Belaying the Leader Unanchored

It's good to have your thoughts, beliefs, and practices challenged. The recent revelation that the climbing gym I frequent does not permit the anchoring of lead belayers has caused me to re-evaluate the practice. I went back through all of my climbing magazines and climbing books to research the topic of belaying. As always, when you carefully review a subject, you think you understand, you end up learning or re-learning many things that you knew, or thought you did.

The following represents all the references I came up with on the subject and the Newsgroup postings and emails I received in response to posting the question to as many climbing discussion groups and organizations as I could find.

Literature References on the subject of belaying a climber

Advanced Rock Climbing by John Long and Craig Luebben
Page 95 Belaying the Leader
Some rules are made to be broken: belay rules are not. In review, the belay rules are; never take your brake hand off the rope; stay alert and focused on the climber; have bombproof belay anchors and tie yourself in tight, in line with the anticipated direction of pull; …

Page 96 Stance
The belayer should always have a secure and comfortable stance. In extreme circumstances where good anchors cannot be found, brace your feet against a rock, sit your body in a depression, or wedge it in a crack to bolster the belay. …

Page 97 Suck it Up
Sometimes you want to take in rope if the leader falls, especially if the last protection is far below and he's in danger of decking. More than one life has probably been saved by the Edwin Moses belay, where the belayer sprints along the ground to take up rope and hopefully keeps the falling leader off the ground. …

Page 115 Belay Devices
Another word of caution: belay deveices perform only as well as you know how to use them, and a good belay is safe only if you observe the rules we've laid down. The belay anchor must be inviolate; always tie in taut to the belay anchor; get in line with, and anticipate the direction of pull; maintain ...

Page 130
Common mistakes
#3) The belayer stands to far from the base of the cliff, and gets yanked into the wall, adding slack in the lead rope, maybe injuring the belayer and possible causing the leader to be dropped. Stay close to the wall when belaying, or anchor to the ground.

How to Rock Climb by John Long 3rd edition
Page 111
The Belay
When you start a climb, remember to make sure the site is safe and if at all possible protected from rock fall, dropped gear, falling climber, etc. Ideally, the belayer should be located close to, if not right at the base of the rock; and always tied taut to the belay anchor. If there is any slack between the belayer and anchor, a long fall can jerk the belayer off his feet and thrash him around until he comes taut to the anchor. The rope meanwhile can be ripped from his hands, resulting in disaster. Every fall generates force in one direction - direction of pull. Always station yourself in a direct line between the direction of pull and the anchor. If you don't the force of the fall may drag you there anyway, and you might forfeit the belay - and the leaders life - during the flight. Remember ABC: Anchor - Belayer - Climber.

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This book contains a number of pictures and illustrations of belayers for lead climbers. Of these 2 depict unanchored belayers and 8 depict anchored belayers. Hanging belays are excluded.

The Climbers handbook by Garth Hattingh
Page 58
Direct Belays
Direct belays are given by putting the rope friction and force directly onto the anchor. This is done by lacing the running rope around a spike or through a carabiner attached, via a sling directly to the anchor point. In a direct belay the belayer is 'outside the system' and does not get pulled around by the falling climber, making it suitable for climbers belaying heavier partners. One advantage is that the belayer can easily escape from the system to affect rescue or help the other climber. A disadvantage is that the forces generated by a falling climber impact directly onto the anchor points which need to be correspondingly solid.

Indirect belays
Indirect belays are more usual. Here the belaying climber ties on to the anchor, and places the rope through a belay device attached to the harness. Any forces generated by the falling climber are transmitted to the belayer, which allows a lot of the shock to be dissipated before coming onto the anchor points. The disadvantage is that the belayer often gets pulled around, and it is more difficult for him to escape from the system if needed.

Page 61 Belayer Positioning
Drawing of belayer and climber. Footnote.
Note: These diagrams do not show the customary tie-ins, which should connect the belayer to the anchor.

Mountaineering The Freedom of the Hills by Graydon and Hanson 6th edition
This book dedicates an entire chapter of 28 pages to the subject of belaying. I have sited a few relevant passages but the chapter should be read in its entirety.
Page 130 Belaying
In its simplest form, a belay consists of nothing more than a rope that runs from one climber to another person, the belayer, who is ready to stop a fall. Three things make the magic work; a skilled belayer, a stance or an anchor to resist the pull of the fall, and a method of applying a stopping force to the rope. There are many ways to apply the force, a variety of stances, and many methods of setting up and tying into an anchor.

Page 150 Position and Stance
An advantage of belaying from an anchor is that the belayer's body is not subjected to the sometimes, violent forces created by a serious fall, so the belayer is less likely to be injured or lose control of the belay.
A small advantage of belaying from the body is the movement of the belayer's body under the force of a fall introduces a dynamic element that may somewhat reduce the forces on the protection and on the climber's body. What is often believed to be a significant advantage of belaying from the body is that the belayer may be able to adopt a stance so strong that little or no force goes on the anchor - and the anchor essentially becomes a backup. ... But in a situation where an extreme leader fall or a pendulum fall is a possibility, it's probably an illusion to think that the belayer can protect the anchor by maintaining a stance; whatever force goes on the belayer is likely to go, undiminished, onto the anchor.

Page 151 Position and Anchor
Your relative position to the anchor or anchors when belaying off of your harness is a relatively straight-forward matter: just make sure you are tied in as close as feasible to the anchors, with no slack, so that you won't be jerked about by a severe fall. ...

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Consider an upward pull first. In a severe fall, you as the belayer may be jerked sharply upward for a few feet, especially if you are much lighter than your partner. This can cause you to lose control and can result in injury if you are yanked up against an obstruction.

Page 156 Belaying in Sport Climbing
Much climbing today takes place on artificial rock and manufactured climbing walls, in gyms and outdoors, and on short routes in rock-climbing areas. …
Many sport climbers get into this activity as a kind of rock gymnastics, and they often have little interest in the equipment handling techniques that climbers must master. This can be a deadly kind of ignorance, because falls are extremely common in sport climbing where climbers are continually trying to push their physical limits. And the sport-climbing environment, which usually seems less threatening than that of longer, multipitch climbs, can induce serious complacency. …
Belaying without an anchor can cause problems. If you are belaying and standing well away from the rock or off to one side, the force of a fall - even a top-roped fall - can pull you sharply into or along the wall. You may not be injured or lose control of the belay, but the fall will certainly be lengthened - perhaps enough to make it a ground fall. … If you're belaying without an anchor, it's usually best to position yourself as nearly as possible directly beneath the anchor. Even then if you considerably lighter than your partner, you could be lifted upward by the force of the fall. …
The problems of unanchored belayer can be even more serious when the pitch is being lead instead of being top-roped, with the climber using pre-placed bolts for protection. If the bolts are in a straight line and a fall is taken on the pitch - after the first or second bolt - the force on the belayer can be considerable. As the belayer, you should stand as close as possible under the first bolt. And if your partner is much heavier than you are, you might insist on being tightly anchored. Or tell your partner to find another belayer. …
Remind yourself that even in seemingly benign climbing environments - with everyone having fun, pushing their limits, taking lots of falls without getting a scratch - all the basic climbing hazards remain, requiring constant attention to safety.

This book contains a number of illustrations of belayer's for lead climbers. Of these 2 depict unanchored belayers and 32 depict anchored belayers.

Rock and Ice, #95, Oct 99 - To Gri or Not to Gri, by Eric Coomer
…. During a fall, there is a possibility of the belayer being pulled into the first piece, which may keep the cam from locking.
To prevent this, the belayer should anchor in with a short leash. As a practical matter however, few sport climbers anchor this way. So get in the habit of checking the system and your immediate environment while you belay. Could you be dragged into a tree or the first bolt? Get and anchor. …
A recent study proved that it was possible to give a softer belay using a GriGri if the belayer "jumped" upward in anticipation of the fall. Under these circumstances, peak force measured with a GriGri was commensurate with Munter Hitch and figure-8 belays. This technique should only be attempted by a skilled belayer, and is usually practical only when belaying on the ground.

Rock and Ice, #98, Feb 2000 - Braking Power, How to Choose the Right Belay Device by Clyde Soles
Sidebar - Better Belaying, by Enga Lokey
… Make sure the belayer is in a safe position, where he can focus his attention on the climber's safety - not his own. Always locate the belay station out of the fall line if there is a chance a falling leader will hit the belayer. In many cases, it's a good idea to anchor the belayer even when he's standing on the ground.

'Rock - Australia's Climbing Magazine' (winter 1996), p.27.
In this article on belay set-up instruction it states: "When belaying the lead climber from the ground it is usual for the belayer to have an appropriately placed anchor to stop him or her from being dragged upwards should the leader fall. This provision might be overlooked in situations in

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which a fall will not jeopardize the belayer. If the worst-case scenario merely results in the belayer being lifted into the air, the absence of an anchor for the belayer may not be a major concern (as long as he or she is experienced enough not to let go of the rope in the process).

Rock Climbing by Don Mellor
Actually it is useful for a belayer on the ground to be tied to a bottom anchor. A falling climber can generate quite a bit of force, ... The bottom anchor isn't as critical as the top anchor (being supplemented naturally by the weight of the belayer herself). Most climbers use a single anchor point, one that needs to resist only moderate upward forces. Tying your belayer ensures she'll stay put but in the event of a fall, but it also prevents her from running if a loose rock is dislodged by the climber. It's crucial therefore, for the belayer to be stationed in a safe place, far enough to the side or back from the rock so that there's no risk of her being clobbered from above.

You'll see climbers, both in the gym and at the crags, belaying without tying themselves in. They can only do so if they are directly below the anchor. Otherwise they run the risk of being yanked over or pulled into the wall, losing control of the belay. As you start, take the more conservative approach and tie your belayer to the ground, either with the rope itself or by hitching the back of her harness to the trees or other anchor.

On Rope, North American Vertical Rope Techniques by Bruce Smith and Allen Padgett
Page 216
The belay needs to be positioned in line with the anchor and the climbers possible fall trajectory, or in-line with the first piece of protection. This is called the "ABC Rule". Anchor, Belay, Climber, all must be in a straight line (fig 4-9).

After a strong anchor has been set attach the belay device.

Page 221
There should be minimal distance between belayer and anchor point with absolutely no slack (fig 9-20).
...
The belayer must be positioned in direction of the anticipated fall or the point of the climber's last point of protection.

Page 224
The belayer should verify that his staging area is ready for belay:

1) Belayer properly attached to a secure anchor
2)
3)

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Web References on the subject of belaying a climber

www.petzl.com
http://www.petzl.com/FRENG/tech/techframe.html see **belaying** in the navigation frame

At a hanging belay, with nothing but air under your feet, you have no choice but to anchor yourself. **O**n the ground you may choose not to, but you should know that **belaying someone unanchored increases the risk**. Since even the shortest fall develops a force much greater than the average body can absorb, any belayer is relatively speaking a featherweight. That's why it's **particularly important to be anchored when belaying someone heavier than you**. Being aware your respective weights is part of smart belaying.

When climbers are roughly equivalent in weight, an unanchored belayer can be effective. Because then, if your partner falls, you can be active. You can play the role of shock absorber by standing away from the wall and moving foreword to reduce impact. But be careful of falls after the first clip; as you're propelled forward (or upward), your partner gets closer to the deck. In this case, stand closer to the base of the climb; you'll shorten the rope and diminish the risk of seeing the climber hit the ground.

Belayer safety
http://www.petzl.com/FRENG/tech/belay.html
Climbers talk a lot about protection for climbers, but to be safe, there has to be protection for both the climber and the belayer.
Belay the Belayer http://www.petzl.com/FRENG/tech/belay3.html
In many circumstances the belayer must themselves be belayed. It's particularly important to be anchored when belaying someone heavier than you.

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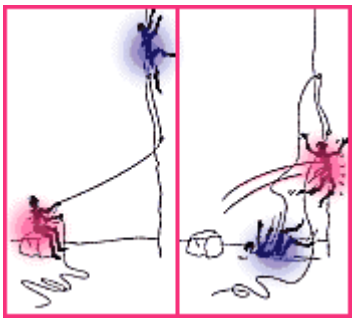
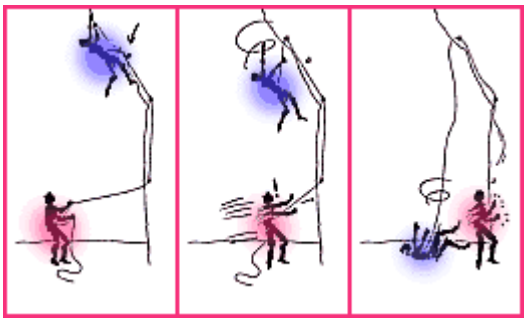
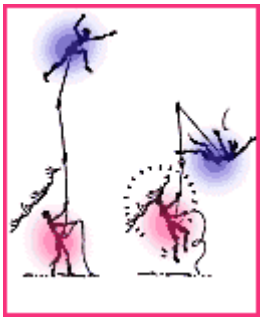
Relevant illustrations from the Petzlweb site







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Internet discussion forums responses
On the subject of belaying a climber

The following are responses to my post to various internet climbing discussion forums and climbing organizations

Original Post

My local climbing gym has just informed me that it is against their rules for a belayer to anchor when they are belaying a climber who is on lead. I find this difficult to understand or support. I've done some research in the climbing books I have and all the references seem to indicate the belayer should always be anchored. The same gym requires that all belayers for top roped climbers anchor in.

I have been climbing at this gym for 4 years and the question has only come up now because I out weigh my latest climbing partner by 65-70 pounds. I don't feel safe on lead knowing I can pop my belayer to the first bolt if I come off the wall. In fact my partner hates to anchor in but I insisted after a couple of these free sailing incidents got me to close to the deck for comfort. I routinely belay my partner unanchored because the weight difference in my favor makes it impossible for me to be pulled off stance should she fall.

I understand the arguments that an unanchored belayer can perhaps provide a softer fall for the leader. I don't think the risk of being pulled into the wall, smashed in to the first bolt, etc. justifies the increased risk.

I'd like to ask two things.

1) Is anyone aware of climbing articles, books, etc., which support either position?

2) Arguments pro and con against requiring the belayer to anchor.

Thanks
Carl Adams
Cincinnati, OH.

The responses I received provide some arguments from both sides, for and against anchoring the belayer. I have included all the responses I received, except two or three, which wwandered off topic or did not address the question.

Sydney Rockey (Australia)

John Croker on 13/03/2000 10:01:09 pm

To: Peter Monks@AsiaPac
cc:
Subject: Re: fwd: Anchoring the belayer in the gym

Total garbage - this is dangerous advice. Any belay giving the possibility of uncontrolled sudden

movement with consequent risks of losing balance, hitting walls, dropping the leader is more hazardous than being tied in place, with the debatable exception of the risk of being hit by a falling object e.g. in an avalanche zone. Unlikely to get avo'd at the gym.

I make a habit of tying on in all circumstances, including to the ground when on the first pitch, and get my seconds to do so when I lead.

Gravity never takes a holiday!!

From: Tim Davenport <toolman@lisp.com.au Date: Tuesday, March 14, 2000 11:18 AM

Carl,

Too right your smaller sized belayer should be anchored while belaying you! You've experienced first-hand the consequences of participating in such an imbalanced set-up, i.e. you plummeted back to the deck as he got pulled off the ground by your additional weight and momentum. This effect would be even more exaggerated on a fall where you are close to the ground with less rope to absorb the impact - the last place you want it to happen!

As for printed reference, see John Long's 'How to Rock Climb' (2nd ed., Chockstone Press), p.170. Unfortunately he's discussing top roping, but the same logic would apply (to a lesser extent) to leading. He says:
"Many times it is difficult to find an anchor at the base of boulders. If the angle of the rock is less than vertical, it is often unnecessary for the belayer to use one, though it is always desirable. The combination of stretch in the rope, friction on the top anchor, and the belayer's own bulk is often adequate if a ground anchor is unavailable. But if the angle is steep or there is a discrepancy in weights between belayer and climber, an anchor is useful, particularly for lowering climbers to the ground."

Also of use is the Petzl catalog (the one I've got is a 1995, but hopefully the 2000 edition would also include this-), which has many useful instructional drawings. In it under the section on belaying (p.57 in mine) is a series of drawings showing exactly the sort of accidents you want to avoid (LEAD belaying this time).

Also see 'Rock - Australia's Climbing Magazine' (winter 1996), p.27. In this article on belay set-up instruction it states: "When belaying the lead climber from the ground it is usual for the belayer to have an appropriately placed anchor to stop him or her from being dragged upwards should the leader fall. This provision might be overlooked in situations in which a fall will not jeopardize the belayer. If the worst-case scenario merely results in the belayer being lifted into the air, the absence of an anchor for the belayer may not be a major concern (as long as he or she is experienced enough not to let go of the rope in the process).

Aside from all this evidence, your own experience and common sense tell you that the imbalanced set-up you've been using is unsafe. Don't listen to the gym dudes if you know you're right and it's your arse on the line.

If the gym turds still persist in their unsafe rule and you would like photocopies of the above quotes, email me with your address and I'll post them to you. (Or if all else fails just lose 70lbs!)

Good luck,

Tim Davenport

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Alpine Club of Canada

---------- Original Message ----------
--
From: Alpine Club of Canada <alpclub@telusplanet.net> Monday, March 13, 2000 8:20 PM

Hi Carl,
I don't understand why your gym would have that rule. I don't think that there is anything anywhere saying that they can't make that a rule though. In my mind, for your safety, your belayer's safety and other people around it would make sense to be anchored in. Anyways, I don't make the rules, I have sent your message on to Dave Dornian (Chairman of the National Sport climbing committee) and he might be able to answer some of your questions. I don't know if the rules are a lot different from Canada and the USA, Dave would know all the rules for Canada. You may want to try contacting the American Alpine Club if you haven't already (303) 384-0110.

Cheers,
Shelley
ACC staff
---------- Original Message ----------
From: David Dornian <ddornian@agt.net> Tuesday, March 14, 2000 4:15 PM

Carl,

There are lots of books and articles that discuss the topic of anchoring versus not anchoring the belay in various situations. Try one of Craig Leubben's books, or search the Climbing Magazine back issues on the topic. Sounds like you've been exposed to most of the arguments for either side already. You should realize by now that there can be no definite prescription that can be safely applied in all belay situations.

Gyms like unanchored belayer's for a number of reasons - primarily because it's easier on the gear given the high fall-factor situations frequently encountered, and because a mobile belayer can more accurately tension and direct the rope and get out of the way of other climbers working nearby. If the belayer stands next to the wall, in line with the first clip, but out of the line of a falling leader, there should be no problem with being moved around in the case of a fall, even when there is great discrepancy in respective weights. Ultimately it's up to the climber, however. Don't proceed if you feel the route is improperly protected, or presents unreasonable hazards.

But go easy on your gym managers. They're the paid slaves of an institution, and have insurance policies, supervisors, and hordes of beginners that all want RULES about things. Don't you join the clamoring crowd.

If climbing was about rules, it would be tennis.
dD

David Dornian
Competition Climbing Committee chair
The Alpine Club of Canada

American Sport Climbing Federation

---------- Original Message ----------
From: <Mhurni@aol.com> Monday, March 13, 2000 7:26 PM

Hello Carl,

Belaying the Leader Unanchored

I appreciate your questions and understand your concerns. First off, with that much weight difference it is necessary for the belayer to be anchored. (I have the same situation and I hate to anchor in, but the falls come too close to the ground for comfort, and if you include the "human error" factor, I believe the risk is too high.)

If there were any information available, it would be through ORCA (Outdoor Recreation Coalition of America). Their phone number is: 303/444-3353, but I am unaware of their e-mail address. They have a subgroup called the "CGA, Climbing Gym Association" and I'm sure they have a general rule about this matter.

I hope I have helped. Take care and safe climbing!
Michelle Hurni
ASCF

---------- Original Message ----------

Rec.Climbing

From: Jonas Wiklund Monday, March 13, 2000 5:32 AM

If you belay someone on a steep well-bolted sport climb (1-pitch) or indoor, it is generally stupid to anchor in. In fact it is much safer to give a dynamic belay where you rush towards the wall and jump up when rope stretches. This gives much less risk for the leader to slam into the wall/cliff, and also much less stress on the anchors. Of course you have to use a Gri-Gri to do this and it is not a beginner routine by any means.

On vertical to slabby terrain, when the belayer is inexperienced, or weights 30 kg less then the leader, or the climb is minimally bolted, other rules certainly applies.

---------- Original Message ----------

From: Steven Cherry <steven@panix.com> Monday, March 13, 2000 9:27 AM

The softer fall is just one reason. The main reason, at my gym at least, is that it's important for the belayer to be able to move around, keep the rope in a good position relative to the climber, and so on.

Alternatively, add another low clip to your lead, which will add more rope drag to the system. Two horizontally level clips to start out is the norm at my gym for leading. If you don't feel safe you certainly shouldn't lead with that belayer.
-Steven-
<steven@panix.com

From: Fatty Monday, March 13, 2000 4:03 PM

Steven Cherry wrote:

Alternatively, add another low clip to your lead, which will add more rope drag to the system.

I'm sorry, Steven, but I have to laugh when you talk about rope drag while clipping bolts in a gym. I've climbed at some of the tallest gyms in the world and have never felt like rope drag was a problem. Compared to some of the drag-fests I've endured on trad routes, few outdoor sport routes come close, let alone a gym route.

Two horizontally level clips to start out is the norm at my gym for leading.

This makes it sound like your gym leads have a roof right off the deck. If that were true, I'd rather

be anchored. If you're not talking about a low roof, two level clips sounds a bit odd.

Fatty

From: Steven Cherry <steven@panix.com> Monday, March 13, 2000 8:50 PM

Steven Cherry wrote:

Alternatively, add another low clip to your lead, which will add more rope drag to the system.

I'm sorry, Steven, but I have to laugh when you talk about rope drag while clipping bolts in a gym. I've climbed at some of the tallest gyms in the world and have never felt like rope drag was a problem.

It's not a problem. The goal here is to introduce a little rope drag into the system.

Two horizontally level clips to start out is the norm at my gym for leading.

This makes it sound like your gym leads have a roof right off the deck. If that were true, I'd rather be anchored. If you're not talking about a low roof, two level clips sounds a bit odd.

Yes, steep and low overhanging walls.

-Steven-

From: Duncan Thomson Monday, March 13, 2000 9:49 AM

What gym? Let's have the specifics, please!

Obviously, it is unsafe for a heavy leader to climb with an unanchored light belayer. If you fall after the first or second bolt, you could easily have a mid-air collision with your belayer as she comes flying up off the ground, causing her to let go of the rope, whereupon you would both fall to the ground, possibly seriously injuring both of you when your 230 lb frame smashes down on top of her fragile 95 lb body.

Doh! Is this *really* a rule in your gym? Or is it just misinformation from some misguided gym employee?

Also, be aware that this is a sport-climbing habit, which you will have to unlearn when you get on a trad wall.

Duncan

From: GeoffCJ <geoffcj@aol.com> Monday, March 13, 2000 10:19 AM

I have to jump in and say that, just like anything, no rule is universal. I weigh @230 lbs. It's difficult for me to imagine any situation where my much lighter partners would benefit by not being anchored. When I fall, I fall, and I've had partners pass me, had partners end up with the belay device in my
first draw, etc....

when I lead, my belayer is anchored, and if a gym didn't let me, I wouldn't lead there.

Geoff

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From: Hardman Knott <hardmanknott@my-deja.com>: Monday, March 13, 2000 11:54 AM

I have personally been "decked" a few times by experienced lightweight belayer's in the gym, from as high as 30 feet. (Huge whippers are fun!) The rope still does its job and breaks the fall. However, it is fairly dramatic to see the climber on the ground and the belayer 7 to 10 feet in the air. I have occasionally skipped the first bolt for this reason when no one is looking. (Bad climber! Bad!) In a worse case scenario, the cam on a Gri-Gri could slam into the first bolt and open, with predictable results. But the climber would likely be gently touching down about this time due to rope stretch. (The belayer might get speed-lowered, though) Has anyone ever seen this happen?

I generally use ground anchors with belayer's who weigh more than 40lbs less then me. You can use a cut piece of rope, slings, or daisy chain to adjust the length so there is plenty of room for them to move around. I'm usually more worried about landing on the belayer's head than decking. It would be nice to have the anchors a little to the side to keep the belayer from being pulled directly into the line of the fall.

To ban ground anchors outright is about as reasonable as forcing belayer's to use Gri-Gris, to never skip the first bolt regardless of circumstances, never use a double-bowline tie in knot, etc. (Insurance companies know what's best for us, BTW)

Hardman Knott

From: John Kramer Monday, March 13, 2000 4:38 PM

The gym I climb at provides anchors but does not require you to use them. I think it is much safer and logical to use a little common sense and anchor or don't as you feel comfortable (I'd advise telling the gym staff as much). I personally do not anchor when I am lead-belaying in the gym but I'm 190lbs and even though my usual partner is 230lbs he has yet to lift me off the ground but I tend like to give a more dynamic belay because without it you can actually feel the walls shake when he falls. Outside I have used anchors when the belay station is on rather treacherous terrain or if my partner might be doing any extensive hang dogging. So like many things in climbing you should adapt your technique to your situation, and try to avoid the mind set of this is wrong or that is right.

John

From: Simone Monday, March 13, 2000 4:43 PM

It's within the rights of gym to put on any limitations it wants. Such is the nature of gyms -- it's not that tough to understand or support -- unless it goes against your usual way of doing things.

Simone

From: : Wednesday, March 15, 2000 1:31 PM
Subject: Re: belaying a lead climber unanchored

Dear Carl,
Fundamentally this discussion stems from the real question, "which: dynamic or static belay". Your gym probably wants to reduce the combined loads on its quick draws and tee nuts (perhaps even questions whether they could hold) and also to allow the belayer to manipulate the rope as he sees fit, for the benefit of the leader as he progresses upwards. As others have said, there are situations where belay anchors are needed and situations when they arguably are not indicated. Obviously you are speaking only of one-pitch climbs or the first pitch of a climb, although sometimes in gyms, multi-pitch routes are set to teach intermediates and beginners how to set up a belay station, belay from it, and break it down. To simply say, "anchors are always needed" is to deny (as others have concurred) a variety of issues that make up some situations

both indoors and outdoors. Up until belay devices became the universal accepted method of belaying, we belayed around our waists in what Richard Leonard called, the Dynamic Belay. Some slippage around the waist was required and expected in order to dissipate the kinetic energy of the fall, along with the stretch of the rope and the system friction. By eliminating the dynamic belay, of course the system has to become quite a bit stronger, and this issue is not only of interest to gym owners, but outdoor leaders on shaky protection which might rip out if the belay was thoroughly static. Further, by belaying only statically, the rope life is shortened.

It is my opinion that a gym should require anchors when the differential in weight of the two climbers is too great that the belayer will be really out of control when a typical fall takes place. However there may be other issues the gym is aware of, such as the strength of its tee nuts etc, that lead them to make this very unusual rule so you might want to actually speak to the owner or general manager and find out the origin of all t…**message terminated abruptly here, perhaps he went climbing**

Gorp

Sent: Monday, March 13, 2000 8:12 PM
Author: sandbag

I use the same system you described, outweighing my partner. Anchoring her belay is mandatory. We climbed a little in France, where they don't anchor the belayer for some reason I don't understand. After lofting her on a leader fall, to where we just about met in mid air, we decided to anchor the light belayer. I've heard of elite climbers getting lofted into roofs on belay too.

From: : Wednesday, March 15, 2000 12:01 AM
Author: Brandon Scroggins

I have a number of climbing partners whom out weigh me. There has never been a time where I wasn't secure as they were leading...to me its simply common sense! If it's against the gyms rules to have an anchored belayer...then they are waiting for a serious accident to happen, which at that time I'm sure they will change their minds, and rules.

REI

*Posted by **Jason Sasse** on **Tuesday, 14 March 2000, at 10:36 a.m.**, in response to Anchored while belaying, posted by Chuck Claude on Tuesday, 14 March 2000, at 7:51 a.m.*

I was in Colorado last summer and was belaying for someone lighter than me. (he was about 145, I was 175) When he came off, I kissed the rock and got hit by his fall. I understand the need to move for rope placement aiding your lead, but that's still possible if you leave some slack while setting up your anchor. That's my experience and I got the scarred knees to prove it.

Posted by ***Spyder*** on ***Tuesday, 14 March 2000, at 10:51 p.m.***, in response to *Anchor in*, posted by Jason Sasse on Tuesday, 14 March 2000, at 10:36 a.m.

The question of anchoring the belayer has no hard-and-fast rules. It depends on the circumstances.

The key is to remember that body weight alone is not the only factor in controlling a fall. Keep in mind that a falling body creates more energy the longer it falls. This energy puts an enormous shock-load on the protection system, which includes the belayer.

In a gym or during sport climbs (i.e., non-trad climbing), the chance for a long run-out (and a really long fall) is slim as long as you clip every bolt on the way up. Falling 5-6 feet may lift the

belayer off the ground if there is a significant weight difference, but the effect is typically controllable. Comparatively little energy is created by the fall.

Also, by not being tied into an anchor (if you're on the ground) you can help cushion a short fall or pull in slack by running away from the wall as the climber falls.

However, if you are trad climbing and there are long run outs (long distances between protection) there is a great chance for a high-energy fall. So, even if the climber is lighter than the belayer, the belayer will have to absorb a great deal of shock load due to the acceleration of gravity on the climber. The belayer may be pulled off his feet and into the wall.

Jason gives a good example of this. He was pulled into the wall and injured. This is minor incident since he walked away with only bruises and the climber survived the fall.

There have been numerous reported accidents where a climber is WAY up on the wall, takes a long whipper, and as a result, pulls the belayer HARD into the wall. The belayer released his break hand due to the shock (and possible unconsciousness) and allowed the climber to fall to his death. Not good.

Only experience will teach you the right time to anchor-in as a belayer, and when you don't have to. Climbing with more experienced climbers is a good way to start learning. Using an auto-lock belay device can also provide additional fall protection (a Petzl Gri-Gri, for example).

I hope this information helps. Be safe!

Spyder

*Posted by **Duane** on **Wednesday, 15 March 2000, at 4:32 p.m.**, in response to Falls and fall factors, posted by Chuck Claude on Wednesday, 15 March 2000, at 5:38 a.m.*

I don't use my Gri-Gri much at all, so maybe I just need more practice, but the one time I belayed a lead climb with it, I had to fight with it enough I decided it definitely was the wrong tool for the job. Anything that hampers the belayer ends up being an issue for the leader, who doesn't need any added challenges. Is anyone really using a Gri-Gri to belay lead climbs? How do you avoid locking up the device when changing directions of rope travel?

As for the issue of anchoring the belayer, leaving several feet of slack seems to be a pretty workable compromise. The belayer can move as needed, and in a fall, enough upward movement is available to add another second to the deceleration of the leader. Just remember to measure how much movement you want to allow so the belayer doesn't get jerked off the ledge (unless that seems like fun), into the flake, through the cactus patch, etc.

*Posted by **chuck claude** on **Thursday, 16 March 2000, at 5:53 a.m.**, in response to Gri-Gri for belaying a lead climb???, posted by Duane on Wednesday, 15 March 2000, at 4:32 p.m.*

You keep the rope from binding by (I kid you not) removing your brake hand from the rope, taking the other hand and squeezing the lock mechanism (which will lock it open) and forcefully pulling rope towards the climber, and then releasing the lock and putting your hand back onto the brake side of the rope.

Leaving some slack in the rope can be a bad thing. At one place where my girlfriend have climbed where gri-gris are used, we saw more people fall from nearly the end of a route to within 5 ft of the ground, because of that extra slack. It can also be a good thing if the climber is falling past an overhang, so they clear the overhang and not swing back into the lip.

Belaying the Leader Unanchored

Posted by: James Wells on March 13, 2000 at 21:30:19:

In Reply to: Anchoring the belayer posted by Carl Adams on March 13, 2000 at 17:32:14:

If the belayer is standing in a secure position (i.e. not belaying a second pitch, etc.), there are good reasons not to anchor. The "softer fall" has the substantial potential to reduce the chance of a piece of pro or bolt pulling, or other equipment failure. This is because the likelihood of a piece pulling depends considerably on peak load, and the more compressed the period of energy transfer, the more that peak load is.

My wife weighs much less than I do, and she often will anchor even for belaying me on lead. In cases where the belayer weighs much less than the leader, I think this is a reasonable approach. The main concern is that she will lose control of the belay while she is in flight. I climb with the full understanding that in some cases, this may increase the chance of a piece pulling (it's ok, because I'm just not that bold a leader).

If the belayer weighs anything close to the belayer's weight, it is better not to anchor, and simply get used to the chance of taking a ride as part of improving the overall safety of the belay.

Posted by: Frank Vlchek on March 13, 2000 at 22:00:32:

In Reply to: Re: Anchoring the belayer posted by James Wells on March 13, 2000 at 21:30:19:

If the belayer is standing in a secure position (i.e. not belaying a second pitch, etc.), there are good reasons not to anchor.

I've been in the situation when a seemingly secure position became unsecured, when the leader fell, due to rock movement or breakage. I'll tell you, the ride is surprising and not very pleasant. It may be ok in a controlled environment like a rock gym, but in the real world I'd vote for an anchor. Otherwise you might be getting the dedication in the book "Unsecured Anchors - A Belayer's Death wish"

Posted by: Jim Borden on March 14, 2000 at 09:43:06:

In Reply to: Re: Anchoring the belayer posted by Frank Vlchek on March 13, 2000 at 22:00:32:

Like most things, hard and fast rules do not apply regarding anchoring the belayer (other than on multi-pitch climbs, etc.). In rock gyms and outside in many situations, the versatility of a 'dynamic' belay can mean the difference between injury or not and/or gear pulling or not. The ability to move, for example, may allow the belayer to control a fall to a stop such that the leader does not slam into a sharp corner.

Of course, you have to use judgment and weigh the risk of a moving belay (rough talus, differential in weight of leader versus belayer, etc.) and decide for yourself. But, for the record I do not teach all but the experienced the subtleties of dynamic belaying.

As usual, the answer is "It depends".

Posted by: Jim Roberts on March 14, 2000 at 13:43:14:

In Reply to: Anchoring the belayer posted by Carl Adams on March 13, 2000 at 17:32:14:

The rock climbing gym I go to in Bettendorf, Iowa doesn't require an anchor, the rock gym in Bloomington' IL requires an anchor if you have a substantial weight difference. It depends.

Posted by: Ralph E. Powers on March 14, 2000 at 16:32:44:

In Reply to: Anchoring the belayer posted by Carl Adams on March 13, 2000 at 17:32:14:

Belaying the Leader Unanchored

Belayer's should always be anchored regardless of the size/weight differences between climber and belayer. Consider this, a 200 lb person falling 6 feet can exert over 2000 kn of force. You either better be VERY strong or secure. Might be that my numbers are wrong but testing has proven that these forces are in effect during a fall or at the moment of arresting/stopping the fall. Our ropes and equipment are usually rated very high in fall factor protection, taking this into account the belayer should always be anchored regardless of in or out of the gym. It's just plain COMMON SENSE and it sounds like the climbing gym has just simply forgone that.
My .02

Re: Anchoring the belayer

Posted by: **Tony Brocklebank** on March 21, 2000 at 18:32:40:

In Reply to: Re: Anchoring the belayer posted by Ralph E. Powers on March 14, 2000 at 16:32:44:

In practical terms the weight difference is not that important. Away from climbing walls, where the small number and relatively direct route of rebelays is a different matter, there will usually be enough friction in the rig to make weight differences irrelevant.

The practical answer is probably twofold, in some situations, i.e. belaying from above or from an awkward stance, anchoring makes sense, in others there'll be little point. In short anchor when you feel it's a good idea, don't bother when not, and don't wince when you get it wrong.

One poster mentioned belaying "out of the rig", i.e. anchoring a descender direct to the rock, leaving the belayer free to lock off, go the pub or whatever. Personally I think this is a much underrated and under used option, which most people never think off, especially for training. It is important to make sure the belay is bombproof, if not the belayer needs to be attached as well in case it fails.

Posted by: Justin Gleason 48217 on March 15, 2000 at 10:53:01:

In Reply to: Anchoring the belayer posted by Carl Adams on March 13, 2000 at 17:32:14:

I am a sport climber and a caver. I always find it better for the belayer to anchor off if the weight of the climber is greater than yours. I weigh 156 LBS and I belayed a person of 226 LBS. Yes he is BIG. I anchor in while I belay him so he doesn't suck me through a bolt or carabiner. When I cave I use a different technique. I pick a separate anchor point from the rappel rope and I set up a belay line with a descender. With a fig8 on a bite I connect it to the caver and set the rope on the descender. So I am not connected to the rappeller. I use a pair of gloves and feed him rope through the descender. Now if he falls I will lock up the descender stopping him/her. I still connect to something tough so I don't slip into the hole. Well mean wile "Climb Hard and Fall Infrequently" and "Cave Softly".

Justin Gleason
48217

Posted by: Jim Borden on March 15, 2000 at 12:37:55:

In Reply to: Anchoring the belayer posted by Carl Adams on March 13, 2000 at 17:32:14:

This discussion has been all over the place, the last suggestion being to ALWAYS tie-in. In the context of the original question, which is sport/lead climbing in gyms and outside, not tying-in can be far safer for the climber if leader falls are likely. Of course, the conditions have to allow for it (nominal risk to the belayer and an experienced belayer). As I said before, judgment should be employed to assure that the belayer is positioned properly and won't be dragged into an obstacle (or is not significantly outweighed by the climber). I can see this approach being used in technical

lead climbing in a cave also where leader falls are possible and a dynamic belay is preferred and safer. Again, use judgment. Applying hard and fast rules to unique situations is fraught with problems -- such as the statement to ALWAYS tie in the belayer. That kind of statement can be dangerous; fortunately, I see most folks who could use this approach safely learning it from the climbing scene rather than from a bunch of cavers. However, in any event, I do not advocate suggesting dynamic belaying to anyone who is not relatively experienced. I do not think I have taught any caver to use it and only have shown a few climbers.

Posted by: **Jim Borden** on March 20, 2000 at 11:39:25:

In Reply to: Re: Anchoring the belayer posted by Frank Vlchek on March 19, 2000 at 22:06:58:

A "real world' situation is when I am belaying a climber leading a difficult climb and a fall is possible/likely. If the climber takes a fall, I may either want to run toward the cliff or away from the cliff, depending on the situation. I may want to run toward the cliff if the fall is such where the leader may catapult into a sharp edge or crash into a ledge (not an unusual situation); I will be lengthening his fall but saving him from injury. Accordingly, running away from the cliff may shorten his fall, which may be advantageous in other situations.

Tying-in prevents the dynamic capability of a belay, which in some situations is desirable or even safer than s static (tied-in) belay. I, myself, leading on difficult rock has appreciated a dynamic belay, which has undoubtedly spared me from injury. Of course, most of the time, tying-in is appropriate also, usually on a ledge of a belay or on unsafe ground.

Leading in a rock gym is a good example of a place where dynamic belays can have their place and in many cases are safer. Again, the particulars of the situation play into the decision, whether indoors or outside (real world) -- novices should not even try it without some supervision. I would think a 'rule' of not tying-in would be enforced with some judgment (significant weight difference may be cause to want to tie-in). If you talk to the folks, they are usually flexible.

Also, bear in mind that a leader with several pieces of protection below him will not necessarily put an undo load on the belayer in the event of a fall, so weight is not always the determinant.

Jim Borden

Posted by: Frank Vlchek on March 19, 2000 at 22:06:58:

In Reply to: Re: Anchoring the belayer posted by James Wells on March 18, 2000 at 07:29:32:

My post was referencing the original question where the climber greatly outweighed the belayer. In the experiences I've had, the climbers outweighed me by 50 to 70 pounds. The reality is, even with redirection, if the secure footing you select breaks and you are not anchored, you better be quick of mind and quick on your feet (if there is room) or someone can get hurt. That being said, I probably should have used the words "natural world" instead of real world when comparing rock climbing to the artificial rock gym climbing.
: : : If the belayer is standing in a secure position (i.e. not belaying a second pitch, etc.), there are good reasons not to anchor. Can you give an example?

:

: The original context of the question was in outdoor climbing, where it is very often the case that the belayer is standing on more or less flat ground, and it is easy to evaluate the security of the location. This is especially true in the single pitch climbing found throughout the eastern U.S. In this case, there is considerable value to not being anchored. Once again, give an example of the value.

: I believe that the term "in the real world" is not a useful way to divide between scenarios

Belaying the Leader Unanchored

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In Reply to: Re: Anchoring the belayer posted by Frank Vlchek on March 13, 2000 at 22:00:32:

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I believe that the term "in the real world" is not a useful way to divide between scenarios, because it connotes that certain situations are more "real" or in some way better than others. Clearly both approaches have merit, depending on the physical situation and the experience of the belayer.

----------Solicited Opinions----------

Terry.Ferg@ejgallo.com on 03/13/2000 02:31:12 PM

Subject: RE: anchoring

The anchoring ban seems crazy to me. I think it should be personal preference. The gym already has climber sign agreements about danger and at your own risk. On most climbs I personally would rather have someone NOT anchored, preferring the softer catch. But you should consider the safety of both the climber and belayer. Generally an attentive belayer can crouch low, out of falling range, close to the wall (to help keep the falling climber from getting tangled in the rope), until the climber gets a few bolts clipped. Often it takes the third bolt to be clipped for the danger of decking/colliding to be avoided.

If the climber has traveled some distance there will be enough rope out to give a soft catch (unless the rope should be retired from leading) if the belayer is anchored or not.

Terry
