



SAFETY ORDER

LEITNER POMA “X-Y” SHEAVE ASSEMBLY AXLE ADJUSTMENT BOLTS

No: SO-PR 2012-02

Date of Issue: September 13, 2012

This safety order is issued pursuant to section 31 of the Safety Standards Act. A person affected by this safety order may appeal this order in writing to the Safety Standards Appeal Board within 30 days. The appeal process is set out on the Safety Standards Appeal Board's website at <http://www.housing.gov.bc.ca/ssab/>.

Failure to comply with a safety order is an offence under section 72 of the Safety Standards Act.

Part 1: Details of Regulated Work or Regulated Product

This safety order is being issued in relation to (circle or highlight one):

Regulated Work – General	Regulated Products – General
Regulated Work – Specific Class	Regulated Product – Specific Class
Specific Regulated Work	Specific Regulated Product

This safety order supersedes safety order NO: SO-P4 110621 2 issued in June 2011. Safety Order NO: SO-P4 110621 2 has been rescinded.

This safety order, No: SO-PR 2012-02, applies to all Leitner Poma detachable above surface passenger ropeways.

It has been determined through consultation with affected operators and Leitner Poma of America (LPOA), in addition to BCSA's internal review, that the proposed solution to “X-Y” sheave assembly adjustment bolt failures identified in 2011 is not viable. Therefore; the installation of “X-Y” sheave assembly axle adjustment bolt safety kits proposed by LPOA is no longer required on the affected detachable passenger ropeway installations. New requirements to mitigate these types of failures have been identified and are explained in Part 2 of this safety order.

The paragraphs below explain the original safety risk identified by BCSA that prompted issuance of the former Safety Order

Incidents have been reported to the BCSA where “X-Y” sheave assembly axle adjustment bolts on Leitner Poma detachable passenger ropeways have failed. These failures typically result in a displacement of the sheave assembly axle resulting in the haul rope deviating from its prescribed path. In all cases thus far the haul rope movement is detected by the “cable position sensors” and the installation is stopped before a full deropement occurred. Three of these failures resulted in manual evacuations of the passenger ropeways affected. One failure has resulted in the bolt dropping to the ground potentially exposing passengers and persons underneath the lift line to injury or death. Due to the movement of the axle as a result of these failures there is potential for deropements to occur that could result in injuries or further damage to equipment.

BCSA performed an analysis which included consultation with the manufacturer, operators of the affected passenger ropeways and a metallurgical analysis of the bolts in question conducted by an



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independent engineering firm. The results of the analysis have prompted the BCSA to require passenger ropeway contractors to take the actions identified in this safety order.

All of the incident data accumulated by BCSA indicates that only detachable passenger ropeways have been affected to date; however if failures begin to emerge on fixed grip installations another safety order may be issued by the BCSA to address those installations.

Part 2: Requirement(s) of this safety order

All operators of LPOA detachable above surface ropeways must complete requirements 1 and 2 prior to operation for the 2012/2013 winter operating season.

1. Complete the detailed requirements identified in LPOA Service Notice No: 07262012. This includes detailed setup instructions of sheave assembly axles with respect to "X-Y" adjustment bolts, installation of new hardware where required and installation of 3040409 Axle Block Safety where required. A copy of LPOA Service Notice No: 07262012 is attached to this safety order.
2. Replace all existing 1 1/8" A325 Cut thread "X-Y" bolts. All of the A325 cut thread "X-Y" bolts must be replaced with an A325 class 2A rolled thread bolt. Any existing A325 class 2A rolled thread "X-Y" bolts that show signs of failure or potential failure must immediately be reported to a BCSA Safety Officer.
3. After the 2013/2014 winter operating season, a 10% sample rate of all A325 class 2A rolled thread "X-Y" bolts must be non-destructively tested utilizing the wet fluorescent magnetic particle inspection method performed by an appropriately certified test person. These tests shall be performed on bolts from sheave assemblies that receive the highest loads according to your "as-built" ropeline calculation or on sheave assemblies where previous failures of these bolts have occurred. Any bolts that show signs of failure or potential failure during testing must be immediately reported to a BCSA Safety Officer to determine if an increase in the sample rate is required on that particular installation. All test reports must be submitted to the BCSA prior to the 2014/2015 winter operating season. Subsequent to the receipt of the test results, BCSA may require further testing at a similar interval.

BCSA is aware of newer LPOA detachable passenger ropeway installations where an axle stop device and/or ASTM A325 bolts with class 2A rolled threads may already be in place. This must be confirmed by the manufacturer in writing and submitted to BCSA in support of your response to this safety order.

All affected passenger ropeway contractors must submit the attached response form to confirm completion of requirements 1 and 2 prior to the 2012/2013 winter operating season. The response form must be completed in its entirety.

Part 3: Details of Issue

This safety order is being issued to the following: All passenger ropeway contractors operating Leitner Poma detachable above surface ropeways.



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Part 4: Details of Ordering Safety Manager or Safety Officer – Please read following page

I certify that I am authorized to issue this safety order in accordance with section 15 (d) of the Safety Standards Act or that I have been delegated this power under section 15 (g) of the Safety Standards Act.

A handwritten signature in black ink, appearing to read "Jason Gill".

Jason Gill
Provincial Safety Manager –
Passenger Ropeways and Amusement Devices

Date: September 13, 2012



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Safety Standards Act:

Safety Orders

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- (1) To prevent, avoid or reduce risk of personal injury or damage to property, a provincial safety manager may, in writing, issue a safety order.
 - (2) A safety order may be issued to any person in relation to any of the following:
 - (a) regulated work or regulated products generally;
 - (b) a specific class of regulated product or regulated work;
 - (c) a specific regulated product or regulated work.
 - (3) For certainty, a safety order issued under this section may apply to
 - (a) regulated work that meets the requirements under this Act,
 - (b) regulated work that previously met the requirements under this Act or a former Act but does not meet the current requirements under this Act,
 - (c) regulated products that meet the requirements under this Act, or
 - (d) regulated products that previously met the requirements under this Act or a former Act but do not meet the current requirements under this Act, including a regulated product that bears a certification mark.
 - (4) A safety order may specify any requirement that is intended to prevent, avoid or reduce the risk of personal injury or damage to property and may include any of the following orders:
 - (a) that an existing regulated work or regulated product must be made safe in compliance with the safety order;
 - (b) that a regulated product must be
 - (i) disconnected from a power source,
 - (ii) uninstalled, or
 - (iii) modified before continued use;
 - (c) that a regulated product must be operated, installed, manufactured or disposed of only as specified or that a regulated product must not be moved;
 - (d) that current or future regulated work or a regulated product must conform to the terms or conditions of the order;
 - (e) that a person take or refrain from taking any action that a safety manager considers necessary to prevent, avoid or reduce a risk of personal injury to persons or damage to property;
 - (f) that the manufacturer make reasonable efforts to recall the regulated product.
 - (5) The provincial safety manager must give written notice of the safety order to the following persons:
 - (a) the manufacturer of the regulated product;
 - (b) an owner of the regulated product if the identity of the owner is known to the provincial safety manager;
 - (c) the person in charge of the regulated work.
 - (6) The notice must state the reasons for the decision and that the person has the right to appeal the decision to the appeal board.
 - (7) Despite section 54, a safety order may not be stayed during an appeal.

References:

Safety Standards Act

For more information on the British Columbia Safety Authority, please visit our website at:

www.safetyauthority.ca