Motorcycle

OPERATOR MANUAL

2005 - 2007

It is NDDOT's policy that all employees have the right to work in an environment free of harassment. An employee may discontinue service to a customer if the customer subjects the employee to conduct, communication, or sexually explicit paraphernalia which may interfere with the employee's work performance or create a hostile, intimidating, or offensive work environment.

To the Motorcycle Operator:

This manual contains important information for those of you who wish to operate a motorcycle. You are urged to study this manual thoroughly. This manual was developed by the National Public Services Research Institute with the cooperation of the Motorcycle Safety Foundation under contract to the National Highway Traffic Safety Administration.

As a motorcyclist, you should remember that you will be traveling on the streets and highways with a mixture of vehicles, most of which are larger than your motorcycle. Statistics show that the chances of a cyclist being injured in a motorcycle crash are far greater than any other type of vehicular crash. About eight out of ten persons involved in motorcycle crashes receive injuries, of which approximately 50 percent are head injuries.

As a cyclist in North Dakota, you are subject to the same rules of the road as other motorists, as well as special laws for motorcycles, which are summarized in this manual. Applicants who do not currently possess a North Dakota operator's license should study this manual along with the North Dakota Class D operator's manual, both of which are available to individuals at any of the Drivers License and Testing offices.

Driver's License and Traffic Safety Division
ND Department of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700

LICENSE REQUIREMENT

Any person other than a nonresident student, a tourist, or a member of the armed forces who has lived in this state for 90 consecutive days, shall be deemed a resident of North Dakota for the purposes of driver licensing. You may operate a vehicle with an operator's license from another state for a period of 60 days after you become a resident of North Dakota, then you must obtain a North Dakota operator's license.

When operating either a two- or three-wheeled motorcycle, North Dakota law requires that your operator's license must have a Class M endorsement or you must have in your possession a Class M permit or license. Driving without the Class M permit or license will result in a $20 fine and a four point assessment on your driving record.

Fourteen- and fifteen-year-old motorcycle operators may only operate motorcycles with a 250 cc engine or less.

Operators and passengers under the age of 18 must wear a safety helmet that meets U.S. Department of Transportation standards. If the operator is required to wear a helmet, then any passenger, regardless of age, must also wear a helmet.

Applying for a Class M License or Permit

Applications for an operator's license or permit are made with the Drivers License and Testing office in your area.

- PROOF OF IDENTIFICATION IS REQUIRED.

  Original applicants who do not have a valid North Dakota operators license must present proof of current name and date of birth. Out-of-state permits, licenses, and ID cards will not be accepted as proof of name and date of birth. Acceptable forms of identification are:

  - U.S. Birth Certificate (state certified; Government-issued: includes U.S. territories).
  - Valid U.S. Passport.
  - U.S. Government-issued Consular Report of Birth Abroad. Certificate or FS 240 (seal required).
  - Valid Foreign Passport with an I-94 card or an I-551 stamp.
  - U.S. Active Duty/Retiree/Reservist Military ID Card or Common Access Card.
  - U.S. Court Order containing the legal name and date of birth (Court seal required).
  - North Dakota state issued permit, license, or ID card.
  - The following Immigration documents (unexpired):
    I-551 Resident Alien or Permanent Resident Card
    I-688 Temporary Resident Identification Card

I-688B, I-766 Employment Authorization Card
N560 Certificate of Citizenship
N550 Certificate of Naturalization
I-94 card stamped Refugee or Asylee

Only original documents and certified copies will be accepted. No photocopies. A court order or government issued marriage certificate is required for a name change. Several documents may be necessary in the event there has been more than one name change since birth.

You will not be allowed to test without proper identification.

Applicants born in North Dakota who do not have the required birth certificate may obtain a copy by sending $7 and general birth information to Vital Records, North Dakota Department of Health, 600 East Boulevard Avenue, Bismarck, North Dakota 58505-0200.

- All applications for permit or license must contain the individual's social security number (NDCC 39-06-07).
- All applicants must pass a visual test, testing your ability to see as it applies to driving.
- All applicants who do **NOT** present a valid Class A, B, C, or D North Dakota operator's license will be required to pass the Class D Rules of the Road written test prior to the Class M written examination.
- You may **NOT** operate a motorcycle until you receive the Class M permit, then you must pass an on-cycle skill test prior to a Class M license being issued. The on-cycle skill test may be waived upon successful completion of a motorcycle safety course approved by the director.
- Anyone operating a motorcycle with a learner's permit may not drive after dark and shall not carry passengers.
- State statutes require a $5 fee for each written test and a $5 fee for each road/skill test.

North Dakota Drivers License and Testing Locations

To obtain a North Dakota operator's license, you must visit one of the Drivers License and Testing offices. No appointment is needed for the written test. Arrive no later than one hour prior to noon and no later than one hour prior to closing.

TTY information number: 328-4156

For skill test appointments and general license information, call your respective Drivers License and Testing office. **Skill tests will not be conducted during inclement weather. Call for cancellation information.**

All sites are closed from 12:00–1:00 p.m. except Bismarck, Minot, Grand Forks, and Fargo.

Fargo 239-8940
Wahpeton
Forman
Lisbon

Jamestown 252-5596
Valley City
LaMoure
Oakes

Dickinson 227-6550
Beulah
Hazen
Mott
Bowman
Hebron
Hettinger

Bismarck 328-2252
Garrison
Washburn
Steele
Wishek
Linton
Carson
Ashley

Grand Forks 787-6540
Langdon
Cavalier
Grafton
Mayville
Cooperstown

Minot 857-7624
Bowbells
Bottineau
Rolla
Rugby
Harvey
New Town

Williston 774-4358
Crosby
Stanley
Watford City

Devils Lake 662-4814
New Rockford
Carrington
Cando

Offices are closed on the following holidays:

New Years Day, January 1
Presidents' Day, third Monday in Feb.
Memorial Day, the last Monday in May
Labor Day, the first Monday in September
Thanksgiving Day, the fourth Thursday in Nov.
Christmas Day, December 25
Martin Luther King, Jr. Day, third Monday in January
Good Friday, the Friday preceding Easter Sunday
Independence Day, July 4
Veteran's Day, November 11
Christmas Eve, Dec. 24 (offices close at noon)

If January 1st, July 4th, November 11th or December 25th falls on a Sunday, the following Monday shall be the holiday. If these holidays fall on a Saturday, the preceding Friday is the holiday.

CRASH REPORTS

If you are involved in a crash which results in the combined damage of $1,000 or more, or results in personal injury or death, you must immediately report it to the local police, sheriff's office, or State Highway Patrol.

No person shall operate a motor vehicle in the state of North Dakota without a valid policy of liability insurance in effect, the name of the insurance policy carrier, and the policy number must be furnished to a law enforcement officer upon request. The minimum fine for operating an uninsured motor vehicle is $150 and may result in a license suspension.

In any crash involving injury or damage, the operators must exchange the following information: operator's name, address, and motor vehicle insurance company.

Any operator who hits an unattended vehicle must immediately locate and notify the owner. If the owner cannot be found, the operator must leave a note at a conspicuous place on the unattended vehicle. The note must list the operator's name, address, and motor vehicle insurance company.

EXAMINATIONS

Cooperation With the Examiner

- The applicant must at all times cooperate with the examiners by following their instructions.

- License applicants must furnish their own vehicle for the on-cycle test.
- License applicants must submit their motorcycle to an equipment inspection at the time of the on-cycle test.
- Applicants who successfully pass the on-cycle skill test with a motorcycle that has an automatic transmission, will be restricted to operating a Class M vehicle so equipped.
- Applicants successfully completing the on-cycle test on a three-wheeled motorcycle will receive a Class M operator's license restricted to the operation of a three-wheeled motorcycle.
- If you fail any of the tests, you will not be allowed to retake the examination the same day.

Additional Requirement for Applicants 14 or 15 Years of Age

- To receive a Class M learner's permit, the 14- or 15-year-old applicant must be enrolled in or have completed an approved motorcycle safety course.
- When applying for a learner's permit, 14- or 15-year-old applicants must present to the examiner an enrollment certificate or a Motorcycle Safety Completion Certificate.
- These applicants must operate on the initial learner's permit for at least two months prior to completing the on-cycle skill test for a Class M operator's license.
- A Motorcycle Safety Completion Certificate must be presented at the time of the on-cycle skill test. If the applicant has held the initial learner's permit for at least two months, the on-cycle skill test may be waived upon successful completion of a motorcycle safety course approved by the director.

MOTORIZED BICYCLE

A motorized bicycle is a two or three wheeled vehicle, no more than 32 inches wide. It must also have:

- Maximum piston or rotor displacement of 49.98 (3.05 cubic inches) enabling a speed not to exceed 30 mph on a level surface.
- Foot pedals or footrests.
- An automatic drive system not requiring the use of a clutch.
- Motorized bicycles must display an assigned registration plate when operated upon a public highway.

LICENSE REQUIREMENTS

The operator of a motorized bicycle must be at least 14 years of age or older.

- You must have a valid operator's license, a temporary permit, instruction permit, motorcycle permit, or motorized bicycle permit in your immediate

possession when operating a motorized bicycle upon a public street or highway within the state of North Dakota.

- Operators under the age of 18 must wear a safety helmet that meets U.S. Department of Transportation standards.

APPLYING FOR A MOTORIZED BICYCLE PERMIT

Application for a motorized bicycle permit is made with the Drivers License and Testing office in your area.

- All applicants applying for an original motorized bicycle permit must present proof of current name and date of birth. Out-of-state permits, licenses, and ID cards will not be accepted as proof of name and date of birth. Acceptable forms of identification are:
  - U.S. Birth Certificate (state certified; Government-issued: includes U.S. territories).
  - Valid U.S. Passport.
  - U.S. Government-issued Consular Report of Birth Abroad. Certificate or FS 240 (seal required).
  - Valid Foreign Passport with an I-94 card or an I-551 stamp.
  - U.S. Active Duty/Retiree/Reservist Military ID Card or Common Access Card.
  - U.S. Court Order containing the legal name and date of birth (Court seal required).
  - North Dakota state issued permit, license, or ID card.
  - The following Immigration and Naturalization documents (unexpired):
    I-551 Resident Alien or Permanent Resident Card
    I-688 Temporary Resident Identification Card
    I-688B, I-766 Employment Authorization Card
    N560 Certificate of Citizenship
    N550 Certificate of Naturalization
    I-94 card stamped Refugee or Asylee

  Only original documents and certified copies will be accepted. No photocopies. A court order or government issued marriage certificate is required for a name change. Several documents may be necessary in the event there has been more than one name change since birth.

  You will not be allowed to test without proper identification.
- Motorized bicycle applications must contain the individual's social security number (NDCC 39-06-07).
- Pass the Rules of the Road written test.
- Pass a vision test, testing your ability to see as it applies to operating a motorized bicycle.
- **NO** on-cycle skill test is required for a motorized bicycle permit.
- There is a $5 written test fee required.

PREFACE

Operating a motorcycle safely in traffic requires special skills and knowledge. The Motorcycle Safety Foundation has made this manual available to help novice motorcyclists reduce their risk of having a crash. The manual conveys essential safe-driving information and has been designed for use in licensing programs. While designed for the novice, all motorcyclists can benefit from the information this manual contains.

The original *Motorcycle Operator Manual* was developed by the National Public Services Research Institute (NPSRI) under contract to the National Highway Traffic Safety Administration (NHTSA) and within the terms of a cooperative agreement between NHTSA and the Motorcycle Safety Foundation. The manual and related tests were used in a multi-year study of improved motorcycle operator licensing procedures, conducted by the California Department of Motor Vehicles under contract to NHTSA.

The purpose of this manual is to educate the reader to help avoid crashes while safely operating a motorcycle. For this edition, the Motorcycle Safety Foundation has updated and expanded the content of the original manual. These revisions reflect:

- The latest findings of motorcycle-safety research.
- Comments and guidance provided by the motorcycling, licensing, and traffic-safety communities.
- Expanded alcohol and drug information.

In promoting improved licensing programs, the Motorcycle Safety Foundation works closely with state licensing agencies. The Foundation has helped more than half the states in the nation adopt the *Motorcycle Operator Manual* for use in their licensing systems.

Improved licensing, along with high-quality motorcycle rider education and increased public awareness, has the potential to reduce crashes. Staff at the Foundation are available to assist state, private and governmental agencies in efforts to improve motorcycle safety.

Tim Buche
President, Motorcycle Safety Foundation

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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:

- Wear the right gear.
- Become familiar with the motorcycle.
- Check the motorcycle equipment.
- 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.

The Helmet

Crashes are not rare events—particularly among untrained, 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.

Helmet Use

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 cut both the number and the severity of head injuries by half.

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.

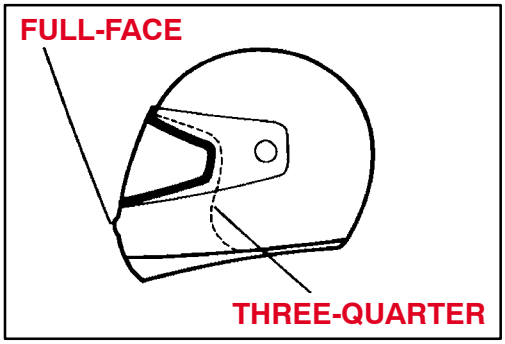
Helmet Selection

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:

- Meets U.S. Department of Transportation (DOT) and state standards. Helmets with labels from the American National Standards Institute (ANSI) or the Snell Memorial Foundation give 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 face shield 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 face shield does. A windshield is not a substitute for a face shield 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 face shield protection must:

- Be free of scratches.
- Be made of shatter-proof material.
- 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 crash.

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, but heavy denim usually does an adequate job at a reasonable price. Sturdy synthetic material allows a lot of protection as well. Wear a jacket even in warm weather. 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 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 heavy cloth.

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 rain suits designed for motorcycle riding resist tearing apart or ballooning up at high speeds.

1. A plastic shatter-resistant face shield:
   A. Is not necessary if you have a windshield.
   B. Only protects your eyes.
   C. Helps protect your whole face.
   D. Does not protect your face as well as goggles.

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:

- 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 cycle 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 cycle.

At minimum, your street-legal cycle should have:

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

Borrowing and Lending

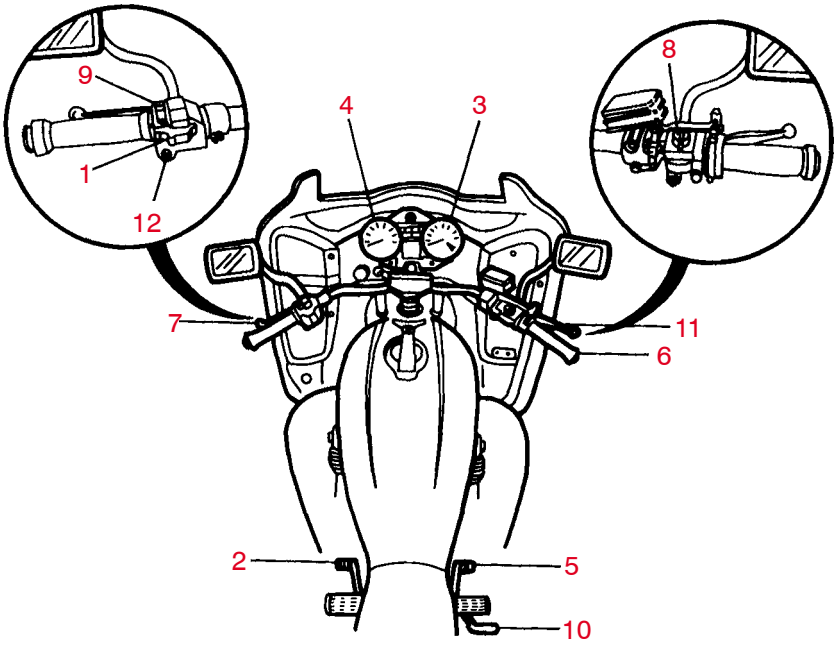
Borrowers and lenders of motorcycles, beware. Crashes are fairly common among beginning riders—especially in the first months of riding. Riding an unfamiliar motorcycle adds to the problem. If you borrow a motorcycle, get familiar with it in a controlled area. And if you lend your motorcycle to friends, 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. More that half of all crashes occur on motorcycles ridden by the operator for less than six months.

Get Familiar With the Motorcycle Controls

Make sure you are completely familiar with the motorcycle before you take it out on the street. This is particularly important if you are riding a borrowed cycle. 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.
- 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. Accelerate gently, take turns more slowly, and leave extra room for stopping.



1. Turn-Signal Switch
2. Gear-Change Lever
3. Tachometer
4. Speedometer & Odometer
5. Rear Brake Pedal
6. Throttle
7. Clutch Lever
8. Engine Cut-Off Switch
9. Light Switch
10. Kick Starter
11. Front Brake Lever
12. Horn Button

Check the 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***—Check the air pressure.
- ***Fluids***—Oil and fluid levels. At a minimum, check hydraulic fluids and coolants weekly. Look under the bike for signs of an oil or gas leak.
- ***Headlights and Taillight***—Check them both. Test your dimmer to make sure both high and low beams are working.
- ***Turn Signals***—Turn on both right and left turn signals. Make sure all four lights flash.
- ***Brake Light***—Try both brake controls, and make sure each one turns on the brake light.

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.
- ***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.**
- ***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.

In addition to the checks you should make before every trip, check the following items at least once a week: Wheels, cables, fasteners, and brakes.

2. More than half of all crashes:
   A. Occur at speeds greater than 35 mph.
   B. Happen at night.
   C. Are caused by worn tires.
   D. Involve riders who have ridden their cycles less than six months.

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 takes place.

Consider a situation where someone decides to try 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 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, it 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.
- ***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.
- ***Scan 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

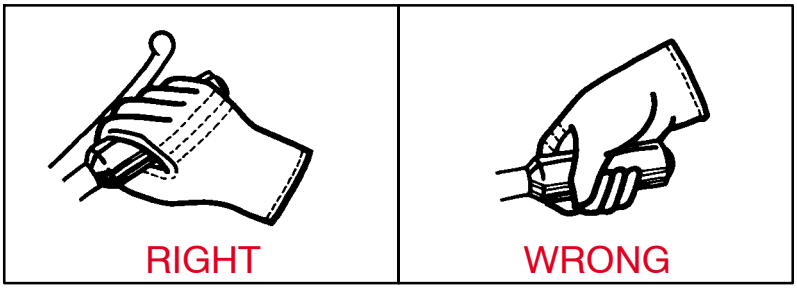
This manual cannot teach you how to control direction, speed, or balance. That's something you can learn only through practice. But control begins with knowing your abilities and riding within them and the rules of the road.

BASIC VEHICLE CONTROL

Body Position

To control a motorcycle well:

- ***Seat***—Sit far enough forward so that arms are slightly bent when you hold the handlegrips. Bending your arms permits you to turn the handlebars without having to stretch.
- ***Hands***—Hold the handlegrips firmly to keep your grip over rough surfaces. Start with your right wrist down. This will help you keep from accidentally using too much throttle—especially if you need to reach for the brake suddenly. 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 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 footpegs.
- ***Posture***—Sit so you can use your arms to steer the motorcycle rather than to hold yourself up.

Shifting Gears

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

Shift down through the gears 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.

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 as much as 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 only the rear brake for "normal" stops will not permit you to develop the habit or skill of using the front brake 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.
- **Apply both brakes at the same time.** The sooner you apply the front brake, the sooner it will start slowing you down.
- 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.
- Some motorcycles have integrated braking systems that activate the front and rear brakes together when applying the rear brake pedal. (Consult the owner's manual for detailed explanation on the operation and effective use of these systems.)

Turning

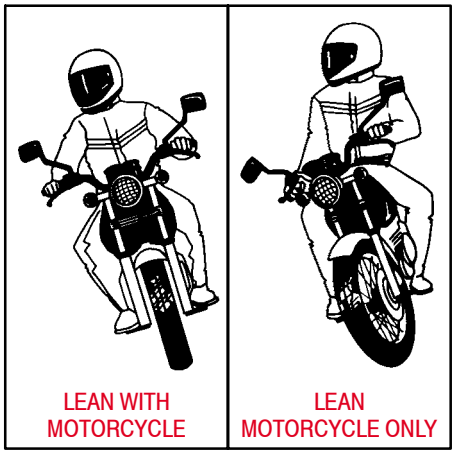
Riders often try to take curves or turns too fast. When they can't hold the turn, they end up crossing into another lane of traffic or going off the road. Or, they overreact and brake too hard, causing a skid and loss of control. Approach turns and curves with caution.

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.

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



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

- ***Roll***—Roll on the throttle through the turn. Maintain steady speed or accelerate gradually. Avoid decelerating in the turn.

3. 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.

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 permits you:

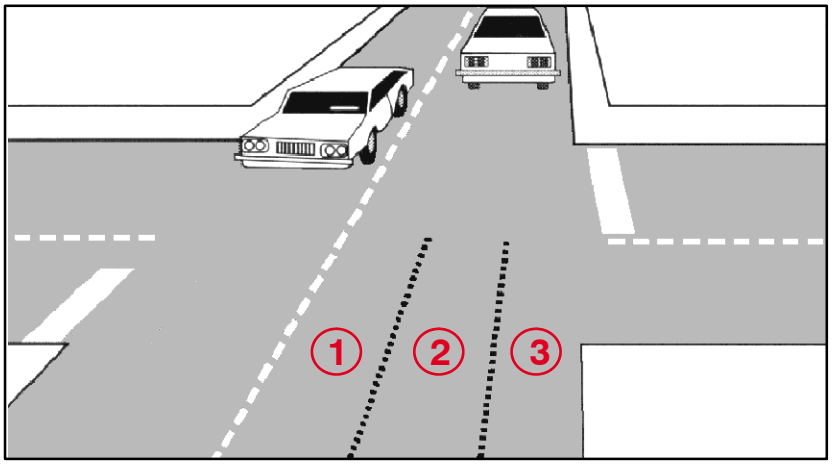
- Time to react.
- Space to maneuver.

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 other's 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 cycle. No portion of the lane need be avoided—including the center.

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

Ride in the portion of the lane where you are most likely to be seen. Depending on the traffic situation, move to the portion of the lane where it will be most difficult for other drivers to miss seeing you.

Following Another Vehicle

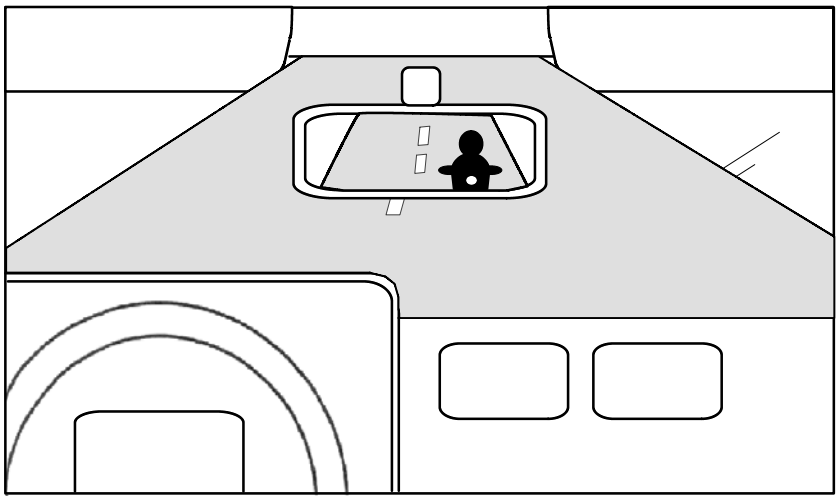
"Following too closely" is a major factor in crashes caused by motorcyclists. **In traffic, motorcycles need as much distance to stop as cars.** Normally, a minimum of three seconds distance should be maintained behind the vehicle ahead. To gauge your following distance:

- 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-and-one, one-thousand-and-two, one-thousand-and-three."
- If you reach the marker before you reach "three," you are following too closely.

A three-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 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 four-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 his rearview mirror. Riding in the **center portion** of the lane should put your image in 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 the best place to ride when following a car.

Being Followed

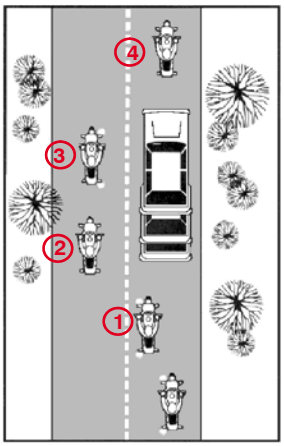
Speeding up to lose someone following too closely only ends up with someone tailgating you at a higher speed.

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.

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



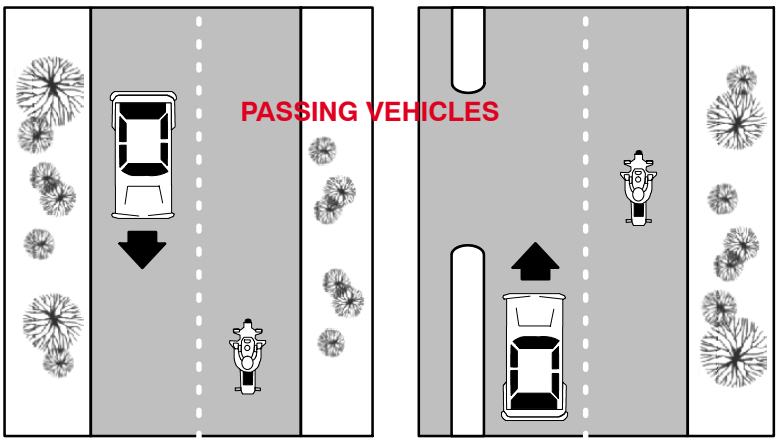
1. Ride in the left portion of the lane at a safe following distance to increase your line of sight and make you more visible. Signal and check for oncoming traffic. Use your mirrors and turn your head to look for traffic behind.
2. Move into the left lane and accelerate. Select a lane position that 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 head checks before returning to your original lane.

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, move to 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

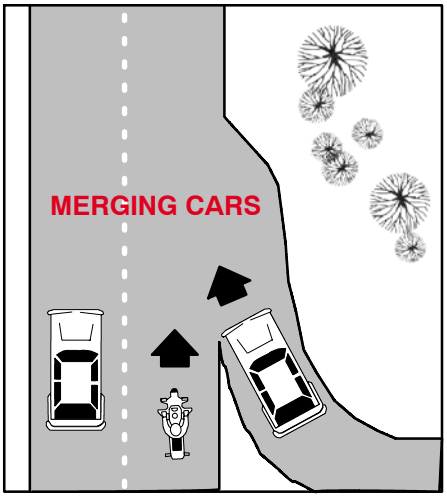
Cars and motorcycles need a full lane to operate safely. Lane sharing is usually prohibited.

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.

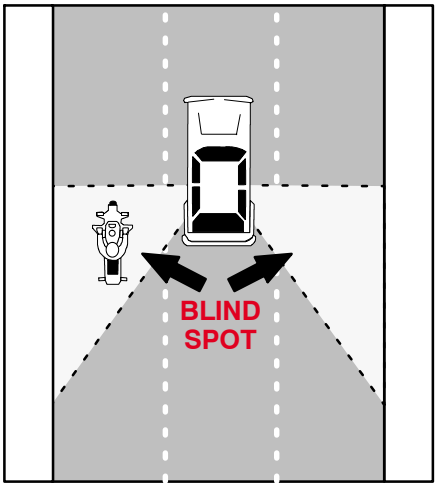
Merging Cars

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. Cars in the next lane are ***extremely hazardous*** because they block your escape if you come upon danger in your own lane. You might be in the blind spot of a car in the next lane, which could switch into your lane without warning. Speed up or drop back to find a place clear of traffic on both sides.



4. Usually, a good way to handle tailgaters is to:
   A. Change lanes and let them pass.
   B. Use your horn and make obscene gestures.
   C. Speed up to put distance between you and the tailgater.
   D. Ignore them.

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:

- **S**earch
- **E**valuation
- **E**xecute

Let's examine each of these steps.

Search

Search aggressively 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, and 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.

Searching or scanning provides the information you need to make decisions in enough time to act accordingly.

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 charateristics***—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 any 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.

SIPDE

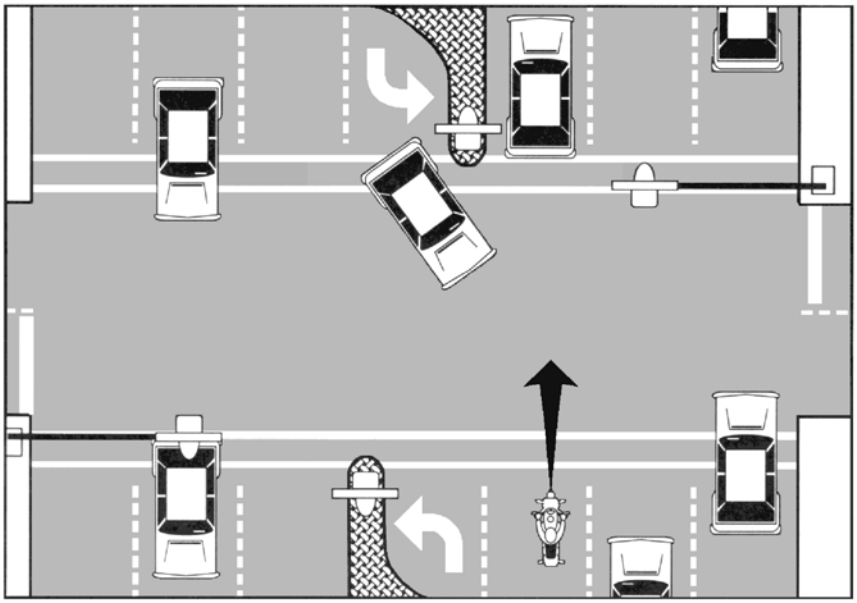
SIPDE is a system of five steps that will help you apply SEE. The steps are:

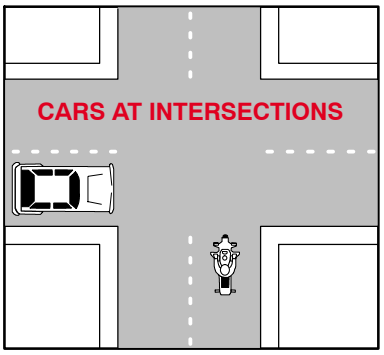
- **Scan** or search aggressively for potential hazards.
- **Identify** or locate hazards and potential conflicts.
- **Predict** or anticipate how the hazard may affect you.
- **Decide** what to do to reduce the hazard.
- **Execute** or carry out your decision.

5. 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.

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 half of motorcycle/car crashes are caused by drivers entering a rider's right-of-way. **Oncoming cars that turn left in front of you, and cars on side streets that pull into your lane, are the two biggest dangers.** Your use of SEE (p. 17) at intersections is critical.





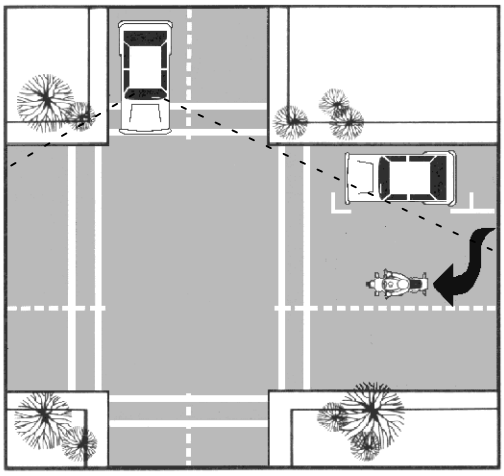
There are no guarantees that others see you. Never count on "eye contact" as a sign that a driver will yield. Too often, a driver looks right at a motorcyclist and still fails to "see" him. The only eyes that you can count on are your own. If a car can enter your path, assume that it will. Good riders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

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.

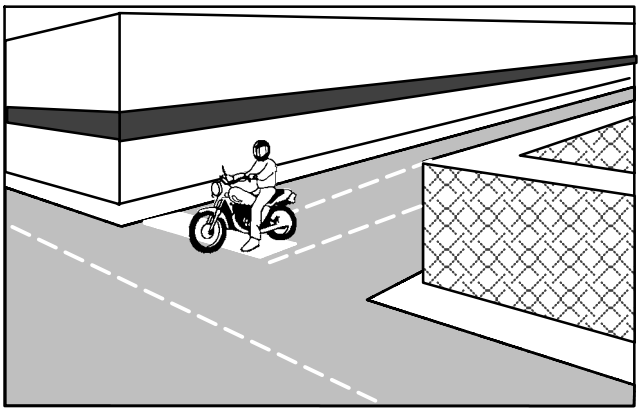
Reduce your speed. After entering the intersection, move away from oncoming vehicles preparing to turn. Do not change speed or position radically. The driver might think that you are preparing to turn.

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 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 and remain visible to others while protecting your space.

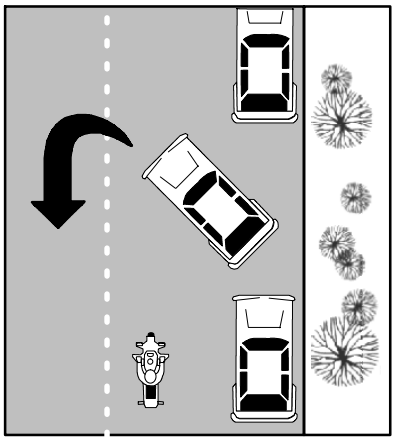


If you have a stop sign or stop line, stop there first. Then edge forward and stop again, just short of where the cross-traffic lane meets your lane. From that position, lean your body forward and look around buildings, parked cars, or bushes to see if anything is coming. Just make sure your front wheel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

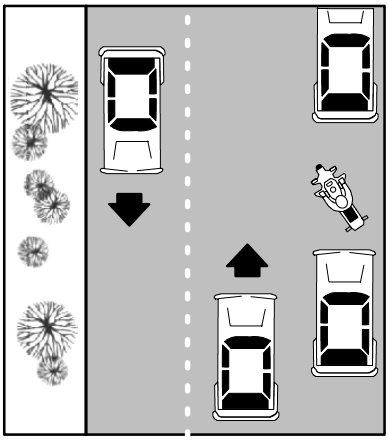
A bigger problem can occur if the driver pulls away from the curb without checking for traffic behind. Even if he does look, he may fail to see you. In either event, the driver might cut into your path. Slow down or change lanes to make room for someone cutting in.



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, get the driver's attention. Sound your horn and continue with caution.

Parking at the Roadside

Angle your motorcycle to see in both directions without straining, or having the motorcycle in the lane of travel. When possible, back into the parking spot at a 90 degree angle to the curb with your rear wheel touching the curb.



6. Making eye contact with other drivers:
   A. Is a good sign that they see you.
   B. Is important when approaching an intersection.
   C. Doesn't mean that the driver will yield.
   D. Decreases your chances of being involved in a crash.

SEE AND BE SEEN

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, 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 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 reflective gear should be worn. Reflective material on the sides of the 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 or from behind.

Headlight

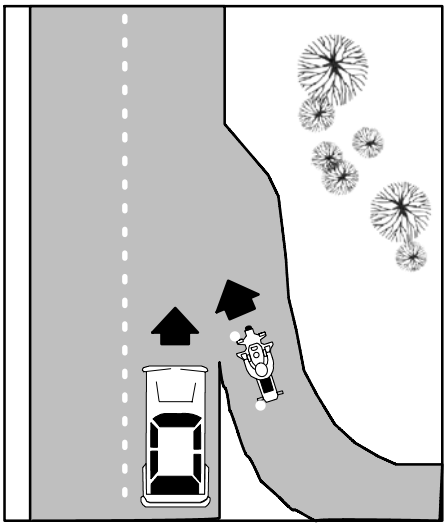
The best way to help others see your motorcycle is to keep the headlight on—at all times. Studies show that, during the day, a motorcycle with lights on is twice as likely to be noticed. Also, use of the high beam in daylight increases the likelihood that oncoming drivers will see you.

Signals

The signals on a motorcycle are similar to those on a car. However, due to a rider's added vulnerability, signals are even more important. 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. 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.



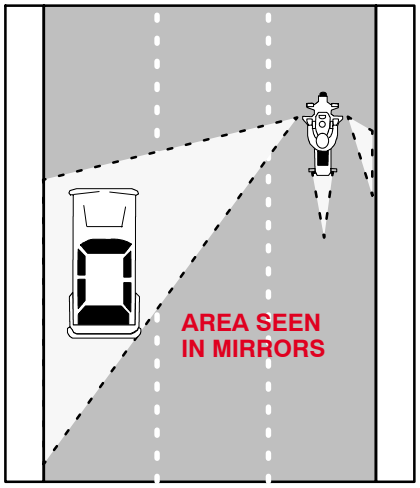
Brake Light

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.) 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.

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 can help you make a safe decision about how to handle trouble ahead.

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

- *Before you change lanes.* Make sure no one is about to pass you.
- *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 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.

Most 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 to spot a car about to pass you. **Remember, the most important time to check traffic to the rear is when you are changing lanes!**

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.

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

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. 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. Wear reflective materials—vests, etc.
- ***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.

7. Reflective clothing should:
   A. Be worn during the day.
   B. Be worn at night.
   C. Not be worn.
   D. Be worn day and night.

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 to the situation is important as well.

Studies show that most crash-involved riders:

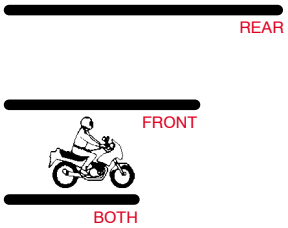
- Underbrake the front tire and overbrake the rear.
- Do not separate braking from swerving or they do not choose swerving when appropriate.

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" at it, either. Squeeze the brake lever steadily and firmly. Apply the front brake fully. If the front wheel locks, release the front brake. At the same time, press down on the rear brake. If you accidentally lock the rear brake, keep it locked until you have completely stopped. Even with a locked rear wheel, you can control the 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*, it may not always be possible to straighten the motorcycle and then stop. If you must brake while leaning, **lightly apply both 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. If you "straighten" the handlebar in the last few feet of stopping, the motorcycle should be straight up and in balance.

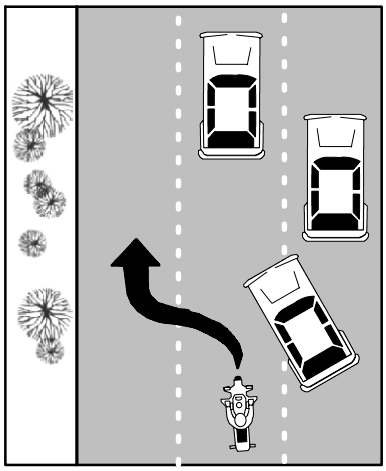
Swerving or Turning Quickly

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, swerve, or ride over the obstacle.

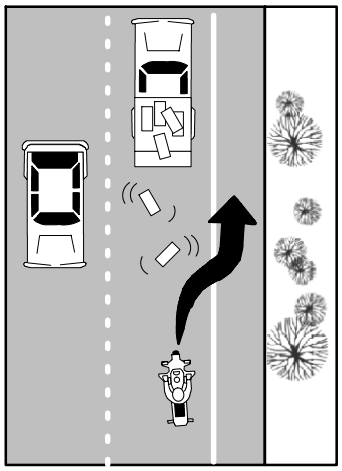
A swerve is two quick turns, one right after the first. It is performed with a small amount of hand pressure on the handgrip in the direction you wish to go to get the motorcycle to lean quickly. **An acquired skill in making a quick turn (swerve) is to lean quickly in the direction of the turn (swerve).**

Press on the inside of the handgrip in your intended direction of escape. Then press on the inside of the opposite handgrip to return to your original direction of travel once you have cleared the hazard. To swerve to the left, push the inside of the handgrips to the left, then push right to recover. To swerve to the right, push right, then push left to recover. Keep your knees snugly against the tank and your feet on the pegs. Make your escape route the target of your vision.

Try to stay in your own lane. Change lanes only if you have enough time to make sure there are no vehicles in the other lane. You should be able to squeeze by most obstacles without leaving your lane.



SWERVE, THEN BRAKE

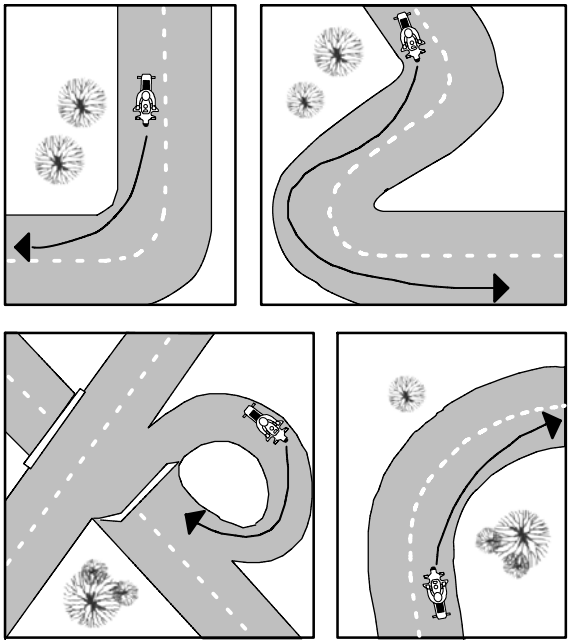


BRAKE, THEN SWERVE

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 and road conditions. If no traffic is present and your riding abilities are up to it, you may choose to 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.

8. The best way to stop quickly is to:
   A. Use the front brake only.
   B. Use the rear brake first.
   C. Throttle down and use the front brake.
   D. Use both brakes at the same time.

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.

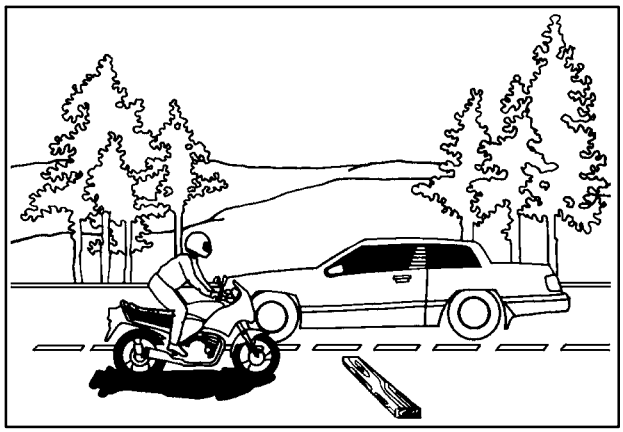
Uneven Surfaces and Obstacles

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

First, determine if it is possible to go over the obstacle. 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 to reduce the jolt if time permits.
- Make sure the motorcycle is straight up.
- Rise slightly off the seat with your weight on the footrests to absorb the shock with your knees and elbows.

Rising off the seat will reduce your chances of being thrown off the bike. However, controlling the throttle can be somewhat tricky. Practice this in an area such as an empty parking lot away from traffic.



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 when stopping or turning. Your motorcycle needs more distance to stop. It is particularly important to reduce speed before entering wet curves.

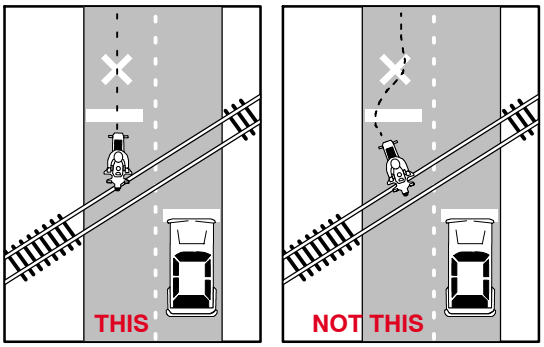
Avoid Sudden Moves—Any sudden change in speed or direction can cause a skid. Be as smooth as possible when you speed up, shift gears, turn or brake.

Use Both Brakes—The front brake is more effective even on a slippery surface. Squeeze the brake lever gradually to avoid locking the front wheel.

- 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. Stay away from 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.

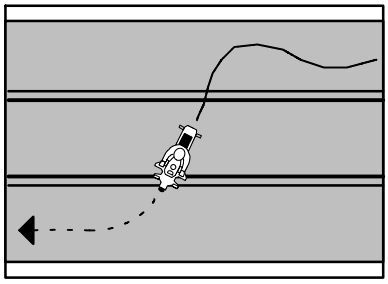
Cautious riders steer clear of roads covered with ice or snow. If you can't avoid a slippery surface, keep your bike straight up and proceed as *slowly* as possible. If you encounter a large surface so slippery that you must coast, or travel at a walking pace, consider letting your feet skim along the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

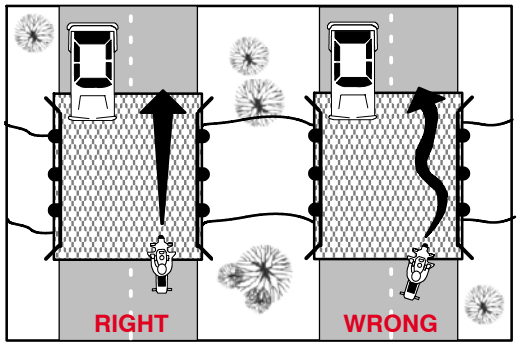


Usually it is safer to ride straight within your lane to cross tracks. Turning to take tracks head-on can be more dangerous—your path may carry you into another lane of traffic.

Move far enough away from tracks, ruts, or pavement seams that run alongside (parallel) to your course 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 will cause a motorcycle to weave. The uneasy, wandering feeling is generally not hazardous. **Relax, maintain 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. 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.

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 cycle starts handling differently, it may be a tire failure. This can be dangerous. You must be able to tell from the way the cycle 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 will jerk from side to side.

If either tire goes flat while riding:

- Hold the handlegrips firmly and keep a straight course.
- 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 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 cycle. Make sure tire pressure, spring preload, 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 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 the motorcycle. 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.

Chain Problems

A chain that slips or breaks while you're riding could lock the rear wheel and cause your motorcycle 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.

10. 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.
    D. Downshift.

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. Downshift and approach the animal slowly. Then speed up 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 make setting the stand difficult.

11. When approaching an animal:
    A. Kick it away.
    B. Stop until the animal loses interest.
    C. Swerve around the animal.
    D. Approach the animal slowly, then speed up.

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***—for the passenger. A 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. Add a few pounds of pressure to the tires if you carry a passenger. (Check your owner's manual.) 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 after you have started the engine.
- Sit as far forward as possible without crowding you.
- **Hold firmly to your waist, hips, belt, or passenger handholds.**
- Keep both feet on the pegs, even when stopped.
- Keep legs away from the muffler(s).
- 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 (1) approach surface problems, (2) are about to start from a stop, and (3) warn that you are going to 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, speed up, or turn—especially on a light cycle.

- 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 to the seat, or put them in saddle bags. Piling loads against a sissybar or frame on the back of the seat raises the cycle's center of gravity and disturbs its balance.
- ***Keep the Load Forward***—Place the load over, or in front of, the rear axle. Tankbags keep loads forward, but use caution when loading hard or sharp objects. Mounting loads behind the rear axle can affect how the cycle 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). 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.

12. Passengers should:
    A. Lean as you lean.
    B. Always sit upright.
    C. Sit as far back as possible.
    D. Never hold onto you.

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.

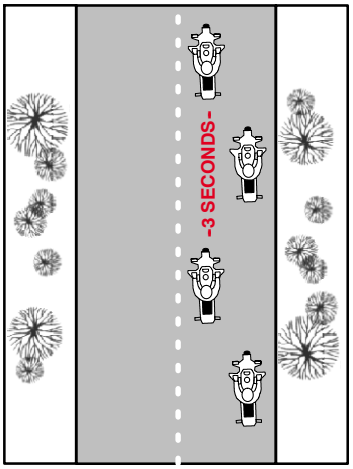
Keep the Group Together

- ***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 behind the leader, where more experienced riders can watch them.
- ***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.

Keep Your Distance

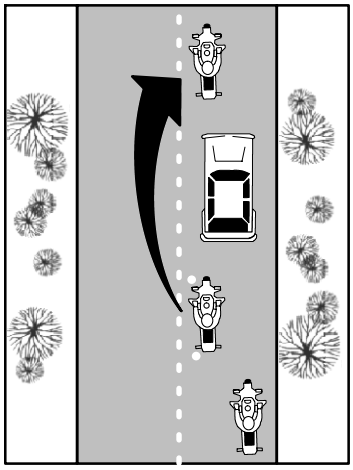
Maintain close ranks at a safe distance. A close group takes up less space on the highway, is easier to see and is less likely to be separated. However, it must be done properly.

- ***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 and one-half seconds behind in the right side of the lane.

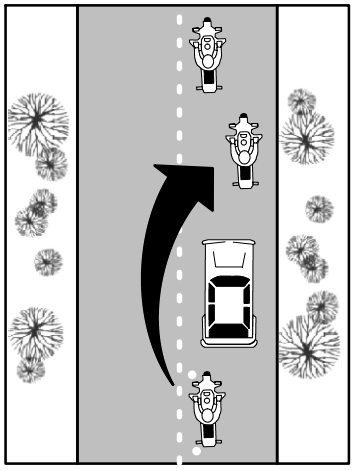


A third rider maintains in the left position, three seconds behind the first rider. The fourth rider would keep a three-second distance behind the second rider. This formation keeps the group close and permits each rider a safe distance from others ahead, behind, and to the sides.

- ***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.**



When 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. When riding in a group, inexperienced riders should position themselves:
    A. Behind the leader.
    B. In front of the group.
    C. In the middle of the group.
    D. Beside the leader.

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

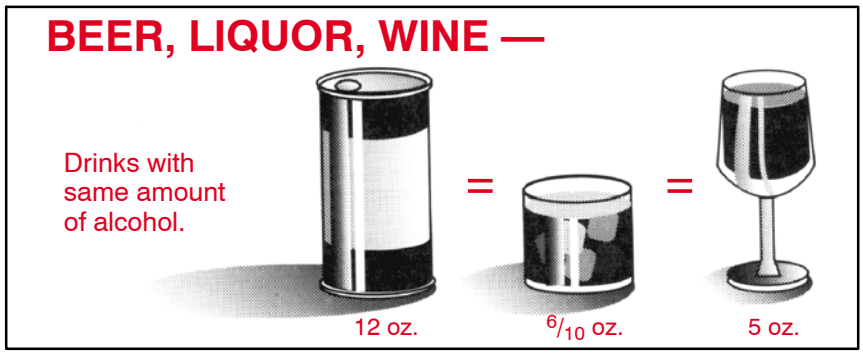
The more alcohol in your blood, the greater the degree of impairment. Your Blood Alcohol Concentration or BAC is the amount of alcohol in relation to other fluids in the body. Generally, alcohol can be eliminated in the body at the rate of almost one drink per hour. But a variety of other factors may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

Three factors play a major part in determining BAC:

- The amount of alcohol you consume.
- The number of hours you have been drinking.
- Your body weight.

But other factors 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 5-ounce glass of wine, or a shot of liquor all contain the same amount of alcohol. BAC is determined in part by how much alcohol you have consumed.



The faster you drink, the more alcohol accumulates in your body. At most, the body can only burn off one drink in an hour. 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:

Drinks consumed – hours = drinks left

A person drinking seven drinks over a span of three hours would have at least four (7 – 3 = 4) drinks remaining in their system at the end of the three hours. They would then need at least another four hours to eliminate the four remaining drinks before they consider riding.

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 judgement and skills begins well below the legal limit.

ALCOHOL AND THE LAW

In North Dakota, a person with a BAC of .08%, or .02% if under 21, is considered intoxicated. It doesn't matter how sober you may look or act. The breath or urine test is what usually determines whether you are riding legally or illegally.

Your chances of being stopped for riding under the influence of alcohol are increasing. Law enforcement is being stepped up across the country in response to the senseless deaths and injuries caused by drinking drivers and riders.

Years ago, first offenders had a good chance of getting off with a small fine and participation in alcohol-abuse classes. Today the laws of most states impose stiff penalties on drinking operators. And those penalties are mandatory, meaning that judges must impose them.

If you are convicted of riding under the influence of alcohol or drugs, you may receive any of the following penalties:

- ***License Suspension***—Mandatory suspension for conviction, arrest, or refusal to submit to a breath test.
- ***Fines***—Severe fines are another aspect of a conviction usually levied with a license suspension.
- ***Costs***—Additional lawyer's fees to pay; lost work time spent in court or alcohol-education programs; public transportation costs (while your license is suspended); and the added psychological costs of being tagged a "drunk driver."

MINIMIZE THE RISKS

Your ability to judge how well you are riding is affected first (judgment). 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.

Control Drinking

- ***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.

Control Riding

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.

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. Take their key, if you can.
- ***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..."

14. If you wait an hour for each drink before riding:
    A. You cannot be arrested for drinking and riding.
    B. Your riding skills will not be affected.
    C. Side effects from the drinking may still remain.
    D. You will be okay as long as you ride slowly.

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 cycle.

- ***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 cycle 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.

15. To avoid fatigue, you should ride no more than:
    A. 2 hours a day.
    B. 4 hours a day.
    C. 6 hours at day.
    D. 10 hours a day.

Answers: 1-C, 2-D, 3-D. 4-A, 5-B, 6-C, 7-B, 8-D, 9-C, 10-C, 11-D, 12-A, 13-A, 14-C, 15-C

EARNING YOUR LICENSE

Safe riding requires knowledge and skill. Licensing tests are the best measurement of the skills necessary to operate safely in traffic. Assessing your own skills is not enough. People often overestimate their own abilities. It's even harder for friends and relatives to be totally honest about your skills. Licensing exams are designed to be scored more objectively.

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.

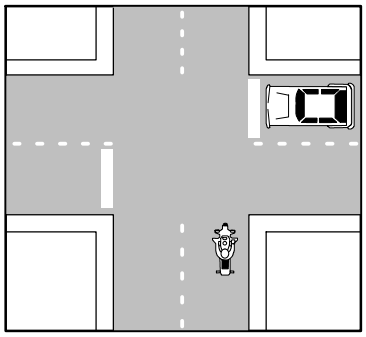
KNOWLEDGE TEST—Sample Questions

Answers are printed at the bottom of the next page.

1. It is MOST important to flash your brake light when:
   A. Someone is following too closely.
   B. You will be slowing suddenly.
   C. There is a stop sign ahead.
   D. Your signals are not working.
2. The FRONT brake supplies how much of the potential stopping power?
   A. About one-quarter.
   B. About one-half.
   C. About three-quarters.
   D. All of the stopping power.
3. To swerve correctly:
   A. Shift your weight quickly.
   B. Turn the handlebars quickly.
   C. Push the handgrip in the direction of the turn.
   D. Push the handgrip in the opposite direction of the turn.
4. If a tire goes flat while riding, it is usually best to:
   A. Hold the handgrips firmly and keep a straight course.
   B. Shift your weight toward the good wheel and brake.
   C. Brake on the good wheel and steer to the right.
   D. Use both brakes and stop quickly.

5. The car is waiting to enter the intersection. It is best to:

   A. Make eye contact with the driver.
   B. Reduce speed and be ready to react.
   C. Maintain speed and position.
   D. Maintain speed and move right.



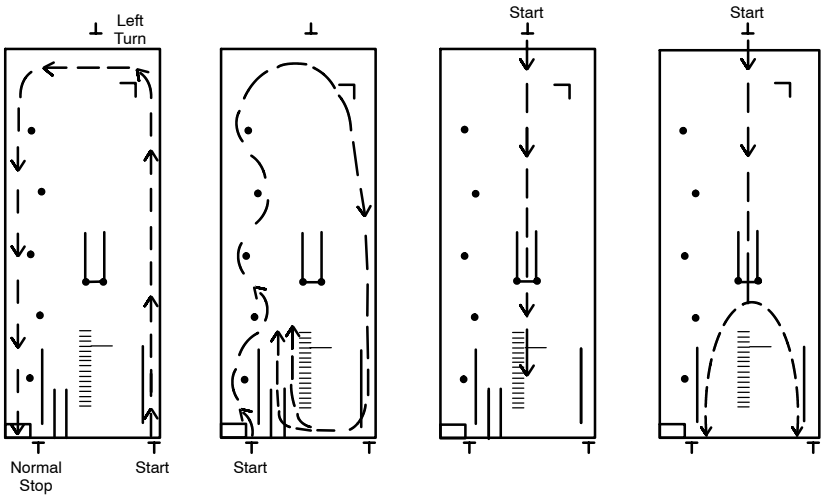
ON-CYCLE TEST

Basic vehicle control and crash-avoidance skills are included in on-cycle tests to determine your ability to handle normal and hazardous traffic situations.

North Dakota utilizes two On-Cycle Skill tests dependent upon the facilities available at the various driver license sites. **Skill tests will not be conducted during inclement weather. Call for cancellation information.**

The **Field Cone Test** consists of six pairs of cones placed 15 feet apart. The cones in each pair are 3 feet apart. The rider is required to safely demonstrate a Slow Ride, Straight Line Ride, Serpentine Ride, and a Figure Eight. Starting, Shifting, Control, Balance, and Stopping are scored throughout each exercise.

The **Alternate Most Skill Test** consists of basic vehicle control and collision avoidance exercises. Cones for the cone weave are 12 feet apart with a 2-foot offset. See diagram for Alternate Most.



TO RECEIVE A MOTORCYCLE LICENSE WITH FULL PRIVILEGES, MANEUVERS ARE TO BE PERFORMED AS DESIGNED.

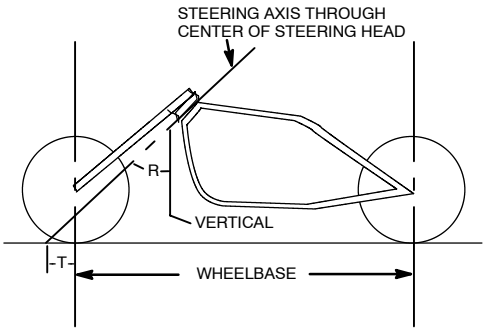
Knowledge Test Answers: 1-B, 2-C, 3-C, 4-A, 5-B

EQUIPMENT REQUIREMENTS

All motorcycles, except three-wheel motorcycles, must meet the following specification in relationship to front-wheel geometry:

MAXIMUM: Rake: 45 degrees—Trail: 14 inches positive
MINIMUM: Rake: 20 degrees—Trail: 2 inches positive

MOTORCYCLE FRONT-END GROMETRY



R - RAKE (ANGLE MEASURED IN DEGREES)
T - TRAIL (MEASURED IN INCHES)

Manufacturer's specifications must include the specific rake and trail for each motorcycle or class of motorcycles.

Handlebars must be of proper leverage for steering, and capable of withstanding a minimum force of 100 pounds applied to each handgrip in any direction. Handlebar grips must be located no more than 15 inches above the unoccupied seat with the handlebars located in a straight-ahead position and must be capable of vertical adjustment. The handlebars must provide a minimum of 18 inches between grip after final assembly.

Handlebars must be equipped with handgrips consisting of a material and surface pattern to ensure firm, nonslip gripping for the driver.

Every motorcycle must be equipped with a suspension system and such suspension system must be applicable to at least the front wheel. The suspension system must be effective in reducing road shock and designed for the purpose of maximizing vehicle stability.

Fuel System

All fuel system components, including the tank, pump, tubing, hoses, clamps, etc., must be securely fastened to the motorcycle so as not to interfere with vehicle operation and be leakproof when the vehicle is in its normal operating attitude.

Fuel lines must be positioned in a manner to prevent their contact with the engine head, manifold, exhaust system, or other high temperature surfaces, or moving components. The fuel system must be adequately vented and provided with a fuel shut-off valve located between the fuel supply and the engine.

Exhaust System

Motorcycles must be equipped with an exhaust system incorporating a muffler or other mechanical device for the purpose of effectively reducing engine noise. All motorcycles used for street and highway travel must not exceed the noise decibel limitations established by the Environmental Protection Agency. Cutouts and bypasses in the exhaust system are prohibited. The system must be leak-proof and all components must be securely attached to the vehicle and located so as not to interfere with the operation of the motorcycle. Shielding must be provided to prevent inadvertent contact with the exhaust system by the operator or passenger during normal operations.

Mirrors

Every motorcycle must be equipped with at least one mirror of unit magnification, securely affixed to the handlebar and capable of adjustment. Such mirror must consist of a minimum reflective surface of 10 square inches. All mirrors must not contain sharp edges or projections capable of producing injury.

Fenders

Each wheel of a motorcycle must be equipped with fenders or otherwise covered by the body configuration. Fenders must be securely mounted and of sufficient size and strength to minimize water or other road surface substances from coming in contact with the vehicle riders, or throwing the road substances unreasonably to the rear of the vehicle. Fender design must be effective in reducing side spray.

Seat or Saddle

A seat or saddle securely attached to the vehicle must be provided for the use of the operator. The seat or saddle must not be less than 25 inches above a level road surface when measured to the lowest point on top of the seat or saddle cushion with the operator seated in a driving position. The seat or saddle adjustment locking device must prevent relative movement of the seat from its selected and secured position under all normal vehicle operating conditions.

Chain Guard

Any drive chain on a motorcycle must be equipped with a chain guard or covering device to prevent chain or chain sprocket contact with any rider.

Vehicle Stand

All motorcycles designed with two wheels must be equipped with a retracting vehicle stand to permit the vehicle to remain in an upright stored position without outside assistance. The stand may be of a side or center type, and must be of substantial construction to hold the vehicle so equipped.

Glazing

When equipped, all motorcycle windscreen and windshields must meet the following standards:

1. The glazing materials must comply with the standards adopted by rule of the director.
2. The metal support must be of a material which bends rather than fragments under impact.
3. Covering material, other than glazing, must be beaded at the edges to prevent fraying.

Horn

Every motorcycle must be equipped with an operative horn in good working order as described by subsection 1 of section 39-21-36 NDCC. The horn must operate from a control device located on the left handlebar.

> 39-21-36. Horn and warning device—1. While being operated upon a highway, every motor vehicle must be equipped with a horn in good working order and capable of emitting sound audible under normal conditions from a distance of not less than 200 feet, but no horn or other warning device may emit an unreasonably loud or harsh sound or a whistle. Whenever reasonably necessary for safe operation, the driver of a motor vehicle upon a highway shall give audible warning with the vehicle's horn, but may not otherwise use the vehicle's horn while upon a highway.
>
> 2. No vehicle may be equipped with nor may any person use upon a vehicle any siren, whistle, or bell, except as otherwise permitted in this section.

Speedometer and Odometer

Every motorcycle must be equipped with a properly operating speedometer and odometer calibrated in miles per hour and miles respectively and must be fully illuminated when the headlamp is activated.

Lighting Equipment

Every motorcycle must be equipped with lamps, reflective devices, and associated equipment as required by and in compliance with standards adopted by rule of the director. A gearbox indicator light, if provided, must be located within the operator's field of vision. A headlamp beam indicator light must be located within the operator's field of vision and illuminated automatically when the high beam of the headlamp is actuated.

Passenger Seat

Motorcyles designed to carry more than one person must be equipped with a securely mounted seat for each passenger located to the side or rear of the driver such that the passenger seat does not interfere with the driver's control or operation of the vehicle. In the case of a two-wheel vehicle, that passenger seat must be located on the longitudinal centerline of the motorcycle.

Frame-Chassis Requirements

The motorcycle frame-chassis, including the suspension components and engine mountings, must be of substantial construction, capable of supporting the combined weight of all vehicle components and riders for which the vehicle is designed, and withstand normal road shocks and operational stresses without constituting a hazard to the riders or other users of the highway. The wheel base may not be less than 40 inches. (Wheel base is measured from the center or axle of the front wheel to the center or axle of the rear wheel.)

Brakes

Every motorcycle must have either a split service brake system or two independently actuated service brake systems in accordance with rules adopted by the director. Brakes must act on the front and rear wheels.

All linkage, cables, pivots, and bearings must be free of excess (high) friction, with the front wheel brake cable so located and secured as not to become pinched between fork and frame members when the wheel is turned completely to the right or left.

Brake actuating devices must be in an accessible location, unencumbered by vehicle components, and so positioned that adequate leverage and safe operation are ensured. A suitable mechanism must be provided for the purpose of automatically returning the actuating devices to normal position upon release.

Motorcycle brakes must be capable of being adjusted automatically or manually with means provided to prevent unintentional adjustment. Each three-wheel motorcycle must be equipped with a parking brake of a friction type with a solely mechanical means to retain engagement.

Tires, Wheels, and Rim

Motorcycle tires must not be less than 2 and 25/100 inches in width and designed for highway use. Wheel rim diameters may not be less than 10 inches and must otherwise comply with applicable state standards, as promulgated by the director. Two-wheel motorcycles using low pressure tires are exempt from the above requirements if the inflated height of the tire is 20 inches or greater.

Footrest

Footrests must be provided for each designated seating position. Each footrest for a passenger must be so designed and constructed to support a static weight of 250 pounds applied at the center of the foot pedal. Footrests must be so located to provide reasonable accessibility for the passenger's feet. Footrests must fold rearward or upward when not in use if the footrest protrudes beyond the width of the handlebars.

Highway Bars

If a motorcycle is so equipped, highway bars must have a maximum width of 26 inches; must be located less than 15 inches from the foot controls; and may not interfere with the operation of the foot controls.

Protective Helmet Requirements

North Dakota law requires that an approved helmet be worn by anyone under the age of 18. If the operator of a motorcycle is required to wear a helmet, any passenger would also be required to wear a helmet regardless of the age of the passenger. No person shall operate a motorcycle if a person under the age of 18 years is a passenger upon that motorcycle and is not wearing a helmet as provided by law. Likewise, an approved helmet is required for all persons less than 18 years of age when operating a motorized bicycle.

Signal Requirements

Motorcycle operators must signal their intention to turn with either electrical turn signals or by use of the standard hand signals. Signals must be given continuously during the last 100 feet before the turn.

MOTORCYCLE LAW

All the basic rules of the road found in the Class D North Dakota Driver's Guide apply to motorcycles as well as other vehicles.

Additional Laws:

- You can carry a passenger only if your motorcycle is designed to carry more than one person.
- Both the driver and the passenger must sit with one leg on each side of the motorcycle.
- You cannot carry a passenger or bundle if it prevents you from keeping both hands on the handlebars.
- The operator of a motorcycle must not operate a motorcycle between lanes of traffic or between adjacent lines or rows of vehicles.
- The operator of a motorcycle is not permitted to pass in the same lane occupied by the vehicle being overtaken.
- Riders of motorcycles cannot attach themselves to any other vehicle on a roadway.
- All motorcycles must be equipped with footrests for their passengers.

MOTORCYCLES MAKE SENSE— SO DOES PROFESSIONAL TRAINING

Motorcycles are inexpensive to operate, fun to ride, and easy to park. Unfortunately, many riders never learn the critical skills needed to ride safely.

Professional training for beginning and experienced riders prepares them for real-world traffic situations. MSF Motorcycle *RiderCourses*SM teach and improve such skills as:

- Effective turning.
- Braking maneuver.
- Protective apparel selection.
- Obstacle avoidance.
- Traffic strategies.
- Maintenance.

For the beginning or experienced *Ridercourse* nearest you, call toll free: (800) 726-4094

The Motorcycle Safety Foundation's purpose is improving the safety of motorcyclists on the nation's streets and highways. In an attempt to reduce motorcycle crashes and injuries, the Foundation has programs in rider education, licensing improvement, public information and statistics. These programs are designed for both motorcyclists and motorists. A national, non-profit organization , MSF is sponsored by five U.S. motorcycle distributors: Honda, Yamaha, Kawasaki, Suzuki and BMW.

The information contained in this publication is offered for the benefit of those who have an interest in riding motorcycles. The information has been compiled from publications, interviews and observations of individuals and organizations familiar with the use of motorcycles, accessories, and training. Because there are many differences in product design, riding styles, Federal, State and local laws, there may be organizations and individuals who hold differing opinions. Consult your local regulatory agencies for information concerning the operation of motorcycles in your area. Although the Motorcycle Safety Foundation will continue to research, field test, and publish responsible viewpoints on the subject, it disclaims any liability for the views expressed herein.

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