

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - MARCH 2002

215. Top Spin Accidents & Incidents

We are aware of a variety of accidents and incidents (several in the 2000 season) which affected rides of the Top Spin type.

Some designs have retracting floor sections which move in and out for loading. There have been instances in which the safety interlock circuits only disconnect the “enable” signal for the drive, without any additional latching element. Momentary operation of safety limit switches may then unexpectedly start the ride moving.

A second issue, which applies to many other types apart from Top Spin rides, relates to the integrity of secondary restraints or other secondary devices. Quite often, if a primary restraint fails or comes open, the secondary device is subjected to an impact load, and design calculations often ignore it. Over the years, accidents have resulted from this serious shortcoming. When consequent severity of injury would be serious, it is important that both primary and secondary devices are designed and constructed to be able to cope with the loads which will occur in service. Clearly a secondary device is useless if it would immediately collapse or open when subjected to the live load which follows primary restraint opening / failure.

There has also been serious, fairly short-term, fatigue cracking in a safety critical region of one type of Top Spin, produced by Far Fabbri s.r.l. of Italy. The region affected was part of the car frame attachment to the main tube near the slewing ring mounting plate at one end of the car. This was reported on in Technical Bulletin No. 101 and would appear to be an inherent design defect. We do not have information as to whether this was demonstrated in the designer's or design reviewers' calculations, nor whether it has been corrected in more recent models.

Lastly we would mention the serious accident, which again involved a Far Fabbri Top Spin, in which the parking brake arrangement was not satisfactory. Technical Bulletin No. 122 covered this type of issue.

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