

Mega Coaster NITRO

Six Flags Great Adventure

LIST OF MANUFACTURER'S NOTICES

<u>Manufacturer's Notice #</u>	<u>Date</u>
2 / 01	September 25, 2001
2 / 04	April 5, 2004
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BOLLIGER & MABILLARD

CONSULTING ENGINEERS INC.

SIX FLAGS GREAT ADVENTURE
Attn: Mr. Robert J. Hoban,
Maintenance Vice President
Route 537
Jackson, NJ 08527, USA

O/ref.: W. Bolliger / sb

September 25, 2001

Mega Coaster Nitro

Dear Bob,

We are pleased to send you hereenclosed :

◆ Manufacturer's notice # 2/01

The purpose of this notice is to describe an additional recommended inspection of the central beam of the coaches.

We recommend the inspection to be done immediately and then in accordance with this notice.

Please do not hesitate to contact us should you have any question regarding this notice.

We thank you in advance for your help with this matter.

Sincerely,

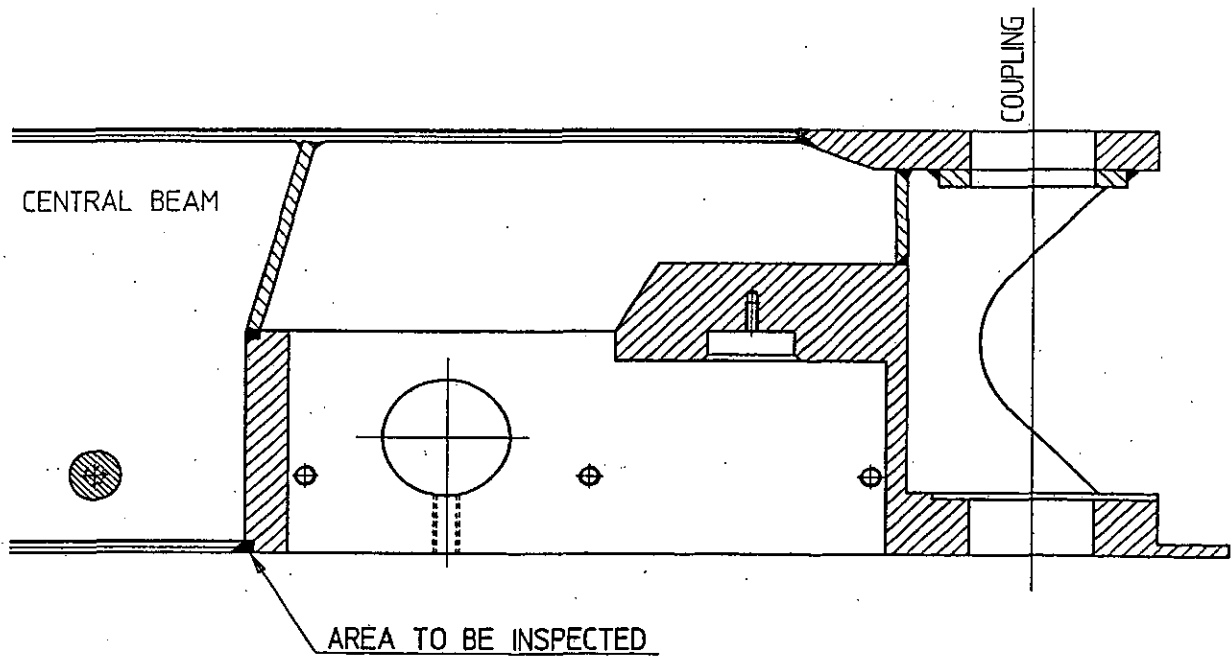
Encl.: ment.

IMPORTANT MANUFACTURER'S NOTICE

Park : **SIX FLAGS GREAT ADVENTURE**

Roller Coaster : **Mega Coaster Nitro**

- 1) We draw your attention to the fact that cracks were found at the connection ratchet box / plate on the central beam of the coaches on one B&M ride.



- 2) We accordingly ask you to inspect these connections as follows:
 - a) immediate visual inspection, then
 - b) weekly visual inspection.

- 3) If any crack is found, the crack needs to be repaired before being further operated.

Bolliger & Mabillard shall be informed of any such crack.

September 25, 2001

BOLLIGER & MABILLARD

CONSULTING ENGINEERS INC.

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SIX FLAGS GREAT ADVENTURE

Attn: Mr. Don Burkholder,
Director of Maintenance &
Construction

Route 537
Jackson, NJ 08527-0120, USA

O/ref.: G. Petitpierre / E. Berra / ru

April 5, 2004

Mega Coaster NITRO

Dear Don,

We send you hereenclosed :

◆ Manufacturer's notice # 2/04

Purpose of this notice is to clarify the procedure for the daily and weekly inspection of the anti-return SPRAG element on the lift drive unit.

We draw your attention to the fact that the anti-return SPRAG is a major safety device. The ride shall not be operated with a faulty anti-return SPRAG.

◆ Manufacturer's notice # 3/04

Purpose of this notice is to require an additional inspection of the vehicle central beam/coupling receiver.

Please do not hesitate to contact us should you have any question regarding these notices.

We thank you in advance for your help with this matter.

Sincerely,

G. Petitpierre *E. Berra*

IMPORTANT MANUFACTURER'S NOTICE

Park : **SIX FLAGS GREAT ADVENTURE**

Roller Coaster : **Mega Coaster NITRO**

Purpose of this notice is to clarify the procedure for the daily and weekly inspection of the anti-return SPRAG element on the lift drive unit.

Daily inspection:

- Listen to the SPRAG for abnormal noise. In case of abnormal noise:
 - inspect the SPRAG to find the cause of the noise
 - carry out the inspection as specified for the weekly inspection.

Weekly inspection:

- Stop the train on the lift so that no anti-rollback dogs are in contact with the anti-rollback rack. It may be necessary to stop several times the train on the lift to get that result.

In case of any doubt:

- a) make sure that the ride is stopped and secure, with no train on the lift.
- b) dismantle the connecting rod that hold the torque arm in place an attempt to lift the torque arm; it should not be possible to do so.

NOTIFICATION

Affected Park: Six Flags Great Adventure
Affected Ride: Mega Coaster
Ride Name: NITRO

Item: Lift driving unit one way clutch (Sprag Clutch)

Abstract of Issue:

This notification clarifies the lubrication, the inspection and the installation of the lift drive unit one way clutch hereafter called Sprag Clutch.

Reason for Release:

Clarification of the lubrication, the inspection and the installation of the lift drive unit one way clutch hereafter called Sprag Clutch.

Action to be taken:

Lubricate and inspect the Sprag Clutch as indicated.

Detail of Issue:

GREASE LUBRICATION

1. The clutch is factory packed with Fuchs Renolit MP2 grease. Only other recommended grease mentioned on the table below may be used. **THE USE OF LUBRICANTS OTHER THAN THOSE RECOMMENDED CAN CAUSE IMPROPER SPRAG ENGAGEMENT AND SUBSEQUENT FAILURE OF THE UNIT.**
2. Grease the sprag clutch every 3 months. Wipe fittings clean and pump new grease into all fittings until it flows past labyrinth seals on both sides of unit.

BOLLIGER & MABILLARD

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Bulletin No.:	5
Release Date:	July 6, 2005
Effective Date:	July 6, 2005
Supersedes:	Notice 2/04
Issued by:	A. Beck
Checked by:	G. Petitpierre / E. Berra
Page:	2 of 2

Affected Park:
Six Flags Great Adventure

Affected Ride: Mega Coaster

Ride Name: Nitro

Detail of Issue continued:

GREASE

TEMPERATURE RANGE	RECOMMENDATION
-7°C TO +65°C	FUCHS RENOLIT MP2 (Original) MOBIL GREASE MP2 MOBIL MOBILUX 2 SHELL ALBIDA R2 ESSO BEACON 2

INSPECTION OF THE SPRAG CLUTCH

Daily Inspection

Listen to the sprag for abnormal noise. In case of abnormal noise:

- inspect the sprag to find the cause of the noise
- carry out the inspection as specified for the weekly inspection

Weekly Inspection

To check the sprag clutch efficiency, stop the train on the lift so that no anti-rollback dogs are in contact with the toothed rack (the whole train load is then supported by the sprag clutch). It may be necessary to stop the train several times on the lift to get that result.

INSTALLATION (Clutch replacement)

1. Before mounting on a shaft, check for damage and dimensional accuracy.
2. Check that free direction of rotation is correct.
3. Offer unit to shaft and apply pressure to end face of inner race only.

High pressure applied to the outer race could cause damage to the bearings and premature failure of the unit.

4. Secure unit axially by use of retaining plate.
5. Reconnect the torque arm

IMPORTANT MANUFACTURER'S NOTICE # 4/04

Park : **SIX FLAGS GREAT ADVENTURE**

Roller Coaster : **Mega Coaster NITRO**

The procedure for the checking of each lap bar prior to the dispatch of a train shall include, at a minimum, the following steps:

- 1) Ride attendant views each passenger and makes sure that
 - a) the passenger is properly seated in full upright position with back in contact with the seat back.

- b) the passenger does not hold loose articles such as purse, camera, etc.

Ride attendant helps the passenger to pull down the lap bar, if not already done by the passenger.

The third click of the ratcheting system shall be engaged (see item c) of paragraph 2).

- 2) As a final check before the dispatch of a train, the ride attendant shall
 - a) **PUSH DOWN FIRMLY** the lap bar against passenger's pelvis. The lap bar shall be in close contact with the upper leg of the passenger.

If the belly or any other part of the body of the passenger does not allow the lap bar to be in contact with the upper leg of the passenger, the passenger shall not be allowed to ride.

- b) **PULL UP FIRMLY** the lap bar to make sure that the lap bar is properly locked. The motion of the lap bar shall not be more than the distance between two clicks (attendants shall be trained to understand the motion between clicks).
 - c) **CHECK THE YELLOW MARK ON THE RATCHET BOX** which confirms that the third click is engaged.

Notes: ➤ Other operation procedures, as indicated in the Recommended Operations Procedures Manual, shall be strictly enforced.

➤ Recommended Operations Procedures Manual, paragraph 3.5, indicates guests limitations. Operators shall be aware of such restrictions.

Procedures shall be in place in order to make sure that passengers who do not meet the acceptance criteria are not allowed on the ride.

➤ In case of oversized guests, it is not allowed to force down the lap bar using exaggerated force.

If the third click of the ratcheting system cannot be engaged while pushing the lap bar with one hand only, it must be assumed that the guest does not fit the restraint system.

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CONSULTING ENGINEERS INC.

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Orig: Jent
cc: Gk
cc: Berra
cc: Bell

SIX FLAGS GREAT ADVENTURE
Attn: Mr. Don Burkholder,
Director of Maintenance &
Construction
Route 537
Jackson, NJ 08527-0120, USA

O/ref.: E. Berra / cc

June 4, 2004

Mega Coaster NITRO

Dear Don,

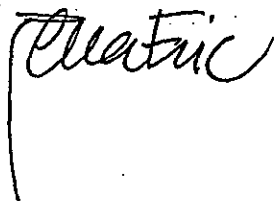
We send you hereenclosed :

◆ **Manufacturer's notice # 4 / 04**

Purpose of this notice is to reemphasize the importance of and to clarify the appropriate procedure for the checking of each lap bar prior to the dispatch of a train from the station.

Please do not hesitate to contact us should you have any question regarding this notice.

Sincerely,

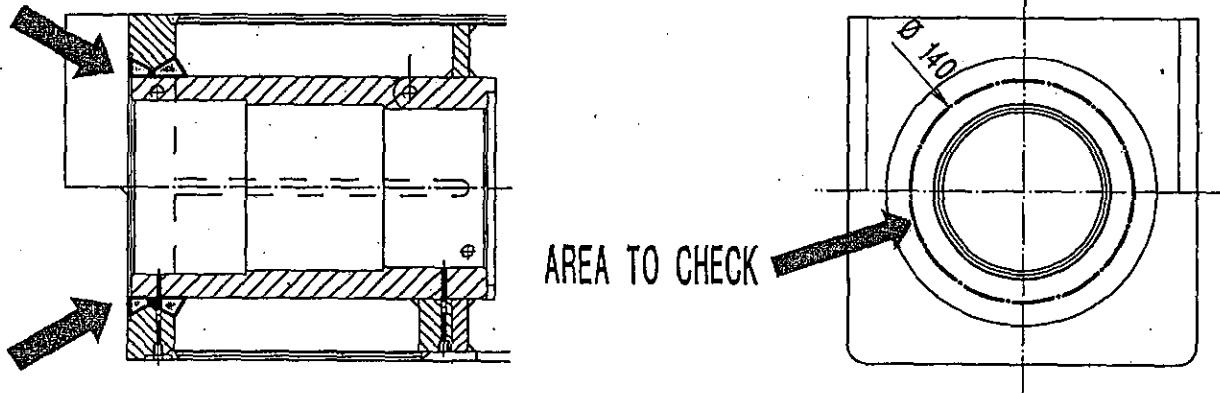


IMPORTANT MANUFACTURER'S NOTICE

Park : **SIX FLAGS GREAT ADVENTURE**

Roller Coaster : **Mega Coaster NITRO**

1. We draw your attention to the fact that one crack was found in the weld between the front plate of the central beam and the pipe of the coupling receiver on a B&M coaster.



2. INSPECTION

2.1 GENERAL

THE AREA SHOWN ABOVE SHALL BE INSPECTED AT LEAST ONCE A YEAR AS FOLLOWS:

- a) dismantle the fork and the front thrust washer on each vehicle.
- b) magnetic particle inspection of the area shown above.

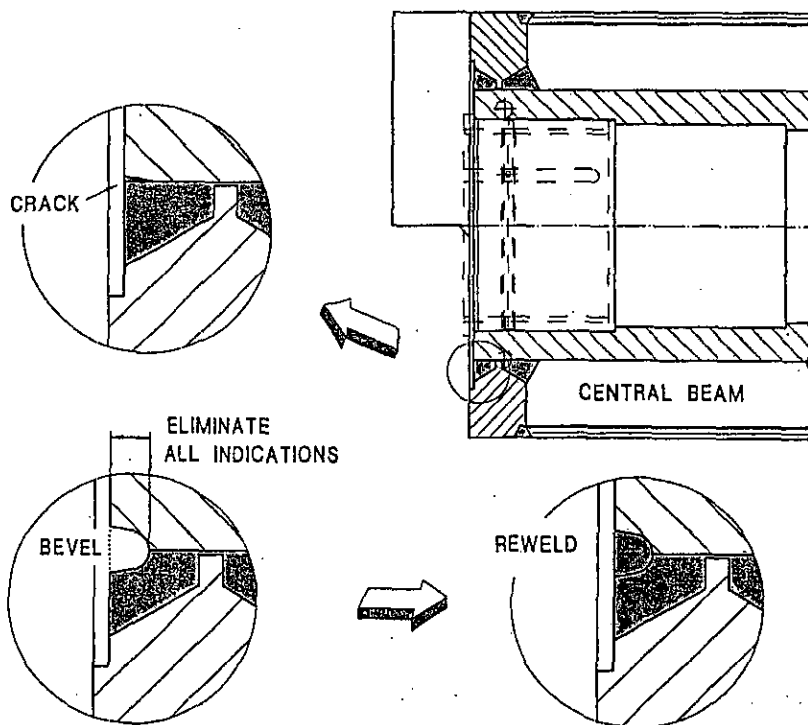
2.2 IMMEDIATE ADDITIONAL INSPECTION

- a) No immediate additional inspection is required for the Park who did carry out the inspection as indicated under paragraph 2.1 above within the last six months (e.g. inspection carried out during the annual maintenance as per the maintenance manual).
- b) For the Parks who did not carry out the inspection as indicated under paragraph 2.1 above within the last six months, an inspection in accordance with paragraph 2.1 above shall be carried out within 45 days.

3. INFORMATION TO THE MANUFACTURER

Bolliger & Mabillard shall be informed of any crack found. Vehicles presenting cracks shall not be operated.

A repair can be conducted according to the following instructions:



1. Eliminate the crack by grinding and prepare the bevel as shown.
2. Preheat at 180 - 200 F°
3. Reweld the root using TIG process.
4. Liquid penetrant test after the first pass.
5. Finish welding using SMAW or GMAW.
6. Final NDT check.
7. Grind the surface flush using a gauge.
8. Touch up paint.