NASCAR POSTPONED DUE TO RAIN?
THAT'S ADORABLE...

An EMS Guide To Motorcycle Crash Response And Care

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”The Brown Mule”

1981 Honda CB900 Custom

DMV reports 384,292 licensed motorcyclist and 189,383 registered motorcycles in Virginia in 2012.

During 2012 in Virginia, there were 75 rider fatalities, 10% of all reported accidents involving motorcycles.

Motorcycle crashes pose unique challenges to EMS providers, which are, in many ways, different than automobile crashes.

Points of Discussion:

- ✓Accident Scene Safety
- ✓Types of Motorcycle Crashes
- ✓Common Protective Equipment

Points of Discussion:

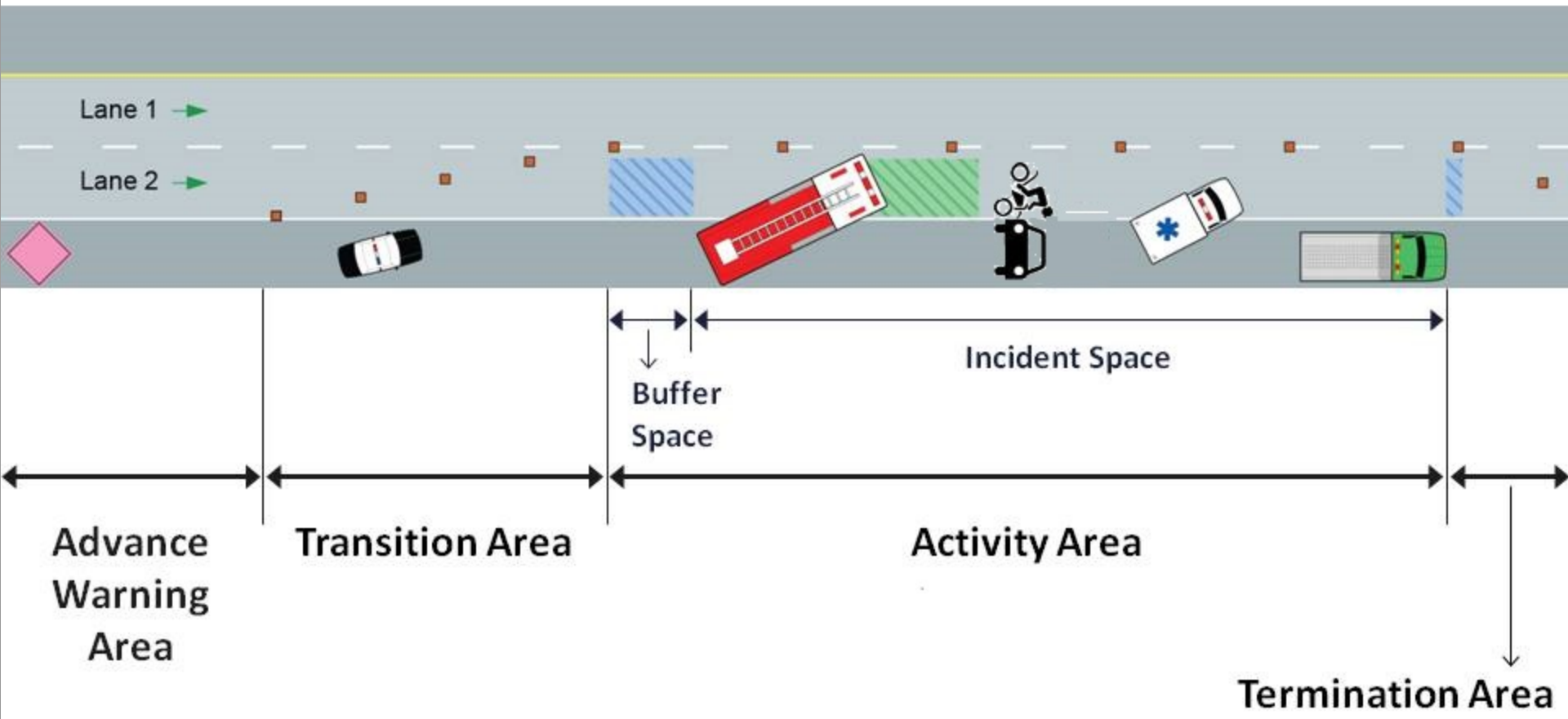
- ✓Injuries Common to Motorcycle Crashes
- ✓Off-Road Motorcycle Crash Considerations
- ✓Rider Alert

As with any motor vehicle crash, scene safety is the first concern!

A downed motorcycle is much more difficult for oncoming traffic to see and avoid.

Employing proper accident scene management is essential!

Traffic Incident Management Area



*from the SHRP2 Training Program

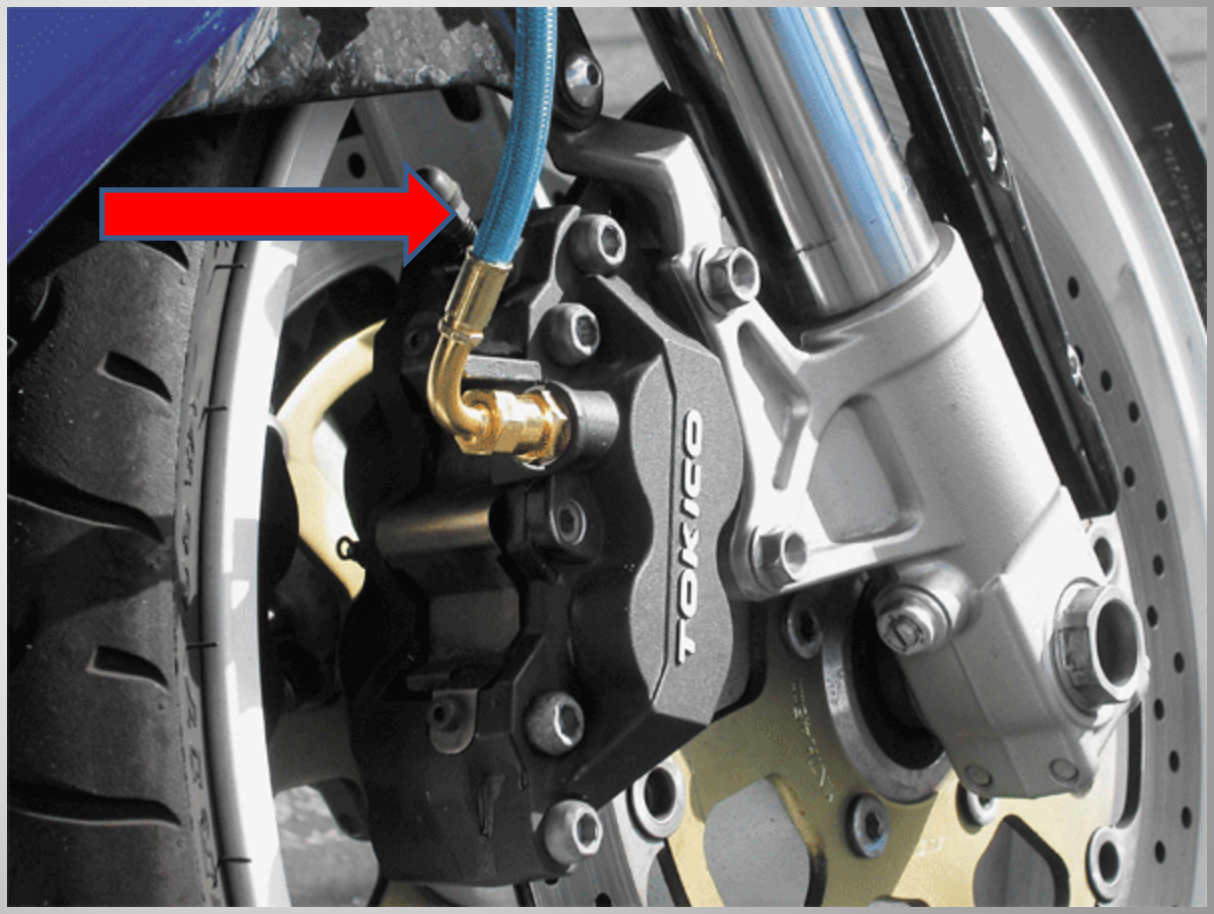
A motorcycle's fluids aren't protected as well as in an automobile since there is no rigid outer frame.

Fairings, windshields and other body panels are usually made of plastic or fiberglass, offering limited protection.

A motorcycle gasoline tank has no external protection and may be readily breached on impact, causing a potential fire or explosion risk.

A motorcycle will often have exposed lines for motor oil, clutch and brake fluid. If spilled, this can cause a slip hazard as well as environmental issues.

Exposed Front Brake Line



Many import motorcycles have liquid cooled engines, similar to an automobile. The radiator is often located on the front of the frame and can be damaged by the crash or road debris.

Common location of a motorcycle radiator

Modern motorcycles will often use a lead acid battery. A motorcycle on its side can leak this highly caustic fluid at the crash scene.

A motorcycle battery is often located under the seat, it isn't always possible or practical to disconnect as is common with automobile accidents.

Locate the ignition, turn to the "OFF" position and remove the key.
This may take some manipulation but should help eliminate electric hazards.

This is very important if the motorcycle is still running after the crash. Although unlikely, it does happen, especially on some off-road motorcycles

All these considerations must be taken into account before making initial contact with the possibly injured rider.

Two types of motorcycle crashes.

“High Side”

“Low Side”

High Side:

When a rider loses control and is ejected off the motorcycle forward or upward

High Side:

Low Side:

When a rider loses control and falls off the rear or under the motorcycle.

Low Side:

Both types of accidents have the potential for serious injury, but the high side is considered to have a higher potential.

This is due to the impact of the landing, whether on pavement or off-road.

A crash where a motorcycle strikes another vehicle or is struck will usually result in a high side.

A low side crash has the possibility of the rider being trapped under the motorcycle. A fully equipped touring motorcycle can weigh over 900 lbs.

2013 Harley-Davidson Electra-Glide

911 lbs

2013 Honda Goldwing

933 lbs

…and on the other end

If the scooter or moped has an engine smaller than 50cc, a rider does not need a DRIVERS LICENCE to operate on Virginia roads

Protective Equipment

A motorcyclist's ONLY protection in a crash is the safety equipment he or she is wearing!

This includes:

Helmet
Eye Protection
Jackets
Gloves
Lower Body Protection
Boots/Specialty Footwear

Virginia is one of 19 states and the District of Columbia requiring ALL motorcyclist to wear a helmet while traveling on public roads.
Code of Va. 46.2-910

Virginia law requires helmets meet or exceed standards and specifications of one of the following organizations…

Snell Memorial Foundation
American National Standards Institute
U.S. Department of Transportation

If a helmet does not have an external decal identifying it to meet this standard, it may be a "novelty" helmet and provide much less protection to a rider.

Five Common styles of Motorcycle Helmet:

Full Face

Modular

Open Face

Half Helmet

Off-Road/Motocross

Full Face Helmet:

Generally offers best protection, usually has face shield

Modular Helmet

Also called “flip-up”
Offer very good protection

Open Face Helmet

Also called "3/4" helmet, offers good to moderate protection

Half Helmet

Also called "Shorty" and provides the least amount of protection

Off-Road/Motocross

Full face with extended visor and chin, designed to be worn with goggles

SHOEI © Helmets have Developed their Emergency Quick Release System™,

SHOEI © E.Q.R.S.™

E.Q.R.S.
Emergency Quick Release System
Find this sticker.
EMERGENCY USE ONLY
Pull Out Red Tab
Cheek Pad

Scorpion™

When To Not Remove A Helmet

- ✓Good fit with little movement
- ✓No current or expected airway or breathing problem
- ✓Removal would cause further injury
- ✓Proper immobilization is able to be performed

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When To Remove A Helmet

- ✓Inability to assess or treat airway or breathing
- ✓Improper fit or movement within the helmet
- ✓Inability to immobilize spine
- ✓Cardiac Arrest

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Stabilize head and helmet, fingers Should be on patient's mandible

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Second EMT loosens or cuts strap

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Transfer stabilization to 2nd EMT

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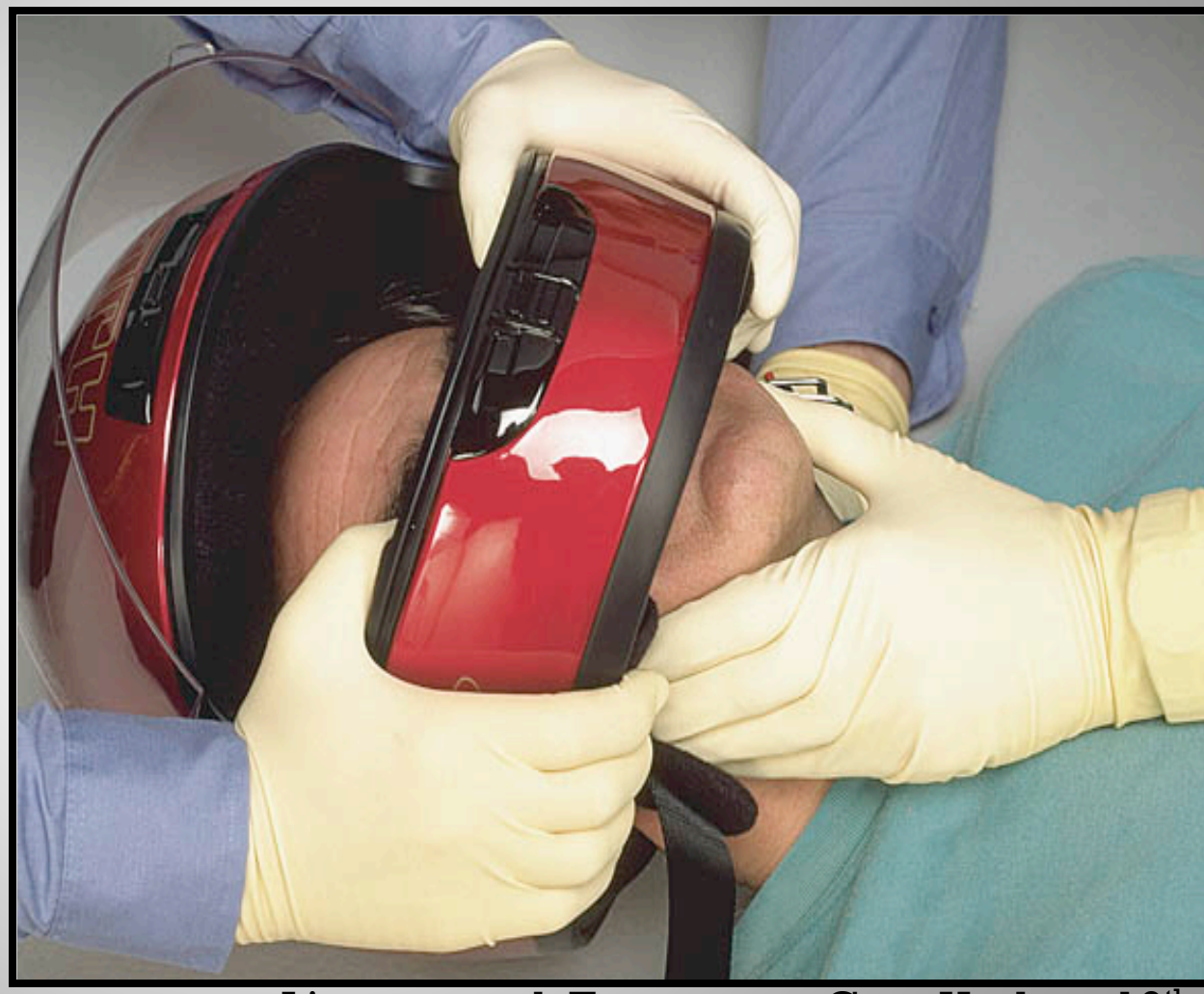
Carefully remove helmet



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Prevent head from falling when helmet removed

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Begin routine stabilization and immobilization

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Eye protection for motorcyclists vary according to style of helmet and rider comfort and preference

Face shields are on full face, modular and some open face helmets. Goggles or glasses are used on some open face, half helmets and off-road helmets

Common styles of Motorcycle Jackets:

Leather

Textile

Denim

Rain

LEATHER

TEXTILE

DENIM

RAIN

Motorcycle jackets of any style may have hard plastic protective inserts in the elbows, spine, ribs and shoulders called "armor"

Keep this and the location of additional zippers, buckles and pockets in mind if it is necessary to cut off a rider's jacket for full assessment.

Common styles of Motorcycle gloves:

Leather
Textile
Fabric

LEATHER

TEXTILE

FABRIC

FINGERLESS

As with motorcycle jackets, the material and construction of gloves determine the level of protection.

Specialty Riding Suits

One and two piece designs constructed of leather, textiles or fabrics

Specialty Riding Suits

For protection from crashes, weather (rain, cold) and racing applications

Specialty Riding Suits

Specialty Riding Suits

Specialty Riding Suits

Motorcycle Pants and Chaps

Provides lower body protection and often constructed of heavy duty materials

Motorcycle Jeans reinforced with Kevlar and interior compart-ments for armor

Motorcycle chaps can be made of leather or other durable textile or fabric

Motorcycle Boots

Touring
Racing
Street
Off Road

Touring boots are constructed of leather, plastic, metal, rubber and other materials

“Slip-On” style with zipper, buckle or Velcro closure

Racing boots are constructed of leather, plastic, metal, rubber and other materials.

Will often have extra armor and padding for additional protection.

Engineer and Harness boots are usually made of leather and common for use on the street

May be reinforced with steel toe/steel shank and additional safety features

Off-road boots are constructed of leather, plastic, metal, rubber and other materials.

Similar to racing boots and will have shin guard to protect rider from debris.

A motorcyclist will have a significant investment in the protective gear being worn and may be resistant to having his or her gear cut off by the emergency responder.

Do not hesitate to safely and quickly remove any and all protective gear as to obtain a proper initial and secondary survey. Saving a life will always trump saving gear.

Potential injuries and medical considerations for motorcycle crashes.

Potential injuries caused from a high side crash;

Bleeding & Shock
Soft Tissue Injury
Musculoskeletal Injuries
Head & Spine Injuries

A rider ejected from a motorcycle at 60 miles per hour can travel 88 feet per second

Potential injuries caused from a low side crash;

Bleeding & Shock
Soft Tissue Injury
Musculoskeletal Injuries
Head & Spine Injuries
Burn Injuries

Motorcycle exhaust system temperatures can range from 140˚- 482˚ F

Whether a low side or a high side, any motorcycle crash on the street can quickly change from motorcycle vs. automobile to pedestrian vs. automobile

Off-Road motorcycle crashes have unique considerations

Off-road speeds are usually slower than on the road, but injury potential is still significant if the rider is jumping or on rugged terrain.

Access to an injured rider may be limited, depending on terrain. It also may be difficult for dispatch to get an exact location.

All Terrain Vehicles (ATV's) can potentially trap a rider, if overturned.

If the area is very remote, it may be necessary to contact the local medevac provider to assist with search and patient extrication

RIDER ALERT

Rider Alert is a program designed to help save lives. It provides free identification data cards to help responders provide assistance to motorcyclists.

Rider Alert cards are placed inside a rider's helmet, between the shell and liner, and contain vital personal, emergency and medical information.

Rider Alert Card

FRONT

BACK

Rider Alert Decal

Remove the circle "Star Of Life" decal and place on outer shell of helmet

Rider Alert

For additional information regarding Rider Alert and to get FREE cards and decals, visit the website at www.rideralert.org

Motorcycle crashes have special considerations and unique challenges for emergency responders. Remembering that will keep you, your crew and your patient safer.

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