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TECHNICAL COMMITTEE MEMORANDUM TCM 02/06

Wild Counry Technical Friend with broken stem Incident ref: 02/05/L.WIL

SUMMARY

This flexible friend broke after repeated flexing of the stem.



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1. INTRODUCTION

Whilst climbing the owner of this fleible friend tried to place the gear and felt a scratch from the wire of the friend. After completing the route he checked the friend and found several broken strands of wire on the stem. He then repeatedly bent the stem backwards and forwards for about a minute during which more wirestrands broke and then the whole stem snapped.

The cam has never suffered a leader fall.

The owner also says that he had noticed some sticking of the trigger over the preceding year and put this down to a need for lubrication.

2. ANALYSIS

The stem of the friend is stamped 8W, which (according to Wild Country) indicates the device was made in August 1988.

Visual examination of the fracture surface revealed no sign of corrosion. The fracture occurred next to the soldered end of the stem.

As the sewn sling of the device shows marked discolouration due to ageing, it was decided to see how this may have affected the sling. Its strength was 12kN.

3. DISCUSSION

It seems likely that the age of this device contributed largely to this failure. The friend was over 13 years old when it broke. Repeated bending of any metal can result in fracture, and it appears likely that for a considerable period prior to failure some of the wire strands were broken. The repeated flexing of the stem then resulted in fatigue failure of the stem. This is more likely to occur near one of the terminations of the wire as the radius of bending is reduced.

The instructions now given with friends state that the device should be discarded if there is any signs of broken wire strands. They also advise that the devices are checked every 3 months for any defects.

The sling probably started life with a strength of around 25kN, so a reduction of around 50% over 14 years is to be expected (thanks to AP for this)

4. CONCLUSIONS

Climbers need to remember to check ALL their equipment on a regular basis, after all their life may depend on it. Climbers should also note that if they notice faults with any of their kit they should check it as soon as possible, not wait for it to break. Attention should be drawn to page 21 of the BMC Care and Maintenance booklet.

The manufacturer has asked that we point out they recommend

“that climbing equipment with metal components is considered obsolete after 10 years and textile components after 5 years”