

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN — MAY 2007

318. HSE response to legal proceedings against Sonacase Re: Twist rides

The committee has received the following letter from Barry Baker HM Principle Inspector of Health and Safety, Entertainments & Leisure Section. The letter discusses the matters arising from the recent legal proceedings regarding the Sonacase Twist devices.

Committee Members:- Mr. R Nichols(Chairman), Mr. Peter Smith,

Mr. Ian Grant, Mr. John Green, Mr. Phil Mitchell, Mr. Ron Dale, Mr. Mark Wolstenholme & Mr. Dave Inman

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All Members of the Fairgrounds and Amusement
Parks Joint Advisory Committee

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Policy Group

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Head of Sector
Tim Galloway

Dear Association Members

HEALTH & SAFETY AT WORK ETC. ACT 1974

Sonacase Twist Fairground rides

1. I said that I would write to you on completion of the legal proceedings that have been ongoing against the manufacturer of the twist fairground ride and after the presentation at the December FJAC. The purpose in writing is to explain the background to the action that was taken, and to outline what action we now expect the industry to take.

Background

2. The 'Twist' has a documented history of potential defects, illustrated by the following: –
 - (a) NAFLIC's technical bulletin 014 (May 1992) reported a problem with the passenger restraints of Sonacase 'Twist' rides,
 - (b) NAFLIC issued technical bulletins in 1996, 1997, 2002 and 2004 concerning problems with the passenger restraints of Sonacase 'Twists'.
 - (c) In May 2000 Wilson Consultants, a registered inspection body engaged to do a design review having regard to a modification of the locking mechanism of the passenger restraints on the ride, issued an urgent defect report, recording that ASP Consulting had advised Sonacase that it caused excessive stresses in some restraint members and that modification would be necessary before the ride

could be considered safe to operate. Dr Garry Fawcett of Wilson Consultants shared that view.

- (d) On 24 January 2001 Dr Fawcett noted a fatality in about 1986 involving defective design of a passenger restraint on a 'Twist' supplied by MH (the fatality in 1997 which he also mentioned is in NAFLIC's technical bulletin 157).
 - (e) In 2001 Dr Fawcett expressed to HSE a continuing concern about passenger restraints on the Sonacase 'Twist'.
 - (f) A report from HSL in 2003 confirmed that there was a risk of deformation and cracking of the restraint from forward forces exerted on the restraint, and recommended modifications to the restraints.
 - (g) A report carried out in August 2006 concluded that some of the critical components of the existing single catch system were excessively highly stressed and that a 3-monthly cycle of NDT for cracking was necessary.
3. The process which has resulted in this letter began in earnest in April 2002, when cracked welds were found on the capstan shaft gussets of a 'Twist' ride during an inspection of a ride controller by the HSE.
 4. Following further investigation, Improvement Notices were served on its manufacturer, Sonacase UK Ltd (SUL), in November 2002. This decision was based on an alleged breach of the duty of a manufacturer under s 6(1A)(a) of the Health and Safety at Work etc Act 1974 ('HSWA').
 5. The Notices required SUL to remedy the breach by reviewing and revising its quality assurance procedures by 30.04.03. Subsequently SUL and Mr. Monty Hammond were prosecuted under s 33(1) (g) of HSWA (Mr. Hammond by virtue of s 37 of HSWA, as the director to whom SUL's offence was attributable) and convicted by a jury in April 2005. Each was fined £5,000 and ordered to pay costs.
 6. Also in April 2005 the Court made an order under s 42 of HSWA, requiring SUL and Mr. Hammond to remedy the breach and prescribing in detail exactly what had to be covered in the process. The order was to be complied with by the beginning of October 2005.
 7. Due to increased concerns over the possibility of more twist rides being manufactured the HSE took the step, and did not take it lightly, of issuing a Prohibition Notice prohibiting any further manufacture and supply of twist rides until the situation was satisfactorily resolved.
 8. On 23rd November 2006 a guilty plea was entered at Hove Crown Court indicating a failing to comply with this court order. A fine, suspended custodial sentence and community service order was imposed. A further Court Order was imposed, reiterating the requirement to produce a satisfactory system for proving design integrity by April 2007. The prohibition notice remains in force.

9. **The result of the legal proceedings is that the Crown Court has agreed with HSE's position that there is no adequate proof that a quality assurance process and design specification exists to demonstrate the integrity of the Sonacase twist fairground ride.**
10. As you know there are two industry agreed options open to ride controllers to demonstrate compliance with health and safety regulations in relation to design integrity.
- a. For rides manufactured after October 1997 a set of pre use inspections should be carried out, namely design review, conformity of assessment to design and initial test.
 - b. For rides manufactured prior to 1997 there is an option to demonstrate that a ride is "mature by design" as an alternative to having the full set of pre use inspections carried out.
11. There is guidance available to duty holders on both options, in HSG 175, NAFLIC Guidance, and in HSE's open document on "Risk Assessment to Establish Maturity of Design for Fairground Rides".
12. For a Declaration of Operational Compliance to be issued after an annual in service inspection, the issuing inspection body must be able to determine that either there is a valid set of pre-use inspections, or a maturity risk assessment in place.
13. There is no adequate design specification (including supporting structural/fatigue calculations) for this type of ride. We do not therefore believe that it has ever been possible for an adequate design review to have been completed for this ride. There are over 35 rides of this type currently operating in this country, of which approximately half have been manufactured after 1997.
14. For the reasons outlined in this letter, and demonstrated in court we do not believe these rides have valid design reviews, and we will not accept the adequacy of any design review issued by any inspection body between 1997 and November 2006.
15. For the other rides e.g. those rides manufactured prior to 1997, it is possible, although unlikely that there is enough information available to ride controllers for them to have completed a satisfactory maturity risk assessment.

Action Required

16. Unfortunately this is not the first type of ride in this country to have exhibited deficiencies in both design and design specification. The response in rectifying faults in the past has been of considerable concern, although we appreciate that in many cases ride controllers suffer the legacy of having to act to remedy deficiencies that should have been identified at the design and manufacture stage.

17. We therefore believe that formal enforcement action is the only effective means of ensuring that sufficient action is taken in a timely manner to address the concerns and remedy the deficiencies. The action we will require is as follows:

a. Rides Manufactured after October 1997

- i. We will serve Improvement Notices on all Sonacase twist rides manufactured after October 1997.
- ii. This will require controllers to have the pre use inspections on their rides carried out (design review, conformity of assessment to design and initial test). Where there is inadequate design information available this must be obtained from a competent person. We will not accept any design reviews issued in the past as proof that this work has already been carried out satisfactorily.
- iii. We will require controllers to have full written schedules for periodic inspection, including an adequate written schedule for the periodic NDT of the ride.
- iv. We will require any deficiencies identified by the pre use inspections to be remedied. In particular we expect that all deficiencies in the integrity of the restraint system are remedied, and an inspection regime incorporated into the written inspection and NDT procedures.

b. Rides manufactured pre October 1997

- i. We will serve Improvement Notices on all Sonacase twist rides manufactured before October 1997.
- ii. This will require ride controllers of twist rides manufactured before October 1997 to ensure that they have completed a maturity risk assessment that adequately addresses all the points raised in HSE's guidance "Risk Assessment to Establish Maturity of Design for Fairground Rides".
- iii. This assessment must also consider any safety critical modifications or repairs carried out.
- iv. Where it is not possible to determine that the design is mature by design, and given the history of this ride there is a strong possibility that this will be the case, a full set of pre use inspections will need to be carried out as above.
- v. We will require controllers to have full written schedules for periodic inspection, including a written schedule for the periodic NDT of the ride.

- vi. We will require any deficiencies identified by the pre use inspections to be remedied. In particular we expect that all deficiencies in the integrity of the restraint system are remedied, and an inspection regime incorporated into the written inspection and NDT procedures.

18. It is unfortunate that HSE has been forced to take formal enforcement action to remedy these deficiencies, but given the circumstances we are confident that this is the most proportionate and consistent means of achieving continued public safety.

If you have any queries, or require any further information, please do not hesitate to contact me.

Yours faithfully

Barry Baker
HM Principal Inspector of Health and Safety
Entertainments & Leisure Section