

## **CYCLE SAFETY INFORMATION**

### Riding Gear for the Motorcyclist

One of the things that makes motorcycling so enjoyable is the freedom of riding in the open air. Unlike car drivers surrounded by a steel compartment, motorcycle riders feel a part of everything around them. Of course, sometimes this can have its drawbacks like when you are riding in extremely hot or cold weather, when it's raining, when insects are pelting you, or when debris flies up at you from the road. It's for these situations that riding gear was developed.

Riding gear has two basic purposes: comfort and protection. Uncomfortable gear can distract you from riding. High quality riding gear will help you stay comfortable in all kinds of riding conditions.

In the event of an accident or a spill, proper riding gear will help prevent or reduce injuries. Here is a summary of some of the important gear needed for comfort and protection,

#### Helmets

The single most important piece of protective gear you can wear is a helmet certified to meet DOT standards. This was emphasized in the University of Southern California (USC) researcher Harry Hurt's federally funded study, Motorcycle Accident Cause Factors and Identification of Countermeasures. Essentially, an in-depth on-scene investigation was performed detailing the use of helmets and protective clothing in 900 motorcycle accidents.

Additionally, Hurt and staff analyzed 3,600 police reports on motorcycle traffic accidents. This and other research has established that helmets save lives by reducing head injuries. And it has been shown that wearing a helmet does not reduce essential vision or hearing.

Helmets help protect your head in two ways. The outer shell resists penetration and abrasion. The inner liner absorbs more of the shock by slowly collapsing under impact. Both the shell and the liner self-destruct by spreading the forces of impact throughout the helmet material. That's why, in most cases, if a helmet has been damaged in an accident, it may be of little protective value in another mishap, and should be replaced.

Consider, too, how a helmet makes riding more comfortable. A helmet cuts down on wind noise roaring by your ears and wind blast on your face and eyes. It deflects bugs and other objects that fly through the air. A helmet even helps to protect a rider from inclement weather, and reduces rider fatigue.

For more information on helmets, send for the Motorcycle Safety Foundation's brochure, "What You Should Know About Motorcycle Helmets." It outlines helmet standards, construction, care, and other important information. Single copies of the brochure are available free. Additional copies may be purchased for 35 cents each.

## Face Protection

Any motorcyclist who has been hit in the face by a stone or an insect while riding can tell you about the benefits of face protection. Windshields and eyeglasses do not provide adequate face and eye protection. Wind, insects, and pebbles may be blown behind a windshield. Eyeglasses with shatterproof lenses may protect the eyes, but most don't seal out wind that makes your eyes water.

The USC research study reported that motorcycle riders with shields covering their faces suffered a lot less facial injuries than those without. According to Hurt, helmets providing full-face coverage with strong chin pieces and energy-absorbing liners are especially effective in reducing face injuries.

## Face Shields

Face shields may cover only a portion or all of the face. They come in a variety of designs. The most popular shield is the flip-up type. There are also two non-flip types, the bubble shield and the flat shield. Make sure that the compound curves of a bubble shield do not distort your vision

When using a face shield be sure it is securely fastened to the helmet to prevent it being blown off. It should also be impact-resistant and free from scratches.

When purchasing a face shield, look for the VESC-8 or V8 standard on the top of the shield. These shields have been tested for impact and penetration resistance.

Whether you wear a face shield or goggles, the lenses should be clear. Tinted lenses substantially reduce vision at night. Sunglasses can be worn under a face shield to avoid eye fatigue during daylight hours, but never worn at night.

Face shields can be cleaned with a mild solution of soap and water or a high-quality plastic cleaner.

## Goggles

Riders wearing goggles receive eye protection, but they are not protected from possible injury to other areas of the face. Face shields or full-face helmets provide better protection for the entire face.

Before purchasing goggles, be sure they carry the VESC8 approval and are designed to be worn with a helmet.

Goggles should be securely fastened over the helmet so they do not blow off. The face guard should permit airflow to your face for comfort, easy breathing, and to prevent fogging. Most frames have a rubber/cotton-fiber strap that resists tearing and stretching.

Goggles can be washed by hand in the sink and then hung up to dry.

## Footwear

Over-the-ankle leather boots can protect riders from a variety of riding hazards. They protect ankles from stones that fly up from the roadway. They also prevent burns from hot exhaust pipes. Boots with oil-resistant, rubber-based composite soles will give you a strong grip on the pavement and help you keep your feet on the pegs. If the boots have heels, they should be low and wide.

In case of an accident or spill, boots help provide valuable protection against foot and ankle injuries.

## Gloves

Leather gloves protect hands from blisters and wind, sun, and cold. If you should fall off your cycle, full-fingered gloves will help prevent cuts and bruises to your hands. Gloves that fit snugly will improve your grip on the handlebars.

If your gloves are too bulky, you may have problems operating the controls of your motorcycle. If they are too tight, circulation will be restricted and your hands will become cold. Seamless gloves or gloves with external seams will help prevent blisters. Gauntlets will keep cold air from going up your sleeve.

Riding gloves are available in many gradations of weight and thickness. Lightweight gloves remain appropriately comfortable in summer warmth and heavier, well-insulated gloves can be obtained for additional protection from winter cold.

## Clothing

Good clothing will help you stay comfortable while riding in adverse conditions. In case of an accident or spill, high quality riding clothes will help prevent or reduce injury. The USC research study states that covering the body with leather or another thick material can provide "an extremely high level of injury protection."

Clothing sold specifically for motorcycling will afford the best combination of fit and protection. These garments are designed to fit while sitting in a riding position. They are cut longer in the sleeves and legs and are fuller across the shoulders. Flaps and fasteners seal out the wind and extra padding helps protect you in case of a spill.

Leather clothing is often used by cyclists because it is durable and abrasion-resistant, giving good protection against injury. Denim and corduroy are reasonably priced and give adequate protection. Many other fabrics have also been developed that are abrasion- or wind-resistant, waterproof, or have high visibility properties. Many motorcycle dealers carry a varied line of riding jackets and suits. They can be helpful in answering questions you may have regarding the beneficial properties of each. Personal riding habits, budget, and local weather conditions will influence your choice of purchase. Shop wisely, making sure your purchase is strong enough to resist abrasions.

Wide-flared pants, flowing scarves and similar items should be avoided because they could become entangled in the motorcycle.

Your clothing should fit comfortably without binding. A jacket with a zippered front will be more wind-resistant than a jacket with buttons or snaps. A flap of material over the zipper of a jacket gives additional protection against the wind. Jackets with snug cuffs and waist are recommended to keep wind from blowing into the garment. Be careful about collar style—a large, loose collar will flap when riding and may irritate your skin or distract you.

Remember that even in relatively warm weather, constant exposure to wind when riding may cause hypothermia: a subnormal body temperature. Hypothermia can cause you to lose your ability to concentrate and react to changing traffic conditions. Motorcyclists are especially susceptible to rapid chilling that leads to loss of reflexes, a symptom of hypothermia. The biggest danger of the subnormal body temperature found in hypothermia is the deterioration in the ability to think clearly. Proper riding gear, such as a windproof jacket and insulated layers of clothing, is essential.

On a warm day (65 degrees Fahrenheit), a motorcyclist riding at highway speeds of 45 to 55 miles per hour experiences a chilling effect equivalent to 33 degrees. That is only one degree above freezing. Riders not dressed properly for the chill could become victims of hypothermia.

Clothes that are just right for cold-weather riding may be too hot once you stop riding. To prevent this, dress in layers so that outer clothing may be removed as necessary.

When preparing to ride in cold weather, several layers of clothing are necessary, usually starting with thermal underwear. Extra layers of pants, shirts and jackets should be layered loosely to aid body heat in forming a warm insulation. Topping your clothing with a windproof outer layer will prevent the cold wind from reaching your body.

Another alternative when riding in cold weather is to wear a snowmobile suit. These lightweight, insulated suits provide the warmth needed to prevent hypothermia. Another option available to motorcyclists is an electrically warmed suit or vest. These items hook up to the motorcycle battery and can be quite effective.

Regardless of temperature, a light jacket should always be worn. Stay away from jackets made of extremely thin material. These jackets will flap too easily in the wind. On hot, sunny days, it is best to wear lightly colored clothes and helmet. Lighter colors reflect the sun rays, rather than absorbing them like darker colors. This can make a difference of 10 degrees or more on hot days.

Wearing a jacket will reduce your chances of becoming dehydrated while riding on a hot day. Wind rushing over exposed skin quickens dehydration. A jacket helps protect your skin from drying wind.

The clothes you wear when riding can serve to make you more visible in traffic. Choose brightly colored clothing when possible. Only two riders of the 900 accident cases studied by the USC researchers were wearing brightly colored clothing. If you wear dark clothing, inexpensive retro reflective vests can be worn over the jacket. Also, it is a good idea to affix reflectorized tape striping to garments you wear regularly when riding. This applies to bright clothing worn during the day. Unless they are reflectorized, they will not offer the same good visibility at night. Jackets made with retro reflective material also will help make you more visible at night.

### Rain suits

Rain suits are recommended in rainy weather. One- or two-piece rainsuits can be purchased in several materials, the most common being polyvinyl chloride (PVC) and nylon. They come in different colors, but orange or yellow is best for high visibility.

There are usually only small differences in rainsuit styles. The pants to a typical rainsuit have elastic at the waist and stirrups (or tie-strings) on the pants' legs to wrap around the rider's boots.

The jacket has a high collar that is held closed by a snap or adjustable hook-and-loop fastener. The front zips up and a wide flap fastens across the opening. The wrist openings fit snugly with more elastic.

When purchasing a rain suit, also consider purchasing glove and boot covers. Most glove covers are large enough to fit over gauntlet-type gloves without interfering with hand flexibility. The boot covers have tie-strings on top and should be worn under the pants. The pants stirrups are pulled over the boot covers. The boot covers will not take much abuse, so it's suggested they be taken off before walking.

For the avid motorcycle rider, a rain suit is a must. A dry cyclist will be much more comfortable and alert than the rider who is wet and cold.

Whether you ride in a warm or cold climate, in a rural area or the city, a good selection of high-quality riding gear will help you stay comfortable in all weather and riding conditions. And, if you have an accident or spill, it could save you from serious injury.

#### Motorcycle Safety Foundation

The Motorcycle Safety Foundation is a national, nonprofit organization promoting the safety of motorcyclists with programs in rider training, operator licensing and public information. For the beginning or experienced RiderCourse nearest you, call the national toll-free telephone number: 1-800-447-4700. MSF is sponsored by the U.S. distributors of Honda, Suzuki, Kawasaki, Yamaha, and BMW motorcycles.

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