

# Professional Ropes Course Association (PRCA)

www.prcainfo.org

## **SAFETY ALERT – StrandVise® Failure 2/2009**

### **PRCA Safety Alert / Technical Advisory Committee: - Safety Alert 2/2009**

The purpose of the PRCA safety alerts and technical advisories is to disseminate current and recently acquired information to the industry which will aid in the prevention of accidents on ropes courses. Where possible the PRCA will provide unbiased information related to the sequence of events, materials involved and root causes of accidents or near misses. When possible the PRCA Safety Alert / Technical Advisory Committee will make appropriate contacts as necessary but the committee does not intend to perform in depth investigations into incidents, we rely upon the information provided by our members, members of the industry and other industry associations, such as the European Ropes Course Association.

Please forward any questions or comments about this safety alert / technical advisory to [info@prcainfo.org](mailto:info@prcainfo.org)

### **StrandVise® Failure**

The PRCA has just become aware of a sudden in use failure of a StrandVise® on a zip line application in Australia. The StrandVise® had only been in place for approximately 8 years and had been inspected by a very reliable firm 5 months before the failure. At the time of the inspection there were no defects or problems visually discernable on the unit.

The unit was mounted to a through bolt with a back-up based on the cable continuing through the unit and terminated with an eye and rapid link back into the cable. The unit failed where the bail contacts the bolt therefore the back-up held and the user was not injured.

Fall Safe Australia had an accredited testing company perform testing on StrandVises® and reported that they were unable to rate the units as they all failed at varying loads. This confirmed the Fall Safe Australia, PRCA and MacLean Power System views that these devices do not meet the relevant requirements of our intended usage as primary restraint devices irregardless of the back-up system employed.

The Fall Safe Australia Urgent Alert (pages 1-3 of 6) is attached for your review. Pages 4-6 are copies of the previous ACCT responses to the June 2007 PRCA and manufacturer's advisory and has no direct bearing on the current notice or the Fall Safe Australia urgent alert.

### **RECOMMENDATIONS:**

Course owners and operators must seek alternate means of terminating zip line and belay cables utilizing StrandVises® and equivalent "dead end": terminations. It is recommended that the use of these devices be phased out in as prompt a manner as possible and replaced with appropriate systems. Many various alternative means of terminating cables are available and must be employed.

The PRCA has, since the original advisory, been working closely with an international cable termination/tensioner manufacturing corporation; this has resulted in the design and production of a cable tensioner/termination with a 92.4% efficiency rating of the cable strength, approved by the manufacturer for our industry usage. This product will be formally introduced later this month.

5/05/08

## URGENT ALERT



## StrandVise® HAS FAILED

In June & August 2007 the ACA was informed through postings by the Professional Ropes Course Association U.S.A. of an issue concerning the use of a StrandVise® device on challenge courses. This device is used as a part of a cable termination for one end of the cable on challenge course elements and should have a "back-up" in most situations.

With full knowledge of the report issued by the ACCT, Fall Safe Australia had discussions with members of the ACA regarding the concerns of the StrandVise®. The concerns raised by Fall Safe Australia in mid 2007 are as follows:

- The StrandVise® is **NOT RATED**
- The cable inside may have deteriorated and could fail at any time, but can not be inspected due the design of the device.
- The StrandVise® is being used in an environment that is **NOT INTENDED** for its original function.

At the time, no immediate action was implemented by the ACA to withdraw the StrandVise®, as there had been no reported cases of failure in Australia. However, the ACA agreed that Fall Safe Australia could offer camp owners the option to replace the StrandVise® with an alternative system (shown p.3)

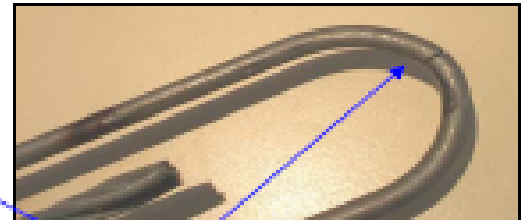
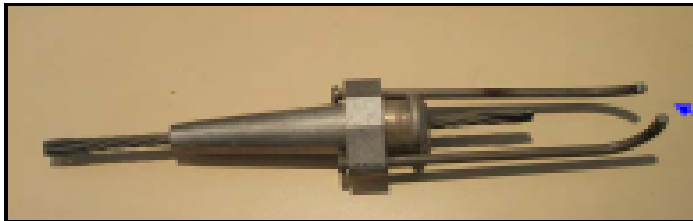
In September 2007 Fall Safe Australia completed an onsite inspection at Camp Curumbene and visually inspected the StrandVise® devices that were installed. At the time of inspection all devices were functioning.

However, on Thursday 21st February 2008 an urgent request was made to Fall Safe Australia, from this campsite, to repair a flying fox due to the **failure** of the StrandVise®.

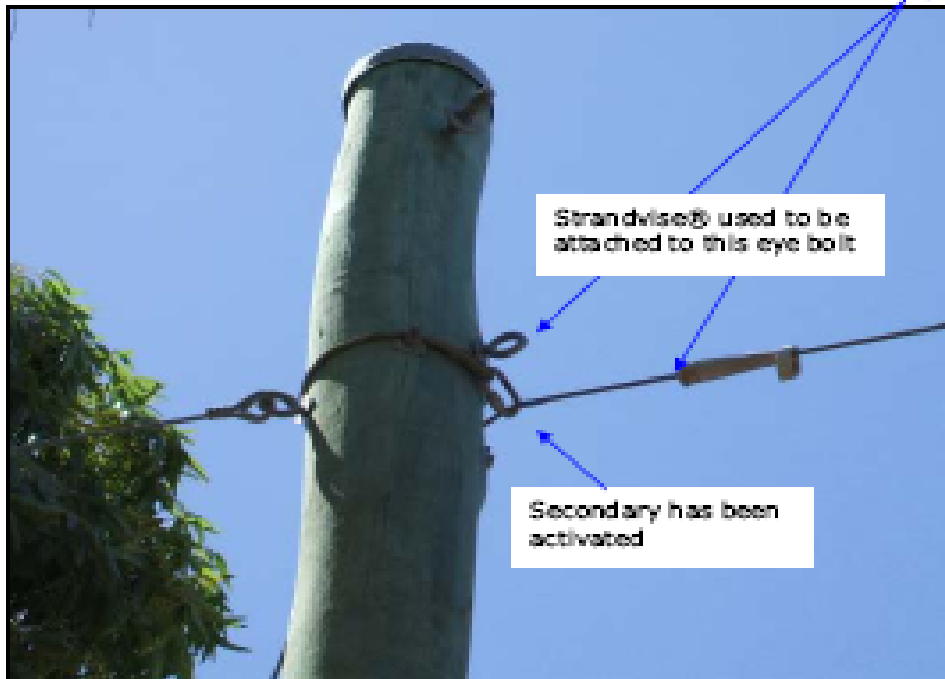
The camp owners were shocked and surprised at the failure of this device, but extremely relieved that the safety measures put in place by way of a backup system worked as intended.

Fortunately, in the case at hand, the child was not injured because the secondary attachment cable activated. Serious injury or death of this child was averted.





**FAILURE**



As is illustrated in the photo above, the attachment "U" ring has FAILED. Inspection (after failure) of the "U" ring found no previous cracking or fatigue marks around the fracture. The failed StrandVise® had only been in service for eight years.

Knowing the risk of having a StrandVise® installed, Fall Safe Australia ensure that when onsite, any StrandVise® devices installed are visually inspected. This failure is extremely disturbing as visual inspection is our only means of inspection for this device.

This implies that we can not determine the structural integrity of the StrandVise® "U" ring.

The ACCT (USA) statement of 7 August 2007 states that "it would be prudent to ensure that any StrandVise currently in use on a course is properly backed up in compliance with the 6th Edition of Challenge Course Standards (and relevant Australian Standards) or replaced with an alternative system."

Alternative means of terminating these cables are available and **MUST** be employed.

Fall Safe Australia's view is that these items **MUST** be replaced where they are being used as the primary restraint device for Flying Foxes, and also **MUST** be replaced where they are being used as a primary restraint device on the Safety Belay Cable for High Ropes Courses.

Without issuing a PANIC, Fall Safe Australia recommends that all StrandVise® devices are phased out, and replaced by Fall Safe Australia with an appropriate system as shown below.



#### **LOAD TESTING RESULTS**

In early 2008 Fall Safe Australia employed ACE Mobile Load Testing Services 1800 731 377, an independent, NATA accredited Load Testing facility to test some StrandVise® devices in order to determine their rating and failure points.

The results were very disturbing.

The load testing facility was unable to achieve any consistent results. The StrandVise® devices should have been able to withstand the same load applied at each test. This was unachievable as they all failed at different load ratings. This confirms our view that these devices could not have not been rated and do not meet current relevant standards for their use as a primary restraint device.

If you have a challenge course (or a single element) using this device, it is recommended to contact Fall Safe Australia or your preferred challenge course inspector to ensure that your element conforms to the relevant standards.