
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. 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 handlegrips firmly to keep your grip over rough surfaces. Start with your right wrist flat. This will help you keep from accidentally using too much
- **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 footrests 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 footrests.

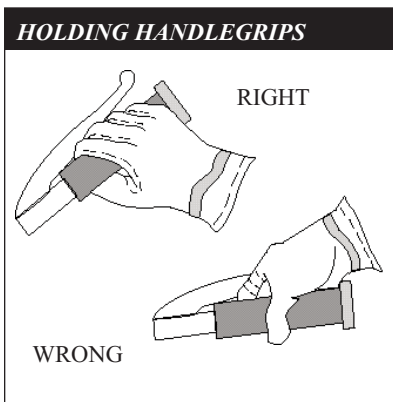
SHIFTING GEARS

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.

BODY POSITION

SHIFTING GEARS



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 activate 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.

Use four steps for better control:

- **SLOW**
- **LOOK**
- **PRESS**
- **ROLL**

SLOW — Reduce speed before the turn by closing the throttle and, if necessary, applying both brakes.

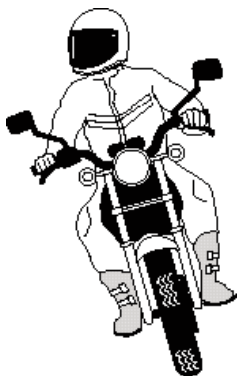
LOOK — Look through the turn to where you want to go. Turn just your head, not your shoulders, and keep your eyes level with the horizon.

PRESS — To turn, the motorcycle must lean. To lean the motorcycle, press on the handgrip in the direction of the turn. Press left — lean left — go left. Press right — lean right — go right. Higher

speeds and/or tighter turns require the motorcycle to lean more.

ROLL — Roll on the throttle through the turn to stabilize the suspension. Maintain steady speed or accelerate gradually through the turn. This will help keep the motorcycle stable.

NORMAL TURNS



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

SLOW, TIGHT TURNS



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

3

Test Yourself

When riding, you should:

- A. Turn your head and shoulders to look through turns.
- B. Keep your arms straight.
- C. Keep your knees away from the gas tank.
- D. Turn just your head and eyes to look where you are going.

Answer — page 40

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 permits you:

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

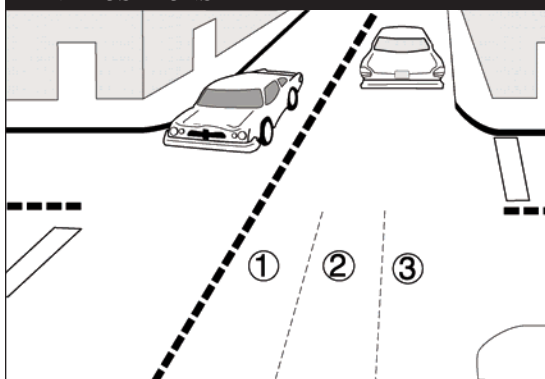
LANE POSITIONS

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.

LANE POSITIONS



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

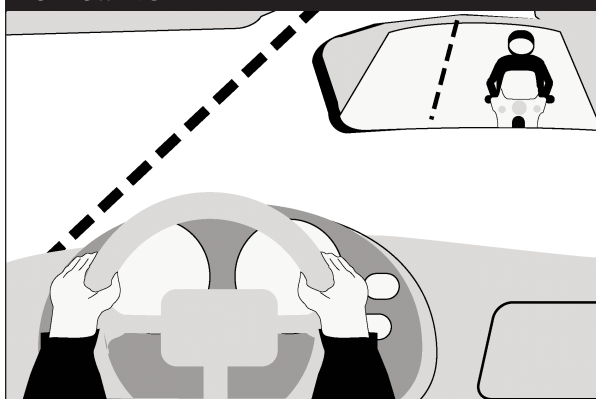
“Following too closely” could be a factor in crashes involving motorcyclists. In traffic, motorcycles need as much distance to stop as cars. Normally, a **minimum of two seconds** distance should be maintained behind the vehicle ahead.

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.”
- **If you reach the marker** before you reach “two,” you are following too closely.

A two-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.

FOLLOWING



BEING FOLLOWED

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 three 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,

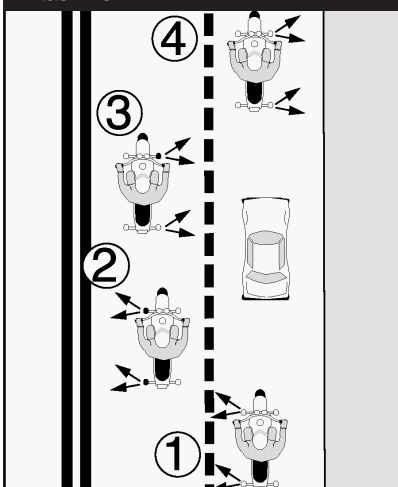
stay in the center portion of your lane. Riding any closer to them could put you in a hazardous situation.

Avoid being hit by:

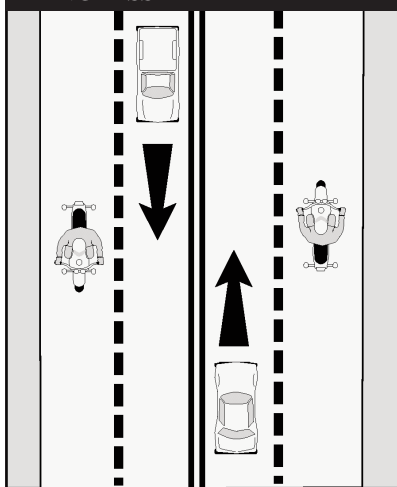
- **The other vehicle** — A slight mistake by you or the passing driver could cause a sideswipe.
- **Extended mirrors** — Some drivers forget that their mirrors hang out farther than their fenders.
- **Objects thrown from windows** — Even if the driver knows you're there, a passenger may not see you 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.

PASSING



BEING PASSED



LANE SHARING

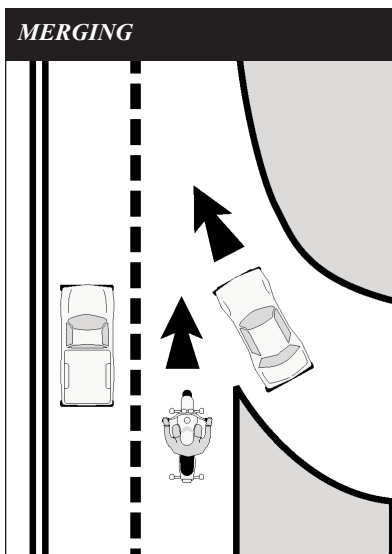
Cars and motorcycles need a full lane to operate safely. Lane sharing is usually prohibited.

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 moving into an exit lane or leaving a highway.

MERGING CARS

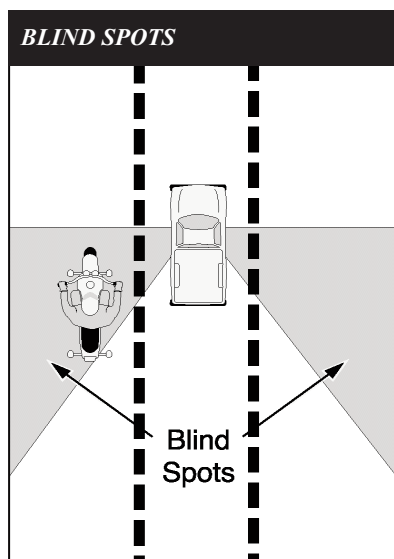
Drivers on an entrance ramp may not see you on the highway. Give them plenty of room. Change to another lane if one is open. If there is



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.



4

Test Yourself

Usually, a good way to handle tail-gaters is to:

- Change lanes and let them pass.
- Use your horn and make obscene gestures.
- Speed up to put distance between you and the tailgater.
- Ignore them.

Answer — page 40

SEE

Good experienced riders remain aware of what is going on around them. They improve their riding strategy by using SEE, a three-step process used to make appropriate judgments, and apply them correctly in different traffic situations:

- **Search**
- **Evaluate**
- **Execute**

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, school and construction zones.

Search for factors such as:

- **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 risks for you. Anticipate potential problems and have a plan to reduce risks.

- **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. Weigh the consequences of each and give equal distance to the hazards.

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

5

Test Yourself

To reduce your reaction time, you should:

- A. Ride slower than the speed limit.
- B. Cover the clutch and the brakes.
- C. Shift into neutral when slowing.
- D. Pull in the clutch when turning.

Answer — page 40

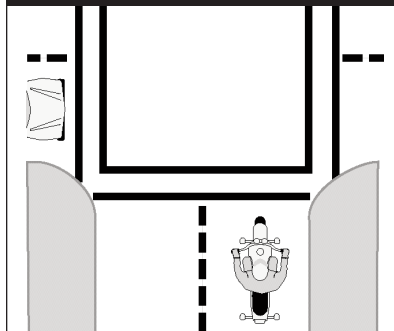
INTERSECTIONS

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. 17] at intersections is critical.

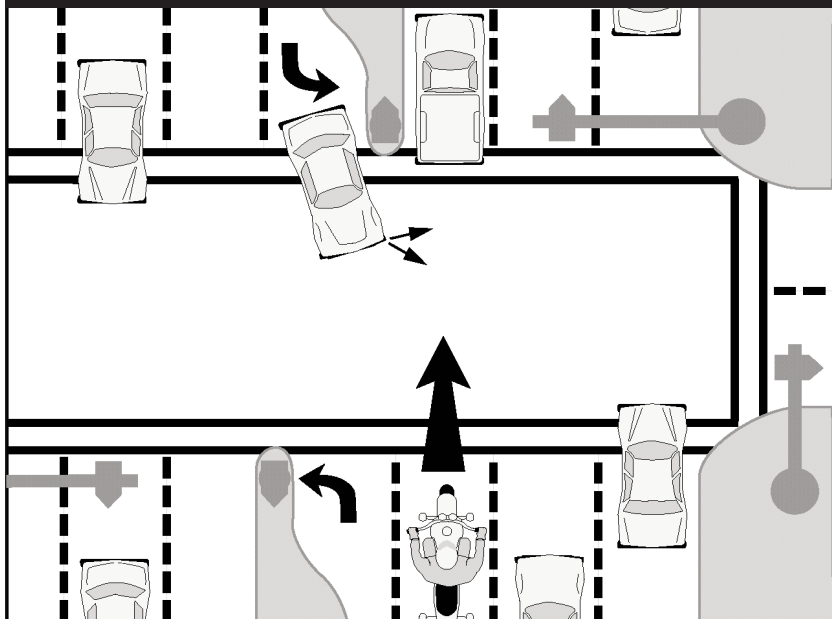
There are no guarantees that others see you. Never count on “eye contact” as a sign that a driver will yield. Too often, a driver looks right at a motorcyclist and still fails to “see” him. The only eyes that you can count on are your own. If a car can enter your path, assume that it will. Good riders 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 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.

SMALL INTERSECTIONS



LARGE INTERSECTIONS



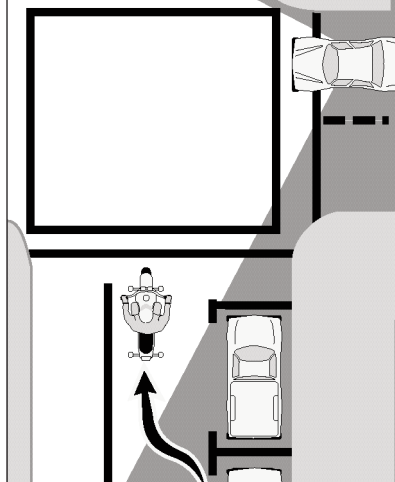
As you approach the intersection, select a lane position to increase your visibility to the driver. Cover the clutch and both brakes to reduce reaction time.

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.

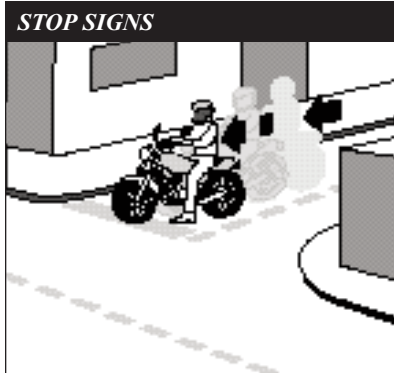
BLIND INTERSECTIONS

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.

BLIND INTERSECTIONS



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



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.

6

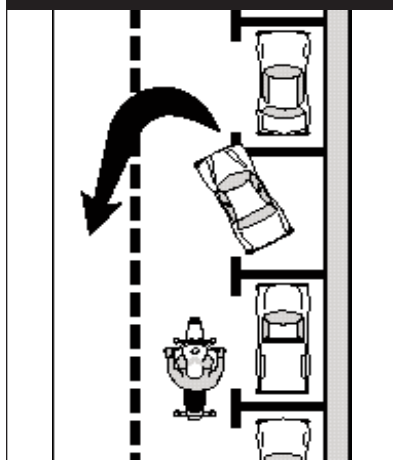
Test Yourself

Making eye contact with other drivers:

- Is a good sign they see you.
- Is not worth the effort it takes.
- Doesn't mean that the driver will yield.
- Guarantees that the other driver will yield to you.

Answer — page 40

PARKED CARS



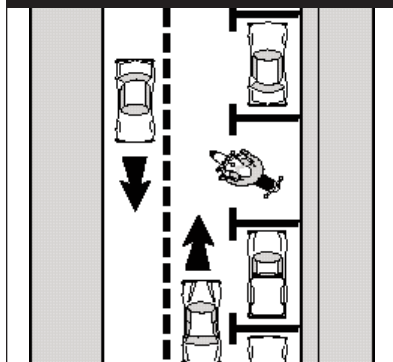
In either event, the driver might cut into your path. Slow down or change lanes to make room for someone cutting in.

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 a 90° 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 motorcycle.

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.

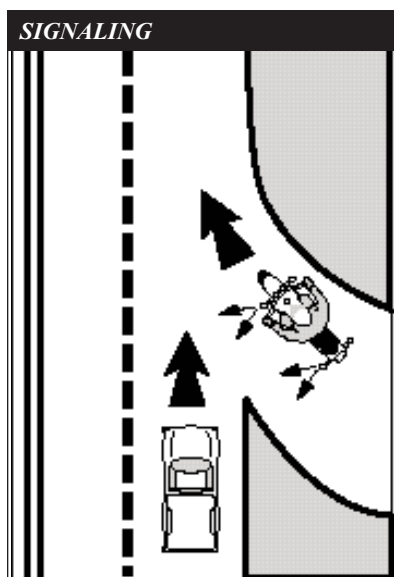
HEADLIGHT

The best way to help others see your motorcycle is to keep the headlight on — **at all times** (although motorcycles sold in the U.S. since 1978 automatically have the headlights on when running.) Studies show that, during the day, a motorcycle with its light on is twice as likely to be noticed. Use low beam at night and in fog.

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



CLOTHING

LIGHTS

SIGNALS

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 onto 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. (It 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 brake light 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).

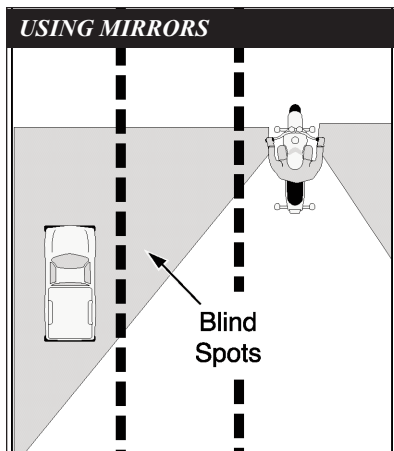
If you are being followed closely, it's a good idea to flash your brake light before you slow. The tailgater may be watching you and not see something ahead that will make you slow down. This will hopefully discourage them from tailgating and warn them of hazards ahead they may not see.

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 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 which skill is 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, you can keep it locked until you have completely stopped. Even with a locked rear wheel, you can control the motor-

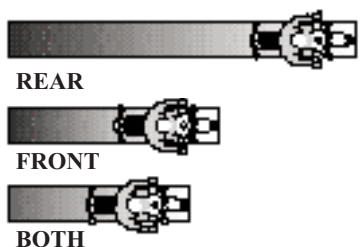
7

Test Yourself

Reflective clothing should:

- Be worn at night.
- Be worn during the day.
- Not be worn.
- Be worn day and night.

Answer — page 40

STOPPING DISTANCE

cycle 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 bike 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

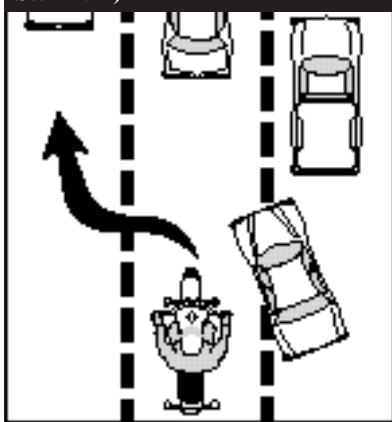
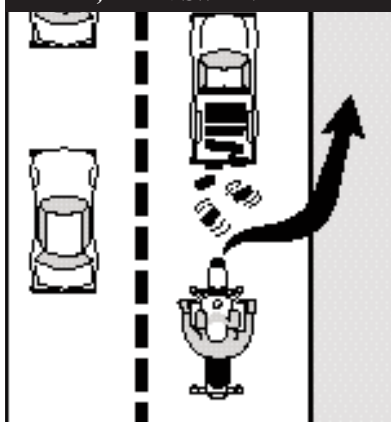
pressure is possible. You should “straighten” the handlebars in the last few feet of stopping, the motorcycle should then be straight up and in balance.

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 hand 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

SWERVE, THEN BRAKE**BRAKE, THEN SWERVE**

feet solidly on the footrests. 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

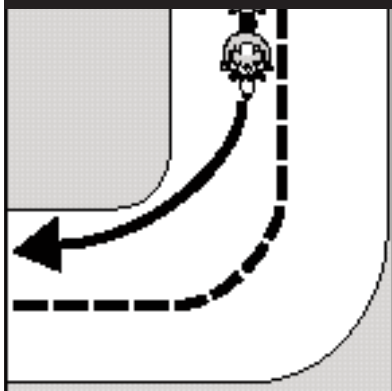
A primary cause of single-vehicle crashes is motorcyclists running wide in a curve or turn and colliding with the roadway or a fixed object.

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

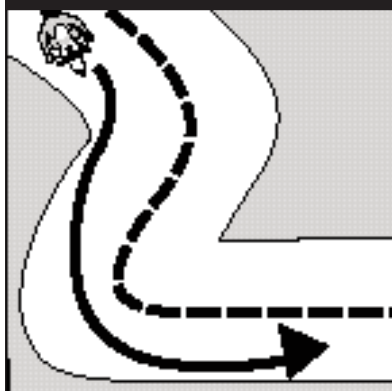
Ride within your skill level and posted speed limits.

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.

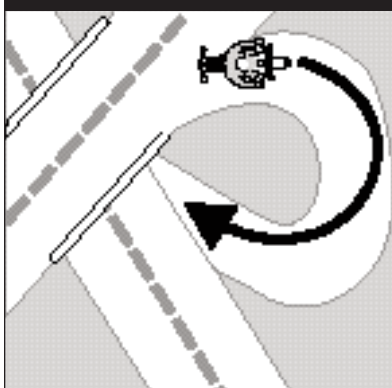
CONSTANT CURVES



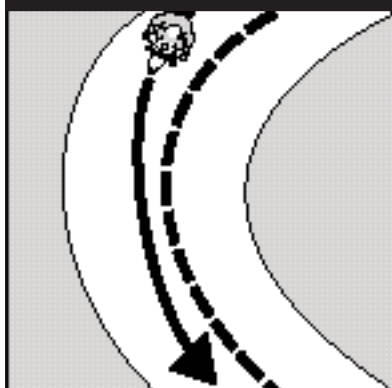
MULTIPLE CURVES



DECREASING CURVES



WIDENING CURVES



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.

8

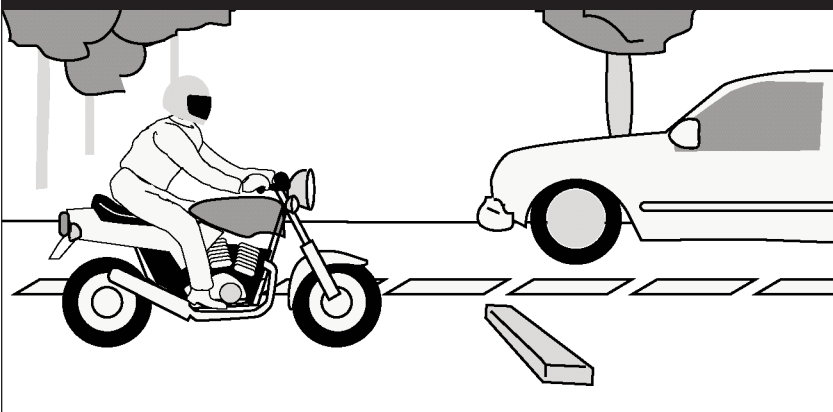
Test Yourself

The best way to stop quickly is to:

- Use the front brake only.
- Use the rear brake first.
- Throttle down and use the front brake.
- Use both brakes at the same time.

Answer — page 40

OBSTACLES



- **Rise slightly** off the seat with your weight on the footrests 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.

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** (painted lines), steel plates and manhole covers, especially when wet.

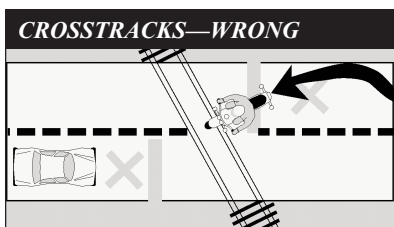
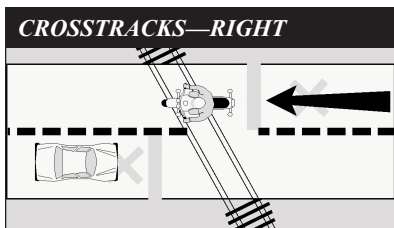
To ride safely on slippery surfaces:

- **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 develop 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.

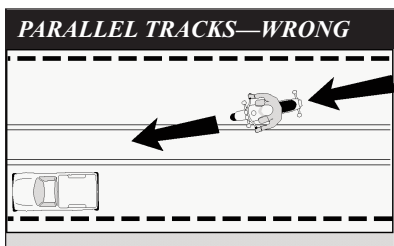
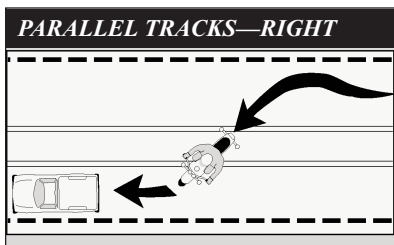
Cautious riders steer clear of roads covered with ice or snow. If you can't avoid a slippery surface, keep your motorcycle straight up and proceed as *slowly* as possible. If you encounter a large surface so slippery that you must coast, or travel at a walking pace, consider letting your feet skim along 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.

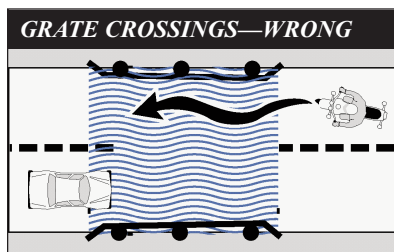
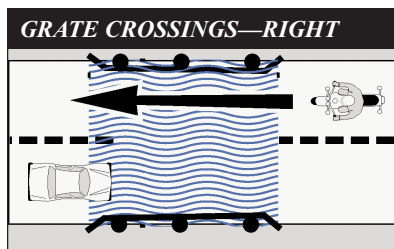
For track and road seams that run parallel to your course, move far enough away from tracks, ruts, or



pavement seams to cross at an angle of at least 45°. Then, make a quick, sharp 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.



9

Test Yourself

When it starts to rain it is usually best to:

- A. Ride in the center of the lane.
- B. Pull off to the side until the rain stops.
- C. Ride in the tire tracks left by cars.
- D. Increase your speed.

Answer — page 40

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 handlegrips** 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 worn swingarm bearings. If none of these are determined to be the cause, have the motorcycle checked out thoroughly by a qualified professional.

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.

10

Test Yourself

If your motorcycle starts to wobble:

- A. Accelerate out of the wobble.
- B. Use the brakes gradually.
- C. Grip the handlebars firmly and close the throttle gradually.
- D. Downshift.

Answer — page 40

CHAIN 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.

11

Test Yourself

If you are chased by a dog:

- A. Kick it away.
- B. Stop until the animal loses interest.
- C. Swerve around the animal.
- D. Approach the animal slowly, then speed up.

Answer — page 40

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, 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** — for the passenger. Firm footing prevents your passenger from falling off and pulling you off, too.
- **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 mirror 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, or to the bike's passenger handholds.
- **Keep both feet** on the footrests, 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 will take to slow down and speed up — 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.

12

Test Yourself

Passengers should:

- A. Lean as you lean.
- B. Hold on to the motorcycle seat.
- C. Sit as far back as possible.
- D. Never hold onto you.

Answer — page 40

- **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.

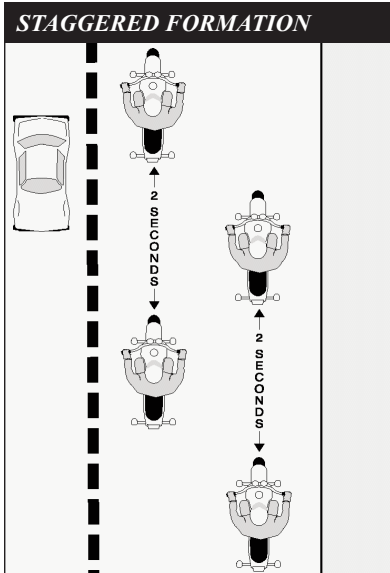
- **Know the Route** — Make sure everyone knows the route. Then, if someone is separated they won't have to hurry to keep from getting lost or taking a wrong turn. Plan frequent stops on long rides.

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. 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.

13

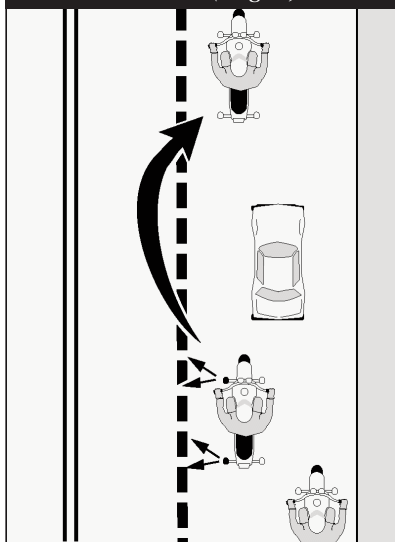
Test Yourself

When riding in a group, inexperienced riders should position themselves:

- A. Just behind the leader.
- B. In front of the group.
- C. At the tail end of the group.
- D. Beside the leader.

Answer — page 40

GROUP PASSING (Stage 1)



GROUP PASSING (Stage 2)

