What's So *Super* About a Supervision System?

Ground Control to Major Tom
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Take your protein pills
and put your helmet on

Space Oddity, David Bowie

The belayers asked me if I wanted a turn, so I had a go – it beat standing around watching. They tied me on just as they had been taught and I climbed the ladder and walked the beam. Then I hit a problem. I had to trust a 15-year old novice belayer to lower me to the ground and, after two major ground falls in my falling career, I've lost my mojo.

Fortunately for me, she had a backup belayer. But I wasn't sure the backup was any use, paying attention as he was to his social calendar while he fiddled with the dead rope. So I asked him to change his position and get a grip, and they both did fine with their ground control.

However, the reality of committing my fragile body to these novice belayers led me to reflect on the supervision and technical systems we place so much faith in. Maybe we have what the psychologist Daniel Kahneman calls systematic errors or biases – received wisdom that isn't really so wise?

The Tui Ridge incident

Not so long ago, a participant being lowered from Tui Ridge Park's high ropes course was dropped a few metres to the ground, causing a back injury. The operator was prosecuted and ordered to pay $86,000 in fines and reparation.

The investigation found there was a weight imbalance between the belayer and the 'climber', resulting in the backup belayer lunging forward to hold the belayer down and possibly dropping the rope while the belayer held the belay device open.

WorkSafe didn't question the equipment but found that staff were inadequately trained and there was inadequate supervision of the participants.

What is supervision?

The good practice guidance on supervision in the High Wire and Swing and the Indoor Climbing Activity Safety Guidelines (ASGs) focuses on establishing a system where staff and participants operate safely. This requires analysing various factors such as the level of risk involved, the complexity of the task, the participant and staff competence, and the number of participants and staff.

This analysis then determines when we allow participants to operate safety-sensitive tasks and how they do it. In other word, we need to ask ourselves:

1. W*hat could go wrong here that would be really bad?*
2. If it did, *How would we respond to prevent it?*
3. And, *Would we actually be able to do that?* For example, are there enough of us, in the right places, at the right times, with the right skills?

If we decide that participants will belay one another, we must then decide whether we'll use direct supervision, proactive indirect supervision, or reactive indirect supervision. The High Wire and Swing ASG details the factors that should be considered when choosing a supervision system. If we decide we need to supervise directly, we must ensure staff are close enough to participants to physically intervene and manage risks should they develop.

Furthermore, this system needs regular review as Mark Smith from Horizons Unlimited observes, particularly given that the participants he sees are younger than they used to be only a few years ago. What works for big kids may not work for little kids.

So, supervision requires a broad view. Important as the ratio of instructors to participants is, it's just one part of a much larger picture.

Role playing

Belaying on high ropes courses owes much to Project Adventure procedures, which designate three roles: *a primary belayer, a backup belayer,* and *a rope manager*. To that list they may add *an anchor role* – someone to hold down the primary belayer when there's a weight imbalance with the *climber,* although there are other ways to manage this.

In practice, operators often instruct the backup belayer to be a rope manager as well. There are no prizes for guessing which role usually takes precedence. The fiddly task of looking after the dead rope is as good a distraction from belaying as you could get, and many operators are reviewing whether they have a reliable system.

Fight, flight, or freeze

In his article *Four Ways to Drop Your Climber* (NZOIA Quarterly, July 2015), Dave Brash writes from his long experience instructing rock climbing. On assisted belay devices, he notes that there is a high chance that humans' *fight, flight, or freeze* reflex will kick in and the belay device will be held open, although he points out that there are some automatic devices that do lock at full speed in the lower mode, and counter the freeze reflex.

Interestingly, Dave also observes that in all his years instructing, he hasn't had a bad experience with a 'manual' belay device such as an ATC, where the reflex action jams the brake on.

Have we got ground control?

It may be important to designate an *anchor* role on occasions, but the priority should be to get the primary belayer underneath the focal point. Some instructors tie the belayer down as in indoor climbing good practice unless, of course, they need to move horizontally with the climber.

However, the major concern in the wider sector is how the backup belayer functions. The role could work if they were on their knees (lower than the primary belayer's belay device), faced the primary belayer's brake hand, held the rope in both hands with both thumbs forward, ignored the dead rope, and paid attention all the time. That's a big ask of many participants.

Consequently, senior instructors like Mark Smith from Horizons Unlimited and Liz Penman from Project Adventure sometimes expect backup belayers to use a prusik, especially novice belayers. Lindsay Main, coach of aspiring sports climbers, resorts to using a second belay device, arguing that it makes no sense to introduce another system. These 'fixes' bring their own problems, notably difficulties lowering because the backup belayer's section of rope isn't weighted and won't run without being fed out.

Some operators choose even lower-tech options, such as wrapping the belay rope around a fixed, horizontal log or adding friction at the focal point. Maybe the simplest system of all is 'counterweight belaying' – attaching the group to the rope, and moving back and forward as required. These options are detailed in the High Wire and Swing ASG.

What's it all mean?

We won't manage ground control by focusing solely on the technical side.

First and foremost, we should review whether we've trained our novice belayers well enough for them to take on a task that is safety sensitive. If we're confident on that score, we should then review our overarching supervision system for which good practice is outlined in the ASGs, although they don't address belay devices in detail.

Good practice is always evolving, and possibly we've been lulled into a systematic error or bias by the high-tech belay devices on the market.

We need to step back and consider whether our supervision system is appropriate to the risk, and then decide on the technology we'll use to get the *super* back into supervision.

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