

Extreme Speed Ride Accident Alert

Background

An operator of a Speed Ride in USA died on 19 October 2008 when a 4500 kg counterweight of the speed ride came down and crushed him on his chest. The speed ride is a type of rotating pendulum ride where one end of an arm has a counterweight and the other end counterpoised passengers.

Cause of the accident

A preliminary investigation of the incident has found that the victim was in the path of the rotating “Inverter”. He was taking measurements for future repairs, and apparently thought the ride had finished its cycle. He reached over, and the counterweight of the machine came down and hit him in the head, then in the chest on the downswing. The counterweight crushed his chest in the process.

The victim was not doing any kind of maintenance at the time of the incident, but was in the hazardous area while the machine was still running.



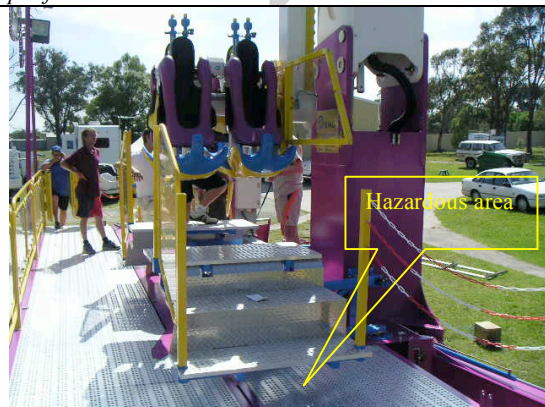
Photograph 1: View of the similar extreme speed ride running in the show ground in NSW, Australia.



Photograph 2: View of the similar extreme speed ride running in the show ground in NSW, Australia.



Photograph 3: The seats move down just above the platform.



Photograph 4: The stairs are moved to the side during operation.



Photograph 5: Side view of the platform.

The difference between US “Inverter” ride and rides in Australia is that the “Inverter” has seats on one end of the pivot arm and counterweight on the other end. Speed ride in Australia (NSW & QLD) appears to have seats on each end of the pivot arm that counterbalance each other.

Plant affected

Information received so far has indicated that all extreme speed (or similar type of) rides around NSW and Queensland have a similar type of platform to the one involved in the recent US accident. A similar incident happened at Luna Park in New South Wales last year with a similar speed ride. Therefore attention should be paid to the safety control over the platform area & locking gate.

Management of risk

All owners of this type speed ride must implement a procedure where the following is carried out:

1. The lockout barrier/gate is required to have an interlock fitted so that attendants cannot access the platform while the ride is moving and the ride cannot be started until the gate is locked, and nobody is to be on the platform.
2. The interlocking micro-switch should be dual-channel and not allow the gate to open until the machine is fully stopped.
3. An extra mat sensor should be placed on the platform to detect if any person, including a child, is on the platform regardless of whether the person is moving or standing still.
4. Only when the safety control system is able to detect and confirm that no one is on the platform and passenger loading steps are out of the path of the moving ride, then the machine may be started. Fencing around the platform should ensure that no one can climb over into the platform (otherwise be detected with alarm going) when the machine is still running.
5. The whole control system should have a self-checking system installed to ensure no safety control parts or components have failed.
6. Regular (in service) inspection and maintenance work, (especially agreed by a qualified Engineer a major commissioning inspection following an erection of mobile speed ride) should be carried out by a competent person with a log book recording critical components inspection and regular services (methods, checklists & schedule for replacement etc. should be agreed by a qualified Engineer or as per manufacturer’s manual). In any case safe operating procedures have to be followed by relevant personnel.
7. The *Workplace Health and Safety Regulation 2008* requires that the design of the speed ride must be checked and certified by a qualified engineer. Annual inspections plus machine setup, which needs it running, should be only carried out by a qualified Engineer with strict safe operating procedures being followed.
8. Relevant Australian Standards refer to **AS 3533 - 1997 Amusement Rides and Devices**.
AS 3533.1-1997 Amusement rides and devices - Design and construction
AS 3533.1 Supp 1-2003 - Intrinsic safety (Supplement to AS 3533.1-1997)
AS 3533.2-1997 - Operation and maintenance
AS 3533.2 Supp 1-1997/Amdt 1-2001 - Operation and maintenance - Logbook (Supplement to AS 3533.2-1997)
AS 3533.3-2003 Amusement rides and devices - In-service inspection

Note: it is critical that no one should be in the path of the pivot arm. Failure to ensure this is likely to lead to a catastrophic incident.

Prohibited activities

The following activities are to be prohibited:

- Service or maintenance on the machine unless the moving pivot arm is fully stopped.
- **Use of the machine without fully functioning interlocking and self-checking sensing systems.**