Unit 3 - B

Driving in Different Environments

Chapter 12 – Driving in Adverse Conditions

12.1 – Reduced Visibility

Objectives

- Tell how to use the IPDE process to manage risk in bad weather
- Explain what you can do to help others see you at dawn and dusk
- Describe the special techniques you can use for night driving
- Explain the procedure to use at night when an oncoming driver fails to use low-beam headlights.

Vocabulary

- Overdriving headlights

Your Vehicle Windows

- Keep it clean
- Defroster
- Rear defogger
- A/C and heater
- Open windows
- Vapors
- Smoke

Sun Glare

- Don’t look at the sun
- Low beam headlights
- Sunglasses and visors
- Fall time of year

Night

- Nighttime conditions can be more difficult
- Headlights
  - Highbeam vs. lowbeam
  - As soon as you see an oncoming car
  - When you see headlights and taillights
  - Use low beam in bad weather

Night cont.

- Meeting Other Vehicles
  - Flash headlights
  - Move to the right, and look at the right edge
  - Look ahead with quick, frequent glances
  - Be ready for a hazard
- Overdriving
  - Your stopping distance is greater than space illuminated by headlights
  - Use 4 second stopping distance

Fog

- Always use low beam headlights
- Slow vehicle and increase distance
- Be prepared to stop quickly
- In fog, other vehicles may be closer than you perceive.
- If you do have to park, do so in parking areas

Rain

- Use wipers and defrost
- Illinois State Law – if wipers are on, headlights have to be on
- If you have to stop, do so in parking areas

Snow

- Snow/slush/ice can build up on windows
- Clear **all** parts – headlights, **all** windows, tailights, etc.
- If you don't have to travel, don't
- Use low beam headlights
- 4 Wheel Drive
  - You have more power going to wheels
  - Not more traction

Chapter 12

12.2 – Reduced Traction

Objectives

- Describes what happens to traction during rain and snow.
- List the steps you can take to avoid hydroplaning.
- Describe how to correct a rear-wheel skid.
- Tell how to use the controlled braking technique.

Vocabulary

- Controlled braking
- Fishtail
- Hydroplaning
- Rocking a vehicle
- Skid
- Antilock braking system
- Traction

Wet Roadways

- When rain starts roads can be slick
- Hydroplaning
  - Tires lose contact with roadway, and rise on top of water
  - Water, speed, and tire condition
  - 35 mph in 1 ½ inch water
  - Tires in poor condition = lower speeds
- Deep water
  - Do not drive through standing or moving water that may touch the bottom of your vehicle

Snow

- Snow can cause varying degrees of traction
- Fresh snow @ low temps = decent traction
- Poor traction
  - Sub zero temps
  - Packed snow
  - Snow, slush, and ice

Snow cont.

- Driving Techniques for snow
  - Gentle accleration, braking, and steering
- Rocking the Vehicle
  - Drive forward a little, and back a little
  - Do not spin wheels

Ice

- Be alert if it's raining and temps. drop below freezing
- Water on top of ice = danger
  - When ice melts
- Check traction away from traffic at low speeds
- Keep windows and wipers clear

Ice cont.

- Ice on Bridges
  - Freeze before other roadway surfaces
  - Cold air circulates above and below the roadway on bridges and overpasses
- Black Ice
  - Thin sheets of ice that are difficult to see
- Ice in Tire Tracks
  - Snow can pack in tire tracks and become ice

Other Reduced Traction Situations

- Braking distances increase in low traction areas
- Gravel Roads
  - Like marbels under your tires
  - Drive in wheel paths
- Leaves
  - Wet leaves = reduced traction
- Construction Areas
  - Mud, dirt, and sand on the roadway

Skidding

- Tires lose all or part of grip on roadway
- Can occur while braking, accelerating, or steering
- Try to detect a skid early
- Steer in the direction you want to go
- This is why H-O-H and hands on outside of wheel is very important
- Never give up trying to correct

Types of Skids

- Over-Power Skid
  - Cause: Apply to much pressure to accelerator
  - Action: Let up on the accelerator
- Over-Braking Skid
  - Cause: Wheels stop moving while braking
  - When there is no ABS
  - Action: Let up on the brake pedal to get wheels rolling

Types of Skids cont.

- Front wheel skid
  - Cause: You turn the steering wheel and the vehicle goes straight ahead
  - Understeer situation- your front wheels do not have enough traction for your vehicle to turn
  - Action: Release pressure on the accelerator or brake
  - Turn in the direction you want to go

Types of Skids cont.

- Rear wheel skid
  - Cause: You want to go straight, but vehicle is going to right or left
  - Oversteer situation – vehicle's rear end tends to slip out or fishtail
  - Action: Release brake or accelorator
  - Steer in direction you want to go
  - Be careful not to over-correct
  - As speed drops, control will increase

Types of Skids cont.

- Skidding in a curve or turn
  - Reduce speed ahead of time to avoid this
  - If you start to skid, you will probably go off the road

Controlled Braking

- Panic braking can cause a skid
- Controlled braking- reduce your speed as quickly as possible while maintaining steering control of your vehicle
- No ABS
  - Heel on floor
  - Brake, release, brake, release, etc.
- ABS
  - Press on brake pedal
  - Will not enable you to stop quicker
  - Used in emergency situations

Objectives

- Explain how to control your vehicle in windy conditions.
- List precautions for driving in extremly hot or cold conditions.
- Describe what to do to maintain vehicle control during winter driving.

Chapter 12

12.3 – Other Adverse Weather Conditions

Wind

- Reduces vehicle control
- Blasts from passing trucks, and coming from under bridges and tunnels
- Stay off centerline
- In tornados – get out of car and lay in ditch or get under a bridge

Hot Weather

- Temp. guage indicates when engine temp. is too hot
- Turn off A/C and turn on heater
- If engine stays hot, pull over and stop engine
- Check coolant levels when car has cooled off

Cold Weather

- Be aware of exhaust leaks
  - CO
  - In snow make sure your exhaust pipe is not blocked
- Do not race cold engines
- Do not set parking brake

Tips for Smooth Winter Driving

- Tests your ability to use IPDE Process
- Look and listen to traffic reports
- Keep windows clear
- Respect lower speeds
- Keep a safe following distance – increase if necessary
- Try to keep moving in snow
- Use a lower gear
- Avoid using cruise control

Chapter 13 – Handling Emergencies

13.1 – Vehicle Malfunctions

Objectives

- List the actions to take if a tire blows out.
- List the proper steps to take if the brakes fail.
- Explain what to do if your acclerator sticks.
- Describe what to do incase of steering failure.

Vocabulary

- Blowout
- Brake fade
- Jack
- Lug nuts

Tire Failure

- Tires wear out
- Lincoln Test
- Wear quicker in unfavorable conditions and poor maintainence
- Bumps, potholes, and poor roadway surface
- Unbalanced wheels and poor alignment
- Underinflation and overinflation

Blowout

- Tire loses air pressure suddenly
- Causes: hits an object or pothole, improper tire pressure
- Front tire
  - Pulls in direction of blowout
- Rear tire
  - Back could fishtail
- Two hands on the wheel at all times

Blowout cont.

- Grip steering wheel firmly
- Ease off accelerator – DO NOT BRAKE
- Check traffic
- Ease off the road
- Brake gently
- Come to a stop and put on emergency flashers

Changing a Tire

- See Handout

Brake Failure

- Two parts
  - One for front wheel, one for back wheel
- Brake warning light tells when one part has failed

Total Brake Failure

- Rarely happens
- Pump the brake pedal
- Downshift to a lower gear
- Pull the parking brake lever out, and push on the parking brake
- Rub against the curb or sideswipe something
- Power brake failure – press harder

Other Brake Failure

- Brake fade – after continuously braking hard
  - Let the brakes cool off
- Driving through water
  - Brake gently to dry the brakes

Accelerator Malfunctions

- Not in book
- Broken Spring
  - Pedal is flat on the floor
  - Shift to neutral and pull to side of road
- Stuck Accelerator
  - Kick side of pedal
  - Apply brakes
  - Choose an open zone off the roadway
  - If in a curve, shift to neutral
  - Follow escape path
  - Turn off ignition

Accelerator Malfunctions cont.

- Stuck Accelerator cont.
  - Once stopped try to free pedal
  - Remove any obstruction
  - Tap pedal repeadedly
  - Try to free it by pulling up on it
  - Only do these when vehicle is stopped

Engine Failure

- Usually little warning
- If you have power steering or braking it will be more difficult
- Shift to neutral and move towards the curb
- Don’t brake – try to restart while vehicle is still moving
- If it does not continue to move out of traffic and stop
- Call for help

Overheated Engine

- Hot weather, stop and go traffic, driving up hills with A/C on
- Temp. gauge or light
- Turn off A/C and turn on heater
- At stops, shift to neutral and press gently on accelerator
- If engine stays hot, pull to a safe place, stop, and turn off engine
- Do not work on a hot engine

Steering Failure

- Total Steering Failure
  - Honk horn and turn on emergency flashers
  - Take foot off accelerator – do not brake
  - Use emergency on/off method
  - Shift to a lower gear
- Power Steering Failure
  - Still works, just need more effort

Loss of Forward Vision

- Hood Flies Up
  - Look below the crack in the open hood
  - Roll down your window and look out it
  - Turn on emergency flashers and tap brakes
  - Slow down and move out of traffic
- Headlights Fail
  - Turn on right turn signal
  - Slow down and bring vehicle to a stop
  - Try other lights – dimmer, parking, hazards
  - Use street lights
- Splashed Windshield
  - Turn on wipers and try to clear windshield – pull over

Vehicle on Fire

- Pull over immediately into a safe area
- Turn off ignition
- Get everyone out and away from the vehicle
- Leave the hood closed
- Call the fire department

Vehicle Stalls on Railroad Track

- Get out of vehicle
- Call for help
- If train approaches – run in the direction of the train

Chapter 13

13.2 – Driver Errors

Objectives

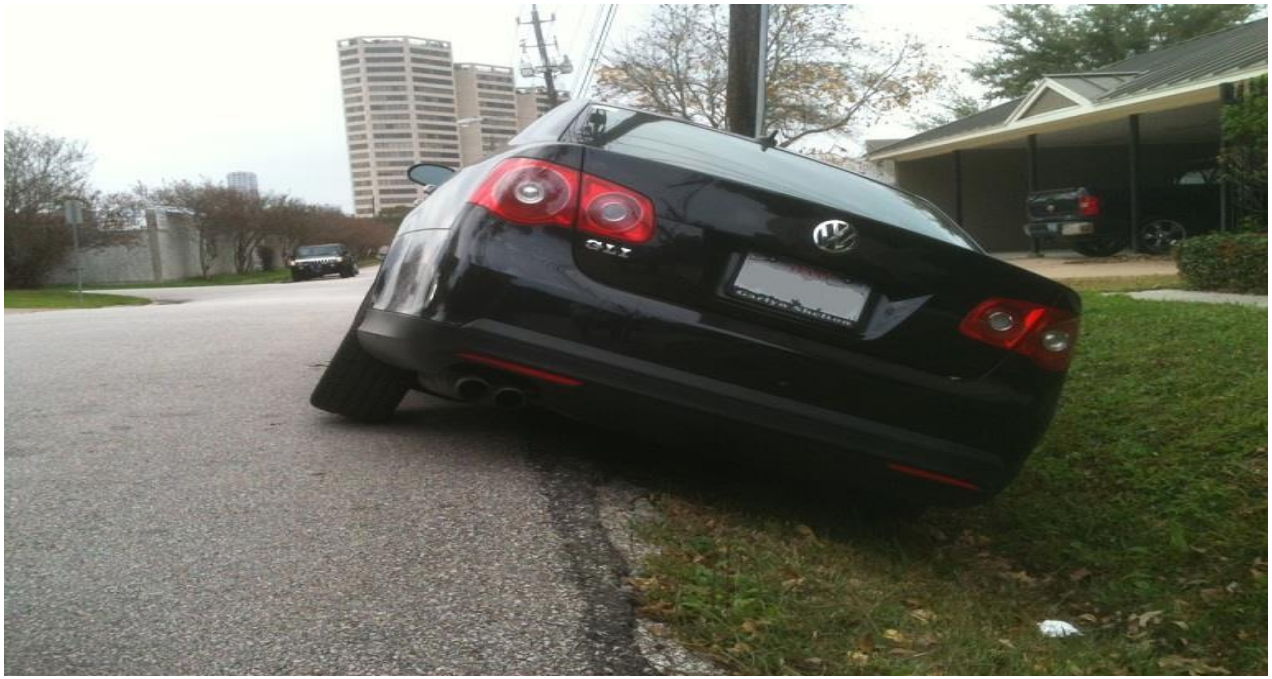
- Describe how to return to the roadway if your vehicle runs off the roadway.
- Explain when to use an emergency swerve.

Vocabulary

- Countersteer

Driving Off the Road

- Front wheel leaves the edge of the roadway
- Easy if shoulder is paved and even with the roadway



Off Road Recovery

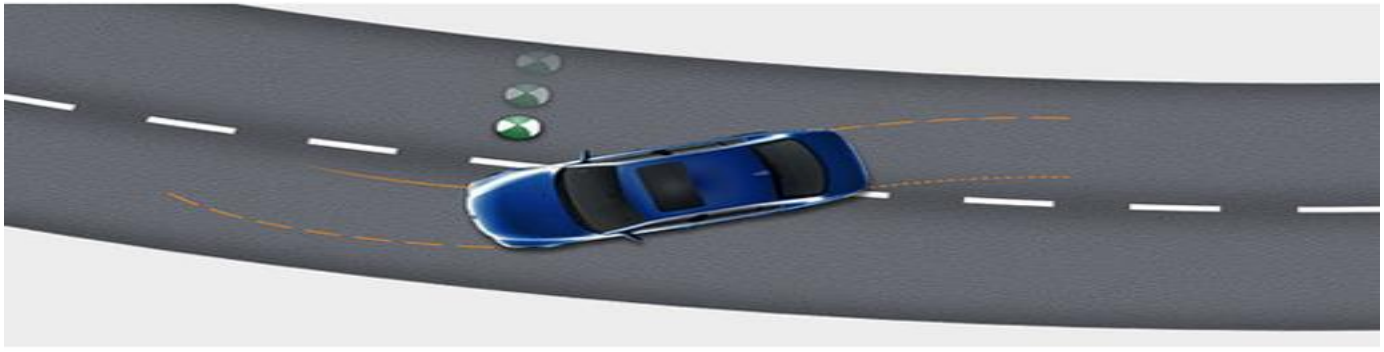
- 2 wheels off the road
- Grip the steering wheel firmly
- Let off the accelerator
- Let the car start to slow on its own
- Check traffic around you
- Ease the car back on the road
- The greater the drop off, the more careful you have to be
- Be careful not to oversteer – countersteer if you do oversteer

Emergency Swerving

- Last second attempt to avoid a collision
- It may take more distance to stop than it would to swerve
  - Over 30
- Make sure there is no object or vehicle in the lane you want to swerve into
- Braking hard could lock the wheels and send you into the object or vehicle in front

Emergency Swerving cont.

- Identify path
- Grip wheel firmly
- Steer quickly in the direction you want to go and then countersteer
- Consider distance and speed
- Increased speed = less time and space



Chapter 13

13.3 – Roadway Hazards

Objectives

- Describe how to minimize vehicle damage caused by potholes.
- Explain what to do if you enter a curve too fast.
- Tell how to escape from a vehicle that is sinking in water.

Potholes in the Roadway

- Water in cracks freezes and thaws
- Potholes can cause major wheel damage
- If you must drive through a pothole, slow down

Sharp Curve

- May not be marked or have ac speed limit sign
- Brake gently as soon as you realize problem
- If not yet in the curve brake more firmly
- About ½ way through, accelerate gently to help stabilize the vehicle

Object in the Roadway

- Never hit an object in the roadway
- Check around you
- Decide to:
  - Brake
  - Steer around
  - Straddle

Vehicle in Deep Water

- Open windows
- Unfasten seatbelt
- Exit the vehicle
- If vehicle is totally submerged, you will have to let the vehicle fill with water first

Chapter 13

13.4 - Collisions

Objectives

- Explain how to minimize or avoid head-on, side-impact, and rear-end collisions.
- List the immediate steps to take if a collision occurs
- Describe other follow up steps needed after a collision

Minimize Effects of a Collision

- Do not give up – keep control of the vehicle
- Aim for something soft
- Avoid trees, parked vehicles, poles
- If threat of another vehicle colliding, get out and away

Threat of a Head-On Collision

- Maintain vehicle control
  - Brake gently and quickly
- Blow horn and flash light
- Steer to the right

Threat of Side-Impact Collision

- Brake or accelerate quickly
- Blow horn
- Changes lanes or swerve into another lane if possible

Threat of a Rear-End Collision

- Flash brake lights
- Pull forward if possible
- Turn right if possible
- Enter the intersection
- Release brakes just before impact

If You Have a Collision

- Stop immediately
- Aid the injured
- Prevent further damage
- Send for the police
- Exchange information

Additional Steps

- Record witness names and addresses
- Give police the facts
- File necessary reports

Chapter 13

Insurance

- Financial responsibility law
  - Requires you to prove that you can pay for damages you cause that result in death, injury, or property damages
- You buy insurance from a company by paying a premium
  - Premium- a specified amount of money for coverage over a specified period of time.

- Policy
  - A written contract between you-the insured-and the insurance company
- Many different kinds of insurance.
  - Liability insurance: covers others when you are at fault in a collision.
  - Collision insurance: provides coverage to pay the costs of repair or replacement of your vehicle, minus the deductible.

- Deductible: amount you agree to pay towards the repair or replacement of your vehicle

- Page 268 for vehicle insurance

Insurance Rates

- Factors:
  - Driving record
  - Age
  - Miles driven
  - Driver's gender
  - Marital status
  - Type of vehicle
  - Address
  - Driver's claim record