NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN - MAY 2003

258. PWS Twist Cracking

We have been informed, by NAFLIC member Tony Mogford Associates, that cracks have been found in the capstans of a PWS (i.e. Stevens) Twist ride in a location that may not have been identified before. The ride concerned is thought to be an early PWS design version.

Please refer to the photographs on the following page for help in interpreting the last 2 paragraphs of this Technical Bulletin.

At the level of the horizontal car arms, each capstan has two large horizontal circular plates spaced about 50 mm or so horizontally apart by a vertical rolled steel ring. The lower of these discs is approximately 150 mm greater in diameter than the upper one. The top edge of the spacer ring is welded to the circumference of the smaller, top, disc and the lower edge is welded onto the surface of the larger, bottom, disc. There are 4 vertical gusset plates, 90° apart, attaching onto the top surface of each upper disc, and terminating some 20 mm or so short of the outer edge. At this region, some localised bending of the disc is likely to occur, translating into increased stress at the weld connecting the ring to the disc.

Tony Mogford Associates, using MPI, have detected 8 cracked welds (variously 20, 30, 60, 65, 70, 70, 80 and 95 mm long). The region in question is very accessible and visible and, at the stage detected, the cracking was probably not imminently dangerous. However, it would be unwise to leave such cracking undetected and unrepaired.

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