Subject: CARRIERS ON BORVIG DOUBLE CHAIR LIFTS
• URGENT ACTIONS REQUIRED

Sent to: All passenger ropeways owners/operators, contractors in Scope 8 and consultants

1. Background

This safety alert is as a result of the investigation into potentially serious incident caused by the failure of the carrier on the Borvig double chair lift at a ski resort in Ontario. The failure of the carrier hanger at its connection to the chair frame caused the chair to fall on the ground. Fortunately, there were no injuries as a result of this incident.

Due to the seriousness of the incident, an independent professional engineer and the manufacturer/designer of the Borvig chair lifts were retained to determine the cause of the carrier failure, and the corrective measures to prevent this type of equipment failure from recurring.

Attached with this is the Service Bulletin Number 02-020899 dated February 9, 1999 issued by Partek Enterprises, Inc. to all owners/operators of the Borvig double chair lifts in Ontario. The Service Bulletin provides the information about the short and long terms corrective measures to maintain the safety of the Borvig double chair lifts.

2. Order to all owners/operators and contractors of passenger ropeways

The requirements of the enclosed Service Bulletin Number 02-020899 dated February 9, 1999 and issued by Partek Enterprises Inc shall be implemented immediately in the following manner:

2.1 Immediately remove from service all those Borvig double chair lifts having carriers, whose hanger is connected to the chair frame as explained in the Service Bulletin.

2.2 Before returning the lift to service for the remaining 1998/1999 ski season, all carriers on the chair lift shall be inspected for cracks, and the faulty carriers shall be either repaired or removed from service.

2.3 Prior to the 1999/2000 ski season, all carriers shall be equipped with new chairs, the sheave liners shall be replaced with the original equipment liners, and all rope grips shall be subjected to non-destructive testing for determination of their serviceability.

2.4 The modification of the chair lift as specified in the Section 2.3 of this Safety Alert shall constitute a major alteration. According to Section 11 of the Elevating Devices Act, the design submission for a major alteration must be registered and then the installation inspected by a TSSA inspector prior to the use of the lift.

2.5 Provide immediately in writing by fax at (416) 325 4320 to the attention of Marc Tevyaw, Acting Chief Inspector, the installation number of the chair lift affected by this Safety Alert.

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February 9, 1999

SERVICE BULLETIN NUMBER 02-020899

- ACTION IS REQUIRED -

TO: ALL OWNERS/OPERATORS OF BORVIG DOUBLE CHAIR LIFTS IN THE PROVINCE OF ONTARIO.

SUBJECT: CHAIR HANGER FAILURE

REFERENCES: ATTACHED PARTEK DRAWING

A failure of a double chair hanger at a Ski Resort in Ontario has been reported to Partek. The failure has occurred due to metal fatigue and the use of Urethane sheave liners. The failure area is indicated on the attached drawing.

We are aware that many operators of Borvig chair lifts have used after market replacement urethane sheave liners. These liners are not original replacements and should be removed from service as soon as possible, but no later than December 1999.

We have concluded that the use of urethane liners has contributed to the failure of the hanger. The urethane liners in use are much harder than the original rubber liners. Urethane does not have the natural shock absorbing qualities of natural rubber. The shock loads that occur each time a chair passes over a sheave assembly are dampened with the use of natural rubber liners. When urethane liners are used, the shock absorbing effect no longer exists and the shock loads are transferred to the rope grip and chair.

The other reason that has contributed to the failure is the age of the chairs. All of the affected lifts having these type of chairs are at least 25 (twenty five) years old. These chairs have come to the end of their service life expectancy.

SAFETY IS OUR PRIMARY CONCERN. On the advice of THE TECHNICAL STANDARDS AND SAFETY AUTHORITY we have issued this safety alert.
INSPECTION PROCEDURE

1) All chair hanger tubes, U-Saddles, fasteners and chair bail frames are to be visually inspected for cracks immediately and on a bi-weekly basis thereafter for the duration of the 1998/1999 season. This inspection is to be documented showing the date, chair number, result of inspection and the individual(s) performing the inspection.

2) Any chair assembly indicating a crack is to be immediately removed from service. Damaged or defective fasteners are to be replaced immediately.

TEMPORARY REPAIR

1) If any chair is found to have a crack, then all chairs on that lift are to be repaired according to the attached drawing. All welding to be performed by a certified welder using 1/8" 7018 electrodes. Once the weld has cooled, the weld is to be painted with one coat primer paint.

CHAIR REPLACEMENT

1) All double chairs of this particular configuration must be replaced with new chairs prior to the 1999/2000 operating season. Partek has a replacement chair for this particular grip configuration. We do not condone the use of chairs supplied by anyone other than Partek.

2) All Urethane sheave liners are to be removed from service and replaced with original equipment liners prior to the 1999/2000 operating season. Partek has these liners available.

3) We highly recommend that non-destructive testing be performed on all rope grips on lifts where Urethane liners are or have been in use. If independent testing firms are used, then Partek is to be supplied with the test results. Any rope grips showing indications are to be sent to Partek for final determination of their serviceability.

By: Hagen Schulz
President

Attachments: Double Chair Repair Drawing