

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Subcommittee

TECHNICAL BULLETIN - APRIL 1994

083. Miami Trip Accident

The Health & Safety Executive have recently informed us of a major structural failure which occurred on a Miami Trip type of ride, going under the name of "Spritzer", at Stockton on Tees on 16 April 1994. The ride was manufactured in October 1992 by K Emmett & Sons Ltd.

The failure occurred at the start of the ride cycle with full passenger load. The bench-type platform was moving to the left as the right side dropped and hit the deck. By the time the operator stopped the ride the platform was resting at about 45° to the horizontal. The passengers were released and four were taken to hospital with minor injuries.

The failure occurred in the right hand platform support shaft which had only seen 19 days of operational service. It is understood, however, from communications with the manufacturer, that there are no other platform support shafts of this type in other Emmett Miami's in service. Emmetts are carrying out a review of their shaft designs and have been visited by the Health & Safety Executive who are carrying out an ongoing investigation.

The Health & Safety Executive have asked the owners of Emmett and other Miami type rides to undertake careful visual checks of the assemblies connecting the platforms to their rotating arms during their daily inspections.

By way of general comment on stepped shafts (with shoulders) in fatigue situations we remind designers of the importance of good design having suitable fillet radii rather than sharp corners. Fatigue life calculations should be carried out and, unless non-propagation of fatigue cracks can be confirmed, careful thought needs to be given to inspection recommendations, NDT or replacement. We also note that Miami rides very quickly build up large numbers of fatigue stress cycles since they typically produce fully reversing stresses at about 20 times per minute.

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