

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - APRIL 1999

178. Roaring Rapids Ride Fatality

One woman was killed and ten people were injured (Sunday, March 21, 1999) at Six Flags Over Texas theme park in Arlington, Texas, after their raft overturned on the park's Roaring Rapids water ride.

The boat, which was carrying twelve passengers, capsized as it dipped through an area of rapids at a point toward the end of the ride. Riders, who were all wearing seat belts, became trapped upside-down underneath the capsized raft in 4 ft (1220 mm) deep waters. Most of the occupants were able to quickly remove their seat belts to escape from underneath the raft but one rider was unable to remove hers. She drowned and ten of the other riders were hospitalised with mostly minor injuries.

At the moment we do not have sufficient information to discuss the full circumstances of this Texan accident but we have decided to make more general comment about a particular type of capsized incident.

The risk of drowning or other serious injury as a result of capsized is by no means newly significant. Serious accidents and incidents have, in the past, occurred in the UK.

It is our experience that the probability of capsized, or ejection due to near capsized, is normally low unless bunching of rafts occurs, although there are other potential causes. Probably the main cause of bunching is lift failure. If the risk associated with this, or similar, circumstance is not demonstrably insignificant then control measures to restrict bunching, whether automatic or based on human supervision, become necessary. For instance, one could consider the immediate switching off of the main water pumps if the onset of bunching is detected.

Automatic controls using bunching sensors rely, of course, on the integrity of the sensors and their circuits, which may themselves be prone to primary faults. Such faults would only become obvious when the sensor circuits are called upon to perform their intended emergency protection. Thus fail-safe design is fairly crucial. Alternatively, the designer might specify periodic testing or planned maintenance of the sensors at sufficient frequency to ensure that the probability of a lift failure occurring while an associated sensor is out of action is sufficiently small.

Committee Members :- Dr Garry Fawcett (Chairman), Mr Richard Barnes, Mr Bob Nicholls, Mr Robert Casey,
Mr Peter Smith and representatives of Plant Safety Ltd, and Banwell & Associates Ltd

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