

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Sub-Committee

TECHNICAL BULLETIN - APRIL 1996

124. Wear in Anti-Rollback Systems

Many roller coasters, log flumes, etc. are fitted with anti-rollback devices to stop the vehicles falling back down a lift section in the event of power loss or otherwise. The most common anti-rollback device is a pawl / ratchet system.

In such pawl / ratchet anti-rollback devices, normal operation of the ride results in wear to some of the components and we are aware that there are not always manufacturer's instructions regarding the management of this wear. We therefore remind readers of the following points :-

- a) Mechanical damage, particularly to pawls, resulting from normal operation may often be removed by light grinding, ensuring that the correct profile is maintained. However, it is important that the dressed dimensions remain within the manufacturer's tolerances. Where these are not available it may be necessary to obtain advice from a competent designer and design reviewer to determine such tolerances.
- b) In some cases more extreme wear to the working surfaces may be "repaired" by weld build up. Again, however, this should, if possible be done in accordance with the original manufacturer's instructions. Where this is not possible it may be necessary to obtain advice from a competent designer and design reviewer to determine the constraints on use of such a procedure.
- c) Wear to pawl or lever pivot attachment pins / bushes may affect correct alignment and allow slippage on the ratchet teeth. Appointed Persons finding such wear may need to consider whether it is likely to deteriorate, within the examination period, to the extent that slippage might occur. Pin / bush replacement / repair is the normal solution.
- d) Because cracks are known to occur on some types, relevant NDT of dogs and pins may well be necessary. Repair of fatigue cracks in these components is unlikely to be acceptable.

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