



# Parking Lot Drills



Instructor Manual



The League of American Bicyclists BikeEd program is the national standard in bicycling education. The League is a member-supported organization that promotes bicycling; educates motorists and bicyclists on how to share the road; and advocates for a bicycle friendly America on federal, state and local levels. To join, learn more about the League, or find out about other BikeEd courses, visit [www.bikeleague.org](http://www.bikeleague.org).



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**T**he Road I course is traditionally taught in three sessions. The parking lot drills are designed to follow the material in the sessions even if the LCI chooses to present the materials using a different schedule. Each of the drills builds upon the drills that precede it.

*The following learning objectives are applicable to the parking lot drills. The material in this document follows this list.*

- **To demonstrate the ability to:**
  1. Correctly mount and dismount from the bicycle
  2. Start and stop
  3. Maintain a straight line
  4. Steer smoothly
  5. Scan behind for traffic without wobbling
  6. Use appropriate hand signals to indicate intentions
- **To understand the bicycling physics of rock dodging, instant turning and quick stopping techniques and be able to demonstrate proficiency in correctly performing these maneuvers.**

*The following learning objectives are applicable to the road test but are not covered in this document.*

- **To understand and demonstrate correct riding techniques and road position when:**
  1. Passing parked cars
  2. Turning right or left on residential streets
  3. Stopped for stop signs or traffic lights
  4. At intersections with right-turn-only and left-turn-only lanes
  5. Moving from the right-most through lane to a left turn position on multi-lane roads
  6. Proceeding straight through at intersections
  7. Selecting the correct lane position for wide, normal width and narrow lanes
  8. Avoiding hazards

# Preparing for the Drills

These directions are intended for use with the included diagrams. A page with all the diagrams for use in the parking lot drills is available.

## Insurance:

You should ask permission of the owner of any space (other than public roads) that you are going to use for instruction or practice. If the owner wants evidence of insurance, contact the League office at least two weeks prior to holding your drills.

## Parking Lot:

The parking lot should be smooth, free of debris and as level as possible. A space that is at least 50 by 200 feet is ideal but smaller spaces can be used with some creativity. If the parking lot has a slope it seems to work best to layout most drills (except for the braking drill) uphill. This means the cyclists have to pedal instead of coasting. Most of the layouts shown can be worked around parking islands. At times it may be necessary to swap them left to right. The Scan Drill is the only drill that doesn't work well when swapped.

## Placement:

Try to get far enough away from traffic and other noise producers to make it easy for the cyclists to hear instructions. Make sure they are not facing into the sun when you are talking to them. Put the wind at your back during your instructions so that your voice will carry. In hot weather, try to have shade available for use during the discussion.

## Markers:

We are assuming that LCIs will use half tennis balls in all exercises requiring markers. Use of other markers (i.e., damp sponges) is permissible. Markers must not create a hazard for the students when run over. Markers should not be tall enough to be hit by pedals at the lowest point. Markers should be relatively stable in windy conditions and be easily placed or replaced.

## In Case of Rain:

We have successfully held parking lot drills in covered parking garages. The floors that are remote from the entry are frequently lightly used and make good places to work most of the drills. Remember to ask permission ahead of time.

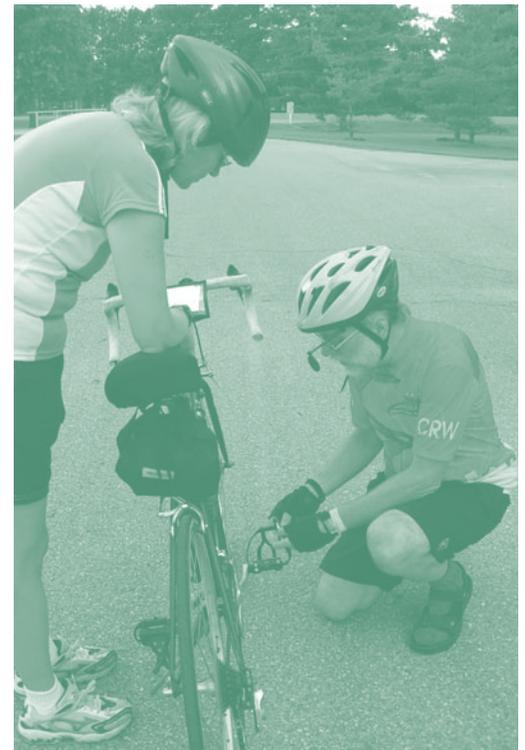
## Competency:

LCIs are expected to be able to demonstrate proficiency in all of these drills. Under medical or other circumstances that don't allow an LCI to demonstrate proficiency, the LCI must demonstrate excellent description and presentation skills for the techniques involved or have an accomplished cyclist demonstrate the drills.

An LCI should set up the layouts and practice them before demonstrating them to the students. Plan to go through each drill at least three times. The first time is to relieve performance anxiety, the second to let the brain get out of the way and the third is to let the body do the drill. This three-time rule also applies when working with the students.

## Handling Skills:

The four exercises in the Handling Skills set are intended to get riders comfortable on their bicycles before moving to the more advanced Avoidance Maneuver drills. Even the most accomplished rider will benefit from working through these exercises. Cyclists already know most of what is taught in this set of drills but may have forgotten in their normal cycling routine. These drills are related to the first of the layers of prevention.



## Avoidance Maneuver Drills:

This set of four drills has been developed to avoid hazards in those unlikely occurrences when a cyclist is faced with a situation that threatens to lead to a serious crash. There are presented in a specific sequence to build on prior experience and skill. To gain a certificate, Road I candidates are required to be proficient in performing these maneuvers. This means they shall:

- Explain the reasons why they need to know the maneuver
- Explain the concepts and techniques of performing the maneuver
- Demonstrate that they understand the techniques, and
- Demonstrate significant progress towards competency in the maneuver.

# Starting/Stopping

## Purpose:

The purpose of this drill is to ensure that the students can start and stop quickly without wobbling, and use the gears efficiently.

## Layout:

The layout for this drill requires 8 markers. They are arranged in two lines of two pairs. The pairs will have 10 inches between them, the lines will have two pairs with 40 feet between them and the lines will be parallel and separated by a minimum of 10 feet. During the exercise the instructor will stand to one side.

## Explanation:

Starting and stopping quickly without wobbling helps a cyclist maintain control in traffic, and presents an appearance of competence to the motorists. Using the bicycle's gearing effectively improves acceleration. The techniques used in this drill will help the cyclist get across intersections quickly and smoothly.

## Demonstration:

The instructor should demonstrate this drill at slow speeds indicating the proper action for the seven items for which the students will be judged. It can be helpful to demonstrate incorrect techniques and why they are inefficient and hazardous (cowboy mount/dismount, with the cyclist standing next to the bicycle when stopped; tricycle start/stop sitting on the saddle with both feet on the ground, impossible with the saddle at the height for efficient pedaling; scooter star, using one foot to push off instead of pedaling). Briefly demonstrate shifting and cadence, but indicate that they will be addressed at more length in the next drill.

## Exercise:

Have the cyclists line up near the starting point. Each cyclist should start and stop four times through the cycle. The next cyclist should not start until the first cyclist has turned and is on the second line of markers.

The instructor will be looking for competence in the following items:

1. Cyclist standing over the bicycle ahead of the saddle, not on the saddle.

2. Pedal in power position: The pedal should be in the 2 o'clock position (viewed from the right side of the bike).
3. Power stroke: The pedal should be pushed down firmly as the cyclist rises onto the saddle.
4. Continuous rotation: The second foot should join the pedal as it reaches the top of the circle and continue with the pedal. Clicking into clip-in pedals or slipping the feet into toe clips should wait until the cyclist has gained momentum or cleared the intersection.
5. Braking with both hands: Both hands should be used to brake the bicycle to a complete stop prior to placing a foot down. If the cyclist leaves the saddle to place a foot down before the bicycle has come to a complete stop the back tire is likely to lose traction and/or lift off the ground.
6. Handlebar turn: As the bicycle comes to a complete stop, the handlebars should be turned slightly away from the foot that will be placed on the ground. This action will cause the bicycle to fall slightly to the side where the foot is to be on the ground.
7. Pedal repositioned: The cyclist should automatically reposition the pedal to the power position.

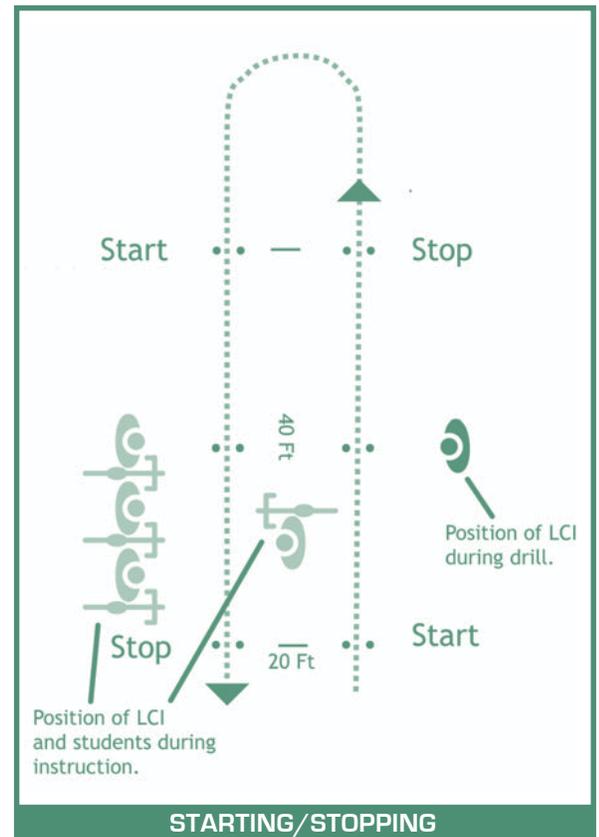
## Bicycle:

Any type of bicycle can be used in this drill including recumbents and tricycles. This is a good exercise to explain the benefits of downshifting when coming to a stop. Have cyclists shift their bikes to the highest gear. Have them go through the exercise. Have them shift to a lower or lowest gear and go through the exercise. Then have them choose a gear that gives them good acceleration without strain. During the road test, have them work to always be in that gear when they stop.

Check that students using toe clips and straps have threaded the straps correctly. A strap should be threaded starting

at the outside of the pedal, with the outside of the buckle facing down and about 1½ inches from the outside of the pedal. The strap should be given a 360-degree twist under the pedal to keep it from slipping. After the strap has been brought through the loop at the top of the toe clip, it should be passed only through the top part of the buckle, not through the loop at the bottom. Then the strap can be adjusted while the cyclist is on the bicycle — tightened by pulling on the end, and loosened by pushing outward on the buckle with the thumb. Students should keep toe straps loose for their first exercise in starting and stopping.

On a recumbent bicycle, it is necessary to place the foot into the toe clip by pulling back from underneath the pedal rather than kicking back from above. If a bicycle has a backpedaling (coaster) brake, it will be necessary for the cyclist to switch feet on the pedals to restart after stopping. Clip-in pedals, or toe clips and straps, are not practical with a coaster brake.



STARTING/STOPPING

# Straight Line/Shifting

## Purpose:

This drill provides practice in riding a straight line a comfortable distance from a curb or other line. Students who are unable to demonstrate competence in this simple skill should not take part in the road ride.

## Layout:

The layout requires 4 markers, placed in two pairs approximately 80 feet apart. The markers in each pair should be approximately 10 inches apart. Placing the pairs approximately three feet to the left of a straight line or curb approximates the situation on the street. This same layout can be used in the Scan Drill portion of the Hazard Avoidance drills.

## Explanation:

Being able to ride a straight line a comfortable distance from the curb is critical to the practice of vehicular cycling. It provides a predictable motion and enhances the appearance of cycling competency.

## Demonstration:

To demonstrate this drill, the instructor should ride slowly and smoothly down the course. Remind students to keep their eyes on the pair of markers at the end of the layout instead of on the ground just in front of their front wheel. The instructor can demonstrate downshifting at the stop point. Show how to shift up while accelerating, maintain a proper cadence, and shift down before stopping. Point out that a higher cadence provides the same power without strain — the leg is a pendulum when walking, with a natural cadence, but when pedaling it is the connecting rod in an engine and can easily go faster.

On a derailleur-equipped bicycle (except with brake-lever shifters), shifting is not possible when both hands are on the brakes. Instruct students to release one brake or the other (generally, the right brake lever to shift the rear derailleur when preparing to restart on level ground) when they need to shift. Point out that downtube shifters can and

should both be operated with one hand. Instruct students to keep braking moderate during this exercise, to avoid skidding and loss of control.

## Exercise:

Have the students line up near the starting point. Each student should demonstrate the proper starting technique and move quickly and smoothly through the layout. The next student can start when the previous student turns at the end of the layout. Each student can practice acceleration when starting and again after turning, and practice slowing and stopping when returning to wait in line at the starting point.

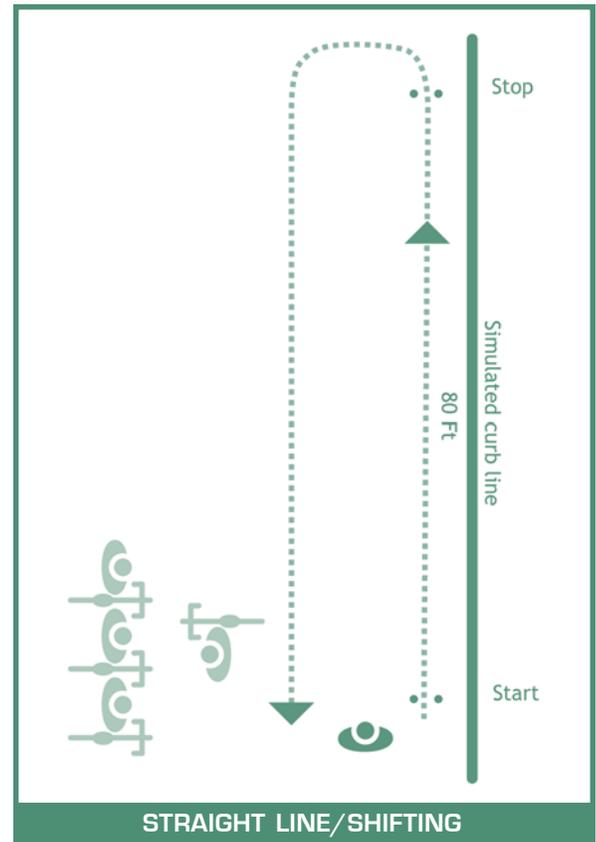
The instructor will be looking for competence in the following items:

1. Starting technique from Drill 1
2. Holding a straight line at a comfortable distance from the curb
3. Starting in a low gear and shifting up through the gears while accelerating.
4. Smooth cadence with even strokes; proper cadence once having accelerated
5. Shifting down before stopping — before braking, then after some practice, while braking.
6. Stopping technique from Drill 1, including downshifting if necessary.

## Bicycle:

Any type of bicycle can be used in this drill including recumbents and tricycles. A single-speed bicycle will not allow practice in shifting. If a student has

brought one, make a teachable moment of advising on standing for power when starting and on choosing a drive ratio that provides a good cadence on level ground. You can demonstrate these points on a geared bike by not shifting.



# Control



## Purpose:

The purpose of this drill is to allow the rider to practice and demonstrate a level of bike handling skill that is adequate for riding in traffic.

## Layout:

This layout requires 12 markers in 6 pairs with approximately 18 inches between those of each pair. The first 2 pairs should be approximately 20 feet apart and in line. Next 3 pairs will be about 10 feet apart and alternately offset laterally by approximately 18 inches. The final pair should be 10-20 feet beyond the fifth pair and in line. For less skilled riders, the markers in each pair in the “chicane” can be placed farther apart.

## Explanation:

Control of multiple weaving movements is important when riding beside traffic either in a lane that is wide enough to share or in a bike lane or shoulder. Minor debris and other hazards can cause a cyclist to make these movements when the hazard is not dangerous enough to cause the cyclist to scan and move into the travel lane.

## Walk-through:

If the instructor feels a walk-through is required, it should be done with one hand on the stem, turning the bike and letting the frame tilt back and forth.

## Demonstration:

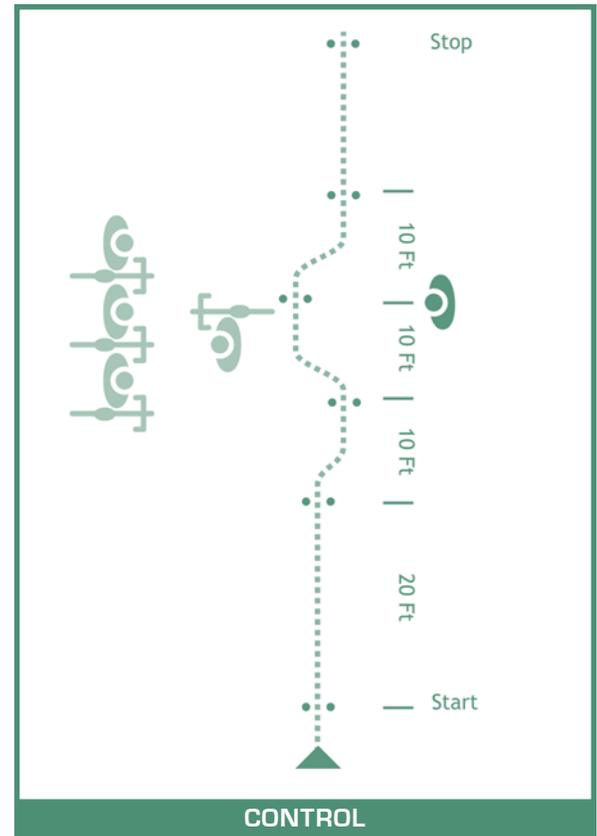
To demonstrate this drill, the instructor should ride smoothly through the layout, displaying the proper hand and body movements. Turns should be made early so the bicycle is riding straight as it passes between the pairs of markers. This drill works better at road speeds. When viewed from the rear, the cyclist should display minimal movement of the upper body and head as the weaving motion is completed. At the end of the demonstration, the instructor should move to the observation position and request the riders to proceed.

## Exercise:

Have the students line up at the start. Practicing a proper start, each student should ride through the layout, demonstrating the proper handling skill to maneuver between the “hazards.” Each rider waits to start until the proceeding rider has stopped at the end of the layout.

The instructor will be looking for competence in the following items:

1. Starting technique from Drill 1
2. Turning early
3. Riding straight through the paired markers
4. Stopping technique from Drill 1



## Bicycle:

Any type of bicycle can be used in this drill, including recumbents and tricycles but execution of the techniques can be very different. This drill will be more difficult with a long wheelbase recumbent or tandem. With a tricycle, the single wheel should pass between the markers, with the paired wheels passing on the outside of the markers. A medium or lower gear can make this drill easier.

# Scan Drill

## Purpose:

The purpose of this drill is to allow the rider to practice and demonstrate the ability to scan behind both to the left and to the right while maintaining a straight line of travel.

## Layout:

This layout is the same as for the previous Straight Line drill. It is helpful to use a painted straight line in a parking lot for this exercise, but that is not necessary. Do not use a curb for the straight line, as a cyclist may swerve doing this maneuver and strike the curb. The instructor takes an active part in this exercise, and so the positioning is important. The instructor should stand on the line the cyclists will ride and then take two giant steps to the left. That should put the instructor about where a vehicle operator would be. After each group of cyclists passes through the course, the instructor may move one giant step back to the right, to end up directly behind the cyclists.

## Explanation:

Many crashes between cyclists and motorists, and between cyclists and other cyclists, are caused by a cyclist's swerving or turning left without checking to determine if the maneuver can be made safely. The scan maneuver is one of the most basic maneuvers available to cyclists to avoid crashes. This maneuver falls in Layer 2 of the layers of safety (don't cause crashes).

## Demonstration:

To demonstrate this drill the instructor should ride smoothly through the layout, displaying the proper head and body movement. The instructor should demonstrate at least two different ways of doing a proper scan. For many people simply turning the head will not be possible. The first recommended way to scan is to tuck the chin into the shoulder and look over the shoulder. Also demonstrate removing the left hand from the handlebars and placing it on the hip or the back of the saddle before turning the upper body to look behind.

three times. Have the rider call out how many hands are raised. For the third time through the course the rider should be given the opportunity to choose at least three times to scan as this more nearly duplicates the conditions on the road.

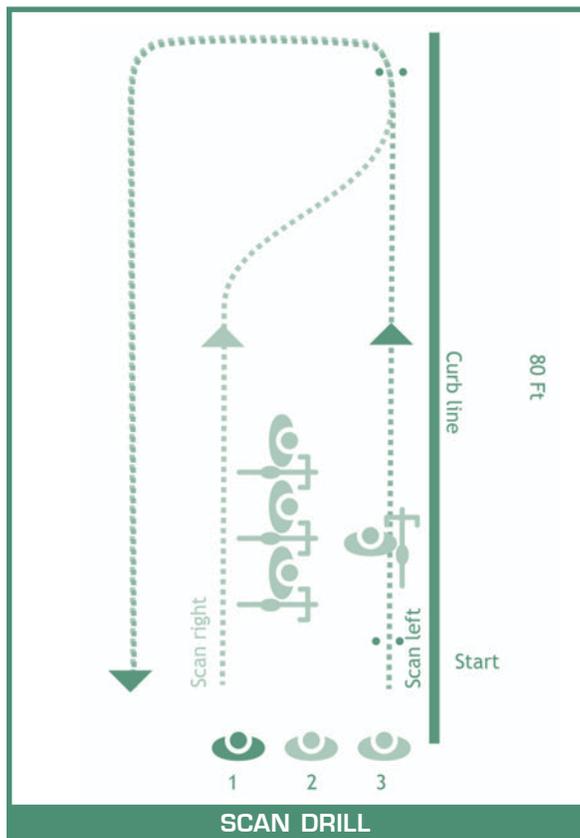
As a recommended option, run the scan drill as if the cyclist has just passed a slower vehicle and needs to move back into the right lane. This is shown by the grey lines in the diagram.

The instructor will be looking for competence in the following items:

1. Turning enough to identify the number of hands held up
2. Maintaining a straight line  
If swerving, how well does the cyclist recover from the swerve?

## Bicycle:

Any type of bicycle can be used in this drill including recumbents and tricycles, but the techniques can be very different. Most recumbent bicycles and tricycles do not allow the head to be turned far enough to look directly back. Students riding them must demonstrate competence through a combination of a scan using a rear-view mirror to look directly back, and a turn of the head to check to the side. The student may also lean forward from the waist and then attempt the scan.



## Exercise:

Have the students line up behind and to the right of the instructor. Practicing a proper start, each student should ride past the instructor and straight along the course. Unless the layout is long, instruct each student to wait to start until the preceding rider has made the turn at the end of the layout. Have each student ride at least twice with the instructor raising either one, two or no hands and calling out "SCAN." At varying intervals the instructor should call SCAN

# Signaling

## Purpose:

The purpose of this drill is to review the hand signals that are lawful in the state and to give the students a chance to practice scanning behind, riding with one hand while signaling and turning properly.

## Layout:

This layout requires 10 markers and works best next to a curb, but one is not required. The layout should be long enough (about 40 feet) on both the right and left turn legs to allow for scanning and then signaling well in advance of the turn, holding the signal for a full count of two and then replacing the hands on the handlebars well before the turn is initiated.

## Explanation:

Signaling turns and stops is required in all states. All states require use of signals for lane changes, turns and stopping. Some states allow the use of the right hand to signal. Some states do not require signaling if removing the hands from the handlebars to signal would endanger the cyclist.

Obviously, it is not desirable to make a hand signal when both hands must be on the handlebars for good steering control, or to use the handbrakes. What is important is to obey the spirit of the law. Remember, the purpose of signaling is communication.

For a cyclist, usually traveling slower than other traffic, a turn signal is most important to indicate the desire to make a lane change, and to obtain the cooperation of a motorist to let the cyclist into line. The cyclist makes this signal before changing lanes or turning, then discontinues it when better control is needed during the maneuver itself. In close quarters, a cyclist can also signal with a turn of the head.

The most effective right-turn signal is made with the right hand. Motor vehicles have had turn signals since the 1950s; many motorists do not understand the antiquated hand-over-head right turn signal

A slow signal is most useful to indicate to a following motorist that it is unsafe to pass. A slow signal, too, is most effectively made with the right hand if the motorist is behind the cyclist on the right (for example, if the cyclist is waiting near the center of the street to turn left).

## Demonstration:

To demonstrate this drill, the instructor should ride slowly and smoothly through the layout, displaying the proper scanning maneuver, then the proper hand signal for a count of two, and then placing both hands on the handlebars well before the turn is initiated. At the end of the demonstration the instructor should move to the observation position and have the riders perform the drill.

## Exercise:

Have the students line up at the start. Practicing a proper start, each student should ride through the layout demonstrating the proper handling skill to scan, then signal, while riding with one hand on the handlebar. Students will be judged on starting technique, scanning technique, signaling technique, turning with both hands on the handlebar, and stopping technique.

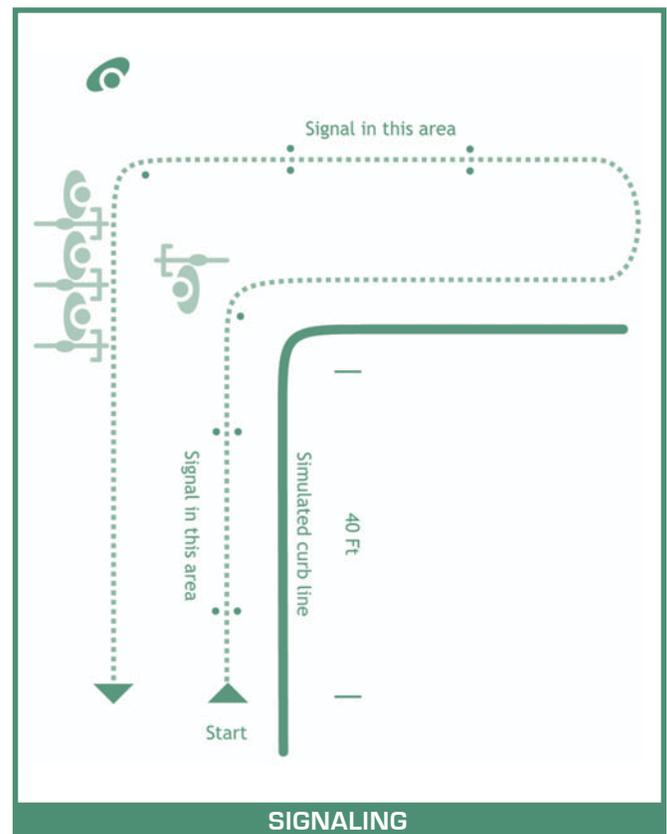
Each rider shall wait to start until the preceding rider is beyond the first turn.

The instructor will be looking for competence in the following items:

1. Starting technique from Drill 1
2. Holding a straight line at a comfortable distance from the curb while scanning as described in the Scan Drill
3. Beginning the signal early enough to complete it before the turn
4. Holding the signal for a full count of two
5. Returning the signaling hand to the handlebar in sufficient time to make the turn
6. Making a smooth turn
7. Stopping technique as described in Drill 1

## Bicycle:

Any type of bicycle can be used in this drill including recumbents and tricycles. Use of a medium or lower gear can make this drill easier. See discussion under Scan Drill for issues of scanning.



# Quick Stop



## Purpose:

The purpose of this drill is to allow the rider to practice and demonstrate the ability to stop the bicycle quickly.

## Layout:

This layout requires 8 markers in 4 pairs with approximately 18 inches between markers in each pair. The spacing should be in-line about 4 feet, 2 feet and 4 feet apart. This layout also will be used in the next drill.

## Explanation:

The ability to brake quickly without either skidding or pitching over the handlebars requires good braking technique and practice. The proper use of lane positioning and signaling should allow a cyclist to avoid most of the situations which require a quick stop. This maneuver falls in Layer 4 of the layers of prevention (avoid other drivers' unsafe decisions).

## Walk-through:

A walk through may not be required.

## Demonstration:

Get all the students to raise the hand that controls the back brake on their bicycle. Most of the time it is the right hand but some people have the back brake in the left hand. Tell students that they should always check the brakes on a bicycle that is new to them, to learn how sensitive the brakes are — it varies.



Make the point that the two brake levers look the same, but they don't work the same. A cyclist who has learned with the brake levers one way will have trouble on a bicycle set up the other way. Pitchover crashes can happen when people go to a bicycle with more sensitive brakes or with a dented front rim that makes the brake grab.

Demonstrate the importance of maintaining control of the bicycle. If the bicycle begins to go out of control, skidding or pitching forward, the reaction must be to release force on the brakes, to regain traction — not to grab the brakes harder in panic. This response should become second nature, through practice.

Demonstrate weight transfer while walking alongside the bike, with one hand on each brake lever. Grabbing the rear brake lever will skid the rear wheel and offer only light braking. Grabbing the front brake lever will raise the rear wheel off the ground. Increasing force on both brakes until the rear wheel skids, and then backing off on the front brake

achieves maximum braking without risking pitching forward.

To demonstrate this drill the instructor should first demonstrate the center of gravity movement (moving off the saddle) without using the brakes. Ride past the cyclists and push the bicycle out in front of you and try to place your stomach on the saddle. Not all LCIs can do this maneuver. The objective is to lower the center of gravity, as can also be done by lowering the upper body down near the handlebars.

The instructor may then demonstrate using the back brake and both brakes, attempting to avoid skidding with the rear tire. Ride into the layout and use the back brake to stop. Try to the degree possible to avoid skidding the rear wheel, but note that using the rear brake alone can wear out a rear tire quickly. Come to a complete stop and put one foot down. Then ride through with both brakes and finally with both brakes and the center of gravity movement. Stop and put a foot down at the end of each run.

*continued on next page*

# Quick Stop (continued)

Instruct the riders that they should put more pressure on the front brake (three times as much) than the rear brake as it is the strongest brake. Remind them that if the rear wheel starts to skid or fishtail, it is a sign that the weight has moved too far forward and they need to let off on the pressure on the front brake. Also point out that light use of the rear brake as a signal will not wear out the rear tire as quickly, and that for all but emergency stops, the rear wheel will not be skidding.

## Exercise:

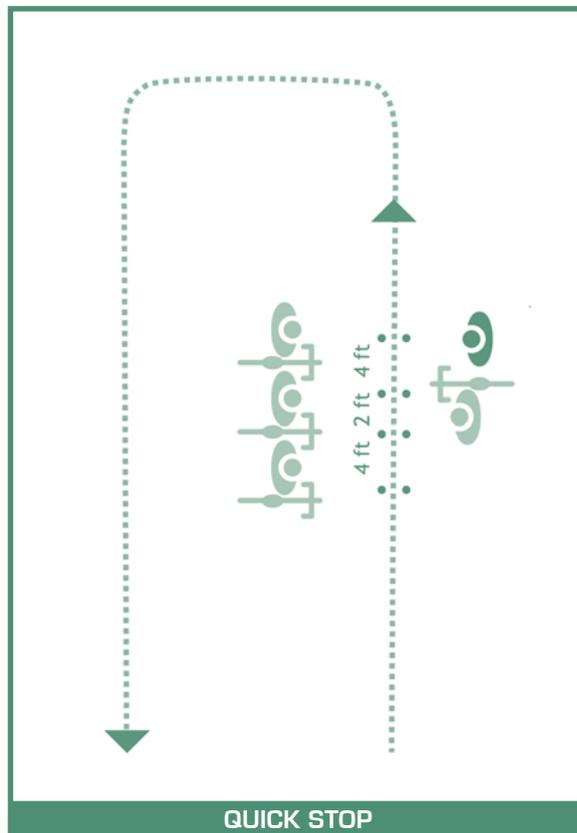
Each cyclist should practice the body movement in the parking lot without using the brakes. Have the students line up away from the start. Request that riders with clips or clip-in pedals free one foot. Riders should wait to start until the proceeding rider has stopped and restarted. Have the riders make at least three passes, one with just the back brake, one with both brakes and finally one with both brakes and the center of gravity body movement. Riders should practice reducing force on the rear brake to minimize skidding.

The instructor will be looking for competence in the following items:

1. Starting technique from Drill 1
2. Body movement
3. Use of both brakes
4. Control of skidding by modulation of the front brake
5. Stopping straight
6. Coming to a complete stop with one foot down.

## Bicycle:

Any type of "bicycle" with dual handbrakes can be used in this drill, including recumbents and tricycles but the techniques can be very different. Tandems and long-wheelbase recumbents will not pitch over the front wheel; short-wheelbase recumbents will pitch over quickly. Some low, recumbent tricycles have one brake lever controlling the brake on each front wheel, and so the two brake levers should be used equally.



# Rock Dodge

## Purpose:

The purpose of this drill is to allow the rider to practice and demonstrate avoiding a hazard that is noticed just as it is approached by the front wheel.

## Layout:

This layout starts with 9 markers in 4 pairs with approximately 18 inches between markers in each pair (the spacing should be in-line about 4 feet, 2 feet and 4 feet apart, similar to that in the prior drill) with the addition of a ninth marker centered laterally and longitudinally within the other eight markers.

## Explanation:

The ability to avoid a hazard that is close to the front wheel before it is seen is important to maintain control. If a piece of debris is struck and punctures the tube in such a way as to cause a catastrophic failure of the front tire, the bicyclist can pitch over the handlebars. It is not as critical to avoid the hazard with the rear wheel. This maneuver falls in Layer 1 of the layers of prevention (avoid falls or collisions with others).

## Walk-through:

Because the technique is subtle, a walk-through is important to demonstrate the actual movement of the front wheel. Holding the stem, the instructor should walk the bike through the layout moving the front wheel to the left and then to the right.

Most of the crashes that occur doing this maneuver occur on “recovery.” We recommend that people always move to the left and then to the right so the recovery is toward the curb and not towards traffic. One should try it both ways but practice the left/right sequence the most.

## Demonstration:

To demonstrate this drill the instructor should ride smoothly through the layout displaying the proper hand and body movements. When done correctly, the body and head should not move when viewed from behind. This maneuver should be practiced before it is demonstrated to students. Point out that this is a good skill to practice before riding in a group.

At higher speeds, it may be more effective to lean the upper body sharply to one side in order to divert the bicycle’s wheels to the other. This works better on bicycles with more trail in the front fork (e.g., road-racing and sport bicycles as opposed to touring bicycles). The instructor may also demonstrate this technique.

## Exercise:

Have the students line up at the start. Practicing a proper start, each student should ride through the layout demonstrating the proper handling skill to maneuver past the “hazard.” Each rider shall wait to start until the proceeding rider has turned at the end of the layout.

A problem with instruction in the rock dodge is that the student knows that the hazard is present, and is likely to prepare a normal turn around the hazard. The instructor can overcome this problem by calling out at the last moment “right” or “left” to indicate on which side the student is to go around the hazard. In this case, the layout should not be directly adjacent to a curb. The instructor may also narrow the entry and exit layout to avoid “steering” around the “rock.”

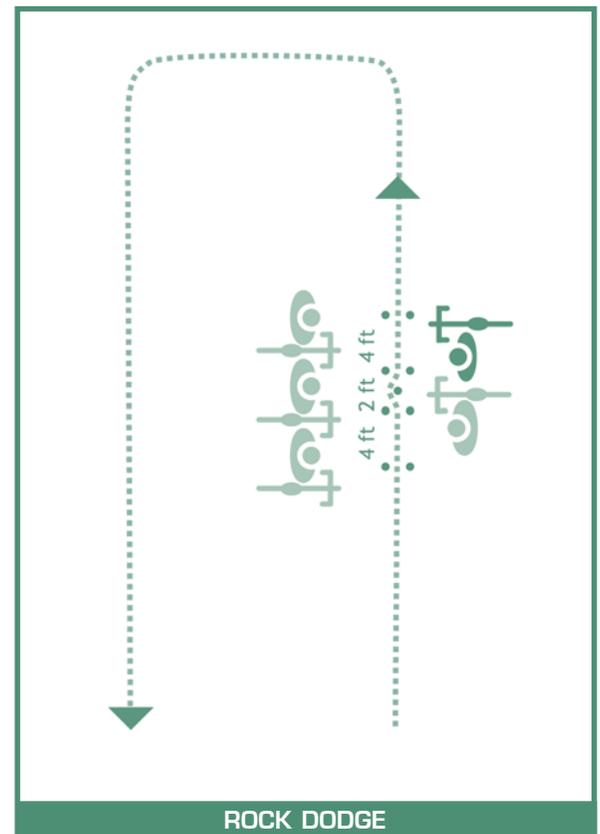
The instructor will be looking for competence in the following items:

1. Starting technique from Drill 1
2. Smooth pedaling
3. Avoiding all the “hazards”
4. Smooth exit from the layout

Once the riders have the concept and the maneuver mastered, the instructor can narrow the distance between the pairs so that the rider is aimed directly at the “rock” and must move the wheel to avoid it. Typically a hand width is about right for the final passes.

## Bicycle:

Any type of “bicycle” can be used in this drill including recumbents and tricycles, but the techniques can be very different. A medium or lower gear can make this drill easier. Note that tricycles are much less likely to crash upon puncture of a front wheel so this exercise is more of a convenience than a true life saver.



# Instant Turn

## Purpose:

The purpose of this drill is to introduce the concepts and techniques of this avoidance maneuver and allow the rider to practice it in a non-threatening environment...

## Layout:

This layout requires 14 markers. Markers are used to make an L-shaped layout approximately 8 feet by 8 feet. The width of the “road” between the markers should be no more than 6 feet and no less than 4 feet. It can be thought of as the shared space in a wide outside lane. Place the layout so that both ends have significant open space available for the riders. If the exit lane even appears to be blocked by a curb or other obstacle, riders will have a tendency to “bail” out to the left.

## Explanation:

When a vehicle turns in front of a cyclist (either a right hook or a left cross,) the most effective way to avoid a serious injury is to turn right with the motor vehicle. This avoids turning left into traffic and also steers the cyclist in the same direction as the vehicle, thus reducing the impact of a crash if one occurs. This maneuver falls in Layer 4 of the layers of prevention (avoid other drivers’ unsafe decisions).

## Walk-through:

It is useful first to ask the students which way to turn the handlebars to turn right quickly. Many will be surprised at the answer, “left.” This is followed by a demonstration of how it is necessary to get the bicycle into a lean before it can turn. Once it is leaning, the student will turn right in order to avoid falling.

A walk-through is required.

Holding the stem, the instructor walks the bike into the layout, turning the front wheel to the left allowing the bike to lean to the right, and then swinging the front wheel to the right and holding the lean to complete the turn.

## Demonstration:

To demonstrate this drill, the instructor should demonstrate “swooping” turns (turns initiated by the bicycle’s normal weave) in the parking lot before riding into the layout.

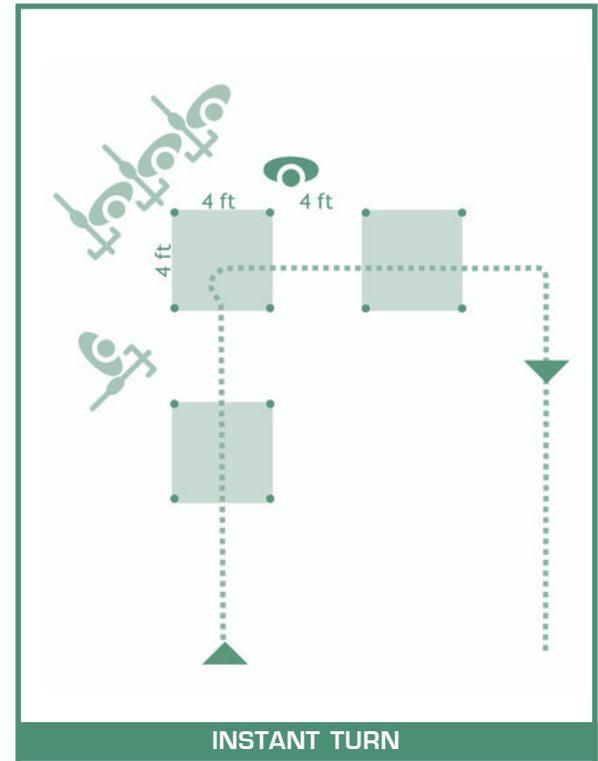
Placing the hands near the center of the handlebars, ride smoothly into the layout and demonstrate the move. Remember that the outside pedal should be down, the body must lean into the turn and the inside hand should be pushing the handlebar down. Remind the riders that brakes should not be used. The faster the cyclist is going, the less handlebar motion is used to initiate the lean; building up to the right amount for a sharp turn, short of losing traction and falling, requires practice. This drill becomes problematical at speed over 25 mph. The tires will lose traction in a “shudder” manner and the cyclist will likely pitch over to the outside of the turn.

Explain to the students that the most common crash in this maneuver is when the front wheel is turned back to catch the lean with too much vigor.

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## Exercise:

Have the students practice “swooping.” Then have the students line up at the start, placing their hands where they normally have them when they ride. Practicing a proper start, each student should ride through the layout demonstrating the proper skill to make the turn. Each rider waits to start until the preceding rider has cleared the exit of the layout. Continue this exercise until each student has accomplished at least one “adequate” turn.



The instructor will be looking for competence in the following items:

1. Starting technique from Drill 1
2. Smooth pedaling
3. Steering to the outside, then “catching the lean”
4. Smooth, straight recovery

## Bicycle:

Some types of bicycles cannot be used in this drill, including some recumbents and many tricycles. Have a student with one of these at least attempt the exercise, understanding that it may not work.

A long-wheelbase recumbent or tandem requires more steering motion to initiate the lean. A short-wheelbase recumbent steers very quickly; the cyclist must take care not to steer too far and initiate a fall.

A low tricycle may simply be steered into a turn. A high tricycle requires great care, as it can tip to the outside of a turn — the cyclist must lean to the inside in order to make a tight turn.