

Professional Ropes Course Association (PRCA)

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SAFETY ALERT – Wire Rope Failure ERCA 1/2008

PRCA Safety Alert / Technical Advisory Committee: - Safety Alert ERCA 1/2008

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

Wire Rope Failure

In January of 2008 the European Ropes Course Association issued an advisory regarding wire rope (cable) failure. These failures occurred in situations where zip lines were attached to trees utilizing a wrap method and wire rope clamps (no bolts) in line with accepted industry standards. Additional clamps had been affixed on each side of the tree to assist with preventing the cable from slipping down. The wire ropes broke where they entered the clamps. Although there was no additional information available this appears to be a situation where the cable was allowed to rotate or bend at a fixed point.

RECOMMENDATIONS:

Wire rope life is related to the type of cable utilized, termination methods, movement at fixed or friction points, amount of participant use, ropes course location (environmental concerns) and specific ropes course application.

- Use only wire core cable, of appropriate design and strength for the intended application and in accordance with applicable standards.
- When utilizing wire rope clamps utilize the manufacturer recommended torque only. Applying a torque above the recommended level may compress and damage the wire rope creating a weak point and potential failure. Applying a torque below the manufacturer's recommendation may allow wire rope slippage, pinching / excessive tension between clamps and potential failure.
- Regularly inspect the wire rope for damage, deterioration, excessive corrosion. (e.g. 3 broken wires within a length equal to six diameters of the cable, 10 broken wires over the entire length of the cable, reduction in diameter of 10% are all reasons for replacement).
- Pay special attention to continual or heavy contact points: bolts, wraps, points entering and exiting terminations, any fixed point where cable has independent movement, exit point of gravity brakes (this area receives the most contact and generally is the lowest point on the cable collecting moisture), etc..

The full text of the ERCA advisory is available as a download or may be viewed at:

<http://www.erca.cc/cms.php?id=732&lng=english>