

Basic Motorcycle Operation Student Booklet

*Be informed before
you decide to ride.*

National Motorcycle Training Institute

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Define Operator: A person who operates a machine, apparatus, or the like.

How can I manage, and reduce risk, while operating a motorcycle?

As with any sport, learn how to use the equipment of the sport. Then develop your operator's knowledge through study and practice. Keep in mind your limits, and stay within your limits while participating in the sport. A fundamental principle used when reducing risk is to recognize times of increased risk. Learning to ride can be considered a time of increased risk.

There are three general periods in any sport, the Beginner-time, the Learner-time, and the Ongoing-time. Enjoying your Beginner-time will help prepare you for your Learner-time. Enjoying your Learner-time will help prepare you for your Ongoing-Rider-time!

In these practice sessions, we provide beginner riders the knowledge required to operate a motorcycle with control. It will take more than beginner training to operate a motorcycle with control in traffic. However, knowing how to properly operate a motorcycle before you take your first ride on the street reduces some risks during your learner-time.

We know that trying to learn to ride using a large, high-powered street motorcycle, while in traffic, is a high risk activity. Basic motorcycle operation is independent of motorcycle size. These practice sessions were created to reduce risks and make learning how to operate a motorcycle fun!

To summarize: Recognize the risks; eliminate the unnecessary risks. Please remember that, "We cannot choose to be "safe" when operating a motorcycle; we can choose to... not be careless."

Risk management starts with preparation:

Riding and learning to ride takes mental and physical stamina. Prepare yourself mentally and physically. Be well rested and properly fed. Clear your mind of distractions, and make mental room for motorcycling tasks.

We do not encourage you to attempt any exercise that makes you uncomfortable. Please inform your instructor, at any time, if you are uncomfortable, or unsure of how to continue.

Motorcyclists are much more vulnerable to the environment than automobile operators. We can reduce some of our vulnerability through protective gear. Match your gear to conditions to increase enjoyment as well as to reduce risk. For example, dirt bike riding gear is different than cross country touring gear. Use appropriate gear for the particular type of riding you engage in.

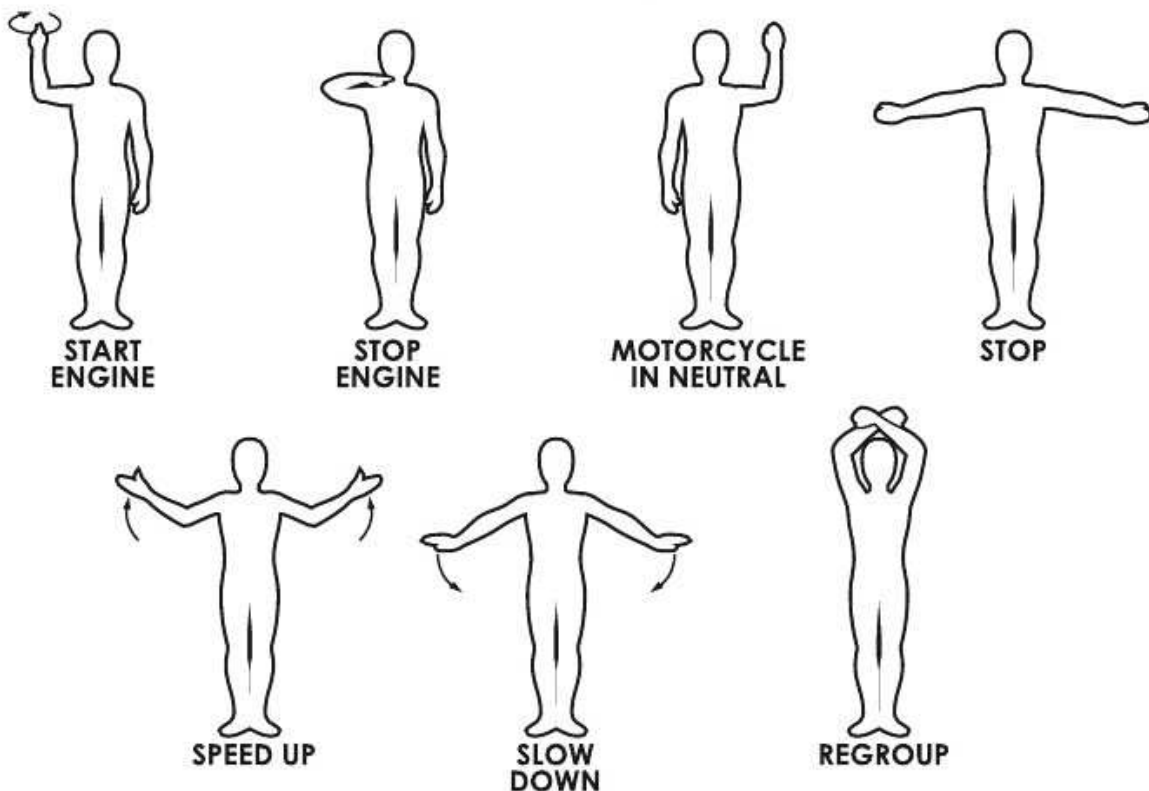
Required riding gear for the Begin2ride course:

For the Begin2ride environment, we require: Sun glasses or regular glasses, long sleeved shirt, long pants, full fingered gloves, and athletic shoes. Your clothes, including undergarments, should fit properly and comfortably. Riding gear is mainly used for comfort and image. The collision protection aspect of riding gear is often over-emphasized to new riders to promote sales.

We provide helmets. You may use your helmet with instructor's permission. The Continue2ride course requires current D.O.T. helmet standards. The Begin2ride course additionally requires a "full face" helmet with the built-in chin protector.

As with other gear, the helmet provides similar protection from the elements, can increase comfort, and provide a way for expression of image. Additionally, the helmet provides some collision protection for the brain. There are many non-full face helmets that provide brain protection similar to full face helmets. Whatever street riding helmet you choose, be sure it will protect your brain! Your helmet should have the inch-thick impact absorbing liner and fit properly. It should have an approved clasp and be secured to your head while riding. Other riding gear offers small to no collision protection. The helmets do have some effectiveness in collisions for protecting the brain.

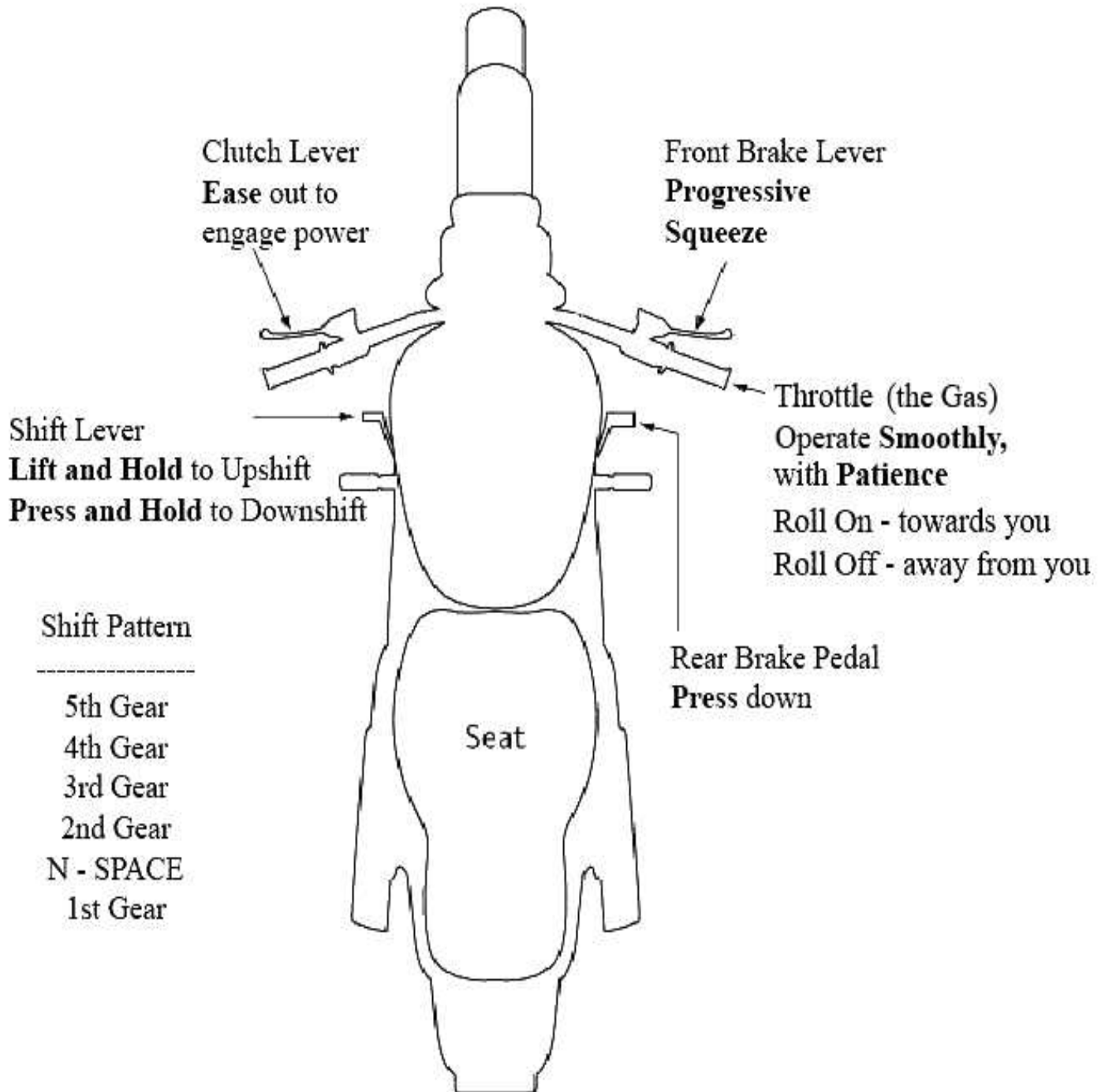
Instructor Signals



Riding Range Rules

1. Riding practice will be organized, supervised, and controlled by the instructor. Follow his/her directions.
2. Be certain you are wearing all the required riding gear prior to mounting the motorcycle.
3. Know the location of the engine cut-off switch and how to use the switch.
4. Cover the clutch lever when practice riding. This will enable you to squeeze the lever immediately in case you need to quickly remove power from the rear wheel.
5. Keep the wrist down on the throttle hand.
6. Keep a reasonable margin of space between yourself and the rider in front of you. Interact with other riders carefully and courteously, without conflict.
7. If you have a mechanical problem with your motorcycle, immediately squeeze the clutch, and straddle-walk your motorcycle, out of the way of the other riders.
8. If an emergency arises, stop and wait for further instructions.
9. If you do not understand the instructor's directions, ask for further explanation before attempting to ride.
10. Do not attempt any riding exercise if you feel uncomfortable or unsafe.

The Primary Motorcycle Controls



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Getting Started

Basic Mounting Sequence:

Stand to the left of the motorcycle, by the sidestand.

Place both hands on handgrips and **squeeze the front brake**.

Swing right leg over saddle to other side and straighten motorcycle.

Sit, then **place sidestand in the up position**.

Basic Dis-Mounting Sequence:

Squeeze front brake lever.

Place sidestand in the out and forward position.

Check to make sure the sidestand is in the fully out and forward position.

Place your left foot on ground with adequate footing to support your weight.

Lean the motorcycle onto the sidestand and swing right leg over.

Leave the front wheel turned toward the sidestand.

Important hand positioning while learning to ride today:

Cover the clutch at all times. Do not cover the front brake lever when not using the front brake.

When using the front brake lever, extend four fingers and squeeze with just your finger tips, then return them to the handgrip after braking is complete.

Do not hold onto the throttle tightly. Let your fingers curl around the grip without squeezing the grip. Place your wrist flat (horizontal) when the throttle is closed. As you roll on the throttle, your wrist will move down. When you again close the throttle, the wrist must be in the flat or down position.

Motorcyclists hands must work independently. Notice that by practicing to cover the clutch while not covering the brake helps in learning how to use the hands independently on the controls.

Basic body posture while riding the motorcycle on our riding range:

Look at your controls and know where they are and how to use them before riding.

While riding, keep your head up and be aware of what is around you. Look where you want to go.

Keep your shoulders relaxed and your elbows bent.

Sit forward on the saddle (slide towards the gas tank) while learning to ride.

Keep your **knees** near the tank and **balls** of the feet on the pegs.

Keeping your knees near and against the tank helps keep your body weight centered on the motorcycle. Additionally, use your knees to hold onto the motorcycle. This allows your hands to be relaxed enough to smoothly operate the controls.

Starting the Engine:

The following information is specific to our training motorcycles, which are typical motorcycles. The starter button is near your right thumb. It is a spring loaded contact switch. Press and hold the starter button to start the engine. Release button as soon as engine starts.

The engine cut-off switch is above the starter button. This switch gives you the option to “kill” the engine before taking a hand off the handlebar. For this course, use this switch when shutting off the engine.

The fuel valve is the silver lever located on the left side, and just below the gas tank. Turn the fuel on by turning the lever so the arrow points to "on". There are three fuel valve positions on these motorcycles: on, prime, and reserve. Leave the fuel valve in the “on” position.

The choke is used to help the engine start when it is cold. It is the brass lever, located on the carburetor, which is behind the fuel valve. The instructor will direct when to use the choke. The choke is off when the lever is in the horizontal position. It is on when it is slanted downward. After the engine is warm, the instructor will direct you to turn the choke off.

The ignition key is located at various locations. Rotate key fully counter clockwise for off. Rotate key clockwise one click for on.

Starting Notes:

- An instructor will direct when to turn the choke on, and off. The engine idles at a higher speed when the choke is on.
- The motorcycle can start if in gear. If you stall in gear, just squeeze the clutch and press the starter button.
- Typically we shift to neutral when the engine is cold to make it easier for the engine to start and to warm up. **Use the throttle with patience.**

Shifting

Shifting when the engine is off: Motorcycle transmissions are synchronized. When the engine is off, move the shift lever **without squeezing the clutch**. To shift with the engine off, gently roll forward until motorcycle stops, then gently roll back until it stops. Roll to the midpoint; **lightly** lift and **hold** the shift lever to go up a gear, or **lightly** press and **hold** the shift lever to go down a gear. Gently roll the motorcycle while applying light toe pressure, you will feel the synchronizers “click in” as the shift completes. Then release pressure on the lever.

Shifting when the engine is running: Squeeze the clutch before moving the shift lever. Instead of rolling the motorcycle by pushing with your feet, use the **clutch** to gently roll the motorcycle. To synchronize when the engine is on, partially release and squeeze the clutch (slowly wiggle the clutch lever). You will hear the synchronizer “click”.

Shifting Notes:

- The shift lever works the same whether the engine is on or off. Use the gentle “lift-and-hold” or “press-and-hold” technique to shift the transmission.
- The clutch needs to be released **less** than half way to move the synchronizers when in gear.
- If you are in neutral and the lever does not move easily into gear, release the clutch all the way and then re-squeeze and try again.

Getting Underway Smoothly:

Squeeze the clutch and gently press down on the gear shift lever to select 1st gear.
Place both feet on the ground* and look well ahead, where you want to go.
In other words, get set, before you move.

Release the clutch until you just feel the power engage, and **hold** it with your fingertips.
Open the throttle slightly, and hold for steady power.
Ease-out clutch slightly more and straddle walk as you start moving.

Continue to hold open the throttle as you straddle walk a little more quickly.
Release clutch about 90% of the way and hold it with your fingertips.
Place feet on pegs and lightly squeeze tank with your knees.
As you place your feet on the pegs, the clutch should be fully released.

Note: After you develop your skill, you will be able to bring your knees to the tank as the motorcycle begins to move, not needing many, or any straddle steps. Today, take your time to learn the throttle roll-on and clutch release coordination, using as many straddle steps as you need.

A Braking Technique for Efficient Stopping: The Front Brake supplies most of the stopping power!

Keep your head up and your knees against the tank.
Close the throttle. Note that your wrist should be in the down or flat position before you extend your fingers to squeeze the brake.

Apply both brakes, at the same time.
Remember to progressively increase the squeeze pressure on the front brake lever, and apply a controlled press to the rear brake pedal.

Squeeze the clutch, and keep it squeezed as you stop.
Press the shift lever if not already in first gear.
Place left foot down just before you stop.
While squeezing the front brake lever, purposefully keep the throttle closed.

*Optional: Foot position for getting underway smoothly while starting on a **hill**: With both feet on the ground, apply front brake while you center yourself on the motorcycle. Once centered, carefully apply the rear brake with your right foot while balancing on your left foot. Release the front brake. Once you have engaged the clutch and are ready to move, release the pressure on the rear brake.

Controlling the direction of a motorcycle:

For new riders, directional control starts with where you are looking. When learning to ride, if you want to go straight, look well ahead. If you want to go left, move your eyes, then turn your head, and look left. If you want to go right, move your eyes, then turn your head, and look right. Practice moving your eyes, then turning your head to look without turning your shoulders. It is ok to move your shoulders if needed, but continue to practice moving your eyes and head independently.

After you get familiar with riding, practice looking around while riding. Experienced and skillful riders can look anywhere they want and still control direction. This is why skillful riders can easily pass any license testing and beginners cannot, i.e. skillful riders can look down at the lines and still control their direction! However, while learning to ride, practice looking well ahead. Doing this improves your stability while learning new techniques.

Turning

A motorcycle must “leean” (lean) to turn. Your turning radius, speed, and lean angle are related to each other. If you go through the same turn again, but at a higher speed, you will require more lean. If you go through sharper corners at the same speed, you will require more lean.

The effective way to control motorcycle lean is using countersteering.

Countersteer: Press forward left, lean left go left, press forward right, lean right go right. Keep your knees in and let the bike lean beneath you.

Note: Both hands are on the handle bar, so pressing forward with one hand and pulling backward with the other hand has the same effect. Pressing left will have the same effect as pulling right and vice versa.

Motorcycles do not steer, motorcycles must **lean to turn**. To initiate the lean, a countersteer press is used. **Let the bike lean beneath you.**

Cornering Technique:

If necessary, use your brakes to slow to an appropriate entry speed before the turn. Release your brakes before you start to lean.

As you enter the turn, you should already be looking through the turn. First look to the exit, then as you approach the exit, look beyond the exit. Press forward on the inside handgrip and let the bike lean beneath you.

Slightly roll on, then continue to open the throttle and gently accelerate throughout the turn. Adjust lean as necessary. Typically new riders must learn to increase their lean. Remember to maintain or increase the **Lean** while continuing to open (**Roll On**) the throttle!

Shifting While Moving:

We will focus on understanding the matching of engine speed to road speed using a clutch release technique. For this course, the basic shifting-while-moving technique will emphasize quickly releasing the clutch over half way, then holding it without fully releasing the clutch. Do not fully release the clutch until after your engine speed is matched to your road speed.

The sequence to upshift is:

Close throttle and Squeeze clutch
Lift and Hold shift lever until clutch is fully released, which will take several seconds
Release the clutch well over half way, and hold until engine and road speed are matched
Then completely release clutch and remove foot pressure from shift lever.

The sequence to downshift is:

Close throttle & Squeeze clutch
Press and Hold shift lever until clutch is fully released, which will take several seconds
Release the clutch well over half way (90%), and hold until engine and road speed are matched
Then completely release clutch and remove foot pressure from shift lever.

Do not hurry the shifts, take your time with the sequence. To match engine and road speed while shifting, you may also use the brakes to lower road speed and the throttle to increase engine speed. However, first master matching road speed and engine speed during a shift using only the clutch release. Using your brakes or throttle is not always available in all shifting situations, the clutch always is used for smooth shifting.

The Journey Ahead ...

Session 1 Wrap-up: So, what is a motorcyclist? There may be many answers to that question. A possible answer is, "anyone who is interested in motorcycling", combined with, "a desire to continue developing one's knowledge to operate and enjoy motorcycles with control."

It does not matter where you are in the motorcyclist's journey. You may be attending an introduction to motorcycle operation session, or you may have been riding for fifty years, or anywhere in between. If you are increasing your knowledge to operate and enjoy motorcycles, you are a motorcyclist.

So, try not to be in too big a hurry. Remember, all of your motorcycling education and experiences can be important and enjoyable.

This riding session established some operational knowledge of motorcycling and risk management. Use this foundation to build motorcycle operation knowledge to a high level. Our motto is, "Be informed before you decide to ride." We hope you are now a more informed rider!

During the second and third sessions, we will use today's foundation to introduce and practice more techniques that are necessary when operating any type of motorcycle. By the end of Session 3 you will have learned and practiced the basic motorcycle operation techniques used in controlling all basic aspects of speed and direction, as well as some risk management techniques.

Our goal is for you to obtain basic motorcycle operation knowledge; to understand how to control speed and direction with confidence; and have a risk management technique. With this knowledge and practice you will be able to make an informed choice about pursuing your learner-time for on-street riding. We don't promote motorcycling, we promote making informed choices.

We enjoyed introducing you to the sport of motorcycling!
(Review upcoming schedule with students and hand out other materials as necessary.)

Session 2 Wrap-up: We are sure you enjoyed adding more motorcycle operator knowledge to your basic motorcycle "knowledge toolbox" today! Of course each part of the journey is important, and can be enjoyable.

In many sports, there are three periods, the Beginner-time, the Learner-time, and the Ongoing-time. You now know that in motorcycling, the beginner-time is fun and exciting.

You have been introduced to all the components of controlling motorcycle speed and direction! The best way to prepare for the street riding learner-time is to increase your proficiency in controlling speed and direction using these components, and practice them in different combinations.

In Session 3 we will review what we have learned today, and then practice different combinations using these components. For example, shifting-while-moving is a combination of throttle control, stability, clutch control, shifting the transmission, and turning; all operational techniques you currently know! Shifting while moving is just doing these in combination!

Remember, in any sport, once you know how to practice good techniques, the best way to make these "second nature" is to practice. As always, we encourage you to look for and eliminate the unnecessary risks along your motorcycling journey! (Instructor review upcoming schedule with students and hand out other materials as appropriate.)

The Journey Ahead ...

Remember to review Begin2ride Quiz on the last page of this booklet.

Session 3 wrap-up:

There are three general periods during your motorcycling journey: The Beginner-time, The Learner-time, and The Ongoing Rider's-time. Your Beginner-time is ending and your Learner-time is beginning. Session 3 completes your introduction to basic motorcycle operation. Please know that while street riding, operating your motorcycle will be a combination of these basic techniques, so make your basic techniques second nature as quickly as you can.

So, what's next?

Our goal has been to provide you information, and physical understanding, of the basics of motorcycle operation. Our motto is, "Be informed **before** you decide to ride!" We do not promote motorcycling, we promote making informed choices.

People learn in different ways and at different rates. Also, all of us have different needs and wants. There is no exact path to follow when you are on your "journey". We know participating in sports exposes us to risk. We know that motorcycling is a risky activity. We have shared with you methods to identify and eliminate some of the **unnecessary** risks.

If you decide to pursue street riding, a good next step would be to obtain your learner's permit or license, and a motorcycle. *Note that a good "starter-bike" is one that you can "out-grow", see dealer trade-up program in back of this booklet.*

We encourage you not to hurry and purposefully enjoy your upcoming street riding learner-time. As you now know, enjoying the beginner-time will help you eliminate some unnecessary risks during the upcoming learner-time. Whether you have a learner's permit or a license, enjoy your learner-time for at least 500 miles or 6 months. We suggest you keep a "ride diary" of what you learn on each ride during your learner-time. Being mindful of your learner-time will help prepare you to eliminate unnecessary risks during your ongoing-time and help you enjoy the journey.

Congratulations on completing basic motorcycle operation practice in the Begin2ride Course!

Enjoy the journey ...

TRADE-UP PROGRAM

500cc or Less: Motorcycle Trade-Up Program for New Riders

This promotion, endorsed by National Motorcycle Training Institute, encourages new riders to operate an appropriately sized motorcycle during their street riding learner-time. The learner-time is defined as the period starting with a new rider entering the street for the first time and covers, **at a minimum**, the first 6 months and the first 500 miles of on-street riding.

This program will include **new** and **used** motorcycles purchased from the participating dealer. Riders in the learner-time experience greater enjoyment and enhanced learning while lowering risk when using an appropriately sized motorcycle.

After the new rider completes the learner-time and is ready to **trade-up** to a larger motorcycle, the dealer agrees to accept the originally purchased motorcycle as trade-in and **will credit trade-in at the original purchase price**.

The original purchase price does not include taxes and fees. The trade-in motorcycle must be properly maintained. High wear items such as tires, if in need of replacement before dealer can resell trade-in, will be paid for by the owner. The dealer reserves the right to refuse trade-in if the trade-in motorcycle is damaged or has excessive wear, at the dealer's sole discretion.

The current 2010 models include:

Honda	Kawasaki
CBR250	BN 125
Rebel 250	Ninja 250
CRF230L	Ninja EX500

Yamaha	Suzuki
V Star 250	DR 200
TW 200	TU250
XT 250	GS 500

All **used** motorcycles of **500cc** sized engine or **less** are also included.

This program is endorsed and encouraged by



Please check our dealer program page for participating dealers on our website, **nmcti.org**.

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Begin2ride Written Evaluation

1. Why would you start with your wrist in the flat or down position when you are about to ride an unfamiliar motorcycle?

- a. To help reduce unexpected throttle roll-on during braking.
- b. If you are experienced, you do not have to concern yourself with this when on unfamiliar motorcycles.
- c. To help reduce the chance of unexpected throttle roll-on if the motorcycle lurches.
- d. Both a and c.

2. What is the first step to risk management?

- a. Wearing a helmet and proper gear.
- b. Doing a pre-ride check every time you ride.
- c. Recognize that there is risk.
- d. Both a and b.

3. How can you reduce your reaction time in braking?

- a. Cover the brake with your fingertips.
- b. Cover the clutch with your fingertips.
- c. Be thinking fast.
- d. Both b and c.

4. Why is it useful to approach street riding as a sport?

- a. It requires coordination.
- b. It requires mental skills that need to be practiced.
- c. It requires strength and stamina.
- d. It requires purposeful practice to develop physical and mental motorcycling skills.
- e. All the above.

5. How do you know if you are prepared for your ride?

- a. Check yourself that you are mentally alert and prepared for the motorcycling demands.
- b. Check yourself that you are physically prepared for the motorcycling demands.
- c. Be sure you use only your motorcycle.
- d. Both a and b.

6. How would you use the “fun factor” to reduce risk?

- a. Recognize motorcycling is fun and exciting.
- b. If you become unsure or uncomfortable, stop and change how you are participating.
- c. Ride with large groups of riders.
- d. Both a and c.

7. What is the proper number of straddle steps to use when getting underway?

- a. Three.
- b. As many as you need to be in control for the particular situation.
- c. New riders should take many steps and skilled riders should not take any steps.
- d. It depends if you are on a hill.

8. To stop in a short distance (a quick stop):

- a. squeeze the clutch quickly so you don't stall.
- b. use an intense, progressive squeeze on the front brake and moderately press on the rear brake.
- c. use both brakes with the same pressure.
- d. All of the above.

9. How do you get a motorcycle to turn?

- a. Look and steer in the direction of the turn.
- b. Always slow to turn.
- c. By leaning the motorcycle.
- d. Always press on the grip with your hand.

10. The word countersteering:

- a. can help you remember that motorcycles do not steer.
- b. is a made up word.
- c. is confusing because it means the same as steering.
- d. Works only at high speeds.