CANYONING AND RELEASABLE ABSEIL SYSTEMS TESTING CAMPAIGN

January 2021

For a better understanding, this document should be read in conjunction with **video «Testing Campaign: Canyoning and Releasable Abseil Systems»**.

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CANYONING AND RELEASABLE ABSEIL SYSTEMS TESTING CAMPAIGN January 2021

Appendix to chapter 2 "Testing Campaign: Canyoning and Releasable Abseil Systems"

Equipment used: Figure 8*

Description of the Releasable System Used	Figure 8 block: **Locked off with half turn**	Figure 8 block: **Locked with half hitch on a bight**	Figure 8 block: **Knot through small hole**	Figure 8 in suspension: **Suspended by the big eye**
Phase 1 Releasable Systems' ability not to slip during a persons descent	✗	●	●	✗
Phase 2 Ability to release system under load	●	✗	●	✗
Phase 3 Ability aid a swimmer	●	●	⚠ Limited functionality	✗
Phase 4 Reasonable force needed to release system	●	●	●	●

Phases 1 and 2 were conducted with two different type B ropes; Beal Spelenium 8.5 mm unicore and Beal Aquaram 9.6 mm.
Phase 3 used Beal Aquaram 9.6 mm rope.
While Phase 4, was tested with the rope Beal Spelenium 8.5 mm Unicore.

***Material tested using the recommendations use of technical canyoning manuals in the dates of 20 January 2021.**

CANYONING AND RELEASABLE ABSEIL SYSTEMS TESTING CAMPAIGN January 2021

Appendix to chapter 3 "Testing Campaign: Canyoning and Releasable Abseil Systems"

Equipment used: Pirana 2*

Description of the Releasable System Used	Pirana 2 Blocker **Assembly: 2 bars**	Pirana 2 Blocker **Assembly: 1 bar**	Pirana 2 Blocker **Assembly: 0 bar**
Phase 1 Releasable Systems' ability not to slip during a persons descent	●	●	●
Phase 2 Ability to release system under load	●	●	●
Phase 3 Ability aid a swimmer	✗	●	●
Phase 4 Reasonable force needed to release system	●	●	●

Phases 1 and 2 were conducted with two different type B ropes; Beal Spelenium 8.5 mm unicore and Beal Aquaram 9.6 mm.
Phase 3 used Beal Aquaram 9.6 mm rope.
While Phase 4, was tested with the rope Beal Spelenium 8.5 mm Unicore.

***Material tested using the recommendations of use provided by the manufacturer at the time of 20 January 2021.**

CANYONING AND RELEASABLE ABSEIL SYSTEMS TESTING CAMPAIGN January 2021

Appendix to Chapter 4 «Testing Campaign: Canyoning and releasable systems»

Equipment used: ATKD*

Description of the Releasable System Used	ATKD blocker **Assembly: 1 bar**	ATKD blocker **Assembly: 0 bar**
Phase 1 Releasable Systems' ability not to slip during a persons descent	●	●
Phase 2 Ability to release system under load	●	●
Phase 3 Ability aid a swimmer	✕	●
Phase 4 Reasonable force needed to release system	●	●
Other limits	⚠ Careful not to unintentionally realise lock	⚠ Careful not to unintentionally realise lock

Phases 1 and 2 were conducted with two different type B ropes; Beal Spelenium 8.5 mm unicore and Beal Aquaram 9.6 mm.
Phase 3 used Beal Aquaram 9.6 mm rope.
While Phase 4, was tested with the rope Beal Spelenium 8.5 mm Unicore.

***Material tested using the recommendations of use provided by the manufacturer at the time of 20 January 2021.**

CANYONING AND RELEASABLE ABSEIL SYSTEMS TESTING CAMPAIGN January 2021

Appendix to Chapter 5 «Testing Campaign: Canyoning and releasable systems"

Equipement used: Figure nine*

Description of the Releasable System Used	Figure Nine: (According to the instructions manufacturer in line the 20 January 2021, i.e without half hitch lock)	Figure Nine (suspended from anchor): (According to the instructions manufacturer in line the 20 January 2021, i.e without half hitch lock)
Phase 1 Releasable Systems' ability not to slip during a persons descent	✗	✗
Phase 2 Ability to release system under load	●	●
Phase 3 Ability aid a swimmer	✗	✗
Phase 4 Reasonable force needed to release system	●	✗

Phases 1 and 2 were conducted with two different type B ropes; Beal Spelenium 8.5 mm unicore and Beal Aquaram 9.6 mm.
Phase 3 used Beal Aquaram 9.6 mm rope.
While Phase 4, was tested with the rope Beal Spelenium 8.5 mm Unicore.

***Material tested using the recommendations of use provided by the manufacturer at the time of 20 January 2021.**

CANYONING AND RELEASABLE ABSEIL SYSTEMS TESTING CAMPAIGN January 2021

Appendix to Chapter 5 «Testing Campaign: Canyoning and releasable systems"

Equipment used: Double-eight*

Description of the Releasable System Used	Double-eight in suspension **Joker Set Up**	Double-eight in suspension **Disengagaeable Set Up**
Phase 1 Releasable Systems' ability not to slip during a persons descent	✗	✗
Phase 2 Ability to release system under load	●	●
Phase 3 Ability aid a swimmer	✗	✗
Phase 4 Reasonable force needed to release system	●	●

Phases 1 and 2 were conducted with two different type B ropes; Beal Spelenium 8.5 mm unicore and Beal Aquaram 9.6 mm.
Phase 3 used Beal Aquaram 9.6 mm rope.
While Phase 4, was tested with the rope Beal Spelenium 8.5 mm Unicore.

***Material tested using the recommendations of use provided by the manufacturer at the time of 20 January 2021.**

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Appendix to Chapter 5 «Testing Campaign: Canyoning and releasable systems"

Equipment used: HMS*

Descriptif du système debrayable	HMS: **Italian Hitch + Half hitch+ Stopper knot**	HMS: **Italian Hitch + Lock**
Phase 1 Releasable Systems' ability not to slip during a persons descent	●	●
Phase 2 Ability to release system under load	⚠ Passed the test but Half hitch difficult to undo when under maximum	●
Phase 3 Ability aid a swimmer	●	⚠ Passed the test when using a large HMS but failed when using a small HMS
Phase 4 Reasonable force needed to release system	⚠ Passed the strength test but important to make sure the rope does not release unintentionally – borderline suitability	●
Other limits	⚠ Difficulty to control speed when using ropes of small diameters – Use BOTH hands when lowering	⚠ Impossible to take in slack

Phases 1 and 2 were conducted with two different type B ropes; Beal Spelenium 8.5 mm unicore and Beal Aquaram 9.6 mm.
Phase 3 used Beal Aquaram 9.6 mm rope.
While Phase 4, was tested with the rope Beal Spelenium 8.5 mm Unicore.

***Material tested using the recommendations of use provided by the manufacturer at the time of 20 January 2021.**

CANYONING AND RELEASABLE ABSEIL SYSTEMS

Appendix Chapter 8 «campaign of tests: Canyoning and releasable systems»

Limits and rospects for use of descenders as Releasable System in abutment

While the Releasable System is in use, it's important to remember the rope is likely not to remain stationary, thus causing your belay device to twist and rotate into a potentially dangerous position.

In addition, it was observed that the karabiner connected to the belay device can also twist and rotate.

This could happen when a person is descending the rope or when the system is released and in lowering mode. Consequently, the devices braking ability could be affected or, conversely, could cause a blockage during lowering.

Performance of Certain Belay Devices

During testing, karabiner rotation was observed on the following belay devices: Oka, ATS, ATK, Hannibal, Nomad, Hoodoo, Criter 2.

Oka ATS ATK Hannibal Nomad Hoodoo Criter 2

It's important to note, that the test showed devices that are intended to be used with specific karabiners (for example, the Pirana 2 and ATKD) rotation physically cannot occur. Thus, the above-mentioned dangers are averted.

Pirana 2 ATKD

Conclusion

These tested showed the importance of correctly pairing your belay devices of choice with it's associated karabiner to avoid the potentially dangerous rotation and twisting when rigging a releasable system.

Incorrect pairing that subsequently does not prevent the rotation of the karabiner is strongly discouraged when using as part of Releasable Abseil System.

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Appendix Chapter 9 «campaign of tests: Canyoning and releasable systems»

Focus on: New methods to overcome failings

Equipment used: Figure 8*

Description of the disengageable system	Figure 8 Block **Locked With Full Turn**	Figure 8 Block **Slip knot on the stem of device**
Phase 1 Releasable Systems' ability not to slip during a persons descent	●	●
Phase 2 Ability to release system under load	●	●
Phase 3 Ability to aid a swimmer	●	●
Phase 4 Reasonable force needed to release system	●	●

Phases 1 and 2 were conducted with two different type B ropes; Beal Spelenium 8.5 mm unicore and Beal Aquaram 9.6 mm.
Phase 3 used Beal Aquaram 9.6 mm rope.
While Phase 4, was tested with the rope Beal Spelenium 8.5 mm Unicore.

***Technical Evolutions devised and tested by the French Federation of Speleology, the CREPS Montpellier, CREPS Vallon-Pont-d'Arc and ENSA, and approved by the French Mountain Federation and of the escalation and the Federation French of Alpine and Mountain Clubs**

CANYONING AND RELEASABLE ABSEIL SYSTEMS TESTING CAMPAIGN

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Summary






	Figure 8 Block						Pirana 2 in abutment			ATKD in abutment		Figure9		Double Figure Eight suspended		Big karabiner/ HMS suspended from anchor	
												In abut-ment	Sus-pended				
	Figure 8 Key capped by a half	Key braided strand soft	Mule knot on small eye	Suspen - from the big eye	Key fairy Tour full on the body of eight	Key Looped on the Body of Eight	2 aws	1 aw	0 aw	1 aw	0 aw	Keyless of blo- cage node of mule	Keyless of blo-cage node of mule	Joker montage	Mounting dual de-brayable	Half capstan + Node of mule + knot stop	Double half capstan + key
Phase 1 Releasable Systems' ability not to slip during a persons descent	✗	●	●	✗	●	●	●	●	●	●	●	✗	✗	✗	✗	●	●
Phase 2 Ability to release system under load	●	✗	●	✗	●	●	●	●	●	●	●	●	●	●	●	◆	●
Phase 3 Ability aid a swimmer	●	●	◆	✗	●	●	✗	●	●	✗	●	✗	✗	✗	✗	●	◆
Phase 4 Reasonable force needed to release system	●	●	●	●	●	●	●	●	●	●	●	●	✗	●		◆	●
Other limits										◆	◆					◆	◆

These tested showed the importance of correctly pairing your belay devices of choice with it's associated karabiner to avoid the potentially dangerous rotation and twisting when rigging a releasable system.
Incorrect pairing that subsequently dose not prevent rotation of the karabiner is strongly discouraged when using as part of Releasable Abseil System.
Check the rating of securit e « disengagement to claw ».