass
  - If the vehicle in the on-coming lane and our vehicle are both traveling at 55 miles per hour, the distance between the vehicles is closing at a speed of 110 m/h. To complete the proper pass takes more than 1 mile.
  - Look behind before you begin to pass.
  - Check ALL mirrors. Don't move until you know the traffic situation behind you.
  - Signal left, to alert the traffic ahead and behind that you are about to pass.



## Defensive Driving

- Maneuvers of a safe pass (Continued)
  - While maintaining a proper following distance:
    - Look ahead, look behind.
    - Signal left.
    - Check blind spots.
  - Make sure you scan the oncoming traffic situation, and the traffic behind your vehicle.



## Defensive Driving

- Maneuvers of a safe pass (Continued)
  - Before you move left, check your blind spots.
    - A blind spot is an area behind or on either side of the driver that can't be seen by the driver
    - With the use of mirrors.
  - Changing lanes in any situation before checking your blind-spot invites a collision with the vehicle behind or a side-swipe collision.



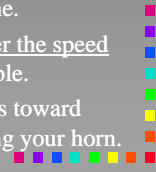
## Defensive Driving

- Maneuvers of a safe pass (Continued)
  - To check blind spots turn your head 90 degrees and check over both shoulders. Check left to move left, check right to move right.
  - Don't remain in the blind spots of other drivers and remember that larger vehicles.
  - Look for smaller vehicles that weren't visible in the mirrors. If you neglect to check the blind spots and mirrors you may have a collision with a vehicle that is trying to pass you.



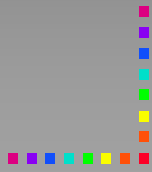
## Defensive Driving

- Maneuvers of a safe pass (Continued)
  - Moving left on a 2 lane is the most hazardous part of passing (exposed to on-coming traffic)
  - When you are moving into the left lane, give the vehicle ahead plenty of room. Move your vehicle completely into the left lane.
  - Then, increase your speed, not over the speed limit, and pass as quickly as possible.
  - If the vehicle you are passing drifts toward your lane, communicate, by tapping your horn.



## Defensive Driving

- Maneuvers of a safe pass (Continued)
  - If everything is clear, you may begin with the second maneuver in passing.
  - Move left into passing lane.
  - Increase speed.
  - Communicate if necessary.
  - Signal right.
  - Check blind spot again



## Defensive Driving

- Maneuvers of a safe pass (Continued)
  - After completely passed the vehicle, signal your intentions.
  - Check blind spot again.
  - To make sure we don't cut back in too soon.
  - To be sure the driver we are passing hasn't sped up to prevent us from completing the pass.
  - On multi-lane expressways, a driver in a right lane may be moving over to the same lane.



## Defensive Driving

- Maneuvers of a safe pass (Continued)
- Complete the pass
  - Move right.
    - If everything is clear, complete the pass. Move right when pavement in front of the vehicle you are passing is visible in your inside rear-view mirror.
    - If a larger vehicle, more distance.
    - Larger vehicles need more stopping distance than passenger cars. At 60 miles per hour it will take a tractor-trailer, with a medium weight load, a dry roadway, and brakes and tires in good condition, approximately 426 feet to come to a complete stop.



## Defensive Driving

- Head-on collisions
- Most apt to produce fatalities.
- To avoid being involved in a head-on you have to recognize potential hazards that might cause you or another driver to cross the center line into on-coming traffic.



## Defensive Driving

- Maneuvers of a safe pass (Continued)
- Complete the pass
  - Cancel signal.
    - When back into the right lane, cancel signal. You may have to turn the signal off manually.
    - If the signal continues to operate after completing the pass, other drivers will be confused of your intentions.
  - Maintain proper speed.
    - When you are back in the right lane and canceled your signal, make sure you maintain the proper speed. Don't slow down or speed up; keep at least two seconds between your vehicle and the other vehicles.



## Defensive Driving

- Faulty driving maneuvers?
  - Poor passing judgment.
  - Left turns directly into the path of an on-coming vehicle.
  - Wide right turns.
  - Failure to correctly interpret markings.
  - Over correcting from a right wheel dropping off the pavement.
  - Driving around a curve too fast for conditions.



## Defensive Driving

- Conditions and/or obstructions that may cause a driver to cross the center line?
  - Obstructions in other lanes (road condition).
  - Cannot see the center line .
  - Tire blowouts (vehicle condition).
  - Impaired driving (driver condition).
  - Construction barriers/debris in the road.
  - Pedestrians or cyclists.
  - Another vehicle parking or leaving the curb.



## Defensive Driving

- Avoidance Defenses - the 4 Rs (Continued)
  - Next, drive to the right.
    - Don't drive close to the center line.
    - Make it a habit to drive slightly right.
      - To enable you to get to the shoulder or the side of the road faster if an on-coming vehicle is in your lane.
    - On a four-lane highway, drive in the least hazardous lane. (read the road) to determine the best lane to drive in. Usually, far right lane.
    - If you see an on-coming vehicle in your lane, move to the right. This will move you away from the on-coming vehicle.



## Defensive Driving

- Avoidance Defenses - the 4 Rs
  - Read the road ahead.
    - To be aware of on-coming traffic.
    - To be alert for problem of other drivers.
    - To be alert for hazardous conditions ahead.
    - Look to the next hill or curve.
    - If you are driving in an uncongested rural area, use longer visual scanning techniques.
    - Look to the next intersection or block ahead.
    - If you are driving in a congested urban area, use shorter scanning techniques.



## Defensive Driving

- Avoidance Defenses - the 4 Rs (Continued)
  - Third, reduce your speed.
    - If an on-coming vehicle veers into your lane;
      - Slow down & sound your horn. By slowing, the erring driver may have time to get back into his or her lane.
      - Continue slowing, and be prepared to stop. This step can be done while driving to the right.
    - On a four-lane highway, drive the least hazardous lane (read the road). Again, usually far right lane.
    - If you see an on-coming vehicle in your lane, move right. This will you more room to move out of the way.



## Defensive Driving

- Avoidance Defenses - the 4 Rs (Continued)
  - Fourth, ride off the road onto the shoulder or into the ditch if necessary
    - If the on-coming vehicle is still in your lane, you have only one option left: to ride off the road.
    - Driving off the road into a ditch or onto the shoulder is a lot safer (and survivable) than a head-on collision.
    - Wearing a safety belt is essential in preventing injuries and maintaining control of your vehicle should you have to drive off the road.



## Defensive Driving

- Split second decisions (Continued)
  - Second, drive don't skid off the road
    - Skidding reduces your ability to steer out of the situation.
    - Don't slam on the brakes and twist the steering wheel. Slow down and drive onto the shoulder.



## Defensive Driving

- Split second decisions
  - If you can't get off the road and a head-on is inevitable, use these split second decisions.
    - If the on-coming vehicle is still in your lane, drive right, not left. If the oncoming driver recovers, that driver's first reaction will be to swerve back into his or her lane.
      - If you move to the right, after impact, your vehicle ends up where it is supposed to be.
      - If you move left, after impact, your vehicle is in the left lane, facing the possibility of another head-on.



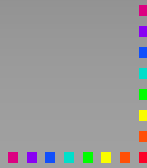
## Defensive Driving

- Split second decisions (Continued)
  - Third, hit something soft, not hard.
    - Hit something soft like bushes or shrubbery.



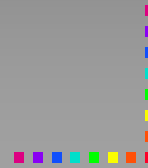
## *Defensive Driving*

- Split second decisions (Continued)
  - Fourth, hit the fixed object with a glancing blow.
    - If your only choice is to hit a fixed object or the on-coming vehicle, hit the fixed object off center
    - Fixed objects have no momentum.



## *Defensive Driving*

- Driving and hazards specifically found in the urban environment.
  - The intersection safety formula.
  - Making safe left and right turns.
  - Right of way at intersections.
  - Intersection traffic control signs.



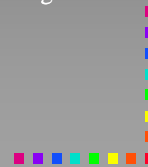
## *Defensive Driving*

- Split second decisions (Continued)
  - Fifth, hit at a glancing blow.
    - If you must hit the fixed object or on-coming vehicle, hit at a glancing blow rather than headman.
    - The physical forces are more intense in a head-on if you hit "nose to nose." So, with every inch you can maneuver your vehicle to hit the fixed object or oncoming vehicle off center, your chances of survival increase.



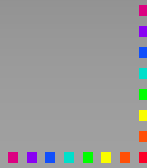
## *Defensive Driving*

- Conditions
  - Let's start out with the conditions of driving.
  - Could someone list the conditions of driving?
  - Vehicle, light, weather, road, and traffic
  - How could the conditions affect driving in the city?



## *Defensive Driving*

- Vehicle:
  - City driving is often stop and go, increases fuel consumption.
  - Parts of the vehicle undergo more wear
  - Poor road surfaces can damage shock absorbers and wheel alignment.



## *Defensive Driving*

- Weather:
  - Seeing clearly is important.
  - pavement markings and signals may become hard to see.
  - pedestrians may be less careful because they are seeking shelter from the bad weather.



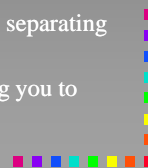
## *Defensive Driving*

- Light:
  - Poor light conditions may create special hazards in the city.
  - sun glare could cause you to miss an important turn signal or make it difficult to see a pedestrian stepping off the curb.
  - at night, you depend entirely on artificial light sources, street lights, and head lights.



## *Defensive Driving*

- Road:
  - City road conditions and surfaces vary.
  - Many streets intersect alleys, driveways, and other streets.
  - Usually the road lacks a shoulder.
  - There may be a line of parked cars separating the traffic lane from the sidewalk.
  - Cars may be double parked, causing you to move into the on-coming lane.



## Defensive Driving

- Dense traffic.
  - There are more vehicles, drivers, pedestrians, and more chances of drivers getting angry or impatient, resulting in poor judgment.
  - To defend yourself:
    - adjust your speed to the traffic, weather, road, and light conditions.
    - during rush hour traffic, maintain proper following distance of at least two seconds when moving.
    - when stopped behind a vehicle, ensure view of rear tire contact with the street.

## Defensive Driving

- Dense traffic (Continued)
  - another way to prevent collisions and aggravation in city driving is to choose your lane sensibly.
  - if there are 2 lanes or more in your direction, stay in the least hazardous lane (read the road).
  - use the left lane for passing or turning left.
  - if there are 3 or more forward lanes, choose one in which affords an even pace, and read the road.
  - don't weave back and forth between lanes.
  - center your car in your lane, avoid crowding other vehicles, and be seen.

## Defensive Driving

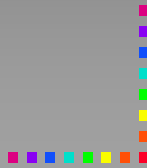
- Dense traffic (Continued)
  - control your emotions and behavior. Delays after a work day make most people feel frustrated. Remember those things you can control and those you cannot.
  - watch out for other drivers. Though you can control your behaviors, other people may not choose to control theirs. Be prepared for inconsiderate behavior from those around you.
  - keep your vehicle in good repair.

## Defensive Driving

- Intersections
  - More than half of all urban crashes occur at Intersections.
    - drivers don't know the rules of right of way, or choose not to follow them.
  - drivers may not slow down when approaching an intersection or look for cross traffic.
  - drivers do not communicate their intentions.
  - drivers believe that a traffic control sign/red light can stop a moving vehicle.

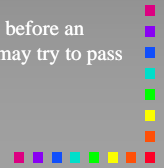
## *Defensive Driving*

- Intersection safety formula
  - To reduce your chances of involvement in an intersection collision, follow these four steps:
    - know, slow, show, go.



## *Defensive Driving*

- Intersection safety formula (Continued)
  - Slow
    - slow down when you approach an intersection,
    - cover the brake with your right foot, this will reduce reaction time, and prepare you to stop in case you spot a hazard.
    - be careful not to slow down too soon before an intersection. The driver behind you may try to pass when it is not safe to do so.



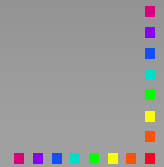
## *Defensive Driving*

- Intersection safety formula (Continued)
  - Know:
    - what's going on around your vehicle: Scan the intersection ahead.
    - where you are going and which lane you should be in to get there.
    - know the laws regarding traffic control devices and right-of-way.



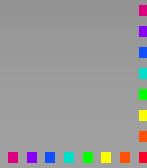
## *Defensive Driving*

- Intersection safety formula (Continued)
  - Show
    - show the other drivers what you are doing. Communicate your plans by lane position and turn signals.



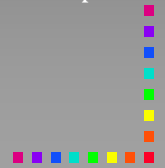
## *Defensive Driving*

- Intersection safety formula (Continued)
  - Go
    - go through the intersection when it is clear, safe and your turn.
    - don't stay in the intersection so long that you become a hazard.



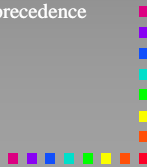
## *Defensive Driving*

- When approaching an intersection where a police officer is directing traffic:
  - slow down and cover the brake.
  - scan all intersecting streets.
  - be alert for other drivers who may misinterpret or disregard the police officer.



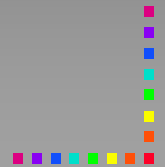
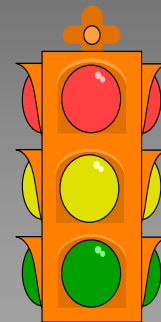
## *Defensive Driving*

- Traffic controls and intersections
  - means of controlling the flow of traffic at intersections.
  - most common city and suburban traffic controls?
    - police officer directing traffic (takes precedence over all other traffic controls)
    - traffic light
    - stop sign
    - yield sign



## *Defensive Driving*

Traffic lights



## Defensive Driving

- Traffic lights
  - Red light
  - A red light means come to a complete stop.
  - If you are make a right turn onto a two way street, or a left from a one-way onto a one-way street, you must first stop. After a complete stop and in the absence of a sign prohibiting a left or right turn, check cross traffic, yielding to pedestrians, vehicles, and then turn if clear and safe to do so.



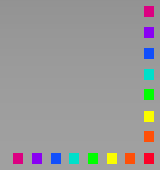
## Defensive Driving

- Yellow light
  - If you are in the intersection or that stopping would cause a collision, proceed through. In many states, it's illegal to accelerate across a yellow light if there is enough distance to stop.
  - When you are approaching a yellow light:
    - slow down.
    - cover your brake.
    - be prepared to stop.
    - if traffic is blocking the intersection, do not enter. May invite a collision.



## Defensive Driving

- Green light
  - Drive through the intersection or turn if it is clear and safe to do so.
  - Stale green - a traffic light that has been green for some time. When approaching:
    - cover the brake with your foot.
    - be prepared to stop.
  - First seconds following a light change to green are most dangerous. Scan carefully.
    - Traffic may attempt to continue through despite the red light.



## *Defensive Driving*

- Stop sign
  - Come to a complete stop. (not to be confused with a rolling stop)
  - To avoid a collision, come to a complete stop, look left, right and scan back left again.
  - When you approach a stop sign, stop at the painted stop line. If there isn't a stop line, stop before entering the crosswalk. In the city, if there isn't a stop line or crosswalk, stop at the point nearest the intersecting roadway where you have a clear view of cross traffic.



## *Defensive Driving*

- Stop sign (Continued)
  - When two vehicles arrive at a four way stop at the same time, who must yield?
    - if two vehicles arrive at an intersection at adjacent comers, simultaneously, the vehicle on the left must yield the right-of-way to the vehicle on the right.

## *Defensive Driving*

- Yield sign
  - yield the right of way to any vehicle in the intersection or approaching so closely that crossing or turning onto another street would be a hazard.
  - slow down.
  - cover the brake.
  - look left, look right, and then scan back left.
  - you may legally have the right-of-way, but don't assume other drivers will yield to you.

## *Defensive Driving*

- Unregulated
  - Unregulated intersections are found more often in rural areas but can be found in urban and suburban areas.
  - An unregulated intersection is one that is not controlled by any traffic control or sign.
  - Exercise caution.



## *Defensive Driving*

- Bridges and tunnels
  - the road surface is narrower, usually with less room for escaping to the side.
  - Look for signs that indicate:
    - whether you may pass.
    - reduced speed limits.
    - headlights on or off.
    - other hazards such as slippery surfaces.
  - Once on the bridge or in the tunnel:
    - keep up with traffic flow and stay in your lane.



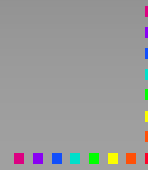
## *Defensive Driving*

- Other urban driving hazards
  - One way streets
    - If you are on a one way street and you see a driver coming toward you,
      - try to warn the other driver by sounding your horn.
      - if the vehicle keeps coming, move to the right as far as possible to get out of the way and stop.
      - if you cannot move to the right ( parked cars), check for an alley to drive into or come to a complete stop and sound your horn.



## *Defensive Driving*

- Bridges and tunnels (Continued)
  - Tunnels utilize artificial lighting. When entering during daylight or night time, your eyes will need to make adjustments to the change in light level. Slow down. Take off your sun glasses.



## Defensive Driving

- Taxis and buses.
  - stop more frequently and without warning. If a cab or bus is stopped,
    - be prepared for it to pull out into traffic without signaling
    - cover your brake as you approach.
    - stay out of their blind spots.
    - be prepared to sound your horn or stop if necessary.
  - watch out for impatient drivers pulling out from around the stopped taxi or transit bus.



## Defensive Driving

- Lines of parked cars
  - watch out for pedestrians, especially children, who might dart or walk out from between parked cars.
  - look out for vehicle doors opening and vehicles that pull out without signaling or checking traffic.



## Defensive Driving

- Parked cars
  - Double parked vehicles
    - be sure that there are no other vehicles trying to pass you.
    - turn on your directional signal.
    - check your blindspot.
    - check your mirrors.
    - yield to any traffic or pedestrians in the next lane. Remember you face a possible head-on collision while moving around the double parked vehicle(s).
    - be alert for on-coming vehicles that may be driving around a double parked vehicle.



## Defensive Driving

- Pedestrians
  - Almost  $\frac{2}{3}$  pedestrian deaths occur in the urban environment.
  - Watch for signs indicating pedestrian or school crossings. In residential areas, slow down, and watch for children crossing or playing.
    - Children < 15 are involved in collisions with vehicles more frequently than any other age group with the exception of pedestrians
    - Pedestrians over 65 may not see or hear well, and are not as agile.



## Defensive Driving

- Drinking or drunk pedestrians.
  - Studies suggest that drinking and walking may be as dangerous as drinking and driving. More than half of adult pedestrian victims have measurable levels of alcohol in their blood.
- pedestrians at night.
  - when you see them it may be too late
- Pedestrians with physical impairments
- As a defensive driver it is your responsibility to be alert for and to yield to pedestrians.



## Defensive Driving

- Motorcycles Continued)
  - Use the same driving skills when driving near a motorcyclist as you would a bicyclist.
  - When you are following a motorcycle:
    - use the two second plus rule (inertia)
    - be alert for cyclists in your blind spots, and when you are pulling out from parking spots and into traffic.
    - Many cyclists lose their lives needlessly every year by not wearing a helmet.



## Defensive Driving

- Bicycles/motorcycles
  - Bicyclists must obey the same rules and regulations as motor vehicles.
  - To avoid collisions with bicyclists:
    - slow down when you are following them.
    - be alert for sudden turns and unexpected maneuvers from them.
    - watch for riders who move between parked vehicles or between your vehicle and the curb when making a right turn.
    - expect them anytime, anywhere.



## Defensive Driving

- Backing and parking lots
  - To make backing as easy as possible:
    - before you get into your, walk around it.
    - roll down the window & turn off the radio to hear.
    - put your foot on the brake before you shift.
    - back slowly, not look forward until stop.
    - look in the direction you are driving.
    - in parking lots, if possible, pull forward. This eliminates the need to back up.



## Defensive Driving

- When driving in a parking lot:
  - drive in the proper direction, in designated lanes, and within the speed limit.
  - look for pedestrians.
  - look out for loose shopping carts.
  - look for vehicles backing/pulling into driving lanes.
  - maneuver slowly, checking for;
    - brake lights
    - pedestrians
  - if there are no on-coming vehicles, drive in the center of the aisle.



## Defensive Driving

- Rural and expressway driving hazards.
  - Last year more than 29,800 people died in collisions in rural areas.
    - Collisions in rural areas and on expressways tend to produce more fatal collisions than in the city.
    - But the biggest difference between rural and city driving is speed.
  - In rural areas people feel safer. There's not as much traffic, not as many pedestrians, no traffic jams.



## Defensive Driving

- Defensive parking
  - May be legally parked, but is it safely parked.
    - off street parking is usually better than curb parking.
    - park so as to leave an empty space on both sides.
    - avoid parking next to a car with dents or banged up fenders. This may indicate the driver's lack of consideration for his or her own car and an equal lack of concern for yours.
    - park in the center of your marked parking space.



## Defensive Driving

- Rural driving hazards
  - High speeds.
  - Mutual opposing two-lane traffic.
  - Blind intersections and corners.
  - Trains.
  - Slow moving vehicles.
  - School buses.
  - Animals.
  - Poorly marked roadways.
  - Weather conditions.



## *Defensive Driving*

- Rural driving conditions
  - vehicle, light, weather, road, and traffic.
    - Vehicle
      - At higher speeds and on changing road surfaces, tire blowouts or mechanical failure could be fatal.
    - What could we do to ensure our vehicle will not break down?
      - Pre-trip check of the vehicle, checking for leaks, burned out lights, tire pressure.
      - Keep the vehicle in top running condition by having it checked by a mechanic periodically.



## *Defensive Driving*

- Light (Continued)
  - To combat sun glare, wear sunglasses and put your visor down.
  - To combat insufficient and too much light, slow down and increase following distance.
  - If an on-coming driver has bright on, look to the side of the road.
  - Don't over drive headlights. Drive a speed that will enable you to stop in the area lit by your headlights.



## *Defensive Driving*

- Light
  - Sun glare may make it difficult to see other vehicles turning, making bad driving maneuvers, or stopping.
  - At the higher speeds allowed on highways, not being able to see could cause a fatal collision.
  - At night you have the opposite of the city, not enough light. Often the only light source is your headlights.



## *Defensive Driving*

- Weather
  - Usually, if the weather is bad in the city, it's worse in the country. It can be windier, snowier, rainier, icier.
  - Snow and ice can make hills and curves impassable and rain can make normal speeds unsafe.



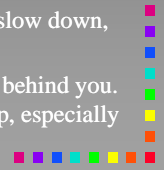
## *Defensive Driving*

- Defend against adverse weather
  - Remember that traveling at higher speed requires more stopping distance.
  - Add more following distance and slow down.
  - If visibility is restricted, get off the road to a service area or town and wait until the weather clears.
  - Listen to weather reports before traveling, so you will know what to expect.



## *Defensive Driving*

- Defense against adverse road conditions
  - Use long range scanning to determine the surface of the road ahead.
  - On gravel, slow down.
  - Check road shoulder, you may need it.
  - As you approach the top of a hill, slow down, be prepared.
  - Going down a hill, watch vehicles behind you. Large ones need more room to stop, especially down hill .



## *Defensive Driving*

- Road
  - Rural road conditions widely:
    - loose gravel, muddy roads, bituminous.
    - may have wider shoulders for escape from a hazard, but they also may drop off.
    - rolling blind terrain.
    - blind intersections.
    - intersections such as driveways and cross roads that are not easily spotted.
    - farmers



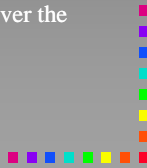
## *Defensive Driving*

- Traffic
  - How could traffic conditions affect driving in rural areas?
    - Slower moving vehicles.
    - Variety of vehicles traveling at different speeds.
    - Vehicles pulling out from blind intersections.



## *Defensive Driving*

- Defense against adverse traffic conditions
  - On rural roads scan longer distances.
  - Look ahead at side roads and driveways for vehicles that are pulling out.
  - Stay to the right of your lane to avoid oncoming traffic that might cross over the center lane.



## *Defensive Driving*

- If you encounter a slow moving vehicle
  - Stay back far enough to see around it.
  - If you must pass, exercise caution. These vehicles frequently take up more than their share of the lane.
  - Don't become impatient.
  - If you have determined that it is safe, legal and necessary to pass, give the slow moving vehicle plenty of room.



## *Defensive Driving*

- Special vehicles you may encounter on the road.
  - Slow moving vehicles
    - In rural areas slow moving vehicles are common.
    - Vehicles displaying sign cannot travel faster than 25 m/h.
    - In addition, there are no licensing requirement for these operators.
    - In rural areas, they may be young drivers under the age of 16.



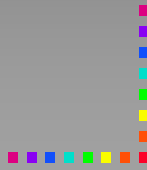
## *Defensive Driving*

- School buses
  - When approaching a school bus:
    - Slow down.
    - If the lights are flashing amber, the bus is about to stop
    - When the bus is stopped, the red lights are flashing.
    - Look for the stop arm that is extended from the left side of the bus.
    - State statute requires that you stop.



## *Defensive Driving*

- School buses (Continued)
  - You must stop if:
    - Red lights are flashing
    - and/or if the stop arm is out.
    - The bus is not separated from your vehicle by a median strip.



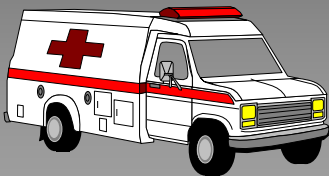
## *Defensive Driving*

- Emergency vehicles
  - If the emergency vehicle is behind you:
    - Immediately move to the right of your lane, to another lane, or to the shoulder if possible.
    - If moving right is not possible, stay where you are. Do not move left. The emergency vehicle driver will move left when observed that you cannot move right.
    - Make your moves based on those of the emergency vehicle.



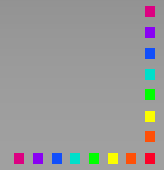
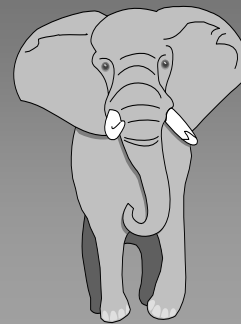
## *Defensive Driving*

Emergency vehicles



## *Defensive Driving*

Animals



## Defensive Driving

- Animals
  - When approaching areas that have been marked as animal crossings,
    - Slow down.
    - Scan.
    - Be alert for areas that are heavily wooded or near farms, and areas of water.
    - At night don't overdrive your headlights.
    - If you hit an animal, get out of your vehicle to check.



## Defensive Driving

- Conditions on the expressway
  - Weather.
    - When weather conditions reduce visibility and posted speed limits are no longer safe.
  - Traffic.
    - Keeping up with traffic flow. However, it is not legal to exceed the speed limit.
    - Those who exceed the limit and those who go too slowly create traffic hazards.
    - If others elect to exceed the speed limit, leave the lane to your immediate left vacant.



## Defensive Driving

- Conditions on the expressway
  - Vehicle.
    - Check your vehicle before beginning a trip. Stalled vehicles can cause collisions.
  - Light.
    - Higher speeds increase the probability that poor visibility will end in a fatal collision.
  - Road.
    - Entrances, exits, merging traffic, and speed variation.
    - Drivers may miss an exit sign. Starwars revisited.



## Defensive Driving

- Defense on the expressway
  - Choose a speed based on:
    - the legal limit
    - light
    - road
    - weather
    - traffic flow
    - congestion.



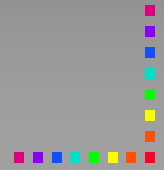
## Defensive Driving

- Defense on the expressway
  - Use the two second or two second plus rules.
    - will aid in avoiding a chain reaction crash.
  - If your vehicle breaks down, steer to the side of the road or the safest spot out of the traffic lanes, and turn on hazard lights.
  - If you view a vehicle stranded ahead:
    - Signal and move left when safe.
    - Give the stalled vehicle plenty of room.
    - When clear, signal and move right when safe.



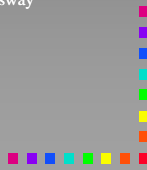
## Defensive Driving

- Entrance and exit ramps
  - The entrance ramp to an expressway has three points:
    - Entrance ramp
    - Acceleration lane
    - Merging area



## Defensive Driving

- Defense on the expressway (Continued)
  - Choosing a lane on the expressway
    - Do not drive in another vehicle's blindspot.
    - Stay in one lane as much as possible, unless
      - passing
      - allowing another vehicle onto the expressway
      - exiting the expressway.



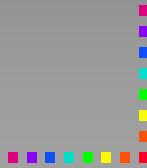
## Defensive Driving

- Entrance and exit ramps
  - The entrance ramp leads you onto the expressway.
    - Look for a break in traffic.
  - The acceleration lane parallels the expressway.
    - provides the time and space needed to accelerate to the speed of traffic.
  - A merging area can be found at the end of the acceleration lane.
    - allows you to enter traffic.



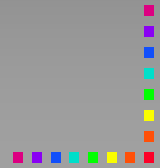
## *Defensive Driving*

- Entering an expressway
  - On the entrance ramp,
    - maintain a two second plus following distance.
    - Glance over your shoulder at traffic, checking for breaks in traffic.
    - Begin to adjust your speed.



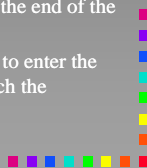
## *Defensive Driving*

- Entering an expressway (Continued)
  - In the merging area
    - Make a final check of your mirrors and your blind spot
    - Enter the expressway yielding the right-of- way to expressway traffic.



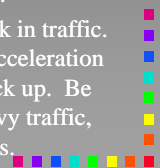
## *Defensive Driving*

- Entering an expressway (Continued)
  - In the acceleration lane
    - Increase your speed to match traffic speed.
    - Entering an expressway at too slow a speed may cause a collision.
    - Turn on your signal before you reach the end of the acceleration lane.
    - Do not cross over the solid white line to enter the expressway early. Wait until you reach the merging area.



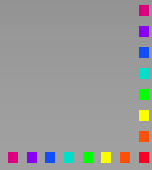
## *Defensive Driving*

- Entering an expressway (Continued)
  - On the expressway
    - Adjust speed to blend with traffic flow.
    - Turn off your signal.
    - Maintain a safe following distance.
    - Do not stop unless there is no break in traffic. However, do so at the end of the acceleration lane or on the shoulder. Never back up. Be alert for short entrance ramps, heavy traffic, and slow or hesitant, unsure drivers.



## *Defensive Driving*

- Expressway exits
  - There are two parts to the exit ramp:
    - the deceleration lane
    - the exit ramp



## *Defensive Driving*

- Expressway exits (Continued)
  - On the expressway
    - Be alert for your exit well ahead of time.
    - As much as a mile from your exit, signal, check traffic, and move into the proper lane.
    - Do not slow down while on the expressway, as you will disrupt the traffic flow.



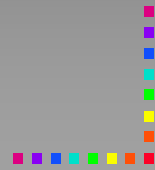
## *Defensive Driving*

- Expressway exits (Continued)
  - The deceleration lane.
    - This extra lane is parallel to the expressway, allowing you to slow to a safe speed for exiting.
  - The exit ramp.
    - This ramp leads you from the deceleration lane to a connecting thoroughfare.



## *Defensive Driving*

- Expressway exits (Continued)
  - In the deceleration lane and out of the traffic flow
    - Begin slowing by letting off the accelerator.
    - Maintain several seconds following distance to the cars ahead of and behind you.



## *Defensive Driving*

- Expressway exits (Continued)
  - On the exit ramp
    - Be sure you have slowed to the posted or safe speed when you enter.
    - Remember that posted speeds on the ramp are for cars, not
      - buses
      - trucks
      - vehicles pulling trailers
      - campers.

