

NAFLIC

National Association For Leisure Industry Certification

Standards & Related Documents Committee

TECHNICAL BULLETIN — JUNE 2008

336. Safety Critical Modifications

It is apparent that there is some confusion as to what constitutes a Safety Critical Modification. This Technical Bulletin does not add new requirements but seeks to clarify the existing text contained within HSG 175.

Safety Critical Modifications

The glossary to HSG175 describes a **safety-critical modification** as:

“any alteration to the hardware and/or software of a piece of equipment including the introduction of a safety-critical component which results in a deviation from the original design specification.”

The practical effect of this is that ANY change to the design specification of a device requires pre-use inspections if it affects the safety of the ride, the pre-use inspections are required for safety critical aspects of a design, including modifications.

Where the modification does not have a safety critical impact, no pre use inspections will be needed. The decision as to whether a modification is safety critical needs to be made by the person designing the modification.

The controller’s responsibilities are described in paragraphs 181 to 184 in HSG175

“181 Before modifying any device, make sure that the proposed modification will be safe.

182 A safety-critical modification includes any changes to:

- *loading(eg changing seating arrangements, fitting heavier passenger units);*
- *speed or operating cycle;*

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

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- *range (eg height of lift);*
- *safety envelope;*
- *safety-critical components, devices or systems;*
- *structural and mechanical components;*
- *drive mechanisms;*
- *control mechanisms (eg brakes, shock absorbers, speed limiters, speed or position sensors);*
- *software;*
- *passenger containment (including fences and barriers);*
- *passenger height restrictions.*

183 *It will also include:*

- *use of a device outside its specification or normal environment for which it was designed;*
- *reinstallation of a fixed device in a different location.*

184 *If in doubt, it should be assumed that every modification is safety-critical and the advice of a competent person should be sought.”*

There is nothing in the list above that limits the scope of a Safety Critical Modification only to “Safety Critical Components”. However, the introduction or a change to a Safety Critical Component will ALWAYS be a Safety Critical Modification.

Safety Critical Components

Safety Critical Components are defined separately and are unrelated to the definition of a modification as:

“any type of component on an amusement device on which the safety of passengers (or others who may be affected) is dependant”

Repairs

A repair may not constitute a Safety Critical Modification, providing that the design specification is unaltered. As an example the correct grades of materials should be used when replacing like-for-like items.

Risk Assessment

If the original design specification is changed, improved or otherwise, the designer of the change has a duty to undertake a suitable and sufficient risk assessment for the design change and document any significant findings. This risk assessment should be part of any review undertaken as part of Design Review.

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