Why Riders Get Caught in Their Stirrups and Potentially Drug …And Other Stirrup Considerations©.

Author: Martin D. Cohen

There are six primary reasons riders get caught in their stirrups.

1) Stirrups that are too big.
2) Stirrups that are too small.

Each of these first two reasons should be addressed when purchasing your stirrups. A correct stirrup size should be assessed by a trained tack shop specialist and/or the evaluation of a professional horseperson knowledgeable in modern stirrup fitting standards.

3) Improper Footwear. It is the standard of the industry that proper riding footwear must have a heel to prevent the foot from passing through the stirrup. The sole of the footwear should not be overly aggressive or with large lug tread patterns that may in any way increase the difficulty of releasing the foot from the stirrup during a fall.
4) The primary reason for a rider to become hung up in the irons is due to the 'closing door effect™' of a lost stirrup trying to return to its natural position of lying flat against the side of the horse. When the rider falls and the stirrup is free, it tends to return to its 'home' position flat against the horse's side. As the stirrup returns to the horse, the opening for the foot gets smaller and smaller and can catch a falling rider's boot in that increasingly smaller opening. Imagine reaching into a refrigerator and the door is continually trying to close on your hand due to its design. In this scenario, the rider's foot will generally be caught on the outside branch of the stirrup against the small toe of the foot.

Ask yourself:

"Is there any positive benefit of a stirrup that is designed to lay flat against the horse's side and return to that flat position when lost? NO."

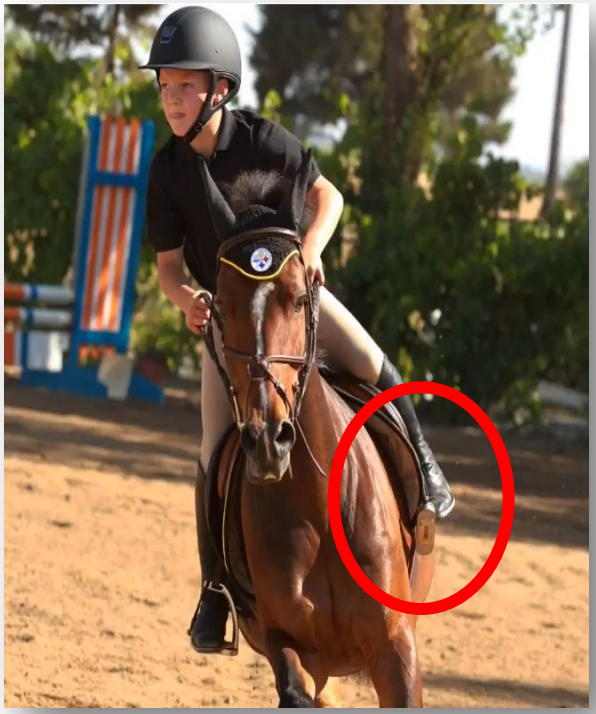
5) A secondary danger occurs when the foot is dislodged and exits straight out of the back of the stirrup. Imagine a car backing out of its garage in a straight line. In this scenario, the toe of the boot rises upwards and is more often than not caught by the upper arch of the stirrup as the rider falls. Historically, the upper, interior arch of the stirrup was designed as a broadly arched 'bell shaped curve' that resembles the human foot and the toe of most riding boots. This design is not by accident; as having the interior arch of the stirrup so designed, causes a more optimal escape route of the toe of the boot during this condition. Any stirrups with a narrowing of the top of the inner, upper arch will logically and predictably enhance the danger of being caught as described.

Example of a stirrup with a wide arch.

Example of a stirrup with a narrow arch.

6) Bad Luck. No stirrup can 100% guarantee that you will not be caught during a fall.

Stirrups that address safety concerns are products that may reduce the chance of getting caught or stirrups that have a mechanism that may release once the foot is actually caught. Obviously, it is universally preferable to 'not be caught in the first place'. With this in mind, any stirrup that tends to stay open to the front of the horse will decrease the chances of getting caught in a lost iron as the 'tendency' of the lost iron to return to its natural position flat against the horse's side will be reduced. It is better to avoid being caught in a lost stirrup than to be dragged down the arena by your foot waiting and hoping for a mechanism to release.



Any stirrup whose opening for the stirrup leather is *pre-positioned* to promote the stirrup

to face the front of the horse when the stirrup is hanging normally; will give an added protection against being caught by the foot. Stirrups that tend to face forward address the core issue of a rider being caught as their design overcomes the built-in tendency of standard riding stirrups. See point 4 above.

Examples of Forward Facing Stirrups™.

Stirrups with a side 'release mechanism' and a standard leather opening do not address this 'core issue' as those stirrups still retain the tendency to trap the rider's foot. See 'closing door effect', page 1, point 4. Once the rider's foot is caught, these stirrups provide an opportunity for release with the opening of their mechanism. This is a secondary safety feature that occurs only after the rider is caught and drug down the arena or open field. Therefore, it is necessary for this type of 'safety stirrup' to 'catch' the rider's foot to enact the release mechanism. Consider these designs as a 'catch and release' mechanism by their nature. This type of 'safety stirrup' is a 'reactive' design in that they 'react' to the rider's foot being caught but do nothing to avoid the 'closing door' effect, which is the primary inherent danger of most traditional stirrups. A 'proactive design' is one that is not trying to catch the rider's foot. A proactive design anticipates the danger of a 'catch and release' stirrup in anticipation of the closing door effect and offers a safer option by its very nature of its tendency to remain open when lost.

A most interesting discussion involves the popular 'Peacock Stirrup'. This design has been the considered standard of the industry for a safety stirrup for many

years, but still does not overcome the primary tendency of a lost stirrup to turn back to the horse catching the falling rider's boot. 'Further, its 'hook' design presents additional, serious safety concerns. Only after the falling rider is actually caught in the 'Peacock Stirrup' does the concept of safety come into play. Once caught, the weight of the dragged rider is applied to the outside mounted rubber band, and hopefully, that weight releases the rubber band and the rider. Should the release not occur, the potential for the rider to be drug is still retained by this design. There are reports of the 'Peacock Stirrup' not releasing. Further, falling riders have been caught by the protrusion of the open edge of the stirrup during a fall or when dismounting. The resultant exposed open 'hook' can catch a rider's breeches, belt, and other clothing or helmet strap. Some riders have even suffered severe injury caused by the open hook ripping through their clothing and lacerating the abdomen or groin requiring surgery. The 'Peacock Stirrup' falls into the category of a 'reactive' or 'catch and release' design.

Other safety considerations include a discussion of stirrup weight, stirrup design, tread design, and leather characteristics.

Stirrups with some residual weight tend to hang 'true' and are more easily retrievable and reduce the turn-back characteristic to a degree. Stirrups made with lighter materials, such as aluminum, plastic, and composites are more difficult to retrieve and are inclined to move unpredictably when lost. In the heat of training or intense competition, not being able to retrieve one's stirrups can be the difference between winning and losing, safety or injury. Stirrups with some residual weight are a better option for retrieval and safety than lighter designs.

In his book *"Riding and Jumping"*, Bill Steinkraus, America's first Gold Medal Olympic Rider in Show Jumping states:

"A reasonably wide and reasonably heavy iron will be far more easily recovered in emergencies – and this is exactly when a second or two saved may prove quite crucial in the show ring."

In a personal conversation with the author, Mr. Steinkraus said "I cannot understand why anyone would want to ride in a light stirrup."

There are new and creative stirrups being designed with more frequency today than ever before. Unfortunately, most stirrups are designed by engineers and or persons who have a limited depth of experience in the equestrian community. They may be riders or horse owners, but not horsemen or horsewomen with a track record and depth of horsemanship. As mentioned in point 5 above, stirrups traditionally have been designed with an arched, bell shaped upper inside curve. This traditional, wide upper arch allows for more interior area and is better shaped for the foot to retrieve the stirrup when lost and to escape the stirrup during a fall as that area matches the shape of the toe of the boot. It is obvious that stirrups whose upper, inside arch is narrower than the traditional broadly arched 'bell shaped', or that are not shaped to match the symmetry of the toe of a riding boot, are more likely to catch a rider's foot during a fall. There may even be legal considerations to stirrups that have narrowed the upper, interior arch. Those manufacturers who have chosen to narrow this important design area may 'know or should have known' that the narrower dimension has made their stirrup predictably more dangerous.

In the past, stirrups had the same inside width as they had the interior height. I call this a 'one-to-one' relationship. Today, modern stirrups are designed to have a taller vertical opening than they have an interior width. This taller increased interior area allows for greater safety for both retrieval as well as escape.

Stirrups that have overly aggressive, sharply pointed treads may not release as easily as other rubber, composite, or less aggressive metal treads. The ability to escape a stirrup during a fall is a serious safety factor for all riders. Should a rider not be able to escape their stirrups, very dangerous conditions occur such as being drug, being pinned under a falling mount, or even worse, being caught in a rollover condition by the horse. The 'rollover' condition, as well as 'rotational falls', are the most dangerous experiences any rider can imagine.

It is therefore imperative for a rider subjected to these predictable, dangerous conditions to have stirrups that proactively seek to allow for escape, and not entrapment, and to release the rider from these dangers as easily as possible.

Properly and purposely designed stirrups are safer stirrups. Improperly designed stirrups are less safe and more dangerous.

Stirrup leathers should also be considered as part of your stirrup safety considerations. Leathers that are overly light and flexible can allow the stirrup to rotate both forward and backward when lost. Leathers with some stiffness and residual tension / memory will tend to retain their shape when lost. Overly flexible leathers compound the inherent issues of lost stirrups and should be avoided.

As previously discussed, the boot of a falling rider can be caught in a stirrup in several ways. When a rider falls and the stirrup turns back towards the horse's side, "the closing door effect™" takes place and the foot is generally caught crossing the foot at an angle with pressure on the outside toe. See Point 4 above. In another condition, should the foot fall to the rear and directly away from the stirrup, as if a car was backing out of a garage, the toe or upper arch of the foot can become caught at the upper, inside radius of the stirrup. See point 5 above. Another very rare and dangerous condition can occur when the rider falls to one side of the horse and the 'opposite side' stirrup stays with the rider's foot as they fall. In this example, a rider's peril is greatly enhanced due to this unexpected position of the rider and stirrup. Should the horse stand up and continue running, the risk of being injured is incalculable.

There are two basic types of falls: **horizontal falls** and **vertical falls**.

In a **horizontal fall**, the rider is thrown from the horse and their body initially moves away from the horse either upwards, laterally or in a downward and sideways force. Falls that catch the rider's foot and allow the rider to be drug fall into the **horizontal fall** category. This is the more common type of fall. In a **vertical fall**, the horse's legs go quickly out from under them and the horse falls on its side. Think of slipping on wet pavement, ice or other slippery surfaces. Vertical falls greatly increase the rider's chances of being caught under the falling body of the horse. These falls generally happen very quickly leaving little time for the rider to react and try to clear themselves from the falling horse. During this type of fall, as in the case of all falls, it is imperative that the rider gets as far away from the falling horse as fast as possible to prevent further serious injury by the horse rolling over the rider's body. Any tendency of the stirrup to remain on the rider's boot increases the danger of being trapped under the falling horse or being kept from moving away to safety. Stirrups that do not easily release the foot due to their constrictive design

or aggressive tread traction, or stirrups that attach to the boot in any way, increase the danger of a rider being injured.

In conclusion, no stirrup can 100% guarantee that a rider will not be caught and exposed to serious injury or even death. However, understanding the reasons why stirrups catch a rider's foot during a fall should better educate those seeking improved safety when purchasing stirrups and in evaluating stirrups that claim to have safety features. Stirrup safety is a matter of concern for riders of any age, any level of riding experience, and for any riding discipline. Pay attention to the design features of your stirrup and leathers to reduce your chances of incurring serious injury or even loss of life.

As of this writing, there are no stirrups on the market that combine the enhanced safety features that include a proactive forward facing design, a reactive 'catch and release' mechanism and that include proper residual weight, a properly designed upper, an interior arch with proper height and radius as well as a tread that allows for easy release during a fall. In the future, it may be possible for other high-tech designs to be created. Futuristic stirrups may become available that can predict a fall or the impending conditions that would catch a rider's foot and allow for the release of the stirrup either from the saddle, the leathers or the boot and further reduce the conditions that may make riding a safer sport.

Martin D. Cohen is a semi-retired FEI and USEF Judge, Course Designer and Chief Steward as well as a Canadian Judge and Course Designer. He was also a professional Trainer, Teaching Clinician, Horse Show Manager and has given Course Design Clinics for the Canadian Equestrian Federation. Further, he was a Judge at the 1984 Olympic Games of Los Angeles and 1996 Olympic Games of Atlanta as well as officiating at recognized International and National Equestrian events throughout the United States and Canada.

He remains active as the Inventor of MDC Stirrups™ and consults as an Equine Expert Witness and Equine Appraiser.

THE SPORT OF HORSEBACK RIDING INVOLVES MANY INHERENT RISKS, INCLUDING, BUT NOT LIMITED TO, THE RISK OF A BOOT BEING CAUGHT IN A STIRRUP. NO STIRRUPS, INCLUDING OURS, CAN GUARANTEE THE USER'S SAFETY.

MDC Stirrups™

	4.25"	4.5"	4.75"	5"
Men's US	5.5	6 - 7.5	8 - 10.5	11+
Lady's US	7	7.5 - 9	9.5 - 12	12.5+
Men's EU	38	39 - 40/41	41 - 43/44	44+
Lady's EU	37	38 - 39/40	40 - 42/43	43+

This chart is intended for general fitting purposes. The width of a rider's foot or riding boot should be taken into consideration when choosing a properly fitted stirrup. It is generally acceptable to move up one size should the foot size be at the upper range of the sizing chart. Riders should consult with a tack or equine professional if they are unsure about their most suitable stirrup size.

Updates to this article may be available in the future. The release date of this publication is 3/19/2024.