

## Section 3: Control for Safety

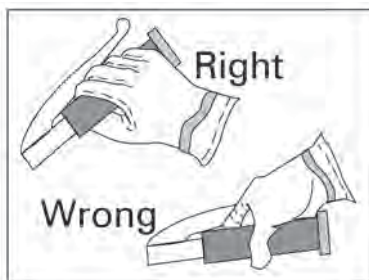


**This manual** cannot teach you how to control direction, speed, or balance. That's something you can learn only through a lot of practice. However, here are a few pointers to help you keep control and avoid crashes.

### Body Position

To control a motorcycle well, your body must be in the proper position.

- ▶ **Seat** – Sit far enough forward so that your arms are slightly bent when you hold the handlegrips. Bending your arms lets you turn the handlebars without having to stretch.
- ▶ **Hands** – Hold the handlegrips firmly. This will help you keep your grip if the motorcycle bounces. Start with your right wrist down. This will help you keep from occasionally using too much throttle – especially if you need to reach for the brake suddenly. Also, ensure that the handlebars are adjusted so your hands are even with, or below your elbows. This allows you to use the proper muscles for precision steering.
- ▶ **Knees** – Keep your knees against the gas tank. This will help you keep your balance as the motorcycle turns.
- ▶ **Feet** – Keep your feet firmly on the footpegs. Firm footing can help you keep your balance. Don't drag your foot along the ground. If your foot catches on something, you could lose control of the motorcycle. Keep your feet near the controls. This lets you get to the



controls fast if you have to use them. Also, don't let your toes drop down — they may get caught between the road and the footpeg.

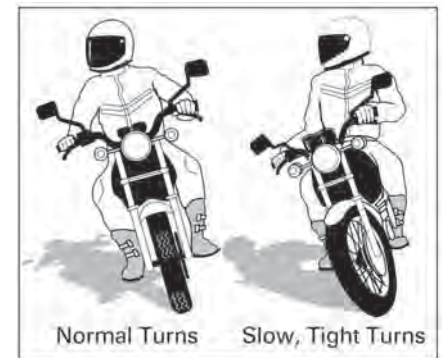
- ▶ **Posture** – You should sit fairly erect. This lets you use your arms to steer the motorcycle rather than to hold yourself up.

### Turning

New 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. Until you learn to judge how fast you can safely take a curve, approach all turns with caution. When turning use the following four steps for better control:

- ▶ **Slow** – Reduce speed before the turn by closing the throttle and, if necessary, applying both brakes.
- ▶ **Look** – Use your head and eyes for directional control. 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.
- ▶ **Lean** – To turn, the motorcycle must lean. To lean the motorcycle, push on the handgrip in the direction of the turn. Push left — lean left — go left, Push right — lean right — go right. Higher speeds and/or tighter turns require more lean.



In normal turns, the rider and motorcycle should lean together. In slow tight turns, lean the motorcycle only and keep your body straight.

- ▶ **Roll** – Roll on the throttle through the turn. Maintain steady speed or gradually accelerate. Avoid deceleration while in the turn.

### Braking

Your motorcycle has two brakes. You need to use both of them. The front brake is more powerful. It provides about three-quarters of your motorcycle's total stopping power. The front brake is not dangerous if you learn how to use it properly. Here are some things to remember about braking:

- ▶ Use both brakes every time you slow down or stop. If you use only the rear brake for "normal" stops, you may not develop the habit or the skill to use the front brake properly when you really need to stop quickly.

## Section 4: See and Be Seen

- ▶ Apply both brakes at the same time. Some people believe that the rear brake should be applied first. That is not a good idea. The sooner you apply the front brake, the sooner it will start slowing you down.
- ▶ Remember, you can use both brakes in a turn. Some motorcycles have integrated braking systems which link the front and rear brakes together, on application of the rear brake pedal. Using the front brake is dangerous only if the road is very slippery and you use the brake incorrectly. Otherwise, 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 available is used for cornering. So if you use the brakes when leaned, less traction is available for stopping. A skid can occur when too much brake is applied.

### Shifting Gears

There is more to shifting gears than simply getting the motorcycle to pick up speed smoothly. Crashes can happen if you use the gears incorrectly when downshifting, turning, or starting on hills.

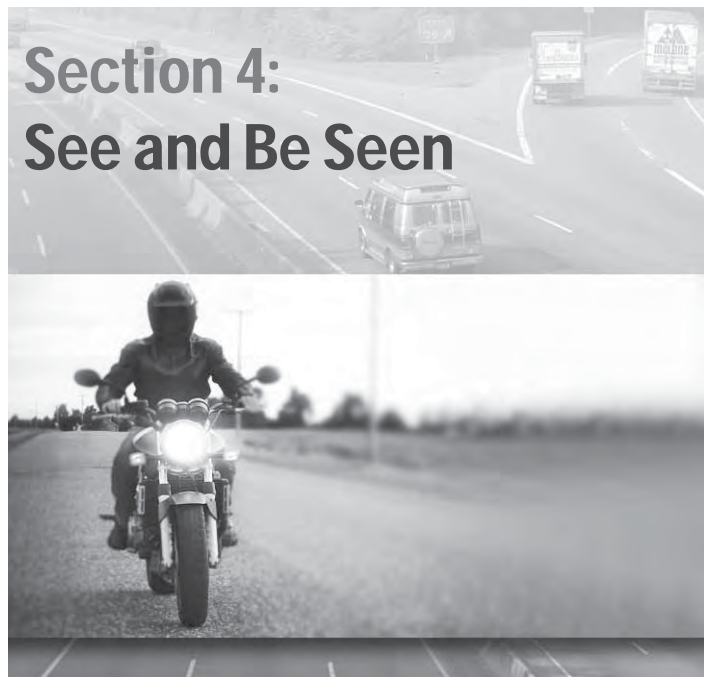
### Downshifting

Shift down through the gears as you slow down or stop. And stay in first gear while you are stopped. This way you can move out quickly if you need to.

Make certain you are going slowly enough when you shift into a lower gear. If you're going too fast, the motorcycle will lurch, and the rear wheel may skid. This is more likely to happen when you are going downhill or shifting into first gear. Under these conditions, you may need to use the brakes to slow down enough to downshift safely.

### Shifting for a Turn

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



**In crashes** with motorcyclists, car drivers often say that they never saw the motorcycle. It's hard to see something you're not looking for, and most drivers are not looking for motorcycles. Also, from ahead or from behind, a motorcycle's outline is much smaller than a car's.

Even if a driver sees you coming, you aren't necessarily safe. Because you and your bike are smaller than other vehicles, it's easier for others to mistake your distance and speed. 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. If you don't wear bright clothing, you greatly increase your risk of not being seen during the day. Remember, your body is half of the visible surface area of the rider/cycle unit. Clothing that helps you be seen includes bright orange, yellow, or green jackets or vests. And your helmet can do more than protect you in a crash. If it is brightly colored, it can help others see you.

Any bright color is better than drab or dark colors. Fluorescent clothing (helmet and jacket or vest) is best for daytime riding. At night, it is best to wear reflective gear. Reflective material on the sides of helmet and vest will help drivers coming from the side spot you. Reflective material can also be a big help for drivers coming toward you on the road ahead or from behind.

### Headlight

The best way to help others on the road see your motorcycle is to keep the headlight on — at all times. Studies show that, during the day, a motorcycle with lights off is twice as likely to go unnoticed by other road users. Also, use of the high beam

in daylight increases the likelihood that you will be seen by oncoming drivers.

## Signals

The signals on a motorcycle are similar to those on a car. However, signals are far more important to a rider.

### Turn Signals

Turn signals do two things for you:

- ▶ They tell others what you plan to do. Use them anytime you plan to change lanes. Use them even when you think no one else is around. The cars you don't see can give you the most trouble.
- ▶ Your signal lights make you easier to spot. Drivers behind are more likely to see your turn signal than your taillight. That's why it's a good idea to use your turn signals even when what you plan to do is obvious.

For example, when you are on a freeway entrance ramp, drivers on the freeway are more likely to see you – and therefore make room for you – if you use your turn signal.

Not turning off a signal is just as bad as not turning it on. A driver may think you plan to turn again and pull directly into your path. Once you've made your turn, check your signal to make sure it is off.

### 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.) Still, you can help others notice you by tapping the foot brake lightly before you slow down. This will flash your brake light. It is especially important to signal others by flashing your brake light whenever:

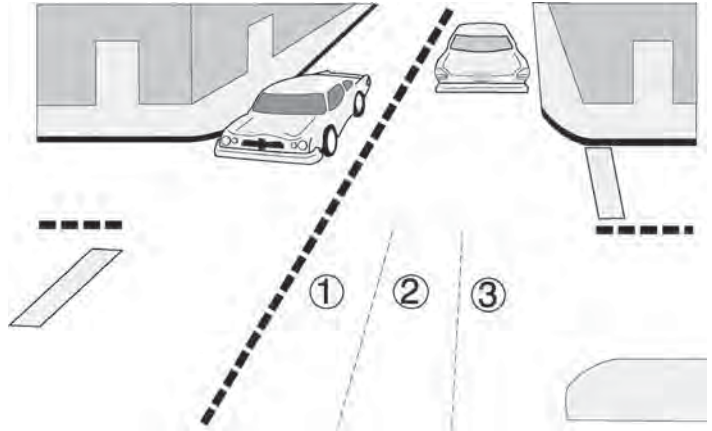
- ▶ You are going to slow down more quickly than might be expected (for example, when you are going to make a turn off a high-speed highway).
- ▶ You are going to slow where others may not expect it (for example, when you slow to turn in the middle of a block, or at an alley).

If you are being followed closely, it's a good idea to flash your brake light before you slow — even if you won't be slowing more quickly than might be expected. The tailgater may be looking only at you and fail to see something farther ahead that will make you slow down.

## Position for Being Seen

Though the size of a motorcycle can make it harder for other drivers to spot you, you can make size work to your advantage. A car driver has very little choice about where he positions his car in a lane. However, each marked lane gives a

motorcyclist three possible paths of travel, as indicated in the illustration.



Each “mini-lane” is approximately four feet wide. By selecting the appropriate “mini-lane,” you can make yourself more easily seen by others on the road.

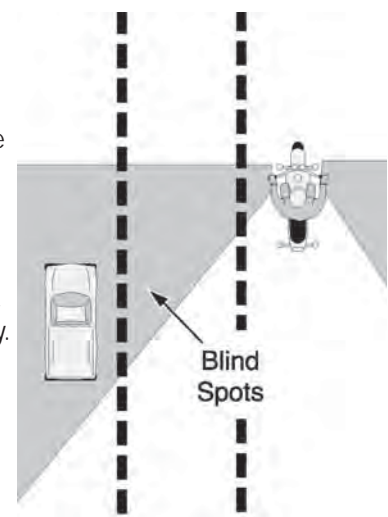
In general, there is no best position for riders when it comes to being seen, however, no portion of the lane need be avoided—including the center. Some people feel that riding in the center portion is dangerous. They argue that the grease strip which often appears in this portion (formed by droppings from other vehicles) is slippery and will cause riders to fall. Such fears are overblown.

Grease strips are usually no more than two feet wide. Since the center portion of the lane is four feet wide, you can operate to the left or right of the grease strip and still be within the center portion. Unless the road is wet with rain, the average grease strip gives just as much traction as the rest of the pavement. Of course, big build-ups of grease—as may be found at very busy intersections or toll booths—should be avoided.

The main idea of positioning yourself to be seen is this: ride in the portion of the lane where it is most likely that you will be seen. In other words, ride where it will be most difficult for other drivers to miss seeing you. Here are some ways to do this.

### Stay Out of Blind Spots

Either pass the other vehicle or drop back. When you pass a car, get through the blind spot as quickly as you can. Approach with care. But once you are alongside, speed up and get by quickly.





### Let the Driver Ahead See You

When behind a car, try to ride where the driver can see you in his rearview mirror:

- ▶ Riding in the center portion of the lane should put your image in the middle of the rearview mirror—where it's most likely to be seen.
- ▶ Riding at the far side of a lane may let you be seen in a sideview mirror. But most drivers don't look at their sideview mirrors nearly as often as they check the rearview mirror.

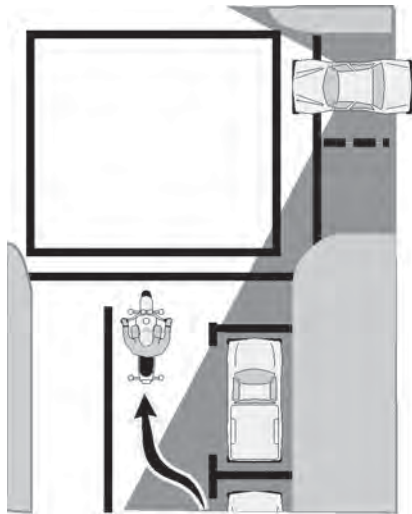


### Help Drivers at Intersections See You

The most dangerous place for any rider is an intersection. That's where most motorcycle crashes take place. The most common cause of these crashes is that the car driver infringed on the rider's right-of-way.

The best way to increase your chances of being seen as you approach an intersection usually is to ride in the portion of the lane that gives the best view of oncoming traffic and with your lights on. As you enter the intersection, position yourself to provide a space cushion all around you that allows you to take evasive action.

If you are approaching a blind intersection, it is best to move to the portion of the lane that will bring you into another driver's field of sight at the earliest possible moment. In the picture above, 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. This will usually make you as visible as possible while protecting your space.

### Horn

Get your thumb on the horn button and be ready to use it whenever you need to get someone's attention. It is a good idea to give a quick beep before you pass anyone you think may move into your lane. Here are some situations.

- ▶ A driver in the lane next to you is getting too close 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, a warning beep won't be enough. Blast the horn in a true emergency and be ready to slow or turn away from the danger.

The two biggest dangers facing you as a rider are:

- ▶ oncoming cars that turn left in front of you
- ▶ cars on side streets that pull out into your lane

Never count on "eye contact" as a sign that a driver has seen you and will yield the right-of-way. All too often, a driver looks right at a motorcyclist and still fails to "see" him.

No matter what you do, you can't guarantee that others will see you. The only eyes you can really count on are your own. A good rider is always "looking for trouble" — not to get into it, but to stay out of it.

### Scan, Identify, Predict, Decide, Execute (SIPDE)

Experienced riders make a practice of being aware of what is going on around them. They can create their riding strategy by using a system known as SIPDE.

SIPDE is an acronym for the process used to make judgements and take action in traffic. It stands for:

- ▶ Scan
- ▶ Identify
- ▶ Predict
- ▶ Decide
- ▶ Execute

#### Scan

Search aggressively for potential hazards. Scanning provides you with the information you need to make your decisions in enough time to take action.

#### Identify

Locate hazards and potential conflicts. The hazards you encounter can be divided into three groups based on how critical their effect on you may be.

**Cars, trucks and other vehicles** – They share the road with you, they move quickly, and your reactions to them must be quick and accurate.

**Pedestrians and animals** – They are characterized by unpredictability and short, quick moves.

**Stationary objects** – Chuckholes, guard rails, bridges, roadway signs, hedges, or rows of trees won't move into your path, but may create or complicate your riding strategy.

The greatest potential for a 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 other traffic may cross your path of travel. Most motorcycle/automobile collisions occur at intersections. And most of these collisions are caused by an on-coming vehicle turning left into the path of the motorcycle. Your use of SIPDE at intersections is critical.

Before you enter an intersection, search for:

- ▶ Oncoming traffic that may turn left in front of you
- ▶ Traffic from the left
- ▶ Traffic from the right
- ▶ Traffic approaching from behind

Be especially alert at intersections with limited visibility. Be aware of visually “busy” surroundings that could camouflage you and your motorcycle.

## Predict

Anticipate how the hazard may affect you. The moving direction of a potential hazard is important. Clearly, a vehicle moving away from you is not as critical as a vehicle moving in your path.

Determine the effect of the hazard — where a collision might occur. How critical is the hazard? How probable is a collision? This is the “What if..?” phase of SIPDE that depends on your knowledge and experience. Now estimate the consequences of the hazard. How might the hazard or your effort to avoid it affect you and others?

## Decide

Determine how to reduce the hazard. There are only three things you can do:

- ▶ Communicate your presence
- ▶ Adjust your speed
- ▶ Adjust your position

Communication is the most passive action you can take since it depends on the response of someone else. Use your lights and horn, but don't rely on the actions of others.

Adjustments of speed can be acceleration, slowing or stopping.

Adjustments of position can be changing lane position or completely changing direction.

In both cases, the degree of adjustment depends on how critical the hazard is and how much time and space you have. The more time and space you have to carry out your decision, the less amount of risk you'll encounter.

In areas of high potential risk, such as intersections, give yourself more time and space by reducing the time you need to react. Cover both brakes and the clutch and be ready with possible escape routes.

## Execute

Carry out your decision. This is when your riding skills come into play. And this is where they must be second nature. The best decision will be meaningless without the skills to carry it out. Know your limits and ride within them.

## Using Your Mirrors

While it's most important to keep track of what's happening ahead, you can't afford to ignore what's happening behind. Traffic conditions can change quickly. By checking your mirrors every few seconds, you can keep track of the situation behind.

Knowing what's going on behind can help you make a safe decision about how to handle trouble ahead. For instance, if you know someone is following you too closely, you can decide to avoid a problem ahead by turning away from it, rather than by trying to stop quickly and risk being hit by the tailgater.

Frequent mirror checks should be part of your normal scanning routine. Make a special point of using your mirrors in these situations:

- ▶ When you are stopped at an intersection. Watch cars coming up from behind. If the driver isn't paying attention, he could be right on top of you before he sees you.
- ▶ Anytime you plan to change lanes. Make sure no one is about to pass you.
- ▶ Anytime you will slow down. It is especially important to check if the driver behind may not expect you to slow, or if he may be unsure about exactly where you will slow. For example, he might see you signal a turn and think you plan to slow for a turn at a distant intersection rather than at a nearer driveway.
- ▶ Many motorcycles have rounded, convex mirrors. These give you a wider view of the road behind than do flat mirrors. However, they also make cars seem farther away than they really are. If you are not used

## Section 4: See and Be Seen

to convex mirrors, get familiar with them. Here's how: While you are stopped, pick out a parked car in your mirror. Try to form a mental image of how far away it is. Then, turn around and look at it. 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

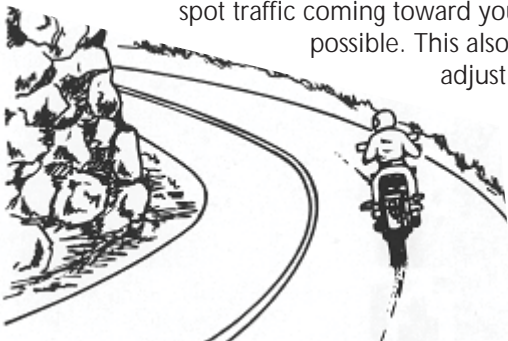
Mirrors do a pretty good job of letting you see behind. But motorcycles have blind spots just like cars. Before you change lanes, make sure to make a head check: turn your head, and look at traffic to the side. This is the only way you can be sure of spotting a car just about to pass you.

On a road with several lanes, make sure to check the far lane as well as the one next to you. A driver in the distant lane may be headed for the same space you plan to take.

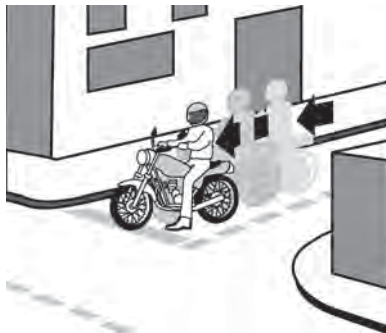
### Position To See

As a motorcycle rider, you can put yourself in a position to see things that a car driver cannot see.

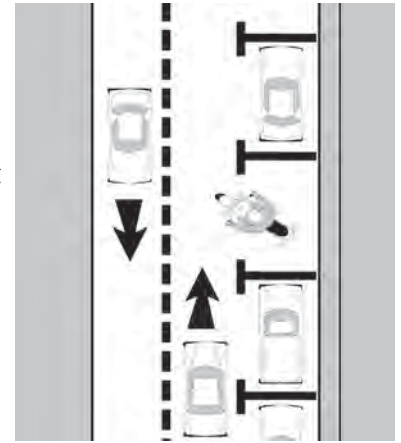
- ▶ **On Curves** – You can move from one portion of a lane to another to get a better view through a curve. Moving to the center portion of your lane before a curve — and staying there until you come out of the curve — lets you spot traffic coming toward you as soon as possible. This also allows you to adjust for traffic that is crowding the center line or for debris that is blocking part of your lane.



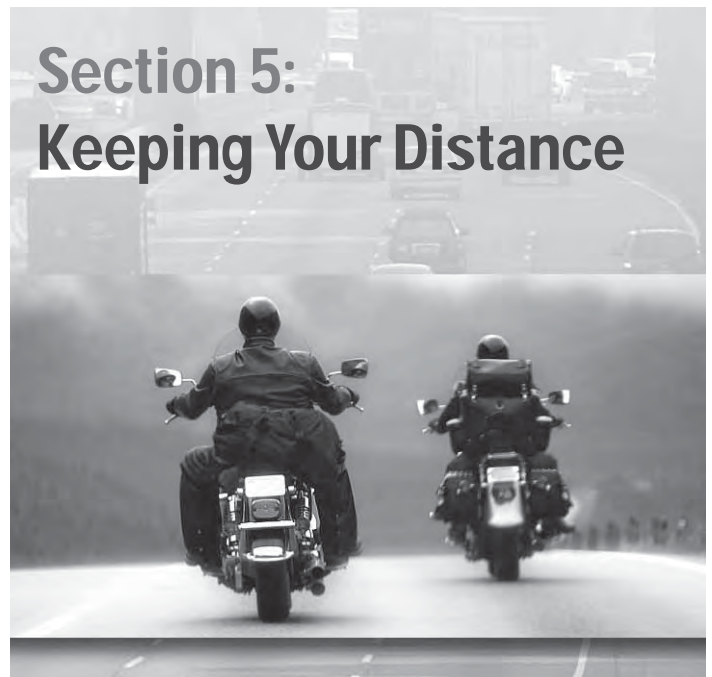
- ▶ **At blind intersections** – Blind intersections can make it hard to see danger coming from the side. If you have a stop sign, stop there first. Then edge forward and stop again, just short of where the cross-traffic lane meets your lane. From that position, you can lean your body forward and look 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.



- ▶ **At the roadside**
  - Angle your motorcycle so that you can see in both directions without straining and without having any part of the cycle in the lane of travel. Angling your motorcycle so that you can get a clear view in both directions is particularly important if you plan to turn across a lane of traffic.



## Section 5: Keeping Your Distance



**The best protection** you can have is distance — a “cushion of space” — all around your cycle. If someone else makes a mistake, distance gives you two things:

- ▶ Time to react
- ▶ Some place to go

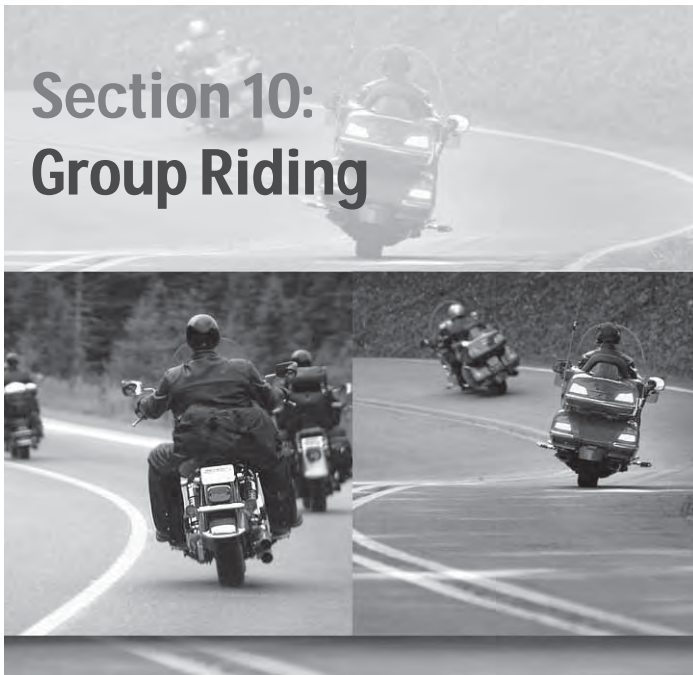
### Distance In Front

“Following too closely” is a major factor in crashes caused by motorcyclists. Motorcycles usually need as much distance to stop as do cars.

How much distance do you need to keep from following too closely? Normally, you will need a minimum of three seconds

- ▶ **Secure the load** – Fasten the load securely with elastic cords (bungee cords). A loose load can catch in the wheel or chain. If that happens, the rear wheel may lock up and skid. Do not use rope as it tends to stretch and knots come loose permitting the load to shift or fall off.
- ▶ **Check the load** – Stop and check the load every so often. Make sure it has not worked loose or moved.

- ▶ **Put beginners up front** – Place inexperienced riders behind the leader, where they can be watched by more experienced riders.
- ▶ **Follow those behind** – Let the tailender set the pace. Use your mirrors to keep an eye on the person behind you. If he or she falls behind, slow down a little. If everyone does this, the group will stay with the tailender.
- ▶ **Know the route** – Make sure everybody knows the route. Then, if someone is separated for a moment, he or she won't have to hurry to avoid getting lost or taking a wrong turn.



**If you ride with others,** you must do it in a way that doesn't endanger anyone or interfere with the flow of traffic.

## Keep the Group Small

A large group tends to interfere with traffic. It makes it necessary for cars to pass a long line of motorcycles at a time. Also, large groups tend to be separated easily by traffic or red lights. Those who are left behind often ride unsafely trying to catch up. If your group is larger than four or five riders, divide it into two or more smaller groups.

## Keep the Group Together

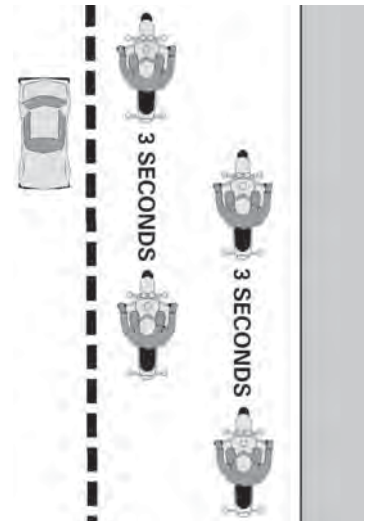
Here are some ways to keep the group together:

- ▶ **Plan ahead** – If you are the leader, look ahead for changes. Give signals early so “the word gets back” in plenty of time. Start lane changes early enough to allow everyone to complete the change.

## Keep Your Distance

It's important to keep close ranks and a safe distance. 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.

- ▶ **Staggered formation** – Riding in a staggered formation is the best way to keep ranks close and yet maintain an adequate space cushion. In a staggered formation, the leader rides to the left side of the lane, while the second rider stays a little behind and rides to the right side of the lane. A third rider would take the left position, a normal three-second distance behind the first rider.



The fourth rider would be a normal three-second distance behind the second rider. This formation keeps the group close and keeps each rider a safe distance from others ahead, behind and to the sides.

A staggered formation can be used safely on an open highway. However, it is best to move into a single file formation when taking curves, making turns, or entering or leaving a highway.



## Section 10: Group Riding

- ▶ **Passing in formation** – When riders in a staggered formation want to pass, they 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 until he has opened up room for the next rider. As soon as the first rider has passed 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. By taking up a right side lane position, the leader would encourage the second rider to pass and cut back in before a large enough cushion of space has been opened up in front of the passed vehicle. It's much simpler and safer if each rider waits until there is enough room ahead of the passed vehicle to allow the rider to move into the same position held before the pass.

**Group Passing –  
Stage 1**



**Group Passing –  
Stage 2**



## Section 11: Being in Shape to Ride



**Riding a motorcycle** is a demanding and complex task. To become a skilled rider, you must be able to give adequate attention to the riding environment and to the operation of the motorcycle, to identify potential hazards, to make good judgments, and to execute each decision quickly and skillfully. Your ability to perform at your best and to 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 with as little as one drink. Let's examine the risks involved in riding after drinking and what to do to prepare to intervene to protect yourself and your fellow riders.

### Why This Information is Important

Alcohol is a major contributor to motorcycle crashes, particularly fatal crashes. Statistics show that 31 percent of all riders killed in motorcycle crashes had been drinking.

The drinking problem is just as extensive among motorcyclists as it is among automobile drivers. However, motorcyclists are far more likely to be killed or injured in a crash. Fatalities or injuries occur in 92 percent of alcohol-involved motorcycle crashes and only 35 percent of automobile crashes. On a yearly basis, 21 motorcyclists are killed and 126 injured in crashes involving alcohol. These statistics are too overwhelming to ignore.

Some people would never, under any circumstances, ride a motorcycle after drinking alcohol. Others are willing to take their chances, even when it means the odds are against them. The most effective way to improve your chances of