



Driving Maneuvers

Review of Steering Techniques



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Three steering techniques:

- Hand-over-hand steering
- Hand-to-hand steering
- One-hand steering

Make sure to keep your thumbs poised on the outside of the wheel rather than using a full, tight grip.

Hand-Over-Hand Steering

- Grasp the steering wheel with your right hand at 3 o'clock and your left hand at 9 o'clock.
- Use the opposite hand of the turning direction to start the turn.
- One hand pushes the steering wheel up, past the 12 o'clock position, while the other hand reaches up to the 12 o'clock position, and pulls down towards 9 or 3 o'clock rotating the wheel in this fashion for the degree of turning needed.
- Hence called "hand over hand", H-O-H technique.



Hand-to-Hand Steering

- This is another steering method that may be used for making turns.
- Starting at the 9-3 position on the wheel, one hand pushes up on the steering wheel to the 12 o'clock position while the other hand slides to the top and then pulls the wheel down, repeating the action until the turn is complete.
- This is sometimes called “feeding” the wheel, “push/pull steering” or “H-T-H” hand to hand steering technique. Both hands are always employed in the steering and wrists never cross.
- Try testing both H-O-H or H-T-H to see which technique works best for you.



One-Hand Steering

- One-handed steering is not recommended. Why?
- Steering with one hand should be used only when backing up in a “straight line” back up or briefly when adjusting or operating dashboard controls.
- When turning while backing like when parallel parking, use both hands on the wheel.
- Palming the wheel is not recommended.



Steering Discussion

What is the correct hand position for driving on a straight away and when backing up your vehicle?

How do you know your wheels are straight?

Why don't you want to wrap thumbs around the wheel?

Mirror Review

Reminder: Your mirrors are essential for all driving maneuvers!

1. When/how often should a driver use their mirrors?
2. How do you know if your mirrors are adjusted properly?
3. How do you adjust the mirrors for night driving?

Using Your Turn Signals

- Develop the habit of signaling every time you plan to turn, change lanes, slow, or stop. The flashing light attracts the attention of other road users.
- Use your turn signal at least 100 -150 feet before turning in a residential area and at least 200 feet if you are in the country or traveling fast – (3-4 seconds before the turn).



Why do you think people don't use their turn signals?

Lateral Movement: Pulling Away From the Curb and Lane Changing

Before moving left or right whether turning, changing lanes, or pulling to or from the curb, a driver must determine if the intended path of travel is available, the right of way clear, and communicate their movement to other users.

Use the following technique and make it your habit.

SMOG

SIGNAL INTENTION - MIRROR CHECKS – OBSERVE – GO



Pulling Toward the Curb

- Signal, check mirrors, observe blind spots and area around vehicle and then brake. Why should you signal first and then brake?
- Note: After parking, wheels must not be more than one foot from the curb. Remember you must not open the door on the road side if it will interfere with bicyclists and other traffic.



Pulling Away From the Curb

- Signal intent to move into traffic.
- Check through rear window for pedestrians, bicyclists, motorcyclists, and other vehicles; continue to use rearview mirror to keep eye on potential hazards behind vehicle; check side mirror for oncoming traffic/road users.
- Observe vehicle blind spots and ensure there is nothing blocking intended path of travel.
- When path is clear, accelerate smoothly into lane.

Check for Understanding Activity 1

1. Explain the proper way to hold and adjust your steering wheel to assist in control and safety.
2. How do you know if your wheels are straight?
3. When should you engage your turn signal?
4. What does the acronym SMOG stand for?
5. What is one of the first steps to take when preparing to pull away from the curb?

Turning: Key Concepts

- Signal 100-150 feet before the turn. Avoid signaling earlier than this to avoid confusion about where you are planning to turn.
- Slow before making the turn-SPEED UP upon completion.
- Better too slow than too fast; speed should not exceed 10-15 MPH on the 90 degree turns.
- The sharper the turn, the slower the speed required to make the turn.
- Turning corners too wide is common problem. This is caused by turning too late, or failing to reduce speed properly. In a controlled turn, the rear wheels always follow a path inside the front wheels – The sharper the turn the greater the difference in tracking between front and rear wheels.

Review Chapter 5 of the NYS Driver's Manual for Additional Information

Additional Considerations When Preparing To Turn

- Be alert to traffic on all sides of your vehicle, taking special care to check for motorcycles. Most crashes involving a motorcycle and other vehicles result from the driver failing to see the motorcyclist.
- Look out for other road users (pedestrians, bicyclists, etc.), especially on right turns. They can be difficult to see in traffic.

Right Hand Turns

- Begin with your right signal – 100 to 150 feet or 3-4 seconds before the turn.
- Slow down before the turn, less than 15 MPH for the sharp, 90 degree turns.
- Scan intersection – check for other vehicles, pedestrians, and bicyclists.
- Check mirrors as you slow down.
- Drift towards right side of your lane.
- Do not drift too wide.
- Imitate the edge of the road, when it curves, that's when you should turn.
- Look where you want the vehicle to go.
- Make sure the front wheel clears before you steer all the way right.
- Recovery – start straightening steering wheel approximately ½ way through the turn.
- Accelerate through the turn if needed. Get back up to speed when the vehicle is straight.

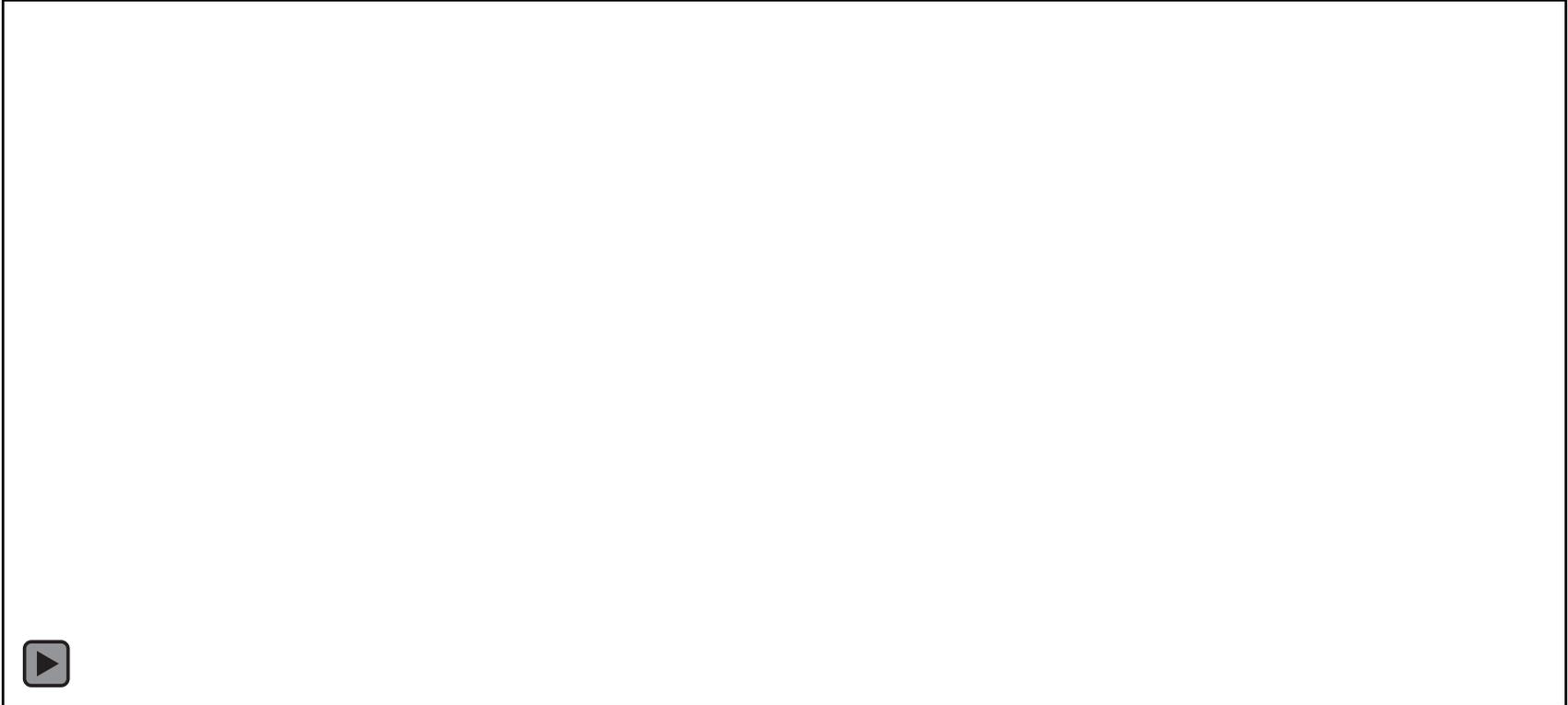
Right Hand Turn Example



Left Hand Turns

- Begin with your left signal – 100 feet to 150 feet or 3-4 seconds before the turn.
- Slow down before the turn, less than 15 mph for sharp, 90 degree turns.
- Scan intersection – check for other vehicles, pedestrians, and bicyclists.
- Check mirrors as you slow down.
- Drift towards the left side of the lane.
- Start by going straight - do not cut the turn.
- Aim towards the center of the road.
- Look where you want the vehicle to go.
- Drive as if there is a vehicle on the corner.
- Recover – start straightening steering wheel approximately $\frac{1}{2}$ way through the turn.
- Accelerate through turn if need, get back up to speed when vehicle is straight.

Left Hand Turn Example (One Way to Two Way Road)



Backing Left and Right

- Before backing, check for traffic, pedestrians, parked vehicles, and any stationary objects – 360 degree look – like you are an owl.
- Keep both hands on the wheel when backing and turning. Look in the direction you want the back of the vehicle to go and turn in that direction.
- The vehicle moves in the direction that the top of the wheel is turned.
- Back slowly. Make quick glances to the front and sides to be sure no one is near.
- Be aware that front of vehicle will swing wide in opposite direction from rear of vehicle.

Checking for Understanding Activity 2

- When do you signal for a turn?
- What should your speed for a sharp 90 degree turn should be?
- Explain understeering and oversteering.
- What is recovery when associated with turning?
- What steps would you take in order to back to the left?

Turning Around: General Tips

- Be smart - select the safest way to turn around.
- Usually the safest method is to drive around the block or pull into a parking lot.
- Backing into a driveway and then driving forward out of the driveway typically is safer than backing out.
- S.M.O.G. and then “roll slow, steer fast” as you execute control and visibility when backing is necessary.

Don't Attempt to Turn Around:

- Near the crest of a hill, curve or any location where visibility is an issue
- On an entrance/exit ramp
- On a highway or fast moving road
- Near a busy intersection or in busy traffic
- In a school zone
- Where a sign says states that turning around is prohibited

U-Turns

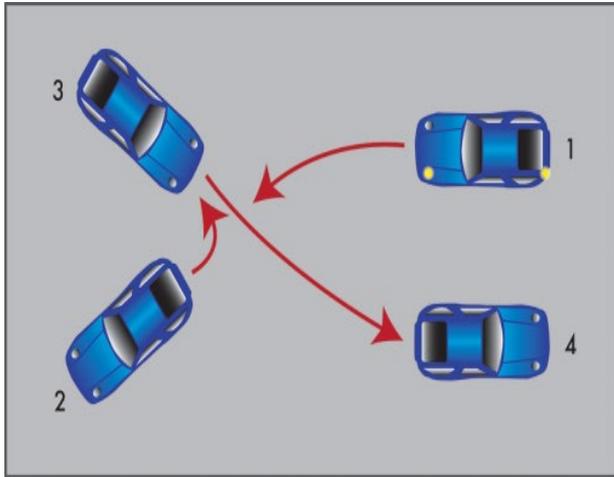
- Activate your right turn signal, check mirror, begin braking and pull to side of the road and STOP.
- Engage left signal (communication), check forward, rearview mirror and blind spot (observation) S.M.O.G.
- If clear, turn your wheel to the left as far as it will go as you gradually move the vehicle towards the other side of the road.
- Keep vehicle moving smooth and steady – ROLL SLOW, STEER FAST.
- Accelerate once you have determined that you can clear the opposite curb.
- Keep moving through the turn.
- If your turn signal doesn't turn off automatically (which would be extremely odd in the case of a U-turn), turn it off.

2-Point Turn

Allows you to change direction using a driveway or cross street. Point refers to place vehicle stops for both 2-point and 3-point turns.

- Put on your turn signal and slow down as you get ready to pull in the driveway or street.
- Check for clearance on the street and ensure there are no pedestrians, bicyclists, vehicles or other obstacles in your way.
- Put the vehicle into reverse and turn in the direction you want the back end to enter.
- Turn your wheel straight and stop when your vehicle is completely out on the original street.
- Put vehicle in drive.
- Use turn signal and enter traffic when it is safe to do so.
- Driving forward across a lane of traffic is much easier, as visibility is better and requires a smaller gap in traffic.

3-Point Turn (K-Turn, Broken U-Turn)



1. Signal with your right turn signal, then pull over to the right and STOP. Signal with your left turn signal, check for traffic coming from all directions.
2. Turn left, go across the road (roll, slow, steer fast) so you come to a stop while you face the left curb or edge of the road.
3. Look again for traffic. Turn your steering wheel as far to the right as possible, then reverse the vehicle to the right curb or edge of the road.
4. Stop, check again for other traffic, then pull away from the curb

Remember: slow vehicle - fast hands; try to time the speed of the turn so that you aren't grinding the tires.

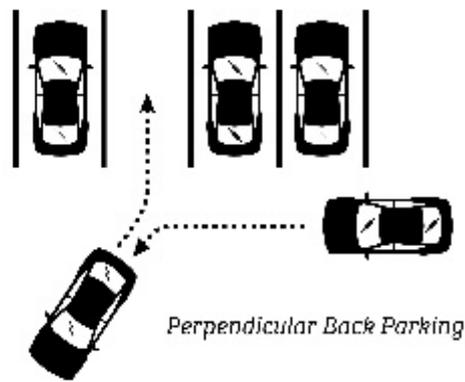
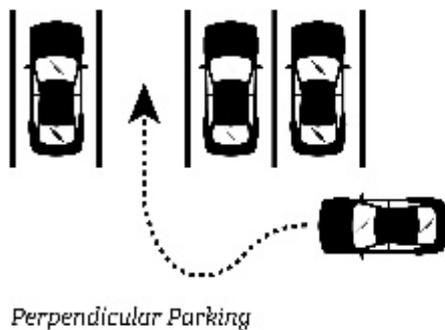
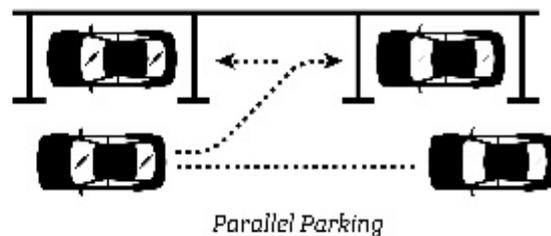
Check for Understanding Activity 3

1. What is the first step when executing a U-turn?
2. What does a “point” refer to when discussing 2- and 3-point turns?
3. What are some other names for a 3-point turn?
4. What is the steering sequence for a 3-point turn, starting from after you have pulled over to the side of the road?

Parallel Parking Tips

1. Signal your intentions first to move to the curb then slow and brake.
2. A good rule is to line up your sideview mirrors to insure that your vehicle is straight.
3. Keep the right signal on while in traffic and immediately place the gear in reverse.
4. When clear and safe to back up, do so straight back before the steering sequence.
 - a. Steer right all the way to direct vehicle into the spot
 - b. Steer back to center so as to back straight into the spot
 - c. Steer all the way left from center position, as to direct the vehicle into spot
 - d. Steer right back to center to pull up and finish the park
5. Look back when backing-you must watch all around-the back up camera is only a check point. It should be used like all the other mirrors.
6. Swivel your head to continually make checks.
7. Always switch gears first when changing direction and do a quick double check.
8. When pulling away use S.M.O.G.

Perpendicular and Angle Parking



Perpendicular Parking-Entering

Pulling in at a right angle to the curb, between two vehicles:

- Locate your space.
- SMOG.
- Move as far away as possible from space you are planning to enter.
- Turn into the space when the passenger mirror is in line with the white line of the parking space.
- Steer into the space, watching for the turning radius.
- Straighten wheels when you are about halfway into the space.
- Make sure you don't pull too far forward.



Perpendicular Parking: Exiting

- Place the vehicle gear into reverse, making sure the wheels are straight.
- Look 360 before vehicle moves, like an owl.
- Back slowly as necessary, looking all around the entire time.
- Keep straight until your front tire is lined up with the back tires of the other vehicle.
- Steer slowly in the correct direction to finish the back out.
- Remember to look back in the direction that you want the vehicle to go and steer in that direction.
- Watch to insure that bumpers don't "kiss".

Angle Parking

Pulling in at a diagonal angle to the curb, between two vehicles

- Locate your space.
- S.M.O.G.
- Move as far out away from the selected space as possible.
- Look to see the very end of the space before turning in.
- Aim for the center as necessary.
- Stop without going too far forward as you rewind the wheel.

Angle Parking - Leaving

- Vehicle in reverse, wheels straight.
- Look 360 before vehicle moves.
- Back slowly, continuing to look all around your vehicle.
- Keep straight until tire to tire or your bumper clears the other parked vehicles.
- Steer in the correct direction to finish.
 - Top of wheel steers to the right, vehicle moves right – top of wheel steers left, vehicle will move left.

Parking on a Hill

- Make sure to turn your wheels in the correct direction to ensure that the vehicle will not roll into traffic.
- With a curb
 - Facing downhill, turn front wheels towards the curb, using it as a block
 - Facing uphill, turn front wheels away from the curb, using it as a block
- With no curb
 - Facing uphill or downhill, with no curb, turn your tires to the right so your vehicle will roll off the road and not into traffic
- Always make sure your vehicle is in park if it is an automatic (first gear if a manual transmission). Make sure to engage parking/emergency brake for extra safety.

Session Review

When performing a parking maneuver, it is important that the vehicle rolls slow, but your hands steer

Quickly.

What is a checkpoint or reference point? Name one check point in regards to parallel parking.

A guide to a successful set up for parking. Line up mirror to mirror to insure the vehicle starts in a parallel position to the vehicle being parked behind.

When parallel parking, are signals required and if so, what/when would you signal?

Yes. Signal to slow before stopping, signal right to indicate turning back with back up lights on. Signal to leave the space and reenter traffic.

List two checkpoints when executing a perpendicular park?

Center your vehicle in the parking lot lane; begin turning when you can see the end of the parking space you are turning into, don't oversteer.

When parking downhill with a curb, which way do you curb your wheel and what precautions should you take when securing your vehicle?

Point towards the curb. Set the parking brake.

References

1. National Highway Traffic Safety Association. Using Efficient Steering Techniques.
<https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/steeringtechniques.pdf>
2. New York State Department of Motor Vehicles. New York State Driver's Manual.
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