TEAM OREGON MOTORCYCLE SAFETY PROGRAM

# BASIC RIDER TRAINING™

INSTRUCTOR'S GUIDE

INTRODUCTION TO MOTORCYCLING

*5th Edition, January 2025*



*Visit our website for more information on courses and course locations: http://team-oregon.org*

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INTRODUCTION TO MOTORCYCLING

# *The Path to Success*

Welcome to Team Oregon, to motorcycling, and to a community of riders dedicated to rider education. We share your passion for riding and are inspired by the idea that what we teach has the potential to save lives.

Successful motorcyclists approach riding with uncompromising honesty. It's this honesty that forces us to recognize a sobering fact about riding: When things go wrong, riders (and their passengers) often incur significant injury or death. Fact number two: Riders' poor judgment and poor skills are to blame for the majority of motorcycle crashes. For some, these realities are enough to discourage them from riding. For others, such truths form the basis of an effective riding strategy.

Team Oregon's rider education has two central priorities. One goal is to boost your knowledge and awareness, addressing dangers inherent in motorcycling. We highlight the traps and offer solutions. We look at recurring problems in the motorcycle community and ask hard questions. Why, for instance, would a rider get on a bike after drinking, when a third of all motorcycle fatalities result from alcohol impairment?

A second goal is to help you understand dynamics particular to motorcycles. We ask you to put this understanding to work immediately, on a bike, in a controlled environment, through exercises that instill and build on fundamental skills. This training is intense. It requires you to be rested and ready. It demands your full attention and a willingness to respond to coaching. Please bring to it the level of respect it deserves.

Basic and intermediate training do not make you an expert. At best they provide rudimentary tools that enable a graduate to critique his or her own riding. And while experiential learning is critical to a rider's growth, far too often a near miss or a minor crash becomes the teacher. Expert motorcyclists do not rely on emergencies to further their growth. Instead, they embrace more training. They challenge what they know (or what they think they know) in formal settings and in exchanges with better riders. They invite feedback and are open to periodic resets in their assumptions and habits. Above all, they continue to hone their judgment.

I salute you for taking the first steps in educating yourself about riding. But let me stress, basic and intermediate training are first steps on a long path to proficiency. Perhaps this course leaves you excited by the commitments motorcycling asks of you. You value more training, practice, and knowledge, and you can hold yourself to the discipline and self-control riding requires. You are a champion. Instead, maybe you learn through this course that you are not ready for the rigors of motorcycling. You, too, are a champion!

Whatever the outcome of your short time with us, let honesty and humility guide you. Motorcycling is an activity that is not kind to those who disrespect it.

Aria Minu-Sepehr, Director

MOTORCYCLE TEAM OREGON SAFETY PROGRAM

# CONTENTS

## CONDUCT PRELIMINARY ACTIVITIES

- **Produce**
  - **Course Roster**
- **Confirm AV Resources and Equipment**
- **Set Up Classroom**
  - **Distribute to each student**
    - ✦ Waiver form
    - ✦ BRT Rider's Guide
    - ✦ Name tag
    - ✦ Local forms or surveys


*Instructor Note: Policy and procedure for late-arriving students:*

*Policy Reference # 2.3.5—Instructors will release any student from training who misses more than 30 minutes of classroom instruction or the first exercise of a range session.*

*Any student arriving more than 30 minutes late for the first classroom session loses eligibility to participate in this class and must be dismissed. Mark the student as NS (No Show) indicating they did not participate in any of the course sessions. If a student attends the first classroom session but misses the first exercise of range, mark the student as DNF (Did Not Finish). In either case, direct the student to contact the office for re-enrollment information.*

*Any student who arrives less than 30 minutes late for the first classroom must independently read Units 1 and 2 and be evaluated on the classroom discussion missed. Key points include:*

- *Evaluate Understanding of Expectations (page 8)*
- *Complete Unit 2 Review Questions (page 11)*


## INTRODUCTION

There is a thrill and a sense of freedom that comes with riding a motorcycle. It is the rhythm of the ride, the road and surroundings, your motorcycle and you. Your senses delight with every passing sight, smell and sound. To achieve this level of motorcycling magic, your senses need to be sharp. Motorcycling demands attention and skill. It challenges you to be physically and mentally prepared to handle anything that comes your way. This course is your door into the world of motorcycling. Get ready to roll the first miles of your motorcycling journey into what will be an exciting and rewarding experience. Welcome to *The Ride*.

## BRT COURSE OBJECTIVES

To acquire knowledge and skills for safe and responsible motorcycle operation.

- Learn the mental skills for safe motorcycling.
  - *Understand the risks associated with motorcycling.*
  - *Identify and develop strategies to manage risk.*
- Gain the physical skills for safe motorcycling.
  - *Develop the basic skills needed to balance, shift, turn and stop the motorcycle.*
  - *Improve skills and finesse to handle emergency situations.*

**Successful riding requires practiced skill and good judgment. You'll develop critical skills, learn about the risks of motorcycling and ways to minimize them. That's the challenge of *The Ride!***

This course is designed to prepare you for street riding. You will develop basic riding skills and strategies to become a safe and responsible motorcyclist.

Your instructors are highly trained professionals who will promote your learning with classroom instruction and hands-on practice in a secure area. In the classroom we'll discuss the risks of motorcycling and identify ways to manage those risks. We'll identify strategies for becoming more alert and perceptive. We'll also explore the handling dynamics of motorcycles so that you'll have the knowledge to continue developing your skills.

On the practice range, your instructors will provide coaching to increase your skills and confidence. The course is not competitive and allows riders of varied skill levels to learn in a safe environment. So relax and enjoy the experience. Our goal is to help you be successful and safe. Ask lots of questions. We're here to help you discover the answers. Concentrate on developing your skills, your strategies and your ride — the first steps to safety!

## COURSE ADMINISTRATION

- **Collect Completed Waiver Forms**
  - **All fields complete**
  - **Examine driver license**
    - **Name, number and date of birth must match student's course forms**
    - **License expiration**
    - **Picture matches the student**
    - **If under age 18, a parent or guardian has signed Waiver and Disclaimer form**
  - **Signed and dated**


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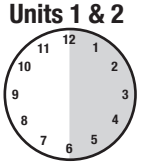
Units 1 & 2



30 minutes

## WELCOME CLASS

- **Welcome and Introductions**

2

Show Slide

**Introductions**

## IDENTIFY UNIT OBJECTIVES

- **Understand Course Objectives and Requirements**

## IDENTIFY BRT OBJECTIVES

- **Develop Mental Skills**
  - ✦ Understand the risks of riding
  - ✦ Develop strategies to manage risk
- **Develop Physical Skills**
  - ✦ Balance, shift, turn and stop
  - ✦ Prepared for emergency situations
  - ✦ Develop skills shown to be absent in collision-involved riders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## COURSE REQUIREMENTS

- **Attendance**
  - ✦ Mandatory for all sessions
- **Participate**
  - ✦ Participate in classroom discussion
- **Rider's Guide**
  - ✦ Read Rider's Guide – refer to Glossary for definition of terms
- **Practice Riding**
  - ✦ Two practice riding sessions on range
- **Formal Evaluations**
  - ✦ Multiple-choice knowledge test
  - ✦ Skills test

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## COURSE SCHEDULE

✦ Identify course schedule

3
Show Slide
Schedule

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## WHAT TO BRING

- **Required Riding Gear**
  - ✦ Motorcycle helmet — loan helmets available
  - ✦ Eye protection
  - ✦ Over-the-ankle footwear
  - ✦ Full-finger gloves
  - ✦ Long pants
  - ✦ Long sleeve shirt or jacket
  - ✦ Rain gear and/or dry change of clothing
- **Arrive Prepared**
  - ✦ Dress in layers
  - ✦ Rested and ready
  - ✦ Snacks and water
- **Health Condition or Disability?**
  - ✦ Inform instructor during break

## COURSE REQUIREMENTS

To successfully complete this course, you must:

- *Attend and participate in all sessions. Be on time! Classes start promptly. Late-arriving students risk losing their reserved place in the class as well as their tuition.*
- *Successfully complete a multiple-choice knowledge test on the material covered in class and this workbook.*
- *Successfully complete a riding skills test. The skills test consists of exercises practiced in the course, including basic handling skills, stopping quickly, cornering, and swerving.*

**Important Note:**
**Come to class rested and ready to ride. Bring snacks and water. If you have a health condition or disability, please let your instructor know. Motorcycling is a demanding physical activity, so be prepared.**

## COURSE SCHEDULE

Note your course schedule here:

| Day | Time | Classroom | Range |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

## Required Clothing and Equipment

1. **DOT-approved helmet**
   Sanitized loan helmets are usually available — check with your instructor. You may bring your own helmet but it is subject to inspection and approval by the instructor.
2. **Eye protection**
   A helmet face shield, goggles or glasses.
3. **Sturdy, over-the-ankle footwear**
   Ankle bones must be covered. Low heels are preferred.
4. **Full-finger gloves**
   Motorcycle gloves are preferred. Avoid bulky gloves.
5. **Pants**
   Full-length sturdy material such as denim.
6. **Long-sleeve shirt or jacket**
7. **Rain gear if weather is threatening**
   Courses are not cancelled because of rain.

## KEEPING THE LEARNING SAFE AND FUN

### ■ Understanding Expectations

- ❍ **Basic course structured for new riders**
  - ✦ Varying levels of experience (*acknowledge*)

**4-10**
**Show Slides**
**Expectations**

- ❍ **Expectations – realistic**
  - ✦ Build knowledge and skill
  - ✦ Practice proper riding technique
  - ✦ Need-to-know knowledge and skills to begin practicing on street
- ❍ **Expectations – not realistic**
  - ✦ Guaranteed to pass/endorsement
  - ✦ Safety guaranteed – street or range
  - ✦ Be an expert rider
- ❍ **Don't focus on pass/fail**
  - ✦ Explore/discover in a safe environment
  - ✦ May decide motorcycling is not for you (*That's a win!*)
- ❍ **Respond to coaching**
- ❍ **Not permitted**
  - ✦ Unsafe behaviors
  - ✦ Conditions of undue risk
- ❍ **Dismissal policy**
  - ✦ If unable to practice safely
  - ■ **Arrive early**
    - ✦ Sessions start promptly – being late risks dismissal
- ❍ **Street riding is dangerous**
  - ✦ You are responsible to apply what you learn to the street

*Instructor Note: Encourage students to read Foreword on Page 4 about the realities of riding and training.*

## KEEPING THE LEARNING SAFE AND FUN

This course is designed for beginning riders and the exercises progress from easy to more challenging. Your expectation may be to learn to ride, to improve your knowledge and skill, and/or to comply with state law or court order. If you have other expectations, discuss them with your instructor.

## UNDERSTANDING EXPECTATIONS

Experience has shown that not everyone who takes a motorcycle training course will be ready to ride on the street. The course is meant to be a safe place to explore and learn if motorcycling is right for you.

You will get instruction and practice time to develop essential skills and strategies in a way that maximizes your safety and the safety of those around you. However, if at any time during the course your instructor determines your safety is at risk, he or she will take immediate action. The problem could be nervousness, lack of concentration or coordination, balance difficulties or repeated failure to respond to coaching. Unsafe behaviors and conditions of undue risk are not permitted. The instructor may dismiss any student who cannot practice safely, regardless of the reason. Motorcycling is a dangerous activity, and you could get hurt or killed.

There is no guarantee that you'll successfully complete this course. And remember: Successful completion of the course does not guarantee your safety, either. If at any time you decide motorcycling is not for you, it's your responsibility to stop riding – on the range now, or on the street later.

Your motorcycling journey only begins here. It is up to you to use sound judgment, make wise decisions and apply what you learn to the street. Your safety depends on it.

## IDENTIFY UNIT OBJECTIVES

- **Understand the Risk Involved in Riding a Motorcycle**
- **Understand Ways to Manage and Reduce the Risk**

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## DISCUSS MOTORCYCLING

- **What is Right for Me?**
  - ✦ Styles, types and sizes
  - ✦ Price
  - ✦ Fit
- **Setting Up Your Motorcycle**
  - ❍ **Identify controls that may be adjustable**
    - ✦ Handlebar
    - ✦ Brake(s)
    - ✦ Gearshift lever
    - ✦ Clutch lever


Motorcycles have been around for over a century. The popularity of motorcycling soared in the 1960s, when small displacement motorcycles hit our shores. Today motorcycling is enjoyed by millions of Americans.

## WHAT'S RIGHT FOR ME?

Motorcycles come in all shapes and sizes and some are designed for very specific uses. It's important for you to know what you want your motorcycle to do. Do you want to tour, or are you more interested in commuting? Do your interests lie in sport bikes, or are you more inclined to explore backcountry forest roads? What's your budget?

In motorcycling, size matters! Try on bikes to see how they fit. It's important that you feel comfortable and confident, so get a bike that allows you to reach the ground flat-footed at stops. Don't forget that you'll need to physically move the motorcycle from time to time, so pick a model you can handle. This is also true when you are riding at slower speeds. If you're uncomfortable with the motorcycle because you're afraid of dropping it or you don't think you can lift it, then it's too big! Your motorcycle dealer can help you select the motorcycle and accessories that suit you best. Look around!

## SETTING UP YOUR MOTORCYCLE

When you first get your new motorcycle, take time to set it up to fit you. Some motorcycles have adjustable seat height. Many of the controls are adjustable, including the handlebar, brakes, shifter and clutch. Adjust the controls so that they are a natural extension of your hands and feet. You should not have to strain to reach or maintain comfortable contact with any of the controls.

## ASSESSING THE RISK OF RIDING

A universal truth of motorcycling is that riding a motorcycle is more dangerous than driving an automobile. Motorcyclists are much more vulnerable than drivers because motorcycles lack the protective cocoon of steel roll cages, crumple zones, safety belts and airbags. Maneuvers that are routine in an auto can be hazardous on a motorcycle. Automobiles don't have to be balanced at a stop like motorcycles; drivers don't worry about minor wheel spins or skids; and, in a car, the rain and wind stay outside. All of these can be safety hazards for motorcyclists.

## VULNERABILITY

When a motorcycle collides with another vehicle, it is the rider who is almost always injured, sometimes seriously or fatally. As a motorcyclist, you are vulnerable. This is why motorcyclists must always be more vigilant than other motorists — more aware of our surroundings and always prepared to react. Vulnerability is also the number one reason for always wearing protective gear; we never know when we might need it!

## CONDUCT RISK ASSESSMENT ACTIVITY

11
Show Slide
**Riding MC - Just Like Driving a Car**

*Instructor Note: Split into groups of 2-3 students. Ask students to discuss slide and give three reasons why the statement isn't true. Allow two minutes.*

- **Motorcycling Is <u>Not</u> Like Driving a Car. Why?**
  - ✦ Others don't see you
  - ✦ Surface problems/stability
  - ✦ Weather/temperature exposure
  - ✦ Not protected by vehicle safety features (seat belts, airbags etc.)
- **Motorcycle Riding Is 27x More Dangerous than Driving**
  - ✦ Riders are vulnerable


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## ASSESSING RISK (CONT'D)

- ❍ **Motorcycle riding is 27x more dangerous than driving**
  - ✦ Being seen reduces crashes
  - ✦ Rider's judgment is critical

---

## DISCUSS RISK ACCEPTANCE

**12-18**
**Show Slides**
**Rider Readiness**

- ■ **Define Rider Readiness**
  - ✦ 100% prepared to manage risk
- ■ **Self-Assess before <u>Every</u> Ride**
  - ✦ Physically rested and able
  - ✦ Mentally prepared and attentive
    - Free of distractions, preoccupations
  - ✦ Judgment unimpaired
    - Free from stress, illness, other physical impairments
  - ✦ All the gear, every time (ATGET)
  - ✦ Aware and prepared for weather, roadway, and traffic conditions
  - ✦ Motorcycle ready to go
- ❍ **If answer to any is "no"?**
  - ✦ Choose not to ride or adjust appropriately

## VISIBILITY — THE SIGHT TO SUCCESS

Visibility is a critical issue for motorcycles. Because motorcycles are so much smaller than autos they are more difficult to detect in traffic. Motorists often fail to notice motorcycles, and even when they do, they often misjudge the approach speed and distance. All these factors raise the risk of motorcycling. "Invisible" motorcyclists are vulnerable to vehicles violating their right-of-way and the odds of a **collision** increase with each passing mile. It's up to you to take responsibility for these limitations. Make yourself visible. Don't let yourself be hidden in traffic!

## JUDGMENT IS CRITICAL

Single-vehicle **crashes** involving motorcycles are over-represented in crash data. The cause is most always rider error, and typically these errors are in judgment first, then skill. Good skill alone will not keep you from crashing, but good judgment can. It's up to you to make good decisions. It's up to you to manage risk. This is your ride! Manage the risks by thinking ahead — way ahead!

## RISK ACCEPTANCE

***RiderReadiness:***

***Being completely prepared for riding. This includes being mentally prepared and attentive, physically rested and unimpaired, having your motorcycle in good condition, wearing appropriate riding gear and being aware of and prepared for upcoming weather, roadway and traffic conditions.***

**Strive to achieve a constant state of *RiderReadiness* by understanding the challenges of motorcycling and riding within your ability.**

Recognizing and accepting the risk of motorcycling is the first step in developing strategies to manage it. No sane motorcyclist intends to crash. But crashes happen. That's why we have to be ready at all times.

## PHYSICAL READINESS

Ride rested. Avoid riding when excessively fatigued, stressed or preoccupied. These conditions can impair your judgment and focus — an invitation to disaster!

## MENTAL READINESS

Your mental readiness is very important. Motorcycling requires focused attention to handle the multitude of riding tasks and challenges. Your mind must be attentive to these tasks and not consumed with other issues. It is especially important to avoid anything that dulls your judgment and coordination, including alcohol and other drugs.

## DISCUSS RISK ACCEPTANCE (CONT'D)

- ❍ **Proper riding gear**
  - ✦ Minimizes injuries
  - ✦ Provides comfort
- ❍ **Recognize limits**
  - ✦ Personal ability
  - ✦ Motorcycle's capabilities
  - ✦ Environmental conditions
- ❍ **Accept responsibility to ride within those limits every time**

---

## COMPLETE REVIEW QUESTIONS

**1. Are you guaranteed to pass this class and get your endorsement? (No) What are some realistic expectations?**

- *Be coached on proper technique*
- *Improve knowledge and skill*
- *Prepare for street riding*

**2. Give three reasons why motorcycling is more dangerous than driving a car.**

- *Motorcyclists are vulnerable to crashes and the elements*
- *Motorcycles are hard to see*
- *Balance and stability are critical*
- *Errors in judgment have greater consequences*

**3. To verify you are 100% ready to ride, what things should you assess about yourself before you head out?**

- *Physically rested and able*
- *Mentally prepared and attentive*
- *Judgment unimpaired*
- *All the gear, every time*
- *Aware and prepared for conditions*
- *Motorcycle fueled and serviced*

**4. What are the three limits you must recognize and ride within?**

- *Ride within your personal ability*
- *Ride within motorcycle's limits*
- *Ride according to conditions*

## PROPER RIDING GEAR

Proper riding gear is essential to minimize injuries should a crash occur. It provides outstanding comfort by sealing out the elements and helping you stay focused on the ride.

## UNDERSTAND YOUR ABILITIES AND LIMITATIONS

It is important to know your abilities and not exceed those abilities. Riders get into trouble when they think they can do something that they really can't. Improve your skills in small steps. Be patient and keep practicing. No one becomes an expert rider overnight.

## KNOW YOUR MOTORCYCLE

Not all motorcycles are created equal. Off-road and dual-purpose bikes excel where touring bikes flounder, but a touring bike in its element is a different story. Sport bikes tilt toward performance and cruisers are more laid back. It is up to you to understand the design limitations of your motorcycle and keep safely within that designed operating range.

## AWARENESS OF RIDING CONDITIONS

Awareness of upcoming roadway, weather and traffic conditions improves *RiderReadiness* and minimizes surprise.

**Ride within the limits of your:**

1. **Personal Ability**
2. **Motorcycle's Capabilities**
3. **Environmental Conditions**

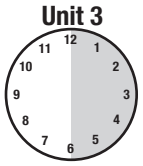
## ACCEPT YOUR RESPONSIBILITY

Once you are prepared, know your abilities and understand your machine's capabilities, it is up to you to take responsibility for riding within those limits every time. It's your ride!

## Review Questions

1. Are you guaranteed to pass this class and get your endorsement?
2. Give three reasons why motorcycling is more dangerous than driving a car.
3. To verify you are 100% ready to ride, what things should you assess about yourself before you head out?
4. What are the three limits you must recognize and ride within?

## IDENTIFY UNIT OBJECTIVES




- **Understand How Riding Gear Provides Comfort, Protection and Visibility**
- **Know What to Look for During a Pre-Ride Check**

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*Instructor Note: Provide and display riding gear examples.*

## DISCUSS RIDING GEAR

- ✦ Brightly colored, retro-reflective
- ✦ Protective armor
- ✦ Protects against injury; also flying debris, dust/dirt, insects, etc.
- ✦ Protects against exposure to sun, rain, wind, heat, cold
- ✦ Provides comfort; improves concentration and safety

---

## PROTECT YOUR HEAD

Play Video

**Helmets**

- **Comfort, Protection and Visibility**
  - ✦ Reduces exposure to weather and debris
  - ✦ Full-faced offers best protection
  - ✦ Protects hearing and vision too
  - ✦ Increases visibility – bright colors, reflective material
  - ✦ Replace after dropping or crashing


## GETTING IN GEAR

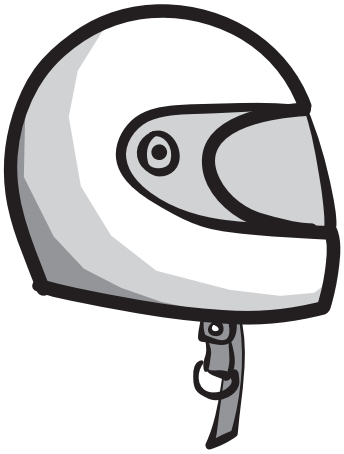
Riding gear is a motorcyclist's best friend. Appropriate gear makes all the difference in your comfort, concentration and safety.

- *Motorcycle riding gear should be brightly colored and have retro-reflective material to catch the attention of surrounding traffic.*
- *Riding gear should have protective pads or armor and resist abrasion to reduce the chance of injury in the event of a fall or collision.*
- *For comfort, and to arrive in style, your gear must be designed to stand up to all kinds of riding conditions, from rain and wind to flying debris.*

Your gear is designed to protect you, to provide comfort and cover, and to improve your control. Don't forget your passenger needs the same level of protection and comfort!

## PROTECT YOUR HEAD

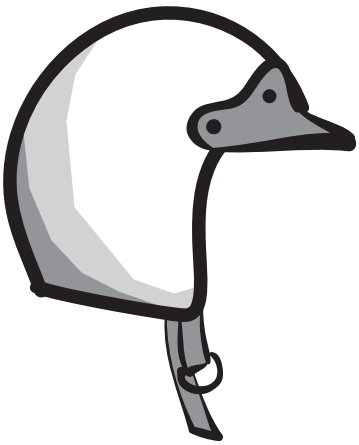
**Full-face Helmet**



The most important piece of safety equipment you can wear is a good quality helmet that, at a minimum, bears **DOT*** approval. There is no substitute. Look for labeling on the outside of the helmet and also sewn to the inside of the helmet. While DOT does not make helmets, they set performance standards that the manufacturers must follow by federal law. Another good indicator is a Snell Memorial Foundation sticker. Helmets with Snell Memorial Foundation certification have passed Snell's safety tests.

Even though helmets are a great way to enhance rider safety, some myths about helmets persist. You should know that helmets don't block vision, impair hearing or cause head or neck injuries. Further, studies have repeatedly shown that helmets protect against head and brain injuries. Wear a high-quality motorcycle helmet every time you ride.

**Three-quarter Helmet**



### CHOOSING A HELMET

Fit, price, color and style are all important considerations when choosing a helmet, but think safety first!

### FULL-FACE HELMETS

When choosing a helmet, know that full-face models provide the most protection through their coverage of the face and jaw, and the greatest comfort from the elements.

### THREE-QUARTER HELMETS

This style of open-face helmet is the choice of some riders who prefer the wind in their faces. Of course that wind can carry rain, bugs, sand and road debris that can be painful and distracting. And there's no protection from the continued exposure of sun

* ***Bolded*** *terms are defined in the Glossary starting on page 71*

## PROTECT YOUR HEAD (CONT'D)

- ❍ **Half helmets**
  - ✦ Protects less area of head
- ■ **Fit**
  - ✦ Snug; try on several types

*Instructor Demonstration: Put on your helmet, fasten strap, remove.*

---

## HOW HELMETS WORK

- ■ **Hard Outer Shell**
  - ✦ Resists penetration, disperses energy
- ■ **Impact-Absorbing Liner**
  - ✦ Cushions head, absorbs energy
- ■ **Comfort Padding**
  - ✦ Comfort and fit
- ■ **Retention System**
  - ✦ D-rings, clips—secures helmet

and wind on your face. A three-quarter helmet affords riders good head protection but lacks the face protection of a full-face helmet.

## HALF HELMETS

Half-shell helmets provide the least protection. If this is your style, make sure you get one that's designed for motorcycling so that you have the most protection afforded by this minimal helmet. Look for the labeling! Some "beanie style" helmets are not designed for motorcycle use. They provide no protection in the event of a collision.

## HELMET FIT

A helmet should fit snugly but comfortably. A helmet that is too loose can lift in the wind or come off your head in a fall. One that is too tight can create sores or cause headaches. When choosing a helmet, try on several brands and sizes to get an idea of fit and comfort.

## HOW HELMETS WORK

Motorcycle helmets are designed to protect your head in case of a collision or fall and to provide comfort from the elements. A full-face helmet with a shield also incorporates excellent face and eye protection.

## OUTER SHELL

Helmet shells are typically made from fiberglass, polycarbonate or composite materials. They protect wearers by dispersing energy away from the head. They also resist penetration by any object that might come in contact with the helmet. However, not all helmet damage is always visible to the eye. It is important to replace any helmet that has taken an impact.

## IMPACT-ABSORBING LINER

The impact-absorbing liner is usually made of expanded polystyrene. This is a dense layer that cushions and absorbs shock by spreading the impact forces throughout the helmet. Think about it: The more impact energy that is absorbed by the helmet, the less that's left to reach your head and brain.

## COMFORT PADDING

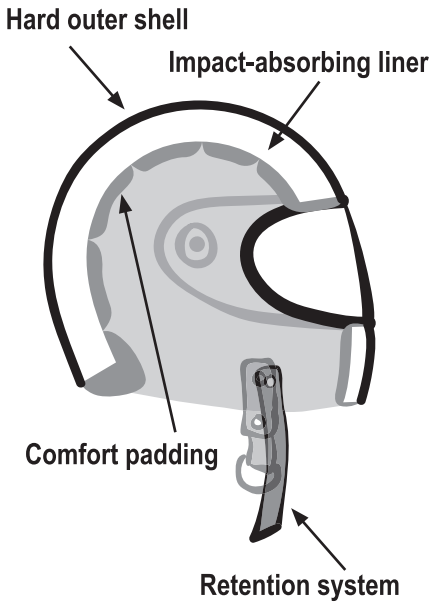
The padding within the helmet helps to increase helmet comfort and maintain fit. Some helmet padding may even be removable for cleaning purposes.

## RETENTION SYSTEM

The retention system is the chinstrap with D-rings or clips that secures the helmet in place. This is very important! If properly used, the chinstrap keeps the helmet on your head in the event of a collision. Helmets that come off the head in a collision or fall can't protect you at the time when they are most needed.

**Head protection is vital! Head injuries account for the majority of motorcycle fatalities.**

**Choose a helmet that at a minimum meets DOT standards and fits you comfortably. Wear and securely fasten the helmet every time you ride. You never know when you might need it.**



## HOW HELMETS WORK (CONT'D)

- **Helmet Care**
  - ✦ Designed to absorb energy
  - ✦ Don't drop helmet or compress inner liner
  - ✦ Treat with care

## PROTECT YOUR HEARING

- **Provides Comfort and Protection**
  - ✦ Earplugs
  - ✦ Doesn't impair ability to hear traffic
  - ✦ Improves concentration

## PROTECT YOUR EYES

- **Provides Comfort and Protection**
  - ✦ Face shields, goggles
  - ✦ Protects against exposure
  - ✦ Provides comfort and improves vision
  - ❍ **Eyeglasses and sunglasses by themselves not sufficient**
    - ✦ Don't block wind/debris
    - ✦ Not shatter resistant
- **Face Shields**
  - ✦ Designed for helmet
  - ✦ Use clear shield at night
- **Care**
  - ✦ Soap, water, soft cloth
  - ✦ Avoid paper products
  - ✦ Replace scratched shields

## HELMET CARE

Helmets are designed to absorb energy that would otherwise be transmitted directly to your head. Treat your helmet with care. Don't jam it on a mirror or carry a spare on a backrest, as that compresses the inner liner, reducing its protective ability. Likewise, use caution when resting the helmet on the seat of your motorcycle. A small gust of wind can knock it to the ground and damage it. Follow the manufacturer's directions for caring for and storing your helmet.

**Tests show that earplugs can prevent hearing loss by reducing sound levels by 30 decibels.**

## PROTECT YOUR HEARING

The roar of engines and the rushing wind is exhilarating, but sustained exposure, even in a good-fitting helmet, can result in hearing loss. Earplugs are cheap and disposable — keep a supply handy and use them!

## PROTECT YOUR EYES

Once upon a time you could identify happy motorcyclists by the bugs in their teeth. While a mouth full of dead insects may appeal to some, no one wants to lose their vision due to a fly in the eye at 50 mph — not to mention road dust, pebbles, wind and rain. Protect your vision! Windshields and eyeglasses do not provide adequate eye protection. Helmets with full-face coverage provide the best protection, but snap-on face shields and goggles also provide good protection. Goggles and some safety eyewear can restrict peripheral vision.

## FACE SHIELDS

Helmet face shields are available in an increasing range of styles and tints. For full-face helmets, face shields flip up for added convenience. Riders should make sure that their face shields are designed specifically for the helmet they are using, are impact resistant, and are securely fastened to their helmets. Face shields should accommodate eyeglasses or sunglasses to be worn while riding and should be optically clear and free from scratches that might impair vision. Use a clear (untinted) shield at night or in low-light conditions.

## CARE

Clean your shield or goggles with a mild solution of soap and water and use a soft cloth for washing and drying. Don't use paper products as they can scratch the plastic. When your shield becomes scratched, replace it.

## PROTECT YOUR HANDS

- **Provides Comfort and Protection**
  - ✦ Protects from elements and abrasion
  - ✦ Improves grip
- **Types**
  - ✦ Summer, winter, gauntlet
- **Made for Motorcycling**
  - ✦ Outside seams, curved fingers, adjustable retention straps

## PROTECT YOUR ANKLES AND FEET

- **Provides Comfort and Protection**
  - ✦ Protects from elements; hot or sharp parts
  - ✦ Rubber soles, low heels — good grip
  - ✦ Injury prevention

## PROTECT YOUR BODY

- **Provides Comfort, Protection and Visibility**
  - ✦ Reduces exposure to wind, weather and debris
  - ✦ Improves visibility through bright colors and retro-reflective material
  - ✦ Vented and weathertight for temperature control
  - ✦ Improves concentration

## PROTECT YOUR HANDS

Gloves provide comfort from the elements, improve your grip on the controls and reduce hand fatigue. They also protect your hands from abrasion and injury in a crash. Gloves specifically designed for motorcycling are best. They are curled to provide a natural grip and have seams on the outside to prevent irritation. **Gauntlet** gloves fit over the cuff of your jacket and keep cold air from rushing up your sleeves. There are also lighter gloves designed specifically for warmer weather, as well as heavier, insulated gloves that are ideal for winter riding.

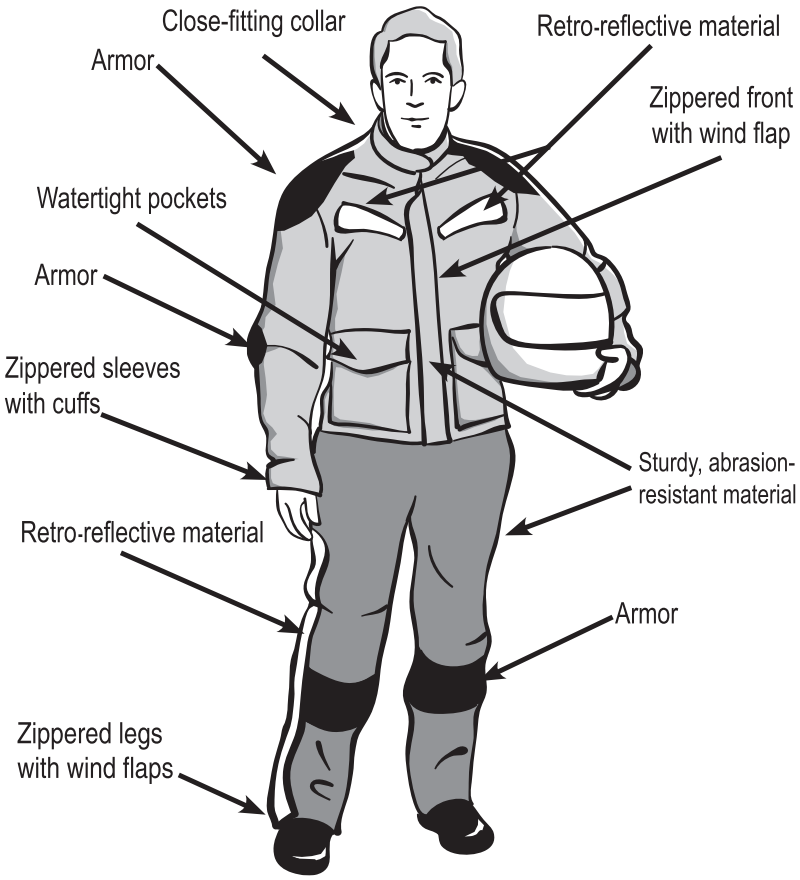
## PROTECT YOUR ANKLES AND FEET

Sturdy over-the-ankle boots are recommended for motorcycling. They protect you from the elements and from hot or sharp motorcycle parts. Boots with rubber soles and low heels are best. They provide a secure grip on the pavement when stopped and provide a good grip on the footrests. In the event of a collision, sturdy boots protect you from foot and ankle injuries. If your boots have laces, be sure to tuck them in so they don't get caught in moving parts of the motorcycle.

## PROTECT YOUR BODY

Motorcycle jackets, pants and riding suits provide comfort in just about all conditions as well as protection in case of a collision. This gear is specifically designed for riding. Riding jackets, pants and suits are made to allow a comfortable riding position. Sleeves and legs are cut longer. Extra material and armor are often installed at the knees, shoulders and elbows to provide lasting comfort and protection. Zippers and flaps that seal out the wind can be opened for ventilation.

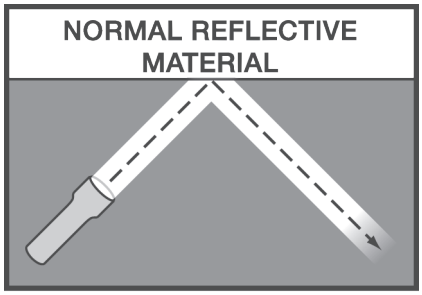
Good quality gear helps to insulate you from inclement conditions, allowing you to concentrate on riding rather than battling the elements. Even a collar that flaps against your helmet or your skin can be irritating and distracting. Avoid these distractions by choosing quality riding gear.

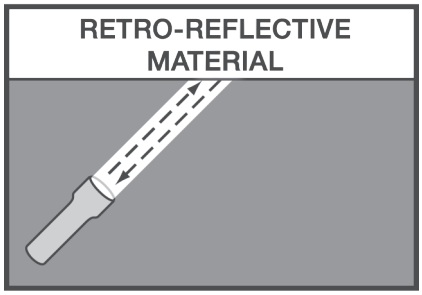


## PROTECT YOUR BODY (CONT'D)

- **Types**
  - ✦ Jackets, pants and riding suits
  - ✦ Abrasion-resistant materials (leather, Cordura nylon, Kevlar, etc.)
  - ✦ Armor
- **Fit**
  - ✦ Fit for riding position
  - ✦ Cuffs and collars adjustable
  - ✦ Ventilation adjustable
- **Rain and Cold-Weather Gear**
  - ✦ Keeps rider dry and focused
  - ✦ Visibility — retro-reflective panels, stripes, material
  - ✦ Removable liners
  - ❍ **Rain Suits**
    - ✦ 1- and 2-piece
    - ✦ Designed for motorcycling

Leather has always been a popular choice, as its durability provides protection against injury and wind fatigue. Another option is durable, abrasion-resistant outerwear designed specifically for motorcycling. One- or two-piece riding suits made of water-resistant materials are good choices for year-round riders. For warmer climates, consider hot-weather riding gear made with mesh and ventilation panels with armor.




**Normal Reflective vs. Retro-Reflective**

Choose gear for durability, comfort, protection and visibility. Black is hard to see in daytime and invisible at night. Select gear with **retro-reflective** striping or patches. Retro-reflective material reflects light back to the source and illuminates the rider. Bright colors and retro-reflective materials are the best choices for keeping you visible to surrounding traffic both day or night.

Protect yourself in all kinds of weather. Constant exposure to the elements is both physically and mentally hazardous. Dehydration, overheating and **hypothermia** can compromise your judgment and cause decreased vision, light-headedness, and impaired coordination. Be prepared by choosing proper riding gear. In hot weather, wear gear with adequate ventilation. Properly ventilated riding gear promotes cooling which results in less dehydration and overheating. Also, riding in hot weather can cause you to lose a surprising amount of fluid through perspiration — drink plenty of water to keep yourself hydrated. When riding in cooler weather, **wind chill** can cool the body quickly and can cause hypothermia, a dangerous lowering of body temperature. Dress in layers to stay comfortable as conditions change. Remember, proper protective gear is essential for safety. Don't allow your senses to become so dulled that you fail to register changing traffic conditions!

## RAIN SUITS

Riding in the rain is not a problem if you are prepared for it. A warm and dry rider is much more attentive and comfortable than a chilled, wet one. Choose a rain suit specifically designed for motorcycling. It will keep the water out, provide comfort and visibility, and stand up to the wind. Don't forget waterproof gloves and boot covers. Be prepared — always carry rain gear!

**Select your riding gear with three things in mind: comfort, protection and visibility — safety in style and motion!**

## RIDING GEAR EXPECTATIONS

19
Show Slide
**Range vs. Street**

- **"Accepted" on Range Not Necessarily Sufficient Protection for Street**
  - **Range is learning environment**
    - ✦ Low speed, closed course
    - ✦ Good surface
    - ✦ Supervision and focused practice
  - **Street is much higher risk**
    - ✦ Higher speeds
    - ✦ Other vehicles
    - ✦ Divided attention
- **Dress Like a Pro**
  - **All the gear, every time**
    - ✦ If it's too hot to wear the gear, it's too hot to ride
  - **Motorcycle-specific gear**
  - **High-viz for conspicuity**

20
Show Slide
**Find the Rider**

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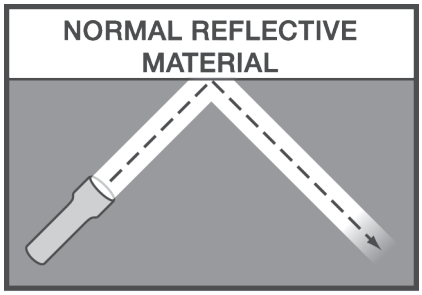


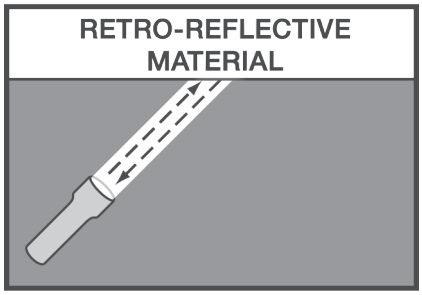


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**Select your riding gear with three things in mind: comfort, protection and visibility — safety in style and motion!**

## INSPECTION AND MAINTENANCE

- **Pre-Ride Check**
  - ✦ Fluids
  - ✦ Tires
  - ✦ Controls
  - ✦ Electrics
  - ✦ Final drive
- **Consult Motorcycle Owner's Manual**
  - ❍ **Checklist: Free download on TO website**

21
Show Slide
**Pre-Ride Check**

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## COMPLETE REVIEW QUESTIONS

**1. What are the three reasons we wear motorcycle-specific riding gear?**

- *Comfort, protection, visibility*

**2. A rider who is comfortable is better able to do what?**

- *Concentrate on riding*

**3. Besides injuries, what does riding gear protect you from?**

- *Sun, wind, weather, debris; preserves vision and hearing*

**4. What features of riding gear can make you more visible to other drivers?**

- *Bright colors, retro-reflectives*

**5. Why aren't ordinary eyeglasses or sunglasses sufficient eye protection?**

- *Not motorcycle-specific; don't block wind and airborne particles*

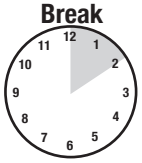
**6. When should you carry rain gear?**

- *Always (buy all-weather gear)*

**7. Where can you find the recommended maintenance for your motorcycle?**

- *Motorcycle operators manual and Team Oregon website*

**Break**



**10 minutes**

## INSPECTION AND MAINTENANCE

"An ounce of prevention is worth a pound of cure." This is especially true with motorcycles. It is always better to deal with a mechanical problem before the ride than suffer a breakdown during it. For your added safety, take a few moments before every ride to inspect your motorcycle.

- *Fluids — Check your fuel and oil levels. Always be on the lookout for weeps and leaks that indicate fluid loss.*
- *Tires — Check for wear and damage. Make sure tires are inflated to the proper pressure.*
- *Controls — Controls should operate smoothly and be properly adjusted.*
- *Electrics — Check your headlight, high beam, brake light, signals and horn.*
- *Final Drive — Chain drives should be properly adjusted and lubricated. Belt drives should be inspected for wear or damage.*

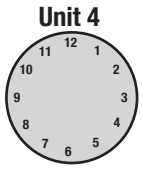
Your Motorcycle Operator's Manual (MOM) is the best source of information for operating and maintaining your motorcycle. If you don't have one for your motorcycle, you can purchase a replacement from your dealer.

Follow the recommended maintenance schedule prescribed in the MOM. Regular maintenance is the best way to avoid expensive emergency repairs. Plan ahead — don't risk mechanical failures. Always follow the recommendations in your operator's manual.

## Review Questions

1. What are the three reasons we wear motorcycle-specific riding gear?
2. A rider who is comfortable is better able to do what?
3. Besides injuries, what does riding gear protect you from?
4. What features of riding gear can make you more visible to other drivers?
5. Why aren't ordinary eyeglasses or sunglasses sufficient eye protection?
6. When should you carry rain gear?
7. Where can you find the recommended maintenance for your motorcycle?

## IDENTIFY UNIT OBJECTIVES




- **Understand Location of Motorcycle Controls**
- **Understand How to Get Underway, Shift, Stop and Turn**

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## IDENTIFY PRIMARY CONTROLS

*Instructor Note: Reference control locations and operation for motorcycles students will use in class. If any students will be using scooters, briefly point out differences in controls and control operations.*

- **Identify Purpose, Location and Operation**
  - **Throttle**
    - ✦ Roll on, increase speed
    - ✦ Roll off, decrease speed
    - ✦ Release, return to idle
  - **Clutch lever**
    - ✦ Squeeze, ease
    - ✦ "Safety valve" – squeeze to immediately cut power to rear wheel
  - **Gearshift lever**
    - ✦ Lift, press
    - ✦ Identify shift pattern, shifting process
  - **Front brake lever**
    - ✦ Squeeze smoothly
  - **Rear brake pedal**
    - ✦ Press


Get to know the location and operation of your motorcycle's controls. Using these controls should become second nature, a comfortable extension of your hands and feet.

## PRIMARY CONTROLS

Five primary controls make the motorcycle go and stop. You will find that it takes both hands and both feet to operate these five controls.

### THROTTLE

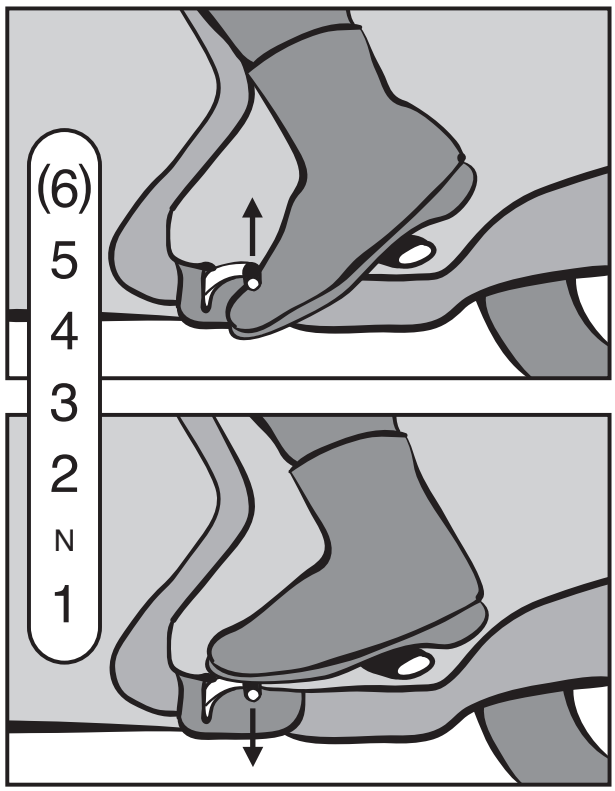
The throttle is the right handgrip and is operated by rolling the handgrip toward you to increase speed and away from you to decrease speed. When released, the throttle snaps back to an "idle" position. To use the throttle safely and comfortably, keep four fingers around the throttle/handgrip and the wrist in a low position.

### CLUTCH LEVER

The clutch lever is located in front of the left handgrip. Operate the clutch lever by squeezing it toward the left handgrip, disconnecting power from the rear wheel. To re-engage power, slowly release the clutch lever while gently applying throttle.

### GEARSHIFT LEVER

The gearshift lever, located on the left side of the motorcycle in front of the footrest, is operated by the left foot. To shift to a higher gear (upshift), squeeze the clutch and then lift the gearshift lever. To shift to a lower gear (downshift), squeeze the clutch and then press the gearshift lever. Remember that motorcycle transmissions shift only one gear per each lift or press - the shift lever must be released before you can shift again. The shift pattern is 1-N-2-3-4-5-(6). Neutral (N) is typically a half-shift up from first or a half-shift down from second; a full upshift or downshift will bypass neutral. The green instrument light indicates neutral.




**Gearshift Lever Operation**

### FRONT BRAKE LEVER

The front brake lever is located in front of the right handgrip and controls the brakes on the front wheel. To operate, use all four fingers and squeeze smoothly and progressively.

### REAR BRAKE PEDAL

The rear brake pedal controls braking on the rear wheel and is located in front of the right footrest. Press down with your right foot to operate.

## IDENTIFY OTHER CONTROLS AND EQUIPMENT

- **Identify Purpose, Location and Operation**
  - **Engine cut-off switch**
    - **Another "safety valve" – immediately cuts engine power**
  - **Ignition**
  - **Choke**
  - **Turn signal switch**
  - **High/low beam**
  - **Horn**
  - **Starter**
  - **Speedometer**

## OTHER CONTROLS AND EQUIPMENT

The location and operation of some of these controls vary from model to model. Consult your motorcycle owner's manual.

### ENGINE CUT-OFF SWITCH

Located on the right handgrip and operated by the right thumb. It allows you to shut off the engine without removing your hands from the controls.

### FUEL SUPPLY VALVE

May not be present on some motorcycles. Controls fuel supply to the engine. Turn from OFF to ON to run. Also may include RESERVE and PRIME positions.

### IGNITION

Usually located near the instrument cluster and activated with a key. Positions include ON, OFF, LOCK and PARK. The LOCK position allows the key to be removed and engages a steering-lock mechanism. PARK activates the taillight for increased visibility if you park alongside a roadway at night.

### CHOKE

Frequently located near the left handgrip and operated with the left thumb, but varies from model to model. The choke provides an enriched fuel mixture to assist in cold engine starts. Turn to OFF position when engine is warmed.

### TURN SIGNAL SWITCH

Usually located on the left handgrip and operated by the left thumb. Most models do not self-cancel. Check your owner's manual.

### HIGH/LOW BEAM

Located on left handgrip. On most motorcycles the headlight activates when the ignition is on.

### HORN

Located on the left handgrip. Press with your thumb.

### STARTER

Located on the right handgrip. Press with your thumb.

### SPEEDOMETER

Located in the instrument cluster. Indicates motorcycle road speed. An odometer shows miles ridden, and a re-settable trip meter can be used to show trip miles or miles since the last gas stop. Check the speedometer periodically as you ride.

## IDENTIFY OTHER CONTROLS AND EQUIPMENT (CONT'D)

- ❍ **Tachometer**
- ❍ **Indicator lights**
- ❍ **Mirrors**
- ❍ **Side and center stands**

---

## COMPLETE REVIEW QUESTIONS

**1. What are the five primary controls and where is each located?**

- *Throttle - right hand grip*
- *Clutch lever - left hand lever*
- *Gearshift lever - left foot lever*
- *Front brake lever - right hand lever*
- *Rear brake pedal - right foot pedal*

**2. What is the purpose of the engine cut-off switch and where is it located?**

- *Located on right hand grip*
- *Allows you to instantly shut off the engine without removing your hands from the controls*

**3. What must you remember when using your motorcycle turn signal?**

- *Many aren't self-canceling — remember to cancel your turn signal*

## TACHOMETER

Located in the instrument cluster. Indicates motorcycle engine speed in revolutions per minute (RPM). Never exceed red line RPM.

## INDICATOR LIGHTS

Located in the instrument cluster. Includes neutral, turn signals, oil pressure, high beam, side-stand down and possibly others.

## MIRRORS

Often located on handlebars. Every motorcycle should have a left and right mirror. Most mirrors are convex. **Convex mirrors** provide a wider view than flat mirrors but make vehicles seem farther away than they really are. Get familiar with your motorcycle's mirrors. Adjust them to see the road behind you. Stock, full-sized mirrors give you the best view. Smaller replacement mirrors restrict your view.

## SIDE AND CENTER STANDS

Support the motorcycle when parked. Not all models have center stands. Most stands have return springs that snap them up and hold them in place. Always remember to raise the side stand before getting underway.

# Review Questions

1. What are the five primary controls and where is each located?
2. What is the purpose of the engine cut-off switch and where is it located?
3. What must you remember when using your motorcycle turn signal?

## CONDUCT MOTORCYCLE CONTROLS ACTIVITY

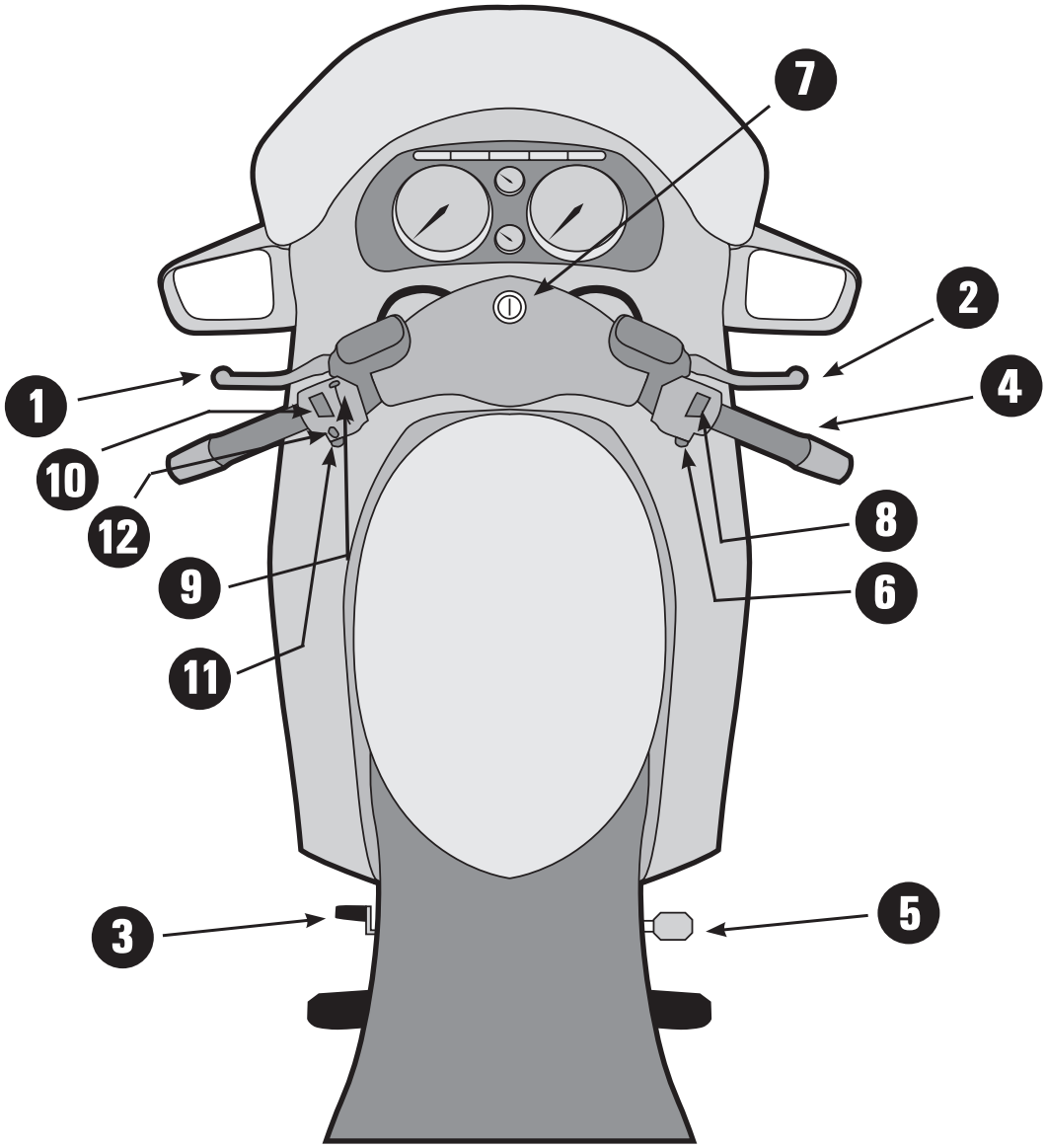
*Instructor Note: Encourage students work together in groups of 2-3. Allow two minutes. Reviewing answers not necessary. Summarize by asking "Which two controls are the "safety valves"? (clutch and engine cut-off switch)*

| | |
|---|---|
| **Clutch Lever** | **1** |
| **Ignition** | **7** |
| **Gear Shift** | **3** |
| **Horn** | **11** |
| **Throttle** | **4** |
| **Front Brake** | **2** |
| **Rear Brake** | **5** |
| **Starter** | **6** |
| **Engine Cut-off** | **8** |
| **High Beam** | **10** |
| **Choke** | **9** |
| **Turn Signal** | **12** |

## IDENTIFYING YOUR MOTORCYCLE'S CONTROLS

Use the illustration below to identify the motorcycle's controls

**Clutch Lever** _____
**Ignition** _____
**Gear Shift** _____
**Horn** _____
**Throttle** _____
**Front Brake** _____
**Rear Brake** _____
**Starter** _____
**Engine Cut-off** _____
**High Beam** _____
**Choke** _____
**Turn Signal** _____



## MOUNTING AND DISMOUNTING

- **Review Mounting Procedure**
  - ✦ Left side
  - ✦ Grasp handgrips, squeeze front brake
  - ✦ Mount
  - ✦ Sit and straighten
  - ✦ Raise sidestand
  - ✦ Adjust mirrors
- **Review Dismounting Procedure**
  - ✦ Sidestand down
  - ✦ Lean bike on stand
  - ✦ Squeeze front brake
  - ✦ Dismount
  - ✦ Turn handlebar toward stand

## STARTING THE MOTORCYCLE

- **Starting the Motorcycle — Identify ONE-C**
  - ✦ O - Ignition on
  - ✦ N - Transmission in neutral
  - ✦ E - engine cut-off switch to run or on
  - ✦ C - choke/clutch Use as needed
  - ✦ Press starter button
- **Stop the Engine**
  - ✦ Engine Cut-off Switch OFF
  - ✦ Ignition OFF

## MOUNTING AND DISMOUNTING

Let's get ready to ride! Stand on the left side of the motorcycle. Grasp the handgrips, squeeze the front brake to keep the motorcycle from rolling, and swing your right leg over the seat. Sit and straighten the bike; raise the sidestand with your foot. Now is a good time to adjust the mirrors so that you can just see the edge of your shoulders in the mirrors. To dismount, put the sidestand down. Lean the motorcycle onto the sidestand, squeeze the front brake and swing your leg over. Turn the handlebar fully toward the sidestand for stability.

# ONE-C

**O** On

**N** Neutral

**E** Engine Cut-off Switch

**C** Choke/Clutch

## STARTING THE MOTORCYCLE

To start the motorcycle, use the **ONE-C** pre-start routine:

- Turn the fuel valve from OFF to ON. Turn the ignition switch ON.
- Shift the transmission to NEUTRAL. Don't rely on the indicator light. Rock the motorcycle back and forth with the clutch out before starting the engine. If it rolls freely and the neutral light is on, it's in neutral.
- Engine cut-off switch to RUN or ON.
- Use the choke as needed. Turn the choke ON for cold starts. Many motorcycles require squeezing the clutch before the starter will operate. Even if this is not required, it is a good precaution against accidentally starting the bike in gear.

### START IT UP!

Press the starter button. Avoid using the throttle; the motorcycle should start without it. Many motorcycles have a safety mechanism that cuts power to the motor if the bike is placed in gear with the sidestand down; so if you haven't brought the sidestand up, do it now. If the motor doesn't start in the first 5 to 8 seconds, stop and repeat ONE-C.

### TO STOP THE ENGINE

Turn the engine cut-off switch to OFF. Do this every time so that you will automatically reach for the switch quickly in an emergency. Turn the ignition OFF. Turn the fuel valve OFF if your motorcycle has one.

## GETTING UNDERWAY

### ■ Using the Friction Zone to Get Underway

22
Show Slide
Friction Zone

- ❍ **Define friction zone**
  - ✦ Area of clutch travel where power is first transmitted from the engine to the rear wheel
- ❍ **Squeeze clutch, press down on shift lever to first gear**
- ❍ **Ease out clutch while gently rolling on throttle**

23
Show Slide
Getting Underway

- ❍ **Smoothly release clutch**
- ❍ **Once clutch is fully released, use throttle to control speed**

### ■ Good Riding Posture

24
Show Slide
Proper Posture

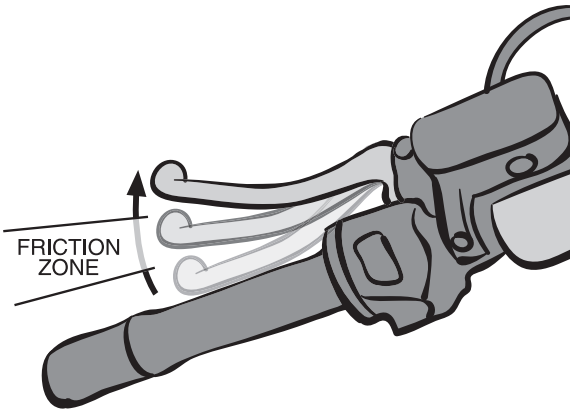
- ✦ Head and eyes up/forward
- ✦ Shoulders relaxed
- ✦ Arms slightly bent
- ✦ Left hand covering clutch
- ✦ Right wrist low
- ✦ Knees against tank

## GETTING UNDERWAY

With the motorcycle started, you are now ready to begin moving. Follow these procedures to smoothly get underway.

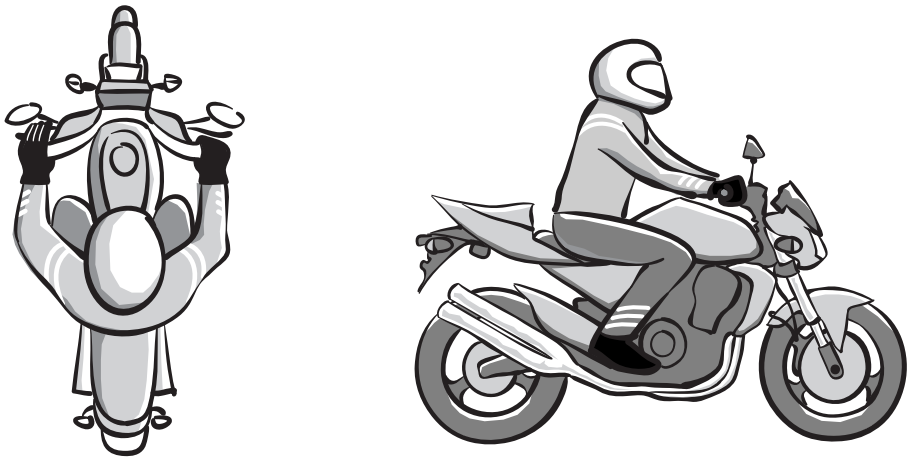
## USE THE FRICTION ZONE

Squeeze the clutch and shift into first gear. Because a motorcycle has a manual transmission, it takes a little clutch slip to get underway. Use the **friction zone —** the area of clutch travel where the engine's power begins to transmit to the rear wheel. This partial engagement allows you to smoothly and precisely control engine power to the rear wheel. Don't be in a hurry. Take your time easing out the clutch. Let the motorcycle get underway before fully releasing the clutch.




## ASSUME GOOD RIDING POSTURE

Good riding posture enhances your comfort and control, and makes you look good, too! Straighten your back, keep your head and eyes up and look where you want to go. Place your feet on the footrests near the controls, knees against the tank. Relax your arms and bend your elbows slightly. Hands should comfortably reach the controls without straining. Cover the clutch with all four fingers and keep your right wrist low on the throttle. Keep all fingers curled around the throttle — do not cover the front brake when you are learning to ride. Learn to roll off the throttle as you reach for the front brake lever with all four fingers. Reach and squeeze, then return your hand to the throttle.



**Proper Riding Posture**

## SHIFTING

### ■ Identify Upshifting Procedure

25
Show Slide
**Upshift**

- ✦ Roll
- ✦ Squeeze
- ✦ Lift
- ✦ Ease
- ✦ Roll

### ■ Identify Downshifting Procedure

26
Show Slide
**Downshift**

- ✦ Roll
- ✦ Squeeze
- ✦ Press
- ✦ Eeeease

### ■ Downshifting More Than One Gear

- ✦ Hold clutch in
- ✦ Press and release shift lever
- ✦ Repeat until first gear

---

## STOPPING

27
Show Slide
**Principles of Braking**

## SHIFTING

You must change gears to keep the engine within its best operating range at all speeds.

### SHIFTING TO A HIGHER GEAR

Your goal is to match engine speed to road speed and avoid over-revving or lugging the engine. As engine speed increases, upshift to a higher gear. You'll soon find shifting routine and enjoyable. Use this five-step process to upshift to a higher gear:

1. *Roll off the throttle.*
2. *Squeeze the clutch.*
3. *Lift the shift lever. Use firm pressure. Release the shift lever after each shift is completed.*
4. *Ease the clutch out.*
5. *Roll on the throttle.*

### SHIFTING TO A LOWER GEAR

Downshift to match engine speed with road speed, provide more acceleration, or to use engine compression to slow the motorcycle. Use this four-step process when downshifting:

1. *Roll off the throttle.*
2. *Squeeze the clutch.*
3. *Press down firmly (but don't stomp) on the shift lever.*
4. *Ease.* ***Engine braking*** *is at work here, and that can have the effect of stepping hard on the rear brake – eeeease out the clutch to avoid skidding the rear tire.*

It is possible to downshift several gears in succession. Keep the clutch in and press once for each gear. When you can downshift no more, you're in first. Remember to allow the shift lever to return to the center position after each shift.

## STOPPING

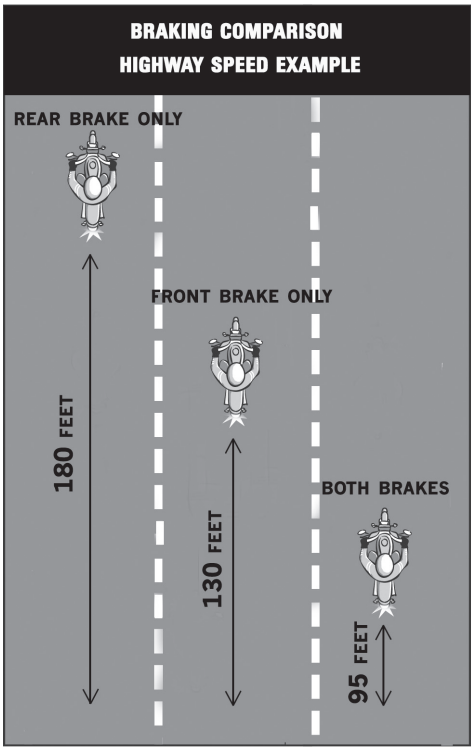
Your hands and feet must work together to bring the motorcycle to a smooth and coordinated stop. All the braking controls are on the right side — right hand and right foot — and all shifting controls are on the left side. When stopping, always begin braking first, then squeeze the clutch and downshift. With practice the action becomes

## STOPPING (CONT'D)

- **Identify Stopping Procedure**
  - ✦ Look — eyes up
  - ✦ Roll — off throttle
  - ✦ Brakes — both together always
  - ✦ Squeeze — clutch
  - ✦ Press — to first gear
  - ✦ Left — foot down first
- **Video Review of Controls**


## IDENTIFY TURNING PROCEDURE

- **Slow**
  - ✦ Before turn
- **Look**
  - ✦ Turn your head to face path
  - ✦ Eyes level with horizon
- **Roll**
  - ✦ Gradually throughout turn
  - ✦ Avoid abrupt acceleration




nearly simultaneous: IN (brake, clutch) and DOWN (rear brake and shift lever). Keep the clutch squeezed as you complete your downshifts to first gear. After you stop, place your left foot down first. The right foot applies the rear brake. Once stopped, place the right foot down if necessary.

The front brake provides at least 70% of the motorcycle's total stopping power. Always use both brakes, even for routine stops. Habits formed now will become automatic actions later.

**Using both front and rear brakes shortens stopping distance**

## TURNING

The secret to smooth and successful cornering lies in proper head turns and keeping your eyes up. ***Where you look is where you go.*** As you'll discover on the range, if you look through the turn you'll ride through the turn. If you look out of the turn, you'll ride out of the turn. Remind yourself to look ahead. Turn your head to face all the way through corners. This gives you the essential information to negotiate turns safely and skillfully.

### There are four basic steps to turning a motorcycle:

**The four steps to turnng a motorcycle**

SLOW
↓
LOOK
↓
ROLL
↓
PRESS

### SLOW

Reduce speed ***before*** the turn. Roll off the throttle and/or apply the brakes as necessary. Downshifting can also help reduce speed if necessary. Slow enough before the turn to allow smooth and constant throttle roll-on through the turn.

### LOOK

Turn your head and look as far as possible through the turn. Keep your head facing your intended path of travel. Keep your eyes level with the horizon. Use your peripheral vision to search the immediate area.

### ROLL

As you approach the entrance to the curve and before you lean, begin to slightly roll on the throttle. Maintaining steady speed or gentle acceleration stabilizes the suspension and improves overall control. Avoid abrupt acceleration while turning.

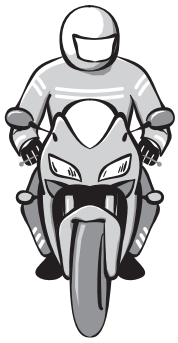
## IDENTIFY TURNING PROCEDURE (CONT'D)

- **Press**
  - ✦ Countersteer; apply gentle, forward pressure to initiate lean
    - To turn right, press right
    - To turn left, press left
- **Posture in Turns**
  - ✦ Head and eyes look through turn
  - ✦ Normal speed — lean with bike

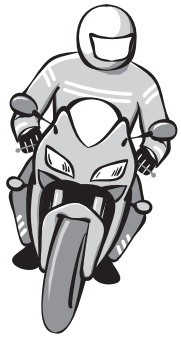
## PRESS

Lean the motorcycle into the turn by applying gentle, forward pressure to the handgrip in the direction of the turn. To turn right, press on the right handgrip. To turn left, press on the left handgrip. While this may sound backwards, the technique, known as **countersteering,** really works. A motorcycle must lean in order to turn. The pressure on the handgrip (countersteering) causes it to lean in the direction of the turn.

## Press to Lean



**Rider countersteers.**



**Front wheel momentarily out-tracks away from turn, causing motorcycle to begin leaning in turn direction.**

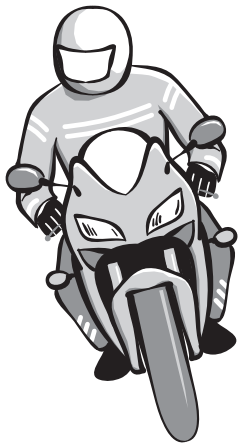
**Motorcycle stabilizes in turn, front wheel re-centers.**

## POSTURE IN TURNS

In most turns you and your motorcycle lean together. However for slow, tight turns you may find it useful to **counterweight,** putting your weight on the outside footpeg, or even shifting your body toward the outside. This allows the motorcycle to lean while you remain upright to balance the motorcycle. Remember to turn your head and look where you want to go. At low speeds, that might be right back over your shoulder. For very tight turns, you'll have to turn the handlebar as the bike starts to lean.

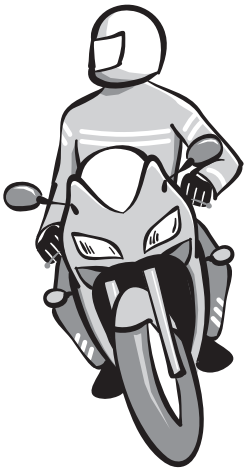
## Proper Turning Posture

**LEAN WITH**



**Normal Speed Turns**

**LEAN OUT**



**Slow, Tight Turns**

## COMPLETE REVIEW QUESTIONS

**1. What is ONE-C?**

- *Pre-start routine*
- *Ignition/fuel ON, Transmission in NEUTRAL, ENGINE cut-off switch to ON, CHOKE/CLUTCH as needed*

**2. How do you use the friction zone?**

- *Smoothly and gradually ease clutch into friction zone*
- *Hold there until motorcycle gets underway*

**3. Describe good riding posture.**

- *Eyes up, back straight*
- *Arms relaxed, elbows bent, clutch covered*
- *Knees against tank, feet on footrests near controls*

**4. What are the four steps to turning?**

- *Slow, Look, Roll, Press*

**5. Why is the "look" step important?**

- *Visual directional control - you go where you look*

**6. What does lifting or pressing on the shift lever accomplish?**

- *Shifts to a higher or lower gear*

**7. Which brake provides more stopping power? How much does it provide?**

- *Front brakes have more stopping power*
- *Provides 70% or more of total stopping power*

**8. How should you release the clutch when downshifting?**

- *Eeeease out the clutch*

---

## READING ASSIGNMENT

- **Prior to Next Class Session, Read Foreword and Units 5-7**

✦ Pages 4 and 28-47

# Review Questions

1. What is ONE-C?
2. How do you use the friction zone?
3. Describe good riding posture.
4. What are the four steps to turning?
5. Why is the “look” step important?
6. What does lifting or pressing on the shift lever accomplish?
7. Which brake provides more stopping power?  How much does it provide?
8. How should you release the clutch when downshifting?

## RANGE RULES, HAND SIGNALS AND REVIEW

- **Read Range Rules**

**28-30**
Show Slides
Range Rules

  - **Rule #12 is critical**
    - ✦ Risk of riding is present on the range
    - ✦ You could get hurt
    - ✦ If you are unwilling to accept these risks, opt out now: Motorcycling is dangerous

- **Demonstrate Hand Signals**
  - ✦ Start engine
  - ✦ Stop engine
  - ✦ Neutral
  - ✦ Cover clutch
  - ✦ Head and eyes up
  - ✦ Speed up
  - ✦ Slow down
  - ✦ Stop
  - ✦ Use both brakes
  - ✦ Uncover front brake
  - ✦ Staging
  - ✦ Whistle

- **Review**
  - ✦ What time on the range?
  - ✦ Don't be late
  - ✦ Range location
  - ✦ Gear needed to ride

- **Dismiss Students**

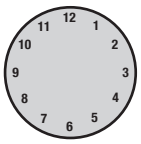
Range rules are designed to maintain safety for all riders and therefore apply to everyone. They are used in conjunction with all riding exercises, no exceptions. Range rules are as follows:

## RANGE RULES

1. **Wear all protective gear when seated on the motorcycle.**
2. **On the range, cover the clutch lever with four fingers at all times – this enables you to immediately remove power from the rear wheel, if necessary.**
3. **Keep your throttle hand in a low wrist position with four fingers around the handgrip.**
4. **On the range, do not "cover" the front brake while moving forward. Keep all four fingers wrapped around the throttle unless using the front brake.**
5. **Always check all around you before moving.**
6. **Don't crowd other riders – leave plenty of space between you and them.**
7. **Do not pass unless instructed to do so.**
8. **Use the engine cut-off switch to stop the engine, and then turn off the ignition key.**
9. **If you have a problem, move out of the way, stop, and signal your instructor.**
10. **If you don't understand an exercise, ask your instructor for clarification.**
11. **If you have a health concern or disability, please see one of your instructors.**
12. **Riding a motorcycle can be dangerous. It is your responsibility to stop training if you feel uncomfortable, unsafe, unable to concentrate, unable to follow directions, fatigued, or pushed beyond your limits.**

**Please familiarize yourself with the range hand signals on the next page!**

Unit 5



60 minutes

## INTRODUCTION – PIE CHART ACTIVITY

- **Three Main Crash Causes**

31
Show Slide
**Pie Chart**

  - **Single-vehicle – rider error**
  - **Multi-vehicle – rider error**
  - **Multi-vehicle – other driver error**

✦ Riders' biggest concern – which piece of pie?

  - **Other drivers only cause 1/4 of fatal crashes**

32
Show Slide
**Multi-Vehicle – Other Driver Error**

  - **Riders cause 1/4 of fatal multi-vehicle crashes**

33
Show Slide
**Multi-Vehicle – Rider Error**

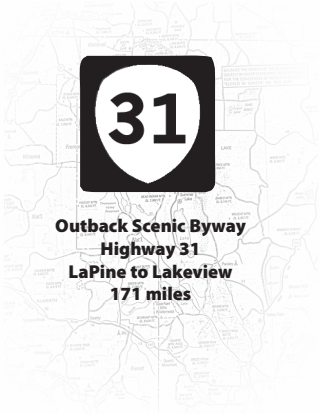
  - **Most common fatal crash is single-vehicle (rider error)**

34
Show Slide
**Single-Vehicle – Rider Error**

  - **"Other" usually animals**

35
Show Slide
**Other**

- **Riders Responsible for 3/4 of Crash Hazards**
- **This Unit Is the Most Important One in the Course**




Once you develop the physical skills of motorcycling, you're ready to hit the streets, right? Wrong. Handling a motorcycle is only one part of safe and successful riding. Now you need to take the next step and develop a set of street riding strategies that are the core of what we call "mental motorcycling." This is a constant game of "what if?" What if that car turns left? What if the bicyclist crosses in front of me? What if that's oil on the street, not water? As a street rider, your success and survival depend on your developing the fundamental skills of mental motorcycling.

**Motorcycling is mostly mental. Responsible riders always think ahead to chart a safe path through traffic. This is mental motorcycling — the art of *The Ride.***

## VISIBILITY

One of the most important strategies motorcyclists must develop is to see and be seen in traffic. In multi-vehicle crashes involving motorcycles, motorists often fail to detect motorcyclists until it's too late to avoid a collision. These factors contribute to that scenario:

- *Motorists fail to actively scan for traffic or confirm that it is safe to enter an intersection.*
- *Riders fail to command attention and communicate their presence and intentions. Often a rider is hidden from view by other traffic.*
- *Riders fail to detect motorists or fail to anticipate that a motorist will violate their right-of-way.*

Visibility is a crucial component of mental motorcycling. Communicate your presence and intentions to other highway users. Even then, you must be ready to take evasive action at any time, especially if you doubt that you've been seen.

## STRATEGY TO SEE AND BE SEEN IN TRAFFIC

## BEING SEEN

You have several ways to communicate your presence to other motorists:

### CLOTHING

Brightly colored clothing and a light-colored helmet will help make you more visible to cars and other traffic. Also, retro-reflective material on your helmet, clothing and motorcycle will help you stand out in traffic.

## IDENTIFY UNIT OBJECTIVES

- **Understand Strategies for Seeing and Being Seen in Traffic**
- **Understand Strategies for Lane Placement and Following Distance**
- **Understand and Apply the SIPDE Process for Dealing with Hazards**
- **Understand Strategies for Dealing with Typical Riding Situations**

---

## VISIBILITY

- **Research Evidence**
  - **Factors contributing to multi-vehicle collisions**

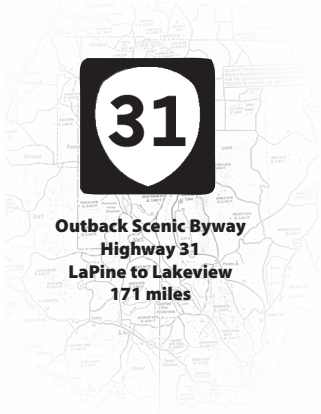
✦ Motorists fail to actively scan
✦ Riders fail to:
- Command attention
- Communicate presence and intentions
- Detect motorists
- Anticipate right-of-way violations
- Match speed to conditions

---

## IDENTIFY WAYS TO BE SEEN

- **Clothing**

✦ Bright colors, retro-reflective

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## IDENTIFY WAYS TO BE SEEN (CONT'D)

- **Headlight Always On**
  - ✦ Communicates presence
- **Signals**
  - ✦ Communicate intentions
  - ❍ **They don't-self-cancel**
    - ✦ Don't send unintended message
- **Brake Light**
  - ✦ Flash before stops when appropriate
- **Horn**

---

## IDENTIFY WAYS TO SEE OTHERS

- ✦ Vision is most important source of information

## HEADLIGHT

Ride with your headlight on at all times. Switch your headlight to high beam to command attention in high-risk situations, then return it to low beam for normal riding.

## SIGNALS

Communicate your intentions. Use your turn signals to let others know your intentions. Don't forget to cancel your turn signal. Use hand signals along with electric signals to help alert traffic around you. Never assume that drivers see you or anticipate your moves. Clear communication is your responsibility.

## BRAKE LIGHT

When stopping in traffic, flash your brake light to alert traffic approaching from the rear. The motorcycle's brake light can blend in with other lights, especially at night. A flashing light attracts more attention.

## HORN

Vehicle drivers accustomed to relying on horns to alert other motorists should be forewarned: motorcycle horns are not loud enough to reliably do the job, so don't count on them to make others aware of your presence.

**COMMUNICATE YOUR PRESENCE AND INTENTIONS** STRATEGY

## SEEING OTHERS

Research shows that most motorcycle crashes develop from hazards in front of us. One key to successful street riding is in searching out these potential hazards and anticipating their actions and consequences. Finding others before they find you requires alertness and accurate perception.

**FIND HAZARDS BEFORE THEY FIND YOU** STRATEGY

## SCANNING

The first step of mental motorcycling is assessment — finding the critical information needed for success and safety. That search is primarily accomplished through what you see. Therefore, you must develop scanning skills that provide accurate information.

## IDENTIFY WAYS TO SEE OTHERS (CONT'D)

- **Scanning**
  - ✦ Goal is to find critical information early
  - ❍ **How to scan**
    - ✦ Aggressive, purposeful search
    - ✦ Keep eyes moving

---

## IDENTIFY LINES OF SIGHT

- **Chart a Course as Far as You Can See**
  - ❍ **Look ahead 20 seconds**
  - ❍ **Projected path of travel**
- **Aggressively Scan a 10-Second Immediate Path of Travel**
- **Check Traffic to Your Sides**
  - ✦ Avoid blind spots of other vehicles
- **Check Mirrors**
  - ❍ **Rely on head checks**
    - ✦ Turn your head to check blind spots

**36** Show Slide
**20 Seconds - Line of SIght**

**37** Show Slide
**20 Seconds - Line of SIght**

**38** Show Slide
**10 Seconds - Immediate Path**

Scanning for potential hazards includes more than just looking in front of you. You must always be aware of what is to either side and behind. ***Scanning is an aggressive, purposeful search for information.*** Don't let your eyes fix on any one object for more than a split second. Things happen quickly on the street, and it only takes an instant for a hazard to materialize.

## STRATEGY

**LOOK WHERE YOU WANT TO GO!**

### LINES OF SIGHT

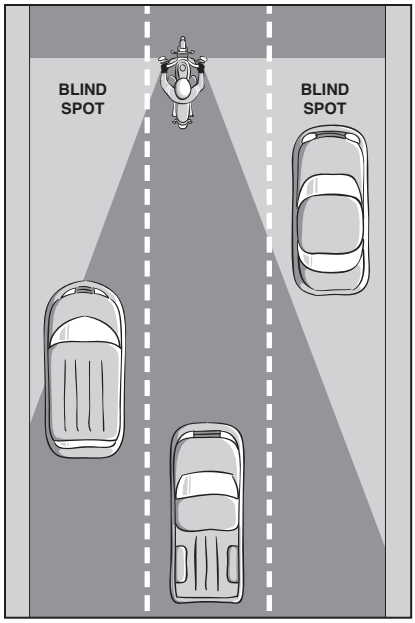
Maintaining an effective line-of-sight strategy keeps you on target, alert and aware of changing conditions. It also helps prevent **overriding your sight distance.** This occurs when you ride at a speed that does not allow time or distance to stop or swerve should a hazard enter your path or when the road takes an unexpected bend.

### CHART A COURSE AS FAR AS YOU CAN SEE

Look ahead as far as you can to scan a 20-second path of travel. That means looking ahead to an area it will take you 20 seconds to reach. This gives you situational awareness — time to prepare for a hazard before it is in your immediate path.

### AGGRESSIVELY SCAN A 10 SECOND IMMEDIATE PATH OF TRAVEL

The area 10 seconds ahead is your immediate path of travel. Situations developing within this area require your immediate response. Scan ahead, to the roadsides and to your mirrors. Look for movement — any movement that could potentially intersect your path or create risk. Whether it's a vehicle, a pedestrian or an animal, things that move can be hazardous. Be especially careful as you approach intersections. This is where most multi-vehicle collisions occur.




**Check Your Blind Spots**

### CHECK TRAFFIC TO YOUR SIDES

Avoid lingering in another vehicle's **blind spot**. If you can't see the driver in the mirror, the driver can't see you. And if the driver can't see you, expect that vehicle to move into your lane at any time.

### CHECK MIRRORS BUT RELY ON HEAD CHECKS

Mirrors are an important safety tool, but riders are encouraged not to rely on them exclusively to know what's taking place behind them. As with automobile mirrors, motorcycle mirrors have "blind spots," which requires riders to turn their heads to see what the mirrors may have missed. Use of mirrors and head checks is essential when changing lanes, merging, turning and stopping.

## IDENTIFY FOLLOWING DISTANCE

39
Show Slide
Following Distance

- **Identify How to Establish and Maintain a 2-Second Following Distance**
  - ✦ Fixed object, count off, "one-onethousand, two-one thousand"
  - ✦ Should take at least 2 seconds for you to reach object
- **When to Increase Following Distance to 3-4 Seconds or More**
  - ❍ **Weather**
  - ❍ **Traffic**
  - ❍ **Limited visibility**
  - ❍ **Fatigue or reduced Rider readiness**

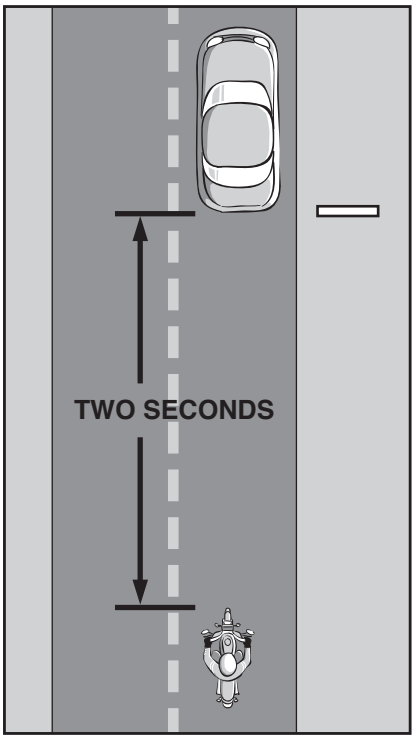
## FOLLOWING DISTANCE

Two seconds is the minimum following distance at low speeds when conditions are ideal. Anything less than ideal — higher speeds, heavy traffic, bad weather, unfamiliar environments, fatigue or reduced rider readiness, etc. — demands at least three to four seconds of following distance. Here's how it's done:

1. *Pick out a fixed object ahead, like a sign, pavement marking or shadow.*
2. *As the vehicle ahead passes the object, count off: "one-one-thousand, two-one-thousand."*
3. *If you reach the fixed object before reaching two seconds, you are following too closely. Give yourself more space and try again.*

Remember, ***two seconds allows minimal room to slow or change position.*** It is not enough distance to stop. Four seconds or more allows a greater margin of safety, especially when conditions are less than ideal.

**2-Second Minimum**




**MAINTAIN A 2-4 SECOND FOLLOWING DISTANCE** STRATEGY

## LANE PLACEMENT

It is important to choose a lane position appropriate for the conditions. Your lane position can help you to communicate with other traffic, see and avoid roadway hazards, create space between yourself and other vehicles, and provide an **escape route**. Position yourself where other motorists are expecting to see traffic and where you have the greatest margin of safety. Be visible!

**A GOOD LANE POSITION ALLOWS YOU TO 1) SEE AND BE SEEN, 2) MAINTAIN A SPACE CUSHION, 3) MAINTAIN AN ESCAPE ROUTE AND 4) AVOID SURFACE HAZARDS.** STRATEGY

## INTRODUCE LANE PLACEMENT STRATEGY

- **Selecting Best Position for Conditions**

40
Show Slide
Lane Position

- **Motorcycles Have More Options**

41-43
Show Slides
Lane Position

---

## IDENTIFY LANE PLACEMENT STRATEGY

- **Four Objectives**

44
Show Slide
Lane Placement Strategy

  - **See and be seen**
  - **Space cushion**
  - **Escape route**
  - **Avoid surface hazards**

Play Video
Lane Placement Strategy

- **Review**
  - **See and be seen**

45
Show Slide
See and Be Seen

    - **Communicate intentions to surrounding traffic**
    - **Don't hide in traffic**
  - **Maintain space cushion**
    - **Allow adequate distance front, rear, sides**

46-47
Show Slides
Space Cushion

## SEE AND BE SEEN

Consider the following strategies when selecting a lane position: Your lane position should provide you with the best position to see and be seen and for you to communicate your intentions to traffic ahead, behind and to the sides. If you are hidden behind a larger vehicle, traffic to the front can't see you — so expect an oncoming car to turn left in front of you just as the vehicle you are following clears the intersection. Don't hide in traffic. If you can't see the drivers around you, they can't see you.

STRATEGY

**BEING SEEN IS YOUR RESPONSIBILITY**

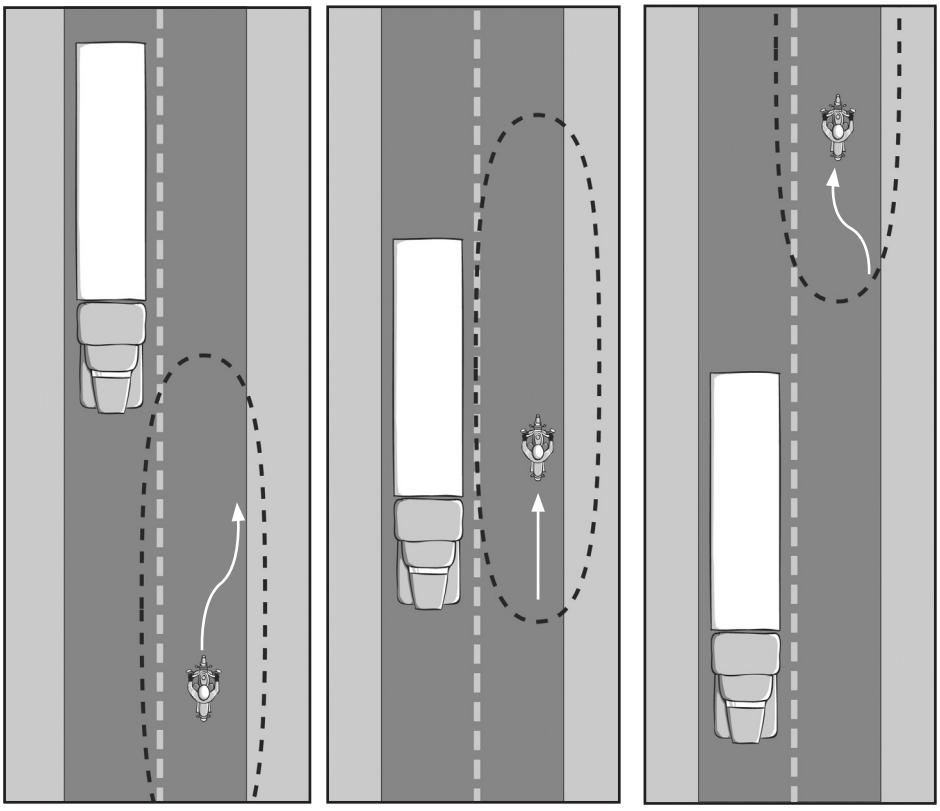
## SPACE CUSHION

A **space cushion** is the area surrounding you in the traffic flow. Allow adequate distance to the front, rear and sides. This principle holds true whether you are moving or at a stop in traffic.

STRATEGY

**ALWAYS MAINTAIN A SPACE CUSHION AND AN ESCAPE ROUTE**

**Maintain a Space Cushion from Oncoming Traffic**



## IDENTIFY LANE PLACEMENT STRATEGY (CONT'D)

48-51
Show Slides
**Escape Route**

- ❍ **Maintain escape route**
  - ■ **Alternate path of travel**
  - ■ **Always maintain escape route**

52
Show Slide
**Avoid Surface Hazards**

- ❍ **Avoid surface hazards**
  - ■ **Choose a safe path**

53
Show Slide
**Lane Placement**

- ■ **Summarize Lane Placement Strategy**
  - ✦ Ideal position meets all objectives
  - ✦ Sometimes not possible
    - Position for as many as you can
    - Use caution while working toward better position

---

## COMPLETE REVIEW QUESTIONS

**1. How can you improve your visibility to other traffic?**

- *Light/bright-colored clothing*
- *Retro-reflective materials on clothing, helmet, and motorcycle*
- *Use lane placement strategy*

**2. Why should you maintain a 20-second visual lead?**

- *Situational awareness*
- *Time to prepare for hazards*

**3. What two words best describe scanning?**

- *Aggressive, purposeful*

**4. What is the recommended minimum following distance?**

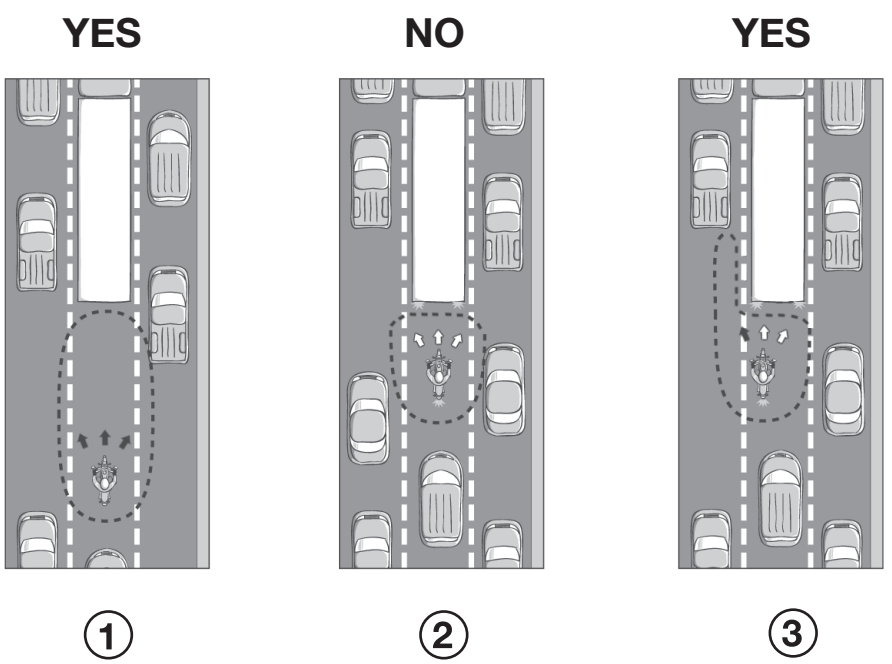
- *2-4 seconds*

**5. What should you do if you can't meet all four lane placement objectives?**

- *Get as many as you can*
- *Keep working toward better position*

## ESCAPE ROUTE

An escape route is an alternate path of travel that you can take if a hazard develops in your path. No matter what the conditions, always maintain an escape route — your way out.




**Maintain an Escape Route!**

1. Bumper to bumper traffic
   Cushion preserved
   Three escape routes open

2. Truck ahead stops
   Vehicle behind still approaching
   All escape routes closed

3. Truck ahead stops
   Vehicle behind still approaching
   Left side escape route still open

## AVOID SURFACE HAZARDS

Surface hazards such as potholes, gravel and ruts can be avoided by employing the line-of-sight strategies addressed earlier. By protecting your lane, you maintain the necessary space cushion and escape route for avoiding surface hazards.

## Review Questions

1. How can you improve your visibility to other traffic?
2. Why should you maintain a 20-second visual lead?
3. What two words best describe scanning?
4. What is the recommended minimum following distance?
5. What should you do if you can't meet all four lane placement objectives?

## CONDUCT SIPDE ACTIVITY

*Instructor Note: Refer to Appendix E, page 75, Worksheet #1. Have students work together. Split into groups of 2-3 students. Allow 3 minutes.*

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## REVIEW SIPDE ACTIVITY

- **Define Expert Motorcyclist**
  - ✦ Rider who uses expert judgment to avoid using expert skills

54
Show Slide
**Expert Motorcyclist**

- **Define Five-Step Strategy**

55
Show Slide
**SIPDE Chart**

  - ❍ **Helps us recognize and respond to potential hazards before problems arise**

## RIDING STRATEGY

Fill in the blanks.

***1. Expert Motorcyclists:***

Riders who use expert _____ to avoid using their expert _____.

***2. Riding Strategy***

Riders need a strategy to recognize and respond to hazards or conditions before problems arise. There are five steps to the process listed below. Write the steps in most logical order in the left-hand box using these terms:

***Decide Execute Identify Predict Scan***

| | | Mental | Physical |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

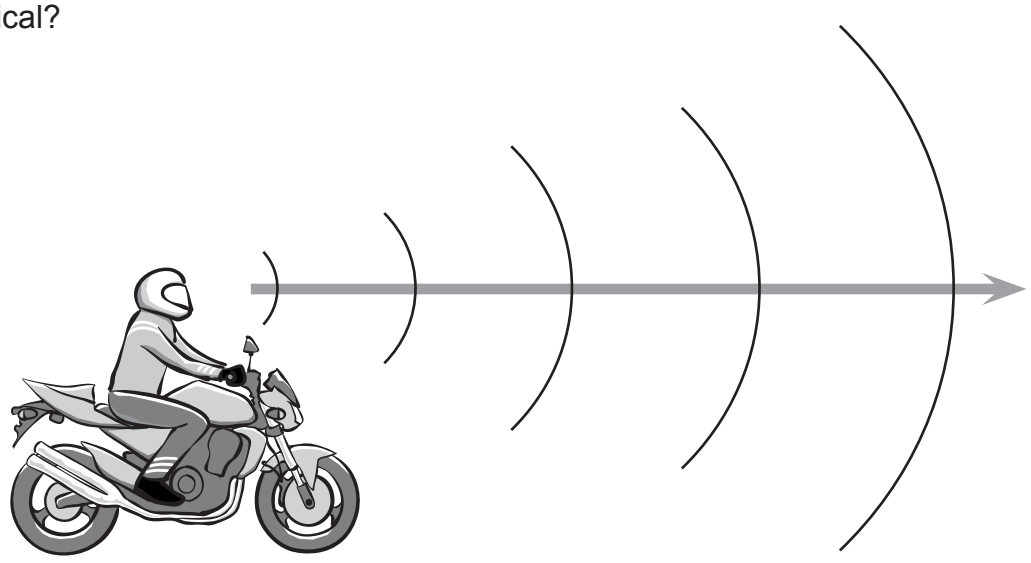
***3. Mental or Physical?***

Which steps above are mental skills, and which are physical? Check one box each.

***4. Summarize***

Is riding mostly mental or physical?

Answer: _____



## THE SIPDE PROCESS

- **Scan**
  - ✦ Aggressive, purposeful search
  - ✦ Front, behind, sides, head check
  - ✦ Keep eyes moving
- **Identify**
  - ✦ Other vehicles
    - Beware of blocked view
  - ✦ Pedestrians, animals, bicyclists
  - ✦ Fixed objects and road surface
    - Blocked views
    - Upcoming intersections
- **Predict**
  - ✦ Worst-case scenario
- **Decide (what to do)**
  - ❍ **Three choices**
    - ✦ Adjust speed
    - ✦ Adjust position
    - ✦ Communicate

## THE SIPDE PROCESS

***Expert Motorcyclists***

***Riders who use expert judgment to avoid using their expert skills.***

Expert riders know what's going on around them and act early, responding to potential problems before they become life threatening. Become an expert rider by developing expert judgment. **SIPDE** is the acronym for a mental strategy used to make sound judgments and reduce risks in traffic. It stands for:

**SIPDE**

- **S** Scan
- **I** Identify
- **P** Predict
- **D** Decide
- **E** Execute

### SCAN

Search *aggressively* ahead, behind and to the sides for potential hazards. What you don't detect *can* hurt you! Scan aggressively to recognize problems before they become critical. Keep your eyes moving in a purposeful search for information.

### IDENTIFY

An aggressive search will allow you to identify hazards and potential conflicts early. Hazards fall into the following three categories:

1. *Other vehicles – traffic sharing the road with you. Your reactions to other vehicles are critical.*
2. *Pedestrians and animals – they move unpredictably and, depending upon their size, can create an imposing hazard.*
3. *Fixed hazards – stationary objects near and alongside the roadway, surface hazards, signs and signals, guardrails, bridges, etc. They don't move, but failing to recognize them can be hazardous.*

### PREDICT

Once you've identified the hazard, the next step is to quickly predict what it will do. How critical is the situation? What are your options? What are the consequences? Will the hazards separate or is action required? Is collision imminent? This is the "what if" phase of SIPDE that depends upon your knowledge, experience and skill. An aggressive search has presented you with critical information — be prepared to act on it!

### DECIDE

The next step calls for decisions based upon your prediction. Complete the "what if" phase to estimate results. What are you going to do, and how are you going to do it? In any situation you have three choices:

1. *Adjust speed – speed up, slow down or stop.*
2. *Adjust position – move left or right.*
3. *Communicate – sound your horn, flash your brake light or headlights, signal, etc.*

## THE SIPDE PROCESS (CONT'D)

- **Execute**
  - **Apply physical skills**
    - ✦ Neutralize hazard and continue scanning
- **Review SIPDE**
  - ✦ First four parts mental process
  - ✦ "Execute" is physical
  - ✦ Apply expert mental skills to avoid using physical skill

---

## PRESENT SIPDE APPLICATION VIDEOS A-F

*Instructor Note: Use the following procedure to present each SIPDE application slide:*

- ✦ "Prepare to SCAN"
- ✦ "What did you IDENTIFY?"
- ✦ "What did you PREDICT?"
- ✦ "What did you DECIDE to do?"
- ✦ "EXECUTE your decision and continue scanning"

**SHOW VIDEO**

### SIPDE - A

**LEFT TURN REFUGE LANE**

- ✦ IDENTIFY – *Vehicle in refuge lane; intention unknown; right lane blocked; forward clear*
- ✦ PREDICT – *Vehicle will pull in front of you*
- ✦ DECIDE – *Increase line-of-sight; communicate; prepare to yield or slow*
- ✦ EXECUTE *your decision and continue scanning*

## EXECUTE

Act on your decision. This is the physical part of the SIPDE process. Now is the time to apply your skills:

- *Adjust speed – roll on or off throttle, brake, or downshift for greater acceleration.*
- *Adjust position – press left or right.*
- *Communicate – press the horn button, flash the lights, etc.*

Your safety and success on the street requires effective use of SIPDE. Riders with excellent physical skills and poor SIPDE skills ride into trouble much more often than riders with poor physical skills and excellent SIPDE skills. Become an expert rider by applying good judgment and riding responsibly.

## INTERSECTION SITUATIONS

Most multi-vehicle collisions occur at intersections. Typically the driver violates the motorcyclist's right of way. The driver's most common response is *"I didn't see the motorcyclist."* Active use of SIPDE and proper lane positioning will make you more visible and better prepared to deal with hazards at intersections.

Be alert and ready when approaching intersections. Maintain a space cushion and always have an escape route. Cover the clutch and brakes for a quicker response. Downshift if necessary so that you are ready to accelerate away from a hazard. Adjust your lane position to create space and increase visibility.

Anywhere another vehicle can enter traffic is considered an intersection. This includes driveways, merge lanes, alleys and parking lots. Plan ahead before reaching an intersection. Be especially careful when your visibility is blocked. If you can't see an intersection, the drivers waiting at that intersection can't see you.

First priority is the traffic ahead, where most collisions occur. Many hazards approach from the left. Be ready to take evasive action if an oncoming car waiting to turn left doesn't wait for you. Your SIPDE process will have identified this hazard and predicted that the motorist might turn, so be ready when your prediction comes true.

Don't forget to check behind you. When stopped, waiting to turn or waiting for a light to change, check behind you and flash your brake light to command attention. Always keep your bike in first gear at stops. Place yourself in one side of the lane and give yourself at least two bike lengths from the vehicle in front, so you have room to maneuver in an emergency. Be ready to escape if the vehicle behind you fails to stop or yield.

**First priority is the traffic ahead, where most collisions occur. Many hazards approach from the left. Be ready to take evasive action if the car waiting to turn left doesn't wait for you.**

SHOW VIDEO

## SIPDE - B

**COMMERCIAL DISTRICT**

- IDENTIFY – *Multiple intersections; line-of-sight blocked by truck*
- PREDICT – *Vehicles at intersection behind truck; may turn in front of you*
- DECIDE – *Move left to increase line-of-sight; watch intersection for moving traffic; prepare to stop*
- EXECUTE *your decision and continue scanning*

SHOW VIDEO

## SIPDE - C

**SURFACE HAZARD INTERSECTION**

- IDENTIFY – *Approaching car and car waiting at intersection; hazards (crack sealant)*
- PREDICT – *Either of two vehicles can turn in front of you; traction could be compromised*
- DECIDE – *Slow; communicate with traffic; prepare for either/both to move*
- EXECUTE *your decision and continue scanning*

SHOW VIDEO

## SIPDE - D

**TAILGATING DRIVER**

- IDENTIFY – *Vehicle following too closely; vehicle pulling out*
- PREDICT – *Impact from rear*
- DECIDE – *Tap brake to flash tail light; slow; increase space in front; prepare to evade if traffic suddenly stops*
- EXECUTE *your decision and continue scanning*

## EXECUTE

Act on your decision. This is the physical part of the SIPDE process. Now is the time to apply your skills:

- *Adjust speed – roll on or off throttle, brake, or downshift for greater acceleration.*
- *Adjust position – press left or right.*
- *Communicate – press the horn button, flash the lights, etc.*

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**First priority is the traffic ahead, where most collisions occur. Many hazards approach from the left. Be ready to take evasive action if the car waiting to turn left doesn't wait for you.**

SHOW VIDEO

**SIPDE - E**

**HIDDEN INTERSECTION**

- ✦ IDENTIFY – *Vehicle ahead; blind intersections to the right*
- ✦ PREDICT – *Vehicles waiting at those intersections – can't see you; vehicle may turn*
- ✦ DECIDE – *Slow; move slightly left to increase line-of-sight; prepare for vehicle to enter path*
- ✦ EXECUTE *your decision and continue scanning*

SHOW VIDEO

**SIPDE - F**

**DEER**

- ✦ IDENTIFY – *Rural road; limited sight distance; road curves to left; deer on the left*
- ✦ PREDICT – *Deer can run in front of you*
- ✦ DECIDE – *Slow; prepare to stop*
- ✦ EXECUTE *your decision and continue scanning*

## INTERSECTION SITUATIONS

56

Show Slide

**Multi-Vehicle – Other Driver**

- **Most Multi-Vehicle Collisions Occur at Intersections**
  - ✦ Intersections include:
    - Driveways, alleys, parking lots
- **Identify Strategies**
  - ❍ **Be alert and ready**
    - ✦ See and be seen
    - ✦ Maintain space cushion & escape route
    - ✦ Cover clutch & brakes for quicker response
    - ✦ Adjust position to create space and see and be seen
  - ❍ **Cautions**
    - ✦ When view blocked
    - ✦ Turning vehicles and cross traffic
    - ✦ Check to the rear prior to and during stops
    - ✦ Keep bike in first gear at stops
      - Identify escape route
    - ✦ Never count on eye contact

## EXECUTE

Act on your decision. This is the physical part of the SIPDE process. Now is the time to apply your skills:

- *Adjust speed – roll on or off throttle, brake, or downshift for greater acceleration.*
- *Adjust position – press left or right.*
- *Communicate – press the horn button, flash the lights, etc.*

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**First priority is the traffic ahead, where most collisions occur. Many hazards approach from the left. Be ready to take evasive action if the car waiting to turn left doesn't wait for you.**

## NON-INTERSECTION SITUATIONS

57
Show Slide
**Passing Trap**

- **Identify Passing Traps**

  *Refer to RG page 37*

  - ✦ Do not pass with vehicle, driveway or intersection ahead
  - ✦ Be prepared to cancel pass and return to your lane

- **Passing**

  - ❍ **Good SIPDE is critical**
    - ✦ Why is the vehicle moving slowly?
    - ✦ Unusually low speed is clue that it is preparing to turn

*Instructor Note: Refer students to Rider's Guide Resource pages 36-37 for information on changing lanes and passing. Encourage independent study.*

Passing other vehicles is similar to changing lanes, but the risk is much greater: For a period of time you must use the oncoming lane of traffic, with few escape routes. Apply SIPDE here. Before you pull out to pass, ask yourself why the vehicle you are following is going so slowly. Is the driver searching for a house address? Will they make a sudden left turn – or a U-turn – right in front of you?

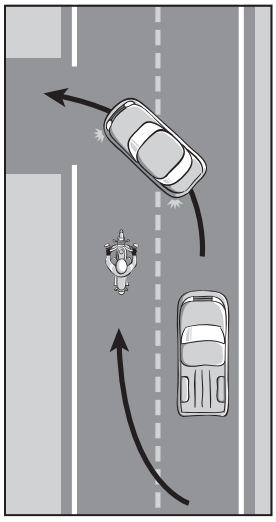
On rural roads, slow-moving vehicles often turn into a driveway or farm field, creating a serious hazard for motorcycles attempting to pass. In urban traffic, large trucks often swing wide just before turning. Passing riders who fail to recognize the clues of the turning vehicle will find themselves cut off with no escape.

To pass safely, first make sure there are no driveways or intersections ahead. Once the way looks clear, assess the approaching traffic. Do you have enough room to pull out, pass and return completely to your lane? If you aren't sure, wait.

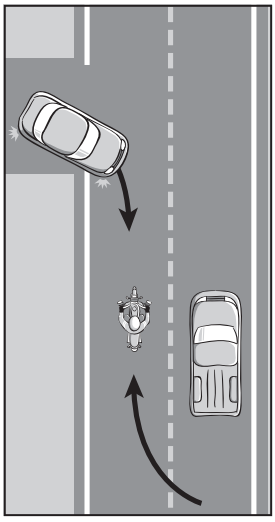
When you are certain it's safe to pass, use SMOG-C. Signal, check your mirrors and your blind spot. Move into the next lane and accelerate. Don't linger in the other driver's blind spot. Execute the pass quickly to minimize your time in the oncoming lane. Be prepared to cancel the pass and return immediately to your lane if a problem appears ahead.

Complete SMOG-C by signaling and returning to your lane. Don't forget to cancel your signal. Remember that passes must be completed within posted speed limits and only where permitted.

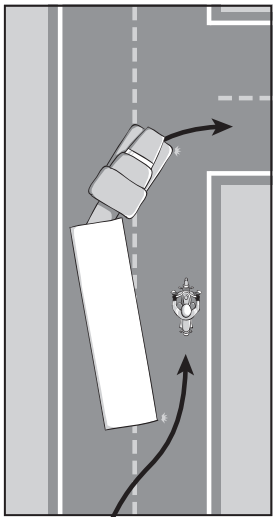
## Common Passing Traps



**Watch for driveways.**



**Scan ahead for intersections.**



**Beware of blind spots!**

**An unusually slow-moving vehicle is your clue that it is preparing to turn.**

## NON-INTERSECTION SITUATIONS (CONT'D)

### ■ Blind Spots

❍ **Problem**

- ✦ Not visible

❍ **Solution**

- ✦ Recognize condition
  - Can't see vehicle operator in mirrors
- ✦ Predict lane violation
- ✦ Move from blind spot

### ■ Tailgating

❍ **Problem**

- ✦ Reduced space cushion
- ✦ Risk of being rear-ended
- ✦ Distraction

❍ **Solution**

- ✦ Create larger space cushion ahead
- ✦ Let tailgater pass when safe

### ■ Night Riding

❍ **Problem**

- ✦ Reduced visibility and sight distance

❍ **Solution**

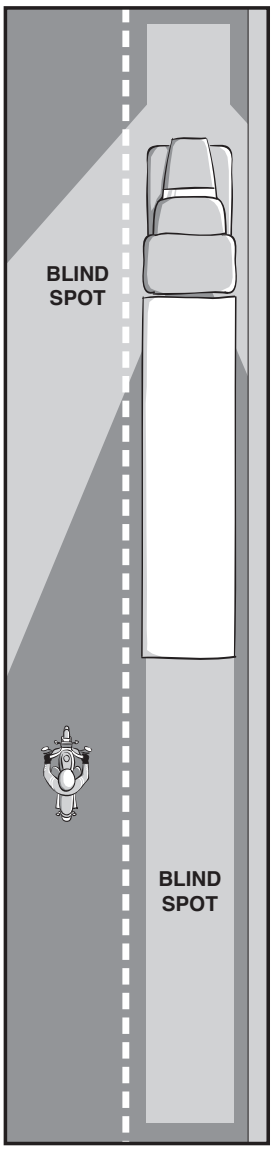
■ **Make yourself visible**

- ✦ Use retro-reflective materials
- ✦ Signal early
- ✦ Flash brake light at stops
- ✦ Position to improve visibility

58
Show Slide
**Riding at Night**

■ **Seeing others**

- ✦ Use clear face shield
- ✦ Increase following distance
- ✦ Don't override headlight
- ✦ Use other vehicle headlights & tail lights
- ✦ High beam when appropriate




## BLIND SPOTS

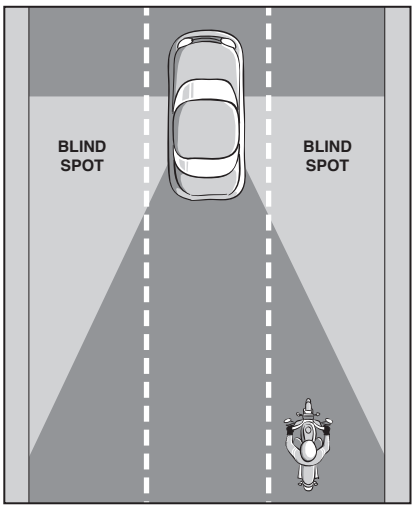
Avoid other vehicles' **blind spots**. Some drivers will turn their heads to check mirrors before changing lanes — that's your clue. Remember, if you can't see the driver in his rear-view mirror, the driver can't see you. Communicate!

**AVOID RIDING IN THE BLIND SPOTS OF OTHER VEHICLES** STRATEGY

## TAILGATING

Drivers that **tailgate** may not be able to stop as quickly as you and their presence is distracting. Don't become emotionally engaged with a tailgating driver. The distraction can affect your safety (remember most hazards approach from the front). Some options for dealing with tailgaters include:

- *Increase the space cushion in front of you in case you have to stop quickly.*
- *Make your traffic stops smooth and gradual. No surprises.*
- *Communicate with the tailgater by flashing your brake light.*
- *Hold your position and don't allow lane sharing.*
- *Turn or yield at the first opportunity to let the tailgater pass.*




## NIGHT RIDING

Night riding carries special challenges; visibility is reduced and sight distance is much more limited than during daytime. Riders can greatly enhance their visibility and safety through use of bright, reflective and retro-reflective materials, including use of retro-reflective vests. Wear untinted eye protection that is free of scratches and smudges, reduce speed and increase the distance at which you follow other vehicles, signal your intentions early and flash the brake light when stopping or waiting at intersections - this helps keep you from blending in with other vehicles. Riders should also take care not to **override the headlight**, a condition where stopping distance **exceeds sight distance**. Use other vehicles' headlights to see farther ahead and taillights for clues about curves, bumps or maneuvers. High beams should be used wisely, taking care not to blind other road users.

## NON-INTERSECTION SITUATIONS (CONT'D)

### ■ U-Turns

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Show Slide

**U-Turn Danger**

❍ **Problem**

- ✦ Extremely dangerous, cut off escape route

❍ **Solution**

- ✦ Predict vehicle moving from roadside will make U-turn
- ✦ Slow, get driver's attention
- ✦ Watch for front wheels turning
- ✦ Proceed with caution

---

## COMPLETE REVIEW QUESTIONS

**1. How does SIPDE help make you an expert rider?**

- *Helps us recognize and respond to potential hazards before problems arise*

**2. Where do most multi-vehicle collisions occur?**

- *Intersections*

**3. What is a head check?**

- *Sideways glance to fill in information not available in mirrors*

**4. What can you do to reduce reaction time in hazardous situations?**

- *Cover your brakes and clutch*

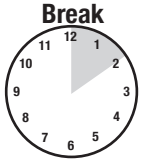
**5. Why are roadside obstructions and blocked views a problem?**

- *Hazards could be hidden behind them.*

**6. Where are most passing traps located?**

- *Driveways and intersections*

**Break**

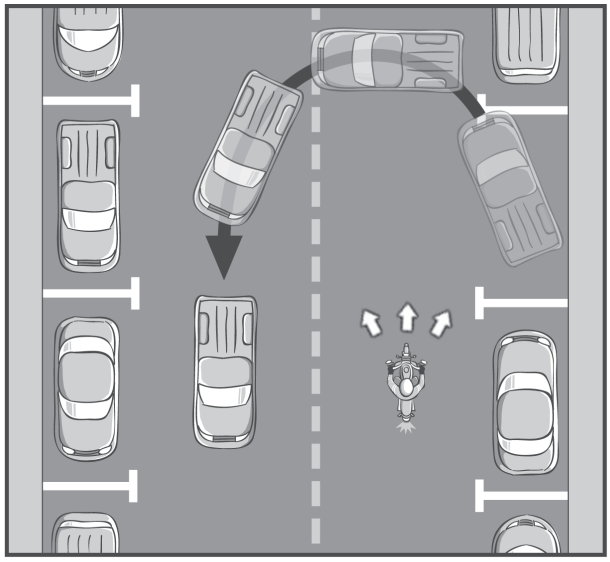


**10 minutes**

*Instructor Note: Recommend students review this unit again after riding 1-2 weeks – this information is a lot for a beginner to process all at once.*

## U-TURNS

Cars making U-turns are extremely dangerous. They can cut you off by blocking the entire roadway, leaving you with no escape route. Since you can't tell what the driver will do, slow down and get the driver's attention. Sound your horn and flash your high beam. Proceed with caution.




## Review Questions

1. How does SIPDE help make you an expert rider?
2. Where do most multi-vehicle collisions occur?
3. What is a head check?
4. What can you do to reduce reaction time in hazardous situations?
5. Why are roadside obstructions and blocked views a problem?
6. Where are most passing traps located?

Unit 6

20 minutes

## IDENTIFY UNIT OBJECTIVE

- **Understand Strategies for Skillful Cornering**
- **Understand Strategies for Line Selection**

---

## IDENTIFY CRASH PROBLEM

60

Show Slide

**Crash Causation Factors**

- **Most common fatal crashes is single vehicle**
  - **Failure to negotiate turns**
    - ✦ Excessive speed
    - ✦ Overriding sight distance

---

## SKILLFUL CORNERING

- **Review Turning Procedure**
  - ✦ Slow, look, roll, press
  - **Complete all transitions before turn**
    - ✦ Slow, look and roll <u>before</u> you press handgrip to enter turn

Play Video

**Cornering**


When asked to describe a perfect motorcycle road, most riders describe one with lots of curves. Unfortunately, the enjoyment of cornering snares many riders. Every year countless riders suffer self-inflicted injury from failure to negotiate curves — single vehicle crashes in which the rider is clearly at fault. In typical scenarios, riders either run off the road while cornering or drift into the opposing lane and collide head-on with approaching vehicles. Neither scenario is appealing and both are completely avoidable.

## SKILLFUL CORNERING

The basic turning procedure — slow, look, roll, press — applies to all curves. The key to this process is *slowing before the turn*. Enter the turn at a speed that permits safe cornering and allows constant acceleration through the curve. Complete all braking and downshifting *before* the turn. Begin your throttle roll-on *before* you lean. This stabilizes the suspension, maximizes traction and makes the turn more comfortable and confidence-inspiring.

Many crash-involved riders enter turns too fast and are unable to complete the curve. This error applies to riders of all ages and riding styles. While excessive speed is usually listed on the crash report, the real cause of these crashes is failure to look far enough through the turn. Essentially, these riders override their sight distance and roll on the throttle before they know where the road leads or what hazards it may contain.

**Use the strategy READY, AIM, FIRE for motorcycle cornering**

**READY**

**All braking, downshifting and positioning are completed. You are ready for the corner.**

**AIM**

**Turn your head and target your path of travel. Your mind will calculate the required lean angle, speed and lane position, but ONLY if you feed it the information. Turn your head to face your target!**

**FIRE**

**Begin rolling on the throttle smoothly and precisely before you lean into the curve. If you are forced to make mid-corner adjustments in path or throttle application, your technique is faulty. Complete your transitions earlier.**

## SKILLFUL CORNERING (CONT'D)

- **READY**

  - ❍ **Complete all braking, downshifting early**
  - ❍ **Establish lane position**

61
Show Slide
Ready

- **AIM**

  - ❍ **Turn head to face new path**
  - ❍ **Look as far as you can**
  - ❍ **Establish "target" in the distance**

62
Show Slide
Aim 1

63
Show Slide
Aim 2

    - **Beware target fixation**

      - ✦ Staring at the wrong thing and riding right into it
      - ✦ You go where you look

- **FIRE**

  - ❍ **Roll-on throttle smoothly and precisely**
  - ❍ **Press to lean – countersteer**
  - ❍ **Continue to face exit**

64
Show Slide
Fire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## WHAT'S MY LINE?

65
Show Slide
**Choose a Good Line**

- **Identify Advantages of a Good Line**
  - ✦ Visibility
  - ✦ Line-of-sight
  - ✦ Avoid traffic and roadway debris
  - ✦ Conserves traction
  - ✦ Increases cornering clearance
- **Identify Apex**

  *(Point out)*
  - ✦ Point where your path is closest to the inside of curve
  - ✦ Apex not necessarily at midpoint of curve
- **Caution**
  - ✦ Bike and body must remain within lane at all times
- **Standard Curves**

66
Show Slide
**Standard Curve**

  - ❍ **Good line doesn't exactly match curve of road**
  - ❍ **"Straighten" the curve**

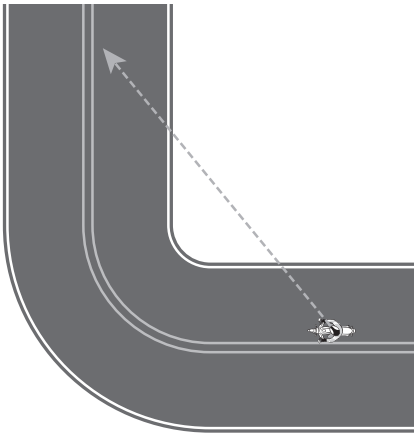
67
Show Slide
**Outside-Inside-Outside**

  - ❍ **Advantages of outside-inside-outside**
    - ✦ Increase line-of-sight
    - ✦ Turn less sharp
    - ✦ Limits cornering forces
    - ✦ Increases available ground clearance

## WHAT'S MY LINE?

Smooth and skillful cornering requires selecting the best line or path through corners. The best line often does not match the curve of the road. A good line allows you to:

- *Maximize visibility by positioning yourself in clear view of traffic ahead and behind you.*
- *Maximize your line-of-sight by positioning toward the outside of the curve where you can see the farthest.*
- *Select a safe path to avoid approaching traffic and roadway debris.*
- *Minimize traction required.*
- *Maximize cornering clearance.*
- *Do all of the above safely and skillfully, while remaining within your lane at all times.*

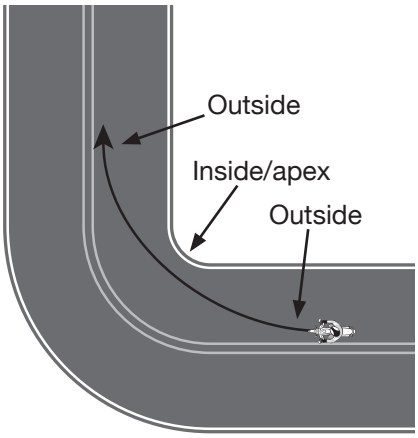


**Line of sight**

To select an appropriate line, you must determine where the turn's **apex** will be. The apex is the point where your path is closest to the inside of the curve. The apex is not necessarily in the center of the curve.

## STANDARD CURVES

For most turns, an outside/inside/outside line is recommended. This increases your line-of-sight and creates a turn that is less sharp, thereby limiting cornering forces and preserving your ground clearance.




**Standard Curve**

### USE AN OUTSIDE/INSIDE/OUTSIDE LINE STRATEGY

## WHAT'S MY LINE? (CONT'D)

68
Show Slide
Blind Curves

- **Blind and Decreasing-Radius Curves**
  - **Problem: You can't see exit**
  - **Solution: Use a "late apex" line**

69
Show Slide
Blind Curves

- ✦ Delay turn-in until exit comes into view

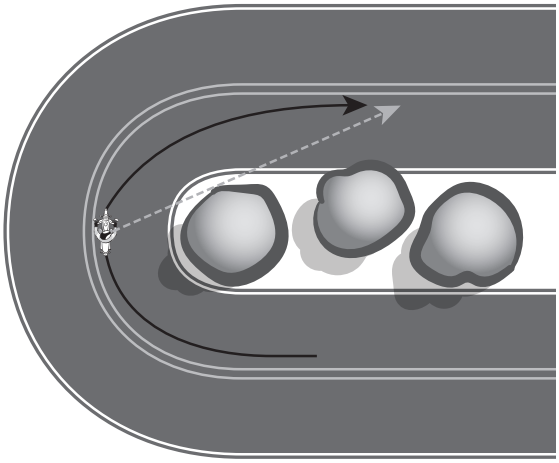
  - **Decreasing radius: Bends out of sight or tightens**
    - **Delay turn-in**

70
Show Slide
Decreasing-Radius Curves

  - **Advantages**

- ✦ Improved line-of-sight
- ✦ Conserves speed/positioning
- ✦ Freeway on-ramps: Late apex allows smoother merge

## BLIND AND DECREASING-RADIUS CURVES

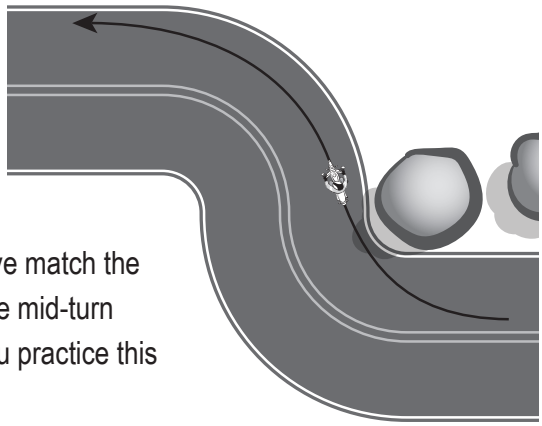


For turns that bend out of sight or tighten, maintain a modest **entry speed** and hold a line to the outside of your lane until you can see the exit. When you have the critical information about radius, slope, path, etc., you can begin the outside/inside/outside line. This is known as a **delayed turn-in** or a "late apex" turn.

STRATEGY

**USE AN OUTSIDE LINE AND HOLD YOUR POSITION UNTIL THE EXIT IS VISIBLE**

## LINKED CURVES



In linked turns, maintain an outside line until you can see the exit. Committing to an inside line too early may put you out of position for the next turn. Strive to make the exit line of the first curve match the entry line for the following curve. Minimize mid-turn corrections. Ride slowly and safely as you practice this technique.

STRATEGY

**DELAY TURN-IN TO FIRST TURN TO SET UP FOR NEXT TURN**

## TIGHT TURNS

For tight, slow turns, the cornering procedure is the same — slow, look, roll, press — but at slow speeds, you must turn the handlebar to steer the motorcycle once it has started to lean. To help maintain balance in slow speed turns, counterweight by placing your weight on the outside peg and keeping your body upright. Look back over your shoulder to control your path.

STRATEGY

**COUNTERWEIGHT AND MAKE A BIG HEAD TURN**

## ■ Linked Curves

71
Show Slide
**Linked Curves**

### ❍ Identify strategy

- ✦ Look two turns ahead
- ✦ Identify target

72
Show Slide
**Linked Curves**

- ✦ Delay turn-in to 1st turn

73
Show Slide
**Linked Curves**

- ✦ Make exit of 1st turn the entrance to the 2nd turn

### ❍ Advantages

74
Show Slide
**Linked Curves**

- ✦ Optimizes use of space, traction and ground clearance
- ✦ Keeps options open in case of surprises
- ✦ Demonstrates elevated skill level

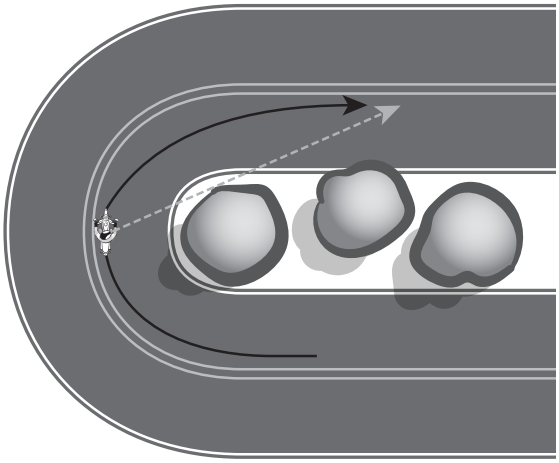
## ■ Tight Turns

75
Show Slide
**Tight Turns**

### ❍ Identify technique

- ✦ Turn head and eyes, handlebar
- ✦ Counterweight
  - Place weight on outside peg
  - Lean motorcycle only
  - Keep body upright

## BLIND AND DECREASING-RADIUS CURVES



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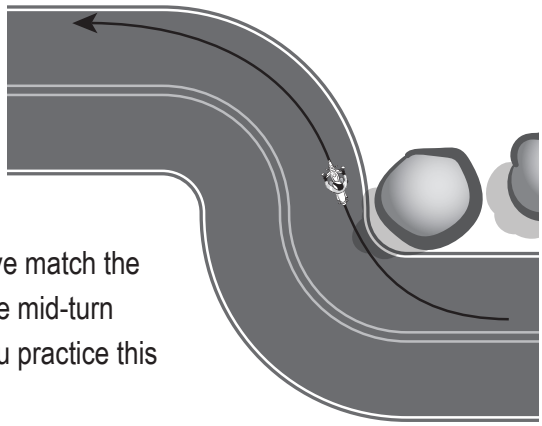

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STRATEGY

**COUNTERWEIGHT AND MAKE A BIG HEAD TURN**

## WORKSHEET ACTIVITY

*Instructor Note: Refer to Appendix E, page 76, Worksheet #2. Have students work together. Split into groups of 2-3 students. Allow 3 minutes.*

---

## REVIEW UNIT 6

**76-81**
**Show Slides**

**Cornering Review**

- **Leading Cause**
  - ✦ Failure to negotiate curves
- **Four Steps**
  - ✦ Slow, look, roll, press
- **Outside-Inside-Outside**
- **Problem/Solution**
  - ✦ 1-D
    2-A
    3-F
    4-B
    5-C
    6-E
- **Turn Your Head**
  - ✦ Before you lean

*Instructor Note: Recommend students review this unit again after riding 1-2 weeks – this information is a lot for a beginner to digest all at once.*

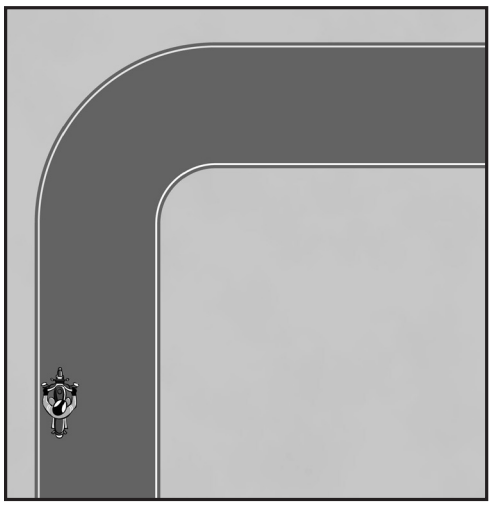
## CORNERING REVIEW

***1. The leading cause*** of single-vehicle crashes is riders' failure to do what?

***2. There are four*** steps to every corner. Where do they fit into READY, AIM, FIRE? Write the steps in logical order:

***Roll*** **Press** ***Slow*** **Look**

| | |
|---|---|
| READY | |
| AIM | |
| FIRE | |
| | |



***3. Identify and mark*** your target, then draw the smoothest line through the turn.

***4. Match*** the cornering problem to its solution.

| Problem | Solution |
|---|---|
| 1. Feel panic, need to slow mid-turn | A. Reduce speed and lean angle |
| 2. Slippery sand on surface | B. Press, lean more, turn head more |
| 3. Target fixation on guardrail | C. Stay outside, keep speed down |
| 4. Feel about to run wide mid-turn | D. Slow more before entering next time |
| 5. Can't see turn's exit | E. Reduce speed and lean angle |
| 6. Footrest is scraping ground | F. Look where you want to go |

***5. When should you*** turn your head for a corner?

Unit 7

25 minutes

## IDENTIFY UNIT OBJECTIVES

- **Understand Techniques for Maximum Braking**
- **Understand Techniques for Swerving**
- **Be Prepared to Practice These Maneuvers**

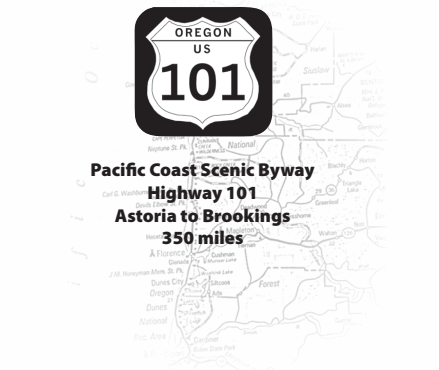
## PLAY VIDEO: STOPPING QUICKLY

Play Video

**Stopping Quickly**

## REVIEW BRAKING SYSTEMS

- **Linked and Integrated**
  - ✦ Both brakes activated with rear pedal, or
  - ✦ Both brakes activated with front or rear controls
- **Anti-Lock Brakes (ABS)**
  - ✦ Prevents wheel lock-up in straight-line braking
  - ✦ Strongly recommended
- **Motorcycle Stability Control**
  - ✦ Helps maintain optimal brake pressure in all emergencies
  - ✦ Strongly recommended
- **Refer to MOM**




Stopping a motorcycle quickly and safely is a skill that takes time to develop and continual practice to keep sharp. Failure to apply the brakes properly is a leading cause of motorcycle crashes.

Research shows that riders typically under-brake at the front and over-brake at the rear, or panic at the controls, crashing to the pavement even before reaching the hazard. This errant maneuver is commonly known as "**laying the bike down**." This is not a braking or obstacle avoidance maneuver — it's a crash. Once the motorcycle is down, all control is lost and the rider is just another flying object. Braking and control are available only when the motorcycle is on its wheels, not when it's on its side or tumbling.

## BRAKING SYSTEMS

Modern motorcycles are equipped with excellent braking systems and stop very quickly with a skilled rider at the controls. Some models are equipped with braking systems that apply braking force, both front and rear, when the rear brake is activated, or proportional braking forces to both brakes when either brake is applied.

Other bikes are equipped with **Anti-Lock Braking Systems (ABS)**, which prevent wheel lock-up in a maximum straight-line stop. Some models provide a combination of **linked braking** and ABS. Check your owner's manual for information about your motorcycle's braking system.

## MAXIMUM STRAIGHT-LINE STOPS

Maximum straight-line braking is accomplished by fully applying front and rear brakes without locking either wheel. To do this:

**Maximum Straight Line Stops**

*Squeeze the front brake smoothly, firmly and with progressively more force. Do not grab the brake lever or use abrupt pressure.*

*As the motorcycle's weight transfers forward, more traction becomes available at the front wheel, so the front brake can be applied harder after braking begins.*

*Keep your knees against the tank and your eyes up, looking well ahead. This helps you stop the motorcycle in a straight line.*

*Apply light-to-lighter pressure to the rear brake pedal to prevent a rear wheel skid. As weight transfers forward less traction is available at the rear. Use less rear brake pressure.*

## REVIEW MAXIMUM STRAIGHT-LINE STOPS

82
Show Slide
**Apply Both Brakes Fully**

- **Apply Both Brakes Fully Without Locking Either Wheel**

83
Show Slide
**Firm, Progressive Squeeze**

- **Front Brake**
  - ✦ Squeeze smoothly, firmly
  - ✦ Use progressive force
  - ✦ Do not grab or use abruptly
  - ✦ More braking force is available as weight transfers forward
  - ✦ Knees against tank; eyes up
- **Rear Brake**
  - ✦ Light pressure
- **Anti-Lock and Stability Control**
  - ✦ Apply full braking force
  - ✦ Caution: ABS may not be effective when leaning
- **Excessive or Abrupt Braking**
  - ✦ Can cause skidding
  - ❍ **Consequences**
    - ✦ Inability to steer; crash likely
  - ❍ **Solution**
    - ✦ Immediately release and reapply braking on skidding wheel

*Instructor Note: Refer students to Rider's Guide Resource for independent study of front- and rear-wheel skids.*

## ANTI-LOCK BRAKING SYSTEMS (ABS)

The benefit of ABS cannot be overstated. This technology prevents wheel lock-up in straight-line stops. To use it, apply maximum pressure on both the front and rear brake. Remember that ABS is only designed to prevent wheel lock-up in a straight line. It may not be effective when the motorcycle is leaning.

## HANDLING SKIDS

The best way to handle a skid is to avoid causing one in the first place. But we all make mistakes. Here's how to correct the problem:

## FRONT-WHEEL SKIDS

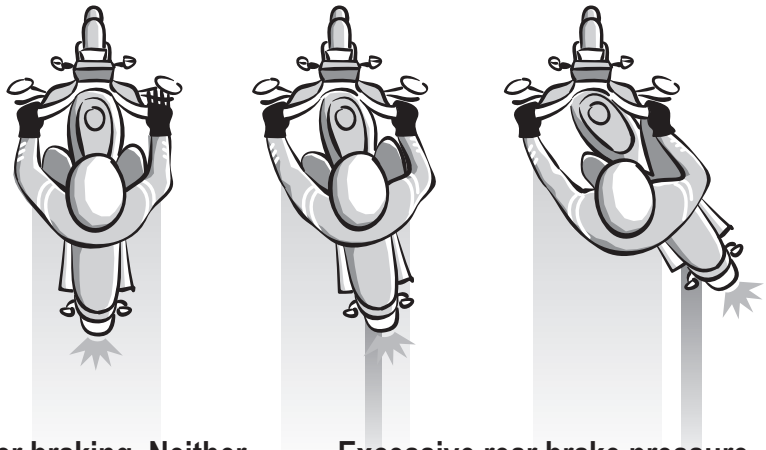
If the front wheel locks, release the front brake immediately and completely. Reapply the brake smoothly and properly.

Under braking force, a motorcycle's weight transfers forward. More weight forward equals more traction available for braking. However, too much braking force applied before this weight transfer occurs can result in front-wheel lockup. The same can happen if the force is applied abruptly or excessively. Front-wheel skids result in immediate loss of steering control and balance. Failure to fully release the brake lever immediately will result in a crash. ABS is designed to prevent front wheel skids.

## REAR-WHEEL SKIDS

Too often when riders are faced with an emergency situation, they over-brake and lock the rear wheel. A skidding rear tire is a dangerous condition that can result in a violent crash and serious injury or death.

Rear-wheel lockup is caused by too much rear brake pressure. As soon as the rear wheel locks, your ability to change direction is lost. To regain control the brake must be released. However, if the rear wheel has fishtailed out of alignment with the front, there is a risk of a **high-side crash**. This occurs when the wheels are out of alignment and a locked rear wheel is released. The motorcycle can violently and abruptly snap upright and tumble, throwing the rider into the air ahead of the motorcycle's path. Even slight misalignment can result in a high-side crash. ABS is designed to prevent rear wheel skids.



**Proper braking. Neither wheel is locked and motorcycle is in alignment.**

**Excessive rear brake pressure locks rear wheel. Motorcycle is out of alignment and control.**

Practice quick stops and don't lock either brake. Learn to recognize when a skid occurs and release the brakes instantly and reapply. Keep your skills sharp for the unexpected.

## STOPPING QUICKLY IN CURVES

- **Define Traction**
  - ✦ Friction between tires and road
- **Identify Limitations**
  - ✦ Traction shared between cornering and braking
  - ❍ **Must separate or compromise**
- **Identify Methods**
  - ❍ **Separate turning from braking**
    - ✦ Straighten, then brake
      - Look straight ahead to new target
      - Straighten motorcycle
      - Square the bars
      - Apply maximum straight-line braking force
  - ❍ **Compromise: Brake while leaning**
    - ✦ Brake smoothly and gradually
    - ✦ More traction available as bike straightens
    - ✦ Eyes up
    - ✦ Square the bars before stopping
  - ❍ **Beware target fixation**
    - ✦ Look to desired path, not hazard

---

## VIDEO REVIEW: STOPPING QUICKLY IN CURVES

## STOPPING QUICKLY IN CURVES

**Traction** is the friction between the tires and the road surface. Like money, traction is a limited resource and we always need some in reserve. During straight-line braking, most of your motorcycle's traction is available for braking. In corners, some of the available traction holds the bike in the turn and is not available for braking. The greater the lean, the more traction is used for cornering. When stopping quickly in a turn, remember that the amount of traction available for braking is limited by the traction that is being used to grip the corner. Use the following techniques to stop quickly and safely in a corner:

**Two Ways to Stop Quickly and Safely in a Curve**

### STRAIGHTEN THEN BRAKE

- Straighten the motorcycle first by pressing the "outside" handgrip.
- Once the motorcycle is upright, apply maximum straight-line braking force.
- Remember to square the bars before coming to a stop. This centers the steering and helps you achieve a balanced stop. Leaning motorcycles become very heavy at stops. Square the bars!

### BRAKING IN A LEAN

- If road or traffic conditions do not allow you to straighten your path of travel, use your brakes smoothly and gradually.
- As you straighten the motorcycle, more traction is available for braking. This is a delicate balance — the more upright the bike is, the more braking force is available.
- Keep your eyes on your intended path, not on the obstacle.

## SWERVING

Skilled motorcyclists can swerve away from danger in less space than it takes to stop. It is critical to develop good swerving skills and practice these skills to keep them sharp.

## SWERVING

84
Show Slide
**Swerving**

- **Define**
  - ✦ Plan "B"
  - ✦ Quickly change position and path
  - ✦ Two consecutive countersteers
- **Identify Method**
  - ❍ **Use your escape route**

85
Show Slide
**Look to Escape Route**

  - ✦ Beware of target fixation
  - ❍ **Press handgrip firmly**

86
Show Slide
**Press Handgrip Firmly**

  - ✦ Hold press until hazard is cleared
  - ✦ Keep body upright; lean bike beneath you
  - ❍ **Press opposite to straighten**

87
Show Slide
**Press Opposite Handgrip**

- **Caution: Traction Limitation**
  - ❍ **Always separate braking from swerving**
    - ✦ Brake first, then swerve, or
    - ✦ Swerve first, then brake

A swerve is two consecutive countersteers; one forward press on the grip to avoid the obstacle, held long enough to clear the obstacle, followed by a forward press on the opposite grip to regain a straight path after the obstacle is cleared. Smooth, firm and constant pressure is required to make the motorcycle lean quickly and precisely. Here's how a swerve is accomplished:

1. *Look to your escape path and press firmly on the handgrip to initiate the swerve. Remember: press right, go right; press left, go left.*
2. *Hold the press until the motorcycle has cleared the hazard.*
3. *Press firmly on the opposite grip to straighten the motorcycle.*
4. *Keep your body upright and allow the motorcycle to move independently of you. The motorcycle will react more quickly that way.*
5. *Keep your eyes on your escape path (not the obstacle!) and your knees against the tank.*

Caution: Swerving consumes a lot of traction leaving little in reserve for braking. Therefore, never attempt to brake during a swerve. Even the slightest braking force can induce an immediate and forceful crash. Hold a steady throttle while swerving. If braking is required, brake *before* or *after* swerving, never during!

Practice swerving often where it is safe to do so. Hone this skill until you make the correct moves automatically — every time.

**ALWAYS SEPARATE BRAKING AND SWERVING** STRATEGY

## Review Questions

1. How is the front brake applied to stop quickly in a straight line?
2. How is the rear brake applied to stop quickly in a straight line?
3. What is the quickest way to stop in a curve?
4. When braking in a lean, what is important to remember?
5. What is countersteering?
6. What should you always avoid while swerving?

## COMPLETE REVIEW QUESTIONS

**1. How is the front brake applied to stop quickly in a straight line?**

- *With firm, progressive squeeze*

**2. How is the rear brake applied to stop quickly in a straight line?**

- *Light to lighter pressure*

**3. What is the quickest way to stop in a curve?**

- *Straighten motorcycle first, apply maximum straight-line braking force*

**4. When braking in a lean, what is important to remember?**

- *Traction is limited by the amount of traction used to grip turn*

**5. What is countersteering?**

- *Pressure on handgrip to initiate lean*

**6. What should you always avoid while swerving?**

- *Braking*

---

## READING ASSIGNMENT

- **We will cover units 8-9 in the next session. Study all units in preparation for the test**

✦ Pages 6-61

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## DISMISS FOR THE DAY

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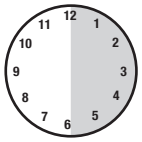
Unit 8



30 minutes

## IDENTIFY UNIT OBJECTIVES

- **Be Aware of Hazardous Roadway Conditions**
- **Understand the Risks of Group Riding**

---

## ROADWAY CONDITIONS

- **Identify Problem**
  - ✦ Hazards that don't affect cars pose risk to motorcycles
- **Identify Strategy for Assessing Changes in Surface Conditions**
  - ✦ Clues that traction may change
    - Color
    - Texture
- **Riding in the Rain**

88

Show Slide

Riding in the Rain

  - ❍ **Traction is limited**
  - ❍ **When danger is greatest**
    - ✦ First rainfall following dry period
  - ❍ **Identify strategy**
    - ✦ Reduce speed and lean
    - ✦ Increase following distance
    - ✦ Be smooth on controls
    - ▪ **Strategy applies to most surface hazards**
  - ❍ **Avoid**
    - ✦ Pooled water and highway ruts
    - ✦ Shiny surfaces
  - ❍ **Beware**
    - ✦ Rider vision and attention impaired
    - ✦ Overall visibility is poor
      - Use high-viz, waterproof gear

## ROADWAY CONDITIONS

Changes in roadway conditions are part of the challenge of motorcycling. You have to be ready for anything. Use SIPDE to identify roadway problems early, giving you time to plan for success. Be especially vigilant for changes in color and texture — your clues that traction may change.

**PREDICT CHANGES IN TRACTION BY SCANNING FOR CHANGES IN ROADWAY COLOR AND TEXTURE** STRATEGY

### RAIN-SOAKED SURFACES

Rain-soaked roads can be safe to ride, but danger is greatest during the first rainfall following a dry period. Oil, dirt and other debris accumulate in and upon the road surface. Rain mixes with that composition and creates a slippery film, but with time this film washes away and traction improves. Avoid riding during the first part of a rainstorm when conditions are the most slippery. Also:

1. *Ride in the tracks of other vehicles if conditions permit.*
2. *Reduce speed and lean angle in corners and on especially slippery surfaces. Conserve your traction.*
3. *Increase your following distance.*
4. *Avoid pooled water and highway ruts caused by excessive pavement wear. Motorcycles can lose traction due to* **hydroplaning** *(water build-up under the tread). Ride where traction is best.*
5. *Avoid riding during an electrical storm. Why take the chance?*
6. *Watch for shiny surfaces. They can be very slick. Examples are:*

    - *Metal covers and plates*
    - *Painted or plastic roadway markings*
    - *Bridge gratings*
    - *Railroad tracks and rubberized crossings*
    - *Wet leaves*

**Shiny surfaces can be slick. Some examples are:**

- **Metal covers and plates**
- **Painted or plastic roadway markings**
- **Bridge gratings**
- **Railroad tracks and rubberized crossings**
- **Wet leaves**

## ROADWAY CONDITIONS

### ■ Rain Grooves

89
Show Slide
Rain Grooves

- ❍ **Define**
  - ✦ Grooves cut into pavement parallel to path of travel
- ❍ **Identify traction clues**
  - ✦ Texture
- ❍ **Identify handling characteristics**
  - ✦ May cause motorcycle to wiggle
- ❍ **Identify strategy**
  - ✦ Firm, relaxed grip
  - ✦ Allow bike to wiggle
  - ✦ Eyes up

### ■ Bridge Gratings

90
Show Slide
Bridge Gratings

- ❍ **Define**
  - ✦ Steel grid surface
- ❍ **Identify traction clues**
  - ✦ Color, texture
  - ✦ Reduced traction, especially when wet
- ❍ **Identify handling characteristics**
  - ✦ Weave or wander slightly
- ❍ **Identify strategy**
  - ✦ Slow, be smooth, eyes up

## RAIN GROOVES

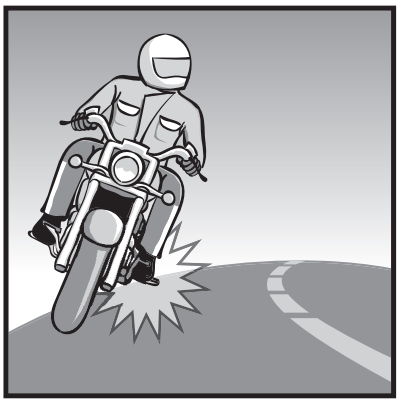
Rain grooves are cut into the pavement parallel to the path of travel. They channel water away from the surface but do not affect traction. However, rain grooves can cause the motorcycle to wiggle. Do not fight the wiggle; instead, keep a firm but relaxed grip on the hand grips. Maintain a steady speed and keep your eyes up.

## BRIDGE GRATINGS

Bridge gratings are slippery steel grid surfaces that cause the motorcycle to weave or wander. This situation is not a hazard when handled properly. Slow down before reaching the grating, then maintain a steady speed. Keep your eyes up, looking where you want to go. Again, keep a firm but relaxed grip on the handgrips and avoid abrupt maneuvers. Ride evenly and smoothly.

## LOOSE SURFACES AND DEBRIS

Paved surfaces may be littered with sand, gravel, cinders, rocks and leaves, as well as fuel, oil and coolant. Watch for telltale changes in road surface color or texture. Traction is compromised in these situations, so avoid abrupt acceleration or braking, and minimize lean. Ride straight across, keeping a steady throttle.



## GRAVEL ROADS

Gravel roads decrease traction. Ride where the traction is best, usually in the ruts created by other vehicles. Don't change your direction or speed abruptly, and limit your lean angle. Keep your eyes up, looking where you want to go.

## CRACK SEALANT

Cracks in highway road surfaces are usually sealed with a black, tar-like substance. In warm weather, this material becomes gummy and slick, causing motorcycles to slip and wiggle when leaning. Recognize this change in pavement color and avoid it if possible. If not, reduce speed and minimize lean.

**Limit your angle when turning left on crowned roads!**

## STEEL PLATES

Steel plates are often used to cover excavations. These plates are very slippery, especially when wet. Ride straight across them avoiding abrupt maneuvers and lean angle.

## CROWNED ROADS

Road surfaces are often crowned to improve water run-off. Use SIPDE for early warning that cornering clearance is reduced. Limit your lean angle when turning left.

## ROADWAY CONDITIONS (CONT'D)

91
Show Slide
Loose Surfaces and Debris

### ■ Loose Surfaces and Debris

- ❍ **Define**
  - ✦ Sand, gravel, leaves, fuel, oil, coolant
- ❍ **Identify traction clues**
  - ✦ Color, texture
- ❍ **Identify handling characteristics**
  - ✦ Motorcycle slip or fall without warning
- ❍ **Identify strategy**
  - ✦ Slow, be smooth, minimize lean, eyes up

92
Show Slide
Gravel Roads

### ■ Gravel Roads

- ❍ **Identify traction clues**
  - ✦ Texture
  - ✦ Reduced traction
- ❍ **Identify handling characteristics**
  - ✦ Instability; motorcycle slip or fall
- ❍ **Identify strategy**
  - ✦ Ride in tire tracks
  - ✦ Slow, be smooth, minimize lean, eyes up

93
Show Slide
Crack Sealant

### ■ Crack Sealant

- ❍ **Define**
  - ✦ Used to seal pavement cracks
- ❍ **Identify traction clues**
  - ✦ Color
- ❍ **Identify handling characteristics**
  - ✦ Motorcycle slip or fall without warning
- ❍ **Identify strategy**
  - ✦ Avoid if possible
  - ✦ Slow, be smooth, minimize lean, eyes up

## RAIN GROOVES

Rain grooves are cut into the pavement parallel to the path of travel. They channel water away from the surface but do not affect traction. However, rain grooves can cause the motorcycle to wiggle. Do not fight the wiggle; instead, keep a firm but relaxed grip on the hand grips. Maintain a steady speed and keep your eyes up.

## BRIDGE GRATINGS

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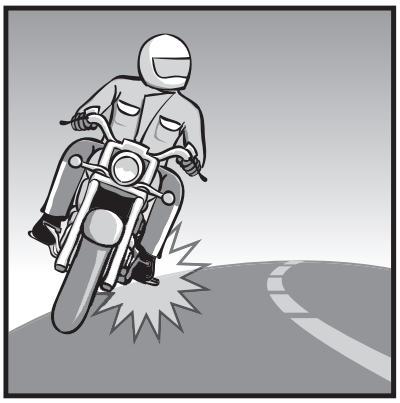
## LOOSE SURFACES AND DEBRIS

Paved surfaces may be littered with sand, gravel, cinders, rocks and leaves, as well as fuel, oil and coolant. Watch for telltale changes in road surface color or texture. Traction is compromised in these situations, so avoid abrupt acceleration or braking, and minimize lean. Ride straight across, keeping a steady throttle.



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## CRACK SEALANT

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**Limit your angle when turning left on crowned roads!**

## STEEL PLATES

Steel plates are often used to cover excavations. These plates are very slippery, especially when wet. Ride straight across them avoiding abrupt maneuvers and lean angle.

## CROWNED ROADS

Road surfaces are often crowned to improve water run-off. Use SIPDE for early warning that cornering clearance is reduced. Limit your lean angle when turning left.

## ROADWAY CONDITIONS (CONT'D)

### ■ Steel Plates

94
Show Slide
**Steel Plates**

- ❍ **Define**
  - ✦ Used by road crews to cover excavations
- ❍ **Identify traction clues**
  - ✦ Color, texture
  - ✦ Reduced traction, especially when wet
- ❍ **Identify handling characteristics**
  - ✦ Motorcycle slip or fall without warning
- ❍ **Identify strategy**
  - ✦ Avoid if possible
  - ✦ Be smooth, minimize lean, eyes up

### ■ Crowned Roads

95
Show Slide
**Crowned Roads**

- ❍ **Define**
  - ✦ Road surface higher in center
- ❍ **Identify traction clues**
  - ✦ Slope
- ❍ **Identify handling characteristics**
  - ✦ Reduced ground clearance
- ❍ **Identify strategy**
  - ✦ Anticipate
  - ✦ Minimize lean (left turns)

## RAIN GROOVES

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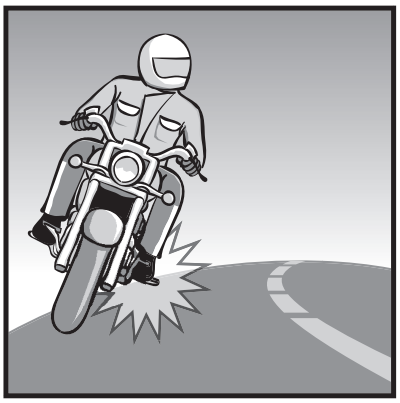

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Road surfaces are often crowned to improve water run-off. Use SIPDE for early warning that cornering clearance is reduced. Limit your lean angle when turning left.

## ROADWAY CONDITIONS (CONT'D)

### ■ Railroad, Trolley Tracks, Pavement Seams

96
Show Slide
**Edge Traps**

❍ **Define**
- ✦ Tracks or pavement edges parallel to path

❍ **Identify traction clues**
- ✦ Color, texture
- ✦ Reduced traction

❍ **Identify handling characteristics**
- ✦ Can catch front tire and cause crash
- ✦ Rail crossings slippery when wet

❍ **Identify strategy**
- ✦ Avoid if possible
- ✦ Cross at minimum 45-degree angle
  - Don't cross into oncoming lane
- ✦ Slow, be smooth, minimize lean, eyes up

### ■ Potholes, Bumps and Cracks

97
Show Slide
**Potholes, Bumps and Cracks**

❍ **Define**
- ✦ Road surface irregularities

❍ **Identify traction clues**
- ✦ Color, texture

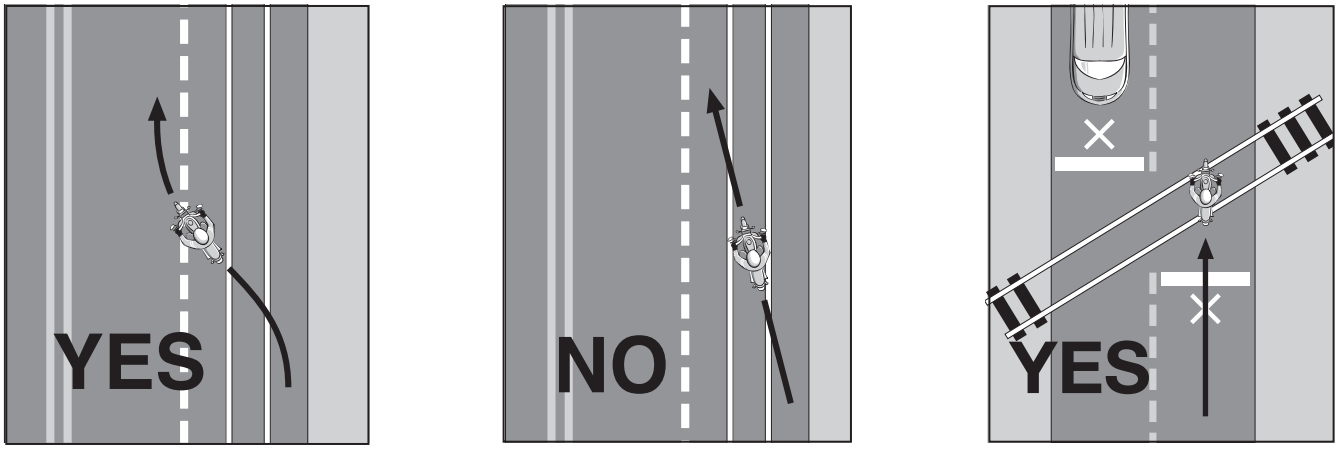
❍ **Identify handling characteristics**
- ✦ Jarring, destabilize, damage or crash

❍ **Identify strategy**
- ✦ Avoid if possible
- ✦ Rise off seat for large bumps
- ✦ Slow, be smooth, minimize lean, eyes up

## RAILROAD AND TROLLEY TRACKS, PAVEMENT SEAMS

Railroad tracks usually pose no problem if you ride straight across them. If the tracks cross your path at a diagonal, try to approach them at a 45-degree angle, but be careful not to ride into the oncoming lane. To cross trolley tracks and pavement seams that run parallel to your path of travel, swing away from the tracks or seams to square your approach to at least 45 degrees. Do not cross at a shallow angle. Otherwise the tracks or seams can catch your front tire and cause a crash.

# Crossing Pavement Seams and Tracks




## POTHOLES, BUMPS AND CRACKS

Treat potholes, bumps and cracks as you would any other obstacle. Cross at a 90-degree angle, maintain a steady speed and rise off the seat as you cross.

## EXTREMELY SLIPPERY SURFACES

Ice, snow, mud and moss can make road surfaces extremely slippery. Be alert to the possibility of these hazards, such as the onset of bad weather at higher elevations, areas prone to mudslides, and damp, shady patches of road where moss and algae can grow.

The SIPDE process will keep you from being surprised by such hazards. If you must ride through them, use the throttle smoothly and carefully. Squeeze the clutch to eliminate the possibility of engine braking. Make no sudden or abrupt moves. Ride straight up and in the tracks of other vehicles. Be especially careful around other vehicles. The roads are slick for them, too. *Remember, the key to handling poor traction situations is smooth control inputs.*

## ROADWAY CONDITIONS (CONT'D)

### ■ Extremely Slippery Surfaces

98
Show Slide
**Extremely Slippery Surfaces**

❍ **Define**
- ✦ Ice, snow, mud, moss
- ✦ Metal, paint, leaves when wet

❍ **Identify traction clues**
- ✦ Color, texture
- ✦ Reduced traction

❍ **Identify handling characteristics**
- ✦ Motorcycle slip and fall without warning

❍ **Identify strategy**
- ✦ Anticipate
- ✦ Avoid if possible
- ✦ Ride in tracks of other vehicles
- ✦ Be very smooth, do not lean, eyes up

### ■ Strategy

❍ **Use SIPDE**

99-100
Show Slides
**Surface Hazard Strategy**

- ✦ Identify problem, choose path, then keep eyes up
- ✦ Firm, relaxed grip
- ✦ Be smooth

❍ **Minimize lean angle**

101-102
Show Slides
**Reduce Lean**

❍ **Straighten Path**

103-105
Show Slides
**Cross at 90 Degree Angle**

- ✦ Cross at 90 degree angle if possible

## RAILROAD AND TROLLEY TRACKS, PAVEMENT SEAMS

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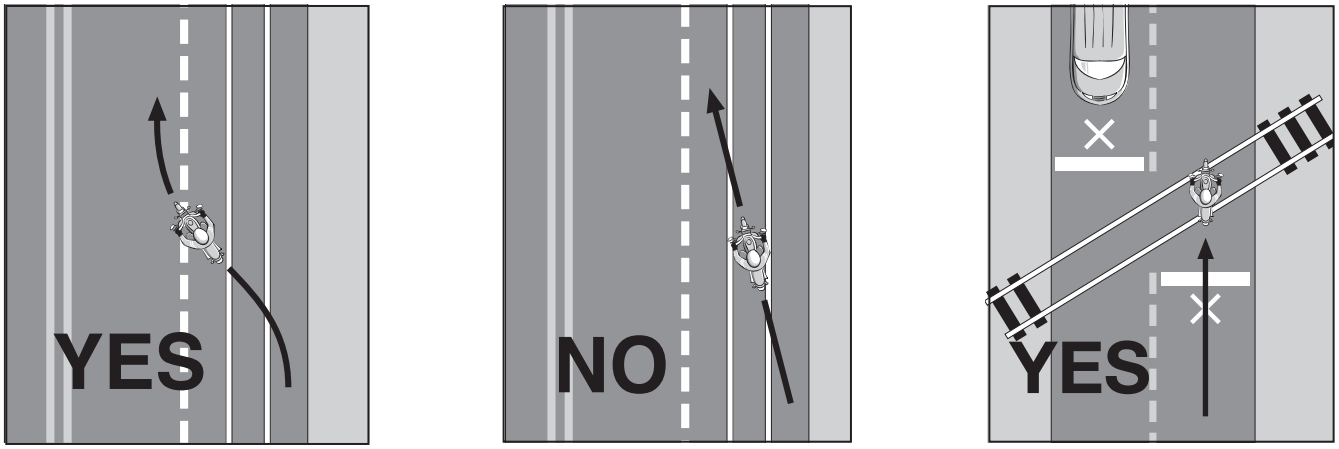


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## ANIMALS

106
Show Slide
Crash Causation Factors

- **Identify Problem**
  - **"Other" usually animals**
- **Animals that Roam**
  - ✦ Anticipate
  - ✦ If you see one, expect more
  - ✦ Prepare to stop

*Instructor Note: Refer students to Rider's Guide resource for small animals and dogs.*

## ANIMALS

Animals on and alongside the roadway can pose a serious hazard to motorcyclists. How you deal with them depends on road conditions and the animal's size.

### SMALL ANIMALS

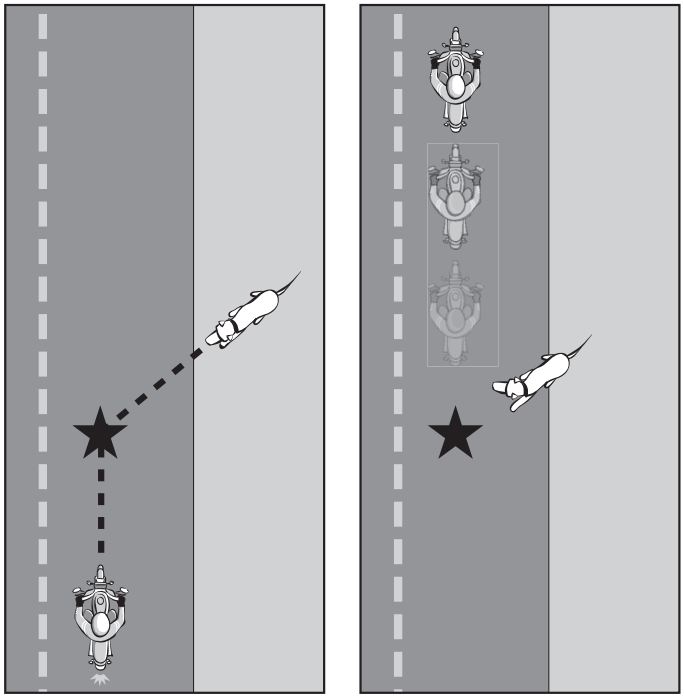
Animals like squirrels and rabbits may dart into your path. Don't increase your risk by attempting to avoid a collision. If it's unsafe for you to swerve or brake, prepare to surmount the obstacle.

### ANIMALS THAT CHASE

Some dogs chase vehicles, and motorcycles are no exception. Dogs use SIPDE to pick a point of interception. Defeat that strategy by slowing, downshifting and then accelerating out of the dog's reach. Don't kick at the dog. Keep your eyes up.

## DOGS THAT CHASE

- SLOW DOWN
- DOWNSHIFT
- THEN ACCELERATE OUT OF DOG'S REACH




### ANIMALS THAT ROAM

Larger animals like deer and elk create a real hazard. They are unpredictable and hitting one is like colliding with a truck. Use SIPDE aggressively in areas where deer or elk may be present. Remember, these are herd animals. If you see one, expect more. If you come upon one of these animals, slow down as much as you can. The safest passing speed is walking speed. Expect such animals to dart into your path. Be prepared!

## WIND

107
Show Slide
Wind

- **Identify Problem**
  - ✦ Wind gusts can push motorcycle out of lane/off road
- **Identify Strategy**
  - ❍ **Steady wind**
    - ✦ Lean into it (press)
  - ❍ **Identify areas where wind conditions exist or may change**
    - ✦ Large vehicles, bridges, overpasses, river valleys, mountain passes
    - ✦ Maximize space cushion
    - ✦ Anticipate changes

---

## PARKING

*Instructor Note: Refer students to Rider's Guide resource for parking strategy and security.*

- **Caution**
  - ✦ Sidestand can sink
  - ✦ Place rigid object under stand

## WIND

An unexpected blast of wind can push a motorcycle right off the road. It's important to understand where gusts can occur and be prepared to counteract the wind with proper riding technique.

Trucks, motorhomes and other large vehicles push a lot of air ahead and to the sides. Avoid the wind blast of these vehicles by moving away from them as they approach. When passing a large vehicle, stay far from its side to avoid the draft effect that may pull you toward it.

While riding, you might encounter steady winds or strong and irregular gusts. The strategy is the same: Lean into the wind by applying forward pressure on the handgrip. The stronger the side wind, the more forward pressure must be applied. Use SIPDE to identify places where the wind may be blocked, such as road cuts and freeway underpasses. As the wind is blocked, you'll need to lighten the pressure on the handgrip. Also use SIPDE to identify bridges and overpasses where you'll be exposed to the full force of the wind...in other words, be prepared. Adjust your lane position to allow for space to move side-to-side within your lane to compensate for wind gusts.

For strong and irregular blasts, be ready! Maximize the space cushion around you. Be prepared to take immediate action to counter the blast. If the wind becomes too erratic and dangerous, find a safe place to park until conditions improve.

## PARKING

### PARALLEL PARKING SPACES

Back into the space at an adequate angle to keep the motorcycle out of the traffic flow. Place the rear tire against the curb.

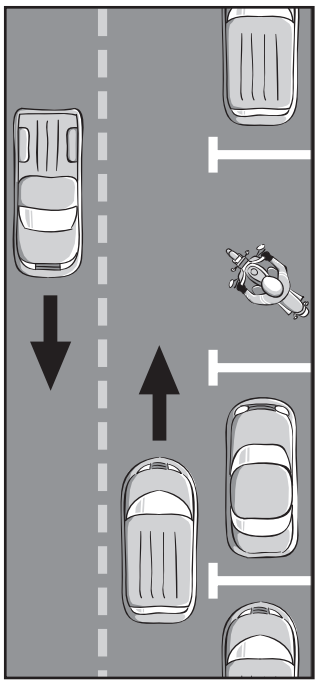
### PULL-IN SPACES

The space is yours. Center your motorcycle in the space to discourage space sharing.

### SECURITY

Secure the motorcycle with the handlebar turned toward the sidestand. For greater stability and security, lock the forks. Leave the motorcycle in first gear to prevent rolling. Caution: When asphalt is hot, a motorcycle sidestand can sink into it. To prevent sinking, place a rigid object like a flattened soda can under the sidestand.

**Parallel Parking**



## GROUP RIDING

Play Video

**Video Clip: YouTube**

### ■ Identify Problem

- ❍ **Group mentality and peer pressure**
  - ✦ Affect behavior and attention:
    - Speeds too high
    - Fail to maintain space cushion
    - Fail to break formation
- ❍ **Distraction/target fixation**
  - ✦ Watching other riders, not the road ahead
- ❍ **Group riding is not for beginners**

### ■ Ride Your Own Ride

- ❍ **Speed and space cushion**
  - ✦ Choose based on your comfort level
- ❍ **Time and distance**
  - ✦ Beware of fatigue
- ❍ **Alcohol**
  - ✦ Don't drink or ride with those who do

### ■ Riding Formation

- ❍ **Staggered**

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Show Slide

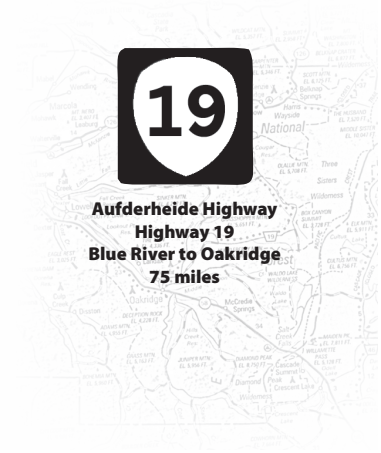
**Staggered Formation**

- ❍ **Break large groups into pods of four or less**
- ❍ **Two-second spacing from rider ahead**
- ❍ **No riding side by side**
- ❍ **Break formation when necessary**

109-110

Show Slides

**Riding Formations**




Riding with friends is a popular way to share the journey, but before you do, be certain that you are comfortable and confident in your riding skills. Group riding is very distracting – it's not for beginners!

## RIDE YOUR OWN RIDE

Beware of peer pressure. The desire to keep up, fit in and be accepted can push even the most mature, level-headed riders beyond their personal limits. Spread out and ride only at the pace you're comfortable. Never hesitate to abandon a group that rides too fast or chooses to drink and ride. Remember: You don't have to be impaired by alcohol or drugs to get hurt or killed by a rider who is.

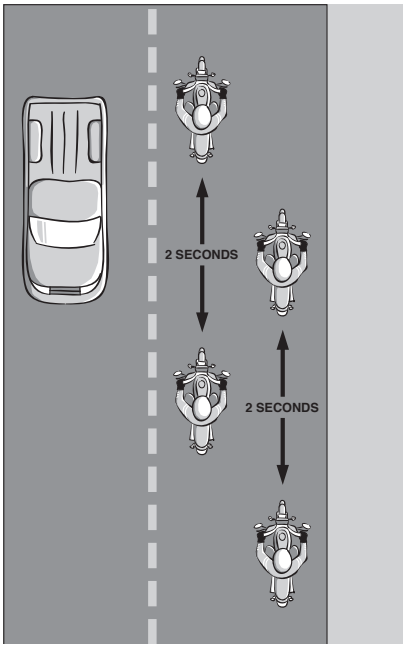
## WATCH THE ROAD AHEAD, NOT THE RIDERS AHEAD

Avoid **target fixation**. Don't stare at the riders in front of you – look PAST riders in front of you. This will help you see the big picture and avoid following another rider into a bad line or a crash.

## KEEP THE GROUP SMALL

Riders at the rear of large groups can get separated from the main group by traffic or lights and feel an urgency to catch up. Eliminate this potential by limiting your group size. If you have a large group, split into pods of four or less. Put beginners up front, right behind the leader.

**Staggered Formation**




## KNOW THE ROUTE AND HAND SIGNALS

Every rider in the group should know the route. Make multiple maps or route sheets to reduce the pressure to keep up. Before starting out, the leader should show the group the signals they will use to communicate. See Appendix B.

## MIND THE RIDER BEHIND YOU

When making a turn or passing through a signal, check to make sure the rider behind you is within sight. If not, slow down or stop and wait until they see you. This strategy also helps keep the group together.

## KEEP YOUR DISTANCE

Use a staggered formation. This allows the group to remain compact while maintaining a space cushion and escape route. Maintain a two-second following distance behind the rider directly ahead of you. At stops, pair up. When the wheels start rolling, return to the staggered formation. Avoid riding in pairs. This compromises your space cushion and escape route.

## GROUP RIDING (CONT'D)

*Instructor Note: Refer to Appendix E, page 77, Worksheet #3. Have students work together. Split into groups of 2-3 students. Assign each group one scenario. Allow 2 minutes.*

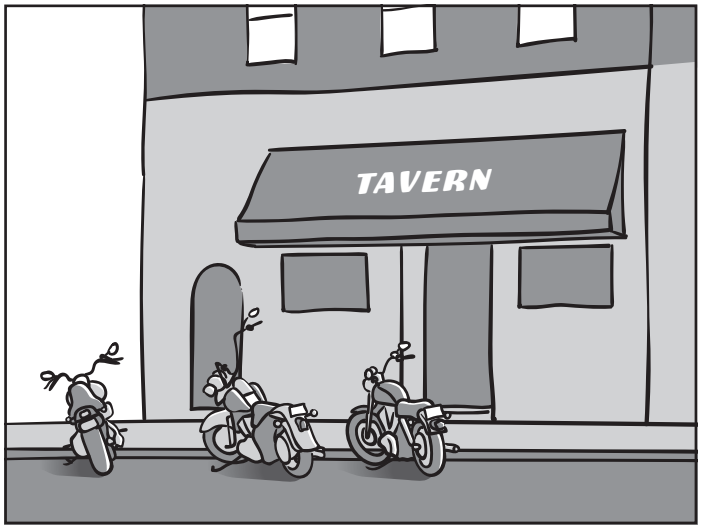
*Pick two groups to read the scenario aloud to class and give their response. Allow three minutes.*

- **Review Scenario 1 Answers**
  - ✦ Do not order alcohol
  - ✦ Leave group before ride continues
  - ❍ **Summarize**
    - ✦ Both answers are examples of "ride your own ride"
    - ✦ Impairment (yours or others) increases risk
- **Review Scenario 2 Answers**
  - ✦ Let the group go
  - ✦ Ride your own pace
  - ❍ **Summarize**
    - ✦ Both answers are examples of "ride your own ride"
    - ✦ Peer pressure is an impairment

## RIDE YOUR OWN RIDE

***Group Riding Scenario 1***

Your co-worker finally talked you into joining his club for their weekend ride, a nice, long trip to the coast and back, with lunch at the turnaround point. As it turns out, lunch is at the group's favorite tavern, and everyone is drinking beer with their food.
How do you handle it?
Answer:

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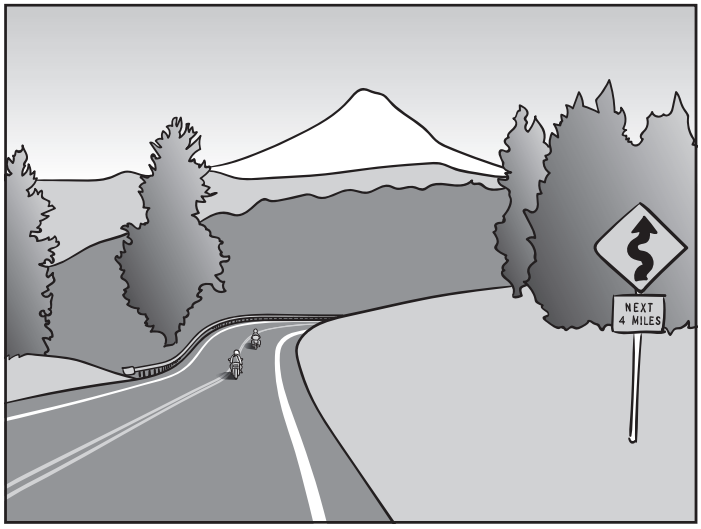
***Group Riding Scenario 2***

You finally learned how to ride, and just got your first bike a couple of weeks ago. Your best friend invites you to join him on a ride with his friends. The other riders are quite experienced and ride very fast. It's not long before the group pulls away from you. Your friend waves, encouraging you to try and keep up.
How do you handle it?
Answer:

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## COMPLETE REVIEW QUESTIONS

**1. What indicates a potential change in roadway traction?**

*- Differences in surface color or texture*

**2. How should you ride across low-traction surfaces?**

*- Be smooth; reduce lean angle; choose path then head and eyes up*

**3. What surfaces are extremely slippery when wet?**

*- Steel plates and rails, painted lines, wet leaves*

**4. Why do crashes happen on group rides?**

*- Group mentality; peer pressure; distraction*

**5. When should a new rider try group riding?**

*- Only after they have more experience*

*Instructor Note: Recommend students review this unit again after riding 1-2 weeks – this information is a lot for a beginner to digest all at once. Encourage independent study of surmounting obstacles, passing in formation and traffic-actuated signal lights.*

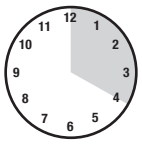
## TRAFFIC-ACTUATED SIGNAL LIGHTS

Most traffic-actuated signals are triggered by vehicle magnetic mass, and because motorcycles lack mass these sensors don't always detect them. Position your motorcycle directly over a sensor strip. If that doesn't work, contact the agency responsible for the intersection. Explain the situation and ask for the sensor to be adjusted.

# Review Questions

1. What indicates a potential change in roadway traction?
2. How should you ride across low-traction surfaces?
3. What surfaces are extremely slippery when wet?
4. Why do crashes happen on group rides?
5. When should a new rider try group riding?

## IDENTIFY OBJECTIVES




- **Understand How Alcohol, Drugs and Other Impairments Affect a Motorcyclist's Ability to Ride Safely**
- **Be Willing to Intervene to Prevent Others from Riding Impaired**
- **Identify Other Impairments to Safety**

---

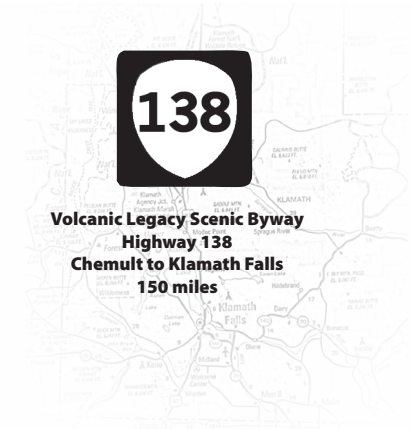
- **Identify Research Evidence**
  - ✦ Alcohol leading cause of death
    - 33-50% had positive BAC
    - Higher % than any other vehicle
- **Skills Needed for Safe Riding**
  - ✦ Attention and skill
  - ✦ Balance
  - ✦ Hand-eye coordination
  - ✦ Good judgment
- **Define "Impairment"**
  - ✦ Any condition that affects motor skills, vision, judgment or attention

111
Show Slide
**Impairment Defined**

---

## ALCOHOL AND MOTORCYCLING - A LETHAL MIX

- **Identify When Impairment Begins**
  - ✦ With first drink
- **Identify Alcohol Content**
  - ✦ Same alcohol content
    - Can of beer
    - Glass of wine
    - Mixed drink
- **Sobering Up**
  - ✦ Time is the primary factor




Responsible riders are alert, aware, skilled and savvy because they know that motorcycling requires keen attention and constant readiness. Any physical or mental condition that reduces your attentiveness, fogs your judgment or interferes with your riding abilities constitutes a safety **impairment**. For a motorcyclist, riding when physically and/or mentally impaired for *any* reason, is courting disaster.

While most riders understand that alcohol and drug use is hazardous, it's important to recognize that fatigue, hunger, exposure to the elements and everyday worries can also crowd your thinking and distract your attention from the ride. Evaluating your personal state of readiness is the first step in reducing the risk of riding.

## ALCOHOL AND MOTORCYCLING -- A LETHAL MIX

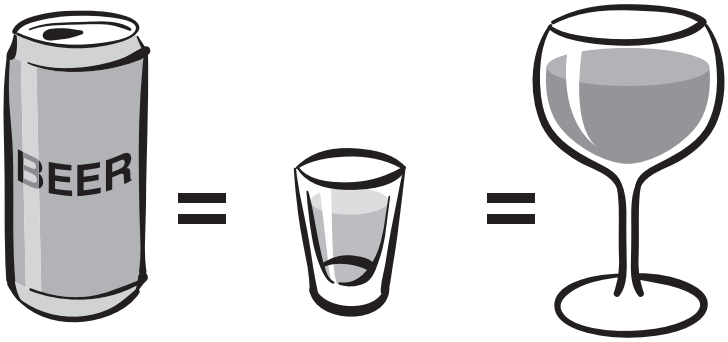
Alcohol is the leading cause of death among motorcyclists. Every year, one-third to one-half of the riders killed in motorcycle crashes had been drinking. Many of these riders' **Blood Alcohol Concentration** (BAC) levels are below legal limits, but obviously their judgment and abilities were impaired. Impairment begins with the first drink. The question is, how much impairment are you willing to accept?

**RECOGNIZE WHEN YOU ARE IMPAIRED. HOW MUCH IMPAIRMENT ARE YOU WILLING TO ACCEPT?**

STRATEGY

## EFFECTS OF ALCOHOL

Alcohol is a depressant — it slows your bodily functions. Because it is absorbed into the bloodstream quickly, the effects begin to appear almost immediately as errors in judgment, impaired vision, slowed reactions and reduced coordination.




**The alcoholic contents of a can of beer, a glass of wine and a shot of whiskey are about the same.**

## MEASURES OF IMPAIRMENT

112-117
Show Slides
Measures of Impairment

- **Impaired Judgment**
  - ✦ Willingness to take risks
  - ✦ May think abilities are unaffected
  - ✦ Affects Predict/Decide of SIPDE
- **Divided Attention**
  - ❍ **Define**
    - ✦ Simultaneous concentration on mental and physical tasks
  - ❍ **Problem**
    - ✦ Concentration limited – more attention on controls
    - ✦ Affects Scan/Identify
- **Impaired Vision**
  - ✦ Inability to focus or adjust to changes in light
  - ✦ Easily observable during a stop
  - ✦ Affects Scan/Identify
- **Coordination and Balance**
  - ✦ Inability to respond quickly and with precision
  - ✦ Affects Decide/Execute
- **Blood Alcohol Concentration (BAC)**
  - ✦ BAC in Oregon is 0.08
  - ✦ Impairment begins at first drink
  - ✦ You can be arrested below 0.08
  - ✦ Zero tolerance under 21
  - ✦ More information in Appendix C

## MEASURES OF IMPAIRMENT

Here are a few indicators of drug and alcohol impairment that law enforcement officers look for during Standardized Field Sobriety Tests:

### Impaired Judgment

Impaired judgment is evidenced by a willingness to take risks. Impaired riders typically fail to recognize this behavior. They may think they ride better after a few drinks.

### Divided Attention

Field Sobriety Tests measure a rider's ability to attend to several mental and physical tasks at the same time. The ability to divide attention is impaired in riders under the influence of alcohol, marijuana and/or other drugs. As a result, they tend to focus on only a few aspects of riding and disregard others. For example, they may ignore a traffic signal and focus instead on speed control.

### Impaired Vision

**Nystagmus**, or involuntary jerking of the small muscles of the eyes, is a readily noticeable sign of possible alcohol or drug impairment. The effect of nystagmus on a motorcyclist is critical, as these impaired muscles are the ones that control the rider's ability to focus and adjust to changing light conditions. Individuals experiencing nystagmus are unaware that their eyes are jerking and are unable to control it.

### Blood Alcohol Concentration

Many factors must be considered when determining BAC, including physical size, gender, the amount of alcohol consumed and the number of hours spent drinking. In most states, a person with a BAC of .08% is considered legally intoxicated. Breath, blood and/or urine tests confirm BAC. Even if you are below .08%, you can still be arrested and convicted of driving under the influence of intoxicants (**DUII**).

**Marijuana and DUII**

**Law enforcement is trained to detect impairment caused by any substance, including marijuana. Getting high and riding a motorcycle can get you arrested and charged with DUII.**

## MARIJUANA

Marijuana slows reactions, inhibits concentration and distorts your perception of time and distance. Its effects are most pronounced when individuals handling multiple tasks are confronted with something unexpected. Your response and performance at these times need to be quick and accurate – don't blow it by being impaired by marijuana.

## MEASURES OF IMPAIRMENT, (CONT'D)

- **Marijuana**
  - **Effects**
    - ✦ Slows reaction time (D/E)
    - ✦ Inhibits concentration (S/I)
    - ✦ Distorts perception of time and distance (P/D)
  - **DUII laws apply to marijuana**
    - ✦ Law enforcement can detect marijuana impairment in field sobriety tests

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## SIPDE UNDER SIEGE

118-121
Show Slides
SIPDE Under Seige

- **Alcohol's Effects on SIPDE**
  - **Divided attention** ✦ Scan and Identify
  - **Impaired vision** ✦ Scan and Identify
  - **Impaired judgment** ✦ Predict and Decide
  - **Coordination and balance** ✦ Execute
- **Marijuana's Effects on SIPDE**

122-125
Show Slides
SIPDE and Marijuana

  - **Inhibits concentration** ✦ Scan and Identify
  - **Distorts perception of time and distance** ✦ Predict and Decide
  - **Slows reaction time** ✦ Decide and execute

---

## MIXING DRUGS AND ALCOHOL

- **Identify Problem** ✦ Increases impairing effects of each

---

## IDENTIFY STRATEGY

- **Separate Drinking and Drugs from Riding**

# SIPDE UNDER SIEGE

**NOTICE WHAT ALCOHOL AND/OR DRUG INFLUENCE DOES TO THE SIPDE PROCESS:**

**Scan** Clear vision is impaired. Your ability to detect moving objects and to see clearly at night is impaired. Critical information may be missed. Your ability to divide attention between scanning and operating the motorcycle is compromised.

**Identify** As impairment increases, more attention is diverted to operating the controls. Key visual clues are missed. Hazards aren't identified.

**Predict** Judgment and the ability to process information are impaired. Short-term memory is impaired.

**Decide** The ability to divide attention, analyze risk and make decisions is flawed.

**Execute** The ability to react properly and precisely is affected. Reaction time, coordination and balance are compromised.

## ADDING DRUGS MAKES IT WORSE

Alcohol combined with prescription drugs, over-the-counter remedies or controlled substances can be a lethal mix. These substances can greatly increase the dulling effects of alcohol, and the time your body takes to remove the drug from your system varies. Using marijuana with alcohol increases the impairing effects of each.

Riding impaired is like lowering a shade between your eyes and your brain. Critical information is missed, skills and judgment are dulled, but your confidence is high. Mixing in other drugs, controlled substances or inhalants makes a deadly combination.

## THERE IS A CURE

Impairment begins immediately, so exercise good judgment before using alcohol, marijuana or drugs. Use SIPDE and plan ahead:

- *Separate drinking and drugs from riding. If there is a chance you will be tempted to use alcohol, marijuana or other drugs, don't ride.*
- *Have an alternate plan for getting home in case you change your mind.*

**SEPARATE DRINKING AND DRUGS FROM RIDING** STRATEGY

## HELP YOUR FRIENDS

- **Identify Ways to Intervene**
  - ✦ Get others to help
  - ✦ Secure the motorcycle
  - ✦ Arrange a safe ride or place to stay
  - ✦ Take the keys
  - ✦ Plan ahead – Establish zero tolerance for riding after drinking

---

## OTHER IMPAIRMENTS

- **Identify Impairments Unrelated to Alcohol/Drugs**
  - ✦ Fatigue (mental and/or physical)
  - ✦ Exposure (temp, wind, sun)
  - ✦ Distraction
  - ✦ Emotion
  - ✦ Peer pressure
  - ✦ Medications
  - ✦ Health conditions
  - ✦ Aging
    - Vision, strength, endurance, reflexes, motor-skill precision
  - ❍ **Identify pathway (fatigue, exposure)**

126
Show Slide
**Pathway to Impairment**

- **Indicators of Impairment**
  - ✦ Increased number of surprises
  - ✦ Late reactions
  - ✦ Loss of smooth control operation
  - ❍ **Recognize and Compensate**
    - ✦ Slow; increase space cushion
    - ✦ Stop; take break/rest
    - ✦ Eat; drink water
    - ✦ Quit for the day

## DISTURBING DISTRACTIONS

**Riding a motorcycle requires your complete attention. Anger, stress, trouble and/or pain are just a few disturbing distractions. While you can't avoid these troubles in day-to-day activities, you must put them aside when you swing your leg over a motorcycle.**

## HELP YOUR FRIENDS

The last thing anyone wants is to see a friend hurt or killed in a crash. Intervene when you suspect a friend is impaired but still intends to ride.

- *Arrange a safe ride home.*
- *Because riders often are unwilling to leave their motorcycles, find a secure location for your friend's bike.*
- *Get others to help. The more support you have, the better your chances of success.*
- *Stop serving if you are the host.*
- *Use any excuse to keep your friend from getting on the motorcycle. Serve food or non-alcoholic drinks to pass the time. Let your friend sleep over at your place.*
- *If all else fails, hide the keys.*

Do something! Just don't let your friend ride away!

## OTHER IMPAIRMENTS

Alcohol and drugs are not the only things that impair your mental and physical abilities. Other factors also affect your ability to ride safely:

### FATIGUE/DROWSINESS

Recognize your state of *RiderReadiness*. When you are tired, or if battling the elements has diminished your energy reserves and attention, take a break or stop for the day. Don't ride when your body and mind are so dulled that it is difficult to process information and respond to hazards.

### TEMPERATURE EXTREMES

Exposure to prolonged and/or extreme heat or cold drains your energy and dulls your attention. Rain, gusting winds and other adverse conditions also increase stress and fatigue. Riding safely means enjoying the journey. Pursuit of your destination should not prevent you from stopping whenever you need to rest and recover.

### OVERRIDING YOUR ABILITIES

Don't let ego and emotion impair your judgment and safety. The street is no place for competition, showing off or aggressive riding. If that type of riding interests you, head for the racetrack.

## OTHER IMPAIRMENTS, (CONT'D)

127
Show Slide
**Looking Ahead**

*Instructor Note: Have 2-3 students predict one impairment they will encounter in the next few months and what their solution will be.*

❍ **Invoke Rider Readiness**

128
Show Slide
**Assess Before You Ride**

✦ If not 100%, adjust appropriately or don't ride

---

## COMPLETE REVIEW QUESTIONS

**1. Name five impairments unrelated to alcohol or recreational drugs.**

- *Fatigue, exposure, distraction, emotion, peer pressure, medication, health, age*

**2. What measures of impairment affect SIPDE?**

- *Judgment, attention, vision, coordination, balance*

**3. How does your riding ability change as you get older?**

- *Vision deteriorates*
- *Strength and endurance deteriorate*
- *Reflexes and motor skills less precise*

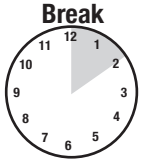
**4. When is it okay to ride after drinking or using drugs?**

- *Never*

**5. What should you do if you recognize you are becoming impaired while riding?**

- *Slow, stop, rest, eat, hydrate, sleep*

**Break**



**10 minutes**

## OTHER IMPAIRMENTS

### PRESCRIPTION DRUGS

Marijuana and narcotics are not the only drugs that can cause impairment. Any medication can impede your ability to recognize clues and make good decisions. Prescription painkillers, sleep aids or anxiety medications can dull your senses, slow your reactions or alter your perceptions. Even over-the-counter drugs like cough syrups, cold remedies or allergy medications (e.g. Benadryl, NyQuil) interfere with riding. Legal drugs often come with the warning: DO NOT OPERATE HEAVY MACHINERY. Isn't a motorcycle a heavy machine?

**Examples of legal drugs that can impair your ability to ride:**

- Adderall
- Ativan
- Codeine
- Marijuana
- OxyContin
- Ritalin
- Vicodin
- Xanax

### HEALTH CONDITIONS

Temporary health problems like nagging injuries, aches and pains can steal your attention and slow your reactions. If an injury or ailment limits your ability to perform ordinary tasks, that's your clue that you probably shouldn't be riding. Chronic conditions such as diabetes, arthritis, depression or anxiety can make it difficult to ride a motorcycle safely.

### AGE

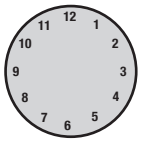
Vision, your most important source of information, deteriorates as you age. Light sensitivity, lack of depth perception and reduced night vision can limit your ability to use SIPDE effectively. Physical strength, fitness and endurance also deteriorate with age. Older riders' reflexes and motor skills may not be as precise as those of their younger selves!

## Review Questions

1. Name five impairments unrelated to alcohol or recreational drugs.
2. What measures of impairment affect SIPDE?
3. How does your riding ability change as you get older?
4. When is it okay to ride after drinking or using drugs?
5. What should you do if you recognize you are becoming impaired while riding?

## ADMINISTER KNOWLEDGE TEST

Classroom Wrap-up



60 minutes

***Read to class:***

***"We will now begin the BRT Knowledge Test. Cell phones and/or cameras must be silenced and put away for the duration of this session."***

---

***Instructor Notes:***

- *Instruct students to close books.*
- *Distribute knowledge tests in sequential numerical order (1-12).*
- *Distribute answer sheets.*
- *Instruct the students:*
  - *o Mark your answers on the answer sheet. Do not write on the test itself.*
  - *o Write your name and test number in the appropriate spaces.*
  - *o When finished, turn in both the knowledge test and answer sheet to the instructor.*
  - *o After turning in test, you may leave the room while others finish.*

***Securing the Testing Environment:***

*Instructors must maintain visual awareness of the testing environment for the duration of the testing and review process.*

*Neither the test nor the answer sheet may be taken from the testing area.*

***Scoring the Test:***

- *Using the scoring key, mark all wrong answers.*
- *Mark the score (expressed as a percentage correct).*
- *A passing score is 80% or greater.*
- *Turn answer sheets face down in front of you as you score remaining tests.*
- *Complete a test analysis of missed questions.*
- *Record student scores (on the answer sheets and the course roster).*
- *Count returned tests and arrange in numerical order (1-12). Return tests to file. Do not return the knowledge test to the students.*

## CONDUCTING THE TEST (CONT'D)

***Automatic Failure:***

*Cheating during the test and taking photos or video of testing instrument is cause for automatic failure. If you find a student to be referencing notes, looking at another's answers, conversing with another or making such attempts to gain unfair advantage, it shall result in immediate test termination. Mark the answer sheet as zero and note on the answer sheet and in the course file your finding. The student is eligible for a retest in accord with BRT retest policy.*

**129-134**
**Show Slides**
**BRT Knowledge Test Review**

***Reviewing the test:***

- *Call the students back into the testing area.*
- *Remind students "We are still testing. Cell phones and/or cameras must be silenced and put away for the duration of this session."*
- *Distribute to each student his/her answer sheet.*
- *Review the 2-4 most missed questions using Slides 129-134. Encourage students to ask about the questions they answered incorrectly.*
- *When the review is completed, collect the answer sheets back from each individual student. Do not pass or forward them – collect individually.*
- *Count returned answer sheets and put in numerical order (1-12) to verify all have been returned.*

## BRIEFLY IDENTIFY UNITS 10, 11 AND APPENDICES

- **Unit 10: Carrying Passengers and Cargo**
- **Unit 11: Mechanical Problems**
- **Appendices**
  - ✦ Course wrap-up; rules and regulations
  - ✦ Glossary
  - ✦ Deals and discounts – please support our sponsors
- **Next Steps**
  - ✦ Your job is to go ride
  - ✦ Remember: Riding gear expectations (range vs. street)
  - ✦ Don't bite off too much
    - Short rides on familiar roads

**135-136**
**Show Slides**

**Don't Bite Off Too Much**

  - ✦ Acknowledge; avoid long distance, passengers, group rides until you have more experience
  - ✦ Not "one and done." Plan to take RSP next year; ABC or ART in 2 years; PMC or CCS in 3 years *(refer back to Foreword on Page 4)*

*Instructor Note: Refer students to Appendix C, page 69.*

- **Riding Legally in Oregon**
  - ✦ Apply for endorsement
  - ✦ Pay fees
- **Website Resources**
  - ✦ Become an instructor *(encourage)*
  - ✦ Motorcycle laws, riding scenarios, lifting a motorcycle, videos, etc.

*Instructor Note: Identify possible candidates.*

## NEXT STEPS

Once you have completed the BRT or IRT, your next step is to get out and ride. The skills you developed will fade quickly if you don't put them to use. Go practice what you learned and build your confidence, skill and knowledge. Be careful not to bite off too much at once. Keep your first rides short. Ride when traffic is light on roads that are familiar to you. Avoid group riding or carrying a passenger until you have more experience. As you progress, you will discover you have more questions about riding and new skills you want to learn. Perfect! Next season, come back for Rider Skills Practice (RSP) and take your riding to the next level.

Before you can legally ride on the street, you must go to a Driver and Motor Vehicles (DMV) office and apply for your motorcycle endorsement. Be sure to check online ahead of time (www.oregon.gov/ODOT/DMV/) for identification requirements and the fee schedule. If you took the BRT, DMV waives both the motorcycle knowledge and skills tests for your endorsement. If you took the IRT, DMV waives only the skills test.

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## CONDUCT INDIVIDUAL EVALUATIONS *(if graduating in classroom)*

- **Identify Completion Status**
- **Distribute Completion Materials**

---

## DISMISS

## NEXT STEPS

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**Illinois River/Cave Junction Scenic Route**
**Highway 199**
**Grants Pass to Crescent City, CA**
**82 miles**

## CARRYING PASSENGERS

Adding passengers and cargo opens up a whole new dimension of your motorcycling experience. But remember that this will affect the motorcycle's handling. The bike will feel heavier at all speeds. Acceleration will be reduced and stopping distances will lengthen. Stability and cornering clearance may be affected in turns.

Here are some tips to make the trip safe and enjoyable when carrying passengers:

1. *First, do not carry passengers unless you are confident in your abilities and judgments. Practice away from traffic.*
2. *Adjust the suspension and tire pressure according to the manufacturer's recommendations found in your owner's manual.*
3. *Never carry a passenger in front of you. This is dangerous and illegal in many jurisdictions.*
4. *Your passenger must be able to reach the footrests and look over your shoulder.*
5. *Be sure your passenger is wearing proper protective gear and that shoe laces are tucked in.*
6. *Show your passenger how to mount so that he or she can avoid the hot exhaust pipes. Place both feet on the ground and grip the front brake. This stabilizes the motorcycle for the passenger to mount and dismount.*

### PASSENGER RULES FOR SAFETY AND SECURITY

**Brief your passenger before the first ride. Ask your passenger to follow these rules for safety and security:**

- **Notify the operator when you are ready to mount or dismount and wait for approval. This prevents surprise shifts of balance.**
- **Hold the operator's waist or hips. This braces the passenger for acceleration or braking. Keep both feet on the footrests at all times.**
- **Keep hands and feet away from moving and hot parts.**
- **Look over the rider's shoulder in the direction of the turn.**
- **Avoid sudden moves that might affect stability.**
- **If the rider rises off the seat, so too should the passenger.**
- **Enjoy the ride!**

## CARRYING CARGO AND TOURING

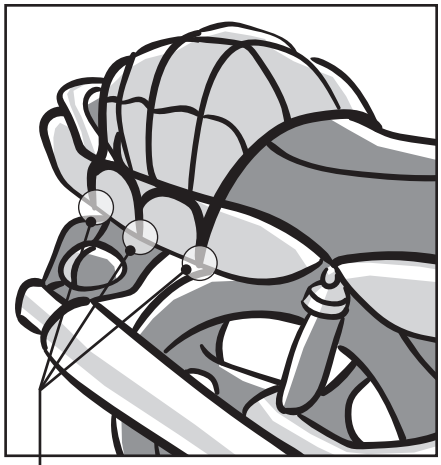
### CARGO

When carrying cargo, carefully consider its weight and location. Check your owner's manual for the maximum load limits of your motorcycle, including a passenger. Do not exceed the total weight limitation. Check your owner's manual for recommendations on adjusting the suspension and tire pressure to accommodate the added weight.

Balance is important in loading a motorcycle. Keep the load low and toward the center of the motorcycle. Keep the weight distributed evenly side to side. Carry heavier items down low in saddlebags. Lighter items can be stored in a motorcycle tank bag, tail bag or trunk. For other items, use cargo nets or web straps secured to multiple points on the motorcycle.

Secure your cargo! Make sure the load can't shift while you're riding. Take care that your cargo doesn't interfere with the safe operation of your bike.

**Use bungee nets, not bungee cords, to secure cargo.**



**Multiple mounting points**

### TOURING

There's a time-honored tradition of long-distance touring by motorcycle. But touring requires lots of mental and physical stamina, as well as preparation. You'll have to deal with heat, cold, rain, wind, and "highway hypnosis" – sometimes all in the same day.

The key to riding long distances successfully is planning. You'll need extra clothing and rain gear to adjust for all possible conditions, both expected and unexpected. You should also have tools to perform basic maintenance and repairs. Bring snacks and water to help you stay alert. Plan breaks along the way so you can stay refreshed. Take time to get off the bike at regular intervals – not just at gas stops – and loosen up.

Riding long distance is a dream for many riders, but don't jump right into it. Begin with shorter trips and build up to longer distances over the course of numerous rides. Avoid long trips until you have gained experience.

## Review Questions

1. When should you consider carrying a passenger or touring?
2. How should your passenger be dressed?
3. What adjustments to your motorcycle should you make when carrying loads?
4. What items should you take on a long-distance ride?


Mechanical failures often result in emergencies. Quickly assessing the problem will help you respond properly.

## TIRE FAILURE

Modern tubeless tires rarely blow out, but it does happen. As soon as you detect an unfamiliar handling characteristic, *slow down*. The bike will wobble and/or wander. If the flat is on the front, the steering will feel heavy. If on the back, the entire bike will weave and feel unstable. A typical rider response is to look down at the motorcycle as if to say, "What's up?" Instead, keep your eyes on the road and use these techniques:

1. *Hold the grips firmly and ease off the throttle. Don't fight the wobble.*

2. *Avoid applying the brakes unless you have to. If you have to brake, use the brakes on the wheel with the good tire. Remember that linked or* ***integrated braking systems*** *may not allow this.*

3. *Avoid downshifting.*

4. *Squeeze the clutch and keep it in.*

5. *Shift your weight away from the affected area. If the front tire is flat, move back. If the rear is flat, move forward.*

6. *Keep your eyes up and find a safe place to pull over.*

A common cause of tire failure is under-inflation. Check your tires frequently and keep them inflated to the manufacturer's specifications.

## BROKEN CLUTCH CABLE

Some bikes have cables linking the clutch lever to the clutch and occasionally these cables break. Hydraulic clutches can also fail. If this occurs, the clutch will remain completely engaged. It is possible to shift without the clutch. Just match engine speed to road speed and complete the shift quickly. Ride to a place where assistance is available. Remember that once you stop, it is very difficult to get going again. When coming to a stop, try to find neutral. Shut off the motorcycle with the engine cut-off switch.

## WOBBLE/WEAVE

A weave or wobble is your motorcycle's way of telling you something's wrong. A wobble is felt in the handlebars as a possibly strong and rapid shaking. A weave, on the other hand, is a slow oscillation in the rear of the motorcycle. In either case, you may have a serious problem. Slow down immediately and follow these tips:

- *Keep a firm grip on the handlebar and don't fight the wobble.*
- *Eeeease off the throttle.*
- *Move your weight forward and as low as possible over the tank.*
- *Avoid applying the brakes unless you have to. Braking can amplify the wobble or weave.*
- *Do not accelerate to try and stop the wobble. This will only makes it worse.*
- *Worn or improperly inflated tires, loose or worn bearings and/or too much weight in the wrong location can cause a wobble or weave. Identify the problem and take your motorcycle to a qualified technician for repairs.*

Once you experience a wobble/weave, it can occur again at any time until you make the necessary repairs.

**TAKE CARE OF YOUR MOTORCYCLE AND IT WILL TAKE CARE OF YOU**

STRATEGY

## Review Questions

1. What is a primary cause of tire failure?
2. Where do you find information about proper tire pressure?
3. How can you shift without using the clutch?
4. If you experience a wobble, what should you do?

Range rules are designed to maintain safety for all riders and therefore apply to everyone. They are used in conjunction with all riding exercises, no exceptions. Range rules are as follows:

## RANGE RULES

1. **Wear all protective gear when seated on the motorcycle.**
2. **On the range, cover the clutch lever with four fingers at all times – this enables you to immediately remove power from the rear wheel, if necessary.**
3. **Keep your throttle hand in a low wrist position with four fingers around the handgrip.**
4. **On the range, do not "cover" the front brake while moving forward. Keep all four fingers wrapped around the throttle unless using the front brake.**
5. **Always check all around you before moving.**
6. **Don't crowd other riders – leave plenty of space between you and them.**
7. **Do not pass unless instructed to do so.**
8. **Use the engine cut-off switch to stop the engine, and then turn off the ignition key.**
9. **If you have a problem, move out of the way, stop, and signal your instructor.**
10. **If you don't understand an exercise, ask your instructor for clarification.**
11. **If you have a health concern or disability, please see one of your instructors.**
12. **Riding a motorcycle can be dangerous. It is your responsibility to stop training if you feel uncomfortable, unsafe, unable to concentrate, unable to follow directions, fatigued, or pushed beyond your limits.**

**Please familiarize yourself with the range hand signals on the next page!**

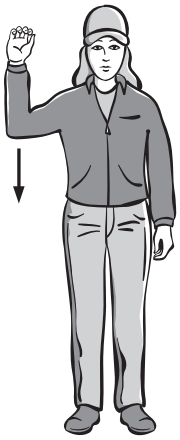
## HAND SIGNALS

**The course instructors will use these hand signals to communicate with you while you are riding on the range.**

Start engine

Stop engine

Neutral



Use both brakes

Stop

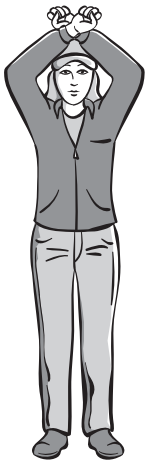
Speed up

Slow down

Cover clutch

Uncover front brake

Head and eyes up



Return to staging

## FOLLOW ME

Arm extended straight from shoulder, palm forward.

## SPEED UP

Arm down to side. Fist clenched. Twist as if turning throttle.

## STOP OR SLOW

Arm extended straight down, palm back.

## YOU LEAD

Arm extended down, palm forward. Swing forward from hip in arc.

## HAZARD IN ROAD

Point immediately with emphasis. Sometimes done with right hand.

## SINGLE FILE

Arm and index finger extended straight up.

## DOUBLE FILE (STAGGER)

Arm extended straight up. Index and pinky form "Ram's Horn" sign.

## CHECK HEADLIGHT

Tap top of head with open hand, palm down.

## NEED FUEL STOP

Arm out to side. Point to fuel tank.

## NEED FOOD, COFFEE STOP

Arm out to side, fingers closed, thumb pointing to mouth.

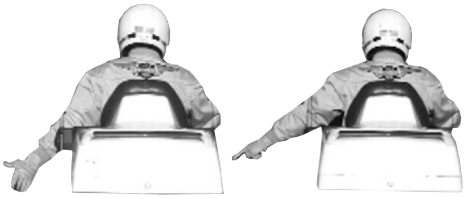
## TURN SIGNAL LEFT ON

Repeatedly open and close hand with thumb and fingers extended.

## PULL OFF

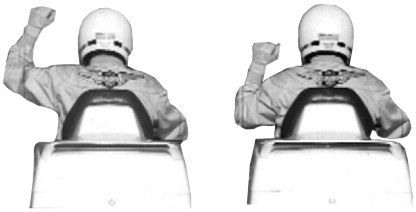
Arm raised as if for right turn. Hand then swung down toward shoulder.

## COME ALONGSIDE



Start same as "You Lead" but ending pointing to side.

## NEED COMFORT STOP



Upper arm extended, forearm straight up and down, fist clenched. Short up and down motion like pulling a lamp cord.

**Hand signals courtesy of Gold Wing Road Riders Association**

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## MANDATORY INSURANCE

Oregon law requires you to carry basic liability insurance to operate a motorcycle or moped on premises open to the public. The minimum amount of liability insurance required is:

- *Bodily injury and property damage liability – $25,000 per person; $50,000 per accident for bodily injury to others; and $20,000 per accident for damage to property of others.*
- *Uninsured motorist coverage – $25,000 per person, $50,000 per accident for bodily injury.*

## HELMET LAW

Oregon law requires you and your passengers to wear an approved motorcycle helmet whenever you ride a motorcycle or moped. Helmets must have a label certifying that they meet U.S. Department of Transportation (DOT) standards.

## DRIVING UNDER THE INFLUENCE LAWS AND PENALTIES

Anyone with a .08 percent or higher blood alcohol content (BAC) is considered legally "under the influence." People who fail the breath test lose their license for at least 90 days. Drivers who refuse to take the test lose their license for at least a year, plus they are taken to the police station in handcuffs for mug shots and fingerprints. The same thing happens to drivers who fail or refuse a urine test to determine if they are under the influence of inhalants or other controlled substances.

If convicted in court, impaired drivers spend at least 48 hours in jail or up to 250 hours in community service. They lose their license for another year or more. They also pay fines, fees, assessments, costs for an alcohol treatment program, legal fees and higher insurance costs.

That's not all: they must file proof that they have liability insurance with the Department of Transportation before any license or permit can be issued. Before any hardship or probationary permit can be issued, they must pay a $75 reinstatement fee. It all adds up to thousands of dollars!

Oregon has zero tolerance for underage drinking drivers. Underage drivers automatically lose their license for at least 90 days if a breath test shows *any* amount of alcohol — anything above .00 percent!

Oregon has two other important laws in the war against impaired driving. An open container of any alcoholic beverage in a vehicle could produce a fine of up to $300. A minor in possession of alcohol also faces a fine of up to $300, plus court-ordered license suspension. There also are fees to cover court and other related costs.

**Anti-Lock Brakes:** Braking systems that prevent skids during straight-line braking.

**Apex:** Point in a rider's path of travel closest to the inside edge of a curve.

**BAC:** Blood Alcohol Concentration. Percentage of alcohol in a person's blood.

**Blind Spot:** Areas behind and beside a vehicle not visible in the mirrors.

**Conspicuity:** The quality of being conspicuous; highly visible, easily seen.

**Convex Mirror:** Mirror having a surface that curves outward. They show more area but objects appear farther away than they actually are.

**Collision:** A crash or conflict.

**Crash:** To fall or collide with something; to undergo sudden damage or destruction on impact.

**Counterweight:** Shifting weight to the outside of the turn. Used to provide better balance in low speed turns.

**Countersteer:** Initiate lean by applying forward pressure to the hand grip in the direction of the turn: press right, go right; press left, go left. The front wheel out-tracks initially as lean is initiated, then re-centers and points into the turn.

**Crowned Road:** A road that is higher in the middle to promote drainage.

**Delayed Turn-In:** Holding an outside position in a curve until the exit is visible.

**Divided Attention:** Concentration on both mental and physical tasks at the same time or any simultaneous multiple tasks.

**DOT:** Department of Transportation.

**DUII/DUI/DWI:** Driving Under the Influence of Intoxicants (DUII); Driving Under the Influence (DUI); Driving While Impaired (DWI). These terms refer to any and all offenses involving the operation of vehicles while under the influence of alcohol and/or other drugs.

**Engine Braking:** Slowing by using engine compression; shifting down and easing out the clutch or rolling off the throttle.

**Entry Speed:** Speed at the entry to a turn. A proper entry speed allows you to maintain a steady speed or accelerate gently throughout the entire turn.

**Escape Route:** An alternative route to avoid hazards in your immediate path of travel.

**Exceeding Sight Distance:** Riding at a speed that does not allow time to recognize and avoid hazards in your path.

**Field Sobriety Tests:** Roadside tests used by law enforcement to determine impairment.

**Friction Zone:** Area of clutch lever travel where the clutch begins to engage and transfer power from the engine to the rear wheel. Used in getting underway, downshifting and in slow speed maneuvers.

**Gauntlet:** A glove with a flared cuff for preventing wind from going up the sleeve.

**Heat Exhaustion:** A condition caused by exposure to heat, resulting in the depletion of body fluids that causes weakness, dizziness, nausea, and often collapse.

**High-Side Crash:** Crash in which the motorcycle snaps violently upright and throws the rider in front of the tumbling motorcycle. Often the result of releasing the rear brake when a skidding rear tire is not in alignment with the front.

**Hydroplane:** Water buildup under tread. Hydroplaning causes tires to lift from the roadway surface. Can cause loss of control.

**Hypothermia:** A clinical state of sub-normal body temperature when the body is unable to generate sufficient heat to efficiently maintain functions. Warning signs include uncontrollable shivering, memory loss, disorientation, incoherence, slurred speech, drowsiness and exhaustion.

**Integrated Braking System:** Braking system that applies partial front braking when rear brake is applied.

**Impairment:** Diminished judgment and ability.

**"Lay It Down":** See low-side crash.

**Linked Braking System:** System that engages both front and rear brakes when either is applied.

**Low-Side Crash:** Crash where the rider makes contact with the ground behind the sliding motorcycle.

**Nystagmus:** Involuntary jerking of the eyes.

**ONE-C:** Pre-start routine — Fuel valve/key ON, Transmission in NEUTRAL, Switch ENGINE to run or on, engage CLUTCH and use CHOKE as needed.

**Overriding the Headlight:** Riding at a speed that does not allow you to avoid hazards or stop within the path illuminated by the headlight.

**Overriding Sight Distance:** Riding at a speed that does not allow time or distance to stop or swerve if something unexpected enters your path or the roadway takes an unexpected bend.

**Retro-reflective:** Material that reflects light back to the light source.

**RiderReadiness:** Being completely prepared for riding. This includes being mentally prepared and attentive, physically rested and unimpaired, having your motorcycle in good condition, wearing appropriate riding gear and being aware of and prepared for upcoming weather, roadway and traffic conditions.

**Sight Distance:** The road that is within sight at any given moment.

**SIPDE:** Acronym to describe defensive riding strategy: Scan, Identify, Predict, Decide, Execute.

**Space Cushion:** Zone of space surrounding rider. Maintained to provide space and time to react to hazards.

**Square the Handlebar:** Getting the steering centered and the motorcycle upright and traveling in a straight path. Helps to preserve balance at stops.

**Target Fixation:** Staring at the object you are trying to avoid. Target fixation is associated with riders striking obstacles they were attempting to avoid. Caused by failure to look to the escape route.

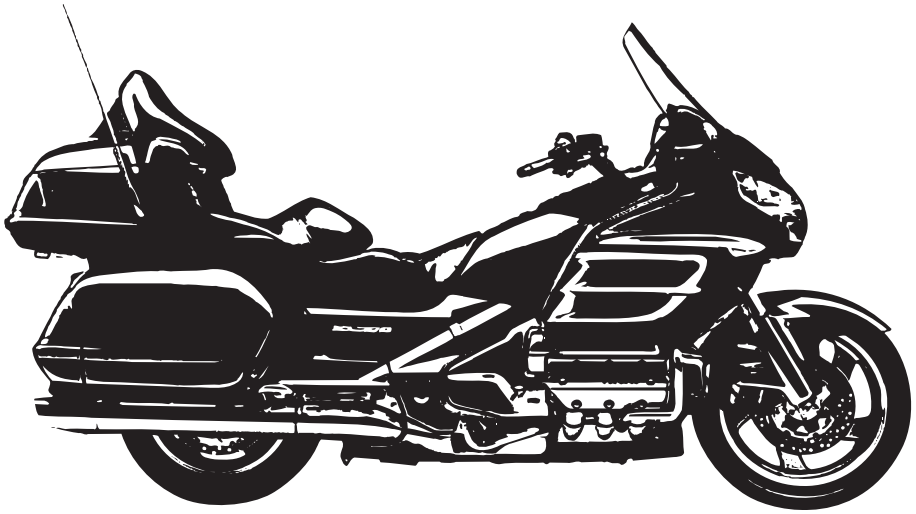
**Tailgating**: Following too closely.

**Traction:** Friction between the tires and the roadway.

**Visual Directional Control:** Guiding your motorcycle by turning your head and focusing your eyes on the desired path.

**Visual Lead:** Space allowed to identify and manage risks. Includes 2-second minimum following distance under optimum conditions, 10-second projected path of travel and 20-second anticipated path.

**Wind Chill:** The rate of heat loss from exposed skin caused by wind and cold.



TOURING

## RIDING STRATEGY

Fill in the blanks.

***1. Expert Motorcyclists:***

Riders who use expert _____ to avoid using their expert _____.

***2. Riding Strategy***

Riders need a strategy to recognize and respond to hazards or conditions before problems arise. There are five steps to the process listed below. Write the steps in most logical order in the left-hand box using these terms:

***Decide Execute Identify Predict Scan***

| | | Mental | Physical |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

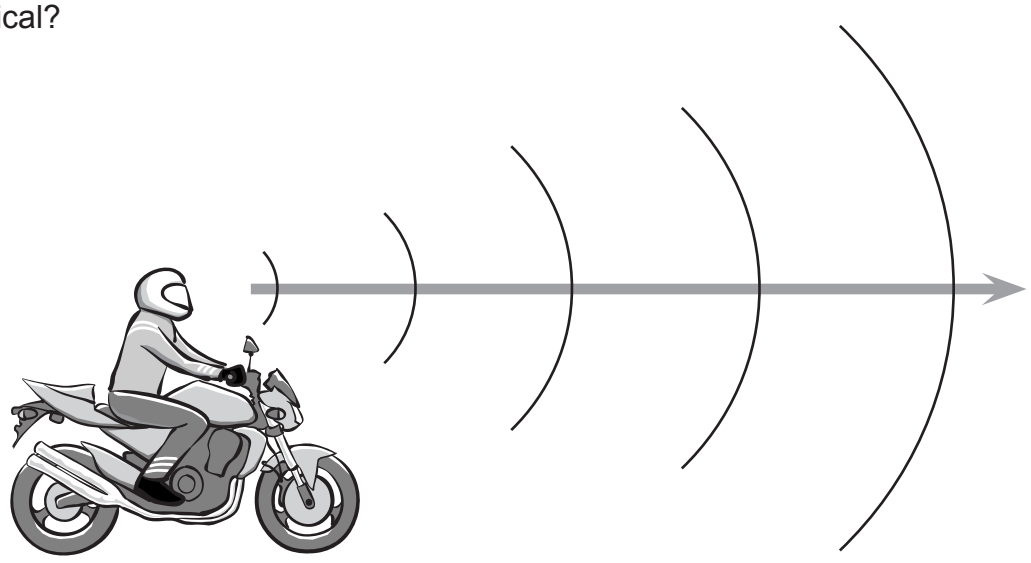
***3. Mental or Physical?***

Which steps above are mental skills, and which are physical? Check one box each.

***4. Summarize***

Is riding mostly mental or physical?

Answer: _____



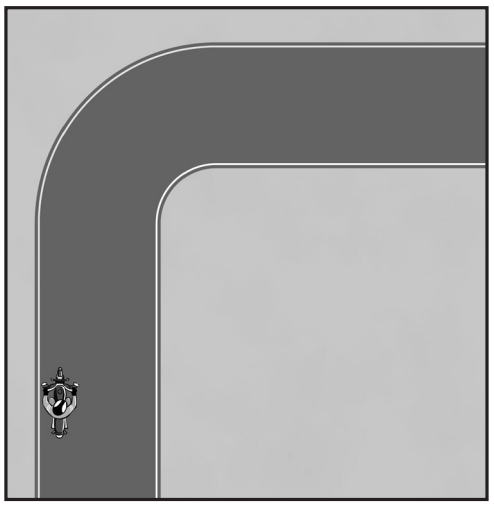
## CORNERING REVIEW

***1. The leading cause*** of single-vehicle crashes is riders' failure to do what?

***2. There are four*** steps to every corner. Where do they fit into READY, AIM, FIRE? Write the steps in logical order:

***Roll*** **Press** ***Slow*** **Look**

| | |
|---|---|
| READY | |
| AIM | |
| FIRE | |
| | |



***3. Identify and mark*** your target, then draw the smoothest line through the turn.

***4. Match*** the cornering problem to its solution.

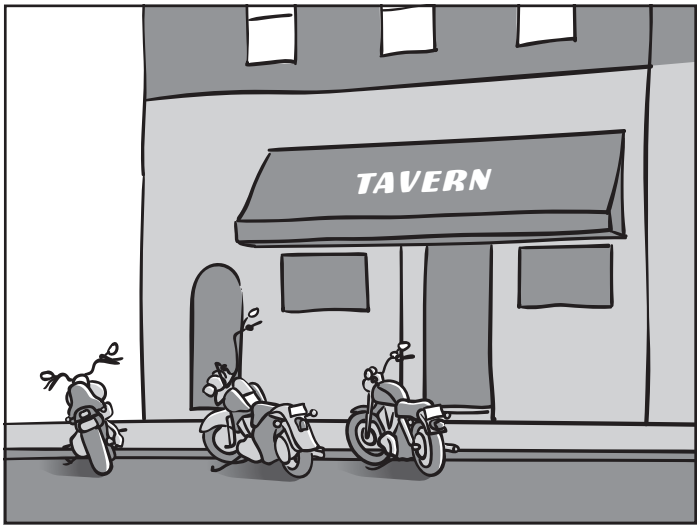
| Problem | Solution |
|---|---|
| 1. Feel panic, need to slow mid-turn | A. Reduce speed and lean angle |
| 2. Slippery sand on surface | B. Press, lean more, turn head more |
| 3. Target fixation on guardrail | C. Stay outside, keep speed down |
| 4. Feel about to run wide mid-turn | D. Slow more before entering next time |
| 5. Can't see turn's exit | E. Reduce speed and lean angle |
| 6. Footrest is scraping ground | F. Look where you want to go |

***5. When should you*** turn your head for a corner?

## RIDE YOUR OWN RIDE

***Group Riding Scenario 1***

Your co-worker finally talked you into joining his club for their weekend ride, a nice, long trip to the coast and back, with lunch at the turnaround point. As it turns out, lunch is at the group's favorite tavern, and everyone is drinking beer with their food.
How do you handle it?
Answer:



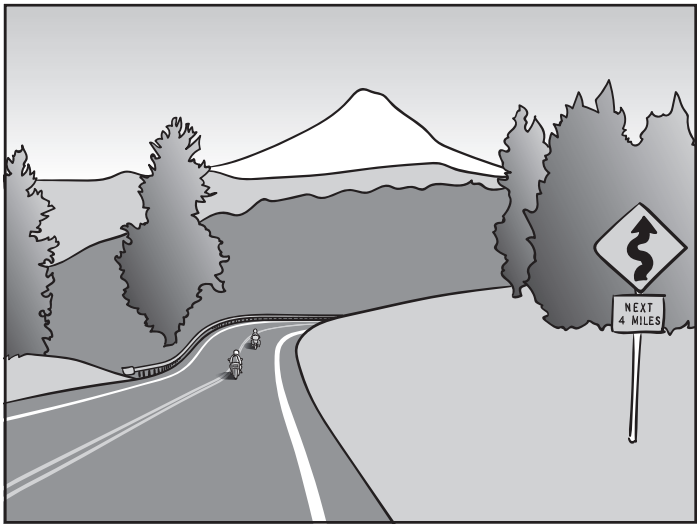

_____

_____

_____

***Group Riding Scenario 2***

You finally learned how to ride, and just got your first bike a couple of weeks ago. Your best friend invites you to join him on a ride with his friends. The other riders are quite experienced and ride very fast. It's not long before the group pulls away from you. Your friend waves, encouraging you to try and keep up.
How do you handle it?
Answer:




_____

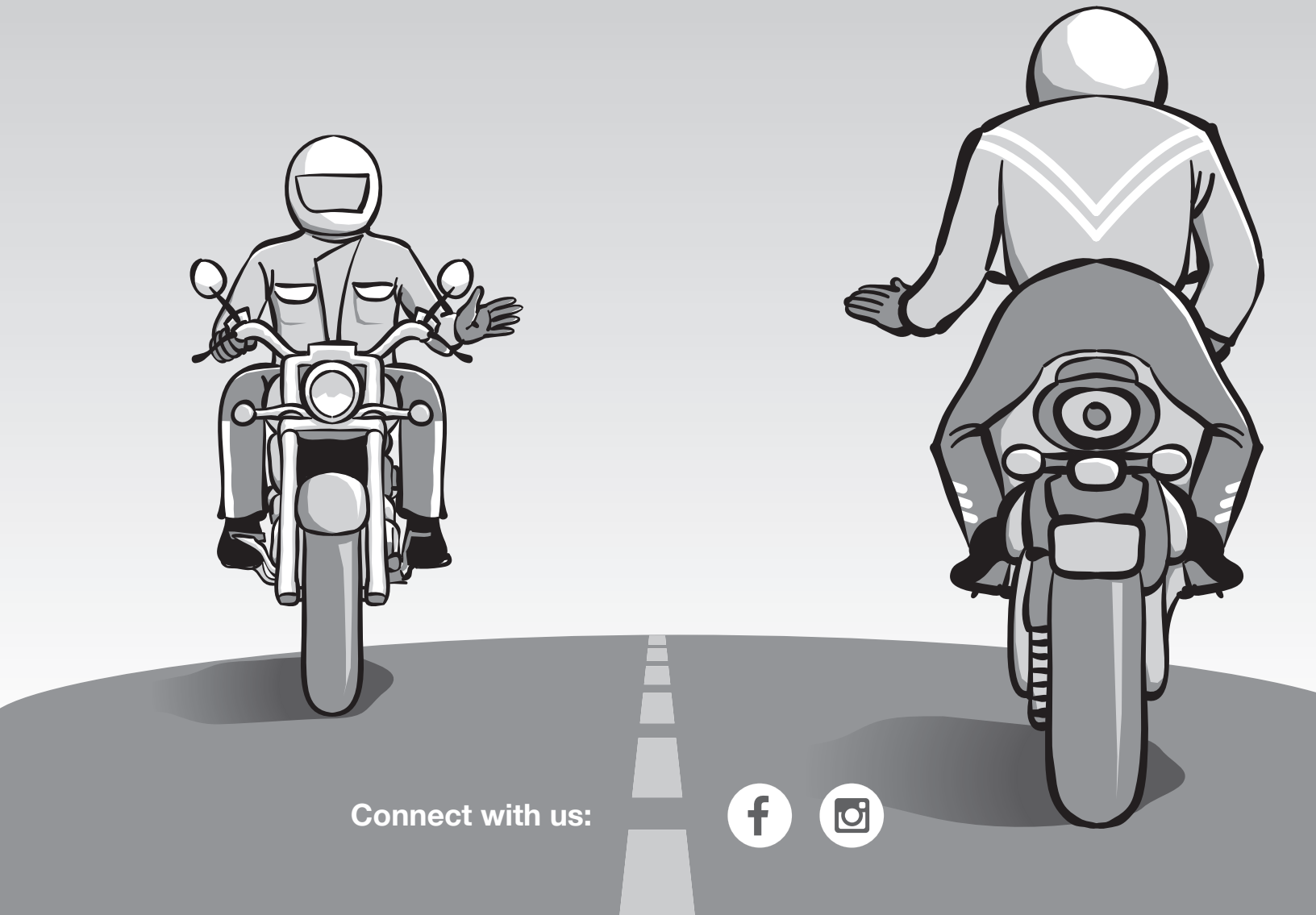
_____

_____

# Notes

# Enjoy the Ride!

**But remember, learning to ride a motorcycle is a journey, not a destination. Get out and ride, practice what you learned and develop your skills. Then come back next year and take your riding to the next level with an advanced course.**



**Connect with us:**

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MOTORCYCLE SAFETY PROGRAM
TEAM OREGON

Oregon Department of Transportation

**Team Oregon is an outreach program of the Oregon State University (OSU) College of Health. OSU collaborates with the Oregon Department of Transportation for support of the motorcycle safety program and activities. Funding comes from motorcycle student tuition, endorsement and renewal fees, and grants.**