

# NAFLIC

*National Association For Leisure Industry Certification*

## Standards & Related Documents Committee

### TECHNICAL BULLETIN - OCTOBER 1999

#### 196. Mimafab Mini Roller Coaster Axle Failure

NAFLIC member John H Rundle Ltd has reported to us a case of in-service fatigue failure of a Mimafab mini roller coaster axle. Following the initial failure of the axle in the rear car, the axles in the 3 cars preceding it broke in the ensuing crash. Fortunately nobody was killed, but there were some serious injuries.

We have previously reported this same design shortcoming (in Technical Bulletin 160 - December 1997). We believe the identical design may have been used under other names - GMT "Runaway Train" juvenile roller coaster and versions sold by Big Country Motioneering.

The axle fatigue failure which caused the crash occurred at a shoulder of the main vertical axle pivot pin. The partial fatigue damage to the other broken axles was clearly visible. From the information we have received it is clear that the shoulder cannot be examined, either visually or by NDT, without strip down. A second crack location exists at the weld attaching the pivot pin into the main transverse axle member.

Maintenance personnel and Inspection Bodies should be aware of the need for careful monitoring of these locations, since there is clearly potential for serious accident.

Committee Members :- Dr Garry Fawcett (Chairman), Mr Richard Barnes, Mr Bob Nicholls, Mr Robert Casey,  
Mr Peter Smith, Mr Richard Cousins, Mr Ian Grant and Mr Paul Forrester

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