

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Sub-Committee

TECHNICAL BULLETIN - DECEMBER 1997

160. Axle Cracking on Juvenile Roller Coasters

We have been informed, by NAFLIC members Leisure Technical Consultants Ltd, of a fatigue problem identified on a GMT "Runaway Train" juvenile roller coaster. The same design was sold under a different manufacturer's name, Mimafab, and may also have been sold by Big Country Motioneering.

Fatigue cracking has occurred at a shoulder of the main vertical pivot pin of several rear axles. The fact that several different such cracks have been found implies that this may be a short-coming of the design detail and not just a simple manufacturing fault. All rides of this type are thought by this Committee to be of similar age and therefore may all be developing cracking now. A second crack location has been detected at the weld attaching the pivot pin into the main transverse axle member.

We are also reminded by NAFLIC member J H Rundle Ltd that a similar shoulder cracking problem, in a similar location, exists on the Zamperla "Dragon" juvenile roller coaster. In that case there is an additional snag that accessibility is so restricted that the cracks are very difficult to detect by either magnetic or ultrasonic methods.

Maintenance personnel and Inspection Bodies should be aware of the need for careful monitoring of this cracking 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 and representatives of Plant Safety Ltd, and Banwell & Associates Ltd

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