



Report: UIAA Training Standards Seminar 11-13 September 2012, Lagunillas / CHILE

Attendees:

The seminar was attended by delegates from Europe, South America and North America:



Darío Arancibia (FEACH), Felipe Gonzalez (FEACH), Steve Long (BMC/MTUK), Claudio Melchiorri (CAI), Christian Frischknecht (SAC), Pedro Calderon (Costa Rica), Ron Whitehead (ENEQ), Gabriel Porti (FEDME), Jordi Magriña (FEEC), Alberto Bechet Perez (FEACH), Sergey Vedenin (RMF), Mike Galbraith (ACC). [Other individuals also joined for one or more days, including Fernando Millar (FEACH)].

Summary of workshops

Unfortunately the delegates from Argentina cancelled their visit shortly before the start of the seminar so the attendance from South America was limited to Chile and Costa Rica. The group had mixed skill levels with rock climbing vs. basic mountaineering, so although the topics were mainly examined at “Train the trainer” level, some of the rock climbing sessions also included basic instructor/leader issues.

Day 1: the first day commenced at the club hut at las Lagunillas with a session comparing notes on considerations for equipping crags, including the issues about bolting raised by the Mountaineering Commission's Trad/Adventure climbing values working group. The delegates then transferred by foot to a small volcanic crag about 2kms downhill from the accommodation. This is a partially developed abseiling site comprising three areas equipped with bolt stations on top. This allowed the group to examine the crag's potential for development as a teaching site for climbing as well as to discuss various aspects of teaching abseiling as a climbing activity. The consensus was that the site had very limited potential for climbing due to the generally poor quality of the rock. However it prompted discussion about the amount of cleaning justifiable for a crag; some new developments take days of cleaning in Chile. Some felt that no amount of cleaning could ever make this crag safe because of erosion leading to more debris threatening most of the lines. A couple of areas were agreed to provide safe working zones and the group compared teaching methods for single and group abseiling sessions. It was generally agreed that group abseiling sessions sometimes bear very little resemblance to a climbing session and so the use of specialised equipment such as maillons and caving descenders may be appropriate for suitably trained staff, while for group abseil an anchor system that is releasable under load is normal practice though not essential.



Day 2: The group travelled SE to Baños Morales: this was an ideal site for examining issues relating to the Andean snow pack, as a north-facing slope with multiple aspects and angles was immediately accessible from the road leading towards a hot springs. Some of the issues were further developed in a practical seminar at the Ed Hillary Outdoor Pursuits Centre in New Zealand and have been incorporated into this report to widen its scope.

Sub-groups compared teaching progressions for walking on snow with and without crampons, and with and without an ice-axe and/or walking poles. The groups then "compared notes". Important teaching points for working with novices included:

- Choose work zones carefully (check hazards above and below).

Walking skills:

- Introduce basic walking skills as soon as possible, and consolidate regularly.
 - Practise skills on both left and right sides, up down and sideways.
 - For novices a pole in the lower hand and axe in the upper hand can help teach good posture for walking

- Teach defensive walking mode (pole plant, 2 steps, repeat) as a good “fall-back”
- Good role modelling by the leader when walking has considerable influence
- Steps: kicking a platform using “sawing” action of stiff boots, sloped inwards
- Cramponing: flex ankles and tilt knees outwards when traversing to maximise spike utilisation.
- Ensure that people are protected from spikes (axe and crampons).
 - Axe strapped to sack can be a hazard, particularly for eyes
 - Avoid leaving sharps (axe, crampons etc.) at bottom of a workslope.
 - Introduce safe way to carry axe and poles when walking
 - Walking pole in downhill hand can help novices learn correct posture
 - Walking pole wrist loop generally more hazard than help
 - Ice axe wrist loop is generally a hindrance but avoid letting go...!
- Snow melt during the day makes walking laborious both in the Andes and New Zealand
 - Being organised enough for an early start (and finish) is important for quality teaching days
 - On Andean snow a light dusting of dust/grit/lichen on the surface delays thawing slightly and often provides firmer footing for longer.
 - Beware melt near boulders
 - Use natural features (e.g. subtle variations in angle and aspect can hold shade longer and be firmer underfoot).
 - If the snow can be reached quickly, try to introduce step-cutting and cramponing while the snow is still firm
 - Cramponing in soft snow can be counter-productive and lead to torn trousers and trips
- Cutting steps is a useful leadership skill, but best practiced in context (firm snow).
 - “stepping through” requires skill and balance, so for novices two parallel lines of steps is easiest for a diagonal ascent
 - Pay particular attention to a good platform for direction changes
- Show the snow who is boss! Novices tend to be too gentle when hacking ledges etc - a good exercise in its own right to dig a safe platform to stand in.

Fall arrest:

Ice axe braking. There was some discussion over the effectiveness of the vertical stab and grab to stop a slip. Certainly it is essential to grab the shaft as low as possible.

- Inertia is your friend and enemy. Don't let speed build up.
 - Effective braking needs to be automatic. Practice regularly
 - Make sure that students understand that if they slip, fast action is essential
 - Allowing speed to build up in exercises may give wrong impression
 - “Bi-lateral transfer” – practice with pick in different hand each time!
 - Teach braking feet and head first, on back and on front
 - No crampons for practice! Many ankle injuries have been caused by crampons
 - Good body posture can be coached by braking without an axe. However, using feet to brake can reinforce bad technique (leading to crampons breaking ankles)
 - A platform at the top of the slope with a groove for hooking toes to set up for practice slides.
 - For headfirst slides, consider helping novices by a judicious push so that they can “feel” the initiation of rotation.
 - Careful organisation for sessions.
 - Prepare one or two slide lines, with ascent line on outside of slope.

- Soft snow may require some digging and also multiple slides to work.
- A poor site may be improved by constructing a platform/hump at base
- Avoid placing gear below slide
- Probably best to remove glasses and perhaps contact lenses (easily damaged/lost)

Snow anchors:

The snowpack varied enormously according to exposure to sun, and most anchors were unreliable when tested with a heavy shock loading.

- The most effective anchor was a “bucket seat” used in conjunction with a snow anchor
 - Need to ensure that there is no slack in the rope between the anchor and the belayer
 - A waist belay is the most effective system for belaying climbers, allowing a “soft catch” by letting some rope slip through and gradually bringing a slide/fall to a halt.
 - Avoid climbing on the wrong side of the belayer – otherwise the rope can tear free of the belayer in the event of a fall.
- Horizontal axe belay: needs to be buried at least a fore-arm’s depth. Try to find a firmer layer to butt the axe against.
- Really soft snow can often be improved by trampling firm and then leaving for a few minutes to re-freeze, then constructing the anchor in this snow.
- Snow stakes: the best information currently available on this subject can be found online at:
<http://www.mountainsafety.org.nz/assets/images/Snow%20Anchors0705.pdf>

The conclusion of this article is as follows:

“There are many snowstakes in use currently that would not be strong enough to handle the upper end loads that a snowstake could be placed under. Some of the techniques that are in use at present such as, not disturbing the snow in front of an anchor in any circumstances or putting multiple pieces of equipment in close together or having the point of the V to load when building a mid clip anchor do not let the users derive the maximum strength from their placements. I am fairly sure that a lot of users do not have a good understanding of the strength of the snow anchors they are using and are probably over estimating the holding power of the anchors they are building. I think that because snow anchors do not come under the upper end of the loads they could be subjected to (6 kN to 10 kN) very often, that catastrophic failures are infrequent with users.”

“However I would think that there are many people who are operating very close to the failure limits of their snow anchors without realising that.”

- Deadman anchor. The modern style with angled edges rather than a flat plate is more reliable. The plate needs to be placed at an angle of 40° to the snow – beware icy layers below, which can deflect the plate instead of allowing it carve further downwards. When well placed, this was the most effective anchor in soft snow. As with all snow anchors involving burial, attention should be placed to ensuring that the slot for the sling or wire is narrow enough to provide a strong wall for the anchor to rest against and deep enough to avoid a “threshold” that levers the anchor upwards when loaded. A deadman anchor should tunnel further into the snow when heavily loaded.

- Snow shovel: this proved to be almost as effective as a deadman anchor when used with an opened cordalette – each end is fed through the small hole near the corner of the blade, and then looped around the shaft. In this photo Sergey Venedin demonstrates this technique, tested successfully in Russia. The shovel is buried at a similar angle to a deadman (40° to slope) and snow piled in front of the handle.
- Other possible anchors in soft snow include anything bulky: rucksack, timber, skis etc.



Crevasse Rescue

The group also practiced and discussed crevasse rescue methods. Various principles emerged:

- With any demonstration it is best for observers to wait until the end of the demonstration before questioning details – unless there is an over-riding safety concern requiring urgent intervention.
- Rescue techniques are best understood in context: with a full body-weight on the end of the rope.
 - Back-up with independent anchors
 - When possible equalise at least 2 anchors for the hoist.
 - Tests with a load cell demonstrate (the counter-intuitive fact) that the loading on the anchor is reduced when hoisting with a 3:1 pulley system (pulling away from the crevasse) relative to the static loading. This means that once the load is successfully transferred to the anchor, hoisting does not create a dangerously high additional loading.
 - For novice alpinists consider postponing 1:1 rescues. A team rescue is more realistic for Alpinists until operating as an independent pair. The simplest system is for the person who holds the fall continuing to belay while the other member(s) come in closer (sliding a prusik to eliminate building up slack).



Day 3: this was held at el Manzano, where there are extensive escarpments of volcanic rock; several of which have been developed for climbing; mostly sport climbing but also with some routes requiring leader-placed protection. The group split into pairs to sample several climbs and then re-grouped for debriefing.

- For leaders and instructors it is important to be able to appraise the qualities of a crag

for teaching purposes. For leaders, ease of use is an advantage, whereas for instructors it is good to have features that are less than ideal or even problematic, in order to teach judgement and how to overcome limitations.



- An aspect of instructing that prompted considerable discussion during both the seminar and subsequently during moderation visits is management of the approach to crag tops. As a general principle, all participants, including instructors and assessors should be wearing harnesses, allowing the rapid deployment of slings and daisy chains for self protection. Wearing helmets is also normal practice though some discretion is allowable according to risk assessment – low risk of head injury = low need for helmet.
 - For some sites (for example some of the el Manzano crags) it may be advisable to set up a fixed line along the back wall of a ledge system. For logical consistency either all or none of the personnel involved in training or assessment should be clipped to the line. During a subsequent assessment session considerable discussion was prompted by a situation where all group members other than the novice climbers were attached to a safety rope. Whether or not this constituted a hazardous situation is open to debate but it is certainly inconsistent.
- Various methods for teaching belaying to novices were discussed.
 - For introductory sessions with a “team-building” emphasis, the “bell-ringing” system is popular, whereby one student is attached to the belay rope by an Italian (Münster) hitch. One or more students handle the belay end of the rope to safeguard the climber, usefully occupying at least 3 students for each line of rope.
 - For novice climbers the use of a belay device is an important skill, and various coaching methods were discussed, prioritising the key component of the rope being held in the locked position (maximum friction) for hand changes.

- Some federations include an introduction to basic rescue situations within training for single pitch instructors. Careful attention should be paid to preliminary considerations - problems can be solved at most single pitch venues by lowering the climber to the ground, so good judgement and risk management are more important than optional Counter-balance rescue technical skills. Where access to more serious small crags is included within remit, more complex skills may be advisable, in particular simple hoist evacuations and counter-balance abseils.



Counter-balance rescue

- Be wary of using specific gadgets (e.g. gri gri) to facilitate rescues since the instructor may become too reliant on the device and not be able to improvise if for example the device is dropped. Abseil rescues using a “Y-hang” from a belay device, and counter-balance rescues were discussed as techniques in wider use for single pitch environments.
- For novice climbers care should be taken to allow a good chance of success. This means that climbs of UIAA grades 2-4 are desirable on a crag and well-worth seeking out - all too often the easier lines are ignored when developing a new crag.

Steve Long October 2012

Appendix 1: sketch map of locations

Localidades de montaña cerca de Santiago

Federación de Andinismo de Chile



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Appendix 2: Flyer for Seminar

Date	Schedule	Activities
Sep 10th 2012	14:30 17:30 18:30	Transfer- Santiago (FEACH) San Alfonso Introduction with seminar participants Dinner
Sep 11th 2012	08:00 10:30 13:00 13:30 17:00 18:00 19:00	Transfer San Alfonso - Lagunillas Introduction and activities Lunch Teaching crag development and climbing activities End of Mountaineering and climbing activities Presentations Dinner
Sep 12th 2012	07:30 08:30 10:00 13:00 13:30 16:00 17:30 19:30 20:00	Breakfast Transfer to Baños Morales Basic skills and progressions for snow and ice Picnic Snow anchors, basic rescue etc. End of Mountaineering and climbing activities Transfer to Lagunillas Presentations Dinner
Sep 13th 2012	08:00 09:00 10:00 13:00 13:30 17:00 (or..) 17:00	Breakfast Transfer to el Monzano Teaching sport climbing End of Mountaineering and climbing Activities Closing lunch Transfer El Manzano - Santiago (FEACH) Prepare for accreditation visit

Appendix 3: Seminar Programme Program



Fecha :	Del 12 al 14 de septiembre
Lugar :	Baños Morales, Cajón del Maipo, Santiago, Chile
Programa	<p>Martes 11 Desplazamiento Santiago - Baños Morales</p> <p>Miércoles 12 Apertura Presentación del training standards UIAA Trabajo de terreno</p> <p>Jueves 13 Charlas expositivas Trabajo de terreno</p> <p>Viernes 14 Trabajo practico Cierre Regreso a Santiago</p>
Temas	<p>Escalada Técnicas de base y avanzada</p> <p>Montaña Técnica de base y avanzadas Ejemplos de maniobras de rescate</p>
Transporte	Incluido
Valor Refugio	<p>Refugio lo Valdés, www.refugiolovaldes.com Opción 1 : U\$ 50 (incluye desayuno), Opción 2 : U\$ 30 (incluye desayuno) (Llevar de saco de dormir)</p> <p>Refugio ROD, www.lodgeiovaldes.cl Opción 1 : U\$ 20 Opción 2 : U\$ 4 (camping)</p>
Cena	<p>Opción 1: Desde U\$ 9 hasta U\$ 24, Refugio lo Valdés Opción 2: U\$ 6, LOD</p>
Contacto	info@dt-feach.cl

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