

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Sub-Committee

TECHNICAL BULLETIN - JUNE 1996

136. Juvenile Cup and Saucer Rides

We have been informed by Plant Safety Ltd of a recent dangerous occurrence involving a Juvenile "Cup and Saucer" ride. There are a number of manufacturers of these devices and, at the moment, we do not know who produced this particular one. The incident involved one of the passenger units breaking free from the rotating platform while in service. We understand that the incident followed seizure of the upper of the two taper roller bearings which allow passenger unit rotation. Fortunately there were no injuries.

As with some other types of juvenile Cup and Saucer device, passenger unit rotation is based on the use of bought-in trailer hub units. For trailer use, these are normally housed so that the ingress of dirt, etc. is minimised. They use taper roller bearings, which are without their own internal shields or seals. In this Cup and Saucer design, the upper bearing, particularly, is exposed to dirt and debris falling into the region of the rollers / raceways.

The investigation of the incident revealed that the probable sequence of events began when the seized bearing caused the split pin securing the castellated retaining nut to shear. The nut then unscrewed itself from the thread, allowing the passenger unit to tip off the main spindle.

We believe that the incident emphasises the importance of good design, for instance the calculation and selection of suitable bought-in components. Appropriate maintenance and inspection instructions are also a necessity.