

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - MARCH 2002

218. A.R.M. / Thurston Superbowl Cracking

We are grateful to MP Fairground Inspections for informing us about an inspection of a Superbowl ride carried out in the late summer of 2000. The ride in question was partially manufactured by A.R.M. (UK) Ltd of Enstone, Oxford, in about 1995/96. A.R.M. are no longer trading. Much of the fabrication work was apparently carried out, under licence, by William Thurston.

Defects were noted in the main chassis of the ride and these were in the form of fatigue cracking which appeared to have propagated from a fabricated joint / flitch plate.

For the purpose of clarification the following description relates to viewing the machine from the "front" or passenger access / exit area. The fatigue cracks were at a point approximately 450 mm to the rear of the centre of the lower pivot point of the hydraulic rams used for elevating the rotating platform.

The cracking in the left hand side member extended to a depth of approximately 200 mm on the vertical face and approximately 100 mm on the lower horizontal face. The right hand side member was also suffering from fatigue cracking but to a lesser extent.

It is thought that there is more than one design version of such Superbowls. Wilson Consultants, who carried out the Design Review, tells us that the Mark I design produced by A.R.M. was shown by calculation to have a number of regions prone to fatigue cracking, including the chassis location described above. The Report of Design Review recommended that specific instructions on regular inspection of these regions should be incorporated into the Operations Manual.

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