

2.4.3 Provide a range diagram with measurements displaying layouts for each exercise, and provide narrative for each exercise;

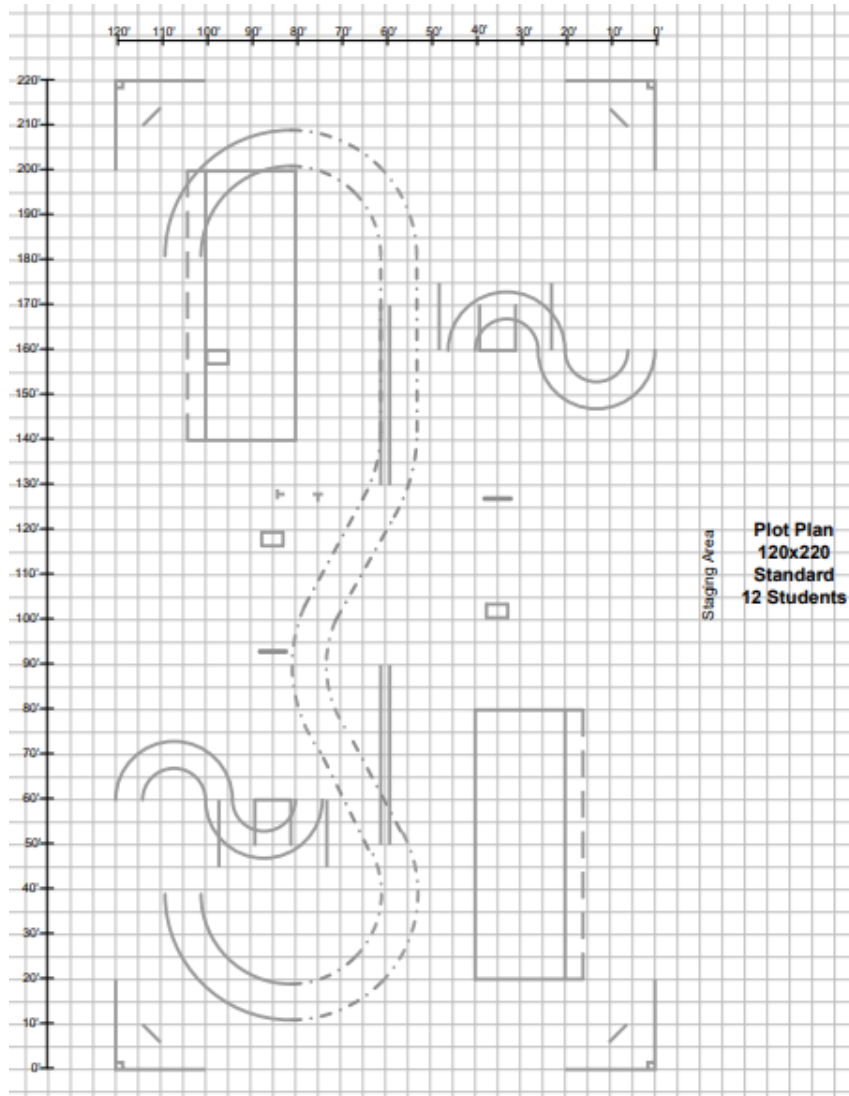
Sources: Motorcycle Safety Foundation (MSF) Basic Rider Course (BRC) RiderCoach Guide (RCG), MSF Rider Education System Organization (RETSORG) www.retsorg.org

Columbus Ranges 1 and 2



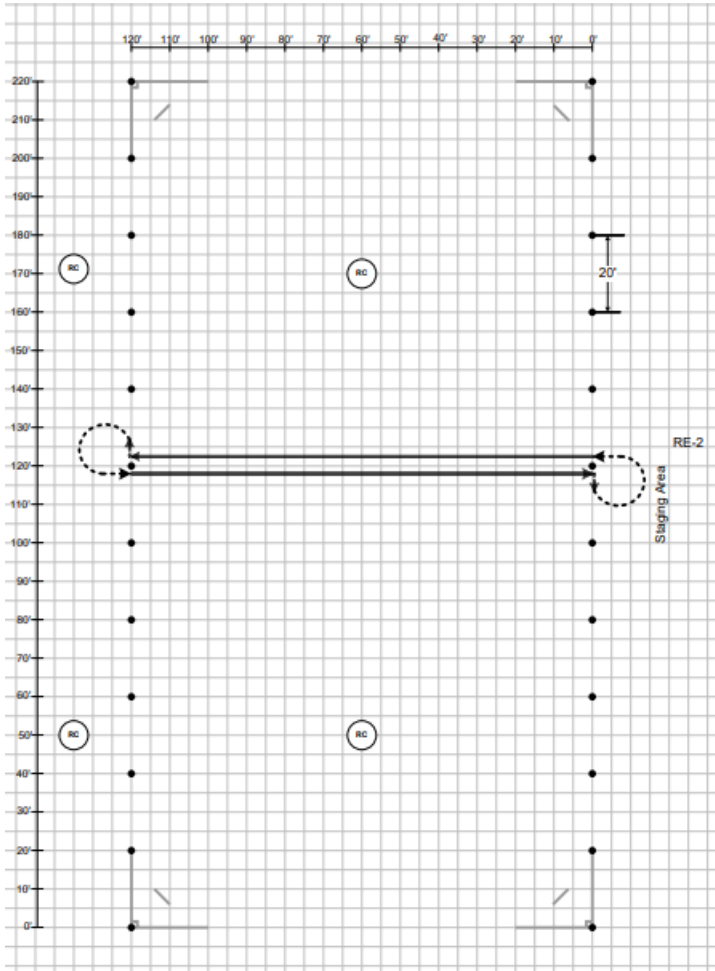
Both of the Columbus ranges are MSF Certified, “standard” ranges (160 x 260) with 20+ feet run off for each range. There is an extra 25 feet between the two range to permit for safety and range two staging.

EXERCISE 1: MOTORCYCLE FAMILIARIZATION



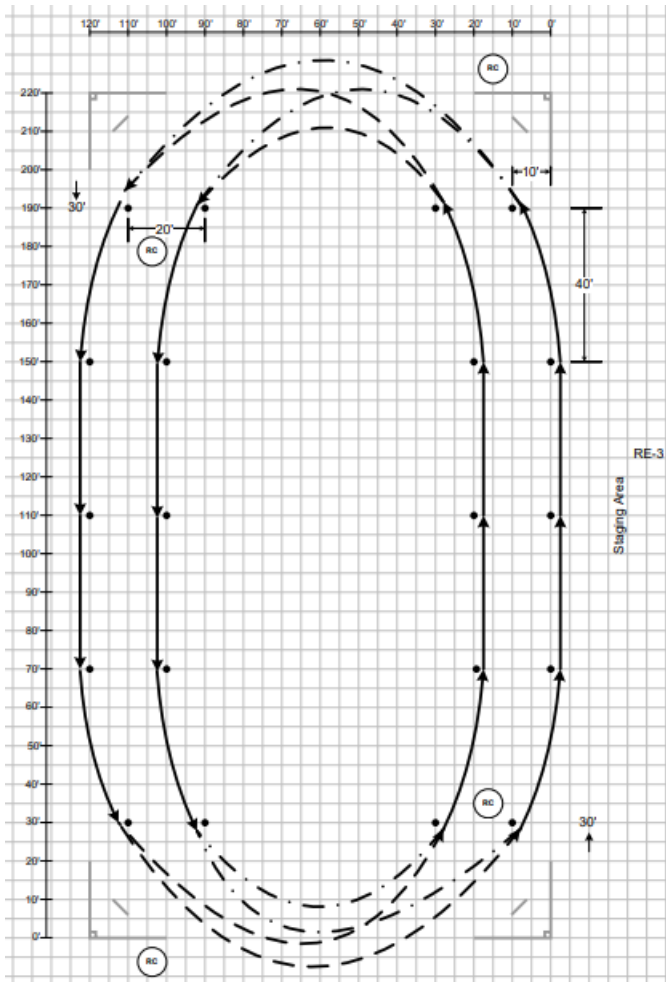
GENERAL 1. This exercise is designed to acquaint a new rider with the major parts and controls of a motorcycle. (Some of the action steps may be completed in the Pre-Exercise 1 activities.) Exercise 1 consists of: a. Ensuring riding gear is used properly. b. Fitting a participant on his/her course motorcycle. c. Familiarizing riders with parts/controls. d. Familiarizing riders with operation of key controls. e. Using the clutch lever and shift lever (finding neutral). f. Straddle walking forward and backward (while practicing front brake use). g. Starting, stopping, and warming the engine. h. Positioning the motorcycle for the next exercise. 2. Subtleties include: a. Multiple mounts and dismounts. b. Posture and throttle use. c. Practice in throttle roll-off with front brake squeeze. d. Observing a square-the-bars demonstration. 3. A benefit of this exercise is that participants become comfortable interacting with a motorcycle and are introduced to various manipulations that will be used later in the course. Some actions need to be repeated to ensure adequate understanding and proper use of controls. 4. Basic motorcycle operation is introduced, including: a. Manipulation of the controls. b. Proper control operation. c. Eyes up once the location and operation of the controls are adequately learned. 5. For the static demonstration, stand beside the motorcycle and push it a short (5'-10') distance with the handlebars square and squeeze the front brake lever to stop. Repeat the push and stop with the handlebars turned slightly (not enough to potentially drop the motorcycle). The riders should see how the motorcycle gets heavy and wants to dip in the direction the handlebars are turned when the front brake is applied. Riders must understand the importance of having the handlebars square at a stop to help keep the motorcycle upright.

EXERCISE 2: USING THE FRICTION ZONE



GENERAL 1. This exercise is designed to acquaint riders with the procedures and practices to start out, stop, and operate at low speed in a straight line. 2. There are 3 parts: a. Group rock, with individual assistance as needed. b. Power walk (straddle walking with engine power). c. Straight-line ride. 3. Simulated practice is used for emphasis in proper use of the friction zone; that is, to ensure riders understand the friction zone is an area in the clutch lever's travel that connects engine power to the rear wheel. The idea is to have riders pause in the friction zone area when starting out in 1st gear, and to avoid using the clutch lever as an on/off switch when starting out (releasing too quickly). A good statement to make is to it, not through it when starting out from a stop.

EXERCISE 3: STARTING & STOPPING DRILL

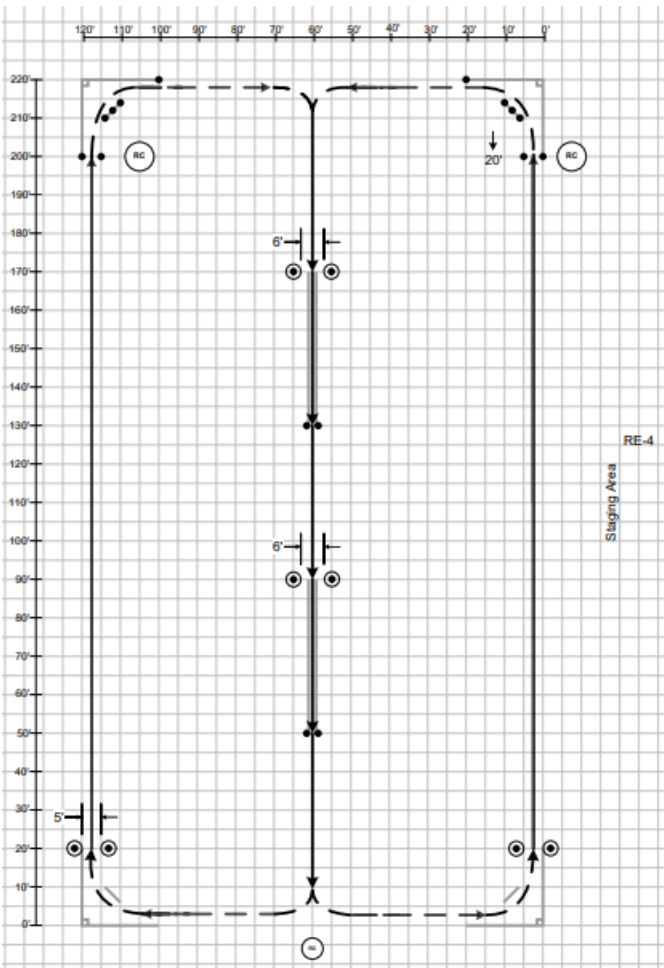


GENERAL 1. This exercise is designed to provide practice time in learning clutch lever and throttle coordination when starting out and stopping. In terms of learning to start out well and having low-speed control, it is the most critical skill to develop. 2. A motor skill development principle is to develop accuracy and control before introducing speed of movement and finesse. This exercise is designed to facilitate that transition. 3. The exercise has 2 parts: a. Start/stop every 40 feet. b. Ride an extended distance and stop with the handlebars square. 4. A drill technique is used for repetitive feedback. Each rider is to develop the skill of starting out by gaining feedback from manipulation of the controls. This helps to develop muscle memory. 5. The technique of power walking is used extensively at the start of the exercise so riders are not forced to lift their feet until they are comfortable and skilled enough to do so. At the same time, riders who are comfortable enough to immediately lift their feet should not be forced to power walk other than the first few feet. Riders should be encouraged to keep their feet on the ground for a few steps (power walk) when starting out. 6. Subtleties of this exercise include: a. Taking a few steps before using the footrests. b. Gaining some speed in a straightaway. c. Smooth brake use when stopping from a “higher” speed. d. Stopping in a slight curve with the handlebars square. e. Turning from a stop. f. Keeping the head and eyes up and beginning to look through the intended path of travel. 7. As with most exercises that develop basic skill, there is some awkwardness in the beginning as riders are challenged with controlling low-speed instability. It is important riders are allowed to work through this challenge at a natural pace. As skill develops, smoothness and confidence will normally become evident.

EXERCISE 3:
STARTING & STOPPING DRILL
(Continued)

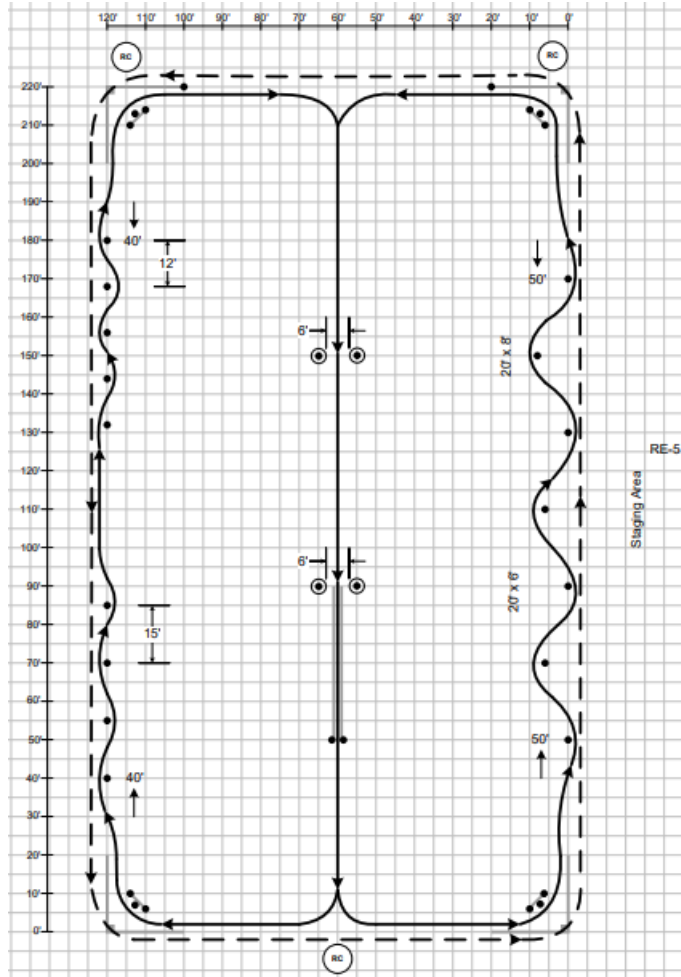
8. When this exercise is successfully completed, later exercises may be less problematic because basic control has been established. Do not hurry riders through this developmental step. 9. Riders should become comfortable and confident enough to get up to pre-shifting speeds. In part 2, riders should be provided enough time to explore the effects of throttle roll-on and roll off when in gear. 10. In exercise 2, only minimal throttle was used. Here riders are to develop skill to attain a speed just below the need to shift. The more automated clutch/throttle coordination and control become, the more likely riders will have more attention available for shifting in the next exercise, as well as use more acceleration in the straightaways during exercise 5. 11. Achieving the objective lays the groundwork for development of the finer skills of operating a motorcycle.

EXERCISE 4: SHIFTING & STOPPING



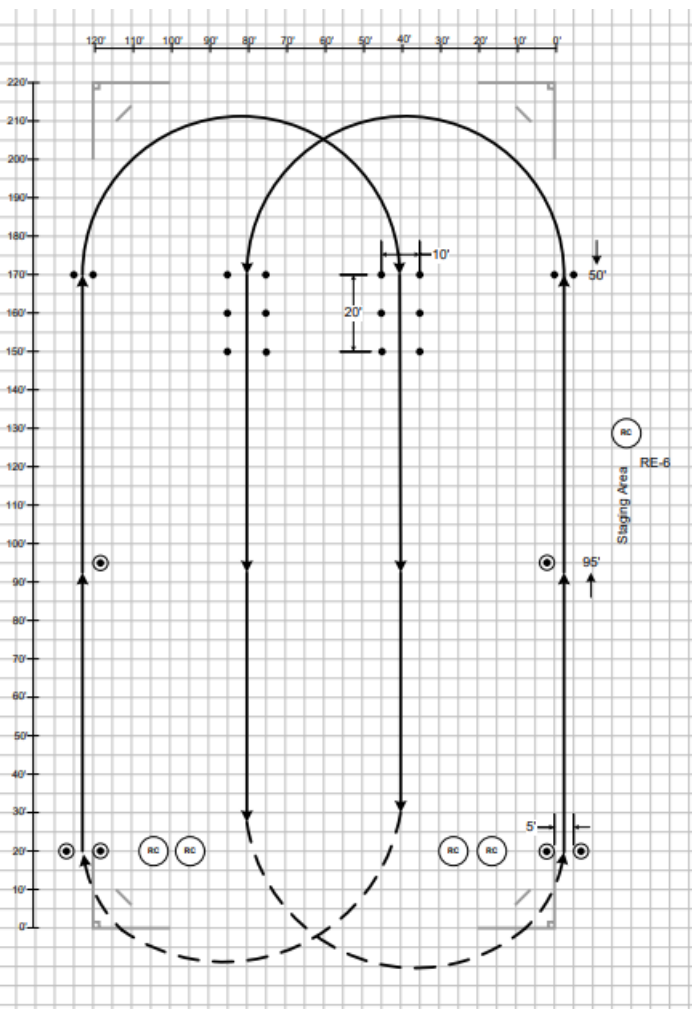
GENERAL 1. This exercise is designed to have riders learn to shift gears. It is accomplished in a straight line with a stop at the end. 2. Added to the path of travel are perimeter turns and two clutch-control lanes. The perimeter turns serve as an introduction to turning more sharply, and the clutch control lanes provide practice to fine-tune clutch lever and throttle coordination. 3. A subtlety of this exercise is that a “mix” traffic flow is used, and riders must use SEE to cooperate in merging with each other prior to entering the middle of the range. 4. Riders are likely to stop in a slight turn as they stop to wait in line. This is why it is important to have stressed the need to keep the handlebars square in earlier exercises. 5. The riding demo should not show shifting too quickly. There should be time between each part of the shifting process so riders can see (and hear) the three steps. 6. A middle path of travel should be used in the perimeter turn.

EXERCISE 5: BASIC SKILL PRACTICE



GENERAL 1. This exercise is designed to allow riders to develop the skills related to adjusting speed and turning. It helps riders automate basic skills as they manipulate the controls and “bond” with the motorcycle. Bonding refers to the interaction of the rider and motorcycle in using smooth, precise control manipulation in developing proper procedures and techniques for good low-speed maneuvering skills; skills becoming automated. The more automated the skills, the better riders are able to keep their head and eyes up. 2. This is the first exercise that provides extended, continuous riding free of frequent stops. It also provides an introduction to the basic curve procedure of slow-look-press-roll, with emphasis on the slow-look steps. 3. The exercise has 2 parts: a. Full group rides the middle and weaves on both sides b. Split groups ride the perimeter in both directions. 4. In part 1, the weave pattern is different on each side. One side has 15' and 12' straight-line weaves, and the other side is a 20' x 6' offset weave with the last cone forming an 8' weave (to provide a challenging skilldevelopment goal for riders). The different dimensions provide varying control inputs and feedback; that is, riders practice and gain feedback in multiple paths of travel that require varied control operation. 5. In part 2, the outside perimeter corners are used in a split group format that is reversed. The split ensures adequate time and space for rider development with good overall control and adequate following distance. This also provides sufficient time and space to adequately learn control manipulation (related to the primary controls, primarily roll-on and roll-off).

EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN



GENERAL 1. This exercise is designed so riders gain the knowledge of results from handgrip pressure and handlebar movement to initiate and adjust lean. It also allows, if riders are ready, the opportunity to transition from slowlook-press-roll to the more general concept of search-setup-smooth. The most critical aspect is setup, which includes having a speed that does not require slowing while in a curve. 2. The procedure to initially learn how to negotiate a curve is slow-look-press-roll. a. Slow means to adjust speed from an approach speed (generally any reasonable speed) to an entry speed (one in which no slowing is needed in the curve itself). b. Look means to keep the head and eyes up while making the curve. Riders should constantly be searching and evaluating the curve from approach through completion, not only because riders should look where they are going, but because riders tend to go where they look. But look in a larger context is to use the eyes to SEE well before, during, and after the curve: look-slow-look-press-look-roll-look. c. Press means to adjust the handlebars with handgrip pressure to initiate and adjust lean. A press on one handgrip can be simultaneous with a pull on the other. d. Roll means to use the throttle to maintain a steady or increasing speed. A very subtle roll-on is needed to maintain speed as the tires need to turn faster due to their reduced circumference from the lean. This rollon is commonly referred to as maintenance throttle (engine rpm is maintained). If a very conservative entry speed is used, it is possible to roll-on to increase speed (mph) through the curve. While not a requirement, it does show a good, conservative entry speed was used. Since a too-fast entry speed is likely a primary error in curve-related crashes, having a conservative entry speed is a good point to emphasize for novice riders.

EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN (Continued)

3. A more general approach to cornering is search-setup-smooth. a. Search means to look far and near and side-to-side to identify the important factors for control and safety. A minimum 12-second lead time should be maintained, with the 4-second urgent path an absolute minimum as this time/distance is needed for making an aggressive stop. To search well means to not only keep the eyes moving, but to also identify key factors and how they might interact (with some imagination) to produce a problem that requires some kind of action. This is why having good perception, especially hazard perception, is so important. For curves, search means to know the variables of the curve before entering it (radius, slope, width, surface, other traffic, etc.). It is good if a rider can see the whole curve all the way to its end point, but oftentimes trees or buildings prohibit this. Even if a rider can see the end of a curve, like a short, flat curve with no view obstructions, a rider should not fixate on the end point. While in the curve, the eyes are to keep moving far and near and side-to-side as part of a perceptual strategy. To fixate is not good. Automobile research shows that most drivers spend around 80 percent of their time gazing near the curve's tangent point, which is a line from the eyes to the leading edge of the curve where its radius can be determined. The remaining 20 percent of the time is gazing throughout the curve. b. Setup means to consider entry speed and line. Entry speed: for novices, it is one that would permit (not require) a roll-on to increase speed through the entire curve because a very conservative entry speed minimizes running wide in a curve. But roll-on through the entire curve is not possible for all curves. A long sweeping curve, especially if downhill, would lead to scraping parts or running off the road. Line: assuming no hazardous variables, a good line for novices is middle-middle-middle because it allows for errors in path of travel to both sides. It also keeps the rider farther from the edges of the lane. A more aggressive line would be outside-inside-outside because a curve can be ridden faster due to less lean angle. Using an outside-inside-outside line permits a rider to see farther

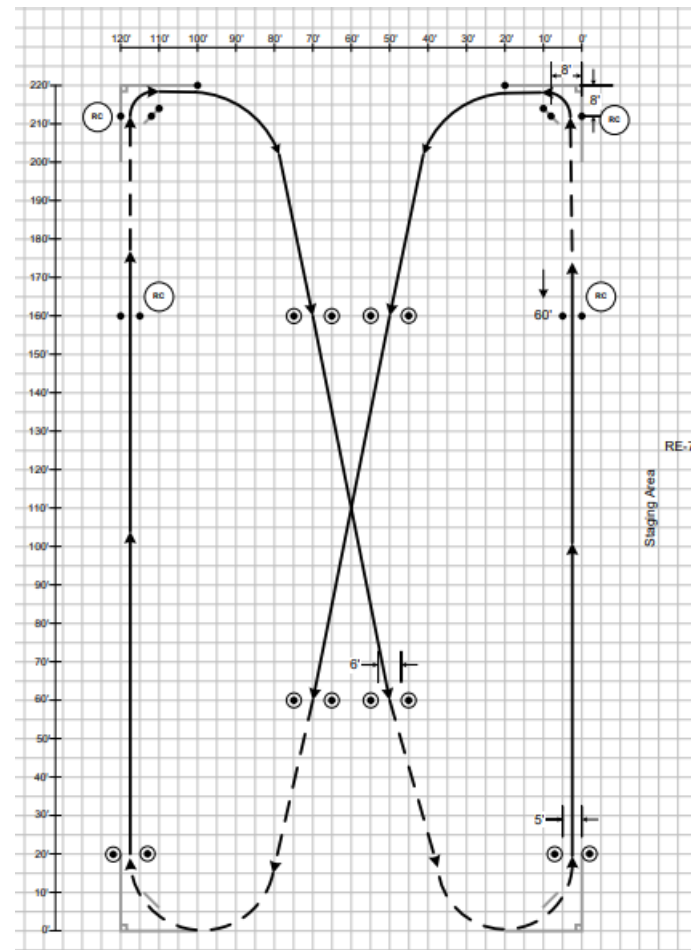
EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN (Continued)

through the curve and can be advantageous, but it puts a rider near the edges of a lane and requires a higher degree of skill. Whichever line is chosen, a rider should choose a speed that allows adequate sight distance to make lane position adjustments and stop in time for hazards. c. Smooth refers primarily to any speed adjustment, whether in a straight line or in a curve, and its effects on the path of travel, suspension, and traction. Making abrupt steering or speed adjustments, especially when negotiating a curve, is hazardous. It is best to operate the controls with the precision that produces smoothness. Smoothness when operating the controls results in overall motorcycle smoothness and is best for overall control and traction. 4. In the MSF Basic eCourse and Rider Handbook, learning to turn (or negotiate a curve) is introduced with the steps of slow-look-press-roll. The assumption in using this procedure is that the approach speed used for the curve requires some slowing. Curves do not always require slowing before entry, and slowing for a curve that requires it may be accomplished by a throttle roll-off or by throttle roll-off and braking, depending on the nature of the curve and the speed of approach. Using the brakes to establish a good entry speed is not always needed. To brake with a low approach speed could cause balance problems and undesired manipulation of the controls. 5. In this exercise, the primary objective is to experience handgrip pressure and handlebar movement to initiate and adjust lean. Riders who use a slow approach speed may only need a slight throttle roll-off, if any, and little or no brake pressure. Riders with a high approach speed are to use throttle roll-off and/or braking to slow, but not so much as to become unstable. In no instance should entry speed make it difficult to stay in the path of travel. If an approach speed is too fast, slowing down must be coached. Slowing in the curve is considered an error in judgment and must be corrected. In later exercises, a higher approach speed is used so riders will learn more about braking for proper entry speed. 6.

EXERCISE 6: PRESSING TO INITIATE AND ADJUST LEAN (Continued)

To an untrained eye, this exercise (as well as many others) looks like a group of riders “just riding around a parking lot.” RiderCoaches know that deeper learning is occurring; that is, riders are fine-tuning their procedures and techniques. Learning to operate the controls of a motorcycle to put the motorcycle where a rider wants it is an overall goal. 7. The simulated practice is “search and press.” It highlights the importance of searching throughout the intended path to determine a proper setup regarding entry speed and handgrip pressure. 8. Coaching in the stage area should include an emphasis on both slow-look-press-roll with a mention of searchsetup-smooth once the basics are mastered. The exercise should not be ended until riders are not slowing in the curve itself and are using a good entry speed that results in no decrease of speed in the turn. 9. A split and full group process is used. The riders are divided into two groups. One group rides both directions while the other group observes, then the groups switch, then all ride each direction again. 10. The full group portion of the exercise provides opportunities to practice SEE to maintain an adequate time-and-space safety margin.

EXERCISE 7: STOPPING MORE QUICKLY & TIGHT TURNS FROM A STOP



GENERAL 1. This exercise is designed to allow riders to further develop the skill of stopping by developing an improved feel for progressive braking pressure to stop more quickly. It is important riders are not led to believe they are practicing an emergency stop. Riders are to explore brake intensity gradually, starting first with lower speeds and moderate brake pressure, and then progressing to quicker stops with more brake pressure. 2. This exercise uses simulated practice to emphasize the proper squeeze of the front brake lever when making a quick stop. A key point of emphasis is to avoid grabbing the lever. 3. The turn-from-a-stop is several feet prior to the perimeter turn to provide another scenario from which turns from a stop can be made in real-world situations (particularly intersections). 4. Earlier in Exercise 4, Shifting and Stopping, the distance was 20' to cause friction zone practice in making the perimeter turn. Now a greater approach distance is provided with the idea that braking adjustments may be needed prior to turning. Use of the friction zone in the turn is optional. 5. A feature of this exercise is that a crisscross traffic pattern is used in the middle of the range. This creates an opportunity to use SEE for gap selection and a time-and-space safety margin. 6. This exercise has 2 parts: a. Riders stop after they pass a cue cone and then turn from a stop. b. Riders stop on RiderCoach signal and then stop again for the tight turn from a stop. 7. For part 1, riders may begin to use the brakes when the front tire reaches the cue cones; clutch lever squeeze and downshifting could occur prior to that point. 8. Having riders stop on signal provides different feedback for the riders. This develops the skill to a deeper level. 9. Part 2 of the exercise also adds tight turns from a stop. After the rider stops, the RiderCoach directs the rider to stop again with the front tire between the entry cones at the perimeter turn. The tight turn from a stop ties into the concept of Open Up the View – after riders stop at an intersection (as in Exercise 4), they may have to stop again to ensure the roadway is clear before pulling out.

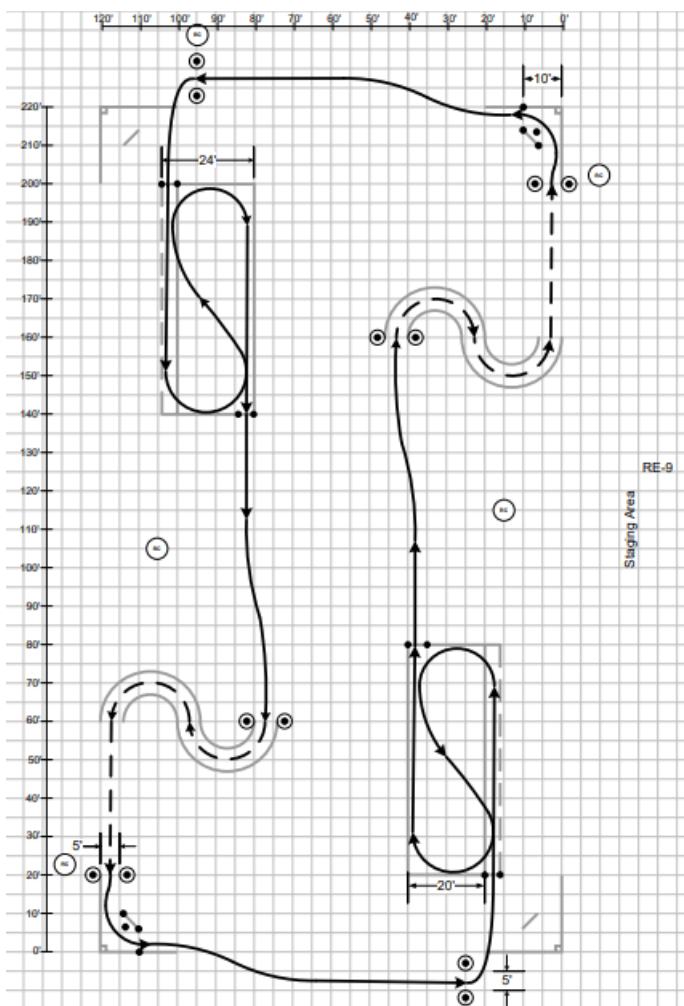
EXERCISE 7:
STOPPING MORE QUICKLY &
TIGHT TURNS FROM A STOP
(Continued)

10. It is important the riding demo not have a high approach speed and that full stopping power is not used. As with all riding demonstrations, the speed, procedures, and techniques should be shown as the average novice would be expected to accomplish by the end of the exercise. 11. During reflection, mention a rider's personal motorcycle may feel a lot different, so practicing quick stops on one's personal motorcycle is highly recommended (in the BRC2, ARC, or on their own in a safe parking lot).

Diagram illustrating a slaging area with a 3rd run line and intersection marks. The diagram shows a grid with horizontal and vertical axes. The horizontal axis is labeled from 120' to 0' in 10' increments. The vertical axis is labeled from 0' to 220' in 10' increments. A diagonal line, labeled "3rd run", runs from the bottom left towards the top right. A note states: "NOTE for 3rd run: Chalk Intersection marks based on stopped motorcycle". Two points on the 3rd run line are marked with dots. Arrows indicate distances from these points to a circular marker labeled "RC": 130' and 49' for the upper point, and 25' and 49' for the lower point. The area is labeled "Slaging Area" and "RE-8".

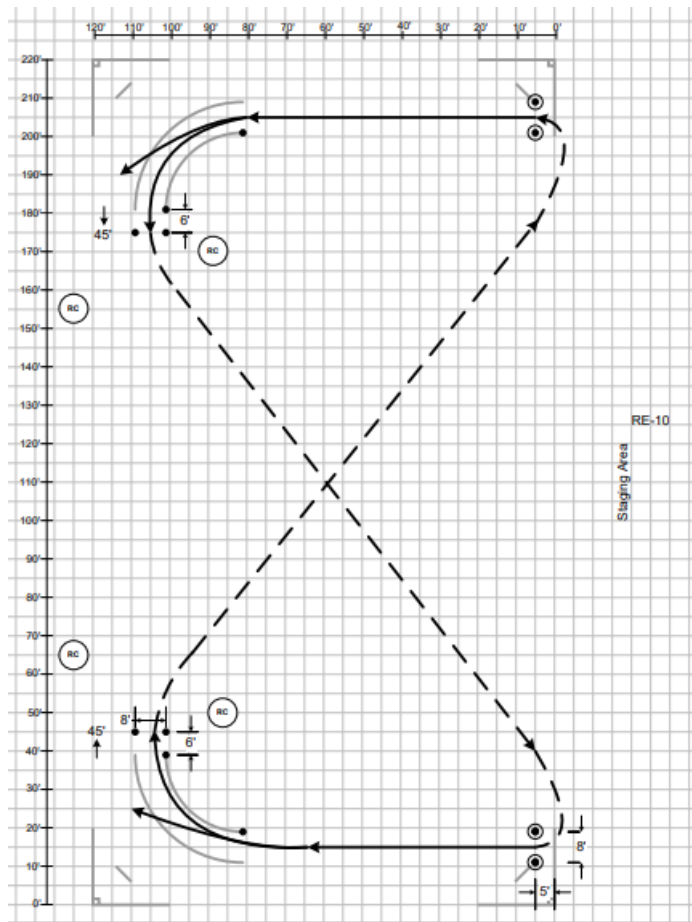
Demonstration speeds need to be precise, reaction times accurate, and braking operation crisp and smooth with no skidding. The RiderCoach who demonstrates should practice extensively to ensure adequate acceleration and braking within the prescribed area, especially at 25 mph.

EXERCISE 9:
LIMITED-SPACE MANEUVERS



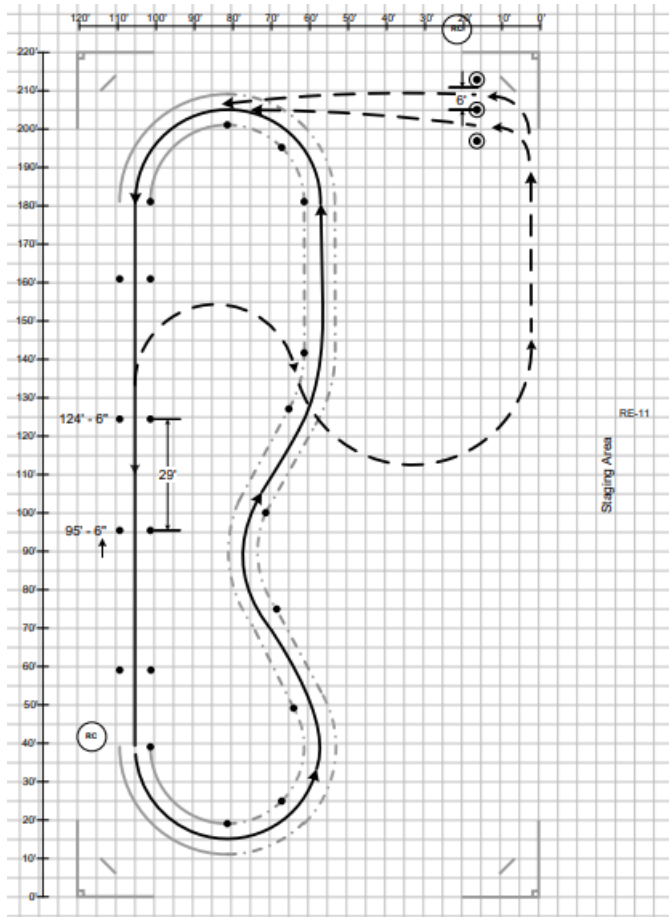
GENERAL 1. This exercise is designed to have riders reinforce (and in some cases re-learn) their basic, low-speed skills by using paths of travel within a limited space. A motor skill principle is to have adequate gross motor skills before practicing and developing the finer motor skills. This exercise helps with bike bonding toward the development of automated, basic skills. 2. Three limited-space maneuvers are provided: a. U-turn. b. S-turn. c. Perimeter turn from a stop. 3. The U-turn area has two width dimensions, 24' and 20'. The former is the minimum width of most two-lane roadways (not counting the shoulder) and the latter provides a goal to increase skill. The 20' width is used in the skill test. 4. The skills in this exercise are more than simply convenience skills. These maneuvers provide practice time on basic skills within a practical context. The exercise is primarily about becoming adept at control operation. 5. RiderCoaches should be aware this exercise is not primarily about teaching riders to make U-turns, but rather using a U-turn path of travel to develop basic skill. It's about controlling the motorcycle and being able to manipulate the controls to put the motorcycle "where a rider wants it." 6. The skill of handlebar turn and counterweighting is emphasized, and is highlighted with a simulated practice. As much as possible, the handlebar turn should be at full-lock position (not for the first practice rides, but as a goal to achieve while practicing). 7. The demonstration should not show any body movement other than upper-body counterweighting. The buttocks should not be moved off-center in the seat. 8. Dragging the rear brake should not be demonstrated, but it may be encouraged for riders who have the overall skill and control to try it. 9. For the perimeter turns, cones are used to mark a stop point to continue the practice of turning from a stop. The middle cone is now in a position to form a 90-degree turn. Riders should not be forced to lean the motorcycle. An upright position is acceptable. Riders may power walk a couple of steps as they start out, but power walking too far through the perimeter turn will be scored as an error on the skill test.

EXERCISE 10:
STOPPING IN A CURVE



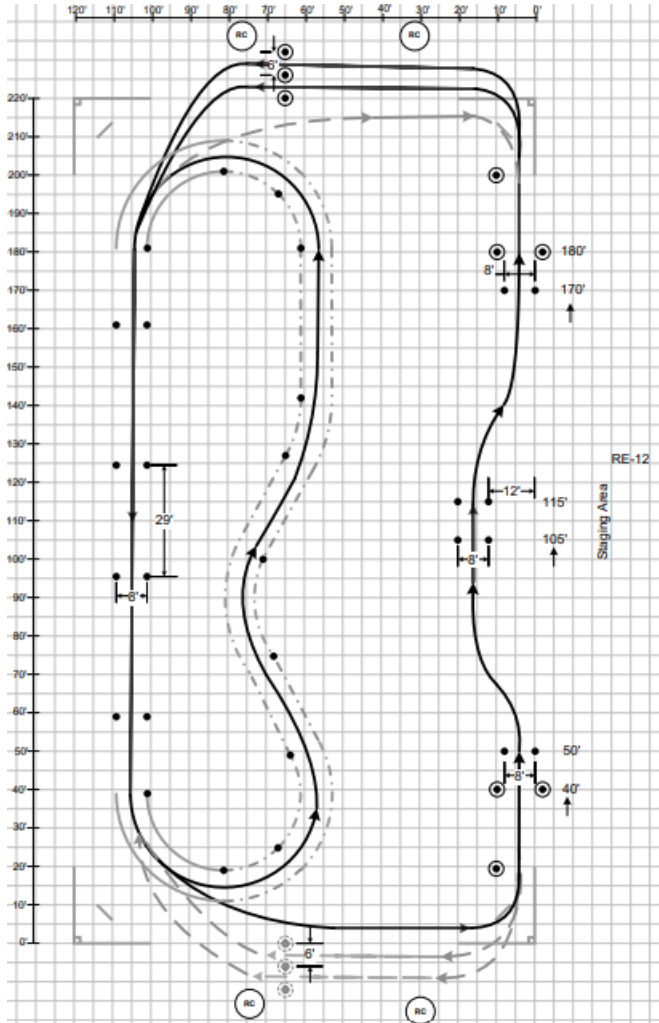
GENERAL 1. This exercise is designed to develop skills for stopping in a curve and has 2 parts: a. Normal stop in a curve. b. Stopping quickly in a curve using straighten-then-brake method. 2. This exercise does not address the technique for stopping quickly in a curve by gradually increasing brake pressure as the motorcycle straightens up; rather, the emphasis in part 2 is straighten first, then brake to make a controlled, straight-line stop.

EXERCISE 11:
CURVE JUDGMENT



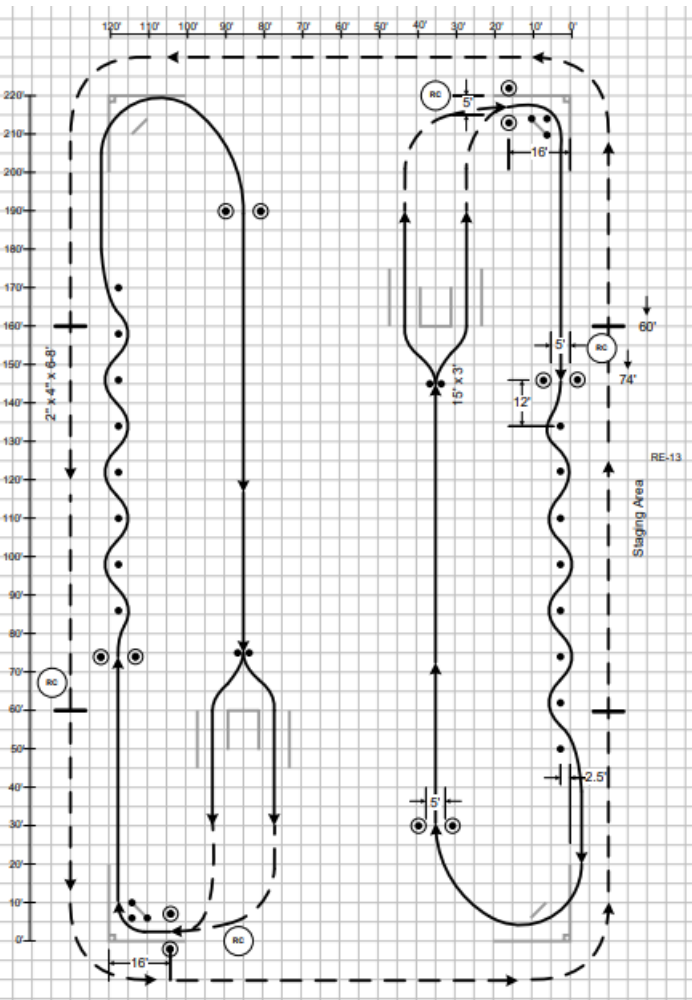
GENERAL 1. This exercise is designed to add to the skill and finesse related to search-setup-smooth when riding in curves, which requires a high degree of rider judgment and control. 2. The path of travel is a circuit ride consisting of a long straightaway and several curves. A middle-middle-middle path of travel should be used. 3. Riders may be familiar with search-setup-smooth from Exercise 6, Introduction to Curves. Search means to search before, during, and after the curve (far and near and side-to-side); setup means to have an appropriate entry speed so slowing in the curve is not required and to have a good lane position; smooth means to be precise and not abrupt when operating the controls. 4. Besides staying in the path of travel, a primary emphasis in this exercise is to have a good entry speed, which is a speed that would permit roll-on through the curve if a rider decided to do that. This requires judgment in assessing the curve's radius. 5. Only a few revolutions are likely needed in each direction to establish an understanding of the overall path of travel, sufficient skill, and adequate judgment. Further refinement will take place in the next exercise. 6. A portion of this path of travel is nearly identical to an exercise on the skill test. 7. Be sure the circuit path of travel is clearly and adequately marked.

EXERCISE 12:
MULTIPLE CURVES &
LANE CHANGES



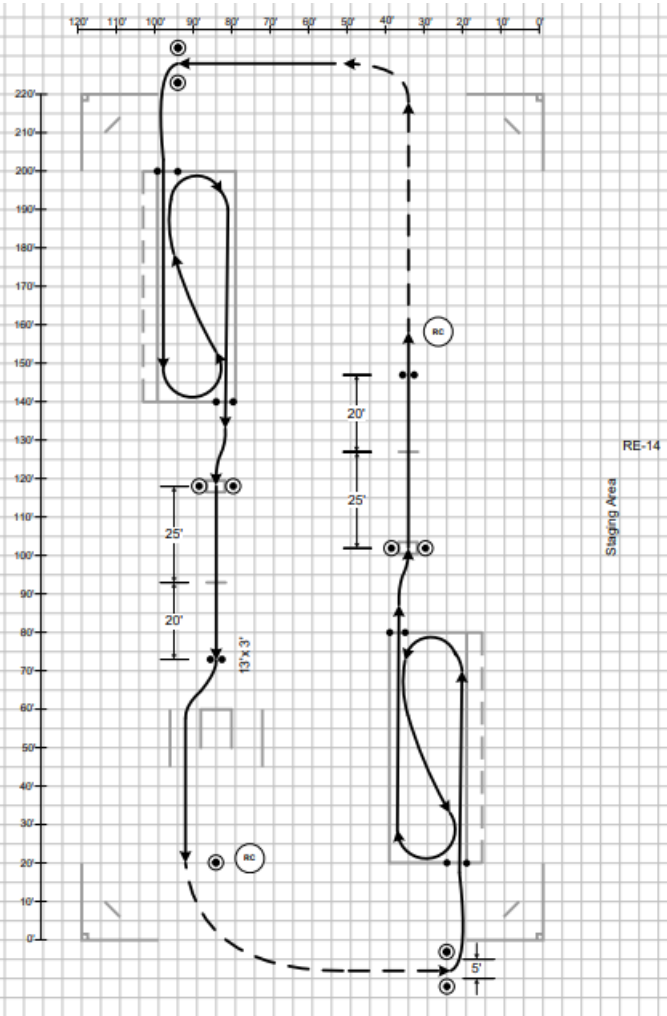
GENERAL 1. This exercise is designed to refine proficiency in negotiating curves and making lane changes as if in traffic. A nuance of this exercise is the selection of a gap to enter traffic, and to manage time and space. 2. A middle-middle-middle path of travel should be used. 3. Be watchful of the speed used by riders. The development of cornering procedures is important, and the speed used should be progressive – slower in the first part of the exercise, but not so much speed later to cause slowing in the curve or too much lean angle. 4. Simulated practice is used to remind riders how the turn signal switch operates and to emphasize the blind spot check. This simulated practice is a good example of muscle memory; that is, having a rider feel what it's like to find and use the turn signal switch without looking at it while still controlling the motorcycle.

EXERCISE 13:
CROSSING AN OBSTACLE &
SWERVING



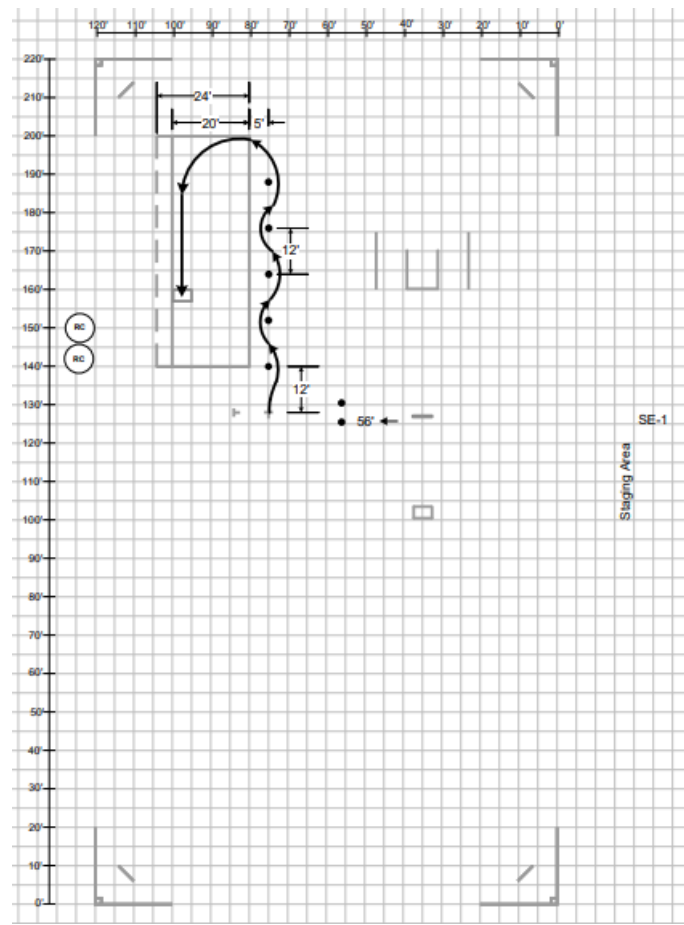
GENERAL 1. This exercise has 2 parts: a. Crossing over obstacles on the perimeter. b. Swerving to avoid a hazard. 2. The cue cones are 3' apart and 15' from the barrier. 3. The exercise is not intended to encourage riders to cross over obstacles on the street, but rather to provide the experience of crossing over an obstacle that cannot be avoided. 4. For the swerve, simulated practice is used to remind riders how to keep their upper body upright during the swerve. This, in essence, is counterweighting as handgrip pressure is applied. 5. The exercise adds slow-speed manipulation practice with a turn from a stop and a 12-foot, straight-line weave after a stop. 6. The demonstration should show slowing down between the obstacles to help ensure speeds do not increase between them.

EXERCISE 14:
SKILL PRACTICE



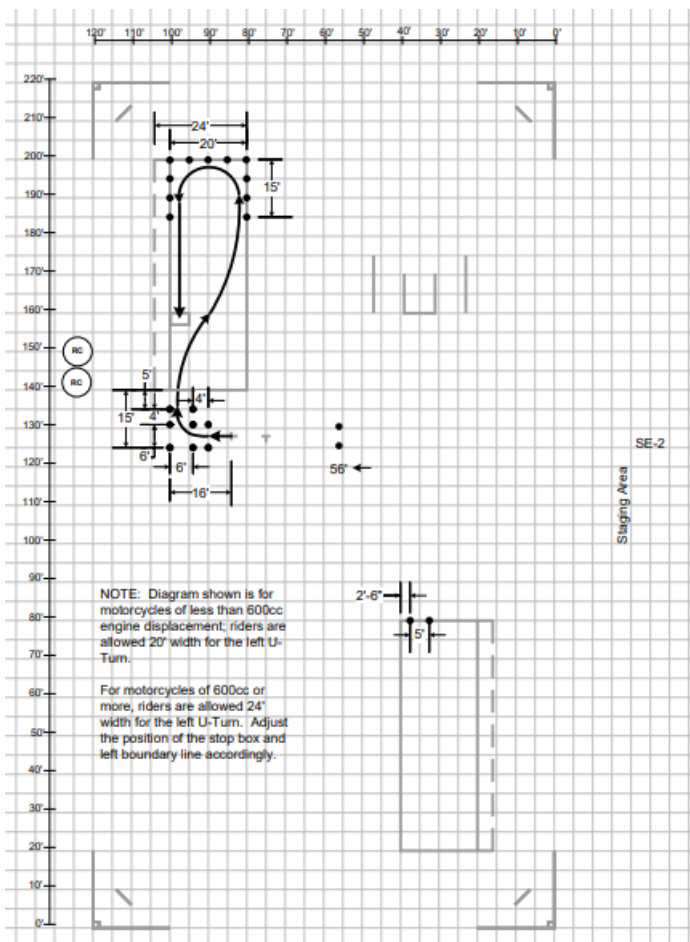
GENERAL 1. This exercise is designed to provide riders with continued development of overall basic control skills. It is a capstone exercise that provides practice of important skills including the collision-avoidance skills of stopping quickly in a straight line and swerving to the right. It also reinforces low-speed control and manipulative skills using controlled and precise inputs. This applies particularly to the transition from brisk acceleration to smooth braking, swerving, and stopping. 2. The exercise has two primary paths of travel. On one side: a U-turn with a 20' width followed by a stop-in-a-box, and then a quick stop in a straight line; on the other side: another U-turn with a 20' width and stop box, and then a swerve right and stop when straight. 3. Cue cones are 3' apart and 13' from the obstacle.

EVALUATION 1: CONE WEAVE & NORMAL STOP



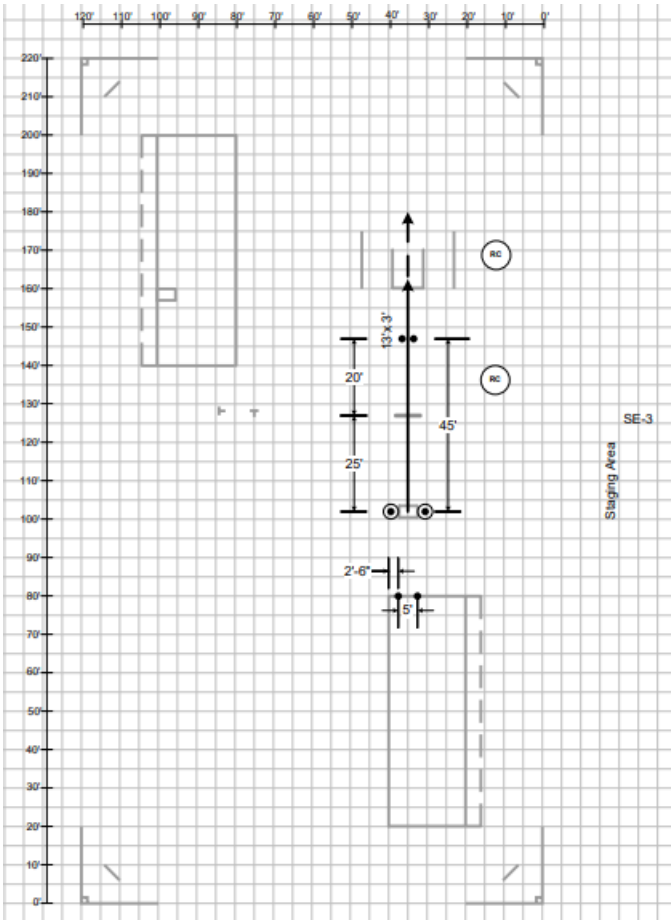
This evaluation consists of a cone weave through five cones and a normal stop with the front tire in a marked stop box. It is designed to assess basic control operation by measuring the ability of the rider to coordinate clutch and throttle operation and basic handling skills to complete turns and avoid hazards. The normal stop evaluates the rider's ability to stop in a designated area, such as before a crosswalk or stop sign, without interfering with traffic or pedestrian right-of-way.

EVALUATION 2: TURN FROM A STOP & U-TURN



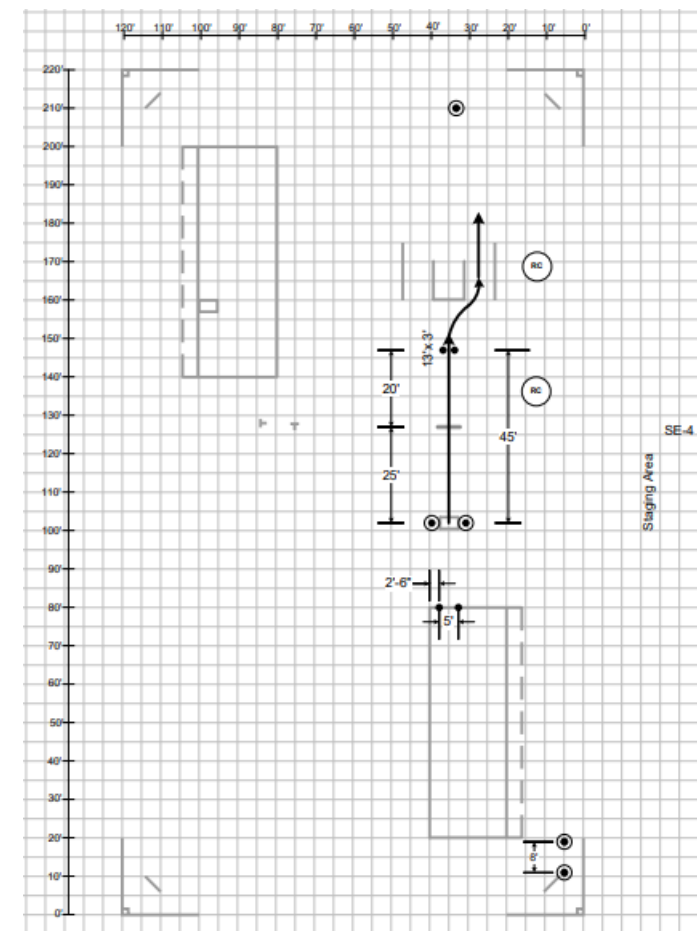
This evaluation consists of a right turn from a stop and a U-turn to the left. A stop box is used but not scored. The evaluation is designed to assess basic control operation by having riders approximate a real-world situation and demonstrate the ability to turn right following an intersection stop, maintain correct lane position, and avoid oncoming traffic. Riders demonstrate low-speed control skills by completing a left-hand U-turn and stopping in a box.

EVALUATION 3:
QUICK STOP



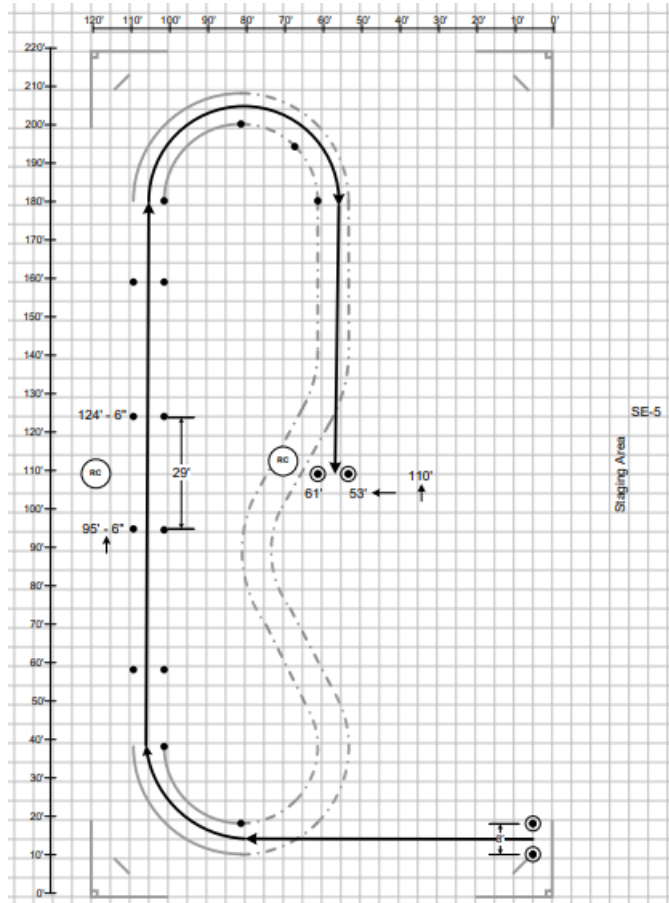
This evaluation assesses the skill of stopping quickly in a straight line. A 20' timing zone is used.

EVALUATION 4: OBSTACLE SWERVE



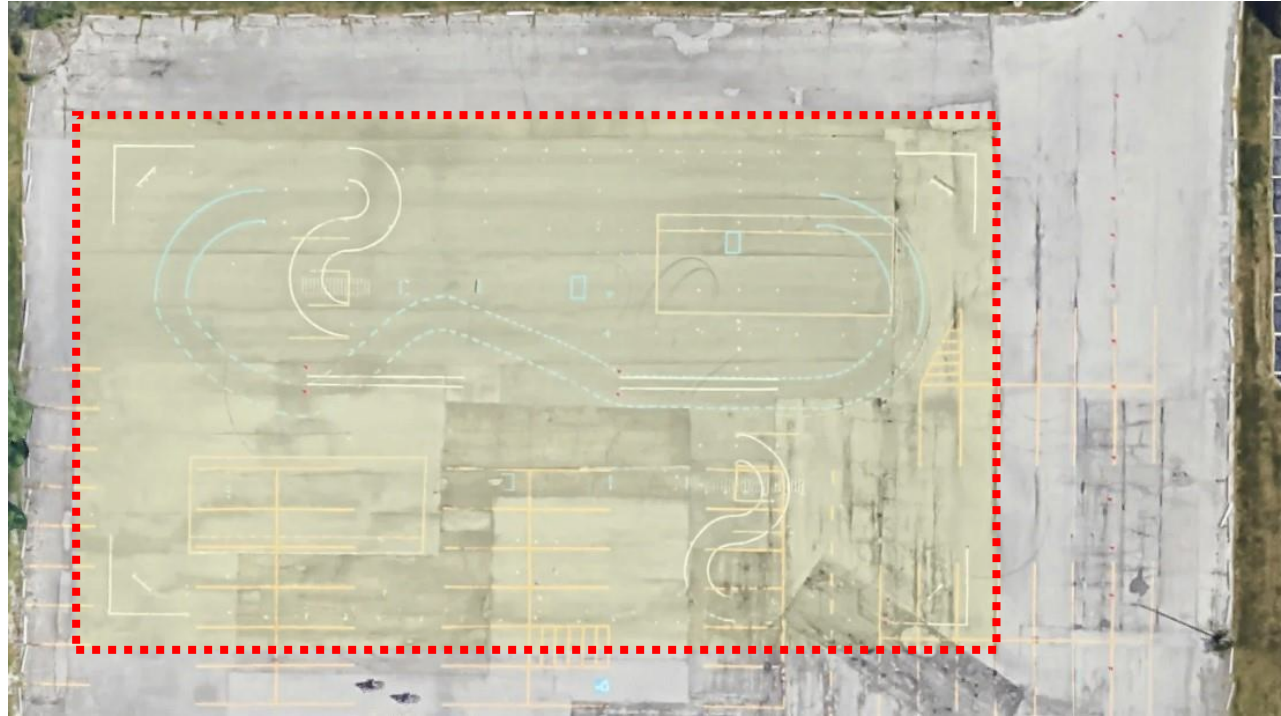
This evaluation assesses the ability to swerve around an obstacle. A 20' timing zone is used.

EVALUATION 5: CURVE



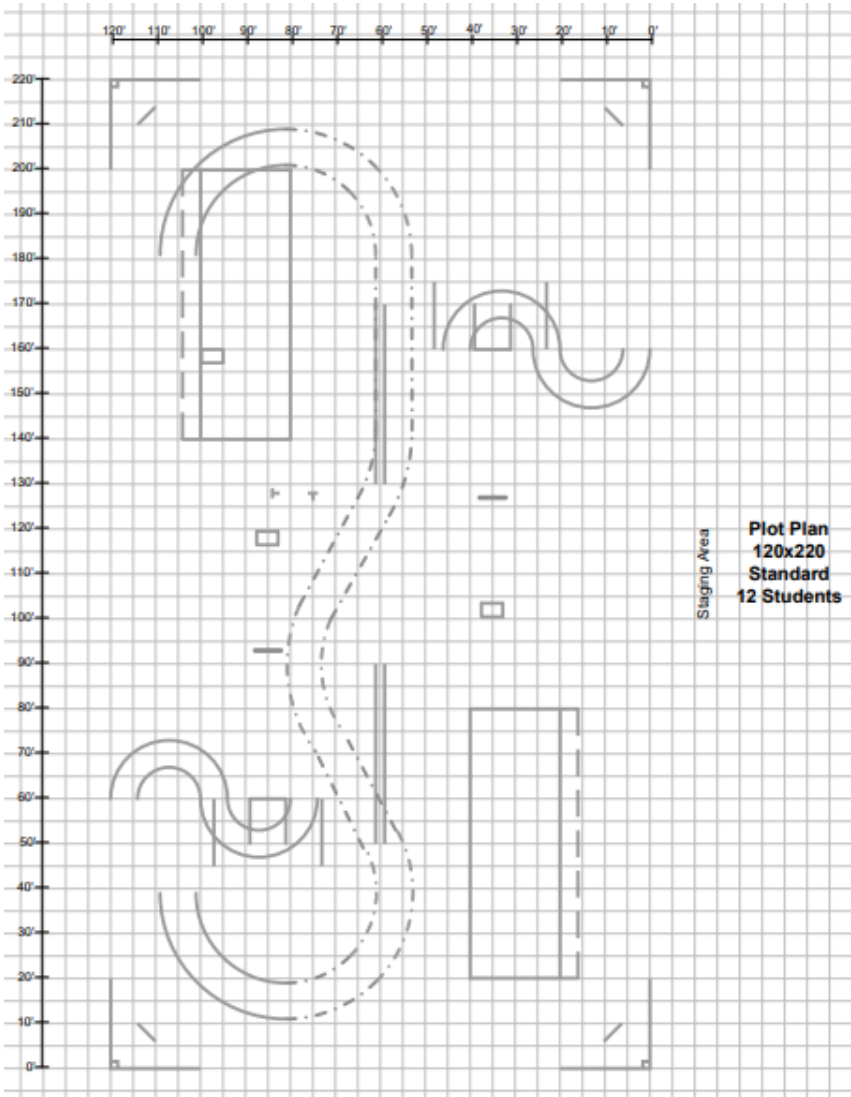
This evaluation assesses rider control and judgment for negotiating a curve. The evaluation may be run in either direction, but the right direction is preferred as the lines naturally provide a 180-degree curve. Only the 180-degree curve is scored for a boundary violation. A 29' timing zone is used, and stalling is not scored during this evaluation.

Dyer Range



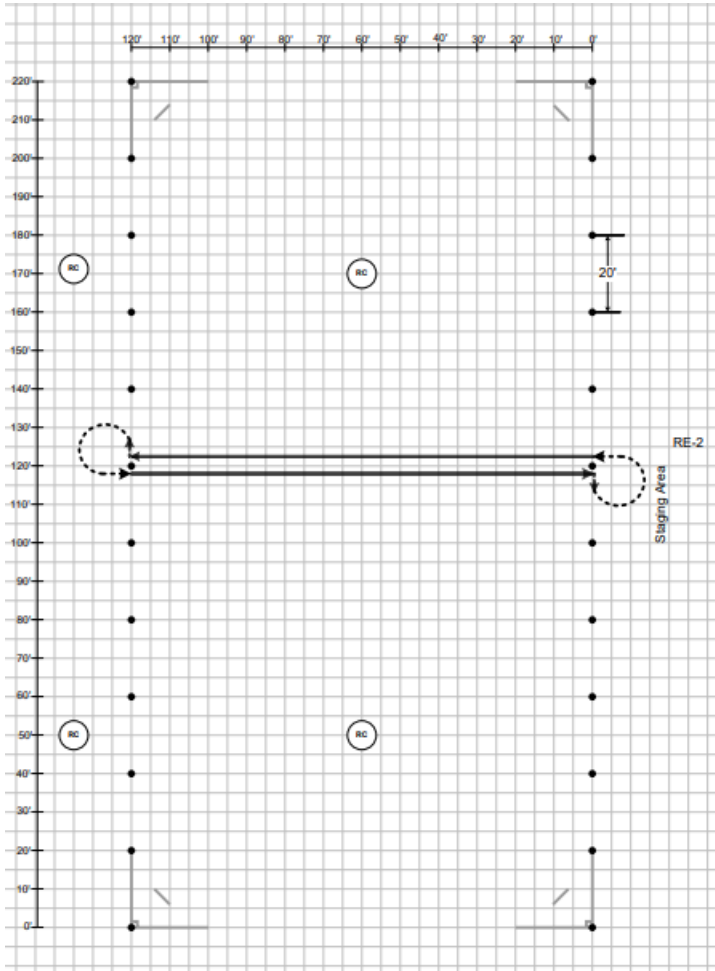
The Dyer range is an MSF Certified, “standard” range (160 x 260) with 20+ feet run off on all four sides. Our goal is to shift the range 10 feet to the north to improve range surface area.

EXERCISE 1:
MOTORCYCLE FAMILIARIZATION



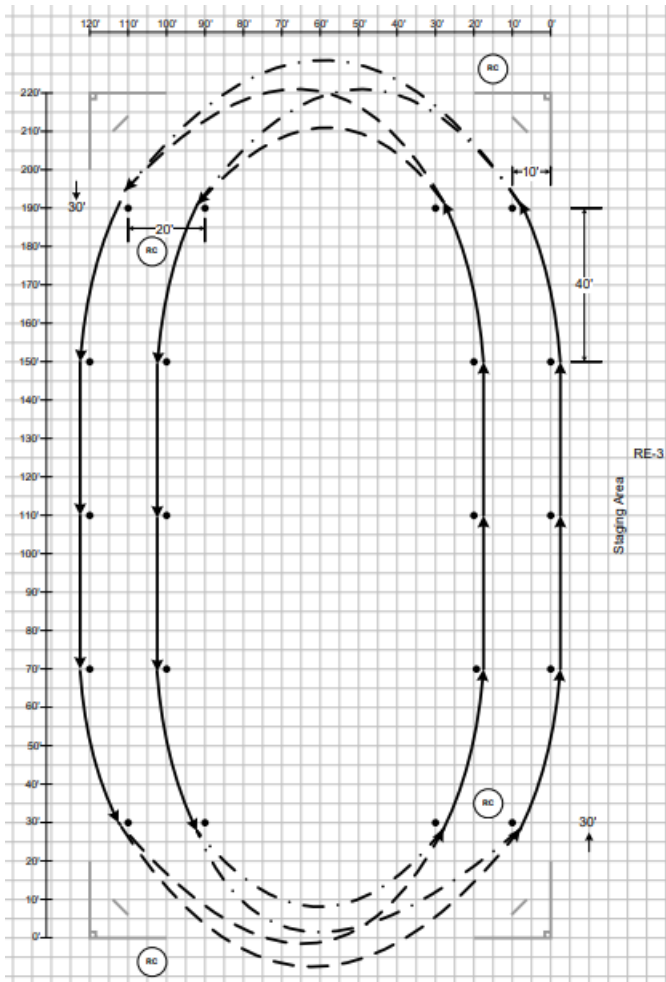
GENERAL 1. This exercise is designed to acquaint a new rider with the major parts and controls of a motorcycle. (Some of the action steps may be completed in the Pre-Exercise 1 activities.) Exercise 1 consists of: a. Ensuring riding gear is used properly. b. Fitting a participant on his/her course motorcycle. c. Familiarizing riders with parts/controls. d. Familiarizing riders with operation of key controls. e. Using the clutch lever and shift lever (finding neutral). f. Straddle walking forward and backward (while practicing front brake use). g. Starting, stopping, and warming the engine. h. Positioning the motorcycle for the next exercise. 2. Subtleties include: a. Multiple mounts and dismounts. b. Posture and throttle use. c. Practice in throttle roll-off with front brake squeeze. d. Observing a square-the-bars demonstration. 3. A benefit of this exercise is that participants become comfortable interacting with a motorcycle and are introduced to various manipulations that will be used later in the course. Some actions need to be repeated to ensure adequate understanding and proper use of controls. 4. Basic motorcycle operation is introduced, including: a. Manipulation of the controls. b. Proper control operation. c. Eyes up once the location and operation of the controls are adequately learned. 5. For the static demonstration, stand beside the motorcycle and push it a short (5'-10') distance with the handlebars square and squeeze the front brake lever to stop. Repeat the push and stop with the handlebars turned slightly (not enough to potentially drop the motorcycle). The riders should see how the motorcycle gets heavy and wants to dip in the direction the handlebars are turned when the front brake is applied. Riders must understand the importance of having the handlebars square at a stop to help keep the motorcycle upright.

EXERCISE 2: USING THE FRICTION ZONE



GENERAL 1. This exercise is designed to acquaint riders with the procedures and practices to start out, stop, and operate at low speed in a straight line. 2. There are 3 parts: a. Group rock, with individual assistance as needed. b. Power walk (straddle walking with engine power). c. Straight-line ride. 3. Simulated practice is used for emphasis in proper use of the friction zone; that is, to ensure riders understand the friction zone is an area in the clutch lever's travel that connects engine power to the rear wheel. The idea is to have riders pause in the friction zone area when starting out in 1st gear, and to avoid using the clutch lever as an on/off switch when starting out (releasing too quickly). A good statement to make is to it, not through it when starting out from a stop.

EXERCISE 3: STARTING & STOPPING DRILL

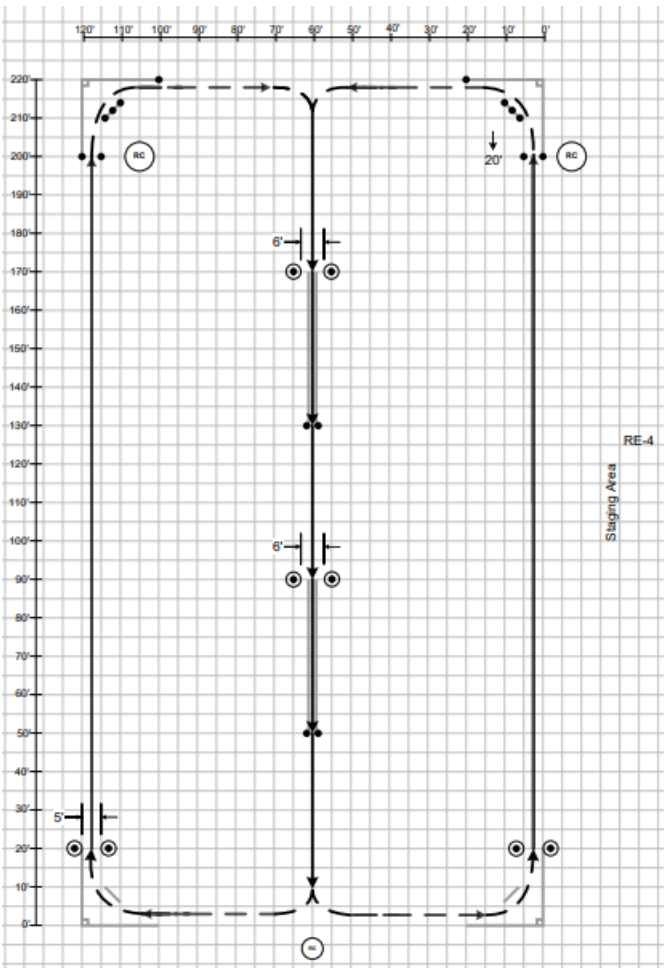


GENERAL 1. This exercise is designed to provide practice time in learning clutch lever and throttle coordination when starting out and stopping. In terms of learning to start out well and having low-speed control, it is the most critical skill to develop. 2. A motor skill development principle is to develop accuracy and control before introducing speed of movement and finesse. This exercise is designed to facilitate that transition. 3. The exercise has 2 parts: a. Start/stop every 40 feet. b. Ride an extended distance and stop with the handlebars square. 4. A drill technique is used for repetitive feedback. Each rider is to develop the skill of starting out by gaining feedback from manipulation of the controls. This helps to develop muscle memory. 5. The technique of power walking is used extensively at the start of the exercise so riders are not forced to lift their feet until they are comfortable and skilled enough to do so. At the same time, riders who are comfortable enough to immediately lift their feet should not be forced to power walk other than the first few feet. Riders should be encouraged to keep their feet on the ground for a few steps (power walk) when starting out. 6. Subtleties of this exercise include: a. Taking a few steps before using the footrests. b. Gaining some speed in a straightaway. c. Smooth brake use when stopping from a “higher” speed. d. Stopping in a slight curve with the handlebars square. e. Turning from a stop. f. Keeping the head and eyes up and beginning to look through the intended path of travel. 7. As with most exercises that develop basic skill, there is some awkwardness in the beginning as riders are challenged with controlling low-speed instability. It is important riders are allowed to work through this challenge at a natural pace. As skill develops, smoothness and confidence will normally become evident.

EXERCISE 3: STARTING & STOPPING DRILL (Continued)

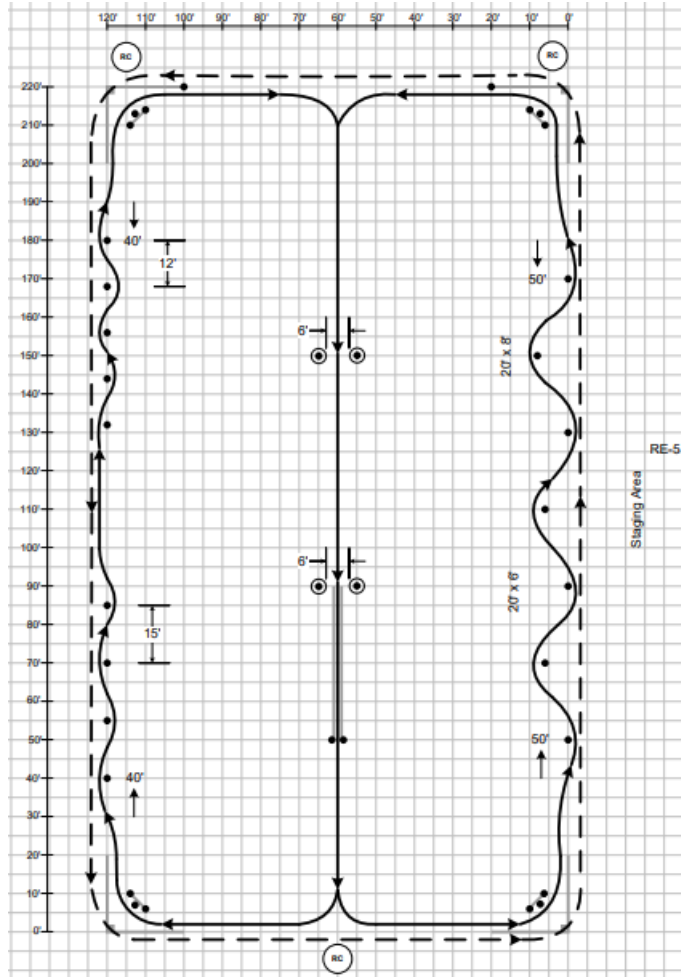
8. When this exercise is successfully completed, later exercises may be less problematic because basic control has been established. Do not hurry riders through this developmental step. 9. Riders should become comfortable and confident enough to get up to pre-shifting speeds. In part 2, riders should be provided enough time to explore the effects of throttle roll-on and roll off when in gear. 10. In exercise 2, only minimal throttle was used. Here riders are to develop skill to attain a speed just below the need to shift. The more automated clutch/throttle coordination and control become, the more likely riders will have more attention available for shifting in the next exercise, as well as use more acceleration in the straightaways during exercise 5. 11. Achieving the objective lays the groundwork for development of the finer skills of operating a motorcycle.

EXERCISE 4: SHIFTING & STOPPING



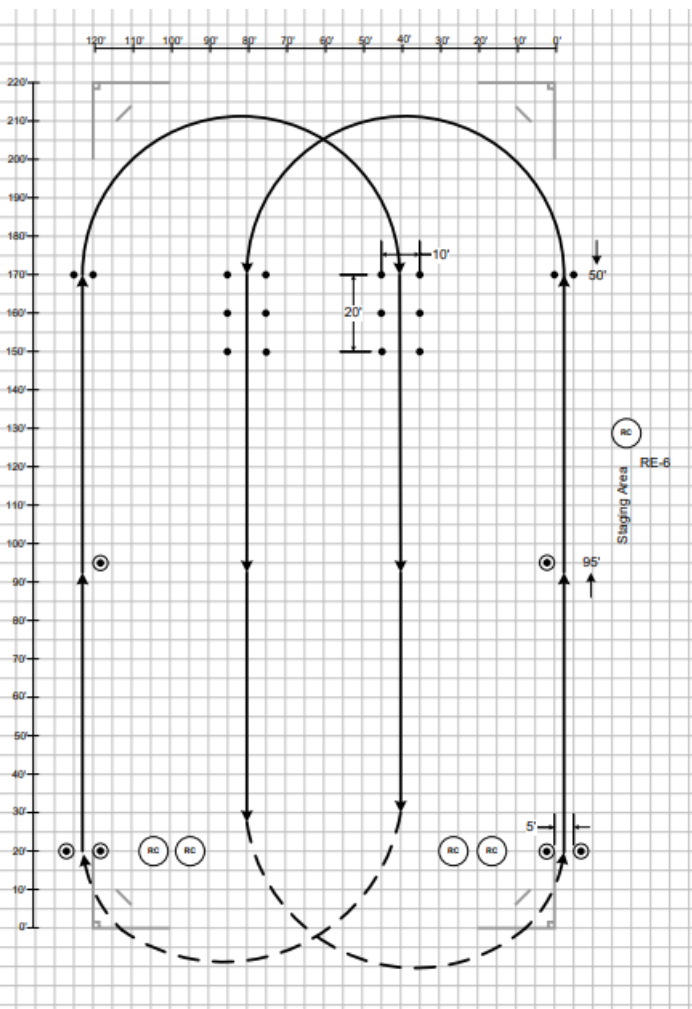
GENERAL 1. This exercise is designed to have riders learn to shift gears. It is accomplished in a straight line with a stop at the end. 2. Added to the path of travel are perimeter turns and two clutch-control lanes. The perimeter turns serve as an introduction to turning more sharply, and the clutch control lanes provide practice to fine-tune clutch lever and throttle coordination. 3. A subtlety of this exercise is that a “mix” traffic flow is used, and riders must use SEE to cooperate in merging with each other prior to entering the middle of the range. 4. Riders are likely to stop in a slight turn as they stop to wait in line. This is why it is important to have stressed the need to keep the handlebars square in earlier exercises. 5. The riding demo should not show shifting too quickly. There should be time between each part of the shifting process so riders can see (and hear) the three steps. 6. A middle path of travel should be used in the perimeter turn.

EXERCISE 5: BASIC SKILL PRACTICE



GENERAL 1. This exercise is designed to allow riders to develop the skills related to adjusting speed and turning. It helps riders automate basic skills as they manipulate the controls and “bond” with the motorcycle. Bonding refers to the interaction of the rider and motorcycle in using smooth, precise control manipulation in developing proper procedures and techniques for good low-speed maneuvering skills; skills becoming automated. The more automated the skills, the better riders are able to keep their head and eyes up. 2. This is the first exercise that provides extended, continuous riding free of frequent stops. It also provides an introduction to the basic curve procedure of slow-look-press-roll, with emphasis on the slow-look steps. 3. The exercise has 2 parts: a. Full group rides the middle and weaves on both sides b. Split groups ride the perimeter in both directions. 4. In part 1, the weave pattern is different on each side. One side has 15' and 12' straight-line weaves, and the other side is a 20' x 6' offset weave with the last cone forming an 8' weave (to provide a challenging skilldevelopment goal for riders). The different dimensions provide varying control inputs and feedback; that is, riders practice and gain feedback in multiple paths of travel that require varied control operation. 5. In part 2, the outside perimeter corners are used in a split group format that is reversed. The split ensures adequate time and space for rider development with good overall control and adequate following distance. This also provides sufficient time and space to adequately learn control manipulation (related to the primary controls, primarily roll-on and roll-off).

EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN



GENERAL 1. This exercise is designed so riders gain the knowledge of results from handgrip pressure and handlebar movement to initiate and adjust lean. It also allows, if riders are ready, the opportunity to transition from slowlook-press-roll to the more general concept of search-setup-smooth. The most critical aspect is setup, which includes having a speed that does not require slowing while in a curve. 2. The procedure to initially learn how to negotiate a curve is slow-look-press-roll. a. Slow means to adjust speed from an approach speed (generally any reasonable speed) to an entry speed (one in which no slowing is needed in the curve itself). b. Look means to keep the head and eyes up while making the curve. Riders should constantly be searching and evaluating the curve from approach through completion, not only because riders should look where they are going, but because riders tend to go where they look. But look in a larger context is to use the eyes to SEE well before, during, and after the curve: look-slow-look-press-look-roll-look. c. Press means to adjust the handlebars with handgrip pressure to initiate and adjust lean. A press on one handgrip can be simultaneous with a pull on the other. d. Roll means to use the throttle to maintain a steady or increasing speed. A very subtle roll-on is needed to maintain speed as the tires need to turn faster due to their reduced circumference from the lean. This rollon is commonly referred to as maintenance throttle (engine rpm is maintained). If a very conservative entry speed is used, it is possible to roll-on to increase speed (mph) through the curve. While not a requirement, it does show a good, conservative entry speed was used. Since a too-fast entry speed is likely a primary error in curve-related crashes, having a conservative entry speed is a good point to emphasize for novice riders.

EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN (Continued)

3. A more general approach to cornering is search-setup-smooth. a. Search means to look far and near and side-to-side to identify the important factors for control and safety. A minimum 12-second lead time should be maintained, with the 4-second urgent path an absolute minimum as this time/distance is needed for making an aggressive stop. To search well means to not only keep the eyes moving, but to also identify key factors and how they might interact (with some imagination) to produce a problem that requires some kind of action. This is why having good perception, especially hazard perception, is so important. For curves, search means to know the variables of the curve before entering it (radius, slope, width, surface, other traffic, etc.). It is good if a rider can see the whole curve all the way to its end point, but oftentimes trees or buildings prohibit this. Even if a rider can see the end of a curve, like a short, flat curve with no view obstructions, a rider should not fixate on the end point. While in the curve, the eyes are to keep moving far and near and side-to-side as part of a perceptual strategy. To fixate is not good. Automobile research shows that most drivers spend around 80 percent of their time gazing near the curve's tangent point, which is a line from the eyes to the leading edge of the curve where its radius can be determined. The remaining 20 percent of the time is gazing throughout the curve. b. Setup means to consider entry speed and line. Entry speed: for novices, it is one that would permit (not require) a roll-on to increase speed through the entire curve because a very conservative entry speed minimizes running wide in a curve. But roll-on through the entire curve is not possible for all curves. A long sweeping curve, especially if downhill, would lead to scraping parts or running off the road. Line: assuming no hazardous variables, a good line for novices is middle-middle-middle because it allows for errors in path of travel to both sides. It also keeps the rider farther from the edges of the lane. A more aggressive line would be outside-inside-outside because a curve can be ridden faster due to less lean angle. Using an outside-inside-outside line permits a rider to see farther

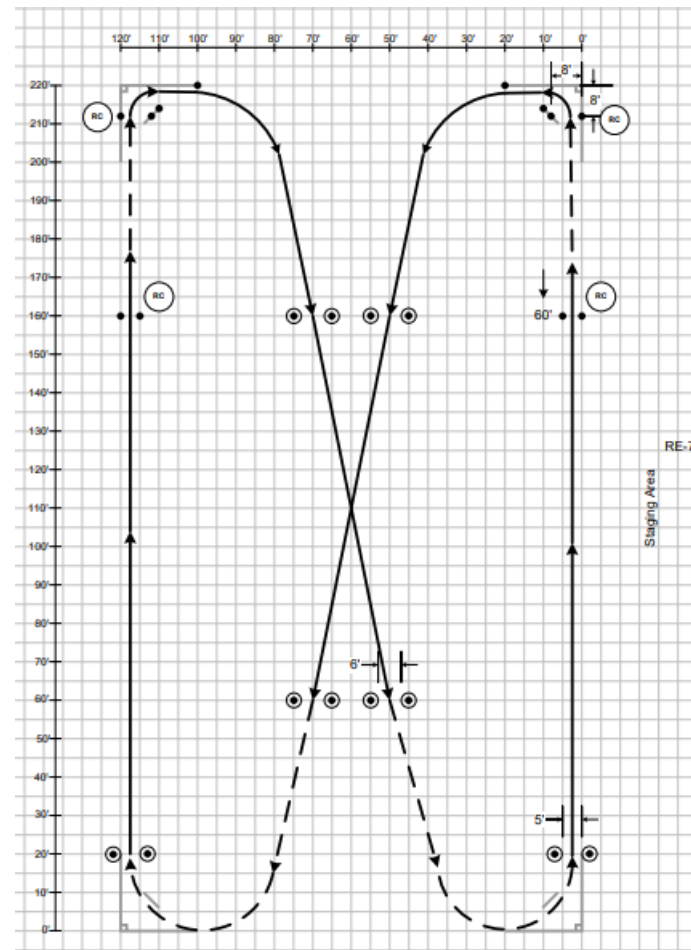
EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN (Continued)

through the curve and can be advantageous, but it puts a rider near the edges of a lane and requires a higher degree of skill. Whichever line is chosen, a rider should choose a speed that allows adequate sight distance to make lane position adjustments and stop in time for hazards. c. Smooth refers primarily to any speed adjustment, whether in a straight line or in a curve, and its effects on the path of travel, suspension, and traction. Making abrupt steering or speed adjustments, especially when negotiating a curve, is hazardous. It is best to operate the controls with the precision that produces smoothness. Smoothness when operating the controls results in overall motorcycle smoothness and is best for overall control and traction. 4. In the MSF Basic eCourse and Rider Handbook, learning to turn (or negotiate a curve) is introduced with the steps of slow-look-press-roll. The assumption in using this procedure is that the approach speed used for the curve requires some slowing. Curves do not always require slowing before entry, and slowing for a curve that requires it may be accomplished by a throttle roll-off or by throttle roll-off and braking, depending on the nature of the curve and the speed of approach. Using the brakes to establish a good entry speed is not always needed. To brake with a low approach speed could cause balance problems and undesired manipulation of the controls. 5. In this exercise, the primary objective is to experience handgrip pressure and handlebar movement to initiate and adjust lean. Riders who use a slow approach speed may only need a slight throttle roll-off, if any, and little or no brake pressure. Riders with a high approach speed are to use throttle roll-off and/or braking to slow, but not so much as to become unstable. In no instance should entry speed make it difficult to stay in the path of travel. If an approach speed is too fast, slowing down must be coached. Slowing in the curve is considered an error in judgment and must be corrected. In later exercises, a higher approach speed is used so riders will learn more about braking for proper entry speed. 6.

EXERCISE 6: PRESSING TO INITIATE AND ADJUST LEAN (Continued)

To an untrained eye, this exercise (as well as many others) looks like a group of riders “just riding around a parking lot.” RiderCoaches know that deeper learning is occurring; that is, riders are fine-tuning their procedures and techniques. Learning to operate the controls of a motorcycle to put the motorcycle where a rider wants it is an overall goal. 7. The simulated practice is “search and press.” It highlights the importance of searching throughout the intended path to determine a proper setup regarding entry speed and handgrip pressure. 8. Coaching in the stage area should include an emphasis on both slow-look-press-roll with a mention of searchsetup-smooth once the basics are mastered. The exercise should not be ended until riders are not slowing in the curve itself and are using a good entry speed that results in no decrease of speed in the turn. 9. A split and full group process is used. The riders are divided into two groups. One group rides both directions while the other group observes, then the groups switch, then all ride each direction again. 10. The full group portion of the exercise provides opportunities to practice SEE to maintain an adequate time-and-space safety margin.

EXERCISE 7: STOPPING MORE QUICKLY & TIGHT TURNS FROM A STOP

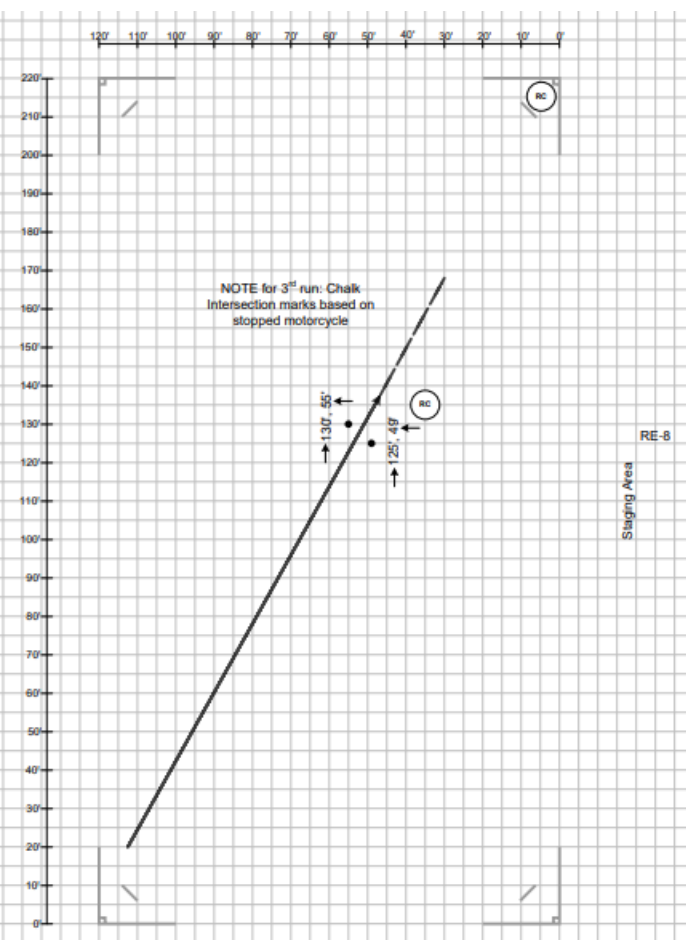


GENERAL 1. This exercise is designed to allow riders to further develop the skill of stopping by developing an improved feel for progressive braking pressure to stop more quickly. It is important riders are not led to believe they are practicing an emergency stop. Riders are to explore brake intensity gradually, starting first with lower speeds and moderate brake pressure, and then progressing to quicker stops with more brake pressure. 2. This exercise uses simulated practice to emphasize the proper squeeze of the front brake lever when making a quick stop. A key point of emphasis is to avoid grabbing the lever. 3. The turn-from-a-stop is several feet prior to the perimeter turn to provide another scenario from which turns from a stop can be made in real-world situations (particularly intersections). 4. Earlier in Exercise 4, Shifting and Stopping, the distance was 20' to cause friction zone practice in making the perimeter turn. Now a greater approach distance is provided with the idea that braking adjustments may be needed prior to turning. Use of the friction zone in the turn is optional. 5. A feature of this exercise is that a crisscross traffic pattern is used in the middle of the range. This creates an opportunity to use SEE for gap selection and a time-and-space safety margin. 6. This exercise has 2 parts: a. Riders stop after they pass a cue cone and then turn from a stop. b. Riders stop on RiderCoach signal and then stop again for the tight turn from a stop. 7. For part 1, riders may begin to use the brakes when the front tire reaches the cue cones; clutch lever squeeze and downshifting could occur prior to that point. 8. Having riders stop on signal provides different feedback for the riders. This develops the skill to a deeper level. 9. Part 2 of the exercise also adds tight turns from a stop. After the rider stops, the RiderCoach directs the rider to stop again with the front tire between the entry cones at the perimeter turn. The tight turn from a stop ties into the concept of Open Up the View – after riders stop at an intersection (as in Exercise 4), they may have to stop again to ensure the roadway is clear before pulling out.

EXERCISE 7:
STOPPING MORE QUICKLY &
TIGHT TURNS FROM A STOP
(Continued)

10. It is important the riding demo not have a high approach speed and that full stopping power is not used. As with all riding demonstrations, the speed, procedures, and techniques should be shown as the average novice would be expected to accomplish by the end of the exercise. 11. During reflection, mention a rider's personal motorcycle may feel a lot different, so practicing quick stops on one's personal motorcycle is highly recommended (in the BRC2, ARC, or on their own in a safe parking lot).

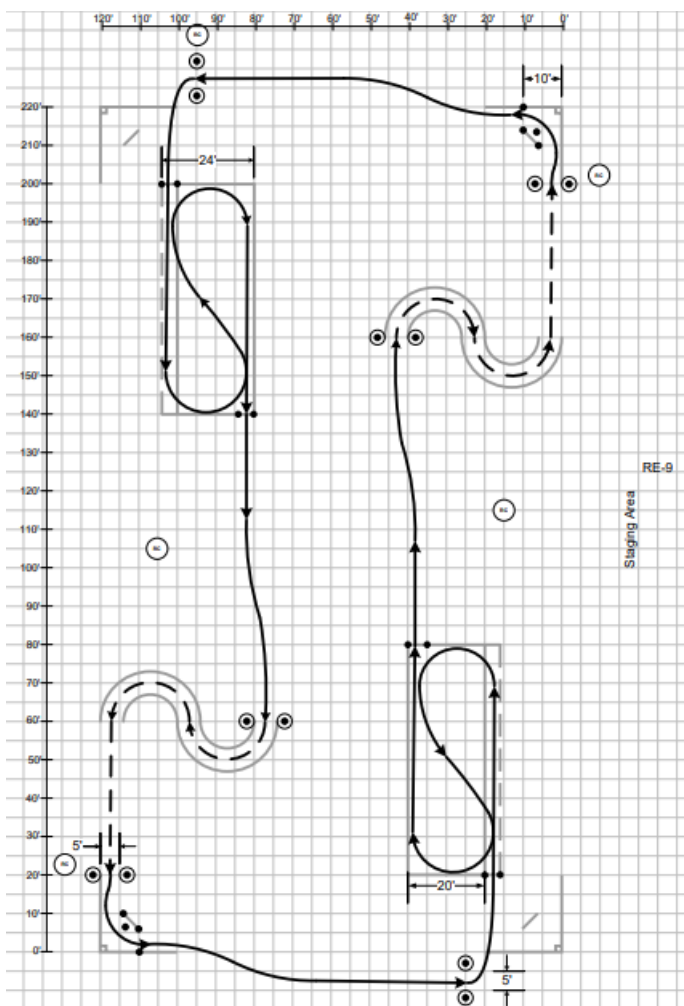
EXERCISE 8:
STOPPING DISTANCE
DEMONSTRATION



GENERAL 1. The objectives for this exercise are to show the effects of speed on the three components of total stopping distance and to illustrate these effects at an intersection. This exercise is used to call attention to the time and distance needed for average (or normal) total stopping distance in the real world. 2. The demonstrations do not have to be overly dramatic, but they do have to be plausible to get the maximum benefit from the exercise.

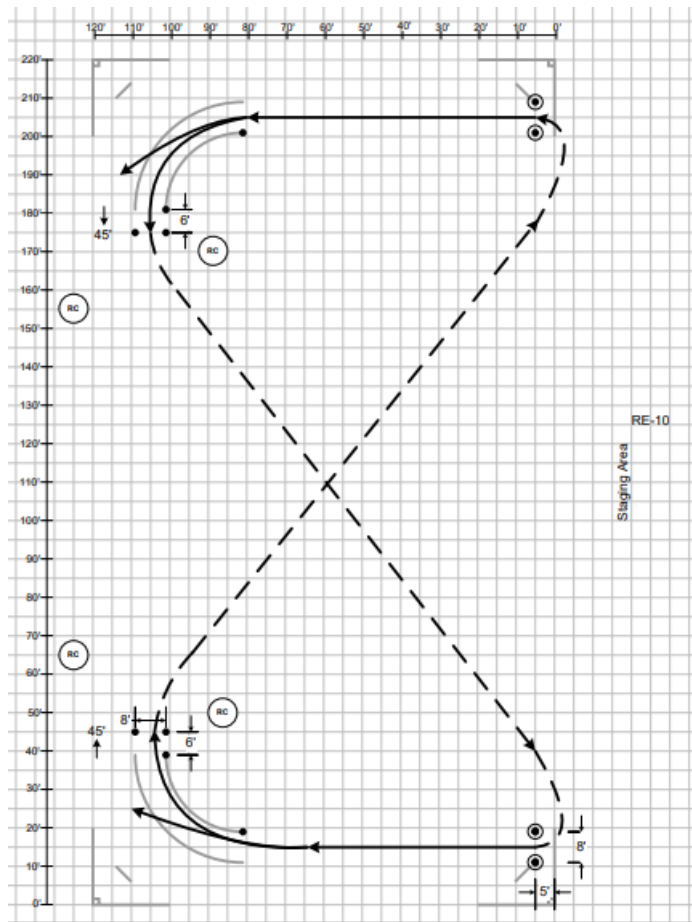
Demonstration speeds need to be precise, reaction times accurate, and braking operation crisp and smooth with no skidding. The RiderCoach who demonstrates should practice extensively to ensure adequate acceleration and braking within the prescribed area, especially at 25 mph.

EXERCISE 9:
LIMITED-SPACE MANEUVERS



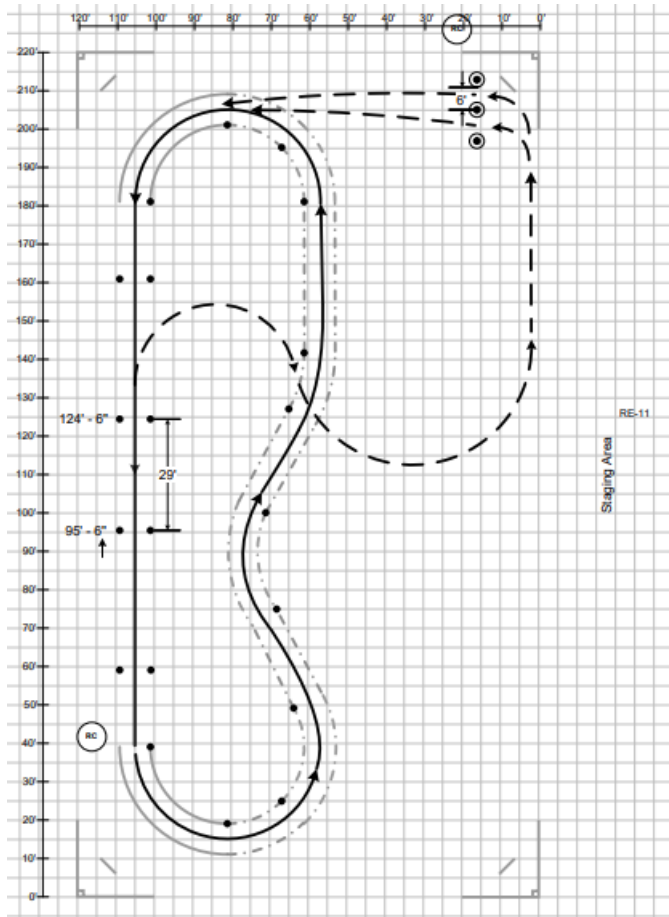
GENERAL 1. This exercise is designed to have riders reinforce (and in some cases re-learn) their basic, low-speed skills by using paths of travel within a limited space. A motor skill principle is to have adequate gross motor skills before practicing and developing the finer motor skills. This exercise helps with bike bonding toward the development of automated, basic skills. 2. Three limited-space maneuvers are provided: a. U-turn. b. S-turn. c. Perimeter turn from a stop. 3. The U-turn area has two width dimensions, 24' and 20'. The former is the minimum width of most two-lane roadways (not counting the shoulder) and the latter provides a goal to increase skill. The 20' width is used in the skill test. 4. The skills in this exercise are more than simply convenience skills. These maneuvers provide practice time on basic skills within a practical context. The exercise is primarily about becoming adept at control operation. 5. RiderCoaches should be aware this exercise is not primarily about teaching riders to make U-turns, but rather using a U-turn path of travel to develop basic skill. It's about controlling the motorcycle and being able to manipulate the controls to put the motorcycle "where a rider wants it." 6. The skill of handlebar turn and counterweighting is emphasized, and is highlighted with a simulated practice. As much as possible, the handlebar turn should be at full-lock position (not for the first practice rides, but as a goal to achieve while practicing). 7. The demonstration should not show any body movement other than upper-body counterweighting. The buttocks should not be moved off-center in the seat. 8. Dragging the rear brake should not be demonstrated, but it may be encouraged for riders who have the overall skill and control to try it. 9. For the perimeter turns, cones are used to mark a stop point to continue the practice of turning from a stop. The middle cone is now in a position to form a 90-degree turn. Riders should not be forced to lean the motorcycle. An upright position is acceptable. Riders may power walk a couple of steps as they start out, but power walking too far through the perimeter turn will be scored as an error on the skill test.

EXERCISE 10:
STOPPING IN A CURVE



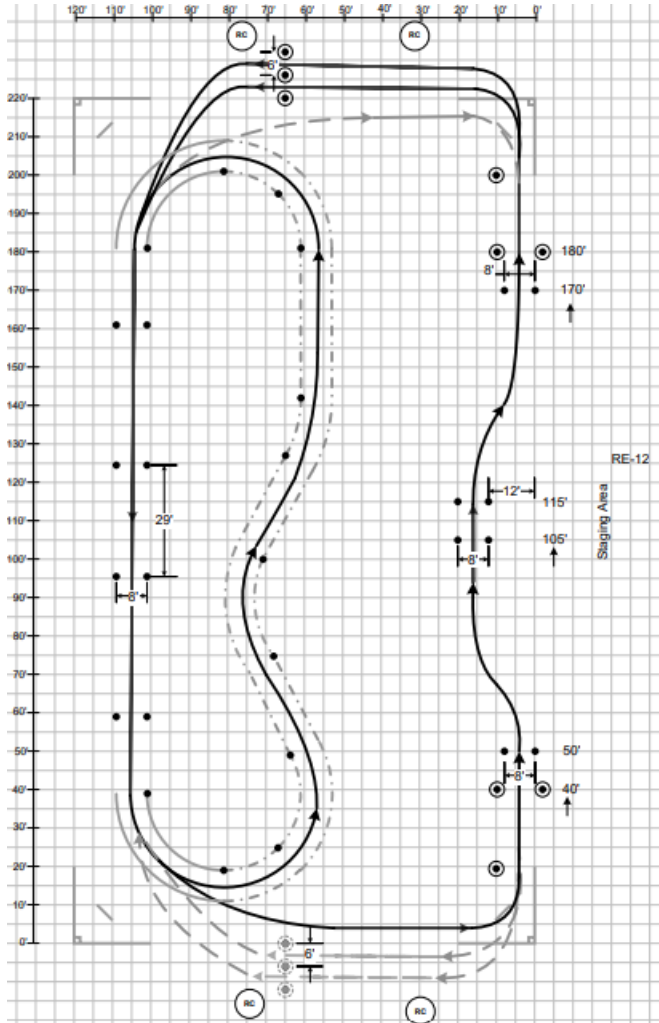
GENERAL 1. This exercise is designed to develop skills for stopping in a curve and has 2 parts: a. Normal stop in a curve. b. Stopping quickly in a curve using straighten-then-brake method. 2. This exercise does not address the technique for stopping quickly in a curve by gradually increasing brake pressure as the motorcycle straightens up; rather, the emphasis in part 2 is straighten first, then brake to make a controlled, straight-line stop.

EXERCISE 11:
CURVE JUDGMENT



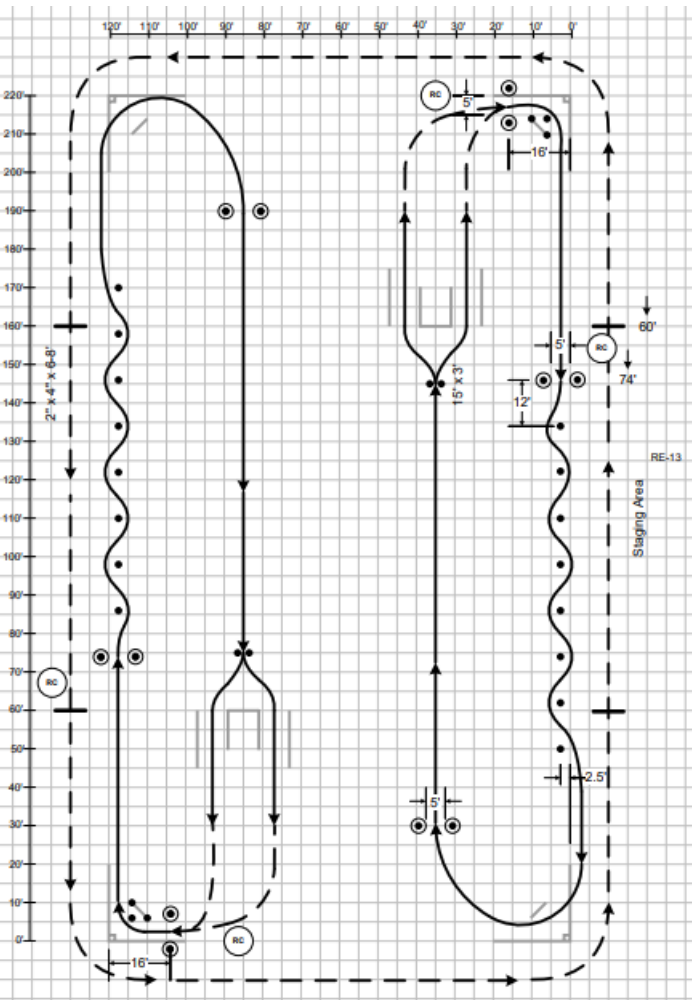
GENERAL 1. This exercise is designed to add to the skill and finesse related to search-setup-smooth when riding in curves, which requires a high degree of rider judgment and control. 2. The path of travel is a circuit ride consisting of a long straightaway and several curves. A middle-middle-middle path of travel should be used. 3. Riders may be familiar with search-setup-smooth from Exercise 6, Introduction to Curves. Search means to search before, during, and after the curve (far and near and side-to-side); setup means to have an appropriate entry speed so slowing in the curve is not required and to have a good lane position; smooth means to be precise and not abrupt when operating the controls. 4. Besides staying in the path of travel, a primary emphasis in this exercise is to have a good entry speed, which is a speed that would permit roll-on through the curve if a rider decided to do that. This requires judgment in assessing the curve's radius. 5. Only a few revolutions are likely needed in each direction to establish an understanding of the overall path of travel, sufficient skill, and adequate judgment. Further refinement will take place in the next exercise. 6. A portion of this path of travel is nearly identical to an exercise on the skill test. 7. Be sure the circuit path of travel is clearly and adequately marked.

EXERCISE 12:
MULTIPLE CURVES &
LANE CHANGES



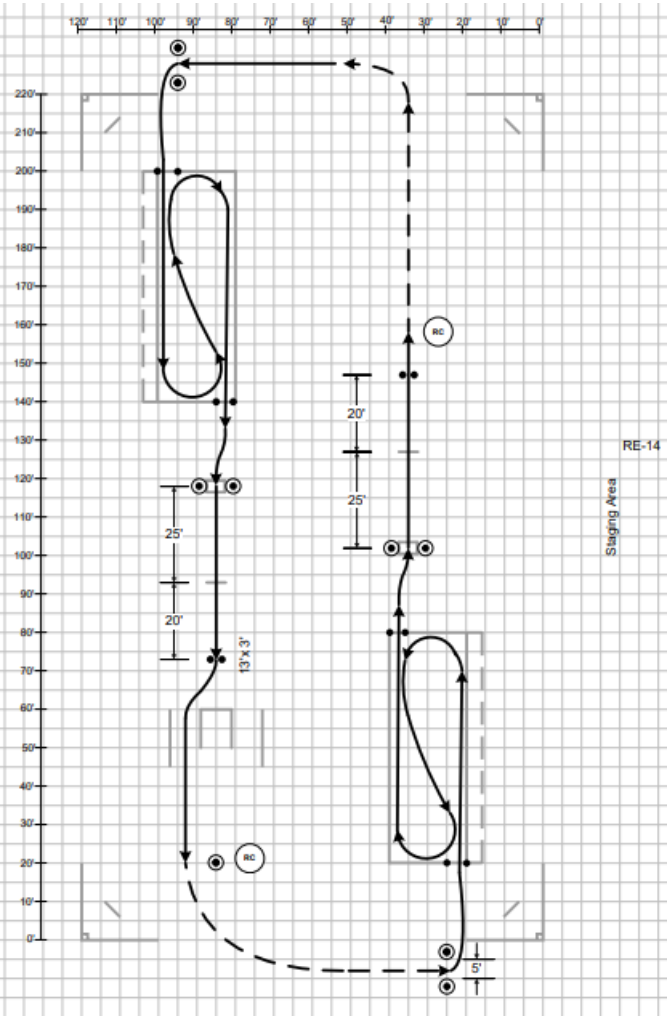
GENERAL 1. This exercise is designed to refine proficiency in negotiating curves and making lane changes as if in traffic. A nuance of this exercise is the selection of a gap to enter traffic, and to manage time and space. 2. A middle-middle-middle path of travel should be used. 3. Be watchful of the speed used by riders. The development of cornering procedures is important, and the speed used should be progressive – slower in the first part of the exercise, but not so much speed later to cause slowing in the curve or too much lean angle. 4. Simulated practice is used to remind riders how the turn signal switch operates and to emphasize the blind spot check. This simulated practice is a good example of muscle memory; that is, having a rider feel what it's like to find and use the turn signal switch without looking at it while still controlling the motorcycle.

EXERCISE 13:
CROSSING AN OBSTACLE &
SWERVING



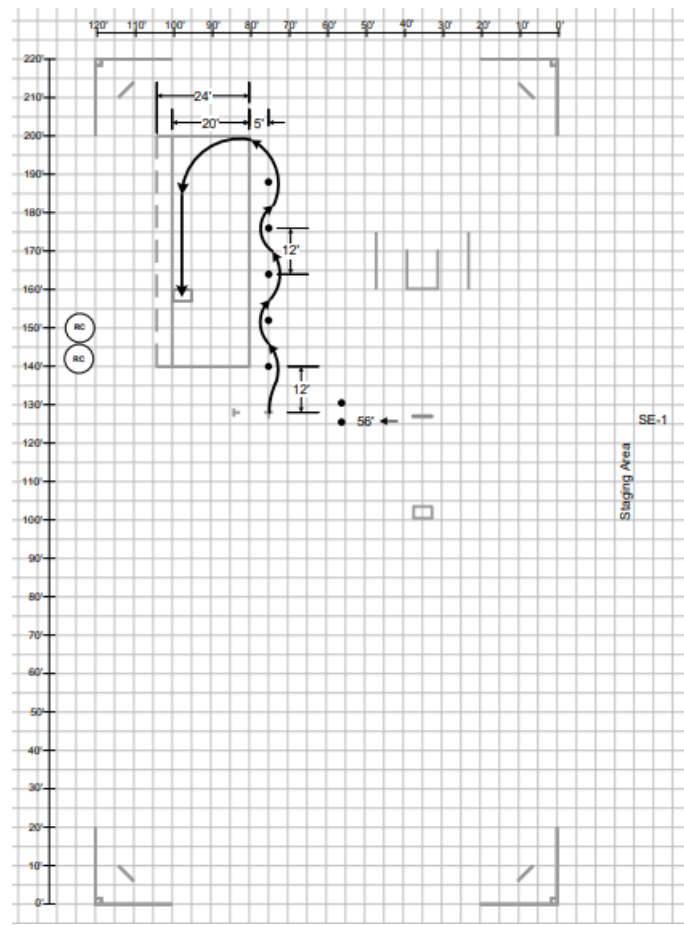
GENERAL 1. This exercise has 2 parts: a. Crossing over obstacles on the perimeter. b. Swerving to avoid a hazard. 2. The cue cones are 3' apart and 15' from the barrier. 3. The exercise is not intended to encourage riders to cross over obstacles on the street, but rather to provide the experience of crossing over an obstacle that cannot be avoided. 4. For the swerve, simulated practice is used to remind riders how to keep their upper body upright during the swerve. This, in essence, is counterweighting as handgrip pressure is applied. 5. The exercise adds slow-speed manipulation practice with a turn from a stop and a 12-foot, straight-line weave after a stop. 6. The demonstration should show slowing down between the obstacles to help ensure speeds do not increase between them.

EXERCISE 14:
SKILL PRACTICE



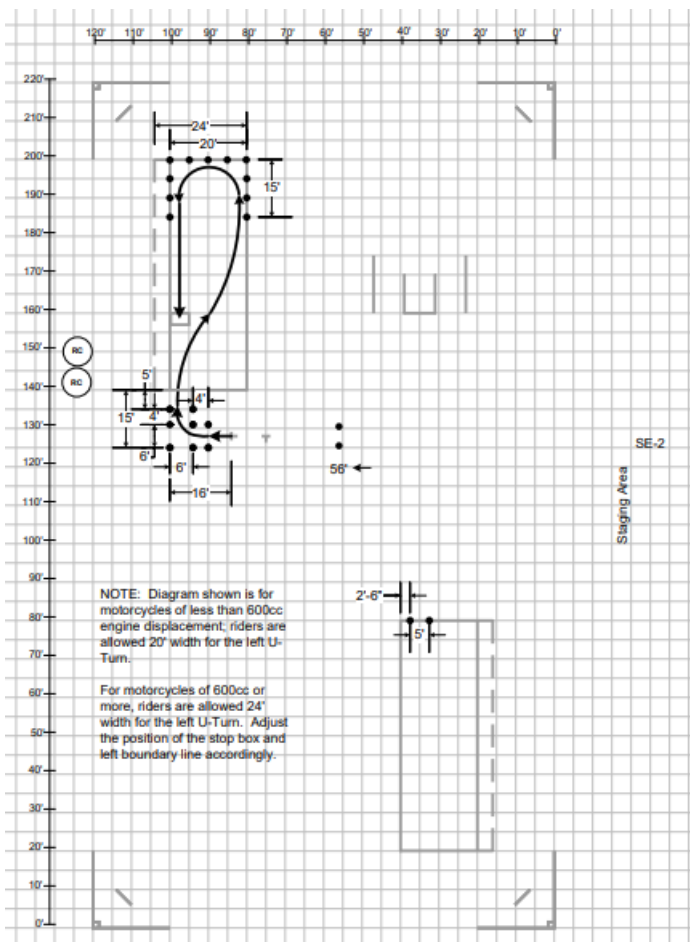
GENERAL 1. This exercise is designed to provide riders with continued development of overall basic control skills. It is a capstone exercise that provides practice of important skills including the collision-avoidance skills of stopping quickly in a straight line and swerving to the right. It also reinforces low-speed control and manipulative skills using controlled and precise inputs. This applies particularly to the transition from brisk acceleration to smooth braking, swerving, and stopping. 2. The exercise has two primary paths of travel. On one side: a U-turn with a 20' width followed by a stop-in-a-box, and then a quick stop in a straight line; on the other side: another U-turn with a 20' width and stop box, and then a swerve right and stop when straight. 3. Cue cones are 3' apart and 13' from the obstacle.

EVALUATION 1: CONE WEAVE & NORMAL STOP



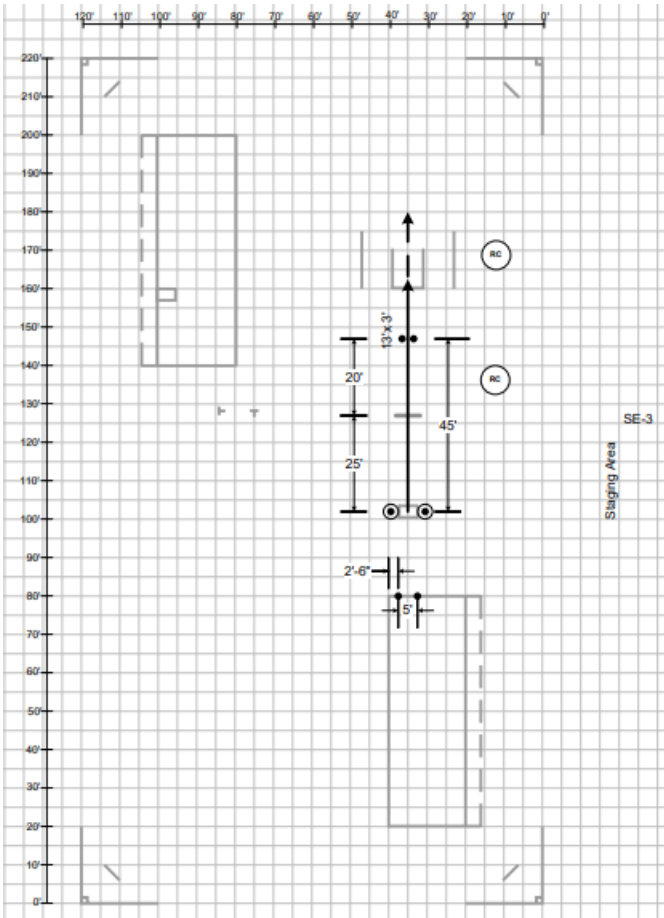
This evaluation consists of a cone weave through five cones and a normal stop with the front tire in a marked stop box. It is designed to assess basic control operation by measuring the ability of the rider to coordinate clutch and throttle operation and basic handling skills to complete turns and avoid hazards. The normal stop evaluates the rider's ability to stop in a designated area, such as before a crosswalk or stop sign, without interfering with traffic or pedestrian right-of-way.

EVALUATION 2: TURN FROM A STOP & U-TURN



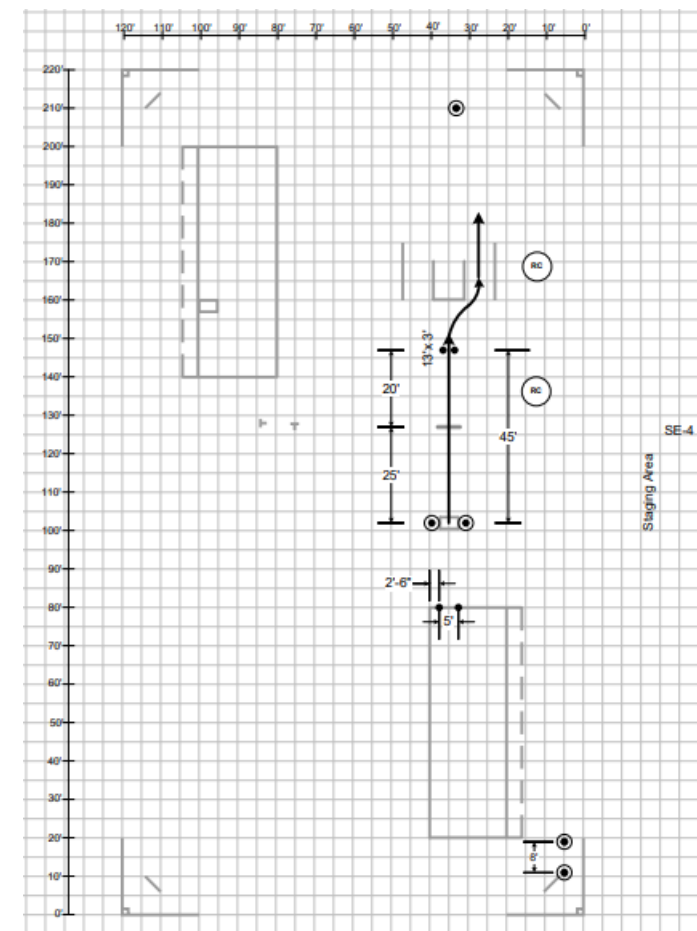
This evaluation consists of a right turn from a stop and a U-turn to the left. A stop box is used but not scored. The evaluation is designed to assess basic control operation by having riders approximate a real-world situation and demonstrate the ability to turn right following an intersection stop, maintain correct lane position, and avoid oncoming traffic. Riders demonstrate low-speed control skills by completing a left-hand U-turn and stopping in a box.

EVALUATION 3: QUICK STOP



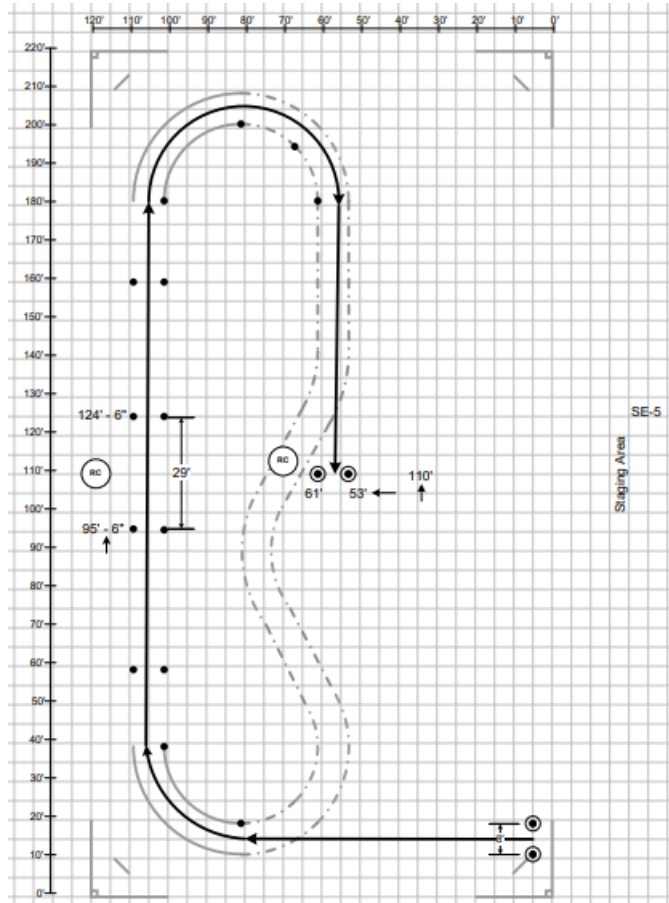
This evaluation assesses the skill of stopping quickly in a straight line. A 20' timing zone is used.

EVALUATION 4: OBSTACLE SWERVE



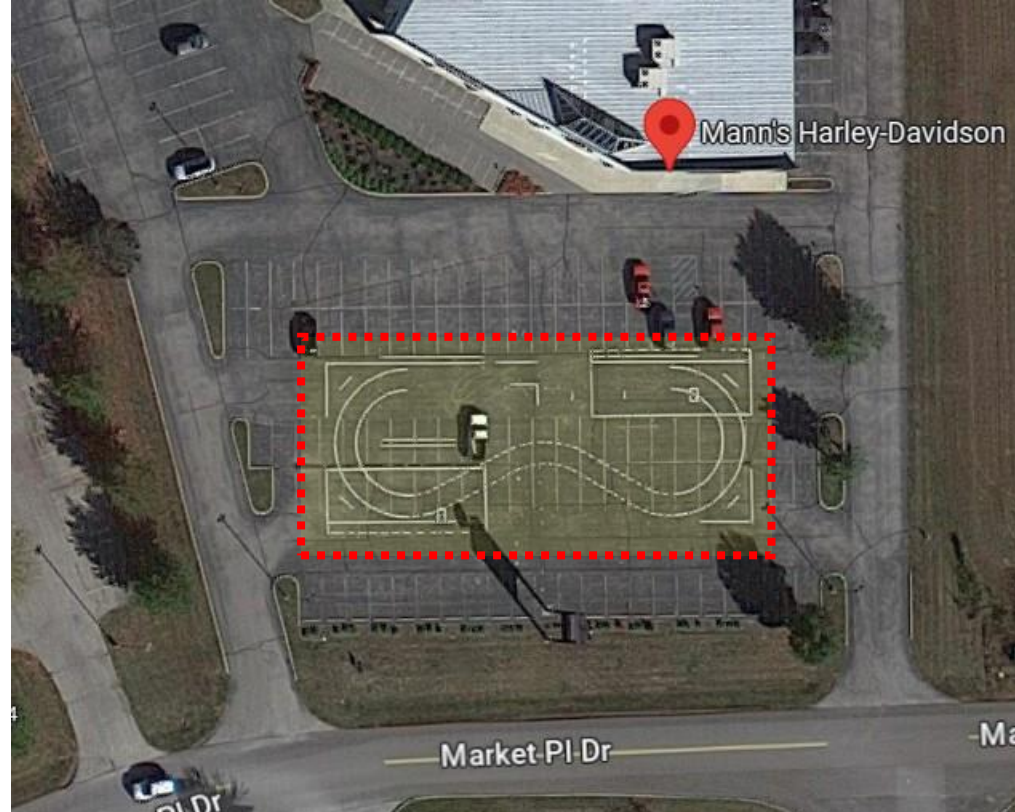
This evaluation assesses the ability to swerve around an obstacle. A 20' timing zone is used.

EVALUATION 5: CURVE



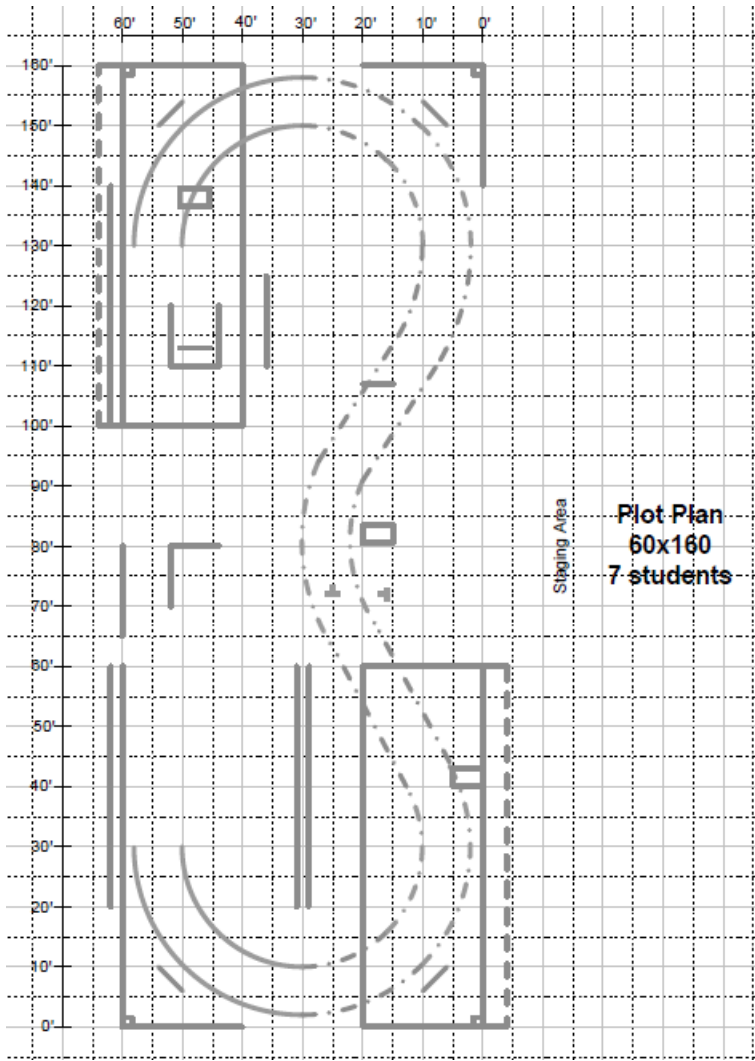
This evaluation assesses rider control and judgment for negotiating a curve. The evaluation may be run in either direction, but the right direction is preferred as the lines naturally provide a 180-degree curve. Only the 180-degree curve is scored for a boundary violation. A 29' timing zone is used, and stalling is not scored during this evaluation.

Edinburgh Range



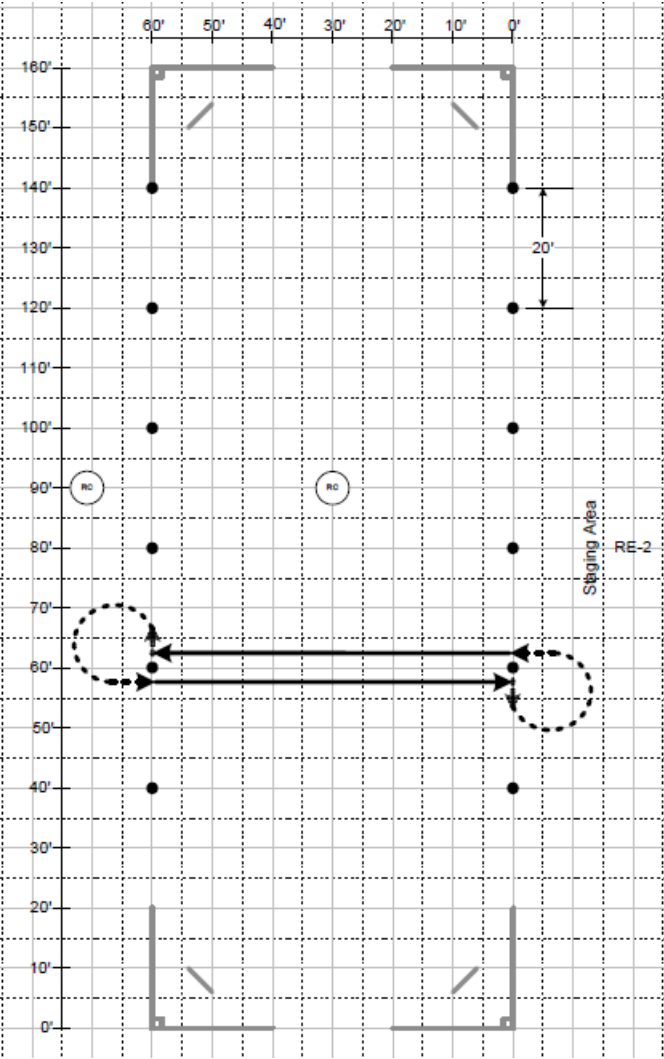
The Edinburgh range is an MSF certified, “modified” range (60 x 160) with 20+ feet run off on all four sides.

EXERCISE 1: MOTORCYCLE FAMILIARIZATION



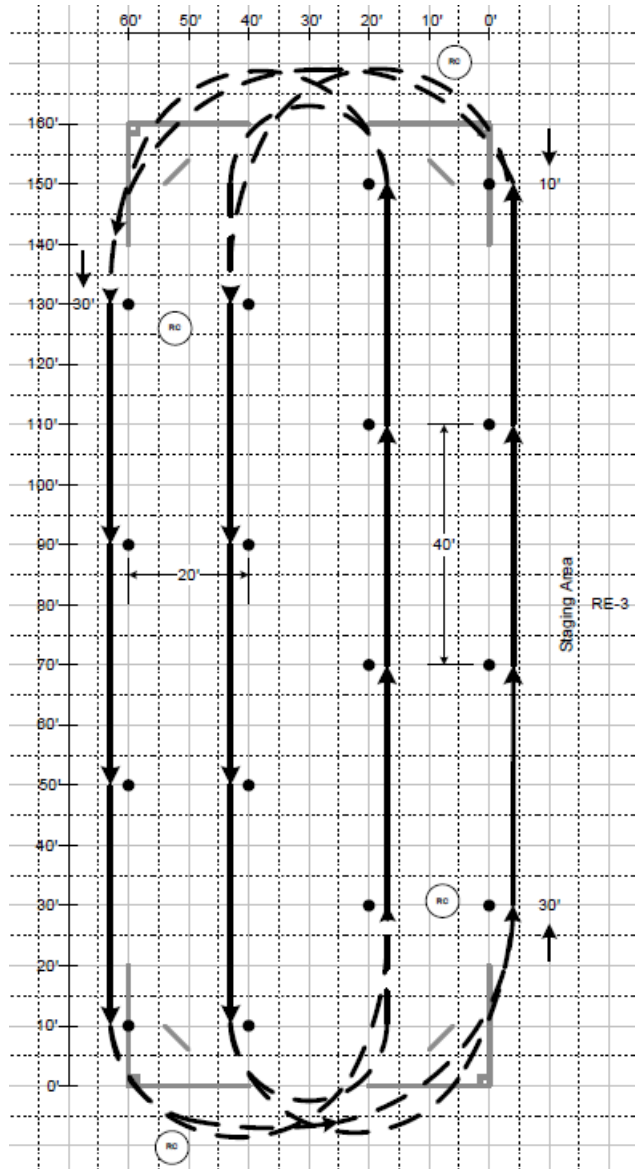
GENERAL 1. This exercise is designed to acquaint a new rider with the major parts and controls of a motorcycle. (Some of the action steps may be completed in the Pre-Exercise 1 activities.) Exercise 1 consists of: a. Ensuring riding gear is used properly. b. Fitting a participant on his/her course motorcycle. c. Familiarizing riders with parts/controls. d. Familiarizing riders with operation of key controls. e. Using the clutch lever and shift lever (finding neutral). f. Straddle walking forward and backward (while practicing front brake use). g. Starting, stopping, and warming the engine. h. Positioning the motorcycle for the next exercise. 2. Subtleties include: a. Multiple mounts and dismounts. b. Posture and throttle use. c. Practice in throttle roll-off with front brake squeeze. d. Observing a square-the-bars demonstration. 3. A benefit of this exercise is that participants become comfortable interacting with a motorcycle and are introduced to various manipulations that will be used later in the course. Some actions need to be repeated to ensure adequate understanding and proper use of controls. 4. Basic motorcycle operation is introduced, including: a. Manipulation of the controls. b. Proper control operation. c. Eyes up once the location and operation of the controls are adequately learned. 5. For the static demonstration, stand beside the motorcycle and push it a short (5'-10') distance with the handlebars square and squeeze the front brake lever to stop. Repeat the push and stop with the handlebars turned slightly (not enough to potentially drop the motorcycle). The riders should see how the motorcycle gets heavy and wants to dip in the direction the handlebars are turned when the front brake is applied. Riders must understand the importance of having the handlebars square at a stop to help keep the motorcycle upright.

EXERCISE 2:
USING THE FRICTION ZONE



GENERAL 1. This exercise is designed to acquaint riders with the procedures and practices to start out, stop, and operate at low speed in a straight line. 2. There are 3 parts: a. Group rock, with individual assistance as needed. b. Power walk (straddle walking with engine power). c. Straight-line ride. 3. Simulated practice is used for emphasis in proper use of the friction zone; that is, to ensure riders understand the friction zone is an area in the clutch lever's travel that connects engine power to the rear wheel. The idea is to have riders pause in the friction zone area when starting out in 1st gear, and to avoid using the clutch lever as an on/off switch when starting out (releasing too quickly). A good statement to make is to it, not through it when starting out from a stop.

EXERCISE 3: STARTING & STOPPING DRILL

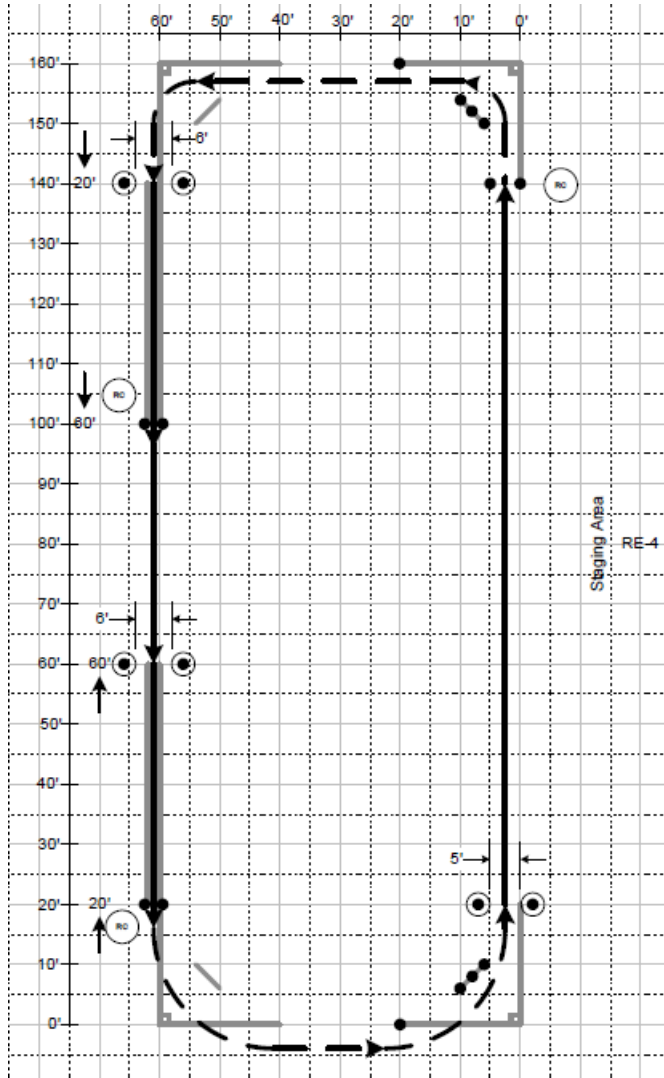


GENERAL 1. This exercise is designed to provide practice time in learning clutch lever and throttle coordination when starting out and stopping. In terms of learning to start out well and having low-speed control, it is the most critical skill to develop. 2. A motor skill development principle is to develop accuracy and control before introducing speed of movement and finesse. This exercise is designed to facilitate that transition. 3. The exercise has 2 parts: a. Start/stop every 40 feet. b. Ride an extended distance and stop with the handlebars square. 4. A drill technique is used for repetitive feedback. Each rider is to develop the skill of starting out by gaining feedback from manipulation of the controls. This helps to develop muscle memory. 5. The technique of power walking is used extensively at the start of the exercise so riders are not forced to lift their feet until they are comfortable and skilled enough to do so. At the same time, riders who are comfortable enough to immediately lift their feet should not be forced to power walk other than the first few feet. Riders should be encouraged to keep their feet on the ground for a few steps (power walk) when starting out. 6. Subtleties of this exercise include: a. Taking a few steps before using the footrests. b. Gaining some speed in a straightaway. c. Smooth brake use when stopping from a “higher” speed. d. Stopping in a slight curve with the handlebars square. e. Turning from a stop. f. Keeping the head and eyes up and beginning to look through the intended path of travel. 7. As with most exercises that develop basic skill, there is some awkwardness in the beginning as riders are challenged with controlling low-speed instability. It is important riders are allowed to work through this challenge at a natural pace. As skill develops, smoothness and confidence will normally become evident.

EXERCISE 3:
STARTING & STOPPING DRILL
(Continued)

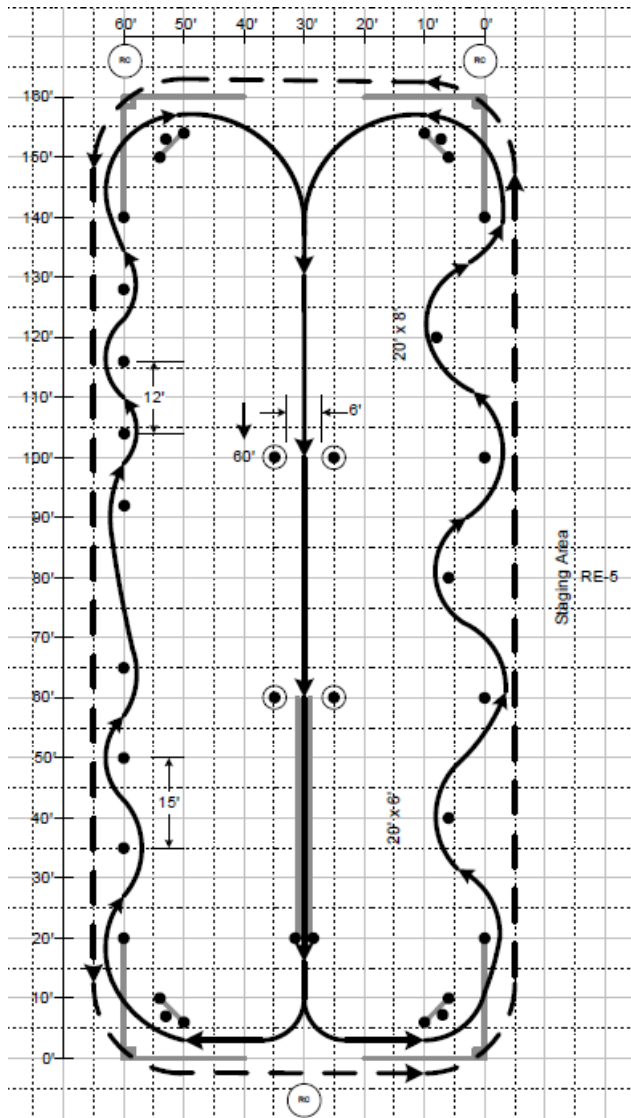
8. When this exercise is successfully completed, later exercises may be less problematic because basic control has been established. Do not hurry riders through this developmental step. 9. Riders should become comfortable and confident enough to get up to pre-shifting speeds. In part 2, riders should be provided enough time to explore the effects of throttle roll-on and roll off when in gear. 10. In exercise 2, only minimal throttle was used. Here riders are to develop skill to attain a speed just below the need to shift. The more automated clutch/throttle coordination and control become, the more likely riders will have more attention available for shifting in the next exercise, as well as use more acceleration in the straightaways during exercise 5. 11. Achieving the objective lays the groundwork for development of the finer skills of operating a motorcycle.

EXERCISE 4: SHIFTING & STOPPING



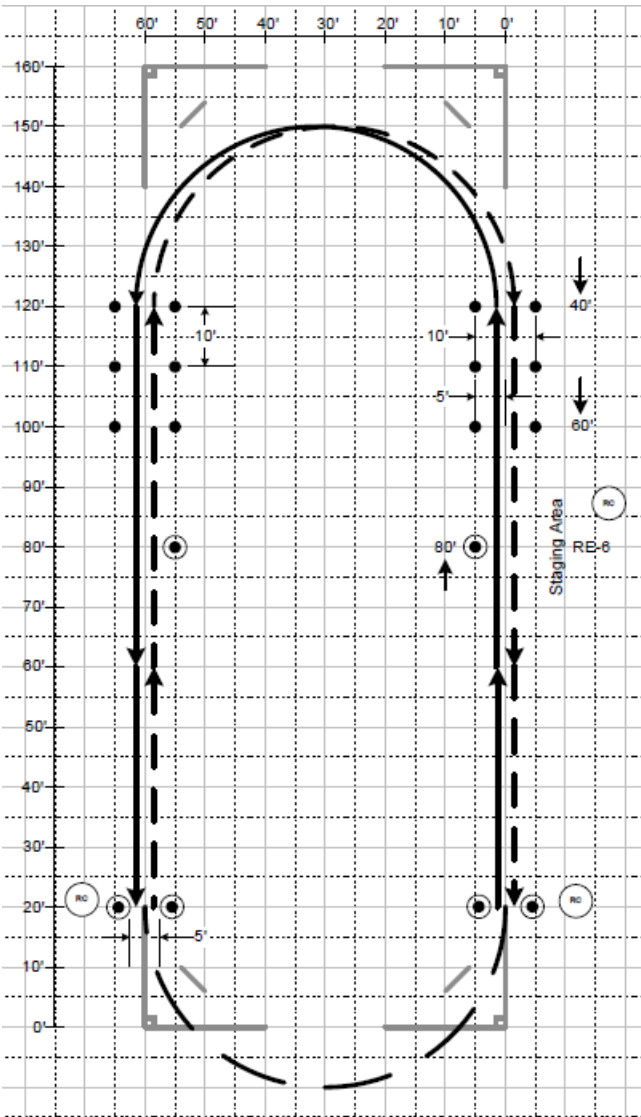
GENERAL 1. This exercise is designed to have riders learn to shift gears. It is accomplished in a straight line with a stop at the end. 2. Added to the path of travel are perimeter turns and two clutch-control lanes. The perimeter turns serve as an introduction to turning more sharply, and the clutch control lanes provide practice to fine-tune clutch lever and throttle coordination. 3. A subtlety of this exercise is that a “mix” traffic flow is used, and riders must use SEE to cooperate in merging with each other prior to entering the middle of the range. 4. Riders are likely to stop in a slight turn as they stop to wait in line. This is why it is important to have stressed the need to keep the handlebars square in earlier exercises. 5. The riding demo should not show shifting too quickly. There should be time between each part of the shifting process so riders can see (and hear) the three steps. 6. A middle path of travel should be used in the perimeter turn.

EXERCISE 5: BASIC SKILL PRACTICE



GENERAL 1. This exercise is designed to allow riders to develop the skills related to adjusting speed and turning. It helps riders automate basic skills as they manipulate the controls and “bond” with the motorcycle. Bonding refers to the interaction of the rider and motorcycle in using smooth, precise control manipulation in developing proper procedures and techniques for good low-speed maneuvering skills; skills becoming automated. The more automated the skills, the better riders are able to keep their head and eyes up. 2. This is the first exercise that provides extended, continuous riding free of frequent stops. It also provides an introduction to the basic curve procedure of slow-look-press-roll, with emphasis on the slow-look steps. 3. The exercise has 2 parts: a. Full group rides the middle and weaves on both sides b. Split groups ride the perimeter in both directions. 4. In part 1, the weave pattern is different on each side. One side has 15' and 12' straight-line weaves, and the other side is a 20' x 6' offset weave with the last cone forming an 8' weave (to provide a challenging skill development goal for riders). The different dimensions provide varying control inputs and feedback; that is, riders practice and gain feedback in multiple paths of travel that require varied control operation. 5. In part 2, the outside perimeter corners are used in a split group format that is reversed. The split ensures adequate time and space for rider development with good overall control and adequate following distance. This also provides sufficient time and space to adequately learn control manipulation (related to the primary controls, primarily roll-on and roll-off).

EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN



GENERAL 1. This exercise is designed so riders gain the knowledge of results from handgrip pressure and handlebar movement to initiate and adjust lean. It also allows, if riders are ready, the opportunity to transition from slowlook-press-roll to the more general concept of search-setup-smooth. The most critical aspect is setup, which includes having a speed that does not require slowing while in a curve. 2. The procedure to initially learn how to negotiate a curve is slow-look-press-roll. a. Slow means to adjust speed from an approach speed (generally any reasonable speed) to an entry speed (one in which no slowing is needed in the curve itself). b. Look means to keep the head and eyes up while making the curve. Riders should constantly be searching and evaluating the curve from approach through completion, not only because riders should look where they are going, but because riders tend to go where they look. But look in a larger context is to use the eyes to SEE well before, during, and after the curve: look-slow-look-press-look-roll-look. c. Press means to adjust the handlebars with handgrip pressure to initiate and adjust lean. A press on one handgrip can be simultaneous with a pull on the other. d. Roll means to use the throttle to maintain a steady or increasing speed. A very subtle roll-on is needed to maintain speed as the tires need to turn faster due to their reduced circumference from the lean. This rollon is commonly referred to as maintenance throttle (engine rpm is maintained). If a very conservative entry speed is used, it is possible to roll-on to increase speed (mph) through the curve. While not a requirement, it does show a good, conservative entry speed was used. Since a too-fast entry speed is likely a primary error in curve-related crashes, having a conservative entry speed is a good point to emphasize for novice riders.

EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN (Continued)

3. A more general approach to cornering is search-setup-smooth. a. Search means to look far and near and side-to-side to identify the important factors for control and safety. A minimum 12-second lead time should be maintained, with the 4-second urgent path an absolute minimum as this time/distance is needed for making an aggressive stop. To search well means to not only keep the eyes moving, but to also identify key factors and how they might interact (with some imagination) to produce a problem that requires some kind of action. This is why having good perception, especially hazard perception, is so important. For curves, search means to know the variables of the curve before entering it (radius, slope, width, surface, other traffic, etc.). It is good if a rider can see the whole curve all the way to its end point, but oftentimes trees or buildings prohibit this. Even if a rider can see the end of a curve, like a short, flat curve with no view obstructions, a rider should not fixate on the end point. While in the curve, the eyes are to keep moving far and near and side-to-side as part of a perceptual strategy. To fixate is not good. Automobile research shows that most drivers spend around 80 percent of their time gazing near the curve's tangent point, which is a line from the eyes to the leading edge of the curve where its radius can be determined. The remaining 20 percent of the time is gazing throughout the curve. b. Setup means to consider entry speed and line. Entry speed: for novices, it is one that would permit (not require) a roll-on to increase speed through the entire curve because a very conservative entry speed minimizes running wide in a curve. But roll-on through the entire curve is not possible for all curves. A long sweeping curve, especially if downhill, would lead to scraping parts or running off the road. Line: assuming no hazardous variables, a good line for novices is middle-middle-middle because it allows for errors in path of travel to both sides. It also keeps the rider farther from the edges of the lane. A more aggressive line would be outside-inside-outside because a curve can be ridden faster due to less lean angle. Using an outside-inside-outside line permits a rider to see farther

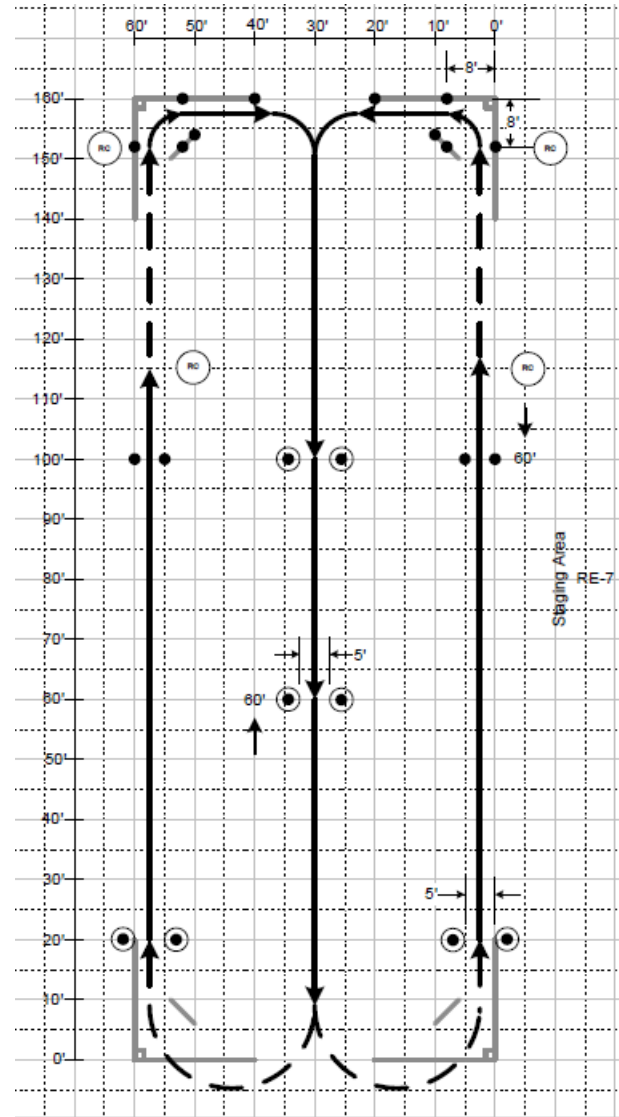
EXERCISE 6:
PRESSING TO INITIATE AND
ADJUST LEAN (Continued)

through the curve and can be advantageous, but it puts a rider near the edges of a lane and requires a higher degree of skill. Whichever line is chosen, a rider should choose a speed that allows adequate sight distance to make lane position adjustments and stop in time for hazards. c. Smooth refers primarily to any speed adjustment, whether in a straight line or in a curve, and its effects on the path of travel, suspension, and traction. Making abrupt steering or speed adjustments, especially when negotiating a curve, is hazardous. It is best to operate the controls with the precision that produces smoothness. Smoothness when operating the controls results in overall motorcycle smoothness and is best for overall control and traction. 4. In the MSF Basic eCourse and Rider Handbook, learning to turn (or negotiate a curve) is introduced with the steps of slow-look-press-roll. The assumption in using this procedure is that the approach speed used for the curve requires some slowing. Curves do not always require slowing before entry, and slowing for a curve that requires it may be accomplished by a throttle roll-off or by throttle roll-off and braking, depending on the nature of the curve and the speed of approach. Using the brakes to establish a good entry speed is not always needed. To brake with a low approach speed could cause balance problems and undesired manipulation of the controls. 5. In this exercise, the primary objective is to experience handgrip pressure and handlebar movement to initiate and adjust lean. Riders who use a slow approach speed may only need a slight throttle roll-off, if any, and little or no brake pressure. Riders with a high approach speed are to use throttle roll-off and/or braking to slow, but not so much as to become unstable. In no instance should entry speed make it difficult to stay in the path of travel. If an approach speed is too fast, slowing down must be coached. Slowing in the curve is considered an error in judgment and must be corrected. In later exercises, a higher approach speed is used so riders will learn more about braking for proper entry speed. 6.

EXERCISE 6: PRESSING TO INITIATE AND ADJUST LEAN (Continued)

To an untrained eye, this exercise (as well as many others) looks like a group of riders “just riding around a parking lot.” RiderCoaches know that deeper learning is occurring; that is, riders are fine-tuning their procedures and techniques. Learning to operate the controls of a motorcycle to put the motorcycle where a rider wants it is an overall goal. 7. The simulated practice is “search and press.” It highlights the importance of searching throughout the intended path to determine a proper setup regarding entry speed and handgrip pressure. 8. Coaching in the stage area should include an emphasis on both slow-look-press-roll with a mention of searchsetup-smooth once the basics are mastered. The exercise should not be ended until riders are not slowing in the curve itself and are using a good entry speed that results in no decrease of speed in the turn. 9. A split and full group process is used. The riders are divided into two groups. One group rides both directions while the other group observes, then the groups switch, then all ride each direction again. 10. The full group portion of the exercise provides opportunities to practice SEE to maintain an adequate time-and-space safety margin.

EXERCISE 7: STOPPING MORE QUICKLY & TIGHT TURNS FROM A STOP

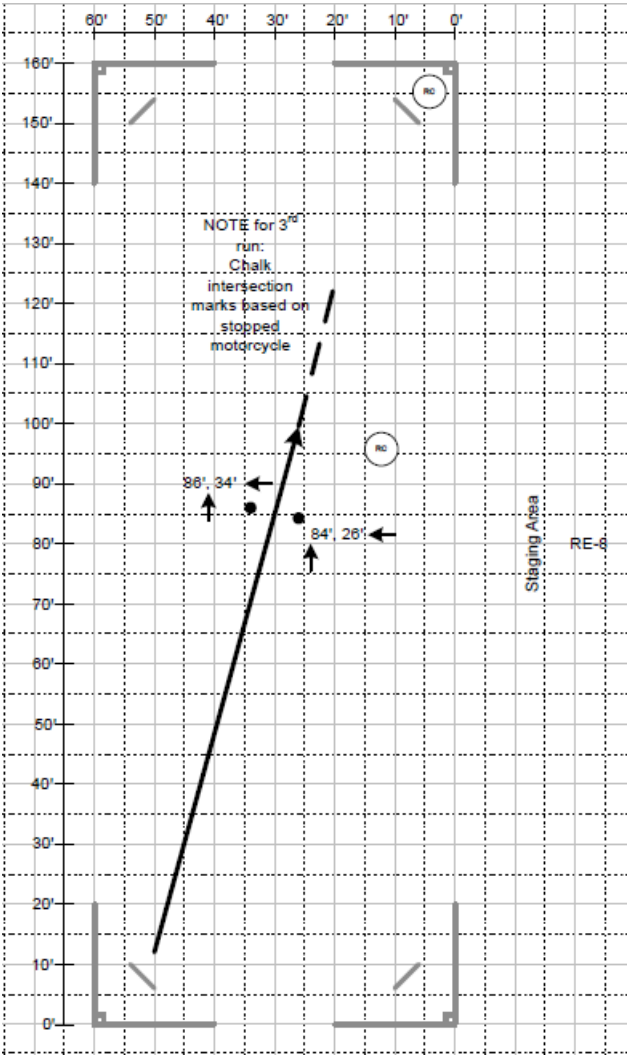


GENERAL 1. This exercise is designed to allow riders to further develop the skill of stopping by developing an improved feel for progressive braking pressure to stop more quickly. It is important riders are not led to believe they are practicing an emergency stop. Riders are to explore brake intensity gradually, starting first with lower speeds and moderate brake pressure, and then progressing to quicker stops with more brake pressure. 2. This exercise uses simulated practice to emphasize the proper squeeze of the front brake lever when making a quick stop. A key point of emphasis is to avoid grabbing the lever. 3. The turn-from-a-stop is several feet prior to the perimeter turn to provide another scenario from which turns from a stop can be made in real-world situations (particularly intersections). 4. Earlier in Exercise 4, Shifting and Stopping, the distance was 20' to cause friction zone practice in making the perimeter turn. Now a greater approach distance is provided with the idea that braking adjustments may be needed prior to turning. Use of the friction zone in the turn is optional. 5. A feature of this exercise is that a crisscross traffic pattern is used in the middle of the range. This creates an opportunity to use SEE for gap selection and a time-and-space safety margin. 6. This exercise has 2 parts: a. Riders stop after they pass a cue cone and then turn from a stop. b. Riders stop on RiderCoach signal and then stop again for the tight turn from a stop. 7. For part 1, riders may begin to use the brakes when the front tire reaches the cue cones; clutch lever squeeze and downshifting could occur prior to that point. 8. Having riders stop on signal provides different feedback for the riders. This develops the skill to a deeper level. 9. Part 2 of the exercise also adds tight turns from a stop. After the rider stops, the RiderCoach directs the rider to stop again with the front tire between the entry cones at the perimeter turn. The tight turn from a stop ties into the concept of Open Up the View – after riders stop at an intersection (as in Exercise 4), they may have to stop again to ensure the roadway is clear before pulling out.

EXERCISE 7:
STOPPING MORE QUICKLY &
TIGHT TURNS FROM A STOP
(Continued)

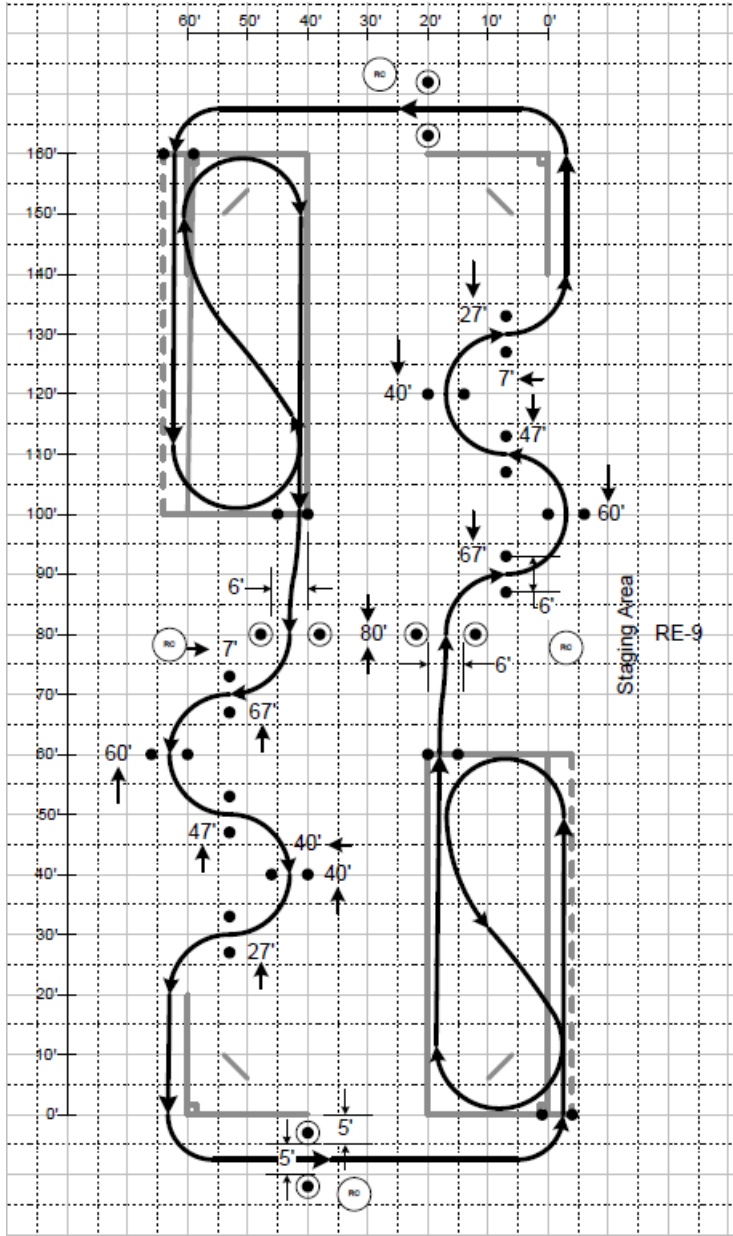
10. It is important the riding demo not have a high approach speed and that full stopping power is not used. As with all riding demonstrations, the speed, procedures, and techniques should be shown as the average novice would be expected to accomplish by the end of the exercise. 11. During reflection, mention a rider's personal motorcycle may feel a lot different, so practicing quick stops on one's personal motorcycle is highly recommended (in the BRC2, ARC, or on their own in a safe parking lot).

EXERCISE 8:
STOPPING DISTANCE
DEMONSTRATION



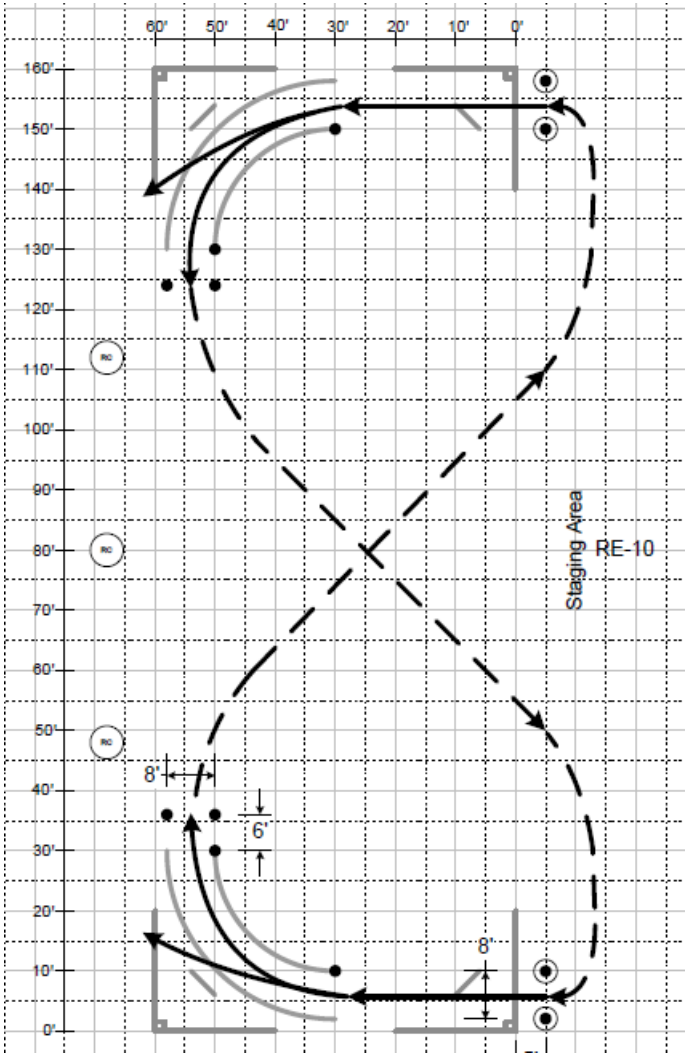
GENERAL 1. The objectives for this exercise are to show the effects of speed on the three components of total stopping distance and to illustrate these effects at an intersection. This exercise is used to call attention to the time and distance needed for average (or normal) total stopping distance in the real world. 2. The demonstrations do not have to be overly dramatic, but they do have to be plausible to get the maximum benefit from the exercise. Demonstration speeds need to be precise, reaction times accurate, and braking operation crisp and smooth with no skidding. The RiderCoach who demonstrates should practice extensively to ensure adequate acceleration and braking within the prescribed area, especially at 25 mph.

EXERCISE 9:
LIMITED-SPACE MANEUVERS



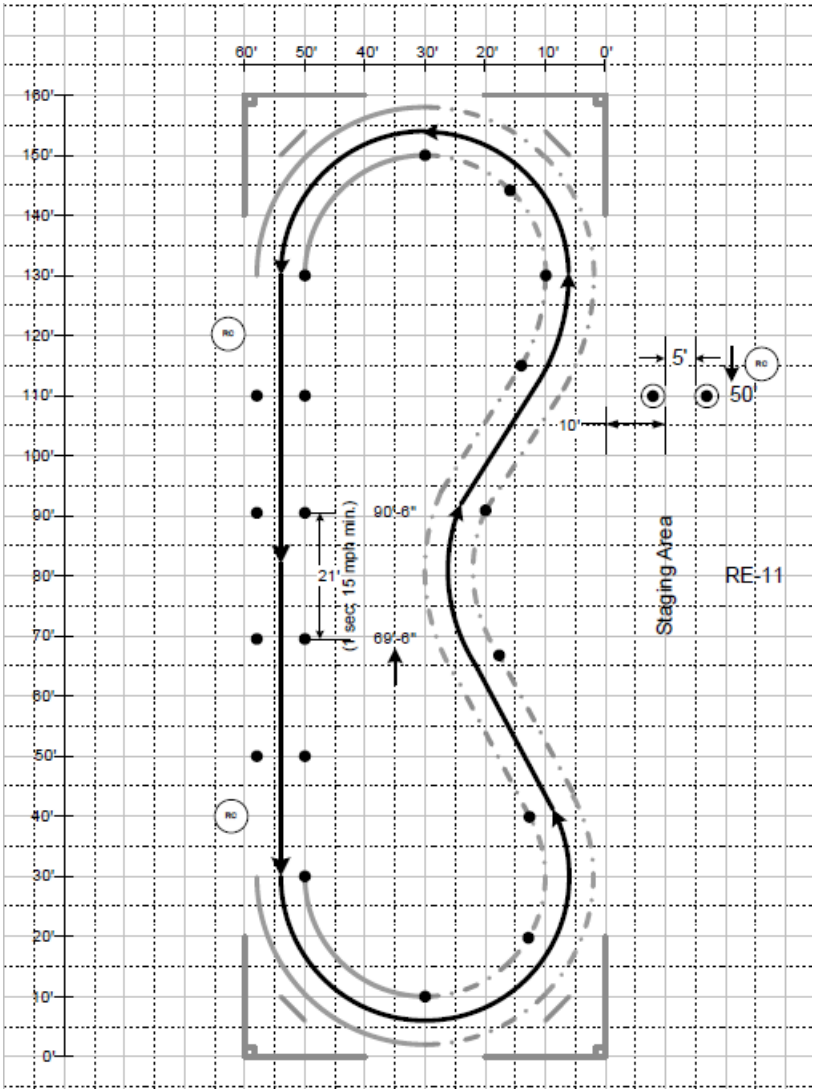
GENERAL 1. This exercise is designed to have riders reinforce (and in some cases re-learn) their basic, low-speed skills by using paths of travel within a limited space. A motor skill principle is to have adequate gross motor skills before practicing and developing the finer motor skills. This exercise helps with bike bonding toward the development of automated, basic skills. 2. Three limited-space maneuvers are provided: a. U-turn. b. S-turn. c. Perimeter turn from a stop. 3. The U-turn area has two width dimensions, 24' and 20'. The former is the minimum width of most two-lane roadways (not counting the shoulder) and the latter provides a goal to increase skill. The 20' width is used in the skill test. 4. The skills in this exercise are more than simply convenience skills. These maneuvers provide practice time on basic skills within a practical context. The exercise is primarily about becoming adept at control operation. 5. RiderCoaches should be aware this exercise is not primarily about teaching riders to make U-turns, but rather using a U-turn path of travel to develop basic skill. It's about controlling the motorcycle and being able to manipulate the controls to put the motorcycle "where a rider wants it." 6. The skill of handlebar turn and counterweighting is emphasized, and is highlighted with a simulated practice. As much as possible, the handlebar turn should be at full-lock position (not for the first practice rides, but as a goal to achieve while practicing). 7. The demonstration should not show any body movement other than upper-body counterweighting. The buttocks should not be moved off-center in the seat. 8. Dragging the rear brake should not be demonstrated, but it may be encouraged for riders who have the overall skill and control to try it. 9. For the perimeter turns, cones are used to mark a stop point to continue the practice of turning from a stop. The middle cone is now in a position to form a 90-degree turn. Riders should not be forced to lean the motorcycle. An upright position is acceptable. Riders may power walk a couple of steps as they start out, but power walking too far through the perimeter turn will be scored as an error on the skill test.

EXERCISE 10:
STOPPING IN A CURVE



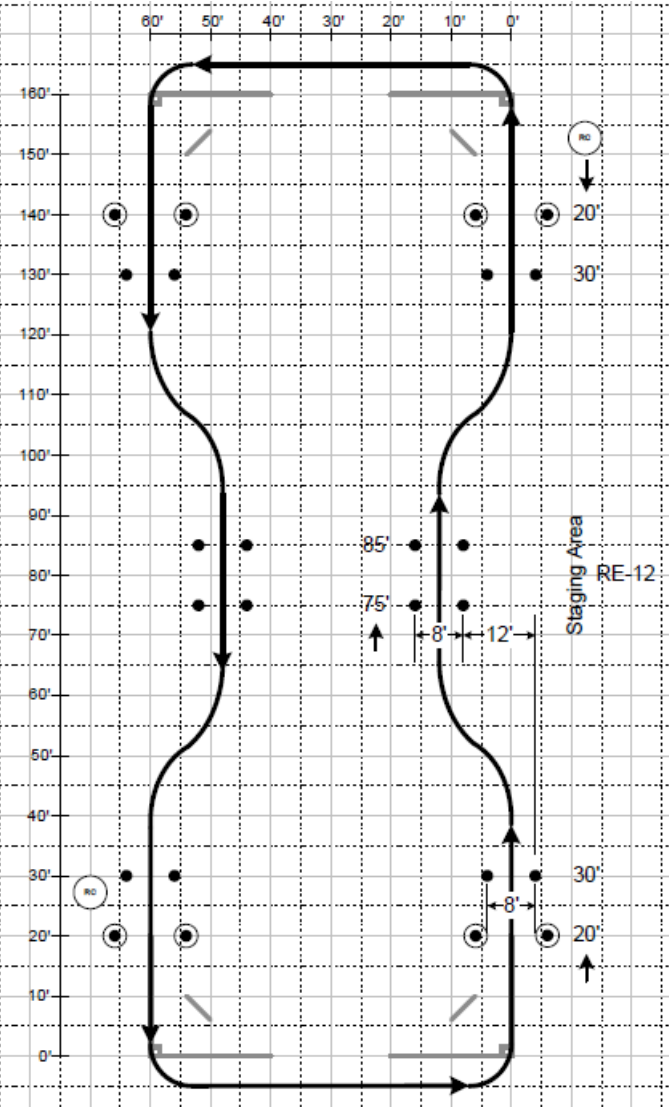
GENERAL 1. This exercise is designed to develop skills for stopping in a curve and has 2 parts: a. Normal stop in a curve. b. Stopping quickly in a curve using straighten-then-brake method. 2. This exercise does not address the technique for stopping quickly in a curve by gradually increasing brake pressure as the motorcycle straightens up; rather, the emphasis in part 2 is straighten first, then brake to make a controlled, straight-line stop.

EXERCISE 11:
CURVE JUDGMENT



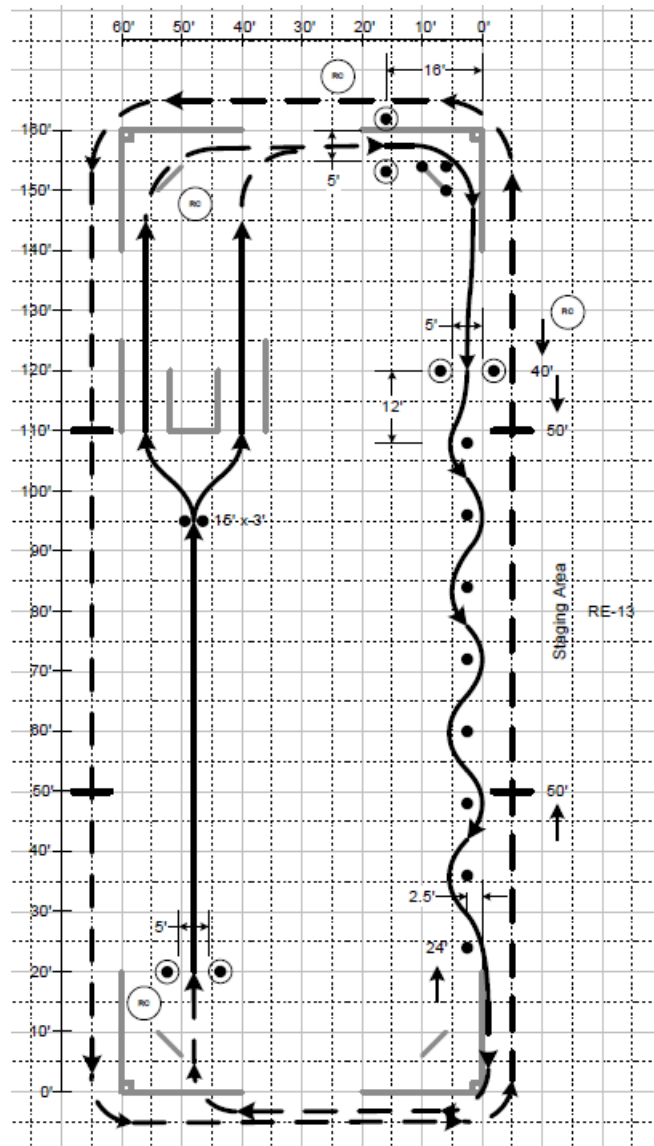
GENERAL 1. This exercise is designed to add to the skill and finesse related to search-setup-smooth when riding in curves, which requires a high degree of rider judgment and control. 2. The path of travel is a circuit ride consisting of a long straightaway and several curves. A middle-middle-middle path of travel should be used. 3. Riders may be familiar with search-setup-smooth from Exercise 6, Introduction to Curves. Search means to search before, during, and after the curve (far and near and side-to-side); setup means to have an appropriate entry speed so slowing in the curve is not required and to have a good lane position; smooth means to be precise and not abrupt when operating the controls. 4. Besides staying in the path of travel, a primary emphasis in this exercise is to have a good entry speed, which is a speed that would permit roll-on through the curve if a rider decided to do that. This requires judgment in assessing the curve's radius. 5. Only a few revolutions are likely needed in each direction to establish an understanding of the overall path of travel, sufficient skill, and adequate judgment. Further refinement will take place in the next exercise. 6. A portion of this path of travel is nearly identical to an exercise on the skill test. 7. Be sure the circuit path of travel is clearly and adequately marked.

EXERCISE 12:
MULTIPLE CURVES &
LANE CHANGES



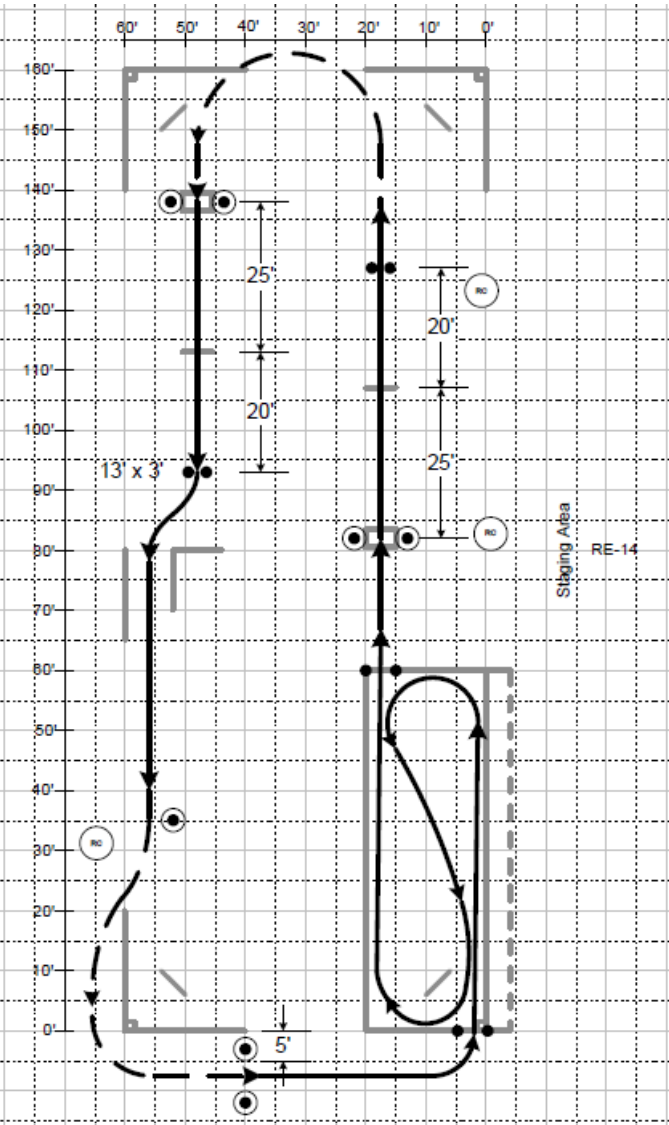
GENERAL 1. This exercise is designed to refine proficiency in negotiating curves and making lane changes as if in traffic. A nuance of this exercise is the selection of a gap to enter traffic, and to manage time and space. 2. A middle-middle-middle path of travel should be used. 3. Be watchful of the speed used by riders. The development of cornering procedures is important, and the speed used should be progressive – slower in the first part of the exercise, but not so much speed later to cause slowing in the curve or too much lean angle. 4. Simulated practice is used to remind riders how the turn signal switch operates and to emphasize the blind spot check. This simulated practice is a good example of muscle memory; that is, having a rider feel what it's like to find and use the turn signal switch without looking at it while still controlling the motorcycle.

EXERCISE 13:
CROSSING AN OBSTACLE &
SWERVING



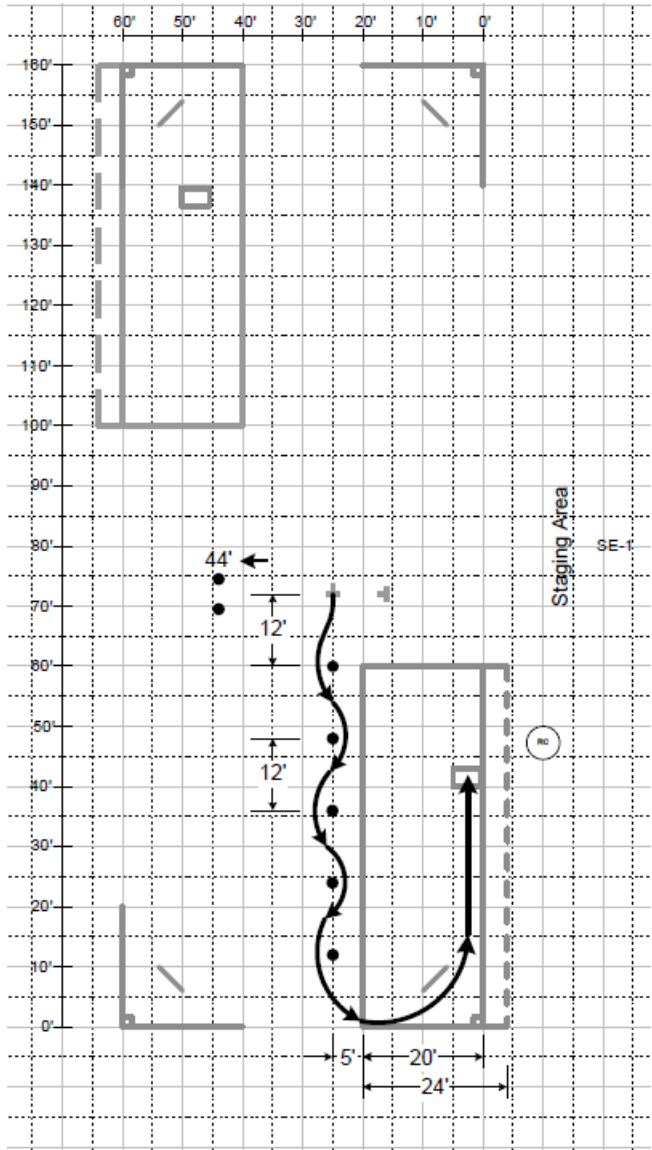
GENERAL 1. This exercise has 2 parts: a. Crossing over obstacles on the perimeter. b. Swerving to avoid a hazard. 2. The cue cones are 3' apart and 15' from the barrier. 3. The exercise is not intended to encourage riders to cross over obstacles on the street, but rather to provide the experience of crossing over an obstacle that cannot be avoided. 4. For the swerve, simulated practice is used to remind riders how to keep their upper body upright during the swerve. This, in essence, is counterweighting as handgrip pressure is applied. 5. The exercise adds slow-speed manipulation practice with a turn from a stop and a 12-foot, straight-line weave after a stop. 6. The demonstration should show slowing down between the obstacles to help ensure speeds do not increase between them.

EXERCISE 14: SKILL PRACTICE



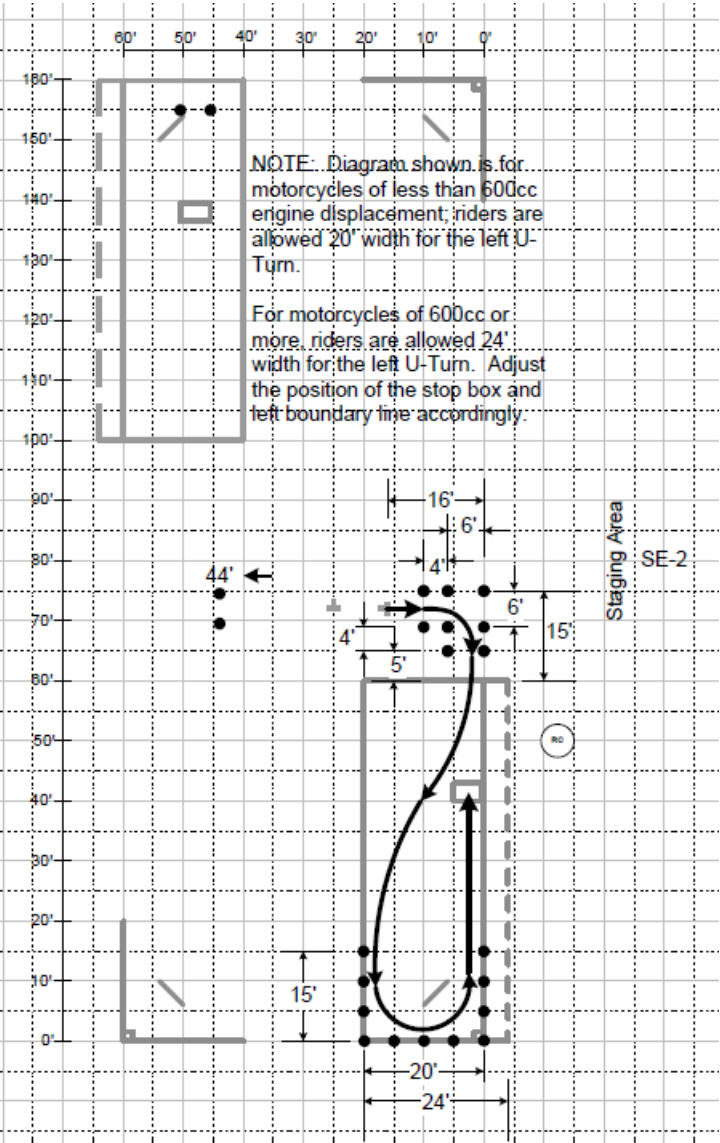
GENERAL 1. This exercise is designed to provide riders with continued development of overall basic control skills. It is a capstone exercise that provides practice of important skills including the collision-avoidance skills of stopping quickly in a straight line and swerving to the right. It also reinforces low-speed control and manipulative skills using controlled and precise inputs. This applies particularly to the transition from brisk acceleration to smooth braking, swerving, and stopping. 2. The exercise has two primary paths of travel. On one side: a U-turn with a 20' width followed by a stop-in-a-box, and then a quick stop in a straight line; on the other side: another U-turn with a 20' width and stop box, and then a swerve right and stop when straight. 3. Cue cones are 3' apart and 13' from the obstacle.

EVALUATION 1:
CONE WEAVE & NORMAL STOP



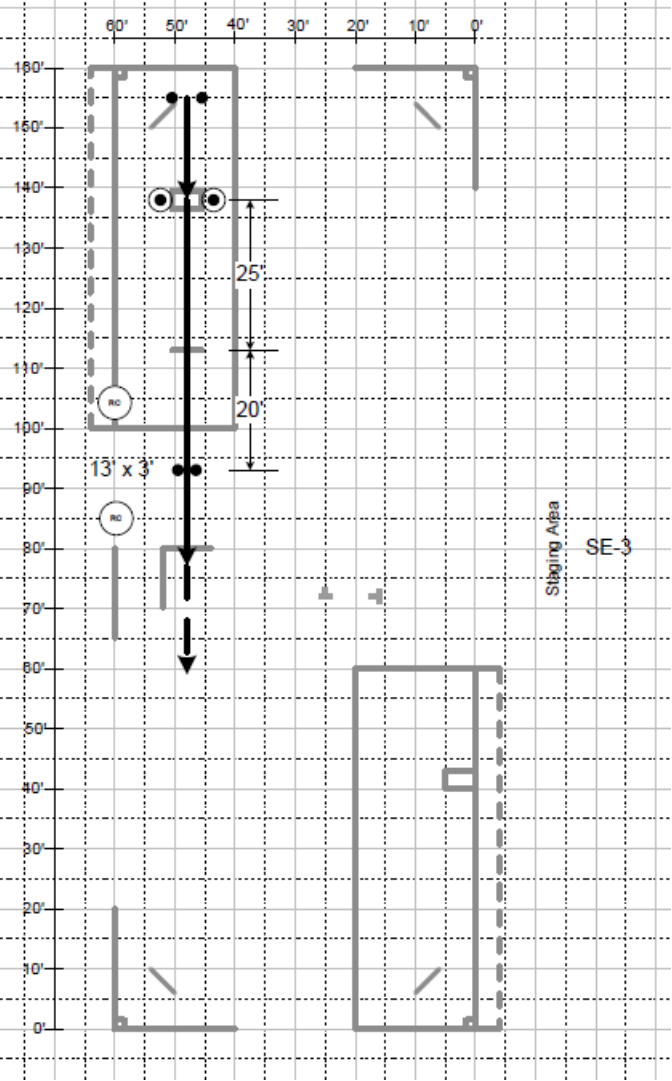
This evaluation consists of a cone weave through five cones and a normal stop with the front tire in a marked stop box. It is designed to assess basic control operation by measuring the ability of the rider to coordinate clutch and throttle operation and basic handling skills to complete turns and avoid hazards. The normal stop evaluates the rider's ability to stop in a designated area, such as before a crosswalk or stop sign, without interfering with traffic or pedestrian right-of-way.

EVALUATION 2:
TURN FROM A STOP & U-TURN



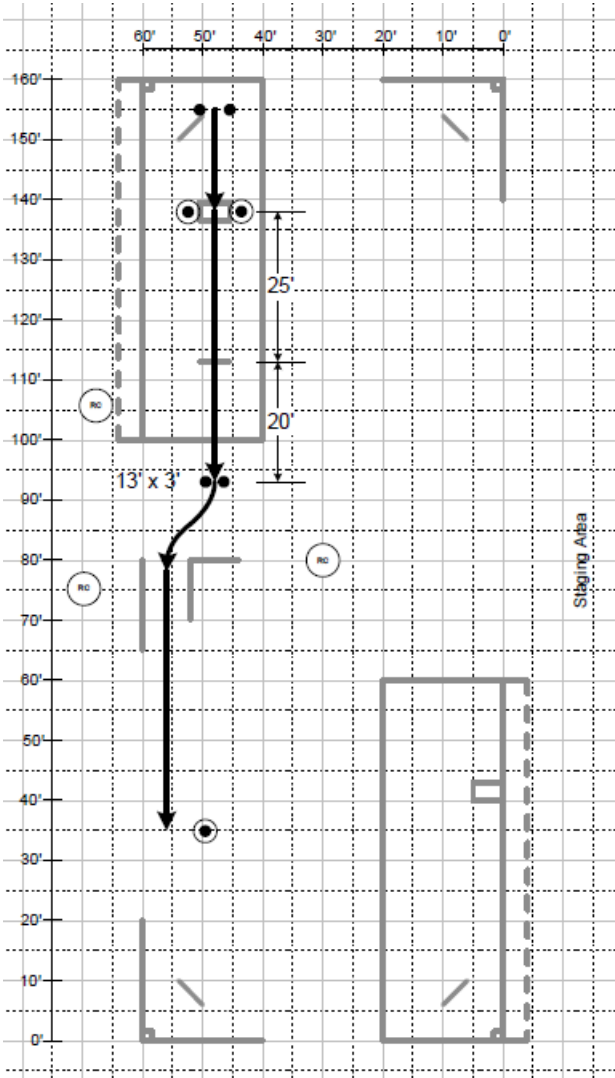
This evaluation consists of a right turn from a stop and a U-turn to the left. A stop box is used but not scored. The evaluation is designed to assess basic control operation by having riders approximate a real-world situation and demonstrate the ability to turn right following an intersection stop, maintain correct lane position, and avoid oncoming traffic. Riders demonstrate low-speed control skills by completing a left-hand U-turn and stopping in a box.

EVALUATION 3:
QUICK STOP



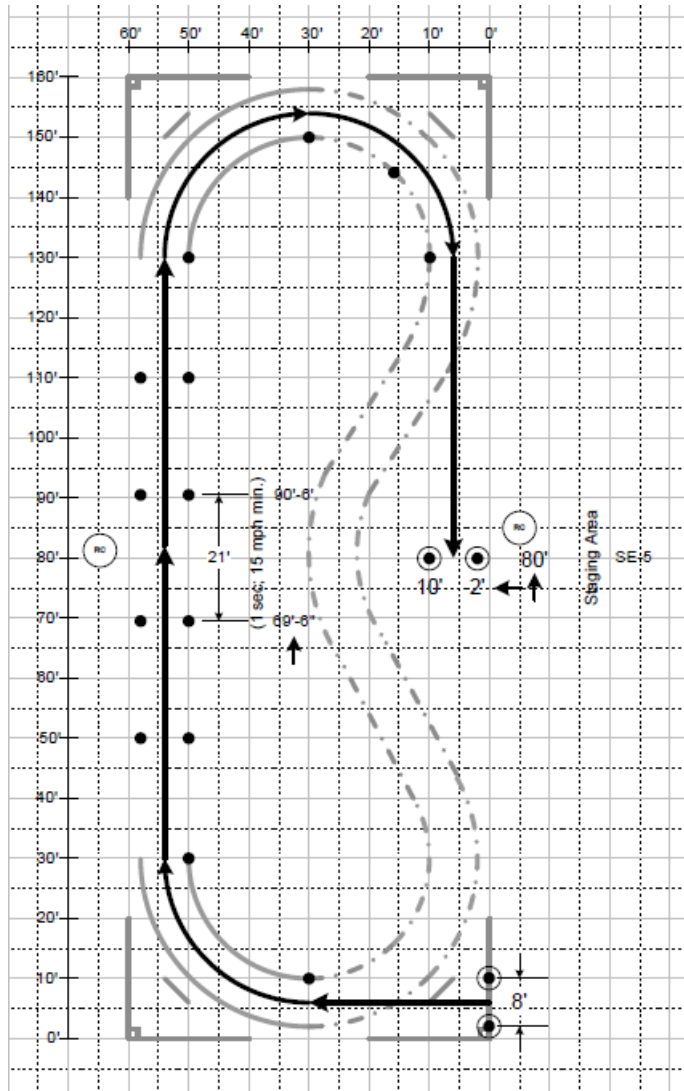
This evaluation assesses the skill of stopping quickly in a straight line. A 20' timing zone is used.

EVALUATION 4:
OBSTACLE SWERVE



This evaluation assesses the ability to swerve around an obstacle. A 20' timing zone is used.

EVALUATION 5: CURVE



This evaluation assesses rider control and judgment for negotiating a curve. The evaluation may be run in either direction, but the right direction is preferred as the lines naturally provide a 180-degree curve. Only the 180-degree curve is scored for a boundary violation. A 29' timing zone is used, and stalling is not scored during this evaluation.