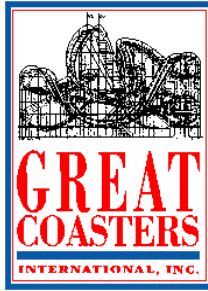


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Wooden Roller Coasters with a Twist

December 19, 2019

To Whom It May Concern:

Great Coasters is in the process of testing the more comprehensive chain retainer system that was introduced in Service Bulletin HL19103140. Thorough on-ride testing will ensure that clearances are maintained and that smooth train operation continues.

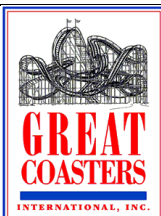
Thus, at this time, Great Coasters is temporarily suspending the mandatory nature of Service Bulletin HL19103140 and will send out any updates to Service Bulletin HL19103140 once the testing phase is complete.

Though the chain retainer portion of the bulletin is on hold, Great Coasters would like to reiterate the importance of the sections on chain inspection requirements. It is critical to perform both the routine visual chain inspections and to also measure chain elongation annually, logging these inspections for future reference. Please refer to the bulletin or your ride manual for the appropriate steps to measure elongation. Please note that if chain elongation exceeds 2%, your ride cannot be operated until the chain has been replaced.

Sincerely,

A handwritten signature in black ink, appearing to read "Clair Hain Jr.", written in a cursive style.

Clair E. Hain Jr.
President
Great Coasters International, Inc.



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Bulletin No.:	HL19103140
Release Date:	12/3/2019
Effective Date:	IMMEDIATE
Supersedes:	HL19021240
Completion Date:	Opening 2021 (will vary)

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SERVICE BULLETIN

Ride Manufacturer:	Great Coasters Int., Inc.	Affected Production Dates:	All
Ride Name:	Varies	Affected Serial Nos.:	N/A
Model Number:	All GCII Rides with Millennium Flyer trains		

Abstract of Issue:

This bulletin serves as an update and replacement for Bulletin HL19021240. GCII is mandating the installation of a revised chain retainer system that will reduce the risk of the chain leaving the trough in the case of a chain break. Updated chain inspection requirements are also included in this bulletin.

Reason for Release:

Excessive wear of the lift chain can potentially result in a breakage of the chain. Depending on the location of the break and the train's position on the lift, the chain may leave the trough, creating a potentially hazardous situation.

Action To Be Taken:

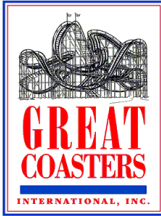
GCII requires the following:

- A revised Lift Chain Retainer (1161-2201) must be installed in accordance with the included drawing (1161-2200).
- Modified Chain Dog Mount Weldments (98083005L) must be installed on all Millennium Flyer trains.
- Inspection of the chain **must be added to your end-of-season checklist** and performed according to the updated chain wear section of this bulletin.

This modification must be completed prior your ride opening for the 2021 season. Lift Chain Retainers and Chain Dog Mount Weldments must be purchased from GCII; please contact for pricing.

Detail Of Issue:

Like the current retainer angles, the new chain retainer is installed via welds to the ARB angle. However, the major difference is that the new design provides continuous coverage along the entire length of the chain trough. Refer to Figures 1 and 2. This reduces the risk of the chain leaving the trough, and directs the broken chain down the trough to gather near the motor base or the lower idler.



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SERVICE BULLETIN

Ride Manufacturer:	Great Coasters Int., Inc.	Affected Production Dates:	All
Ride Name:	Varies	Affected Serial Nos.:	N/A
Model Number:	All GCII Rides with Millennium Flyer trains		

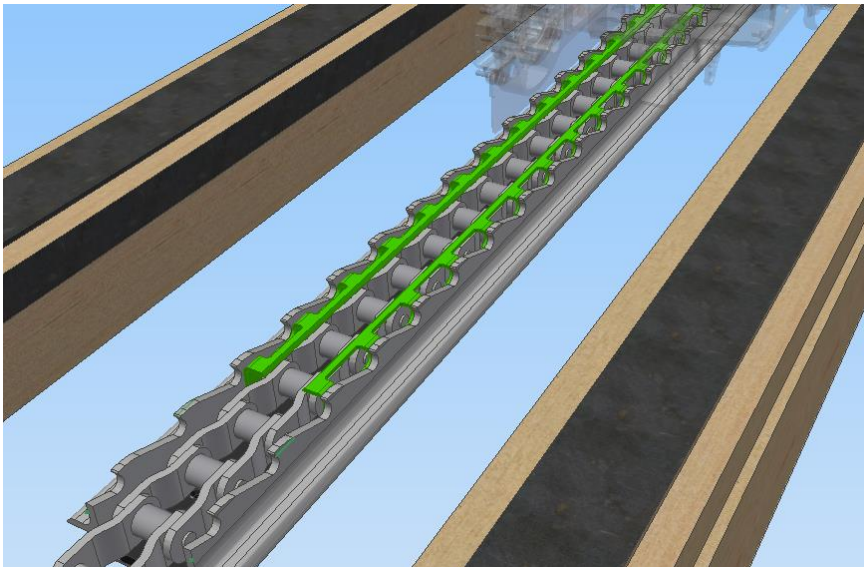


Figure 1: Render of new Lift Chain Retainer design

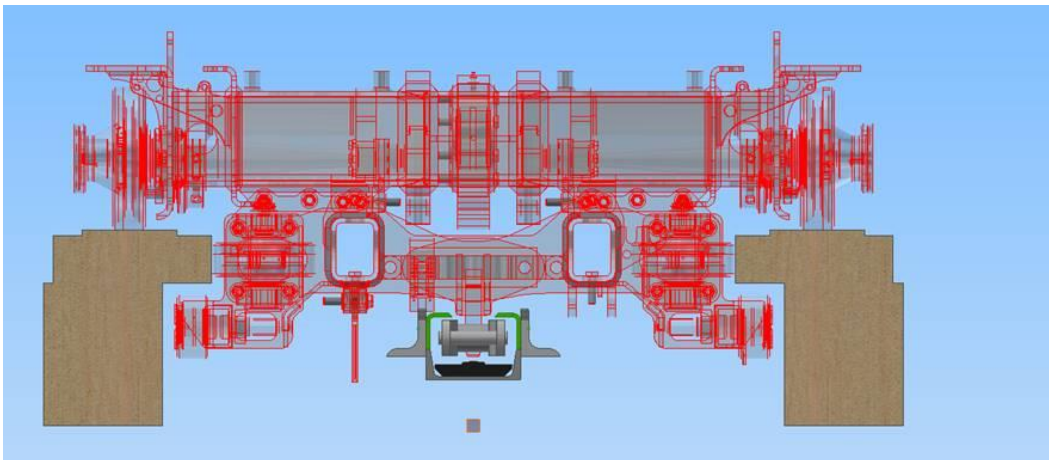
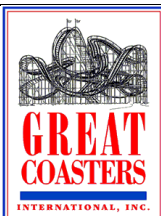


Figure 2: Cross-sectional view of new Lift Chain Retainer design



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The newly-designed Lift Chain Retainer (1161-2201) must replace the existing chain retainer angles (SP07060442) along the flat portion of the entire lift hill. This requires that the current chain retainer angles be removed before the installation of the new retainer. Please refer to Note 1 on the included installation drawing for more details.

Another critical note regarding this modification is that all Millennium Flyer trains must be outfitted with the latest revision of the Chain Dog Mount Weldment (98083005L). ***Old-style chain dog mount weldments cannot be run with the new Lift Chain Retainer in place, as they do not meet the updated clearance requirements.***

For complete specifications and installation measurements, please refer to the included installation drawing. (1161-2200).

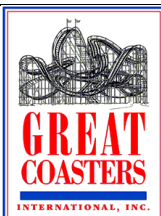
After installation, it is necessary to ensure that the anti-rollback dogs on the train are still properly engaging the ratchet steel for the entire length of the lift.

For your convenience, the Ride Manual section on chain wear is reproduced below with adjustments. Please add this page to your manual to replace your current chain wear section. Following these criteria properly will minimize the risk of the chain breaking.

Chain Wear:

After a while, the chain will wear and require replacement. When the wear (stretch) is between 1% and 2%, it should be replaced. To determine the chain wear:

1. Take approximately 10 feet [3 m] of existing chain and place in tension to get an accurate measurement.
2. Count the whole pitches in the roughly 10-foot section. There should be approximately 29-30 whole pitches in the section of chain.
3. Determine the original chain length by multiplying the number of pitches by the nominal chain pitch (4.063" [103.2 mm]). For example, 29 pitches multiplied by 4.063" equals 117.83" [2,992.8 mm].



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4. Measure the length of the same number of whole pitches in the section of chain being tested. The more accurate, the better. For example, the actual length of the 29 pitches may be 120" [3,048.0 mm].
5. Subtract the nominal length of the original chain from the length of the existing chain. For example, $120 - 117.83 = 2.17$ " [55.1 mm].
6. Divide the difference by the nominal length of the original chain. For example, $2.17 / 117.83 = 0.018$ or 1.8%.
7. This value is the chain wear. In this example, there is 1.8% wear, which is between 1% and 2%. The chain should be replaced.

The above calculation is only a guideline in determining chain wear. If there is any doubt or if confirmation is needed, the manufacturer strongly recommends returning a sample of chain to the factory for analysis and evaluation.

Per manufacturer's instructions, chain wear must never exceed 2%. ***If chain wear exceeds 2%, the ride cannot operate until the chain is replaced.***

Chain elongation inspection must be performed at the end of every operating season (annually) at minimum.

