

# NAFLIC

*National Association For Leisure Industry Certification*

## **Standards & Related Documents Committee**

### **TECHNICAL BULLETIN - JUNE 2002**

#### **240. Superstar Accident**

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We issued Incident Bulletin 0602/01 on 17 June 2002. This talked about an accident which happened on 15 June 2002 (wrongly stated to be 17 June in the Incident Bulletin). The accident involved an NA Superrides Superstar which, we are told (although NAFLIC representatives have not yet been granted access to the ride or received any photograph of the damage), suffered a fatigue failure of the main lifting boom. The information in the early press and television reports, claiming that hydraulic failure was the cause, would seem to have been incorrect. The severity of the accident, which did not result in any particularly serious injuries, may have been mitigated by the quick thinking and prompt action of the operator. The availability of a public address system may have been particularly useful in issuing instructions to passengers on this occasion. In the accident :-

- Failure occurred at some point along the boom and it is rumoured that it may have been one of the transverse butt welds from which cracking propagated. Hopefully the veil of secrecy will lift before too long.

Since the accident, inspection of other NA Superrides Superstar rides has detected additional safety-critical fatigue problems. At least three other locations have now been found to show significant cracks and we have better information about some of these :-

- On a second Superstar, a 200 mm long crack has been found in the region where the main tubular shaft (about which the rotor spins) is welded through the boom. This was where the shaft comes through the boom's upper surface. The lower surface cannot be easily accessed without some disassembly, although theoretical considerations imply that it is likely to experience cracking earlier.
- On yet another Superstar, another significant crack has been found in the tower in the region where the boom pivot pin hinges.
- Lastly, we understand that there has been some previous history of fatigue cracking in one or more of the "bananas", the hanging car arms which carry the passengers.

It is the opinion of NAFLIC Standards Committee members that NDT (by the magnetic particle method) of these areas should be carried out and, because of the potential severity of failure, reliance on visual inspection only would be inadvisable. Inaccessible areas also need to be accessed rather than omitted.

Committee Members :- Dr Garry Fawcett (Chairman), Mr Richard Barnes, Mr Peter Smith, Mr Ian Grant, Mr David Geary, Mr Steve Parker, Mr Eddy Price and Mr Mike Preston

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From what we understand, the standard Instruction Manual does not contain specific advice on component fatigue lives and the areas involved. Any inspection body that becomes involved in a re-inspection should make reference to the ADIPS Report of Design Review (in the Operations Manual) to check whether the design review inspection body has included more detailed advice on these matters.