Motorcycle Operator Manual

pennsylvania
DEPARTMENT OF TRANSPORTATION

PUB 147 (3-24)

PREFACE

Operating a motorcycle safely in traffic requires special skills and knowledge. This handbook will provide you with the information necessary to enable you to obtain a motorcycle license and to help you learn those special operating skills.

The purpose of this manual is to enable the reader to avoid crashes while safely operating a motorcycle. By reading this manual, you will learn strategies for collision avoidance. You will learn how you can improve your riding strategy by using a system known as SEE *(search, evaluate, execute)*. You will learn what you can do to be seen by other motorists. In collisions with motorcyclists, drivers often say they never saw the motorcycle.

When you ride a motorcycle, you should wear proper protective clothing and headgear, ride within your limits, obey the law, and "share the road" with other highway users. Riding a motorcycle can be safe and fun when you act as a responsible rider.

The Pennsylvania Motorcycle Safety Program will teach you the basic skills necessary to operate a motorcycle. Take advantage of this learning opportunity, read the Motorcycle Operator Manual, and become an informed motorcyclist. Remember that your life, and the lives of others, will depend on what you do while operating a motorcycle.

Keep this manual for future reference. There may be times when you will want to check on the recommended ways to handle a situation which you have encountered.

pennsylvania
MOTORCYCLE SAFETY PROGRAM

CONTENTS

PREPARING TO RIDE

WEAR THE RIGHT GEAR 3
- Helmet Use 3
- Helmet Selection 3
- Eye and Face Protection 4
- Clothing 5

KNOW YOUR MOTORCYCLE 5
- The Right Motorcycle For You 5
- Borrowing and Lending 6
- Getting Familiar with the Motorcycle Controls 6
- Check Your Motorcycle 7

KNOW YOUR RESPONSIBILITIES 8

RIDE WITHIN YOUR ABILITIES

BASIC VEHICLE CONTROL 9
- Body Position 9
- Shifting Gears 9
- Braking 10
- Turning 10

KEEPING YOUR DISTANCE 11
- Lane Positions 11
- Following Another Vehicle 12
- Being Followed 13
- Passing and Being Passed 13
- Lane Sharing 15
- Merging Cars 15
- Cars Alongside 15

SEE 16

INTERSECTIONS 17
- Blind Intersections 18
- Passing Parked Cars 19
- Parking at the Roadside 19

INCREASING CONSPICUITY 20
- Clothing 20
- Headlight 20
- Signals 20
- Brake Light 21
- Using Your Mirrors 21
- Head Checks 22
- Horn 22
- Riding at Night 23

CRASH AVOIDANCE 23
- Quick Stops 23

continued on reverse

CONTENTS

Swerving or Turning Quickly 24
Cornering 25
HANDLING DANGEROUS SURFACES 26
Uneven Surfaces and Obstacles 26
Slippery Surfaces 27
Tracks and Pavement Seams 28
Grooves and Gratings 28
MECHANICAL PROBLEMS 29
Tire Failure 29
Stuck Throttle 29
Wobble 29
Drivetrain Problems 30
Engine Seizure 30
ANIMALS 30
FLYING OBJECTS 30
GETTING OFF THE ROAD 31
CARRYING PASSENGERS AND CARGO 31
Equipment 31
Instructing Passengers 32
Riding With Passengers 32
Carrying Loads 32
GROUP RIDING 33
Keep the Group Small 33
Keep the Group Together 33
Keep Your Distance 33

BEING IN SHAPE TO RIDE

WHY INFORMATION IS IMPORTANT 35
ALCOHOL AND OTHER DRUGS IN MOTORCYCLE OPERATION 35
ALCOHOL IN THE BODY 36
Blood Alcohol Concentration 36
PENALTIES FOR DRIVING WHILE UNDER THE INFLUENCE OF ALCOHOL OR DRUGS 37
PA Implied Consent Law 37
MINIMIZE THE RISKS 37
MAKE AN INTELLIGENT CHOICE 38
STEPS TO PROTECT FRIENDS 38
FATIGUE 38

EARNING YOUR LICENSE

EARNING YOUR LICENSE 39
SAMPLE QUESTIONS 40
Answer Key 52

PREPARING TO RIDE

What you do before you start a trip goes a long way toward determining whether or not you'll get where you want to go safely. Before taking off on any trip, a safe rider makes a point to:

1. **Wear the right gear. You must wear a helmet and eye protection if riding on a permit.**
2. **Become familiar with the motorcycle.**
3. **Check the motorcycle equipment.**
4. **Be a responsible rider.**

WEAR THE RIGHT GEAR

When you ride, your gear is "right" if it protects you. In any crash, you have a far better chance of avoiding serious injury if you wear:

- **An approved helmet.**
- **Face or eye protection.**
- **Protective clothing.**

Helmet Use

Crashes are not rare events — particularly among beginning riders. And one out of every five motorcycle crashes result in head or neck injuries. Head injuries are just as severe as neck injuries — and far more common. Crash analyses show that head and neck injuries account for a majority of serious and fatal injuries to motorcyclists. Research also shows that, with few exceptions, head and neck injuries are reduced by the proper wearing of an approved helmet.

Some riders don't wear helmets because they think helmets will limit their view to the sides. Others wear helmets only on long trips or when riding at high speeds. Here are some facts to consider:

- **An approved helmet** lets you see as far to the sides as necessary. A study of more than 900 motorcycle crashes, where 40% of the riders wore helmets, did not find even one case in which a helmet kept a rider from spotting danger.
- **Most crashes happen** on short trips (less than five miles long), just a few minutes after starting out.
- **Most riders** are riding slower than 30 mph when a crash occurs. At these speeds, helmets can reduce both the number and the severity of head injuries by 50%.

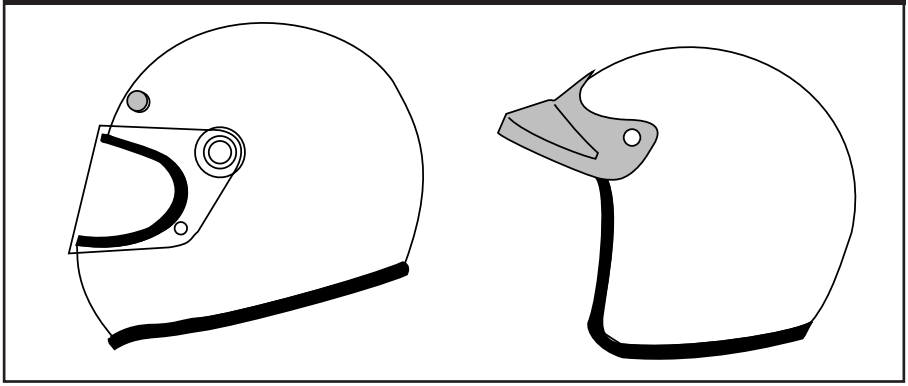
No matter what the speed, helmeted riders are three times more likely to survive head injuries than those not wearing helmets at the time of the crash.

Helmet Selection

There are two primary types of helmets, providing two different levels of coverage: three-quarter and full face.

Whichever style you choose, you can get the most protection by making sure that the helmet:

HELMETS



- **Is designed to meet U.S.** Department of Transportation (DOT) and state standards. Helmets with a label from the Snell Memorial Foundation gives you an added assurance of quality.
- **Fits snugly,** all the way around.
- **Has no obvious defects** such as cracks, loose padding or frayed straps.

Whatever helmet you decide on, keep it securely fastened on your head when you ride. Otherwise, if you are involved in a crash, it's likely to fly off your head before it gets a chance to protect you.

Eye and Face Protection

A plastic shatter-resistant faceshield can help protect your whole face in a crash. It also protects you from wind, dust, dirt, rain, insects, and pebbles thrown up from cars ahead. These problems are distracting and can be painful. If you have to deal with them, you can't devote your full attention to the road.

Goggles protect your eyes, though they won't protect the rest of your face like a faceshield does. A windshield is not a substitute for a faceshield or goggles. Most windshields will not protect your eyes from the wind; neither will eyeglasses or sunglasses. Glasses won't keep your eyes from watering, and they might blow off when you turn your head while riding.

To be effective, eye or faceshield protection must:

- **Be free** of scratches.
- **Be resistant** to penetration.
- **Give a clear** view to either side.
- **Fasten securely**, so it does not blow off.
- **Permit air** to pass through, to reduce fogging.
- **Permit enough room** for eyeglasses or sunglasses, if needed.

Tinted eye protection should not be worn at night or any other time when little light is available.

Clothing

The right clothing protects you in a collision. It also provides comfort, as well as protection from heat, cold, debris, and hot and moving parts of the motorcycle. It can also make you more visible to others.

- **Jacket and pants** should cover arms and legs completely. They should fit snugly enough to keep from flapping in the wind, yet loosely enough to move freely. Leather offers the most protection. Sturdy synthetic material provides a lot of protection as well. Wear a jacket even in warm weather to prevent dehydration. Many are designed to protect without getting you overheated, even on summer days.
- **Boots or shoes** should be high and sturdy enough to cover your ankles and give them support. Soles should be made of hard, durable slip resistant material. Keep heels short so they do not catch on rough surfaces. Tuck laces in so they won't catch on your motorcycle.
- **Gloves** allow a better grip and help protect your hands in a crash. Your gloves should be made of leather or similar durable material.

In cold or wet weather, your clothes should keep you warm and dry, as well as protect you from injury. You cannot control a motorcycle well if you are numb. Riding for long periods in cold weather can cause severe chill and fatigue. A winter jacket should resist wind and fit snugly at the neck, wrists, and waist. Good-quality rainsuits designed for motorcycle riding resist tearing apart or ballooning up at high speeds.

KNOW YOUR MOTORCYCLE

There are plenty of things on the highway that can cause you trouble. Your motorcycle should not be one of them. To make sure that your motorcycle won't let you down:

- **Read** owner's manual first.
- **Start** with the right motorcycle for you.
- **Be familiar** with the motorcycle controls.
- **Check** the motorcycle before every ride.
- **Keep** it in safe riding condition between rides.
- **Avoid** add-ons and modifications that make your motorcycle harder to handle.

The Right Motorcycle For You

First, make sure your motorcycle is right for you. It should "fit" you. Your feet should reach the ground while you are seated on the motorcycle, and the controls should be easy to operate. Smaller motorcycles are usually easier for beginners to operate.

At minimum, your street-legal motorcycle should have:

- **Headlight, taillight and brakelight.**
- **Front and rear brakes.**
- **Turn signals.**
- **Horn.**
- **Two mirrors.**

Borrowing and Lending

Borrowers and lenders of motorcycles, beware. Crashes are fairly common among beginning riders — especially in the first months of riding. Riding an unfamiliar motorcycle adds to the problem. If you borrow a motorcycle, get familiar with it in a controlled area. And if you lend your motorcycle to friends, make sure they are licensed and know how to ride before allowing them out into traffic.

No matter how experienced you may be, ride extra carefully on any motorcycle that's new or unfamiliar to you. It takes time to adjust, so give yourself a greater margin for errors.

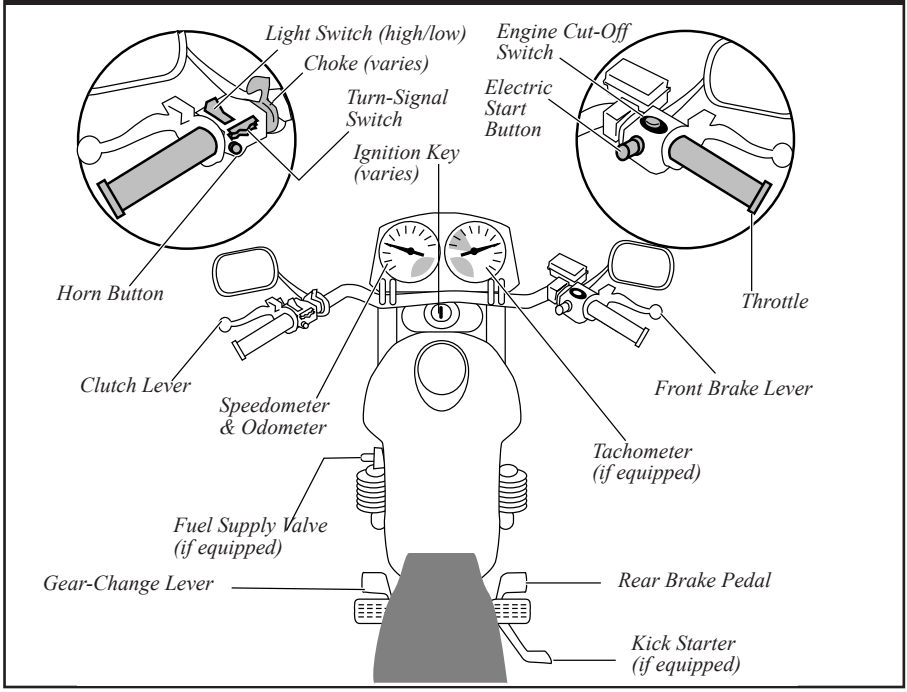
Motorcycle Controls

Make sure you are completely familiar with the motorcycle before you take it out on the street. Be sure to review the owner's manual. This is particularly important if you are riding a borrowed motorcycle. If you are going to use an unfamiliar motorcycle:

- **Make all the checks** you would on your own motorcycle.
- **Find out where everything is**, particularly the turn signals, horn, headlight switch, fuel-control valve, and engine cut-off switch. Find and operate these items without having to look for them.

Get Familiar with the

MOTORCYCLE



- **Know the gear pattern.** Work the throttle, clutch, and brakes a few times before you start riding. All controls react a little differently.
- **Ride very cautiously** and be aware of surroundings. Accelerate gently, take turns more slowly, and leave extra room for stopping.

Check Your Motorcycle

A motorcycle needs more frequent attention than a car. A minor technical failure in a car seldom leads to anything more than an inconvenience for the driver.

If something's wrong with the motorcycle, you'll want to find out about it before you get in traffic. Make a complete check of your motorcycle before every ride.

Before mounting the motorcycle make the following checks:

- **Tires/Wheels** — Check the condition of tread, wheels, and air pressure.
- **Fluids** — Oil and fluid levels. At a minimum, check hydraulic fluids and coolants weekly. Look under the motorcycle for signs of an oil or gas leak.
- **Headlights and Taillight** — Check them both. Test your switch to make sure both high and low beams are working.
- **Turn Signals** — Turn on both right and left turn signals. Make sure all lights are working properly.
- **Brake Light** — Try both brake controls, and make sure each one turns on the brake light.
- **Controls (levers, cables, throttle)** — Check the condition, operation, and routing.

Once you have mounted the motorcycle, complete the following checks before starting out:

- **Clutch and Throttle** — Make sure they work smoothly. The throttle should snap back when you let go. The clutch should feel tight and smooth.
- **Mirrors** — Clean and adjust both mirrors before starting. It's difficult to ride with one hand while you try to adjust a mirror. Adjust each mirror so you can see the lane behind and as much as possible of the lane next to you. When properly adjusted, a mirror may show the edge of your arm or shoulder — but it's the road behind and to the side that's most important.
- **Brakes** — Try the front and rear brake levers one at a time. Make sure each one feels firm and holds the motorcycle when the brake is fully applied.
- **Horn** — Try the horn. Make sure it works.

KNOW YOUR RESPONSIBILITIES

"Accident" implies an unforeseen event that occurs without anyone's fault or negligence. Most often in traffic, that is not the case. In fact, most people involved in a crash can usually claim some responsibility for what took place.

Consider a situation where someone tries to squeeze through an intersection on a yellow light turning red. Your light turns green. You pull into the intersection without checking for possible latecomers. That is all it takes for the two of you to tangle. It was the other driver's responsibility to stop. And it was your responsibility to look before pulling out. Neither of you held up your end of the deal. Just because someone else is the first to start the chain of events leading to a crash, doesn't leave any of us free of responsibility.

As a rider, you can't be sure that other operators will see you or yield the right of way. To lessen your chances of a crash occurring:

- **Be visible** — wear proper clothing, use your headlight, ride in the best lane position to see and be seen.
- **Communicate your intentions** — use the proper signals, brake light, and lane position.
- **Maintain an adequate space cushion** — following, being followed, lane sharing, passing and being passed.
- **Search your path** of travel 12 seconds ahead.
- **Identify and separate** multiple hazards.
- **Be prepared to act** — remain alert and know how to carry out proper crash-avoidance skills.

Blame doesn't matter when someone is injured in a crash. There is rarely a single cause of any crash. The ability to ride aware, make critical decisions, and carry them out separates responsible riders from all the rest. Remember, it is up to you to keep from being the cause of, or an unprepared participant in, any crash.

RIDE WITHIN YOUR ABILITIES

This manual cannot teach you how to control direction, speed, or balance. That's something you can learn only through practice, preferably in a formal course of instruction like the PA Motorcycle Safety Program. But control begins with knowing your abilities and riding within them, along with knowing and obeying the rules of the road.

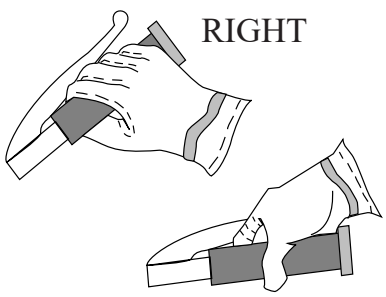
BASIC VEHICLE CONTROL

Body Position

To control a motorcycle well:

- **Posture** — Sit so you can use your arms to steer the motorcycle rather than to hold yourself up.
- **Seat** — Sit far enough forward so that arms are slightly bent when you hold the handlegrips. Bending your arms permits you to press on the handlebars without having to stretch.
- **Hands** — Hold the handgrips firmly to keep your grip over rough surfaces. Start with your right wrist flat. This will help you keep from accidentally using too much throttle. Also, adjust the handlebars so your hands are even with or below your elbows. This permits you to use the proper muscles for precision steering.
- **Knees** — Keep your knees against the gas tank to help you keep your balance as the motorcycle turns.
- **Feet** — Keep your feet firmly on the footpegs to maintain balance. Don't drag your feet. If your foot catches on something, you can be injured and it could affect your control of the motorcycle. Keep your feet near the controls so you can get to them fast if needed. Also, don't let your toes point downward — they may get caught between the road and the footpegs.

HOLDING HANDGRIPS



Shifting Gears

There is more to shifting gears than simply getting the motorcycle to pick up speed smoothly. Learning to use the gears when downshifting, turning, or starting on hills is important for safe motorcycle operation.

Shift down through the gears with the clutch as you slow or stop. Remain in first gear while you are stopped so that you can move out quickly if you need to.

Make certain you are riding slowly enough when you shift into a lower gear. If not, the motorcycle will lurch, and the rear wheel may skid. When riding downhill or shifting into first gear you may need to use the brakes to slow enough before downshifting safely. Work towards a smooth, even clutch release, especially when downshifting.

It is best to change gears before entering a turn. However, sometimes shifting while in the turn is necessary. If so, remember to do so smoothly. A sudden change in power to the rear wheel can cause a skid.

Braking

Your motorcycle has two brakes: one each for the front and rear wheel. Use both of them at the same time. The front brake is more powerful and can provide **at least *three-quarters*** of your total stopping power. The front brake is safe to use if you use it properly.

Remember:

- **Use both brakes** *every time* you slow or stop. Using both brakes for even "normal" stops will permit you to develop the proper habit or skill of using both brakes properly in an emergency. Squeeze the front brake and press down on the rear. Grabbing at the front brake or jamming down on the rear can cause the brakes to lock, resulting in control problems.
- **If you know the technique**, using both brakes in a turn is possible, although it should be done very carefully. When leaning the motorcycle some of the traction is used for cornering. Less traction is available for stopping. A skid can occur if you apply too much brake. Also, using the front brake incorrectly on a slippery surface may be hazardous. Use caution and ***squeeze*** the brake lever, never grab.
- **Some motorcycles** have integrated braking systems that link the front and rear brakes together by applying the rear brake pedal. (Consult the owner's manual for a detailed explanation on the operation and effective use of these systems.)

Turning

Riders often try to take curves or turns too fast. When they can't hold the turn, they end up crossing into another lane of traffic or going off the road. Or, they overreact and brake too hard, causing a skid and loss of control. Approach turns and curves with caution.

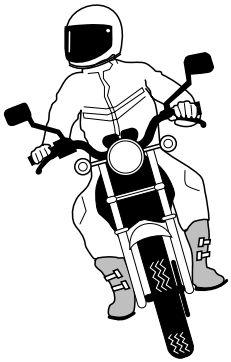
- **SLOW** — Reduce speed before the turn by closing the throttle and, if necessary, applying both brakes.
- **LOOK** — Look through the turn to where you want to go. Turn just your head, not your shoulders, and keep your eyes level with the horizon.
- **PRESS** — To turn, the motorcycle must lean. To lean the motorcycle, press on the handgrip in the direction of the turn. Press left hand-grip — lean left — go left. Press right handgrip lean right —

go right. The higher the speed in a turn the greater the lean angle.

- **ROLL** — Roll on the throttle to maintain or slightly increase speed. This helps stabilize the motorcycle.

In normal turns, the rider and the motorcycle should lean together at the same angle.

NORMAL TURNING



In slow, tight turns, counterbalance by leaning the motorcycle only and keeping your body straight.

SLOW TURNING

KEEPING YOUR DISTANCE

The best protection you can have is distance — a "cushion of space" — all around your motorcycle. If someone else makes a mistake, distance offers you:

- **Time to react.**
- **Space to maneuver.**

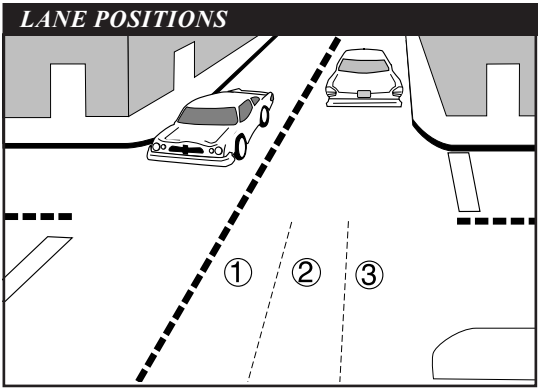
Lane Positions

In some ways the size of the motorcycle can work to your advantage. Each traffic lane gives a motorcycle three paths of travel, as indicated in the illustration.

Your lane position should:

- **Increase** your ability to see and be seen.
- **Avoid** others' blind spots.
- **Avoid** surface hazards.
- **Protect** your lane from other drivers.
- **Communicate** your intentions.
- **Avoid** wind blast from other vehicles.
- **Provide** an escape route.

Select the appropriate path to maximize your space cushion and make yourself more easily seen by others on the road.



In general, there is no single best position for riders to be seen and to maintain a space cushion around the motorcycle. No portion of the lane need be avoided — including the center.

Position yourself in the portion of the lane where you are most likely to be seen and you can maintain a space cushion around you. Change position as traffic situations change. Ride in path 2 or 3 if vehicles and other potential problems are on your left only. Remain in path 1 or 2 if hazards are on your right only. If vehicles are being operated on both sides of you, the center of the lane, path 2, is usually your best option.

The oily strip in the center portion that collects drippings from cars is usually no more than two feet wide. Unless the road is wet, the average center strip permits adequate traction to ride on safely. You can operate to the left or right of the grease strip and still be within the center portion of the traffic lane. Avoid riding on big buildups of oil and grease usually found at busy intersections or toll booths.

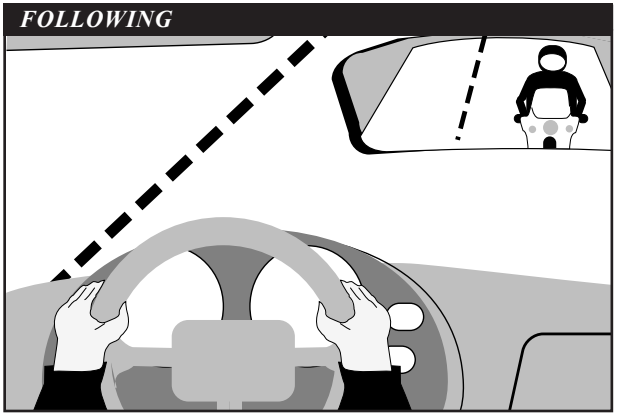
Following Another Vehicle

"Following too closely" is a major factor in crashes involving motorcyclists. In traffic, motorcycles need as much distance to stop as cars. Normally, ***a minimum of four seconds*** distance should be maintained behind the vehicle ahead.

To gauge your following distance:

- **Pick out a marker**, such as a pavement marking or lamppost, on or near the road ahead.
- **When the rear bumper** of the vehicle ahead passes the marker, count off the seconds: "one-thousand-one, one-thousand-two, one-thousand-three, one-thousand-four."
- **If you reach the marker** before you reach "four," you are following too closely.

A four-second following distance leaves a minimum amount of space to stop or swerve if the driver ahead stops suddenly. It also permits a better view of potholes and other hazards in the road.



A larger cushion of space is needed if your motorcycle will take longer than normal to stop. If the pavement is slippery, if you cannot see through the vehicle ahead, or if traffic is heavy and someone may squeeze in front of you, open up a five second or more following distance.

Keep well behind the vehicle ahead even when you are stopped. This will make it easier to get out of the way if someone bears down on you from behind. It will also give you a cushion of space if the vehicle ahead starts to back up for some reason.

When behind a car, ride where the driver can see you in the rearview mirror. Riding in the center portion of the lane should put your image in the middle of the rearview mirror — where a driver is most likely to see you.

Riding at the far side of a lane may permit a driver to see you in a sideview mirror. But remember that most drivers don't look at their sideview mirrors nearly as often as they check the rearview mirror. If the traffic situation allows, the center portion of the lane is usually the best place for you to be seen by the drivers ahead and to prevent lane sharing by others.

Being Followed

Speeding up to lose someone following too closely only ends up with someone tailgating you at a higher speed.

A better way to handle tailgaters is to get them in front of you. When someone is following too closely, change lanes and let them pass. If you can't do this, slow down and open up extra space ahead of you to allow room for both you and the tailgater to stop. This will also encourage them to pass. If they don't pass, you will have given yourself and the tailgater more time and space to react in case an emergency does develop ahead.

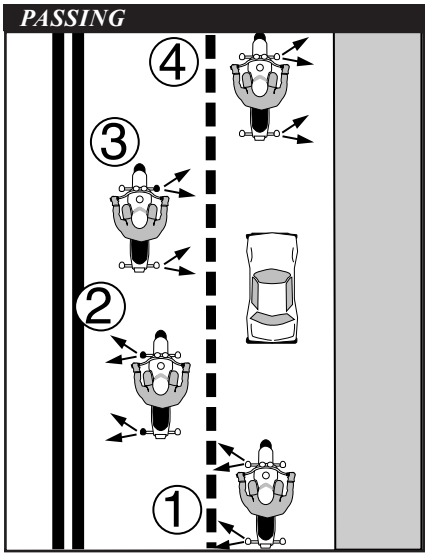
Passing and Being Passed

Passing and being passed by another vehicle is not much different than with a car. However, visibility is more critical. Be sure other drivers see you, and that you see potential hazards.

Passing

1. **Ride in the left** portion of the lane at a safe following distance to increase your line of sight and make you more visible. Signal and check for oncoming traffic. Use your mirrors and turn your head to look for traffic behind.
2. **When safe,** move into the left lane and accelerate. Select a lane position that doesn't crowd the car you are passing and provides space to avoid hazards in your lane.
3. **Ride through the blind spot** as quickly as possible.
4. **Signal again**, and complete mirror and headchecks before returning to your original lane and then cancel signal.

Remember, passes must be completed within posted speed limits, and only where permitted. Know your signs and road markings!



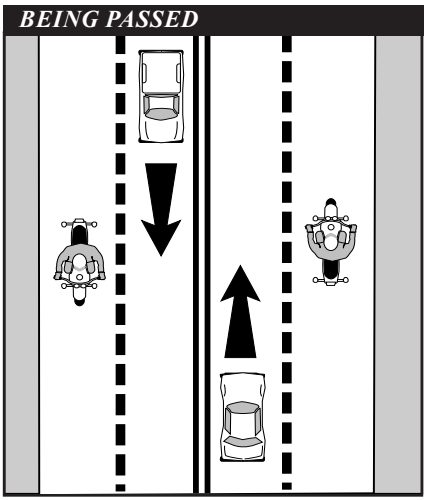
Being Passed

When you are being passed from behind or by an oncoming vehicle, stay in the center portion of your lane. Riding any closer to them could put you in a hazardous situation.

Avoid being hit by:

- **The other vehicle** — A slight mistake by you or the passing driver could cause a sideswipe.
- **Extended mirrors** — Some drivers forget that their mirrors hang out farther than their fenders.
- **Objects thrown from windows** — Even if the driver knows you're there, a passenger may not see you and might toss something on you or the road ahead of you.
- **Blasts of wind from larger vehicles** — They can affect your control. You have more room for error if you are in the middle portion when hit by this blast than if you are on either side of the lane.

Do not move into the portion of the lane farthest from the passing



vehicle. It might invite the other driver to cut back into your lane too early.

Lane Sharing

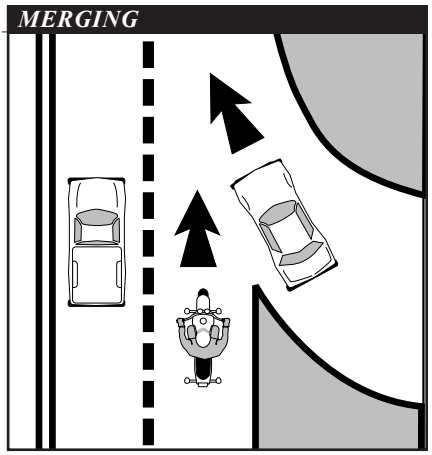
Cars and motorcycles need a full lane to operate safely. Lane sharing is usually prohibited.

Riding between rows of stopped or moving cars in the same lane can leave you vulnerable to the unexpected. A hand could come out of a window; a door could open; a car could turn suddenly. Discourage lane sharing by others. Keep a center-portion position whenever drivers might be tempted to squeeze by you. Drivers are most tempted to do this:

- **In heavy**, bumper-to-bumper traffic.
- **When they** want to pass you.
- **When you** are preparing to turn at an intersection.
- **When you** are getting in an exit lane or leaving a highway.

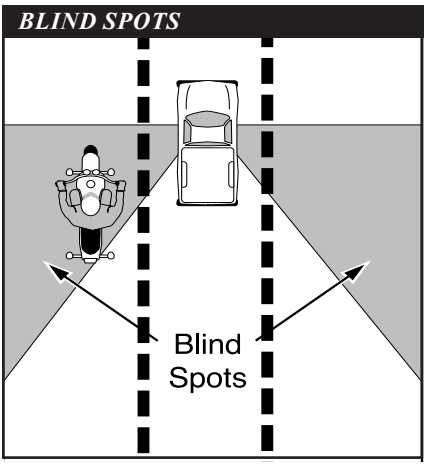
Merging Cars

Drivers on an entrance ramp may not see you on the highway. Give them plenty of room. Change to another lane if one is open. If there is no room for a lane change, adjust speed to open up space for the merging driver.



Cars Alongside

Do not ride next to cars or trucks in other lanes if you do not have to. You might be in the blind spot of a car in the next lane, which could switch into your lane without warning. Cars in the next lane also block your escape if you come upon danger in your own lane. Speed up or drop back to find a place clear of traffic on both sides.



SEE

Experienced riders remain aware of what is going on around them. They improve their riding strategy by using the Motorcycle Safety Foundation's (MSF) SEE strategy, a 3-step process used to make appropriate judgments, and apply them correctly in different traffic situations:

- **S**earch
- **E**valuate
- **E**xecute

Let's examine each of these steps.

SEARCH

Search aggressively ahead, to the sides and behind to avoid potential hazards even before they arise. How assertively you search, and how much time and space you have, can eliminate or reduce harm. Focus even more on finding potential escape routes in or around intersections, shopping areas, schools, and construction zones.

Search for:

- **Oncoming traffic** that may turn left in front of you.
- **Traffic** coming from the left and right.
- **Traffic** approaching from behind.
- **Hazardous** road conditions.

Be especially alert in areas with limited visibility. Visually "busy" surroundings could hide you and your motorcycle from others.

EVALUATE

Think about how hazards can interact to create risk for you. Anticipate potential problems and have a plan to reduce risk.

- **Road and surface characteristics** – Potholes, guardrails, bridges, telephone poles and trees won't move into your path but may influence your riding strategy.

- **Traffic control devices** – Look for traffic signals, including regulatory signs, warning signs, and pavement markings, to help you evaluate circumstances ahead.

- **Vehicles and other traffic** – May move into your path and increase the likelihood of a crash.

Think about your time and space requirements in order to maintain a margin of safety. You must leave yourself time to react if an emergency arises.

EXECUTE

Carry out your decision.

To create more space and minimize harm from any hazard:

- **Communicate** your presence with lights and/or horn.
- **Adjust your speed** by accelerating, stopping or slowing.
- **Adjust your position** and/or direction.

Apply the old adage "one step at a time" to handle two or more hazards. Adjust speed to permit two hazards to separate. Then deal with them one at a time as single hazards.

Decision making becomes more complex with three or more hazards. Evaluate the consequences of each and give equal distance to the hazards.

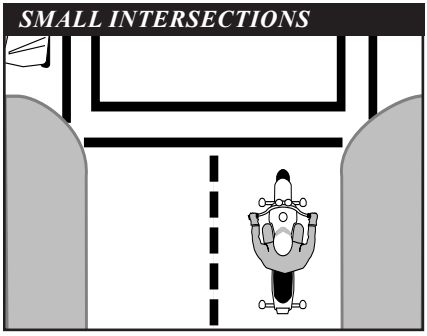
In potential high risk areas, such as intersections, shopping areas, school and construction zones, cover the clutch and both brakes to reduce the time you need to react.

INTERSECTIONS

The greatest potential for conflict between you and other traffic is at intersections. An intersection can be in the middle of an urban area or at a driveway on a residential street — anywhere traffic may cross your path of travel. Over one-half of motorcycle/car crashes are caused by drivers entering a rider's right-of-way. Cars that turn left in front of you, including cars turning left from the lane to your right, and cars on side streets that pull into your lane, are the biggest dangers. Your use of SEE [p. 16] at intersections is critical.

There are no guarantees that others see you. Never count on "eye contact" as a sign that a driver will yield. Too often, a driver looks right at a motorcyclist and still fails to "see" him. The only eyes that you can count on are your own. If a car can enter your path, assume that it will. Good riders are always "looking for trouble" — not to get into it, but to stay out of it.

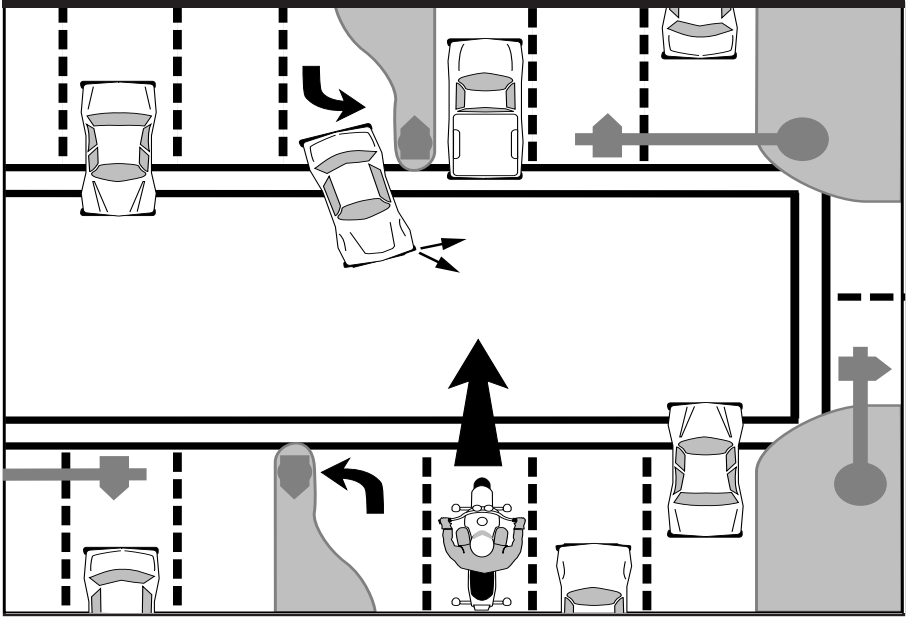
Increase your chances of being seen at intersections. Ride with your headlight on and in a lane position that provides the best view of oncoming traffic. Provide a space cushion around the motorcycle that permits you to take evasive action.



As you approach the intersection, select a lane position to increase your visibility to the driver. Cover the clutch lever and both brakes to reduce reaction time.

Reduce your speed as you approach an intersection. After entering the intersection, move away from vehicles preparing to turn. Do not change speed or position radically. The driver might think that you are preparing to turn.

LARGE INTERSECTIONS

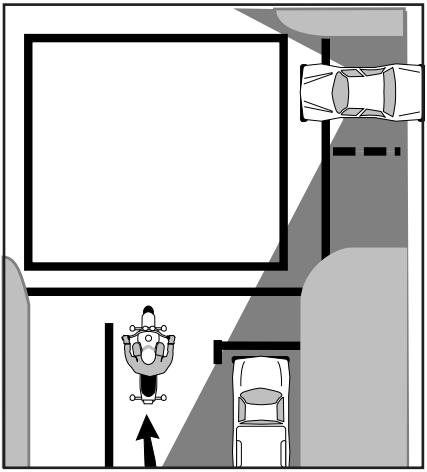


Blind Intersections

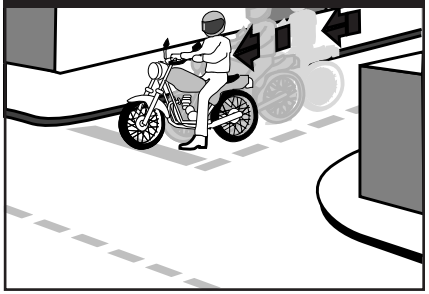
If you approach a blind intersection, move to the portion of the lane that will bring you into another driver's field of vision at the earliest possible moment. In this picture, the rider has moved to the left portion of the lane — away from the parked car — so the driver on the cross street can see him as soon as possible.

Remember, the key is to see as much as possible and remain visible to others while protecting your space.

BLIND INTERSECTIONS



STOP SIGNS



If you have a stop sign or stop line, stop there first. Then edge forward and stop again, just short of where the cross-traffic lane meets your lane. From that position, lean your body forward and look around buildings, parked cars, or bushes to see if anything is coming. Just make sure your front wheel stays out of the cross lane of travel while you're looking.

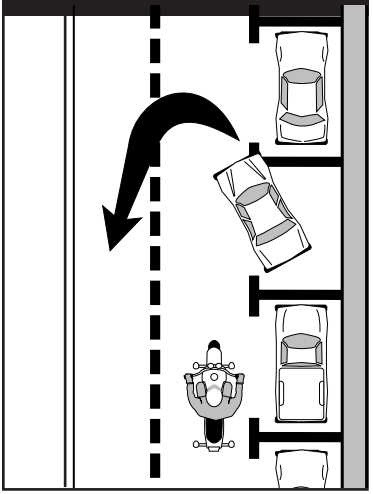
Passing Parked Cars

When passing parked cars, stay toward the left of your lane. You can avoid problems caused by doors opening, drivers getting out of cars, or people stepping from between cars. If oncoming traffic is present, it is usually best to remain in the center-lane position to maximize your space cushion.

A bigger problem can occur if the driver pulls away from the curb without checking for traffic behind. Even if he does look, he may fail to see you.

In either event, the driver might cut into your path. Slow down or change lanes to make room for someone cutting in.

PARKED CARS

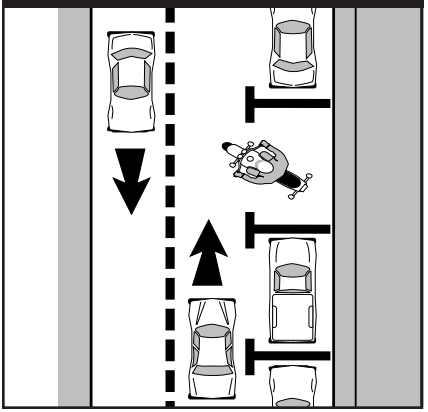


Cars making a sudden U-turn are the most dangerous. They may cut you off entirely, blocking the whole roadway and leaving you with no place to go. Since you can't tell what a driver will do, slow down and get the driver's attention. Sound your horn and continue with caution.

Parking at the Roadside

Park at an angle to the curb with your rear wheel touching the curb.

PARKING AT CURBS



INCREASING CONSPICUITY

In crashes with motorcyclists, drivers often say that they never saw the motorcycle. From ahead or behind, a motorcycle's outline is much smaller than a car's. Also, it's hard to see something you are not looking for, and most drivers are not looking for motorcycles. More likely, they are looking *through* the skinny, two-wheeled silhouette in search of cars that may pose a problem to them.

Even if a driver does see you coming, you aren't necessarily safe. Smaller vehicles appear farther away, and seem to be traveling slower than they actually are. It is common for drivers to pull out in front of motorcyclists, thinking they have plenty of time. Too often, they are wrong.

However, you can do many things to make it easier for others to recognize you and your cycle.

Clothing

Most crashes occur in broad daylight. Wear bright colored clothing to increase your chances of being seen. Remember, your body is half of the visible surface area of the rider/motorcycle unit.

Bright orange, red, yellow or green jackets or vests are your best bets for being seen. Your helmet can do more than protect you in a crash. Brightly colored helmets can also help others see you.

Any bright color is better than drab or dark colors. Reflective, bright colored clothing (helmet and jacket or vest) is best.

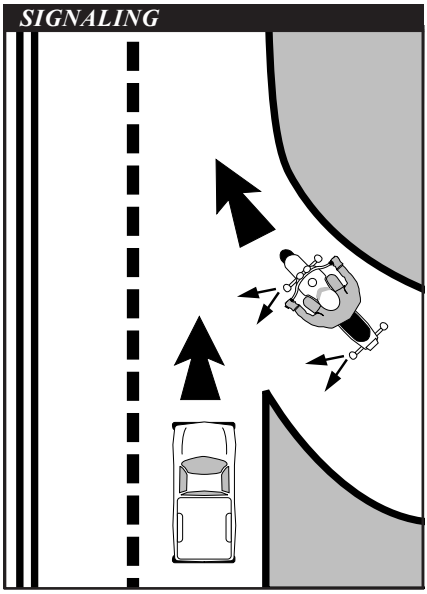
Reflective material on a vest and on the sides of the helmet will help drivers coming from the side spot you. Reflective material can also be a big help for drivers coming toward you or from behind.

Headlight

Motorcycles manufactured during or after 1973 are required by law to use headlights at all times. The headlight is the best way to help others see you. Studies show that during the day, a motorcycle with its light on is twice as likely to be noticed.

Signals

The signals on a motorcycle are similar to those on a car. They tell others what you plan to do. However, due to a rider's added vulnerability, signals are even more important. Use them anytime you plan to change



lanes or turn. Use them even when you think no one else is around. It's the car you don't see that's going to give you the most trouble. Your signal lights also make you easier to spot. That's why it's a good idea to use your turn signals even when what you plan to do is obvious.

When you enter a freeway, drivers approaching from behind are more likely to see your signal blinking and make room for you.

Turning your signal light on before each turn reduces confusion and frustration for the traffic around you. Once you turn, make sure your signal is off or a driver may pull directly into your path, thinking you plan to turn again. Use your signals at every turn so drivers can react accordingly. Don't make them guess what you intend to do.

Brake Light

Your motorcycle's brake light is usually not as noticeable as the brake lights on a car — particularly when your taillight is on. (The tail light goes on with the headlight.) If the situation will permit, help others notice you by flashing your brake light before you slow down. It is especially important to flash your brakelight before:

- **You slow more quickly** than others might expect (turning off a high-speed highway).
- **You slow where** others may not expect it (in the middle of a block or at an alley).

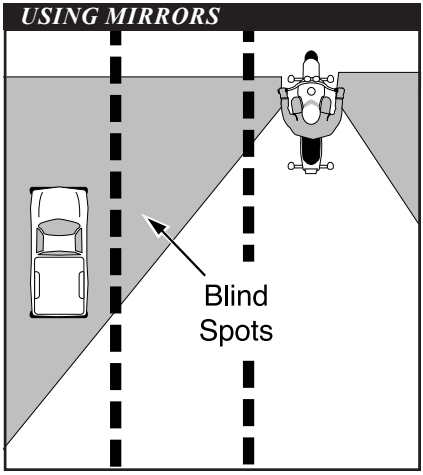
If you are being followed closely, it's a good idea to flash your brake light before you slow. The tailgater may be watching you and not see something ahead that will make you slow down. This will hopefully discourage them from tailgating and warn them of hazards ahead they may not see.

Using Your Mirrors

While it's most important to keep track of what's happening ahead, you can't afford to ignore situations behind. Traffic conditions change quickly. Knowing what's going on behind is essential for you to make a safe decision about how to handle trouble ahead.

Frequent mirror checks should be part of your normal searching routine. Make a special point of using your mirrors:

- **When you are stopped** at an intersection. Watch cars coming up from behind. If the driver isn't paying attention, he could be on top of you before he sees you.
- **Before you change lanes**. Make sure no one is about to pass you.
- **Before you slow down.** The driver behind may not expect you to slow, or may be unsure about where you will slow. For example, you signal a turn and the driver thinks you plan to turn at a distant intersection, rather than at a nearer driveway.



Some motorcycles have rounded (convex) mirrors. These provide a wider view of the road behind than do flat mirrors. They also make cars seem farther away than they really are. If you are not used to convex mirrors, get familiar with them. *(While you are stopped, pick out a parked car in your mirror. Form a mental image of how far away it is. Then, turn around and look at it to see how close you came.)* Practice with your mirrors until you become a good judge of distance. Even then, allow extra distance before you change lanes.

Head Checks

Checking your mirrors is not enough. Motorcycles have "blind spots" like cars. Before you change lanes, turn your head, and look to the side for other vehicles.

On a road with several lanes, check the far lane and the one next to you. A driver in the distant lane may head for the same space you plan to take.

Frequent head checks should be your normal scanning routine, also. Only by knowing what is happening ***all around*** you, are you fully prepared to deal with it.

Horn

Be ready to use your horn to get someone's attention quickly.

It is a good idea to give a quick beep before passing anyone that may move into your lane.

Here are some situations:

- **A driver** in the lane next to you is driving too closely to the vehicle ahead and may want to pass.
- **A parked car** has someone in the driver's seat.
- **Someone is in the street**, riding a bicycle or walking.

In an emergency, press the horn button loud and long. Be ready to stop or swerve away from the danger.

Keep in mind that a motorcycle's horn isn't as loud as a car's, therefore, use it, but don't rely on it. Other strategies, like having time and space to maneuver, may be appropriate along with the horn.

Riding at Night

At night it is harder for you to see and be seen. Picking your headlight or taillight out of the car lights around you is not easy for other drivers. To compensate, you should:

Reduce Your Speed — Ride even slower than you would during the day — particularly on roads you don't know well. This will increase your chances of avoiding a hazard.

Increase Distance — Distances are harder to judge at night than during the day. Your eyes rely upon shadows and light contrasts to determine how far away an object is and how fast it is coming. These contrasts are missing or distorted under artificial lights at night. Open up a three-second following distance or more. And allow more distance to pass and be passed.

Use the Car Ahead — The headlights of the car ahead can give you a better view of the road than even your high beam can. Taillights bouncing up and down can alert you to bumps or rough pavement.

Use Your High Beam — Get all the light you can. Use your high beam whenever you are not following or meeting a car. Be visible, wear reflective materials when riding at night.

Be flexible about lane position. Change to whatever portion of the lane is best able to help you see, be seen, and keep an adequate space cushion.

CRASH AVOIDANCE

No matter how careful you are, there will be times when you find yourself in a tight spot. Your chances of getting out safely depend on your ability to react quickly and properly. Often, a crash occurs because a rider is not prepared or skilled in crash-avoidance maneuvers.

Know when and how to stop or swerve, two skills critical to avoiding a crash. It is not always desirable or possible to stop quickly to avoid an obstacle. Riders must also be able to swerve around an obstacle. Determining the skill necessary for the situation is important as well.

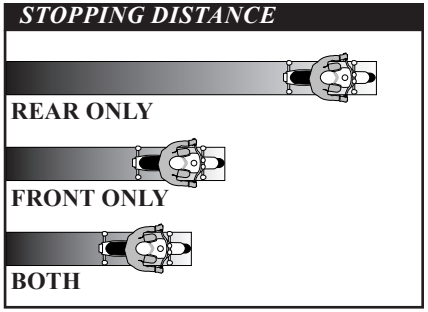
Studies show that most crash-involved riders:

- **Underbrake** the front tire and overbrake the rear.
- **Did not** separate braking from swerving or did not choose swerving when it was appropriate.

The following information offers some good advice.

Quick Stops

To stop quickly, apply both brakes at the same time. Don't be shy about using the front brake, but don't "grab" it, either. Squeeze the brake lever firmly and progressively. If the front wheel locks, release the front brake immediately then reapply it firmly. At the same time, press down on the rear brake. If you accidentally lock the rear brake on a good traction surface, keep it locked until you have completely stopped.



Even with a locked rear wheel, you can control the motorcycle on a straightaway *if it is upright and going in a straight line.*

Always use both brakes at the same time to stop. The front brake can provide 70% or more of the potential stopping power.

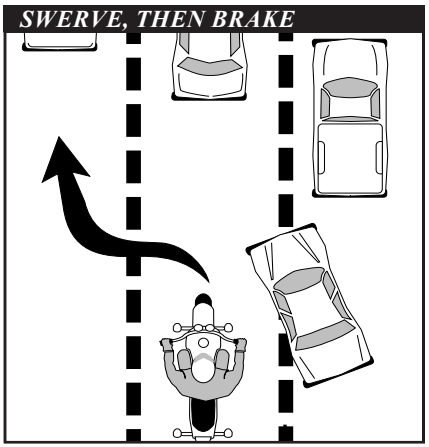
If you must stop quickly *while turning or riding a curve*, the best technique is to straighten the motorcycle upright first and then brake. However, it may not always be possible to straighten the motorcycle and then stop. If you must brake while leaning, apply light brakes and reduce the throttle. As you slow, you can reduce your lean angle and apply more brake pressure until the motorcycle is straight and maximum brake pressure is possible. You should "straighten" the handlebars in the last few feet of stopping, the motorcycle should then be straight up and in balance.

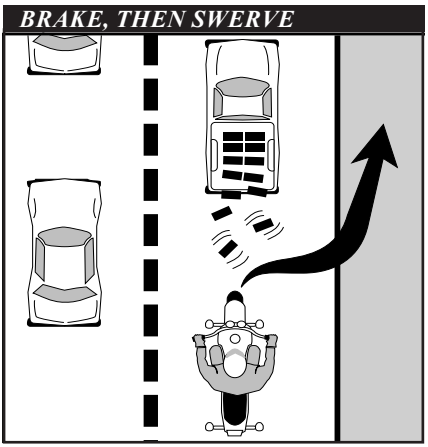
Swerving or Turning Quickly

Sometimes you may not have enough room to stop, even if you use both brakes properly. An object might appear suddenly in your path. Or the car ahead might squeal to a stop. The only way to avoid a crash may be to turn quickly, or swerve around it.

A swerve is any sudden change in direction. It can be two quick turns, or a rapid shift to the side. Apply a small amount of pressure to the handgrip located on the side of your intended direction of escape. This will cause the motorcycle to lean quickly. The sharper the turn(s), the more the motorcycle must lean.

Keep your body upright and allow the motorcycle to lean in the direction of the turn while keeping your knees against the tank and your feet solidly on the pegs. Let the motorcycle move





underneath you. Make your escape route the target of your vision. Press on the opposite handgrip once you clear the obstacle to return you to your original direction of travel. To swerve to the left, press the left handgrip, then press the right to recover. To swerve to the right, press right, then left.

IF BRAKING IS REQUIRED, SEPARATE IT FROM SWERVING. Brake before or after — never while swerving.

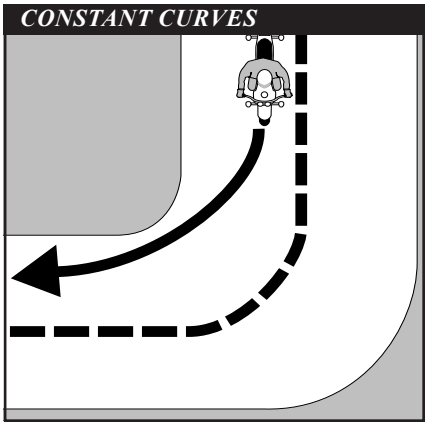
Cornering

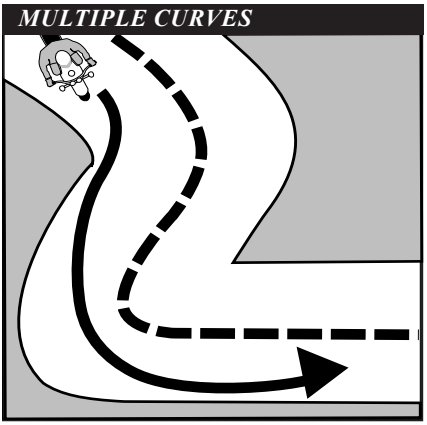
A primary cause of single-vehicle crashes is motorcyclists running wide in a curve or turn and colliding with the roadway or a fixed object.

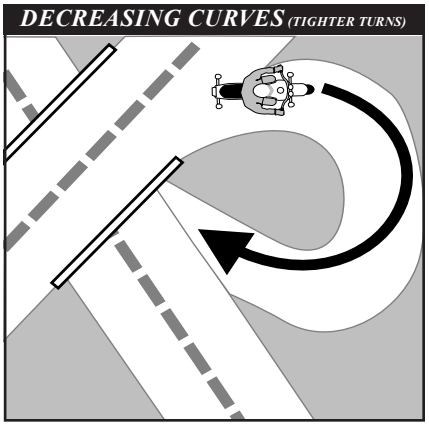
Every curve is different. Be alert to whether a curve remains constant, gradually widens, gets tighter, or involves multiple turns.

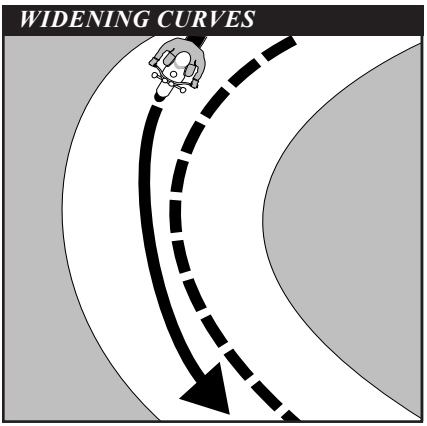
Ride within your skill level and posted speed limits.

Your best path may not always follow the curve of the road. Change









lane position depending on traffic, road conditions and curve of the road. If no traffic is present, start at the outside of a curve to increase your line of sight and the effective radius of the turn. As you turn, move toward the inside of the curve, and as you pass the center, move to the outside to exit.

Another alternative is to move to the center of your lane before entering a curve — and stay there until you exit. This permits you to spot approaching traffic as soon as possible. You can also adjust for traffic "crowding" the center line, or debris blocking part of your lane.

HANDLING DANGEROUS SURFACES

Your chance of falling or being involved in a crash increases whenever you ride across:

- **Uneven surfaces or obstacles.**
- **Slippery surfaces.**
- **Railroad tracks.**
- **Grooves and gratings.**

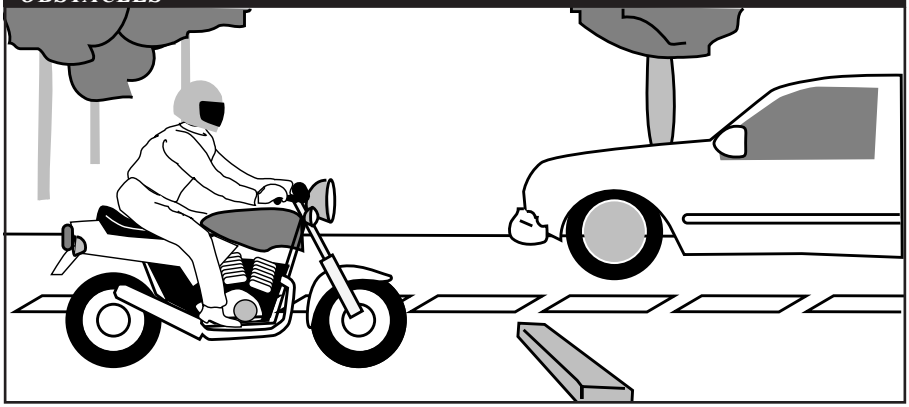
Uneven Surfaces and Obstacles

Watch for uneven surfaces such as bumps, broken pavement, potholes, or small pieces of highway trash.

Try to avoid obstacles by slowing or going around them. If you must go over the obstacle, first, determine if it is possible. Approach it at as close to a 90° angle as possible. Look where you want to go to control your path of travel. If you have to ride over the obstacle, you should:

- **Slow down** as much as possible before contact.
- **Make sure** the motorcycle is straight.
- **Rise slightly** off the seat with your weight on the footpegs to absorb the shock with your knees and elbows, and avoid being thrown off the motorcycle.
- **Just before contact**, roll on the throttle slightly to lighten the front end.

OBSTACLES



If you ride over an object on the street, pull off the road and check your tires and rims for damage before riding any farther.

Slippery Surfaces

Motorcycles handle better when ridden on surfaces that permit good traction. Surfaces that provide poor traction include:

• **Wet pavement**, particularly just after it starts to rain and before surface oil washes to the side of the road.

• **Gravel roads**, or where sand and gravel collect.

• **Mud, snow, and ice**.

• **Lane markings**, steel plates and manhole covers, especially when wet.

To ride safely on slippery surfaces:

• **Reduce Speed** — Slow down before you get to a slippery surface to lessen your chances of skidding. Your motorcycle needs more distance to stop. And, it is particularly important to reduce speed before entering wet curves.

• **Avoid Sudden Moves** — Any sudden change in speed or direction can cause a skid. Be as smooth as possible when you speed up, shift gears, turn or brake.

• **Use Both Brakes** — The front brake is still effective, even on a slippery surface. Squeeze the brake lever gradually to avoid locking the front wheel. Remember, gentle pressure on the rear brake.

• **The center of a lane** can be hazardous when wet. When it starts to rain, ride in the tire tracks left by cars. Often, the left tire track will be the best position, depending on traffic and other road conditions as well.

• **Watch for oil spots** when you put your foot down to stop or park. You may slip and fall.

• **Dirt and gravel** collect along the sides of the road — especially on curves and ramps leading to and from highways. Be aware of what's on the edge of the road, particularly when making sharp turns and getting on or off freeways at high speeds.

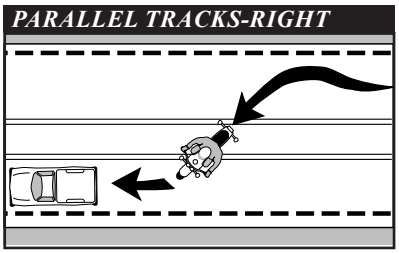
• **Rain dries and snow melts faster** on some sections of a road than on others. Patches of ice tend to crop up in low or shaded areas and on bridges and overpasses. Wet surfaces or wet leaves are just as slippery. Ride on the least slippery portion of the lane and reduce speed.

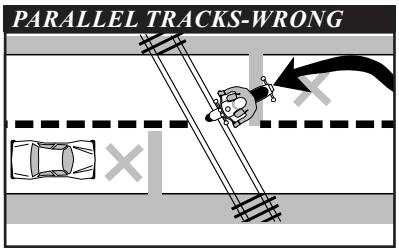
Cautious riders steer clear of roads covered with ice or snow. If you can't avoid a slippery surface, keep your motorcycle straight up and proceed as *slowly* as possible. If you encounter a large surface so slippery that you must coast, or travel at a walking pace, consider letting your feet skim along the surface. If the motorcycle starts to fall, you can catch yourself. Be sure to keep off the brakes. If possible, squeeze the clutch and coast. Attempting this maneuver at anything other than the slowest of speeds could prove hazardous.

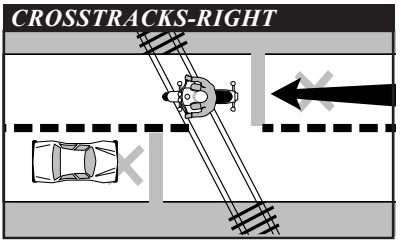
Railroad Tracks, Trolley Tracks and Pavement Seams

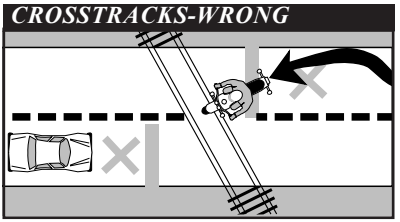
Usually it is safer to ride straight within your lane to cross tracks. Turning to take tracks head-on (at a 90° angle) can be more dangerous — your path may carry you into another lane of traffic.

For track and road seams that run parallel to your course, move far enough away from tracks, ruts, or pavement seams to cross at an angle of at least 45°. Then, make a deliberate turn. Edging across could catch your tires and throw you off balance.



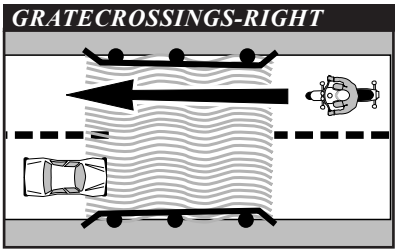


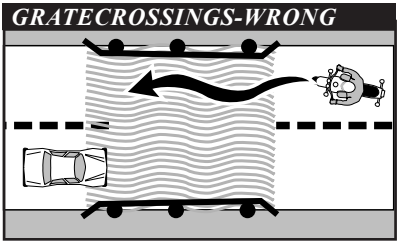




Grooves and Gratings

Riding over rain grooves or bridge gratings may cause a motorcycle to weave. The uneasy, wandering feeling is generally not hazardous. Relax, maintain a steady speed and ride straight across. Crossing at an angle forces riders to zigzag to stay in the lane. The zigzag is far more hazardous than the wandering feeling.





MECHANICAL PROBLEMS

You can find yourself in an emergency the moment something goes wrong with your motorcycle. In dealing with any mechanical problem, take into account the road and traffic conditions you face. Here are some guidelines that can help you handle mechanical problems safely.

Tire Failure

You will seldom hear a tire go flat. If the motorcycle starts handling differently, it may be a tire failure. This can be dangerous. You must be able to tell from the way the motorcycle reacts. If one of your tires suddenly loses air, react quickly to keep your balance. Pull off and check the tires.

If the front tire goes flat, the steering will feel "heavy." A front-wheel flat is particularly hazardous because it affects your steering. You have to steer well to keep your balance.

If the rear tire goes flat, the back of the motorcycle may jerk or sway from side to side.

If either tire goes flat while riding:

- **Hold handgrips** firmly, ease off the throttle, and keep a straight course.
- **If braking is required,** however, gradually apply the brake of the tire that isn't flat, if you are sure which one it is.
- **When the motorcycle slows**, edge to the side of the road, squeeze clutch and stop.

Stuck Throttle

Twist the throttle back and forth several times. If the throttle cable is stuck, this may free it. If the throttle stays stuck immediately operate the engine cut-off switch and pull in the clutch at the same time. This will remove power from the rear wheel, though engine noise may not immediately decline. Once the motorcycle is "under control," pull off and stop.

After you have stopped, check the throttle cable carefully to find the source of the trouble. Make certain the throttle works freely before you start to ride again.

Wobble

A "wobble" occurs when the front wheel and handlebars suddenly start to shake from side to side at any speed. Most wobbles can be traced to improper loading, unsuitable accessories, or incorrect tire pressure. If you are carrying a heavy load, lighten it. If you can't, shift it. Center the weight lower and farther forward on the motorcycle. Make sure tire pressure, spring pre-load, air shocks, and dampers are at the settings recommended for that much weight. Make sure windshields and fairings are mounted properly.

Check for poorly adjusted steering; worn steering parts; a front wheel that is bent, misaligned, or out of balance; loose wheel bearings or spokes; and swingarm bearings. If none of these are determined to be the cause, have the motorcycle checked out thoroughly by a qualified

Trying to "accelerate out of a wobble" will only make the motorcycle more unstable. Instead:

- **Grip the handlebars firmly**, but don't fight the wobble.
- **Close the throttle gradually** to slow down. Do not apply the brakes; braking could make the wobble worse.
- **Move your weight** as far forward and down as possible.
- **Pull off the road** as soon as you can to fix the problem.

Drivetrain Problems

A chain that slips or breaks while you're riding could lock the rear wheel and cause your cycle to skid. Chain slippage or breakage can be avoided by proper maintenance.

Slippage — If the chain slips when you try to speed up quickly or ride uphill, pull off the road. Check the chain and sprockets. Tightening the chain may help. If the problem is a worn or stretched chain or worn or bent sprockets, replace the chain, the sprockets, or both before riding again.

Breakage — You'll notice an instant loss of power to the rear wheel. Close the throttle and brake to a stop.

Engine Seizure

When the engine "locks" or "freezes" it is usually low on oil. The engine's moving parts can't move smoothly against each other, and the engine overheats. The first sign may be a loss of engine power or a change in the engine's sound. Squeeze the clutch lever to disengage the engine from the rear wheel. Pull off the road and stop. Check the oil. If needed, oil should be added as soon as possible or the engine will seize. When this happens, the effect is the same as a locked rear wheel. Let the engine cool before restarting.

ANIMALS

Naturally, you should do everything you safely can to avoid hitting an animal. If you are in traffic, however, remain in your lane. Hitting something small is less dangerous to you than hitting something big — like a car.

Motorcycles seem to attract dogs. If you are chased, downshift and approach the animal slowly. As you approach it, accelerate away and leave the animal behind. Don't kick at an animal. Keep control of your motorcycle, and look to where you want to go.

For larger animals (deer, elk, cattle) brake and prepare to stop, they are unpredictable.

FLYING OBJECTS

From time to time riders are struck by insects, cigarettes thrown from cars, or pebbles kicked up by the tires of the vehicle ahead. If you are wearing face protection, it might get smeared or cracked, making it difficult to see. Without face protection, an object could hit you in the eye, face, or mouth. Whatever happens, keep your eyes on the road and your hands on the handlebars. When safe, pull off the road and repair the damage.

GETTING OFF THE ROAD

If you need to leave the road to check the motorcycle (or just to rest for a while), be sure you:

- **Check the roadside** — Make sure the surface of the roadside is firm enough to ride on. If it is soft grass, loose sand, or if you're just not sure about it, slow way down before you turn onto it.
- **Signal** — Drivers behind might not expect you to slow down. Give a clear signal that you will be slowing down and changing direction. Check your mirror and make a head check before you take any action.
- **Pull off the road** — Get as far off the road as you can. It can be very hard to spot a motorcycle by the side of the road. You don't want someone else pulling off at the same place you are.
- **Park carefully** — Loose and sloped shoulders can make setting the side or center stand difficult.

CARRYING PASSENGERS AND CARGO

Only experienced riders should carry passengers or large loads. The extra weight changes the way the motorcycle handles, balances, turns, speeds up, and slows down. Before taking a passenger or heavy load on the street, practice away from traffic.

EQUIPMENT

To carry passengers safely:

- **Equip and adjust** your motorcycle to carry passengers.
- **Instruct the passenger** before you start.
- **Adjust your riding** technique for the added weight.

Equipment should include:

- **A proper seat** — large enough to hold both of you without crowding. You should not sit any farther forward than you usually do.
- **Footrests and Handholds** — PA law requires that any motorcycle carrying a passenger, other than in a side car or enclosed cab, must be equipped with footrests and handholds for the passenger.
- **Protective equipment** — the same protective gear recommended for operators.

Adjust the suspension to handle the additional weight. You will probably need to add a few pounds of pressure to the tires if you carry a passenger. (Check your owner's manual for appropriate settings.) While your passenger sits on the seat with you, adjust the mirrors and headlight according to the change in the motorcycle's angle.

Instructing Passengers

Even if your passenger is a motorcycle rider, provide complete instructions before you start. Tell your passenger to:

- **Get on** the motorcycle only after you have started the engine.
- **Sit as far forward** as possible without crowding you.
- **Hold firmly** to your waist, hips, or belt.
- **Keep both feet** on the pegs, even when stopped.
- **Keep legs away** from the muffler(s), chains or moving parts.
- **Stay directly behind you**, leaning as you lean.
- **Avoid unnecessary** talk or motion.

Also, tell your passenger to tighten his or her hold when you:

- **Approach** surface problems.
- **Are about to start** from a stop.
- **Warn that you** will make a sudden move.

Riding With Passengers

Your motorcycle will respond more slowly with a passenger on board. The heavier your passenger, the longer it may take to slow down, speed up, or turn — especially on a light motorcycle.

- **Ride a little slower**, especially when taking curves, corners, or bumps.
- **Start slowing earlier** as you approach a stop.
- **Open up a larger cushion** of space ahead and to the sides.
- **Wait for larger gaps** to cross, enter, or merge in traffic.

Warn your passenger of special conditions — when you will pull out, stop quickly, turn sharply, or ride over a bump. Turn your head slightly to make yourself understood, but keep your eyes on the road ahead.

Carrying Loads

Most motorcycles are not designed to carry much cargo. Small loads can be carried safely if positioned and fastened properly.

- **Keep the Load Low** — Fasten loads securely, or put them in saddle bags. Piling loads against a sissybar or frame on the back of the seat raises the motorcycle's center of gravity and disturbs its balance.
- **Keep the Load Forward** — Place the load over, or in front of, the rear axle. Tank bags keep loads forward, but use caution when loading hard or sharp objects. Make sure tank bag does not interfere with handlebars or controls. Mounting loads behind the rear axle can affect how the motorcycle turns and brakes. It can also cause a wobble.
- **Distribute the Load Evenly**— Load saddlebags with about the same weight. An uneven load can cause the motorcycle to drift to one side.
- **Secure the Load** — Fasten the load securely with elastic cords (bungee cords or nets). Elastic cords with more than one attachment point per side are more secure. A tight load won't catch in the wheel or chain, causing it to lock up and skid. Rope tends to stretch and knots come loose, permitting the load to shift or fall.

• **Check the Load** — Stop and check the load every so often to make sure it has not worked loose or moved.

GROUP RIDING

If you ride with others, do it in a way that promotes safety and doesn't interfere with the flow of traffic.

Keep the Group Small

Small groups make it easier and safer for car drivers who need to get around them. A small number isn't separated as easily by traffic or red lights. Riders won't always be hurrying to catch up. If your group is larger than four or five riders, divide it up into two or more smaller groups.

Keep the Group Together

• **Plan** — The leader should look ahead for changes and signal early so "the word gets back" in plenty of time. Start lane changes early to permit everyone to complete the change.

• **Put Beginners Up Front** — Place inexperienced riders just behind the leader. That way the more experienced riders can watch them from the back.

• **Follow Those Behind** — Let the tailender set the pace. Use your mirrors to keep an eye on the person behind. If a rider falls behind, everyone should slow down a little to stay with the tailender.

• **Know the Route** — Make sure everyone knows the route. Then, if someone is separated they won't have to hurry to keep from getting lost or taking a wrong turn. Plan frequent stops on long rides.

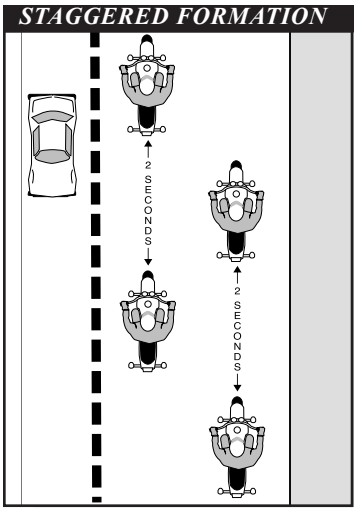
Keep Your Distance

Maintain close ranks but at the same time keep a safe distance to allow each rider in the group time and space to react to hazards. A close group takes up less space on the highway, is easier to see and is less likely to be separated. However, it must be done properly.

Don't Pair Up — Never operate directly alongside another rider. There is no place to go if you have to avoid a car or something on the road. To talk, wait until you are both stopped.

Staggered Formation — This is the best way to keep ranks close yet maintain an adequate space cushion.

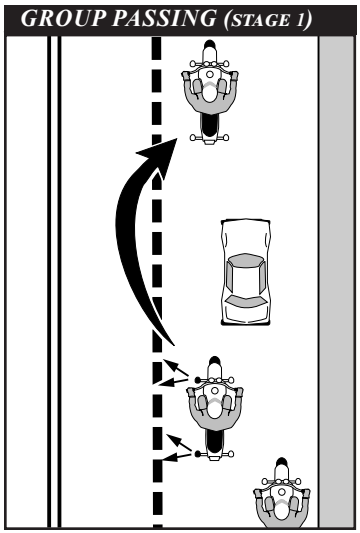
STAGGERED FORMATION



The leader rides in the left side of the lane, while the second rider stays one second behind in the right side of the lane.

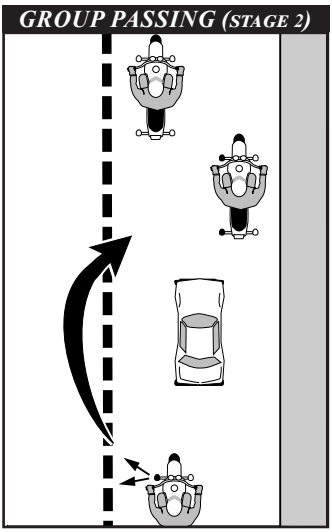
A third rider maintains in the left position, two seconds behind the first rider. The fourth rider would keep a two-second distance behind the second rider. This formation keeps the group close and permits each rider a safe distance from others ahead, behind and to the sides.

- **Passing in Formation** — Riders in a staggered formation should pass one at a time.
- **First, the lead rider should pull out** and pass when it is safe. After passing, the leader should return to the left position and continue riding at passing speed to open room for the next rider.
- **After the first rider passes safely**, the second rider should move up to the left position and watch for a safe chance to pass. After passing, this rider should return to the right position and open up room for the next rider.



Some people suggest that the leader should move to the right side after passing a vehicle. This is not a good idea. It encourages the second rider to pass and cut back in before there is a large enough space cushion in front of the passed vehicle. It's simpler and safer to wait until there is enough room ahead of the passed vehicle to allow each rider to move into the same position held before the pass.

Single-File Formation — It is best to move into a single-file formation when riding curves, turning, entering or leaving a highway.



BEING IN SHAPE TO RIDE

Riding a motorcycle is a demanding and complex task. Skilled riders pay attention to the riding environment and to operating the motorcycle, identifying potential hazards, making good judgments, and executing decisions quickly and skillfully. Your ability to perform and respond to changing road and traffic conditions is influenced by how fit and alert you are. Alcohol and other drugs, more than any other factor, degrade your ability to think clearly and to ride safely. As little as one drink can have a significant effect on your performance.

Let's look at the risks involved in riding after drinking or using drugs. What to do to protect yourself and your fellow riders is also examined.

WHY THIS INFORMATION IS IMPORTANT

Alcohol is a major contributor to motorcycle crashes, particularly fatal crashes. Studies show that 40% to 45% of all riders killed in motorcycle crashes had been drinking. Only one-third of those riders had a blood alcohol concentration above legal limits. The rest had only a few drinks in their systems — enough to impair riding skills. In the past, drug levels have been harder to distinguish or have not been separated from drinking violations for the traffic records. But riding "under the influence" of either alcohol or drugs poses physical and legal hazards for every rider.

Drinking and drug use is as big a problem among motorcyclists as it is among automobile drivers. Motorcyclists, however, are more likely to be killed or severely injured in a crash. Injuries occur in 90% of motorcycle crashes and 33% of automobile crashes that involve abuse of substances. On a yearly basis, 2,100 motorcyclists are killed and about 50,000 seriously injured in this same type of crash. These statistics are too overwhelming to ignore.

By becoming knowledgeable about the effects of alcohol and other drugs you will see that riding and substance abuse don't mix. Take positive steps to protect yourself and prevent others from injuring themselves.

ALCOHOL AND OTHER DRUGS IN MOTORCYCLE OPERATION

No one is immune to the effects of alcohol or drugs. Friends may brag about their ability to hold their liquor or perform better on drugs, but alcohol or drugs make them less able to think clearly and perform physical tasks skillfully. Judgment and the decision-making processes needed for vehicle operation are affected long before legal limitations are reached.

Many over-the-counter, prescription, and illegal drugs have side effects that increase the risk of riding. It is difficult to accurately measure the involvement of particular drugs in motorcycle crashes. But we do know what effects various drugs have on the process involved in riding a motorcycle. We also know that the combined effects of alcohol and other drugs are more dangerous than either is alone.

ALCOHOL IN THE BODY

Alcohol enters the bloodstream quickly. Unlike most foods and beverages, it does not need to be digested. Within minutes after being consumed, it reaches the brain and begins to affect the drinker. The major effect alcohol has is to slow down and impair bodily functions — both mental and physical. Whatever you do, you do less well after consuming alcohol.

Blood Alcohol Concentration

Blood Alcohol Concentration or BAC is the amount of alcohol in relation to blood in the body. Generally, alcohol can be eliminated in the body at the rate of almost one drink per hour. But a variety of other factors may also influence the level of alcohol retained. The more alcohol in your blood, the greater the degree of impairment.

Three factors play a major part in determining BAC:

- **The amount** of alcohol you consume.
- **How fast** you drink.
- **Your body** weight.

Other factors also contribute to the way alcohol affects your system. Your sex, physical condition and food intake are just a few that may cause your BAC level to be even higher. But the full effects of these are not completely known. **Alcohol may still accumulate in your body even if you are drinking at a rate of one drink per hour.** Abilities and judgment can be affected by that one drink.

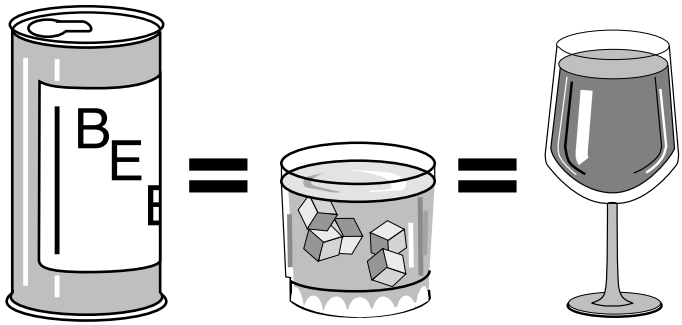
A 12-ounce can of beer, a mixed drink with one shot of liquor, and a 5-ounce glass of wine all contain the same amount of alcohol.

The faster you drink, the more alcohol accumulates in your body. If you drink two drinks in an hour, at the end of that hour, at least one drink will remain in your bloodstream.

Without taking into account any of the other factors, the formula below illustrates the **LEAST** amount of drinks remaining in the bloodstream:

Total drinks consumed	*LESS*	# hours since last drink	*EQUALS*	drinks left in body
_____	-	_____	=	_____

ALCOHOL CONTENT



A person drinking:

- **8 drinks in 4 hours** would have at least 4 drinks remaining in their system.
- **7 drinks in 3 hours** would have at least 4 drinks remaining in their system.

There are times when a larger person may not accumulate as high a concentration of alcohol for each drink consumed. They have more blood and other bodily fluids. But because of individual differences it is better not to take the chance that abilities and judgment have not been affected. Whether or not you are legally intoxicated is not the real issue. Impairment of judgment and skills begins well below the legal limit.

PENALTIES FOR DRIVING WHILE UNDER THE INFLUENCE OF ALCOHOL OR DRUGS

The penalties for driving while under the influence of alcohol or drugs are severe. In Pennsylvania you are considered to be driving "while under the influence" if your blood alcohol level is .08% or higher. For a first conviction or acceptance into an Accelerated Rehabilitation Disposition (ARD) Program, you could:

1. Lose your license.
2. Be sentenced to jail.
3. Pay fines.
4. Be ordered to undergo alcohol and drug rehabilitation treatment and/or Alcohol Highway Safety School.

Pennsylvania's Implied Consent Law

The "Implied Consent" law is very important to you as a rider. If the police arrest you for driving while under the influence of alcohol or drugs and you refuse to take one or more chemical tests of breath, blood, or urine, your driving privilege will be automatically suspended for one (1) year in addition to the driving privilege suspension imposed for a conviction or ARD for driving while under the influence. Altogether, a conviction plus refusal could result in a two (2) year driving privilege suspension.

The law covering chemical testing says that you have agreed to take such a test just by being licensed to drive in Pennsylvania. Even if you are not found guilty of driving while under the influence, your driving privilege will be suspended for one (1) year if you refuse to take a blood, breath, or urine test.

MINIMIZE THE RISKS

Your ability to judge how well you are riding is affected first. Although you may be performing more and more poorly, you think you are doing better and better. The result is that you ride confidently, taking greater and greater risks. Minimize the risks of drinking and riding by taking steps before you drink. Control your drinking or control your riding.

MAKE AN INTELLIGENT CHOICE

Don't Drink — Once you start, your resistance becomes weaker.

Setting a limit or pacing yourself are poor alternatives at best. Your ability to exercise good judgment is one of the first things affected by alcohol. Even if you have tried to drink in moderation, you may not realize to what extent your skills have suffered from alcohol's fatiguing effects.

Or, Don't Ride — If you haven't controlled your drinking, you must control your riding.

- **Leave the motorcycle home** — so you won't be tempted to ride. Arrange another way to get home.
- **Wait** — If you exceed your limit, wait until your system eliminates the alcohol and its fatiguing effects.

STEPS TO PROTECT FRIENDS

People who have had too much to drink are unable to make a responsible decision. It is up to others to step in and keep them from taking too great a risk. No one wants to do this — it's uncomfortable, embarrassing and thankless. You are rarely thanked for your efforts at the time. But the alternatives are often worse.

There are several ways to keep friends from hurting themselves:

- **Arrange a safe ride** — Provide alternative ways for them to get home.
- **Slow the pace of drinking** — Involve them in other activities.
- **Keep them there** — Use any excuse to keep them from getting on their motorcycle. Serve them food and coffee to pass the time. Explain your concerns for their risks of getting arrested or hurt, or hurting someone else.
- **Get friends involved** — Use peer pressure from a group of friends to intervene.

It helps to enlist support from others when you decide to step in. The more people on your side, the easier it is to be firm and the harder it is for the rider to resist. While you may not be thanked at the time, you will never have to say, "If only I had."

FATIGUE

Riding a motorcycle is more tiring than driving a car. On a long trip, you'll tire sooner than you would in a car. Avoid riding when tired. Fatigue can affect your control of the motorcycle.

- **Protect yourself** from the elements — Wind, cold, and rain make you tire quickly. Dress warmly. A windshield is worth its cost if you plan to ride long distances.
- **Limit your distance** — Experienced riders seldom try to ride more than about six hours a day.
- **Take frequent rest breaks** — Stop, and get off the motorcycle at least every two hours.
- **Don't drink or use drugs** — Artificial stimulants often result in extreme fatigue or depression when they start to wear off. Riders are unable to concentrate on the task at hand.

EARNING YOUR LICENSE

If you wish to operate a motorcycle or a motor-driven cycle, you must get a Class M learner's permit before you can learn to drive. A Class M permit allows you to drive only between sunrise and sunset. All applicants with a permit must wear a helmet and eye protection. Class M learners shall not carry any passengers other than a properly licensed instructor.

To earn your license, you must pass a knowledge test and an on-cycle skill test. Knowledge test questions are based on information, practices, and ideas from this manual. They require that you know and understand road rules and safe riding practices. An on-cycle skill test will either be conducted in an actual traffic environment or in a controlled, off-street area.

If you test on a motorcycle that is 5 brake horsepower or less, an "8" restriction will appear on your motorcycle license. This restriction prohibits you from operating a motorcycle of more than 5 brake horsepower. If you test on a motorcycle that has more than 2 wheels, a "9" restriction will appear on your driver's license. This restriction prohibits you from operating a two-wheeled motorcycle. To have the "8" or "9" removed, contact PennDOT at 717-412-5300.

If you are under 18, you must wait the mandatory 6 months from your permit issue date and have a signed Certificate of Completion for the 65 hours of skill-building before taking your road test. Additionally, you must take and successfully complete the Pennsylvania Motorcycle Safety Basic Rider Course before you can receive your Class M license. Please note that the 15 hours of training obtained through the Basic Rider Course can be utilized in meeting counts toward the 65 hours of skill-building requirement.

Please note that you may reapply for a motorcycle leaner's permit no more than three times in a five-year period (4 total leaner's permits within 5 years) and with each reapply, you must successfully pass the motorcycle knowledge test.

KNOWLEDGE TEST – *SAMPLE QUESTIONS*

1.

When adjusting your mirrors to carry a passenger, the passenger should:

A. Stand behind the motorcycle.
B. Sit on the seat with you.
C. Adjust the mirror while you sit on the motorcycle.
D. Stand beside the motorcycle in the blind spot.

2.

A passenger should:

A . Hold onto the seat strap.
B. Hold onto the side of the seat.
C. Hold onto the operator's waist.
D Not ride without a backrest.

3.

When the motorcycle is stopped at an intersection, a passenger should:

A. Keep both feet on the foot pegs.
B. Place one foot on the ground.
C. Place both feet on the ground.
D. Move back on the seat.

4.

When carrying a passenger:

A. You will have more balance.
B. You will be able to slow more quickly.
C. It will take longer to accelerate and slow down.
D. You will have less chance of skidding.

5.

When riding with passengers, you should:

A. Start slowing sooner.
B. Use only your front brake to slow.
C. Never talk to them.
D. Start in the center of the lane.

6.

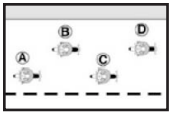
When carrying loads:

A. Keep the load behind the rear axle.
B. Secure the load with a rope.
C. Fasten the load against the frame on the back of the seat.
D. Keep the load low and as far forward as possible.

7.

A group of riders move from a staggered formation into a single file when:

A. Riding at night.
B. Traffic is heavy.
C. Stopping at intersections.
D. Turning corners.

8. 

In this picture, riders are in a staggered formation. The following distance between A and C should be at least:

A. Four seconds.
B. One second.
C. One car length.
D. Two seconds.

9.

Riders in a staggered formation will be passing a car. After the lead rider passes, he/she should:

A. Return to the right portion of the lane.
B. Return to the center portion of the lane.
C. Return to the left portion of the lane.
D. Signal the others to follow.

10.

Alcohol enters the bloodstream and quickly reaches the brain. What is affected first?

A. Judgment.
B. Speech.
C. Balance.
D. Vision.

11.

Alcohol first affects your:

A. Vision.
B. Speech.
C. Judgment.
D. Balance.

12.

Approximately half of all motorcycle crash fatalities are caused by:

A. Road conditions.
B. The rider's helmet.
C. Alcohol Impairment.
D. Mechanical Failure.

13.

If you don't control your drinking:

A. Ride slower.
B. Allow at least an hour for each drink before riding.
C. Exercise or dance to wear the drinks off.
D. Drink hot coffee to be alert

14.

Studies show that almost half of all riders killed in motorcycle crashes:

A. Had poor eyesight.
B. Had been drinking.
C. Were speeding.
D. Were unskilled.

15.

The ability to think clearly and ride safely is affected by as little as:

A. 1 drink.
B. 6 drinks.
C. 3 drinks.
D. 2 drinks.

16.

If you drink 4 typical drinks, what is the least amount of alcohol remaining in your body after 2 hrs?

A. 2 drinks.
B. 3 drinks.
C. 1 drink.
D. 4 drinks.

17.

For greatest safety, your helmet should:

A. Fit tightly at the base; loosely at the top.
B. Fit loosely all the way around.
C. Fit snugly all the way around.
D. Be worn only on long rides.

18.

The single most important thing you can do to improve your chances of surviving a crash is to:

A. Lay the motorcycle down before hitting an obstacle.
B. Wear a securely fastened helmet.
C. Be familiar with the motorcycle.
D. Ride in the center portion of the lane.

19.

Wearing a helmet can reduce the chance of a fatal head injury in:

A. Low-speed crash only.
B. Single – vehicle crashes only.
C. Any crash, regardless of speed.
D. High-speed crash only.

20.

Wearing a helmet will:

A. Reduce your chances of neck and head injuries.
B. Increase your chances of a neck injury.
C. Reduce your vision by two-thirds.
D. Neither reduce nor increase your chances of a head injury.

21.

Of the following, which one gives the most eye and face protection while riding?

A. Goggles.
B. A windshield.
C. A faceshield.
D. Sunglasses.

22.

While riding an unfamiliar motorcycle:

A. Do not shift above third gear.
B. Stay in the right portion of the lane.
C. Have the owner ride with you.
D. Allow extra room for stopping

23.

The engine cut-off switch is usually located:

A. Near the clutch.
B. On the left handlebar.
C. Near the right hand grip.
D. On the top of the gas tank.

24.

With a properly adjusted mirror you can see:

A. The lane beside you.
B. The lane behind you.
C. Part of the lane beside you and behind you.
D. Everything behind and to the side.

25.

When slowing for a normal stop:

A. Use only the rear brake.
B. Use less throttle and the front brake only.
C. Shift down through the gears as you slow.
D. Pull in the clutch and coast.

26.

When turning, you should:

A. Watch the center line.
B. Look straight ahead.
C. Look at the guard rail.
D. Look through the turn.

27.

Which one of the following statements is correct:

A. Press left, lean left, go right.
B. Press left, lean left, go left.
C. Press left, lean right, go right.
D. Press right, lean right, go left.

28.

While in a turn, it is best to:

A. Maintain a steady speed or gradually accelerate.
B. Slow down.
C. Use your brakes.
D. Accelerate and look straight ahead.

29.

If you need to slow down while turning:

A. Apply the rear brake, and lean farther into the turn.
B. Never apply the brakes.
C. Use caution, apply both brakes.
D. Apply the rear brake only.

30.

To make a normal stop, use:

A. The rear brake first.
B. Both brakes, and downshift.
C. The front brake and downshift.
D. The rear brake only.

31.

Your motorcycle has two brakes. Use both brakes:

A. Only for emergency stops.
B. While swerving.
C. Every time you slow or stop.
D. Only for normal stops.

32.

In a normal turn:

A. Lean your motorcycle more than your body.
B. Lean your motorcycle and your body at the same angle.
C. Do not lean.
D. Lean your body more than you motorcycle.

33.

In slow tight turns:

A. Lean the motorcycle only, and keep your body straight.
B. Lean your body more than the motorcycle.
C. Lean with the motorcycle.
D. Do not lean.

34.

To reduce speed before turning:

A. Shift to neutral.
B. Pull in the clutch and use both brakes.
C. Apply the rear brake only.
D. Close the throttle and apply both brakes.

35.

When turning, it is important to:

A. Look straight ahead.
B. Slow after starting into the turn.
C. Reduce speed coming out of the turn.
D. Look through the turn to where you want to go.

36.

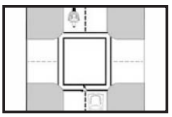
It is important to search the road for escape routes:

A. Though alleyways.
B. At intersections.
C. When riding a borrowed motorcycle.
D. On curves.

37.

To make good judgments in traffic, you need to first:

A. Be able to swerve.
B. Search ahead.
C. Watch for pedestrians.
D. Know how to stop quickly.

38. 

The car driver is signaling for a left turn. The rider should:

A. Hold speed and center lane position.
B. Slow and move away from approaching vehicles.
C. Increase speed and move left.
D. Increase speed and stay in the center of the lane.

39.

You should make a special point of checking traffic to the rear:

A. Before starting into a curve.
B. When you approach an intersection.
C. When carrying a passenger.
D. Before slowing.

40.

When preparing to pass, it is usually better to:

A. Signal–Check your left mirror – look left.
B. Signal–Move into left lane – accelerate.
C. Signal–Check your left mirror.
D. Signal–Check your left mirror – speed up.

41.

Riding in the center lane position:

A. Keeps others from seeing you.
B. Is safest place when approaching intersections.
C. Keeps others from sharing your lane.
D. Should be avoided if possible.

42.

To discourage other drivers from sharing your lane, it is usually best to:

A. Ride in the left portion of your lane.
B. Ride in the center portion of your lane.
C. Ride next to another vehicle.
D. Ride in the right portion of your lane.

43.

Keeping a cushion of space around your motorcycle:

A. Is only necessary for beginning motorcyclists.
B. Allows you time and space to react.
C. Allows you to weave through traffic when you need to.
D. Makes you more vulnerable.

44.

To spot approaching traffic and maintain a space cushion in the illustration above:

A. Ride in the center of the lane.
B. Move right and lean away from the turn.
C. Do not lean.
D. Ride in the left portion of the lane.

45.

You plan to make a right turn after stopping at an intersection. Usually it is best to:

A. Let the traffic coming from behind pass around you.
B. Turn from the center portion of the lane.
C. Turn from the right portion of the lane.
D. Turn from the left portion of the lane.

46.

Following close to vehicles in front of you:

A. Helps you see hazards in the road.
B. Is safer at night.
C. Protects you in heavy traffic.
D. Is a factor in crashes caused by motorcyclists.

47.

When following a car, you should try to:

A. Ride where the driver can see you in the rear-view mirror.
B. Ride next to another car to be more visible.
C. Ride in the left side of the lane.
D. Ride in the right side of the lane

48.

At intersections, the most common cause of motorcycle/car crashes is:

A. Drivers entering a rider's right of way.
B. Riders not seeing drivers enter from side streets.
C. Drivers tailgating riders.
D. Riders not yielding to oncoming traffic.

49.

Car/Motorcycle crashes are most common:

A. At intersections.
B. At night.
C. When the rider is speeding.
D. On freeways.

50.

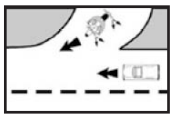
Making eye contact with a driver at an intersection:

A. Is a sure sign that the driver will probably yield.
B. Is important if the driver is pulling out from a side street.
C. Does not mean that the driver sees you.
D. Confuses them.

51.

The greatest danger for a rider when passing parked cars is:

A. A car backing into a parking space.
B. A car pulling out.
C. A car door being opened.
D. Someone stepping from between cars.

52. 

In this picture, the light most likely to make the motorcycle noticeable to the car driver is the:

A. Brake light.
B. Taillight.
C. Headlight.
D. Turn signal.

53.

When riding in traffic at night, the best way to locate bumps in the road is to;

A. Look over the cars ahead.
B. Put your headlights on high beam.
C. Read the road signs.
D. Watch the taillights of the car ahead.

54.

The best way to help others see your motorcycle is to:

A. Ride in the left portion of the lane.
B. Wear a white helmet.
C. Stay in the center portion of the lane.
D. Ride with your headlight turned on.

55.

Not turning off a turn signal is most likely to:

A. Encourage other drivers to pull into your path.
B. Keeps others from noticing your brake light.
C. Reduces your chances of a crash because other drivers stay clear.
D. Encourage others to follow you too closely.

56.

Make a special point to use your mirrors:

A. On long trips.
B. When riding through an intersection.
C. When following a vehicle.
D. Before slowing or stopping

57.

Before changing lanes to the left:

A. Check your left mirror; and look to the left.
B. Check the right mirror, then the left mirror.
C. Check the left mirror, then the right mirror.
D. Use your horn and speed up.

58.

The best gear to wear to be seen at night is:

A. Fluorescent clothing.
B. A white helmet.
C. Reflective clothing.
D. A red jacket.

59.

To see better when following a car at night:

A. Increase your following distance and use your low beam.
B. Use the headlights of the vehicle ahead.
C. Pass when safe and use your high beam.
D. Drop far back and use your high beam.

60.

When riding at night:

A. Always ride in the center lane.
B. Ride with flashers on.
C. Wear reflective clothing.
D. Follow closer to the vehicle ahead for safety.

61.

If you lock the front tire when stopping:

A. Release the rear brake.
B. Keep the front brake locked until fully stopped.
C. Keep both brakes locked.
D. Release and reapply the front brake.

62.

In the picture above, the rear wheel locks while trying to stop quickly. It is usually best to:

A. Maintain position and release the rear brake.
B. Lean the motorcycle and release the rear brake.
C. Release front brake and keep rear brake locked.
D. Keep the rear wheel locked until stopped.

63.

When swerving, it is important to:

A. Always brake before swerving.
B. Separate braking from swerving.
C. Always brake after swerving.
D. Swerve in the direction the hazard is traveling.

64.

To ride over metal bridge gratings:

A. Ride straight across.
B. Weave (zig-zag) across.
C. Cross at a sharp angle without changing lanes.
D. Speed up.

65.

To ride over an object on the road:

A. Stay seated until you have crossed it.
B. Rise slightly off the seat.
C. Edge across it.
D. Grip the gas tank with your knees.

66.

When riding over an obstacle, it is usually best to:

A. Keep a normal seat position.
B. Rise slightly off the seat.
C. Grip the gas tank with your knees.
D. Lean forward as much as possible.

67.

On a paved, two-lane road, sand and gravel are most likely to collect:

A. In the left wheel track.
B. Near to center of the road.
C. Near the sides of the road.
D. In the center of the lane.

68.

On a wet road, it will usually be most slippery:

A. On loose gravel.
B. In the left wheel track.
C. In the right wheel track.
D. In the center portion of the lane

69.

To handle a slippery surface, it is best to:

A. Use the rear brake lightly while crossing.
B. Slow down before reaching it.
C. Gradually accelerate.
D. Downshift when you reach it.

70.

To stop on wet pavement:

A. Apply the front brake only if the wheel begins to slide.
B. Coast to a stop.
C. Apply the rear brake only.
D. Apply the front and rear brakes together.

71.

When riding where sand and gravel have collected on paved roads, you should:

A. Downshift and use more throttle.
B. Pull in the clutch.
C. Only use the rear brake to slow down.
D. Avoid sudden changes in speed or direction.

72.

If the rear tire goes flat:

A. You will not be able to maintain control.
B. You will lose power to the rear wheel.
C. The back of the motorcycle will jerk from side to side.
D. The steering will feel heavy.

73.

If you have a flat tire while riding, hold the handle grips firmly and:

A. Gently apply both brakes.
B. Use the brake of the good tire or avoid braking.
C. Continue to the nearest repair facility.
D. Use only the brake that controls the flat tire.

74.

When the front tire goes flat while riding:

A. Apply the front brake.
B. You will not be able to control the motorcycle.
C. Apply rear brake and steer to the the edge of the road.
D. Steer to the right & apply both brakes.

75.

When the front tire goes flat:

A. The steering will feel heavy.
B. It has no effect on handling.
C. The back of the motorcycle will jerk from side to side.
D. You will lose power to the brakes.

76.

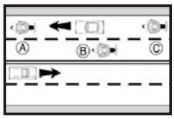
If your throttle sticks:

A. Squeeze the clutch and use engine cut-off switch.
B. Shift to neutral and apply both brakes.
C. Downshift and apply both brakes.
D. Apply the front brake.

77.

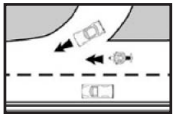
In the picture above, it is usually best to:

A. Speed up to get by quickly.
B. Ride in position 3.
C. Ride in position 1.
D. Ride in position 2 or 3.

78. 

In this picture, A, B, and C are riding as a group. To pass, rider B should:

A. Complete the pass in front of A.
B. Pass with C.
C. Return to the lane and ride next to A.
D. Return to the right portion of the lane behind A.

79. 

To create more space in the situation pictured above, you should:

A. Ride in the right portion of the lane.
B. Adjust speed and stay in the center of the lane.
C. Move to the left lane.
D. Pass the car on your left.

80.

Most motorcycle/car crashes:

A. Occur because a car driver pulls into the path of the motorcycle.
B. Result in minor injuries.
C. Occur because a motorcyclist turns left in front of a vehicle.
D. Occur because of speeding.

81.

You are preparing to move to the left lane, as pictured above. To spot cars passing beside you, it is best to:

A. Slow and look in the left mirror.
B. Look in the left mirror.
C. Speed up and look in the left mirror.
D. Turn your head to the left.

82.

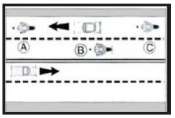
To adjust for traffic and avoid debris in the curve pictured, ride:

A. In position 3.
B. In position 2.
C. Without leaning.
D. In position 1.

83.

To cross tracks that run parallel to your course:

A. Edge gradually across.
B. Move into the opposing lane to cross at a 90-degree angle.
C. Wait for the tracks to end.
D. Move away, then turn and cross at an angle of at least 45 degrees.

84. 

In this picture, the rider in the most dangerous position is:

A. Rider B.
B. Rider C.
C. Rider A.
D. None.

Answer Key

1. B - page 31
2. C - page 32
3. A - page 33
4. C - page 32
5. A - page32
6. D - page32
7. D - page34
8. D - page33
9. C - page34
10. A - page 38
11. C - page38
12. C - page35
13. B - page38
14. B - page35
15. A - page 35
16. A - page 36
17. C - page4
18. B - page3
19. C - page3
20. A - page 3
21. C - page4
22. D - page7
23. C - page6
24. C - page7
25. C - page9
26. D - page10
27. B - page10
28. A - page 11
29. C - page10
30. B - page10
31. C - page10
32. B - page11
33. A - page 11
34. D - page10
35. D - page10
36. B - page16
37. B - page16
38. B - page18
39. D - page21
40. A - page 14
41. C - page15
42. B - page15
43. B - page11
44. A - page 26
45. B - page15
46. D - page12
47. A - page 13
48. A - page 17
49. A - page 17
50. C - page17
51. B - page19
52. D - page21
53. D - page23
54. D - page20
55. A - page 21
56. D - page21
57. A - page 22
58. C - page23
59. B - page23
60. C - page23
61. D - page23
62. D - page 23
63. B - page25
64. A - page 28
65. B - page27
66. B - page27
67. C - page27
68. D - page27
69. B - page27
70. D - page27
71. D - page27
72. C - page29
73. B - page29
74. C - page29
75. A - page 29
76. A - page 29
77. D - page12
78. D - page34
79. B - page15
80. A - page 17
81. D - page22
82. B - page26
83. D - page28
84. A - page 12

General Tips for Riding a Motorcycle Safely

Motorcycle safety is a growing concern, not only in the Commonwealth, but Nationwide. More and more people are turning to motorcycles as their primary mode of transportation. When ridership increases, risk increases. Below are a few tips that can improve your level of safety:

- **Be Safe.**
- Conduct a pre-ride check to identify any mechanical defects that could jeopardize your safety.

- **Be Visible.**
- Signal your intentions.
- Make sure your headlight works and is on day and night.
- Use reflective strips or decals on your clothing and on your motorcycle.
- Flash your brake lights when you are slowing down and before stopping.

- **Dress for Safety.**
- Wear a D.O.T. approved helmet and eye protection.
- Wear bright colored clothing, over the ankle foot protection, long pants, long-sleeved shirt, and full-fingered gloves.

- **Use Common Sense.**
- Keep a safe distance from other motorists and give yourself enough time to react to dangerous situations.
- Use lane positioning to be seen; ride in part of the lane where you are most visible.
- Avoid weaving between lanes.

- **Ride Unimpaired.**
- Don’t ride when you are tired or under the influence of alcohol or other drugs.
- If someone has had too much to drink, intervene.

- **Be Courteous and Responsible.**
- Respect other drivers.
- Don’t speed; know the local traffic laws and rules of the road.

- **Be Prepared. Practice.**
- Develop your riding techniques before going into heavy traffic.
- Know how to handle your bike in conditions such as wet or sandy roads, high winds, and uneven surfaces.
- See back cover for more information about Pennsylvania’s free Motorcycle Safety Program.

pennsylvania
MOTORCYCLE SAFETY PROGRAM

Free Rider Training Courses for Pennsylvania Residents with a Class M License or Permit

- The Basic Rider Course course lasts 15 hours, and is suitable for beginners and intermediate/advanced riders. Students are supplied with a motorcycle and a helmet to be used during the training course. Students on a learner's permit who successfully complete the course will be issued a motorcycle license.
- The Basic Rider Course 2 is a one-day course designed for riders who already have experience riding a motorcycle. Students on a learner's permit who sucessfully complete the course will be issued a motorcycle license. Participants use their own motorcycles. Clubs and groups are welcome.
- The 3-Wheel Basic Rider Course is similar to the Basic Rider Course except the training is completed on a 3-wheel motorcycle. Students on a learner's permit who successfully complete the course will be issued a motorcycle license with a 9 restriction, which prohibits the rider from operating a 2-wheel motorcycle. The course lasts 12 hours and participants must use their own 3-wheel motorcycle.
- The Advanced Rider Course is a one-day course geared toward experienced riders who already have their motorcycle license. This one-day course provides rider development in the areas of risk management, decision-making, riding strategies, and rider behavior and choices. Participants use their own motorcycle. Please note that this is not a licensing course.

Courses are offered at various locations throughout Pennsylvania.

For information and schedules log onto: www.pamsp.com
or call **1-800-845-9533**

*HAVE YOUR LICENSE NUMBER READY FOR REGISTRATION.
TTY callers - please dial 711 to reach us.

Looking for a part-time career in the motorcycle industry with excellent pay, flexible hours and FUN? Become a RiderCoach and start the most rewarding ride of your life. Log onto www.pamsp.com to view an online application today.

THIS PUBLICATION IS NOT FOR SALE

Courses Conducted April through October

NOTE: PEAK TIMES ARE APRIL THROUGH JUNE. MORE CLASSES ARE AVAILABLE LATER IN THE SEASON.