

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Subcommittee

TECHNICAL BULLETIN - JULY 1994

095. Electrical Detection / Interlocks on Seat Restraints

This Technical Bulletin results from subcommittee discussion of experiences with more than one generic ride type, so we mention none in particular. Also we note that the following points are intended only as a summary of some of the additional matters which might need to be considered at the design / Design Review / Initial Test stage.

Paragraph 145 of "Fairgrounds and Amusement Parks - A Code of Safe Practice" states the basis for special consideration of passenger restraints (as well as passenger containment in general). Paragraphs 56 - 65 of "A Code of Safe Practice at Fairs: Technical Annex" relate to passenger restraints and, of these, 62 and 63 deal with locking and interlocking. The draft European Standard, "Fairground and Amusement Park Machinery and Structures - Safety", also contains helpful guidance.

Some amusement devices incorporate electrical detection of the state of the passenger restraints. We are aware that the design specifications of some of these systems :-

- detect only the position of the restraint and not whether the catch is locked;
- detect the position of the restraint but allow too large a range to safely contain all permitted sizes of passenger;
- do not fail to safety;
- allow the detection system to be overridden;
- have no redundant back up system (e.g. hardwired electrical, etc.) reducing the testing and inspection requirements for each individual subsystem.

In the design, review and testing of restraints, points such as these need to be considered. Other, non-electrical, matters may also be crucial, such as :-

- inadequate strength;
- inadequate inspection / replacement programmes in relation to the calculated catch retaining spring fatigue life.

Some or all of these limitations may give a ride operator a false sense of equipment safety. As a result of the Design Review / Initial Test it is possible that reverting to manual checking of the individual restraints by the ride attendants may be a suitable recommendation to, at least in part, deal with some of these factors.

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