

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - AUGUST 2002

245. Ferris Wheel Accident

An accident in late May 2002, involving a traditional type of Ferris Wheel (Big Wheel) at Wicksteed Park, was reported in the press. A 9 year old boy fell from the ride and received minor injuries. His 14 year old brother also apparently fell a limited distance but was not injured. We have no confirmed information about how the passengers were able to fall out.

As a result of the correspondence we received at the time, we last reported (in Technical Bulletin 112, February 1995) on a Ferris Wheel accident, fatal on that occasion, which happened in 1994. We add to the points on the subject of Ferris Wheel passenger restraints that we included in that Technical Bulletin (which will now be withdrawn).

Review of risk assessment is required by Regulation 3(3) of the *Management of Health and Safety at Work Regulations 1999*, when there is new evidence (such as accidents) which may be relevant. It is our view that there are at least two particular safety principles which ought to be considered by dutyholders (in addition to other general principles) when reviewing the adequacy of these restraints :-

1. Consideration should be given as to whether passenger access to the restraint bar release should be made impossible. Methods sometimes used to achieve this include constructing a guard around the release handle, and the use of a release key or tool to do away with an accessible handle.
2. If they are able to do so, it is foreseeable that passengers may attempt to stand or kneel up in the car since they are not readily able to perceive the risk resulting from destabilisation. This risk is not entirely obvious since it results from the proximity of the unloaded car's centre of mass to the swing pivot axis. Consequently, consideration should be given to limiting passengers' potential movement. Methods which have been used to achieve this include the provision of seat dividers and the replacement of the conventional single lap bar by a double bar type (either arranged one above the other or angled inwards).

It is known that some types of Ferris Wheel restraint bar mechanisms suffer failed plungers. On these types we suggest that consideration may be given to installing double (redundant) plunger mechanisms or otherwise improved designs.

Any of the modifications described above are safety-critical and would require to be competently designed and manufactured and submitted to fresh Design Review, etc.

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