

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - SEPTEMBER 2005

299. Chance Chaos Rides - Restraint Opening

Two different “Chaos” rides, manufactured by Chance Rides, were involved in similar-sounding accidents in successive days in June 2005. The 18 passenger units are arranged around the perimeter of a spinning rotor and each one is free to pivot about a tangential axis. The spinning rotor initially has a vertical axis of spin but it may then be tilted about a horizontal axis until the rotor lies in a near vertical plane. The arrangement is similar to the Enterprise generic ride type except that the cars, each of which seats two riders, are able to flip through 360 degrees about their pivot axes.

We understand that about 50 of these were manufactured by Chance Rides Inc. of Wichita, Kansas. We believe that the manufacturer went bankrupt after a different type of accident in 2001.

The first accident, at the Fun Plex amusement park in Omaha, Nebraska, USA, resulted in a 20-year-old man being injured. Police are reported as saying that his restraint opened, ejecting him from the ride. He fell about 15 feet.

Then the following day, at Clementon Amusement Park in Clementon, New Jersey, a 16-year-old girl was treated for injuries sustained while riding a Chaos. It is reported that the injured girl explained that, when her car began to flip, she realised that her shoulder restraint was not properly closed. When her car flipped a second time, the restraint opened and a restraint bar (the secondary restraint?) broke. She said that she managed to hold on to her shoulder restraint and stay in her seat until the ride operator stopped the ride. The passenger seated next to her also helped her to avoid falling from the ride. She was subsequently treated in hospital for strains in her neck and back. The girl was actually an employee of Clementon Park who was visiting the park with her family.

There are reasons, in the circumstances, to question the integrity of the primary systems intended to ensure the safe containment of passengers. Secondly, if the broken restraint in the second accident was the secondary device, its ability to contain the passenger following a primary failure is also suspect. We note that secondary restraints in general, are often found to be incapable of withstanding the impact loads that occur after primary failure. Designers and design review inspection bodies need to take great care over the assessment of the level of integrity and strength of primary and secondary restraint devices.

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