

Amusement Rides - Pushing the Safety Envelope

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Theme parks, ride parks, water parks, attractions and "family fun centers" have become as American as apple pie. Attractions appear throughout the United States wherever a population center can support them, recently even in shopping malls. A person in the United States who has not visited an amusement attraction is rare.

A new generation of rides has emerged and prototypes are being built behind the scenes for the next operating season. A heated race, without a finish line, keeps competitors racing to offer the latest technology, or old technology with a new twist. The amusement industry is merging into the information super highway, harnessing their version of the technological explosion. These advances are resulting in ride designs, which stretch for the ultimate ride experience. The old time amusement park is quickly fading and becoming mostly memories. The familiar rides are being replaced by updated versions of the same thrills; what went round and round for grandpa still goes round and round, but does it at faster revolutions per minute.

The final frontier for the amusement industry may never materialize. The real test is yet to come, but thrill and excitement offered by rides must maintain a balance that ensures the riders' personal safety. Managing safety and introducing a note of caution, becomes increasingly difficult as the designs include greater speeds and faster directional changes that influence the riders' ability to maintain a correct posture involuntarily.

Theme parks generally create an illusion or some form of fantasy. Trading an admission ticket for a spin of the turnstile offers a promise of fun, escape and family entertainment. The guests are confronted with multiple choices on how to spend the day and optimize their time. Personal safety is not stored away for the day. However, personal safety may be mitigated by the make believe world in which the guests find themselves. The crowded environment can ask so much of the guest that he has difficulty separating fantasy from reality.

A transition begins to take place where participants can become an extension of the experience. One is pushed from within and pulled by external hype. The guest begins searching for that special thrill that pushes an edge not found in daily life. The lure of the rides begins to call. This excitement of spinning, going up and down and being thrust between ride stations at high speeds creates an internal debate. Should I ride or not? The threat of imminent danger is placated as guests witness disembarking passengers and the long line waiting to ride. Rides offer a unique, controlled exposure to fear, thrills and excitement while implying confidence in the outcome. There is also a sense of trust developed by the park's operator. Who has not said, "Surely with all these people here and in this obviously well-run park, these rides are fool-proof and totally safe for everyone?"

Some of today's accidents are the result of taking the ride patron farther than he or she may be able to go. Pushing the ride safety envelope increases the potential for injury. The question becomes "how much fun is too much fun?" At what point does a ride cross the boundary from thrill ride to physical endurance challenge? In the past there were rides that created a sensation to make the rider think he had to hold on for dear life. Today, there are many rides where one must hold on to reduce the potential for bodily injury.

Rapid directional changes at varying speeds produce challenges for even veteran riders. Unanticipated directional changes at high speeds can occur so rapidly that the rider cannot recover from his previous momentum before the direction of force changes again.

Rides running at high speeds with rapid multi-directional changes can result in violent internal passenger compartment movement and are going to cause injuries. Reliance on personal rider physical strength to ensure a correct riding posture pushes the safety envelope to the limit. Manufacturers and operators who rely on the rider's active and correct participation to ensure personal safety are asking too much when the safety envelope has been pushed to the edge.

As evidence of this phenomenon, just look at the changes that have been made in ride restraints over the last ten years. Individual lap bars and over the shoulder harnesses are two such examples. Yet, since these restraints are not custom-fitted, only adjustable, even the mechanisms themselves suggest the limits to which the ride manufacturers have gone, testimony to their concerns over these body motion risks.

Has the industry met the threshold of the rider's physical ability? Both manufacturers and operators must revisit the ride safety envelope issue and clearly delineate the boundary between thrills and personal injury. To fail to do so, at this watershed point in ride design, is to fail to address the honest concern for our guests that has given us the success we enjoy and that put the cash in our pocket to buy that new ride!

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