NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - MARCH 2002

228. Huss Enterprise Incident

We have received information from Health & Safety Engineering Consultants Ltd concerning an incident on a Huss Enterprise ride in early 2001. The device was 23 years old, having been operated by a showman in Germany from new until imported in the summer of 2000. HSEC Ltd carried out design review, assessment of conformity to design and initial test. Enterprise rides rely on a minimum rotor speed before safe gondola motion can be guaranteed when the boom is raised.

In the incident, which occurred on two occasions with members of the public riding and on two further occasions during investigation without passengers, a safety stop was activated as a result of over-travel of the main lifting arm to its ultimate limit position. The safety stop was initiated as a result of sticking of the servomotor controlling the hydraulic pump for the lift function. Whilst this in itself would not normally be of undue concern providing remedial action was taken, it was noticed that the rotation of the device slowed very quickly and came to a halt whilst the boom was still elevated to a large extent; some of the gondolas were observed to spin through 360º. As a result, passengers were thrown about inside the gondolas causing complaints but, so far as HSEC were aware, with no injuries resulting.

During a safety stop of this type of device, passengers will normally experience an unusual degree of swinging of the gondolas, but this would not normally be expected to cause them to be thrown around. When the device is in correct working order the boom should reach its low position whilst the rotor is still spinning.

Investigation confirmed that there was a second problem, with the valve block situated under the hydraulic motor which rotates the device. This consists of a solenoid-operated directional valve, bolted to a manifold block containing four non-return valve capsules. It is designated "NOTDREH" (emergency rotation) on the relevant Huss drawing. On strip down of the block it was noted that the non-return valve springs were broken causing malfunction of the valves and excessive deceleration during the safety stop.

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