

Behind the Wheel

Preparing to Drive

Preparing To Drive

- Read and review rules of the road—reduces confusion and ambiguity
- Compare differences between being driver versus passenger
- Identify calming techniques for use when driving conditions become intense
- Discuss decision points-yellow light, turn signals, braking process, response times, distractions.

First Step

- Begin in a parking lot—somewhere safe
- Start the vehicle—put in gear—let it move by itself—No Gas pedal
- Gentle brake
- Repeat same process and add some acceleration before braking
- Attention now is given at how the hands work for accuracy in steering and basic control. Two methods are possible—hand over hand and shuffle steering. Either approach is acceptable as long as there are not gaps or delays. I prefer hand over hand since it is a continuous process and you can see where the car is going. With shuffle there is guesswork involved and the danger of under/over steering.
- Again in a parking lot—practice right turns, left turns, figure 8's, etc. Also practice steering in reverse.

Second Step

- Do not go out on streets until of legal age and proper license. Passing a written exam (Learner Permit) is a requirement for any age.
- Select times and locations with low volume of traffic. This may be a neighborhood subdivision. Some are designed like spider webs thereby affording opportunity at low speed to practice communication via signals, turns, braking, speed humps, etc.
- The eyes act as a camera @ 10 seconds ahead of car. Are there people, animals garbage cans, mailboxes in the path of travel?
- If there are parked cars on the road—is there a driver or anyone in the vehicle who could open a door by surprise?
- If there is a hill—exercise caution if limited field of vision. Be on the alert for skate boards.
- If there is no lane marking—yellow line—draw an imaginary line and drive to share the road.

Defensive Driving Strategies

Escape Space

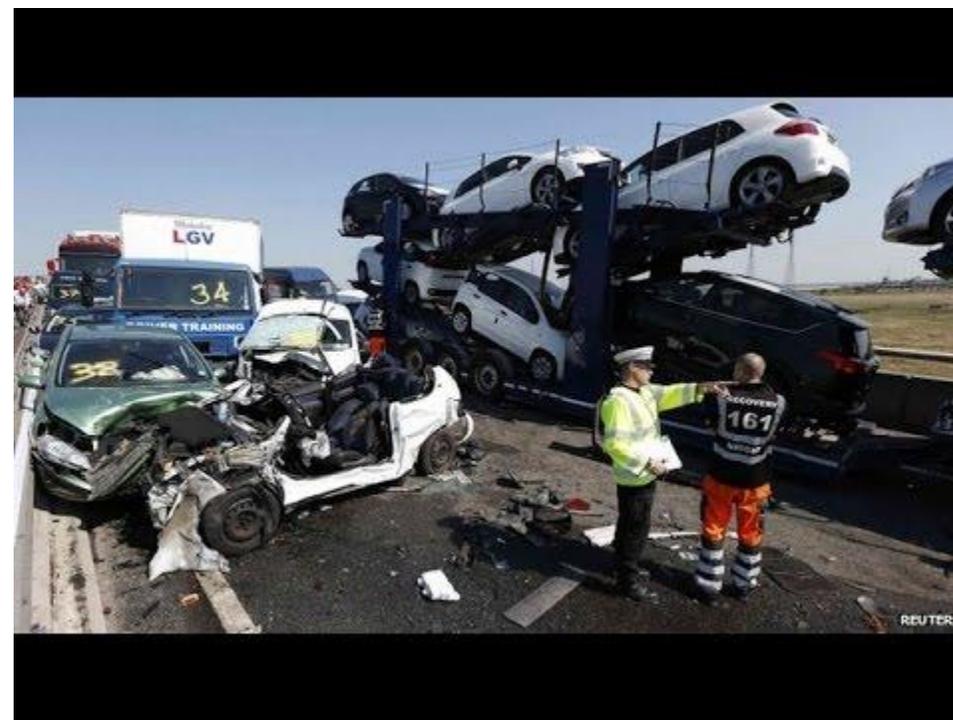
Essential #1

Third Step

- Mental mapping—where are we going? How do we get there?
- Offer directions in advance to minimize stress factors
- Practice primary routes to destinations-work-school-home. What decisions need to be made and when? When you arrive at destination—what are the options for parking?
- Identify Plan B—alternatives. A Detour may be required. A high risk left turn may be neutralized by going to a traffic light, turn around, and come back for a right turn.
- Build a self defense to aggressive drivers, horn taps, verbal and nonverbal exchange. Many drivers are in a hurry mode. They make mistakes!

Escape Space Maintained

- Normal driving conditions-2 to 3 seconds in distance
- Abnormal conditions (night)4-6 seconds in distance
- Hazardous conditions (snow and ice)—8 seconds in distance
- If in doubt---find a fixed marker and count it out!
- The vehicle with front end damage picks up the check!!!



The Hurry Habit



Car Crashes



- An accident implies no one at fault and nothing could have been done to change the outcome.
- A collision is the result of one or more people making mistakes that result in the loss of space thereby colliding with other objects.
- 98% of auto accidents are collisions

Vehicle Stop

- At a Stop sign or traffic light---bring the vehicle to a complete stop so that you can see the back tires of the vehicle in front plus at least a half car length of space. This provides a cushion in the event of any back slide or need of an escape emergency maneuver.



Space Maintenance

- You control the space distance in front of your vehicle.
- You decide lane position---try for a triangle with space control in front, right side with road shoulder, and behind.
- Communicate with vehicles far in advance in use of signals.
- State law requires activation of turn signal in advance of intended action.
- AAA recommends signals at least 150 feet in advance.

Vehicle Void Area

We imagine that we can see everything around us but when you sit in the driver's seat you quickly discover the following:

1. Void area in front of vehicle is 25 ft—where you can see the shoes of person standing in front of car.
2. Driver side—5 ft
3. Passenger side—15 ft
4. Rear---45 ft
5. Which is only to say that the eyes have to work quickly in advance before objects fall into void area



Stopping Distance

Speed / Perception/ Reaction/ Braking/ Stopping

20	22'	22'	15'	59'
30	33'	33'	38'	104'
40	44'	44'	68'	156'
50	55'	55'	105'	215'
60	66'	66'	160'	292'
70	77'	77'	320'	474'

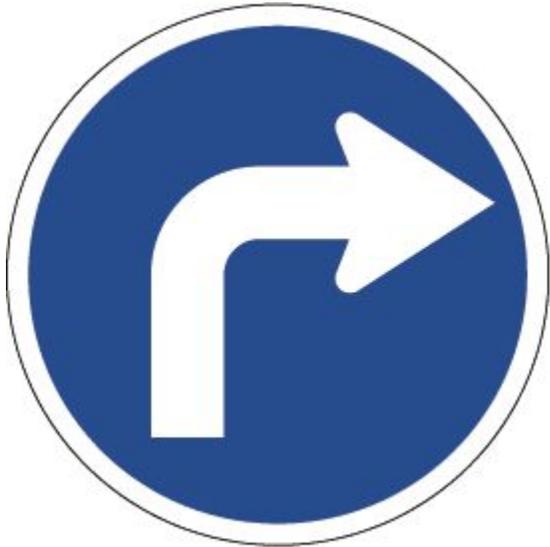


Instructional strategies @ Space

- Drawings---complete a circle. Draw the path of a right and left turn.
- Practice turns without use of gas pedal.
- Practice braking---imagine stepping on an egg without breaking the egg.
- Verbal cues when gentle braking should begin.
- When safe—allow mistakes (hard braking). Then use this as a learning moment about how other drivers are not saying words of affection for surprise effect!



Right Turn



- Prepare 500 feet in advance
- Signal intentions @ 150 -200 ft
- Sharp turn requires speed @ 5 mph
- Begin acceleration when in the lane and path wanted.
- Allow a minimum of 3 seconds in time and space when turning into traffic.
- Considerations for entry involve speed limit and the fact that you are at zero mph.

Right Turn Squeeze



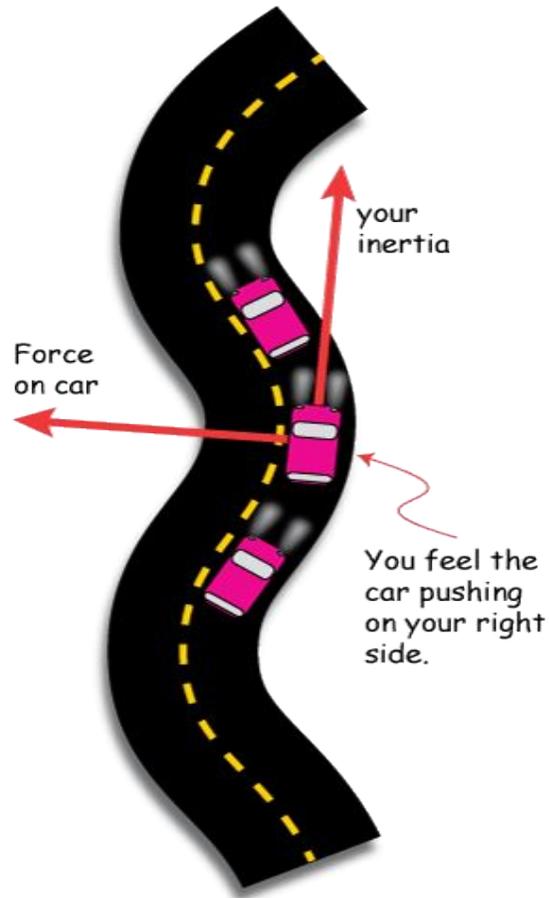
- Trucks must swing out and use other lanes to make a sharp right turn.
- Do not try to turn using inside lane while a truck is in progress of turn.
- This concept applies to bicycles as well.

Right Turn



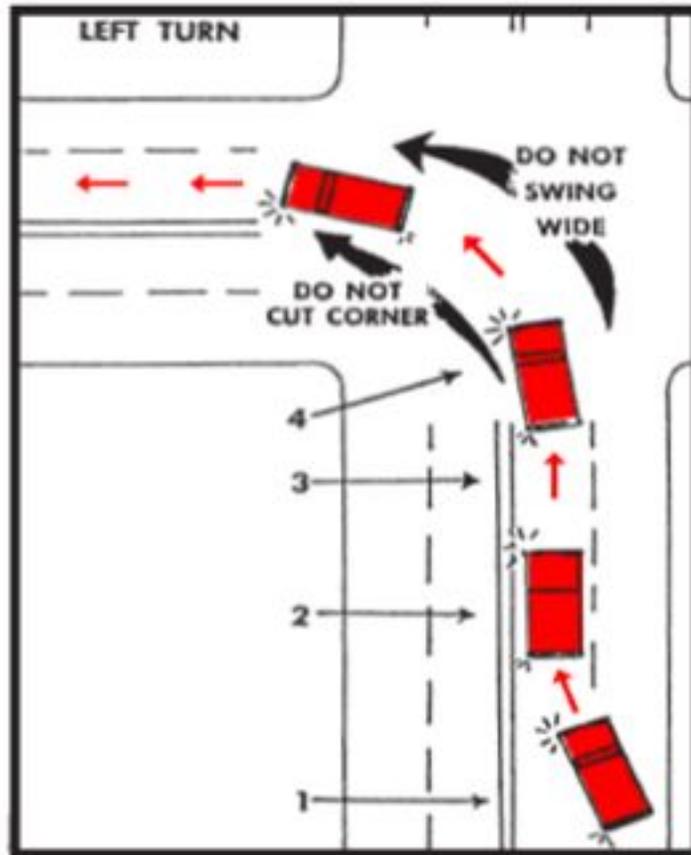
- Right turn on red is an option unless a sign is posted to the contrary.
- Be on the lookout for pedestrians in crosswalks and bicycles in bicycle lane.
- Trucks and buses will swing out to make their turns.

Moving Turns/Curves



- Slow down in advance.
- Guide the car along the path wanted.
- Glide or coast through the turn/curve.
- Begin to accelerate when coming out of turn/curve.
- Speed will vary dependent on sharpness of turn/curve.

Left Turn



- Left turns always yield to oncoming traffic.
- If there is collision---left turner is at fault.
- Wait for space.
- 3 seconds to clear first lane plus 1 second for each additional lane.
- Do the math—if error occurs the last lane of crossing will tag you and redesign your ride!

Left Turn



- Some traffic signals are using multi-colored arrows now since the translation of green means go.
- Flashing yellow arrows are the same as a green light—turn with caution but you better guarantee success with calculations.

Share the Road



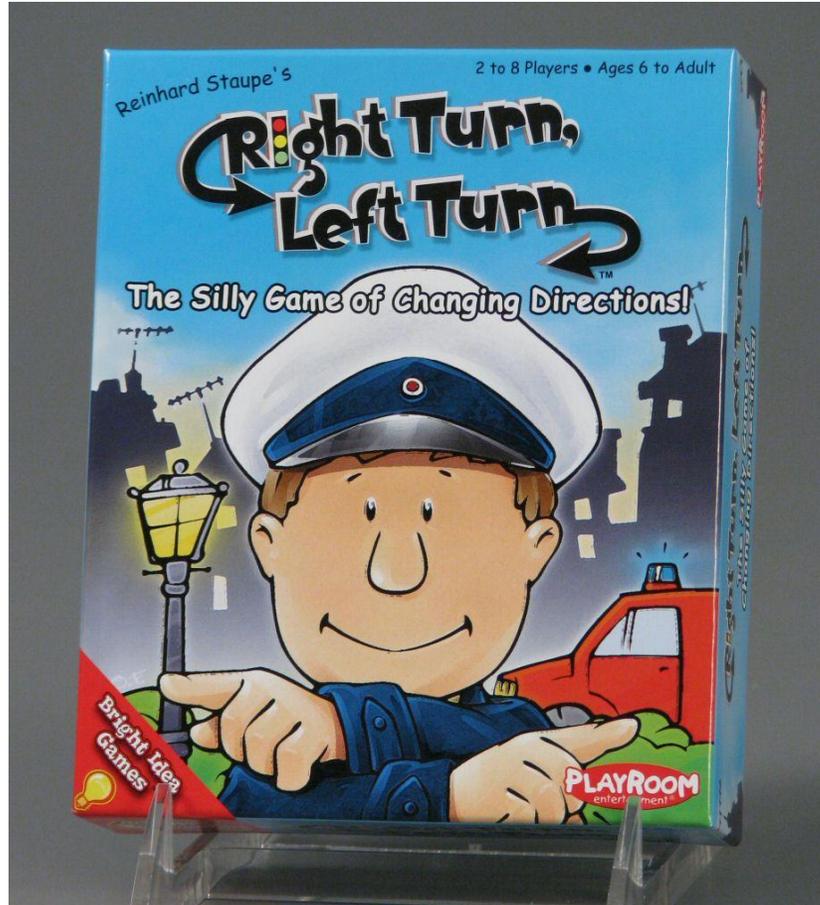
- The basics are if you walk or run you go against traffic. If you ride—you go with traffic.
- Bicycles are to obey the same rules of the road as motorized vehicles.
- Some states have legislated a 3 feet buffer space between bicycle and car—front, beside, and behind.
- If you pass- technically you are to use a different lane.
- 743 killed and 48,000 injured NHTSA (2013)

Move Over Law



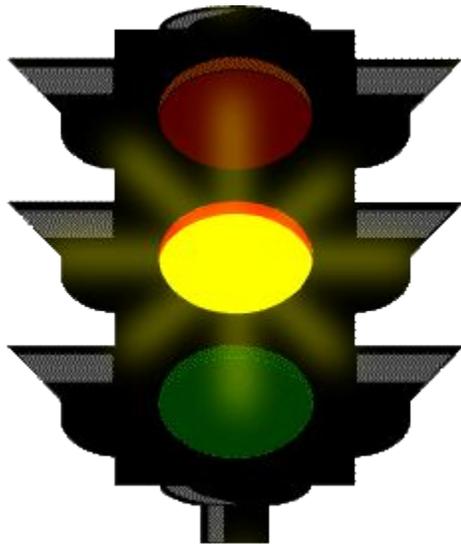
- Recent legislation requires drivers to move over one lane so that emergency responders are not put at risk when out and about the traffic scene.
- If a change in lane is not possible----proceed with extreme caution.
- A traffic ticket can be issued for failure to move over a lane.

Emergency Conditions



- Follow directions of emergency personnel.
- You may encounter detours, road closures, and major traffic delays.
- This is especially true if a helicopter landing is required for transporting injured to a hospital. Minimum time for landing and take-off is 30 minutes.

Point of No Return (PNR)



- The yellow light will stay yellow for @ 3-5 seconds. Decision surrounds whether to brake or proceed through the intersection.
- If in or entering the intersection proceed and clear the intersection
- If approaching the intersection with safe braking possible—apply brakes.
- What we do not want is a hard brake thereby causing a loss of basic control.

Imaginary Lane Markers



- Oftentimes in neighborhoods and rural settings there are no lane markings.
- Some drive in the middle of the road as if it is a one way street.
- Draw an imaginary line down the middle of the road and drive accordingly.
- If a problem develops—slow down and stop if necessary to work it out --one at a time.

Traffic Cameras



- Traffic cameras record vehicle speed and stop position.
- If there is a white line you are to stop behind the line.
- It must be a complete stop—count to 2.
- If there is no white line –stop at the sign.
- Ticket in the mail is \$50 dollars without points or report to DMV

Flying Objects



- Watch out for flying objects!
- Movers are the worst offenders. They do not pack or tie down.
- You have people heavily involved in home improvement projects with one trip only to Lowes or Home Depot. Looks good in the parking lot but falls loose on the highway.
- Look for ropes to secure cargo. Otherwise, loose objects may take wings!

Estimated Time Of Arrival (ETA)



- Traffic patterns vary according to waves (rush hours), construction, collisions, etc.
- The concept of space becomes relative. Plan far in advance for lane changes.
- Speed may vary from 0 – 10 mph. Always have an adequate fuel supply given lengthy delays.
- Be thankful traffic is moving—it could be worse!

Can You See Me??

Visibility

Essential #2

Headlights On For Safety



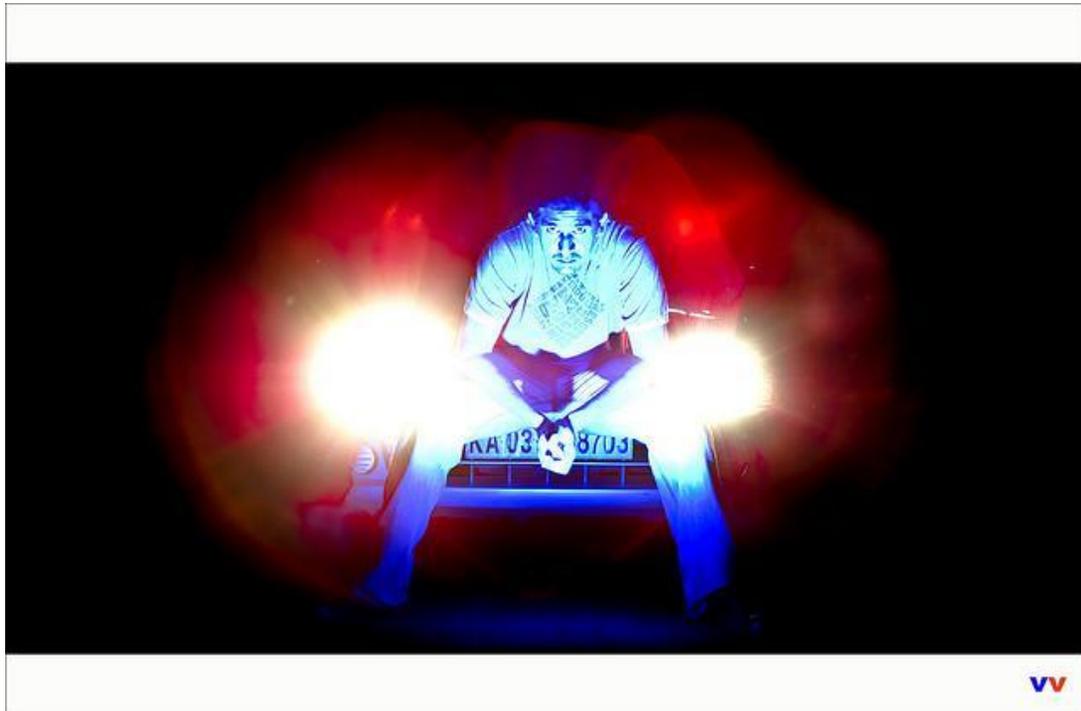
- Required 30 minutes after sunset until 30 minutes before sunrise.
- During inclement weather when visibility is less than 200 feet ahead.
- When rain, snow, or other forms of precipitation requires the use of windshield wipers.

High/Low Beam



- Low beam setting is for general use when around other traffic.
- High beams must be dimmed at 200-500 feet when approaching oncoming traffic. Also, when following another car within 500 ft.
- Illegal to drive using only parking lights.

Blinded by the Lights



Decisions



- Motorcycles are hard to evaluate in the daytime given their speed and performance characteristics.
- At night you might see one, two, or three headlights on a bike.
- At a distance the question becomes whether it is a motorcycle or car with one headlight?

2 Wheels



Sharing the road presents special challenge given design and performance characteristics.

The latest NHTSA review of Motor Vehicle Crashes (2013) records 4,668 deaths and 88,000 injuries.

Helmets are optional in some states which means traumatic head injuries are common.

Roughly half of all crashes take place on rural roads

Scan The Traffic Scene



- Ideally you want to be looking ahead 20-30 seconds.
- Central vision is focused @ 10-12 seconds ahead
- Peripheral vision decreases as speed increases.
- Eyes are in constant motion for details in front, sides, and behind vehicle.

Pedestrians



- According to NHTSA statistics (2013) 4,735 pedestrians were killed in traffic crashes and 66,000 injured during the year.
- The senior population appears to be most vulnerable to injury and death.
- The general rule—if you walk on the road you walk facing traffic.
- Crosswalks provide automatic and absolute right-of-way

Scan the Environment



- Parked cars on the street present a significant challenge.
- Look for lights that indicate intent to begin movement.
- Look for exhaust
- Look for turning front wheels
- Look for a driver via shadows or mirror reflection
- Watch for opening doors

Scan The Environment



- Lawn maintenance activity can present major conflict situations.
- Sometimes lawn maintenance personnel use a road to spin/turn their mower around.
- On occasion they may be working near the curb standing on the street with their back to traffic.
- The mower may pick up stones and/or debris when crossing a driveway and propel flying objects into roadway.

Scan The Environment



- Skateboards and longboards find popular appeal around hills and urban centers that offer a mix of landscaping designs.
- Their skill level does not match their daring attempt to ride the road or jump a curb.
- No fear and No Rules!

Scan The Environment



Scan the Environment



Scan The Environment



Scan The Environment

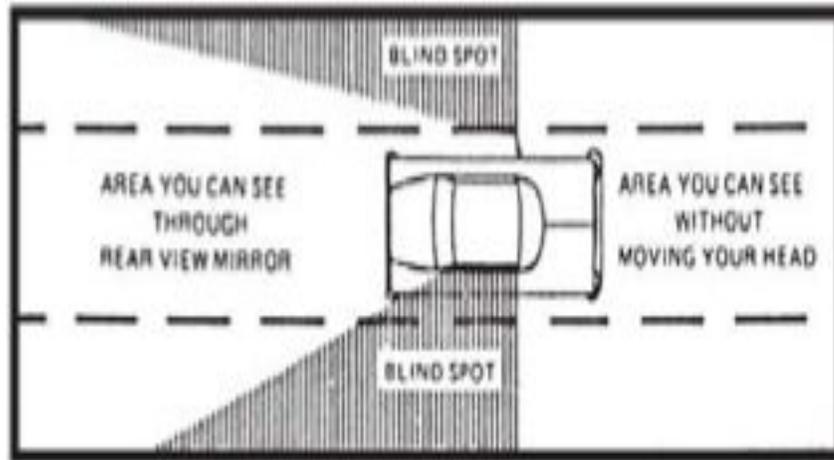


Can We Talk?

Communication

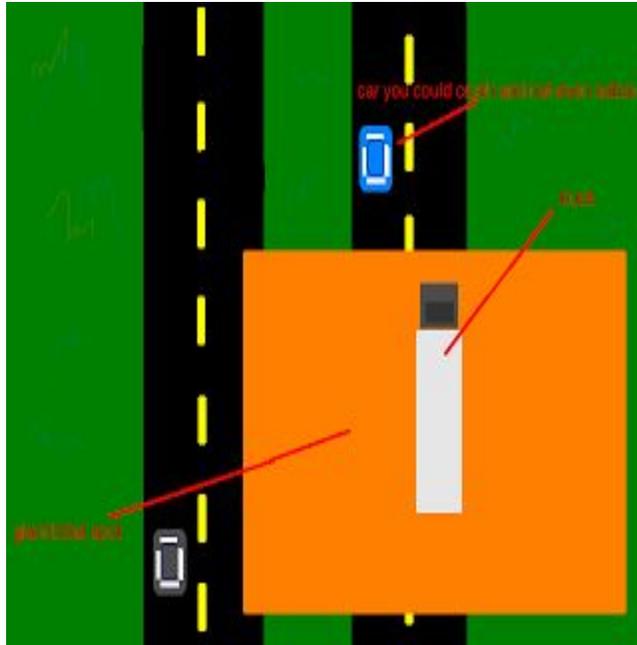
Essential # 3

Blind Spots



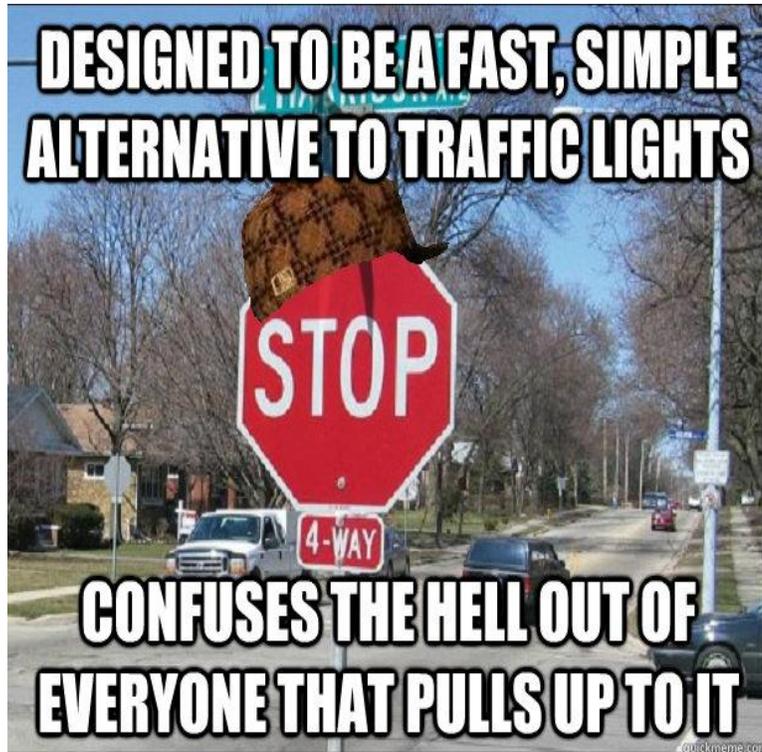
- Mirrors can be adjusted to enhance visual fields.
- May need to do an over the shoulder check behind front door posts. Only the neck moves to check for space!
- Convex mirrors or blind spot mirrors are now standard equipment in newer cars.
- Sensors are available to give audible notice of vehicle(s) in blind spot space.

Truck No-Zones



- Blind spots around trucks are referred to as No Zones.
- As you can see they operate pretty much looking forward.
- The No Zone behind a truck is @ 75 ft.
- If you are beside a large truck chances are he cannot see you.
- If you see movement in your direction sound the horn and look at space options.

Eye to Eye



- At a 4-way stop time of arrival determines order of departure.
- If several vehicles arrive at the same time---vehicle to the right has right-of way.
- Bottom line—people cheat and your job is not to trade the paint!

Easy Horn Tap



- The horn is a tool to be used when necessary for communication.
- There is a difference between an easy horn tap to announce presence and urge caution as opposed to a horn being used in anger.

Pass Back The Signals



- Turn signals for lane changes are appreciated!
- Brake lights warn others that traffic is slowing down.
- Braking is a gradual process of speed reduction.
- Proper use of signals enables space management.

Hand Signals



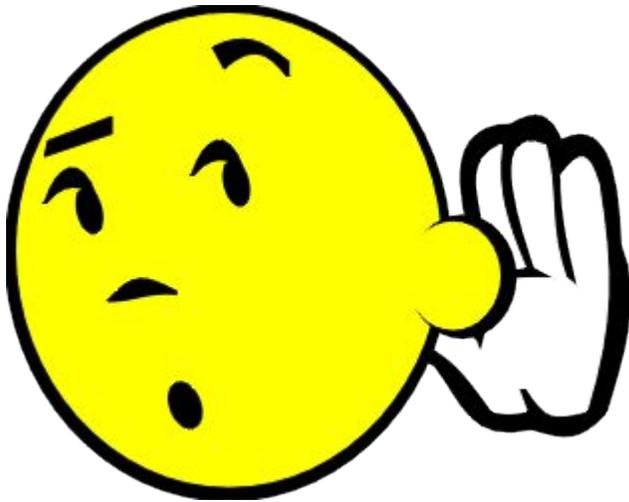
- Hand signals are likely to be used by riders of motorcycles and bicycles.
- Rules of the road apply the same to 2 wheel vehicles.
- Anticipate actions thereby reducing risk factors.

Traffic Stop/Checkpoint



- Law enforcement may direct attention to individuals or all drivers using the highway.
- Keep hands visible!
- You will be asked to show driver's license, car registration, and proof of insurance.
- Directions will be given if more conversation is wanted.

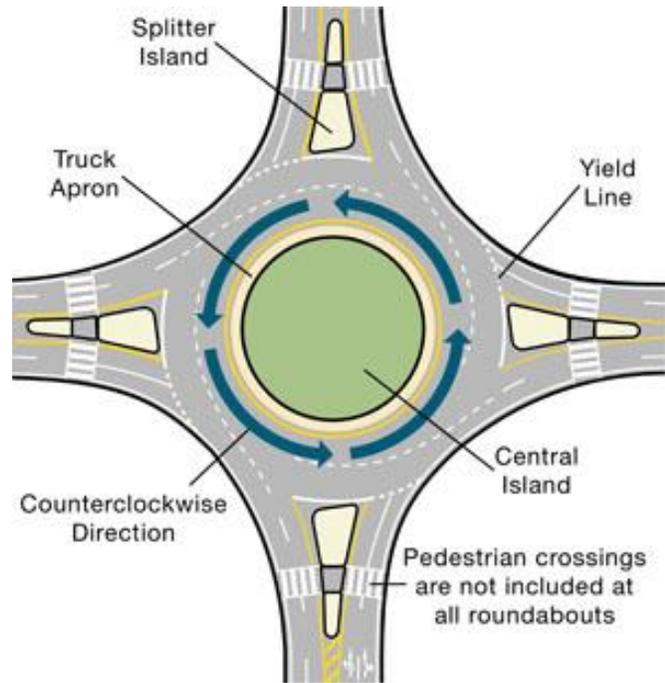
Instructional Strategies



- Driving directions should be given at least 1000 feet in advance of decision points.
- Distance may vary—but there needs to be time to process and clarify expectations.
- Keep directions clear and simple.
- Any use of ASL sign language to communicate with hearing deficits is an exception to rule.

Collision Avoidance Strategies

Roundabouts



- This is a popular design for reducing collisions at intersections due to fewer points of contact.
- Traffic in the circle has right-of-way.
- All entrances have a Yield sign which becomes a Stop sign should traffic be present.
- Always enter to the right

Reversible Lanes



- In addition to traffic signals major urban areas use lane markers to facilitate the flow of traffic.
- A green arrow over the lane signifies the lane is open as a driving lane in this direction.
- The middle lane will change direction given traffic wave patterns.

Distracted Driving



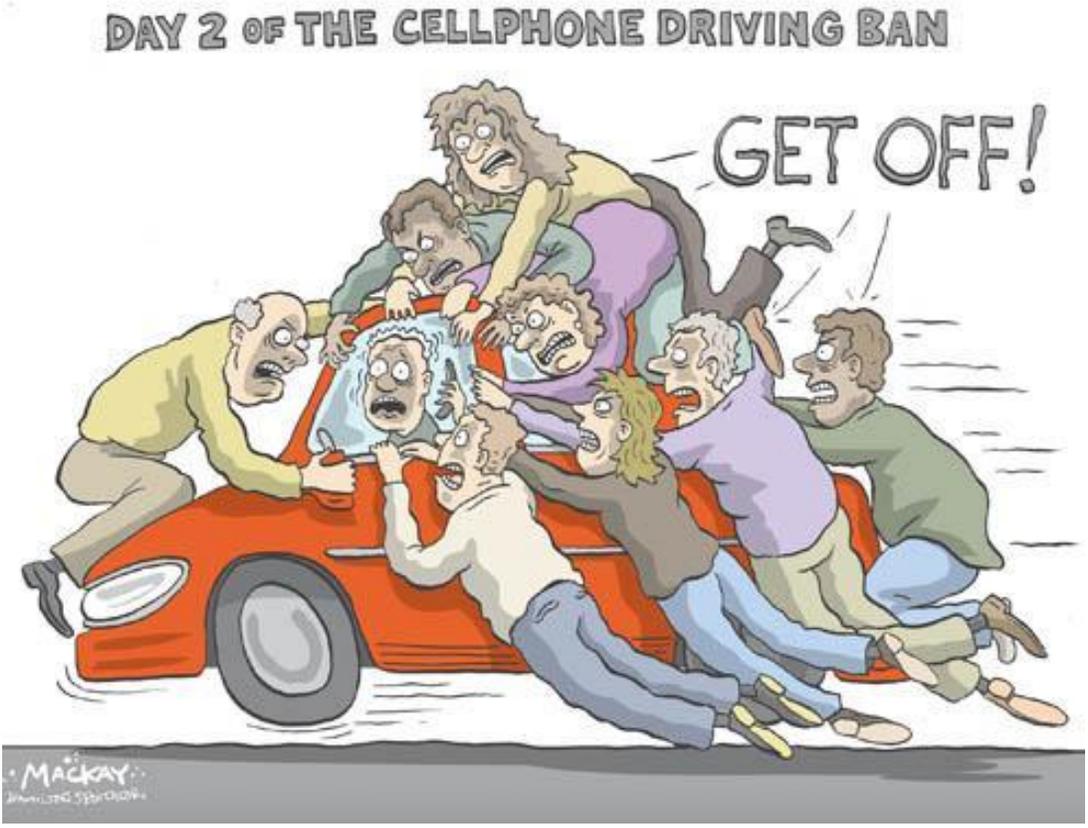
- Focus has primarily been directed at use of the cell phone and texting.
- Conversation in the car with passengers is a distraction.
- Eating fast food in car is a distraction.
- Animals in the car are a distraction.
- Some cars have been converted to an office on wheels.

Distracted Driving



- Rubbernecking is probably the most dangerous distraction.
- Virginia study found 16% of car crashes caused by distractions.
- Other distractions include driver fatigue, other passengers, adjusting radio, and reading materials while driving.

Distracted Driving



PUTTING THE AUTO IN AUTOPILOT: DRIVERLESS CARS & THE END OF DISTRACTED DRIVING

FROM THE MOTOR CITY TO HOLLYWOOD TO SILICON VALLEY, THERE HAS BEEN A GROWING INTEREST IN AUTONOMOUS VEHICLES FOR YEARS. WITH DRIVERLESS CARS NOW BEING TESTED, THE NEXT HURDLE TO OVERCOME IS STATE LEGISLATION. SO BUCKLE UP, WE'RE HITTING THE ROAD.

FUTURISTIC FEATURES? NOT ANYMORE!

- LIDAR**: A laser that projects a 360-degree field of light around a car, creating a 3D map of the world around it. It's accurate to within 2 centimeters.
- RAOAR**: Accident prevention by detecting a car's position within a 360-degree radius of a car.
- STEREO VISION**: Two cameras that create a 3D image of the world around a car. It's accurate to within 2 centimeters.
- LANE GUIDANCE**: Cameras that read traffic signs and road markings to help a car stay in its lane.
- GPS**: An accurate location system that can be used to help a car find its way.
- INFRARED CAMERA**: Two infrared cameras that can see through fog and at night.
- WHEEL ENCODER**: Measures the rotation of the wheels to help a car know its position.

SAY GOODBYE TO DISTRACTIONS

IN A SURVEY BY THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, PARTICIPANTS WERE ASKED WHAT DRIVING DISTRACTIONS THEY FREQUENTLY ENGAGED IN:

- Talking to other passengers: 68%
- Texting: 45%
- Using portable music player: 38%
- Adjusting the car radio: 65%
- Using mobile phone: 40%
- Watching TV while driving: 27%

25% OF ALL TRAFFIC FATALITIES INVOLVE DRIVING A PHONE IN THE HAND

5,000 KILLED AND 450,000 INJURED DUE TO DISTRACTED DRIVING

\$230 BILLION/YEAR IN ECONOMIC DAMAGE DUE TO DISTRACTED DRIVING

WITH A DRIVERLESS CAR, ALL OF THESE DISTRACTIONS WOULD BE ELIMINATED FROM THE EQUATION, RESULTING IN FEWER CAR ACCIDENTS, INJURIES, AND DEATHS.

SO... WHEN CAN I BUY ONE?

IN JANUARY 2011, KENYA PASSED LEGISLATION TO ALLOW DRIVERLESS CARS TO BE TESTED ON PUBLIC ROADS. IN APRIL 2011, CALIFORNIA PASSED LEGISLATION TO ALLOW DRIVERLESS CARS TO BE TESTED ON PUBLIC ROADS. IN JUNE 2011, FLORIDA PASSED LEGISLATION TO ALLOW DRIVERLESS CARS TO BE TESTED ON PUBLIC ROADS.

GENERAL MOTORS, VOLKSWAGEN, AUDI, BMW, HYUNDAI, AND GOOGLE ARE AMONG THE COMPANIES CURRENTLY TESTING DRIVERLESS CARS.

WITH INTERESTING LEGISLATION, DRIVERLESS CARS WILL BE AVAILABLE FOR MASS PRODUCTION BY 2020.

LOOKING FORWARD

WITH DISTRACTED DRIVING ACCOUNTING FOR HUNDREDS OF THOUSANDS OF ACCIDENTS EACH YEAR, THERE IS NOW MORE NEED FOR AUTONOMOUS VEHICLES THAN EVER. THE TECHNOLOGY TO MANUFACTURE THESE VEHICLES IS ALREADY IN EXISTENCE, BUT BEFORE THE PUBLIC WILL HAVE A CHANCE TO GET IN THE PASSENGER SEAT OF A DRIVERLESS CAR, OTHER KEY LEGISLATION MUST BE PASSED. CALIFORNIA, FLORIDA, AND ILLINOIS ARE CURRENTLY TESTING DRIVERLESS CARS, AND SEVERAL STATES ARE CURRENTLY PASSING LEGISLATION ALLOWING AUTONOMOUS VEHICLES.

PRODUCED BY THE LAW OFFICES OF DANIEL R. ROSEN

Driver Fatigue

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- Drowsy driving exhibits similar behaviors as drunk driving.
- The body will take only so much abuse before talking back.
- Drowsy driving accounts for about 100,000 accidents every year according to the U.S. National Traffic Safety Administration.

Drunk Drivers



- Drinking drivers and drunk drivers are a major concern on the highway. They account for @ 10,000 deaths per year
- You can recognize them by no lights on in darkness, windows down, inappropriate speed, lane drifting, etc.
- Paranoia sets in with some drinkers thereby turning the car into a lethal weapon.

Speeding



- Speed reduces time and distance thereby increasing impact.
- The physics of kinetic energy multiplies force of collision.
- Speeding is the major contributing factor to 1/3 of all fatal accidents.
- Posted speed limits reflect the maximum speed under the most favorable conditions.

Road Rage



- Aggressive driving involves promoting self interests above the safety and interests of others on the highway.
- Examples include tailgating, flashing lights, and making rude gestures.
- Resist temptations to respond in kind.
- If a confrontation is necessary—keep it in a public place.
- Call 911 if danger appears

Natural Hazards

Wind



- Structural damage begins @ 40 mph
- Tree/power outages begin @ 25 mph
- Wind currents may appear and shift on short notice
- We have hurricanes, tornados, and dust devils.

Weather



- Heavy snow and blowing winds alter travel conditions. Prepare accordingly both with vehicle maintenance and proper dress.
- Cancel and re-schedule driving if moving into an area of high risk. Freezing rain and ice often accompany snowfall(s).
- Keep an adequate supply of fuel, blankets, and food in the vehicle in the event of slow and disruptive travel patterns.
- Stay warm—Stay safe—Stay home!

Black Ice



- Wet surfaces begin to freeze @ 35 degrees.
- Bridges, Underpasses, and Tunnels are first to transform into slick surfaces.
- Small pick-up trucks and some rear wheel drive sport cars are very light in the back end which means they will be the first to fishtail and lose control.

Flash Flooding



- You need to know how high your exhaust pipe is off the ground.
- Your car is not a boat!
- When in doubt-turn around!
- If water goes up the exhaust pipe—it will lock up engine and transmission.
- Electrical circuits are damaged with exposure to water

Repairs



- Sometimes a car will not start, computer chips shut down or essential parts simply wear out.
- Major engine problems usually involve a tow truck.
- Have an emergency plan in place for both vehicle transport and passenger return.
- This plan is especially important if driving takes place after 8 am-5 pm business hours.

Stressors

- Client
- This is a test—may fail the test!!
- Different vehicle
- Strange environment
- Change in role/relationships
- Instructor
- Visual cues for alertness and response
- Personality conflicts
- Decision(s) @ intervention
- Medications—*are we safe?*

High Occupancy Vehicle Lane



Be Alert



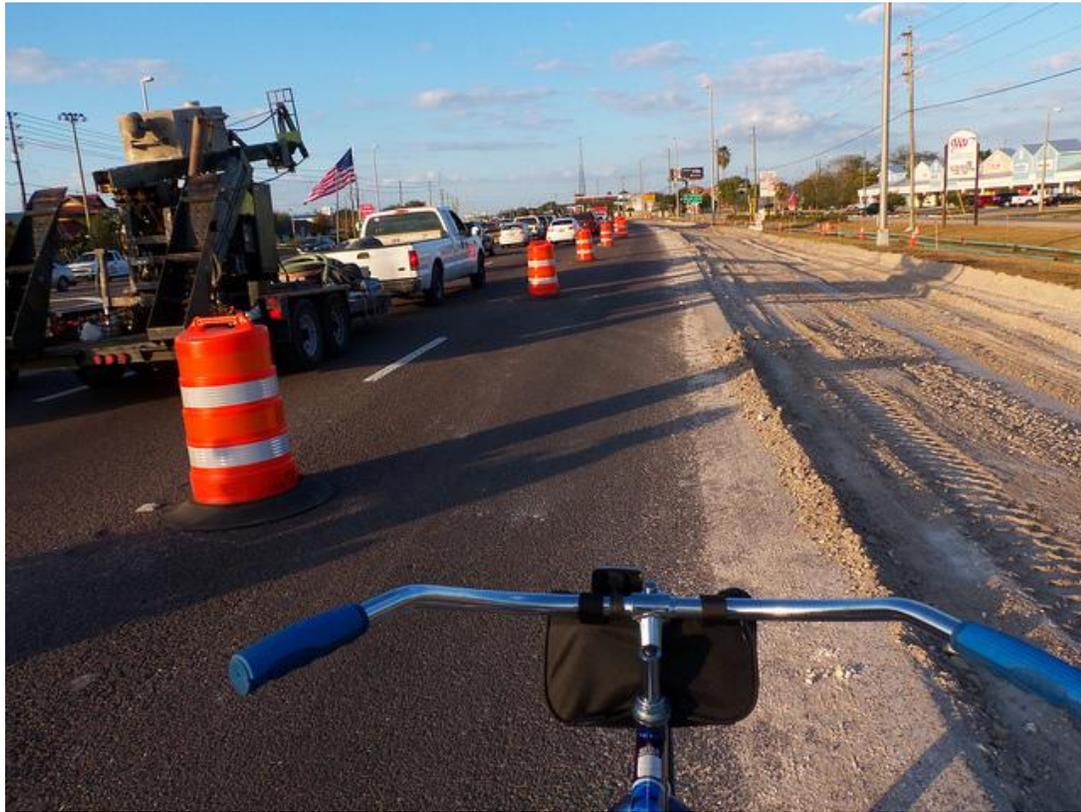
Be Alert



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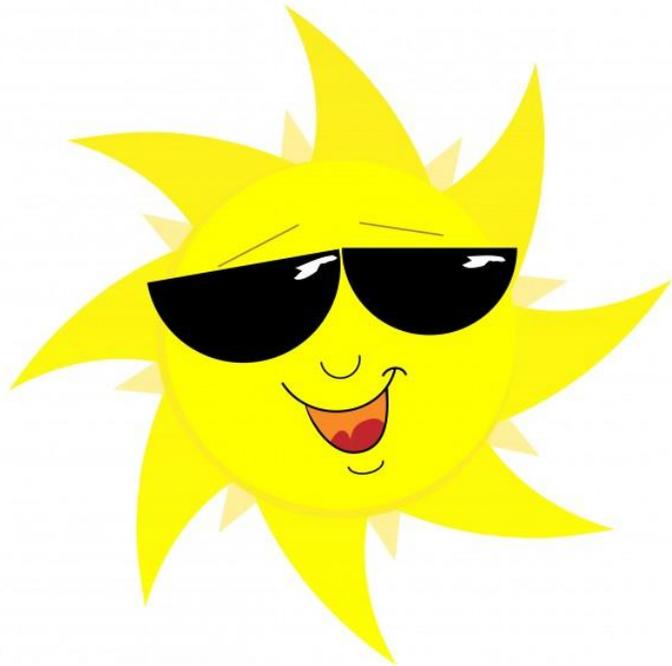


Anticipate the Unexpected



- Road construction is here, there, and everywhere!
- Slow down
- Points and penalties double in a construction zone

Be Prepared



- The sun is a powerful force of energy and driving towards the sun can cause visual problems.
- Sunglasses provide some relief from the glare.
- Wearing sunglasses during the day can protect and improve vision

Be Alert



- Speeding in a school zone is an automatic charge of reckless driving.
- School zone is defined from sign to sign.
- Some use flashing yellow lights to indicate when the zone is active.
- Others post hours for enforcement.

Be Alert



- Amber lights serve notice and warning that a bus stop is about to happen.
- When red lights become active—a vehicle stop becomes an absolute imperative.
- All traffic must stop unless there is a divider or median between traffic lanes