



Cooperation and Collaboration: Following Through on Our Safety Initiatives

A Statistical Review of the National Sport in 2008

By Jo Whitehouse, USEA CEO

In the months following last year's USEF/USEA Safety Summit in Lexington, Kentucky the two organizations have been working hard on the safety measures that resulted from that combined effort. These measures are listed on the USEA website at <http://useventing.com/education.php?section=safety>. Under the direction of the USEF National Safety Officer, Malcolm Hook, who also does triple duty as the USEA's Vice President of Competitions and Chair of the USEF Eventing Technical Committee, several rule changes were submitted, approved and implemented which are now having a positive impact on the sport.

In his position as National Safety Officer, Malcolm was instrumental in the development of a fall report similar to the one used by the FEI which is designed to solicit as much information as possible including the type and design of fence at which a fall occurred, the weather conditions, footing in front of and behind the fence, and a whole host of other pertinent details which it is hoped will help course designers and builders determine whether certain fence designs need to be modified.

"There is no doubt that if we are to determine the underlying causes of eventing accidents we need as much detailed information from the field as it is possible to get," said Malcolm. "While accident report forms have been a central part of our reporting process for many years, and we have been able to track the number of falls based on the results data on the USEA database, we did not have any details about the majority of falls that occur—those that do not result in injury to either horse and rider."

While the combined efforts of the USEA and the USEF in tracking incidents and the improved reporting procedures will produce much more detailed statistics in the future, none of this could be done without the cooperation of the officials who have been

tasked with completing these reports.

"We rely heavily on the officials to help us collect the necessary detailed information," Malcolm continued. "Their assistance is vital if we are to obtain sufficient meaningful data with which to help both organizations, our course designers and builders, officials and competition management in the continual efforts to improve safety."

The health and welfare of our event horses continues at the forefront of all our work and Dr. A. Kent Allen, Dr. Catherine Kohn and a team of eminent veterinarians and medical cardiologists have almost completed the first phase of planning for their work on the USEA Equine Cardiovascular and Pulmonary Research Study. It is hoped to schedule a field trial late this summer to more clearly determine the breadth and scope of the work to be done.

For these reasons, the USEA has made Equine Welfare and Rider Safety our fundraising focus for 2009 and the following projects will be the recipients of those ongoing efforts:

Equine Cardiovascular and Pulmonary Research Study

This study will concentrate on how efficiently a horse's cardiovascular and pulmonary systems function when galloping and jumping across country, and will be seeking answers to such questions as: Are our horses hearts working harder now than in the past? Does the short format increase pressures in the lung vessels? Can pulmonary hemorrhages be detected and/or prevented?

The fundraising goal for the first phase of this study in this fiscal year 2009 is \$30,000 and we are already over half way there with \$17,500 in the bank.

Frangible Fence Technology Research Study

The USEA has committed to making a grant to the USEF to cover the first phase

of the study into frangible fence technology being conducted by the University of Kentucky College of Engineering. Eric Grulke, Suzanne Weaver Smith, Katie Kahmann, Michelle Tucker, Ben Matar and John Greenwell are members of the University of Kentucky Engineering Team who will conduct the study which will cover the evaluation of jump designs for improved horse and rider safety with a focus on in-field mechanical testing, analysis and design, materials evaluation and construction cost estimation divided into the following tasks.

1. Field Testing of Prototype Breakaway Safety Features

This task will provide immediate results for a hinged gate concept to demonstrate the process and value of the overall project, including the presentation of results. Throughout the project, field testing will be conducted to demonstrate and verify safety features of new concepts and designs. Standard video, high-speed video and/or motion tracking of horse/rider dynamics at local events will also be conducted in order to support design and verification efforts.

2. Design and Analysis of New Concepts

New concepts such as the strap-and-snap breakaway concept and fundamental questions such as the effect of deformable or sliding/breakaway contact points, develop designs, perform Monte Carlo and finite-element analyses to evaluate performance.

3. Materials Evaluation

Laboratory and field testing of materials contributing to design and to evaluation of concepts constructed with standard materials, foam (Prolog) and other novel materials will be undertaken. Standard testing methods will be used where applicable, but it is anticipated that novel materials may require non-standard testing approaches.

YEAR	2008
Total Starters at USEA National Competitions	41,294
Number of Recorded Rider Falls on Cross-Country	518
Number of Mandatory Retirements (MR = fall of horse)	65
Total Number of Falls	583
Number of Recorded Injuries at Cross-Country Fences	101
Rider Fatalities	0
Chances of a fall per # starters	1 in 71
Chances of Falling Off at a Cross-Country Fence	0.071%
*Average number of Fences Jumped per Year	825,880

(*Based on average of 20 fences per course per starter.) (Injuries include bruises, winded, concussions, broken bones) (Starters = total number of horses competing annually)

In 2008, there were 17 injury reports submitted for falls taking place on the flat and not related to jumping a fence. There were a total of three serious injuries requiring overnight, or longer, stays in hospital which amounts to .007 percent of all starters or 1 per 13,764 starters. There were also three equine fatalities which is also .007 of all horses starting in competition or 1 per 13,764.

Of the 65 Mandatory Retirements, 7 were at Beginner Novice, 13 at Novice, 11 at Training, 20 at Preliminary, 10 at Intermediate, and 5 at Advanced.

Some data from external, non-verified sources. Data subject to error and intended to show trends and pinpoint large outliers—not for detailed use.

The USEA believes that this is one of the most important projects needing support as it speaks to one of our key guiding principles: the welfare of both horse and rider. “We are working on all types of frangible technology and while it may not prevent a fall, we hope it will minimize the effects of one.” said USEF President and FEI course designer, David O’Connor. “The U.S. has the second largest number of starters in the world and we have long wanted to form a bigger partnership with other countries doing similar studies. It is exciting that the researchers from Britain’s Bristol University, who have been working on these studies for a few years, and researchers from our own University of Kentucky are now able to bounce ideas back and forth about frangible technology as we all work to improve safety.”

The USEA is privileged to announce that upon hearing of this major study, Tom Spalding of Spalding Labs, the Fly Predator® folks, immediately agreed to make his company the founding corporate donor. “I hope that others will see the immense value in a study such as this and join me in helping the USEA secure the financial support needed to get the job done,” said Tom from his company’s headquarters in Arroyo Grande, California. “Eventing is a truly exciting sport

and both horses and riders are amazing athletes. They deserve our best efforts to insure the courses over which they compete are to the highest safety standard possible. This work should lead to new generation of still challenging, yet much safer, fences that will benefit Eventers and their horses for years to come.”

This two-year project has a total cost of \$160,000. Our immediate goal is to reach \$30,000 by April 30th.

GPS Speed Study

Spearheaded by former international event rider, John Staples, and Dr. Reed Ayers, upper level event rider and a Research Assistant Professor at the Colorado School of Mines (Department of Metallurgical and Materials Science), this study aims to monitor horses and riders on the cross-country course to determine the speeds at which the courses are being negotiated. Some surprising data has already come to light as to the excessive speeds some riders have achieved in order to complete courses inside the time. While the study will be ongoing throughout the year coaches have already been able to use the data to educate students on the importance of pace.

The goal is to raise \$10,000 this year

which will go towards the cost of purchasing the satellite navigation systems and the software required to carry out the study.

USEA Members Supporting Safety

One of our successful former Young Riders, Ursula Brush is completing a master’s degree in biomedical engineering at Ohio State University. Ursula contacted us and submitted proposals ranging from the development of a safety database to the raising of funds to support our safety initiatives through the design and production of Safe-T shirts courtesy of her own T-shirt Company. The USEA website has been inviting members to submit their design ideas for these T-shirts and Ursula will produce shirts featuring the winning designs which we hope will be ready for sale at Rolex Kentucky.

Cross-Country Incident Report for 2008

The USEA has for the last three years produced a Cross-country Incident Report which shows the number of falls, injuries and mandatory retirements per number of starters. During the years 2005-2007 these statistics included the data we had on file for FEI competitions. Unfortunately, due to the difference in terminology and the reporting protocols used by the FEI, we did not always have complete data on CICs and CCIs. For 2008, we are reporting statistics on national horse trials only so a true comparison of the 2008 figures with those of prior years is not possible. We recommend you visit the FEI website for reports which cover CIC and CCI levels on a worldwide basis.



The USEA would like to thank Leigh Anne Claywell, USEF Director of Competitions, for her cooperation and contribution.

Number of Starters in U.S. National Horse Trials

Advanced	471
Intermediate	1,860
Preliminary	6,302
Training	11,231
Novice	12,867
Beginner Novice	8,562
NATIONAL TOTAL	41,294

Number of Starters in U.S. FEI CIC and CCI Competitions

3*/4*	318
2*	448
1*	557
TOTAL FEI CIC/CCI	1,323
TOTAL STARTERS IN U.S.	42,617