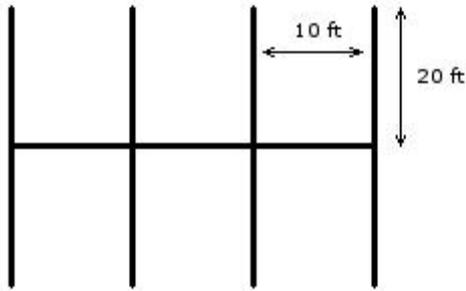


It is common knowledge that "practice makes perfect" in whatever we set out to do. Motorcycling is no exception to that rule. Riding involves certain basic actions and skills, some very counter-intuitive, that can be considered fundamental. Take gear shifting and braking as an example. These need to be performed so often that it is in the rider's best interest to know how to execute these actions quickly and precisely. Unlike a car, the motorcycle has only two wheels, and clumsily executed braking can easily cause a crash even on an empty road! Hence, practicing basic maneuvers in a controlled area, such as an empty parking lot, can benefit both new and experienced riders.

Exercise Safety

Although the practice exercises are not dangerous by themselves, certain precautions must be taken. First, you have to choose an interference-free environment, where you would be able to concentrate exclusively on physically controlling the motorcycle, without having to worry about passing cars and pedestrians. An empty parking lot would be a good spot to practice. Check the surface of the road for oil spots that can be left by leaky cars, sand, gravel and other debris that can cause the wheels to lose traction. Second, you have to wear full safety gear. There is always a chance that you will fall, and riding gloves, for example, can mean a difference between being a little annoyed at a stupid crash and a trip to the emergency room. "Full riding gear" means a helmet, a jacket, gloves, pants and boots. Third, make sure that your motorcycle is in fully working condition. Make sure there are no engine troubles. Inspect the chain, make sure both of your brakes work and that your tires aren't near the end of their life. The fourth and final precaution would be to take a friend along with you. That person can watch out for traffic while you are practicing and can help you if anything goes wrong. Most exercises involve maneuvers in restricted space, and require some kind of markers. Little orange cones, sold in sports shops, will do the job perfectly. You can also use tennis balls cut in half, empty coffee cups, or little plastic bottles filled with water for stability and capped to prevent spillage. Parking lot markings will help you with cone placement; however, you may need to bring a piece of rope and a measuring tape to set up the cones. In all the diagrams below, it will be assumed that the parking lot is marked, and that the markings have the dimensions as in the diagram below.



If the lot is not marked, use the diagram as a guideline for setting the markers (for simplicity's sake, I'll refer to the markers as "cones" below).

Most Basic and Slow-Speed Exercises

- **A few words about body position for low-speed exercises.** Some riders may feel tempted to adjust their balance by moving their body parts, such as sticking a knee out in a slow turn. You should sit firmly on the motorcycle, with your knees against the tank and your feet firmly on foot pegs. Too much moving around will interfere with your steering inputs.

Exercise 1: The friction point. Starting

The "friction point" is the point when the clutch mechanism starts transferring power from the engine to the rear wheel. When the clutch is disengaged (clutch lever pulled in all the way), the engine is spinning independently of the wheels, and no power transfer takes place. When the clutch is fully engaged (clutch lever released all the way out), the engine is rigidly connected to the final drive, and all the power is transferred to the wheel. The friction point is somewhere between full clutch engagement and full disengagement. Knowing your bike's friction point will help taking off quickly and smoothly, and will help you with your slow speed riding.

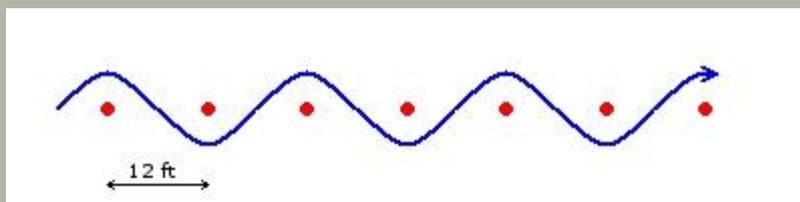
The exercise is very simple. Starting from a full stop, pull in the clutch lever, put the motorcycle in 1st gear, and rev the engine to about 3-4K RPMs. Then release the clutch lever very slowly. At one point you will feel the engine start "pulling" and you will smoothly take off. When you get a feel of where the friction point is on your motorcycle, practice releasing the clutch a little faster. Smoothness is the key: the clutch lever must never be dropped, but released gradually. Once you are comfortable with takeoffs try same exercise with higher engine speeds. Again, concentrate on doing things smoothly. The ideal way to take off is to rev the engine a little, release the clutch to the friction point, and then gently roll on the throttle and release the clutch at the same time.

Exercise 2: Moving slowly in a straight line. Clutch slipping. Rear brake feathering

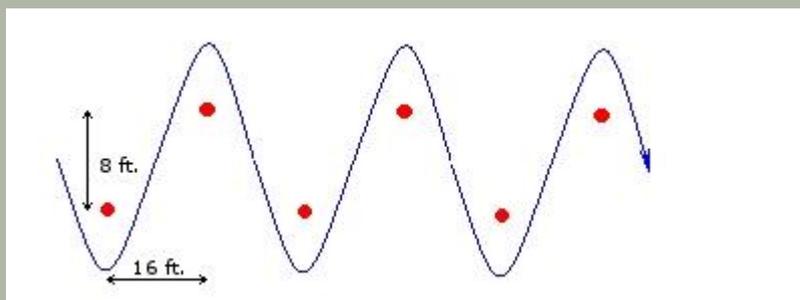
The goal of this exercise is to practice moving very slowly along a straight line in 1st gear. This is a common real-world scenario for a lot of city riders. Set your cones in a straight line. Go to the start of the line. Start riding along at walking pace, trying to keep as close to the straight line marked by the cones as you can. Don't fixate your attention on the cones. Look ahead of you, where you want to go. Practice following techniques to control your speed. The first one is called "Clutch Slipping". Pull the clutch lever in just past the friction point, until you feel the engine "pull" weakening. If your speed gets too low, release the clutch a little to transfer a little more power to the wheel. By manipulating your clutch lever you can dictate how much power gets transferred to the wheel, and thus modulate your speed. As in exercise 1, the key here is smoothness. The second speed-control technique is "feathering" the rear brake. The front brake may feel too "grabby" for low speeds (it will stop the wheel very abruptly), so the rear brake is very useful here. Depress the rear brake lever very slightly, just to feel the effect. While moving along the line of cones, use the rear brake to keep your speed down. Avoid any abrupt movements, and manipulate the brake gently and smoothly. The goal of this exercise is to simply be confident at as low speeds as practical.

Exercise 3: Slow speed cone weave

Set your cones in a straight line, 12 feet apart from each other. The goal is to weave between the cones at slow pace, keeping your balance and controlling your speed using the throttle, the clutch and/or the rear brake. There is no speed requirement; just try to go as slow as you can, in 1st gear.



Another variation of this exercise is setting your cones 16 feet apart with 4-foot offset from the straight line.

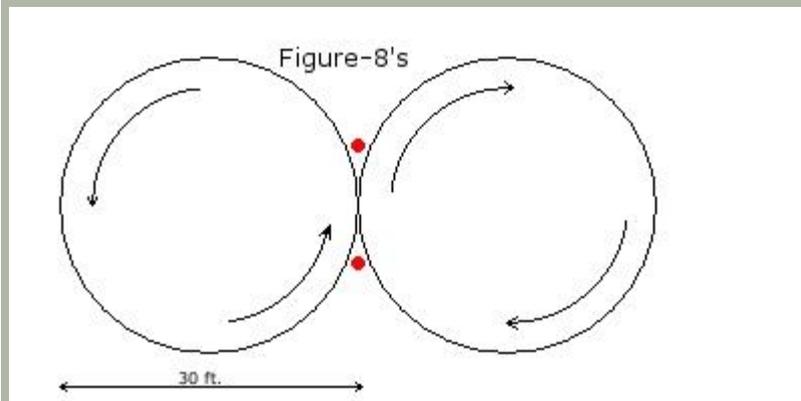


Exercise 4: Slow Circles

Mark off a circle about 30' in diameter. This can easily be done using a piece of chalk and a 15' rope. Practice riding around it, both clockwise and counterclockwise. Do not focus your attention on the circle markers, or on the asphalt immediately in front of you. Look at the road where you want to go. When you start feeling comfortable doing this exercise, try decreasing the circle diameter to 24, then 20, feet.

Exercise 5: Slow figure-8s

Draw two 30-foot circles next to each other. Practice riding figure-8 maneuvers around the circles at slow speed. Sit upright, use the clutch and/or rear brake to adjust your speed, and look through the turn where you want to go. When you get comfortable with this exercise, try it with 24-foot diameter circles.



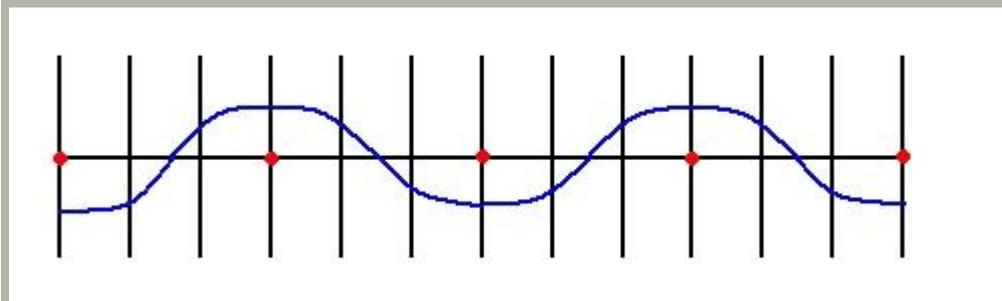
Medium-level exercises

Overview

These exercises are to be performed at medium speed, and in gears other than 1st. Start out slower to get a feel of your tires and familiarize yourself with the maneuvers. It is assumed that the rider is comfortable with motorcycle controls and basic riding techniques: shifting gears, braking, accelerating and countersteering.

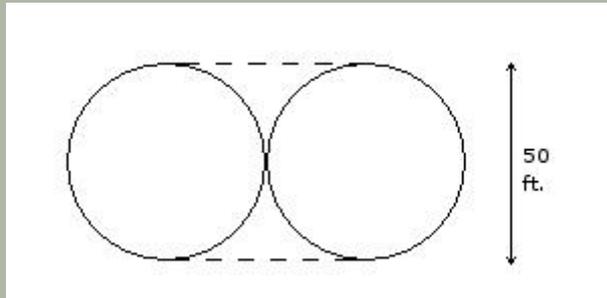
Exercise 1: Weaves

Set the cones in a straight line, 30 feet apart (approximately. You may use the parking lot markings to set up).



The nature of this exercise is essentially the same as for slow cone weave, described in Part 1. However, you are not limited to 1st gear here, and are not required to limit your speed. Start at 10-15mph, and then go as fast as you are comfortable, but strive to maintain steady speed. Keep your eyes up and use countersteering. After practicing the 30-foot weave, set your cones 20 feet apart and repeat the exercise.

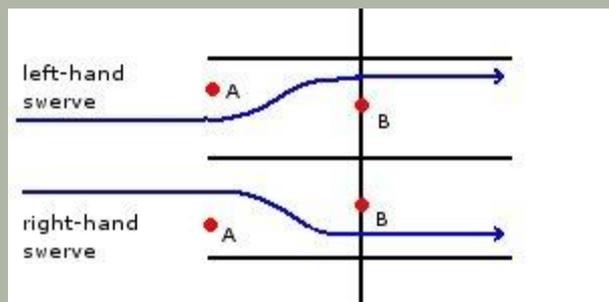
Exercise 2: Circles/Figure-8s



Draw two large, 50' diameter circles next to each other so they form a figure "8". Ride this layout in circles (clockwise and counterclockwise) to practice leaning and to get the feel of your tires, around the oval to practice braking and turning, and as a figure-8 to practice side-to-side transitions. Start slowly, and build up your speed gradually. This layout should allow you to ride at about 20mph. Be careful, because that speed is good enough for maximum lean. Even with stock tires you can scrape asphalt with your footpegs.

Exercise 3: Obstacle swerve

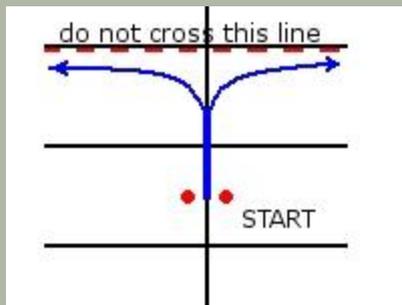
Position your cones as depicted in the diagram below:



The distance between the cones is not set in stone. Use parking lot markers to approximate. Before starting each exercise decide in which direction you will swerve. This is the left-hand maneuver: Start riding towards the cones in a straight line. Upon reaching the cones you should be travelling at steady 10-15 mph. As you pass cone "A", push the left handlebar to swerve around cone "B". If the maneuver is too difficult for you, try setting the cones farther apart, and keeping the speed down. Your steering inputs should be quick, but smooth, not abrupt.

Exercise 4: Turn from complete stop

Use the parking lot markings to set up your practice area:



The spot marked by the cones is your starting point. This maneuver is to be performed from a complete stop. Practice taking off and turning, trying not to cross line "A". Think of this line as a lane divider on a street you are about to turn to. Turn too wide, and you are in the oncoming lane. Slip the clutch to keep your speed in check. Keep your eyes up - look where you want to be at the end of the turn. Accelerate as you are leaving the turn. You may find the right-hand turn more difficult. This is natural. When you lean to the right, you have to support more of your upper body weight on your right hand - your throttle hand.

Exercise 5: Sharp turns at speed

Practice tight left and right turns by running along the parking stripes and making a sharp left or right turn at the end. The goal here is being smooth. See how fast you can get up to and still brake/downshift smoothly and make a nice sharp corner.

Exercise 6: Hard braking

- Use of both brakes is often suggested to achieve the shortest possible stopping distance. However, *learning* emergency stopping should probably be done using only the front brake. Trying to operate both brakes can be very difficult for a beginner, and the additional stopping power provided by the rear brake is not worth the risk of locking the rear wheel. Once you master the use of the front brake, you can start adding the rear brake to the equation.
- The key to hard braking is smoothness. If you quickly squeeze the brake lever with all your might, you will most likely lock the front wheel and crash. If you pull the lever in very gently, you won't stop quickly enough. What you should do is gradually increase pressure on the brake lever as the motorcycle is slowing down and its weight gets transferred forward. More weight on the front means better traction between asphalt and front wheel. Better traction means that more force can be applied to the brake. You absolutely must understand this concept and have some feel for it before you even think about trying emergency braking.

In the beginning, practice the gradual braking technique at slow speeds without concerning yourself with stopping distances. Feel how the bike's weight gets transferred to the front. Practice squeezing the brake lever (gradually) harder and harder as the bike stops. When you get a feel for gradual braking it will be time to limit your stopping distance. Set two cones about 25 feet apart. Your speed for the first few runs will be no more than 10-15 mph. Ride towards the cones at steady speed. Upon reaching cone "A", start braking. Remember to be smooth. Don't just jam the brake lever. You should be able to come to a full stop before reaching cone "B".



As you feel more and more comfortable stopping between the cones, start increasing your speed little by little to about 20 mph. After you get comfortable with this exercise, try braking from 30 and then 40 miles per hour. Don't forget to increase the distance between the cones for higher speeds! You should be able to stop your motorcycle in 30 feet from 30mph, and in 60 feet from 40mph. Be very careful. Increase the exercise's level of difficulty in small increments. Get back to slower speeds if you feel uncomfortable. Feel the feedback from your tires. If the front tire is slipping, then you may be squeezing the brake lever too hard too early.