

Handling the Bike with a Passenger

Handling characteristics of a bike with a passenger differ from a bike with no passenger because of a passenger's weight and movements. A rider experienced with carrying a passenger has presumably already incorporated these concerns into his riding style. A rider with less experience should become aware of these concerns, for his safety and that of his passenger.

The degree of handling difference is related to the comparative weights of the bike and rider with, and without, the passenger. For example, the differences in handling will be more pronounced for a smaller rider with a lighter bike who adds a large passenger than for a large rider with a heavy bike who adds a small passenger. However, even a small passenger can make a difference in how a motorcycle handles. Motorcycles are powerful machines that can readily perform with the additional weight. It's a matter of what the rider is used to when riding solo and handling changes he will feel when riding with the weight and movements of a passenger.

The addition of a passenger not only increases the total weight but also moves the collective center of mass rearward and higher with respect to the bike. This has implications regarding braking, cornering, accelerating, and stability.

With the additional weight, there is more momentum to overcome when braking. More brake pressure will have to be applied or more distance will be covered in stopping. Since brake pressure is limited, more distance to slow or stop the bike is generally required. Increased stopping distance is also necessary when going downhill. For safety, the rider should moderate his speed, increase following distances, brake sooner, and look further down the road to anticipate situations that might require a reduction in speed.

During hard braking, the passenger will tend to slide forward. He should attempt to brace himself and avoid pushing the rider forward on the gas tank, which could make controlling the bike more difficult. Try to brake gently and avoid hard braking.

The efficiency of the rear brake is enhanced with a passenger because the additional weight over the rear wheel increases the traction of the rear tire. This makes the rear brake more useful, but still, the bike with a passenger will generally require more stopping distance.

The bike will handle differently when cornering. Initiating the lean may require more effort, but once in the turn, the higher center of mass could cause a more abrupt dip. The extra weight may also reduce cornering clearances and the bike may drag more readily. The rider should exercise caution and may need to take corners at more moderate speeds and reduced lean.

A critical factor in cornering is the body position and movements of the passenger which can affect the rider's control of the bike. It is important that the passenger not shift position suddenly in the turn or try to offset the rider's lean. By the passenger looking over the rider's shoulder in the direction of the turn, his weight will be appropriately positioned for the turn.

Because of the extra weight, the bike has more inertia and does not respond as quickly to the throttle. Accelerating up to speed will take more time and distance. More time and space should be allowed for passing other vehicles. Acceleration is often used as an avoidance

maneuver. Since the bike is less responsive, use defense riding techniques to identify hazardous situations in time to avoid them without relying on quick acceleration to get out of the way. Even though acceleration is reduced, a quick start could slide an unprepared passenger without a backrest off of the back of the bike. Avoid sudden or hard acceleration if this is a possibility.

The passenger's movements, especially those not anticipated by the rider, can affect stability of the bike. Because the bike is heavier and the center of mass is higher, it can be more difficult to maintain balance during passenger mounting and dismounting and at stops. While riding, sudden moves or a shift in weight by the passenger might affect the rider's control of the bike, especially at low speeds or in corners. Grabbing hold of the rider's shoulders or arms can interfere with control. It is important that a new passenger receive appropriate guidance on what to do and what not to do.

The wind can also affect stability. The body of the passenger adds to the wind profile and is positioned largely above the center of mass. This will exacerbate the effects of wind, especially cross winds. While the rider can somewhat lower his wind profile by leaning toward the tank, this move is not available to the passenger. Caution is required during windy days.

Riding with a passenger is as safe as riding without one. There are some differences in the way the bike handles, but an experienced rider can adjust for these without inordinate difficulty. A new rider, however, should get training and riding experience before taking on the responsibility of a passenger. Less experienced riders and passengers would benefit from practice in a parking lot with the passenger onboard. They can see how the motorcycle will handle with the extra weight and the passenger can be instructed on his role.

Riding is fun. Riding with a passenger can double the fun. Let's do it safely.

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