

452.

General inspection of devices for corrosion and rust (from US manufacturers)

NAFLIC has received a number of service bulletins from several US ride manufacturers relating to the inspection of amusement rides for corrosion and rust. The wording in all the bulletins is very similar, indeed the same in some instances, and they provide general information on the detection of indications of corrosion/rust.

As they are all similar and cover the same subject, so NAFLIC has collated all those bulletins received (see accompanying documents) to create a single technical bulletin on the matter.

Committee Members: Mr. D Dadswell (Chairman), Mr. A Mellor (Secretary), Mr. P Smith, Mr. J Green, Mr. D Cox, Mr. I Davies, Mr. J Shilling, Mr. D Inman & Mr. R Hiscoe

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Supported By:





A.R.M. (USA) INC.
1506 Fernwood Rd.
Wintersville, OH 43953
740.264.6599
740.266.2953 Fax

Bulletin No: SB20180122
Release Date: January 22, 2018
Effective Date: January 22, 2018
Supersedes: SB20171226
Completion Date: April 09, 2018
Page: 1 of 2

SERVICE BULLETIN

Manufacturer: **A.R.M. (USA), Inc.**
Ride Name: **All Rides**

Model(s): **All Models**
Affected Production Dates: **All Dates**

**AFFECTED
SERIAL
NUMBERS**

ABSTRACT OF ISSUE

General Inspection for Corrosion/Rust

All Serial Numbers

REASON FOR RELEASE

Corrosion/rust can cause structure degradation which could result in catastrophic failure of structural members and personal injury.

This bulletin provides general information on detection of indications of corrosion/rust.

ACTION TO BE TAKEN

All owners of the above noted amusement rides are required to perform the overall ride inspection detailed on the following pages of this bulletin.

These inspections are required on all rides which are 5 years of age or older, and again when the ride is 10 years of age. Thereafter, the inspections are required annually. Shorten the intervals as deemed appropriate due to corrosive environments such as coastal regions.

These inspections are in addition to all existing maintenance and inspection requirements.

Reference Standards:

*ATSM F770 7.4 Inspection Documents - Inspection documents deemed appropriate by the owner/operator to be maintained in the amusement ride or device file shall be filed in accordance with the procedures outlined in this practice and Practice F1193.**

*ATSM F770 7.5 Notification of Manufacturer - The owner/operator of an amusement ride shall promptly notify the manufacturer of an incident, failure, or malfunction which, in the owner/operator's judgment, affects the continued proper operation of the amusement ride or device and is information of which the manufacturer should be aware.**

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All work must be performed by competent personnel, capable of understanding the function of the parts and their proper installation. All applicable OSHA safety standards and safe industry practices must be observed.

Observe all safety information contained in the manufacturer's manuals and bulletins. Make available this bulletin and all related technical information to personnel using the equipment.



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Page: 2 of 2

Manufacturer: **A.R.M. (USA), Inc.**
Ride Name: **All Rides**

Model(s): **All Models**
Affected Production Dates: **All Dates**

**AFFECTED
SERIAL
NUMBERS**

DETAIL OF ISSUE

Inspection Procedure

The inspections defined in this bulletin are intended to obtain indications of corrosion/rust. Remove cover panels, scenery, etc., to gain access to structures for inspection. Signs of corrosion/rust may lead to further disassembly of ride. Use one or more of the following methods:

IMPORTANT: *Comprehensive inspection records must be maintained. Include details on which areas have been inspected, type of inspection, when inspection was performed, specific observations during inspection, and by whom inspection was conducted.*

1. Visually check structural members for visible signs of corrosion/rust. Pay close attention to areas where moisture may collect, both internally and externally. Examples include the lowest portion of tubing in a structure, under upholstery or padding, and under diamond plate or sheet metal. Consideration for a structural members position during transportation, operation and storage, should be considered. Visual indications of corrosion/rust include, but are not limited to:
 - Rust stains, bubbling or cracking of paint
 - Loss of material, including flaking, pitting, or holes in the structure
 - Deformation of tubes where water has collected internally and froze due to cold temperatures.
2. Use a hammer to tap on and around questionable areas. Material loss can often be detected by a difference in the sound when compared to good, solid material.
3. Use a sharp pick to probe questionable areas. Look for discoloration, soft areas, pitting and scaling. If the pick penetrates the surface, significant rust is indicated.
4. A borescope can provide visual access to enclosed and hard-to-reach areas if an existing hole or opening allows its use. Do not drill any structure.
5. Test equipment such as an ultrasonic corrosion gauge/thickness gauge can be used by competent owner/operators to perform additional testing.

While this is not a substitute for inspection by qualified NDT personnel, the above mentioned methods can help identify areas of inconsistent thickness, indication corrosion/rust.

IMPORTANT: The purpose of initial testing is to identify indications of corrosion/rust. If found or suspected, additional inspection by qualified NDT personnel is required to determine the actual extent of material loss.

All Serial Numbers

Battech Enterprises LLC issues notifications for the benefit of owners of amusement rides manufactured by Battech Enterprises LLC. As a service to the industry, and in the interest of employee and public safety, Battech Enterprises LLC also may issue notifications for the benefit of owners of amusement ride equipment for which the manufacturer no longer exists, such as Dartron Parts and Services Inc. and Dartron Industries Inc. In doing so, Battech Enterprises LLC does not assume liability for losses associated with amusement ride equipment built by manufacturers other than Battech Enterprises LLC.



Issuing Entity:

Battech Enterprises, LLC

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Bulletin # SR-5K-1801-01

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Effective Date: February 15, 2018

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Completion Date: May 15, 2018

Page 1 of 2

SERVICE BULLETIN

Ride Manufacturer: Battech Enterprises LLC	Affected Production Dates: All Dates
Ride Name: All rides produced by Battech Enterprises LLC, Dartron Industries, Inc., Dartron Parts & Services, Inc.,	Affected Serial #'s: All Units
Model #: All	

Abstract of Issue: General Inspection for Corrosion/Rust

Reason for release: Corrosion/Rust can cause structural degradation which could potentially result in catastrophic failure of structural members resulting in personal injury.

This bulletin provides general information on detection of indications of corrosion/rust

Action to be taken:

All owners of the above noted amusement are required to perform the overall ride inspection detailed on the following pages within 90 days of the release date of this bulletin.

These inspections are required on all rides which are at least 5 years of age or older, and again when the ride is 10 years of age. Thereafter the inspections are required annually. Shorten the intervals as deemed appropriate due to corrosive environments such as coastal regions.

These inspections are in addition to all existing maintenance and inspection requirements.

Ride Owners and Operators are reminded to comply with the ASTM F-24 Standards, including F-770; Practice for Ownership, Operation, Maintenance and Inspection of Amusement Rides and Devices. These are available from ASTM international: www.astm.org.

Reference Standards:

ASTM F770 7.4 Inspection Documents – Inspection documents deemed appropriate by the owner/operator to be maintained in the amusement ride or device file shall be filed in accordance with the procedures outlined in this practice and Practice F1193. *

ASTM F770 7.5 Notification of Manufacturer – The owner/operator of an amusement ride shall promptly notify the manufacturer of an incident, failure, or malfunction which, in the owner/operator’s judgement, affects the continued proper operation of the amusement ride or device and is information of which the manufacturer should be aware. *

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Action to be taken (continued from page 1 of 2):

All work must be performed by competent personnel, capable of understanding the function of the parts and their proper installation. Use only those components authorized, specified or provided by Battech Enterprises LLC. All applicable OSHA safety standards and safe industry practices must be observed.

Observe all safety information contained in the manufacturer's manuals and bulletins. Make available this bulletin and all related technical information to personnel using the equipment.

Detail of issue:

Inspection Procedure:

The inspections defined in this bulletin are intended to obtain indications of corrosion/rust. Remove cover panels, scenery, etc. to gain access to structures for inspection. Sign of corrosion/rust may lead to further disassembly of the ride.

Use one or more of the following methods:

IMPORTANT: Comprehensive inspection records must be maintained. Include details on which areas have been inspected, type of inspection, when inspection was performed, by whom the inspection was conducted and specific observations during the inspection.

1. Visually check structural members for visible signs of corrosion/rust. Pay close attention to areas where moisture may collect, both internally and externally. Examples include, but are not limited to, the lowest portion of tubing in a structure (in both transport and operating positions), under upholstery or padding and under decking and sheeting. Visual indications of corrosion/rust include, but are limited to:
 - Rust stains, bubbling or cracking of paint
 - Loss of material, including flaking, pitting or holes in the structure
 - Deformation of tubes where water has collected internally and frozen
2. Use a hammer to tap on or around questionable areas. Material loss can often be detected by a difference in the sound when compared to good solid material.
3. Use a sharp pick, awl or pick hammer to probe questionable areas. Look for discoloration, soft areas, pitting and scaling. If the surface is penetrated, significant rust is indicated.
4. A borescope can provide visual access to enclosed and hard to reach areas if an existing hole or opening allows its use. **DO NOT DRILL ANY STRUCTURE.**
5. Test Equipment such as an ultrasonic corrosion gauge can be used by competent owners/operators to perform additional testing.

While these inspections guidelines are not a substitute for inspection by qualified/certified NDT personnel, they can help identify areas of inconsistent thickness and indications of corrosion/rust.

IMPORTANT: The purpose of initial testing is to identify indications of corrosion/rust. If found, or suspected, additional inspection by qualified NDT personnel may be required to determine the actual extent of material loss.



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 Page: 1 of 2

SERVICE BULLETIN

Ride Manufacturer: CHANCE RIDES, INC.
 CHANCE RIDES MANUFACTURING, INC.
 CHANCE MORGAN, INC.

Affected Production Dates: See Text

Ride Name: All Rides

Affected Serial Nos.: All

Model No. All

Abstract of Issue: General Inspection for Corrosion/Rust

Reason For Release:

Corrosion/rust can cause structural degradation which could result in catastrophic failure of structural members. Serious personal injury can result from structural failure.

This bulletin provides general information on detection of indications of corrosion/rust.

Action to be Taken:

All owners of the above noted amusement rides are required to perform the overall ride inspection detailed on the following pages within 90 days of the release date of this bulletin.

These inspections are required on all rides which are at least 5 years of age or older, and again when the ride is 10 years of age. Thereafter, the inspections are required annually. Shorten the intervals as deemed appropriate due to corrosive environments such as coastal regions.

These inspections are in addition to all existing maintenance and inspection requirements. Ride owners and operators are reminded to comply with the ASTM F-24 Standards, including F-770: Practice for Ownership, Operation, Maintenance, and Inspection of Amusement Rides and Devices. These are available from ASTM International: www.astm.org.

Reference Standards:

ASTM F770 7.4 Inspection Documents - Inspection documents deemed appropriate by the owner/operator to be maintained in the amusement ride or device file shall be filed in accordance with the procedures outlined in this practice and Practice F1193.

ASTM F770 7.5 Notification of Manufacturer - The owner/operator of an amusement ride or device shall promptly notify the manufacturer of an incident, failure, or malfunction which, in the owner/operator's judgment, affects the continued proper operation of the amusement ride or device and is information of which the manufacturer should be aware.

All work must be performed by competent personnel, capable of understanding the function of the parts and their proper installation. Use only those components authorized, specified or provided by Chance Rides Manufacturing, Inc. All applicable OSHA safety standards and safe industry practices must be observed.

Observe all safety information contained in the manufacturer's manuals and bulletins. Make available this bulletin and all related technical information to personnel using the equipment.

Chance Rides Manufacturing, Inc. issues notifications for the benefit of owners of amusement rides manufactured by Chance Rides Manufacturing, Inc. As a service to the industry, and in the interest of employee and public safety, Chance Rides Manufacturing, Inc. also issues notifications for the benefit of owners of amusement ride equipment for which the manufacturer no longer exists, such as the Allan Herschell Company, Chance Manufacturing Co., Inc., pre-2002 Chance Rides, Inc., D.H. Morgan Manufacturing, Inc., etc. In doing so, Chance Rides Manufacturing, Inc. does not assume liability for losses associated with amusement ride equipment built by manufacturers other than Chance Rides Manufacturing, Inc.



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Ride Manufacturer: CHANCE RIDES, INC.
CHANCE RIDES MANUFACTURING, INC.
CHANCE MORGAN, INC.

Affected Production Dates: See Text

Ride Name: All Rides

Affected Serial Nos.: All

Model No. All

Detail of Issue

Inspection Procedure

The inspections defined in this bulletin are intended to obtain indications of corrosion/rust. Remove cover panels, scenery, etc. to gain access to structures for inspection. Signs of corrosion/rust may lead to further disassembly of the ride. Use one or more of the following methods:

IMPORTANT: *Comprehensive inspection records must be maintained. Record details on which areas were inspected, date of inspection, who performed inspection, type of inspection, and specific observations.*

1. Visually check structural members for visible signs of corrosion/rust. Pay close attention to areas where moisture may collect, both internally and externally. Examples include the lowest portion of tubing in a structure (in both transport and operating positions), under upholstery or padding, and under diamond plate or sheet metal. Visual indications of corrosion/rust include, but are not limited to:
 - Rust stains, bubbling or cracking of paint
 - Loss of material, including flaking, pitting or holes in the structure.
 - Deformation of tubes where water has collected and frozen.
2. Use a hammer to tap on and around questionable areas. Material loss can often be detected by a difference in the sound when compared to good solid material.
3. Use a sharp pick to probe questionable areas. Look for discoloration, soft areas, pitting and scaling. If the pick penetrates the surface, significant rust is indicated.
4. A borescope can provide visual access to enclosed and hard-to-reach areas if an existing hole or opening allows its use. Do not drill any structure without consulting with the manufacturer.
5. Test equipment such as an ultrasonic corrosion gauge can be used by competent owner/operators to perform additional testing.

While these inspection guidelines are not a substitute for inspection by qualified NDT personnel, they can help identify areas of inconsistent thickness, indicating corrosion/rust.

If indications of corrosion/rust are found, contact Chance Rides Manufacturing, Inc. for further instructions.

IMPORTANT: *The purpose of initial testing is to identify indications of corrosion/rust. If found, additional inspection by qualified NDT personnel may be required to determine the actual extent of material loss.*