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## ACP- Carabiners

Posted by Treeman - 10/13/2005 10:14pm

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It wasn't long ago when carabiners were not recognized by ANSI for tree climbing use. Now they are. Praise the Lord!

So what is a standard for life support carabiners? Locking, yes? How many actions? We have single action (screw down or screw up!), double action, and triple action varieties. Ball lock, barrel lock, and maybe other types of which I do not know about.

What about non-locking carabiners? Would you ever choose to hang with one? What standard would you go by?

What about snaps? Do recreational climbers use snaps? What kind should be used? Should the only guide for snap use be in its strength rating?

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Posted by Leon - 10/14/2005 01:45am

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Peter, I believe that double locking and triple action mean essentially the same thing. The Sherrill catalog clarifies (or does it confuse it?) by calling these positive locking. These carabiners make two motions when automatically locking, for example the barrel slides down and twists clockwise. It takes three "actions" to open one of these (push up, twist counterclockwise, pull back the gate). The ball lock and barrel locks both fall into this category, as well as other more obscure mechanisms.

There are only two types of snap mechanism that I am aware of: locking and non-locking.

My personal opinion is that when used for life support, carabiners should be double locking, snaps should be locking, and both should be rated to a minimum of 22kn.

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Posted by Tom Dunlap - 10/14/2005 10:48am

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Double or auto locking are good terms. Why even consider using screw gate biners?

## Screw gates

Posted by Patrick - 10/14/2005 04:12pm

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Screw gates can and are being used safely by some tree climbers and I know of at least one camp that uses some screw gate biners for its tree climbing program. They have a rigorous policy of doing a "gate check" with ALL climbers, whether they are using screw gates or double locking. They do the "gate check" before and during a program, and it ends up being part of the mindset of the climbing participants.

When I purchased my own equipment, I chose to buy double locking biners, primarily because they are faster. But I certainly would have felt OK about buying screw gate biners from a safety standpoint. I have to do a gate check with my double locking biners, anyway.

Patrick

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## Double VS/ Triple action carabiners.

Posted by Treeman - 10/14/2005 07:02pm

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I have had a couple occurrences (years ago when double action carabiners were state of the art) when a branch rubbed against the barrel and the gate opened. It was a shocking experience to look down and see the gate open with a branch

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inside. This was during my tree working days, when contorted positions were common.

So should a triple action carabiner be advised for main life support? What should be said about manual screw locks? Gate Check! We still use a "gate check" at the TCI school so new students will look at their main tie ins from time to time.

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Posted by Tom Dunlap - 10/14/2005 10:27pm

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Checking gates should always be a normal thing. No question.

Unless I can read a study that shows that screw gate biners are better than double acting I'm not going to even consider screw gates for any climber support. I have used them occasionally for hanging my portaledge. In this application the biner is hung, checked and things don't change. Much different application than in a climbing system.

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### The first auto locking carabiners.

Posted by Treeman - 10/15/2005 06:56pm

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I was thinking about the first auto lockers(double action) - Wales I think. The twist and push gate versus the new push button, twist, then open gate (triple action). I am not much of a fan for manual lockers now, except possibly accessory uses.

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### Biners and links

Posted by Rocknroll - 10/15/2005 07:56pm

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I LIKE the screw links for the new climbers, it is not something they have seen especially the deltas, so they don't mess with them. Most have seen biners and a concept hopw they work CMC rescue LIKES the screw links for the non tri-loading factor. Also the visual look at the links can be spotted like a miss tyed knot. CMC rescue only uses screw gate biners, as safety checks are DRILLED into your whole safety factor. Auto lockers I like and use but gate check-check is a must for any system no matter what you use. I have seen and thrown away both screw gate and auto lockers when they don't work right. I have seen some auto lockers not lock right so check-check is must with the also.

check-check

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Posted by NickfromWI - 10/17/2005 01:11am

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The ropes course I work on uses screw lockers almost exclusively and I hate it. We also do a very thorough check before the climbers leave the ground, but I've had campers come back down with gates unlocked! The obstacles they face on the ropes course are not much different than the branches we climb. I avoid screw lockers at all costs.

Snaphooks- yes, rec climbers use them. I use them, at least. But again, I am a tree worker/rec climber hybrid, so maybe I don't count. But they should definately be allowed, as they are quite safe.

love  
nick

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### Worker/rec climber hybrid. Can I steal that?

Posted by Treeman - 10/17/2005 05:51pm

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I love language; especially tree climbing language. Can I steal that term? Maybe "climber hybrid" for short?

Those alloy locking snaps feel good in the hands and are safe. I believe the steel version is approved by the American Dental Association (smile when you throw). It is said you can cap one off if you bang your teeth. I have had that experience with a beloved alloy carabiner once.

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## RocknRoll. More please.

Posted by Treeman - 10/17/2005 06:10pm

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Tell us more about the visual look of a screw link. I personally like the feel of the machine tapered edges but I think you are seeing something I do not see. Please explain.

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## screw links

Posted by Rocknroll - 10/17/2005 07:59pm

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I am just talking about the delta and oval screw links. During checks the visual of the screw collar being all the way over the threads is just another safety factor as well as the hands on. We had one screw link get tight but a visual check showed the threads were not covered by the collar. It must have had a piece of TREE in the threads. :D

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## Speaking of screw links.

Posted by Treeman - 10/17/2005 08:45pm

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RocknRoll-Thanks for that clarification. How about this saying- "See threads- You's deads"! So here is a question along that line.

Should a wrench be used to screw down the screw link? Lock it down, so to speak. I think Sherrill catalog says do it (or is he talking about the clevis?). What do you all think about that? Has anyone seen a screw link, be it delta or oval, unscrew itself?

Should this be a usage standard? The old addage- "screw down so you don't screw up."

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Posted by NickfromWI - 10/17/2005 10:04pm

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In my use, a screw link that will be opened later that day does not get wrenched. If it's a more permanent attachment, it get's the pliers (or allen wrench, etc)

love  
nick

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Posted by Leon - 10/18/2005 12:46am

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I have never had a screw link come unscrewed once tightened, even when only hand tight. For long term use I do use a wrench on them, though. I feel that they are safe to use as attachment points.

Screw gate carabiners are another story. When I started climbing that's what I used and I was always have to rescrew them every so often while I was working up in the tree.

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## FINAL WORD

Posted by Icabod - 10/18/2005 10:43pm

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OK,

First time I have to step in to play devil's advocate. First I must say I WILL NOT climb on a screw lock (though I regularly descend on one). I had a very bad experience with one on a 5 story wall, it resulted in a short fall, stopped by a static lanyard (this was about 10+ years ago), and major bruising. My wife was actually looking over the wall when it happened, not fun.

That said, I cannot support any language in our final document that requires "positive locking" biners. I have a friend (who is also my regular climbing partner, some of you may remember Saplin' from the old days of this board) that will not use one. He is a professional in the field of adventure education. He uses only screw locks...we fight about this everytime we link up. BUT, he always backs up his argument with a very good point, anything automatic makes people lazy. Heck, he's got me checking my lock now at link up, and at the top of every pitch, 'cuz I am paranoid (no backup this time). Also I think that we cannot specify any particular technology, as this will stifle innovation.

I suggest the following terminology:

==START OF CLIP==

Connection to a climbing system, for the purposes of life safety operations (i.e. harness to climbing line), outside of direct tie-in may be made through several methods, listed below in order of the preference indicated by the authors of this document:

--EDITOR NOTE--the order below should be put up for a survey, so we get it right--

1. Quick Link
2. Auto Locking/Positive Locking Carabiner
3. Manual Locking Carabiner

Non locking connections must not be used for life safety operations. Non locking connections may be used for non-life safety connections to systems (i.e. equipment storage, footloop connections to ascenders, etc. )

==END OF CLIP==

Climb Safe! Lets be careful to not get carried away.

Icabod

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Posted by NickfromWI - 10/19/2005 01:32am

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My list of preferences is as follows...

1. Auto Locking/Positive Locking Carabiner
- 1.5- Snap hook
2. Quick Link
3. Manual Locking Carabiner
4. 2 non-lockers used simultaneously, opposite and opposed

love

nick

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Posted by Leon - 10/19/2005 02:45am

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I feel that giving a list of options in order of preference is going to lead us down a slippery slope. I prefer the simplicity of saying that we recommend a climber should use a positive locking carabiner.

What does everyone else think about this?

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Posted by Jim W - 10/19/2005 04:44am

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I believe that Leon has the right idea.

If I recall correctly, none other than Don Blair, in his excellent book "Arborist Equipment," strongly recommends screw links because of their safety. (I sure hope I'm remembering correctly--I don't have a copy handy).

If a list is going to be made of acceptable life-support devices, it seems they should be ranked in order according to safety (not convenience, or cost, or color, etc.). That seemingly would force screw links to the top of the list.

Of course, several sources (e.g., web sites for accredited rescue operations, ANSI) must be investigated in order to create the ranked list.

However, at the risk of being accused of throwing a monkey wrench into the works, I again must strongly encourage everyone to consider what would be done here by such specificity: Once we write such details in these STANDARDS, it must be assumed that every standard will be specific and comprehensive.

That means that we can leave no stone unturned--every word in the document must be examined carefully. This will mean an incredible amount of work, probably not possible by a group of loosely organized (no offense!) volunteers who don't have unlimited time and unlimited resources.

Then, before acceptance, the document must carefully be reviewed by people who really know what they are doing--experts with our technology, our practices, and with the law. Now we're almost talking about unlimited money.

Why need we do that? Because then we will have a document that can be used in a court of law. Well, why do we need that? Because it unfortunately probably, at some time, will have to be used there. You can guess why.

I have grave concerns that, as the result of our laudable desire to have a fine document, we are headed down a very slippery and dangerous slope . . . being supported only by some old cotton sash cord and one non-locking carabiner.

It's one thing to have discussions, and make recommendations, about issues such as carabiners on a board such as this; it is another entirely different thing to openly publish those recommendations as standards recommended by a recognized group.

I strongly suggest that this commission regroup and considers its purpose and goals.

Question: Do we really want a comprehensive and rigorous set of legally airtight standards, or do we want a set of guidelines that will enhance our avocation? Your choice.

I think that, in this case, less is more.

Respectfully--

Jim

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**With Respect...**

Posted by Icabod - 10/19/2005 09:25pm

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Jim W...

We've already had that discussion...and I think you may have missed a few posts, I've yet to hear anyone post about taking a fall while using a quick link or snap, but have about autolockers and screwlinks. I think that if you make a blanket \*recommendation\* and ignore completely the other options that you instantly have created the "out of specification" option that said lawer will be looking for.

I dont want to limit options here, and again look at the title of the discussion-not STANDARDS, but rather Accpeted Climbing practices. I would accept the use of a locking snap (though I'd not use one because of the weight), or even a redundant non-locking (and I may start carrying some for use with the Garda hitch).

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Perhaps order of preference is not a good idea though, and I see where you may be correct there, so howabout we list all possible options (that have merit, dont give me the "tightly wrapped paper clip" option) and list them in no particular order.

Climb Safe!  
Icabod

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Posted by SRT-Tech - 08/07/2006 10:06am

Originally posted by Treeman

RocknRoll-Thanks for that clarification. How about this saying- "See threads- You's deads"! So here is a question along that line.

Should a wrench be used to screw down the screw link? Lock it down, so to speak. I think Sherrill catalog says do it (or is he talking about the clevis?). What do you all think about that? Has anyone seen a screw link, be it delta or oval, unscrew itself?

Should this be a usage standard? The old addage- "screw down so you don't screw up."

never seen one unscrew by accident, but I carry a old drilled out wrench to hang off the harnness anyways. I tighten them down tight. (i also lube the threads with copper anti-sieze).

I figure if a 10mm oval Maillione Rapide can be used with my 3/8"s transport chain for pulling out a 5000lb modified 78 Bronco from the mud, it can be used for my paltry 180 lbs of weight...lol :D

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Posted by lizardman - 08/07/2006 11:14am

any body tried these yet ?

The mini HMS Spring lock karabiner has been designed by the manufacturer as a main attachment karabiner between ropes and harness. The two spring loaded barrells are free to spin, allievating the possibillity of the rope passing through the karabiner rotating the twist lock gate to open accidentally. Operation of the spring lock requires the outer barrell to be pushed up over the black inner barrell to get a perfect alignment of the internal mechanism. As pressure is released on the outer barrell allowing it to drop back slowly, a sideway force from the thumb pushes the gate open.  
30 kn

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Posted by Ron - 08/30/2006 07:04pm

Guys, right up front, I'm new to all this. When I first got interested in climbing, I started looking at rec shops at carabiners. I live about 10 miles from Rock Creek Outfitters and about 10 miles (another direction) from the On Rope 1 shop owned by Bruce Smith.

I like the Omega-Pacific auto lock Jake carabiner and bought one. I was playing with it one day and ran a piece of 9mm prusik cord through it an pulled one end with no force or restraint on the opposite end of the cord. The rope twisted the lock to the open position and the carabiner opened, releasing the rope.

Thinking I did something wrong, I tried it again, and again, and again. It did it every time. I went to one of the shops, don't recall which one, and tried it on another Jake; it did the same thing.

I repeated the test on every screw lock I could get my hands on and absolutely none of them opened. So I proceed to buy screw locks and avoided the auto locks with a passion because I could easily demonstrate failures.

After seeing how easy it is to inadvertantly open an autolock, I was stunned to learn that ANSI does not approve the

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screw locks for tree work. The only problem I've seen with a screw lock was on a Petzl Attache when after a climb I couldn't unscrew it and had to use pliers.

Could it be that ANSI's position is based on early screw lock designs that may have had some problems?

I guess I'm just a little confused by the wide acceptance of auto lockers that are so easily opened?????

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Posted by moss - 08/30/2006 07:23pm

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Is the Jake a double action or triple action auto locker? I've never used one. Triacts are not easy to open by rope action.

Have you run the same test on a Petzl or a Kong triact biner? I'm not saying you won't be able to get it open by running cord across it but you'll have to work at it. I've had the rope make a good attempt to open the gate on my triacts while climbing but it's never succeeded. Also I always face my gate in, the climbing rope is usually contacting the biner from the outside. This is different then the rock climbing standard for screw gates (down and out) but then again this isn't rock climbing. I know many tree climbers practice down and out gate position, don't think this is a good idea with autolockers.

Ropes can open a screw gate biner, there are many anecdotes from tree climbers about this.  
-moss

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Posted by Ron - 08/30/2006 07:45pm

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Moss,  
This is interesting but, I may be getting confused by terminology. The term I was seeing that I thought met ANSI standards was auto-locking. That's what my Jake is; it locks automatically but it only takes a twist to open it.

I assume double locking means you have to do two things to release the gate lock, like push up and twist. Omega makes the Jake in a screw-lock, a Quik-Lok, and a 3 stage Quik-Lok.

So do auto locks meet ANSI standards or do they require double-lock or triple lock biners and auto-locking?

I've been using screw-lock Petzl OKs and have yet to find a lock loose, but now I'm wondering if I may need to replace them with double locks.

Edit:  
I think I've found the answer to my question. The WesSpur site says that to meet ANSI standards for Tree Care Operations and Arborists, the carabiner must be auto-locking, auto-closing, and require two actions to unlock them and another to open. They also have to have a minimum breaking strength 5,000 lbs (23kn).

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Posted by moss - 08/30/2006 11:20pm

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I think the standard is (or should be if it's not) triple action, double locking. Meaning three moves to open or close. Two of those steps are locking so there is double redundancy on the locking and triple redundancy on the motion required to open the gate.

The easiest way to explain is to hold one in your hand and put it through the paces.  
-moss

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Posted by Leon - 08/31/2006 02:23am

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Ron,

I agree with you that autolocking biners are way more dangerous than screw locks. I choose triple action biners over screw locks, though.

Don't give up on that Omega Jake yet. Try out the 3-stage quiklock, which isn't near as prone to accidental opening. It's one of the smoothest opening triact biners on the market (in my opinion). I love 'em!

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Posted by Ron - 08/31/2006 10:21am

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Guys, thanks so much for your responses. I went by On Rope 1 on my way in today and bought a Petzl Am'D Triact-Lock and a Kong HMS Auto-Block. They both are listed in the Sherrill catalog as devices that meet ANSI standards. Well I double checked that and Sherrill states that the Kong does NOT meet the ANSI standard, yet the Kong unlocks exactly like the Am'D - push up and twist. WesSpur says both meet the ANSI standard - no wonder this is confusing.

I'm sitting here playing with the Kong right now and with a 9mm rope through it and a half turn around the gate, and the slightest resistance on the end of the rope, I can pull the rope briskly and it immediately comes out of the biner. I can do it at will, time after time. And I'm not talking about extremes here, it's a half turn around the gate - that could easily happen and since I only have an 8 foot length of rope I put just a slight amount of friction with my finger to simulate the weight of a longer heavier rope. It's simply scary how easy it is to do.

I just tried the same thing with the Petzl Am'D and got the same results - it's easy to make the carabiner unlock, open, and release the rope. Not only is it easy, it represents a very simple configuration that could easily happen while climbing.

I have tried the same thing with my Petzl Oval screw locks and have yet to open one. In fact, commonly I have to use both hands to open a screw gate that I tightened snugly with one hand.

But let's be sure I am testing carabiners that meet ANSI standards. Each of these require you to push up the lock and then twist. That's two actions. Then after doing that a 3rd action is required to open the gate. That's the ANSI requirement, right?

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Posted by Tom Dunlap - 08/31/2006 01:02pm

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Lots and LOTS of confusion here about the ANSI Z133 standard. Let's see if I can clear up some of the confusion...

The Z requires that biners/life support hardware have greater than 5k# breaking strength. When a biner is rated 22kN it comes up about fifty pounds short. That's why the Kong biners don't make the cut...no matter what some vendors say...UNLESS the Kong biners are labeled 5k#, and some were for a while.

The gate opening definition is:

...requires two separate and distinct motions to prepare the gate to open.

The actual spring loaded gate is NOT counted as a motion. Twist lock biners and screwgate biners don't comply with the Z standard.

For too many years arbos have used biners that snap shut. The use of screwgate biners has never been common in pro tree climbing in the US. Since that's the case I feel VERY strongly that screwgate biners not be used. Considering the few documented accidents from having autolockers open I believe we're on the right path.

Tree climbing is a bit different than other rope access disciplines. We routinely go up, down and sideways. Our ropes move across bits and pieces that could cause screwgate biners to open.

People need to be taught to do gear checks routinely no matter if they use screwgates or autolockers. Almost every time

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that I reposition I'm giving my whole system a once-over. This takes absolutely no time.. It becomes as routine as breathing if the climber is taught to do that from the beginning. Too often climbers are not being taught with a strict regimen...too much loosey goosey style actions.

Since autolocking biners came on the market I have never had one fail during use. No one who's worked for me ever had a failure either. The autolockers that I have in my 'Dead Climbing Gear Collection' have come from other climbers. The ones in the collection that are mine are all Kongs. They fail when a small plastic piece inside the gate sleeve breaks. This has always happened when a gate snap shuts, never during use. In those cases another biner was taken and the Kong junked.

The most that I have ever had an MR screw link open, after being hand tightened, is three flats or about 1/2 a turn. The threads are finer on MRs than screw gate biners. When screw/nut threads are made there are several tolerance or slop, specifications. The MRs are tight, screw links loose. Look at the thread pitch too. Oh, when I use MR or screwlink I mean the ones made only by Maillon-Rapide that are commonly found in climbing catalogs. Along with these plain steel ones I use stainless steel screwlinks made by Wichard or other known marine quality manufacturers. If the company name and rating aren't on the link or hangtag, I don't buy them.

Ron,

How do you get the wrapped rope to push in the button on the Petzl biners and release? Are you using the new metal sleeve biners or the plastic sleeves?

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Posted by Ron - 08/31/2006 02:16pm

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Wow! Right you are! I didn't realize that until you posted - the Kong is rated at 22kN; that is shy of the ANSI standard by about 54 pounds. However, while that is a concern, it's only shy by a bit over 1%; I'm not too concerned about that.

What really, really bothers me is whether they will unlock in use. I can "drop" a rope much easier with a PAT (Push And Twist) than I can using the exact same procedure on a screw lock. OTOH, I have to respect the collective expertise that went into setting the ANSI standard.

While I am really new at tree climbing, I am widely experienced in anecdotal "evidence". The problem with anecdotal evidence is the absence of detailed accounts and numbers required for statistical accuracy.

That is, do we know for sure how many total climbs have been performed using screw locks and out of those climbs how many times a screw lock biner opened and caused an accident?

Also, it is not surprising at all that certain types of equipment are used and other types aren't. If most of the tree climbing instructors use a certain piece of gear, that's what they teach and that's what their students use.

You asked how I hold the biner:

I hold the biner vertically with the gate to the right and the spine to the left. The gate opens at the top.

I pass the rope from the bottom over the bottom end of the biner, through the biner and under the top end of the biner.

I hold the bottom end of the biner in my right index finger as if the biner had been attached to a loop. I bring the rope at the top of the biner back over the gate; it clearly makes a half turn around the gate. I apply a very slight amount of friction to the rope at the bottom of the carabiner to simulate a little weight or drag a rope would naturally have. I briskly pull the rope upwards and it pulls the gate up and twists it around and opens it and the rope drops free. It's easier with the Kong than the Petzl, but I can do it pretty easily with either.

I even tied a figure 9 with a bight for a little mass and did not apply any friction to the rope and could still open the gate and release the rope.

Please understand, I consider this a serious concern; this is not just something I wish to banter back and forth about. I'm new to this and even though I have over \$100 invested in screw lock biners (Petzl OK) I won't hesitate to buy safer biners if I see reasonable evidence that what I'm using is a significant risk.

But I also need to be sure that stories about screw locks opening are not propagated by circular circulation. I also want to be sure that a few incidents have not been made to seem like many more.

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As for ANSI, did they have data that they analyzed and came to a conclusion that screw lock biners were in fact X% more likely to open than double locks or was it because the experts on the committee had always used double locks and heard a story or two about screw locks and decided from that?

I guess the issue is on what data or evidence was it decided that screw locks were less safe than double locks?

And P.S.

Can somebody tell me the configuration of a 5-3 Blake's hitch. I asked this in another thread and got no responses. I know the 5 means five wraps, but are the 3 wraps at the bottom or top?

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Posted by Tom Dunlap - 08/31/2006 11:09pm

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I've been involved with the Z133 committee for years but this is much later than when the biner trend started. The definition of what an autolock is came from another ANSI standard. A very good job of wordsmithing.

I have no clue exactly what the history is for not allowing screw gates. It seems to me, from using Stubai steel biners years ago, that they are more likely to jiggle open than autolockers. There has to be some testing out there by now. Every once in a while a piece of literature comes to light about some testing. Most of the testing seems to come out of Europe and is related to either sport climbing of some sort or rope access work.

Even though we're discussing this in a rec tree climbing forum the points are still valid. I have a gut feeling that a rec tree climbing guide/instructor would have a hard time defending the use of screw gates if it was shown that the opening of one lead to an accident. Even though there is no obligation for rec tree climbing to follow the Z it seems prudent to come as close as possible to the standard practices. Is there another field, rec or pro, that sanctions the use of screwgates for liffe support. I know that most all rock climbers use non-lockers for protection. That's a whole different situation and rope use style.

I would hate to hear about an accident that could have been prevented by using autolockers.

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Posted by Ron - 09/01/2006 09:19am

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Originally posted by Tom Dunlap

I've been involved with the Z133 committee for years but this is much later than when the biner trend started. The definition of what an autolock is came from another ANSI standard. A very good job of wordsmithing.

Then I want to express my sincere gratitude for the work you and your team(s) did to help make tree climbing, esp. work related, safer.

Originally posted by Tom Dunlap I have no clue exactly what the history is for not allowing screw gates. It seems to me, from using Stubai steel biners years ago, that they are more likely to jiggle open than autolockers. There has to be some testing out there by now. Every once in a while a piece of literature comes to light about some testing. Most of the testing seems to come out of Europe and is related to either sport climbing of some sort or rope access work.

I think you've nailed exactly what's troubling me - "...There has to be some testing out there by now..." One would think so. But since I can't find any reference to any testing done with screw locks in regard to tree climbing, it just imcreases my curiosity as to how screw locks got such a bad reputation.

What I fear is that there really hasn't been any testing, and hence ANSI standards were not based on test results and were based on word-of-mouth. While I respect the opinions of experts and professionals, without at least some competent testing they are simply isolated events and they could be simply due to lack of training or human error. The real problem is these things get passed on and on and changed slightly each time it is re-told.

Originally posted by Tom Dunlap Even though we're discussing this in a rec tree climbing forum the points are still valid. I have a gut feeling that a rec tree climbing guide/instructor would have a hard time defending the use of screw gates if it was shown that the opening of one lead to an accident.

I agree! In fact, even though my climbing will be rec climbing, I still have a desire to follow the ANSI standards. Where the conflict comes for me, personally, when I first got into climbing, I bought and auto-lock and a screw lock and started devising tests to see if one had any significant advantages over the other, and to be perfectly open, I was pulling for the

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auto-locks all the way. One day I was sitting in my easy chair with my biners and a piece of rope just playing, tying knots, etc. and I put a half turn around a auto-locker, pulled it and it readily opened and released the rope! I was stunned. I did it over and over thinking I was missing something. I mean all kinds of people use this biner, surely it really isn't this easily defeated. So I thought, I wonder if a screw-lock will do that. I tried numerous times and couldn't make it do it. So I decided right then and there that auto-lockers are dangerous and I'm using only screw-locks.

Then I read the ANSI standard and was shocked to see that screw lockers were not approved. Thanks to this board I learned about double locking, auto-lockers. So I bought three of them. But again, I can open them almost as easily as I could my original auto-locker.

So there's the conflict for me. My simple tests disclosed to me that screw locks were the more reliable, yet now I learn screw locks have a bad rep and nobody has any hard evidence as to why they do.

Originally posted by Tom Dunlap I would hate to hear about an accident that could have been prevented by using autolockers. Again, I certainly agree with that sentiment, but also again why do you have the impression that the screw-locks are more likely to cause an accident than an auto-lock?

I'm just asking, I'm bewildered by all this. I want to be safe, in fact as safe as possible, but my personal testing reveals just the opposite of what the common thought is.

Way back, teachers were considered infallible. They used logic to project knowledge. For example, they deduced that because people had 32 teeth, horses also had 32 teeth. They were so confident of their logic that they didn't even bother to count the teeth in a horses mouth and taught it the way their common logic dictated. One day a student had the nerve to actually count the teeth in the horses mouth - guess what he found? A horse doesn't have 32 teeth like he had been taught. When he reported this to his teachers, he was severely reprimanded and punished.

I'm not saying that's where we are by any means, but it does illustrate how things can get propagated without sound basis.

Any thoughts?

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Posted by moss - 09/01/2006 01:05pm

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Here's my reductionist analysis of the screwgate versus autolocker question.

First:  
Many tree climbers use screwgates. They are not intrinsically unsafe.

Second:  
While you may be able to get a piece of cord to open an autolocker in the "lab", the collective experience of tree climbers is that well designed autolockers have not opened and caused a climber to fall. If anyone has heard of such a reported incident let's hear about it. It's worth noting that having the gate open will not guarantee that you will fall. Especially if your rope attachment is cinched on the biner.

Third:  
I'm guessing, only guessing that the reason screw gates are not recommended is because of the opportunity for operator error, that is, forgetting to manually lock the gate.

In conclusion, I would weigh everything you've heard, climb low and slow, try your screwgates and make your decision. Ultimately we are all guided by our own judgement and responsible for our own decisions Every piece of gear has a potential loophole. As a new climber you have to either rely on your own gradual process of building trust in your gear and technique or rely on the experience of a teacher or mentor to help you make those choices.

-moss

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Posted by Ron - 09/01/2006 01:38pm

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Originally posted by moss

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Third:

I'm guessing, only guessing that the reason screw gates are not recommended is because of the opportunity for operator error, that is, forgetting to manually lock the gate.

-moss

That's certainly one of the strong points for auto-lockers. I've forgot to lock one once myself. And that may be the best reason to use auto-lockers.

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Posted by Tom Dunlap - 09/01/2006 02:24pm

Ron,

Why don't you take this opportunity to solicit some feedback comparing biner closing mechanism tests on <http://www.treebuzz.com/> and see what you find out.

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Posted by SRT-Tech - 02/02/2007 01:00am

not once in 15+ years of rope use in a variety of fields have i ever had a screwgate carabiner come undone. I can understand that NOT EVERYONE will check their biners before during or whenever on a treeclimb, but i have 100% confidence in a screwgate for treeclimbing. Work is another issue, i will use rope snaps because i have to.

I have had ropes end up in sich a way around a double locker biner, that the outer part of the gate has slid down, and the gate was susceptible to being pushed open by rock, limb or another rope (under tension). That being said, I agree that a double action locker biner should be used by those entering the treeclimbing realm (treeworld), and that screwlinks (i'm talking Maillione Rapides ONLY, not screwgate biners) should only be used by experienced on rope persons, who check and recheck their gear frequently before , during and after a climb. Too easy for someone with little or some experience to forget to check a screwgate Biner.

I happen to love the Maillione Rapides, the large 16mm pear is one of my favorite (and cheap \$\$\$) rigging items. I can get the large pear for 12 bucks, it solves many rigging problems for me , by allowing webbing slings to be spread out and not contact each other.

one thing that does bug me is a lot of people are under the impression that if someone uses anything other than a double locking biner, they are putting their life at risk, and that the screwgate or Maillione rapide will somehow fail up the aire, and the on rope use will fall. I'm dealing with now at work. They are used to double locks only, and have this weird fear of anything different.

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Posted by Geof\_K - 05/10/2007 09:18pm

As a facilitator taking clients into the trees, I only set them up with a Triple-Action Carabiner, AND I am the only one that gets to put it on or off the climber.

The Triple-Action seems to confuse more newbies and that is a good thing. I don't want them to touch it for fear that they may unlock it.

My 2 cents

Geof

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## Screw links VS Auto locks.

Posted by Treeman - 06/16/2007 09:22pm

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I set my kids and adults up with delta screw links. I put the rope directly into the screwlink. It keeps the Blake's hitch lower for short arms of kids. My fingers hurt a bit from screwing them on and off however at the end of a 30 plus climber day (facilitated climbs). I use New Tribe saddles so the delta is already there.

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## Re:Screw links VS Auto locks.

Posted by nickfromwi - 09/28/2007 02:18am

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I often wonder why the screw locking carabiner is frowned upon by tree climbers (rec and cutters), yet the screw link is accepted by most.

I would prefer my newtribe harness not have a screwlink...and that is just how the next one will be made! :)

Peter, I keep a gerber multitool with some quick access pliers on my saddle at all times. I bet they would see a lot of use on a day like you are explaining!

love  
nick

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## Re:Screw links VS Auto locks.

Posted by moss - 09/28/2007 07:51pm

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nickfromwi wrote:

I often wonder why the screw locking carabiner is frowned upon by tree climbers (rec and cutters), yet the screw link is accepted by most.

A screw link has a finer thread, is threaded on both "ends" of the link, and takes many more turns to engage and disengage. Even if the screw/nut is turned enough to disengage from the end of the link, the rope or biner securing the climber still can't squeeze through, there is no gate to open wide. The link is strong enough to hold the climber's weight even if the link is disengaged. My experience from using them is that they not likely to unscrew far enough from tree or rope contact to allow the climber to come out of it.

nickfromwi wrote:

I would prefer my newtribe harness not have a screw link...and that is just how the next one will be made! :)

What would you replace it with?

-moss

PS: Weird how the underline dash keeps showing up like so: screw link

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## Re:Screw links VS Auto locks.

Posted by nickfromwi - 09/29/2007 01:45am

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My intention is to replace it with the right rigging plate, or simply with a steel ring.

love  
nick

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## More about Screwgate Carabiners, OK for redirects?

Posted by Trebuchet - 01/26/2008 03:36pm

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I've done a lot of deliberating about where to use a rated (24Kn) screwgate, aluminum carabiner, in a climbing system. I've used it combination with both Weaver and New Tribe endless loop slings, in basket configuration, to redirect my primary climbing rope. Of course, it proved to be adequate to safeguard against a swing into the tree trunk, when I tested, low and slow. Also, I "gate check" after installing the sling and screwgate in the tree to be certain that all components are configured correctly, including that the screwgate is "extra hand-snugged" and the carabiner truly locked. Question #1: Is the redirect gear system I described above "below standards"? Question #2: Would a screwgate carabiner be suitable to build up the false crotch, as pictured on p. 63 of "The Tree Climber's Companion, by J. Jepson, 2nd Ed., instead of the double-locking carabiner, pictured and documented there? Question #3: Has there been a study of, probably non-metallic, add-on components that would serve to make a strength-rated screwgate carabiner vibration-proof and reasonably un-thread-proof?

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## Re:More about Screwgate Carabiners, OK for redirec

Posted by moss - 01/28/2008 12:43am

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Screwgate is below standards for a production/work climber but there are no rules for rec climbers. Many rec climbers use screwgates. I would be consistent in what ever gate technology I used for life support use and a redirect is life support. So if you use a screwgate to anchor your rope on your harness then use it for your redirects. If you use autolockers on your harness and lanyards do the same for redirects. Otherwise you're setting yourself up for a mistake when you're tired, stressed or lacking concentration. Be consistent, don't make your brain do flip flops around life support connections.

The way I see it, if you're trying to figure out a way to make screwgates more secure then you probably shouldn't be climbing on them.

-moss

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## Re:Safe Carabiners Practices

Posted by oldtimer - 01/28/2008 10:28am

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Question #1: Is the redirect gear system I described above "below standards"?

Answer; There are not Written Standards for Rec Climbers. It is up to the Climber Desires and Responsibility to be safe while climbing.

Question #2: Would a screwgate carabiner be suitable to build up the false crotch, as pictured on p. 63 of "The Tree Climber's Companion, by J. Jepson, 2nd Ed., instead of the double-locking carabiner, pictured and documented there?

I use both types of Biners (Auto-Locker and Screwgates) on my climbing system and I consider it to be safe and appropriate for my taste.

Question #3: Has there been a study of, probably nonmetallic, add-on components that would serve to make a strength-rated screwgate carabiner vibration-proof and reasonably un-thread-proof?

Answer: No,that I'm aware but I don't have all the answers anyway! (Vibration Proof? Never heard that properly closed Biners will open up if vibrated.):unsure:

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## Re:ACP- Carabiners

Posted by Trebuchet - 01/29/2008 08:58pm

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moss and oldtimer: Many thanks.:cheer: Great recommendations! Let's see: Be consist, i.e. "no flip flops in trees" (good tree-climber wardrobe decision, too?); tailor your climbing style to accommodate when you're tired; commit to safety and be responsible for maintaining safe habits and systems. Please correct me if I've misinterpreted either of you.

Having said all that, I believe that climb-rated (23kN+) screwgate carabiners, double-auto-locking carabiners, and stainless "screwlinks" are secure.

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I believe that still unanswered question is, "Can a screwgate carabiner be "properly closed" to adequately prevent unthreading and inadvertent opening?". No, say the pros.

Vibration, friction, shock. I believe all these types of forces should be considered as potential methods for thwarting a gate lock.

I think that something like the Tory Red Cap Finger Tips (<http://www.toryinc.com/>) might be adapted to reduce the tendency for the screwgate lock to un-thread. In fact, I'd say there might be a size that would be adequate to similarly reduce the ease with which some have said that they can thwart the double-auto-lock gate. I'll probably buy a handful, strictly for the ground-based laboratory environment, and see what they'll do. OK, here's the disclaimer: This mere speculation on usefulness of a specific technology is in no way a recommendation to any climber to use any product referenced.

Thanks again.

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## Re:ACP- Carabiners

Posted by michaeljspraggon - 01/30/2008 07:39am

I'm certainly no pro-arborist but I would say that there are two reasons for not using screwlinks in climbing systems: 1) a rope moving through the screwlink could cause the gate to turn with it, undoing the gate, and 2) the slenderness of the steel compared to an Aluminium carabiner would cause a sharp bend in the rope, increasing the tensile stress, reducing the working life of the rope.

I've found when using screwlinks for non-personal-safety fixings (I've used Maillon Rapide links) the links can be very hard to undo, particularly with wet/cold hands and if they've been done up too tight.

Michael

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## Re:ACP- Carabiners

Posted by oldtimer - 01/30/2008 11:21am

"no flip flops in trees" (good tree-climber wardrobe decision, too?); tailor your climbing \_style\_

Wait a minute I have seen pictures of Nick Climbing on Flip-flops and wearing colorfull pajama pants, So that recomendation on keeping with tailor "Style" is out of the question! :laugh:

Hey Nick, help me here. Where is your photo climbing on Flip flops, wearing pajamas and wearing a dust mask on a tree near the road in a park in CA? Inquiring minds want to see it again to show what climbing in Style is all about. :lol:

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## Re:ACP- Carabiners

Posted by moss - 01/30/2008 02:10pm

oldtimer wrote:

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Wait a minute I have seen pictures of Nick Climbing on Flip-flops and wearing colorfull pajama pants, So that recomendation on keeping with tailor "Style" is out of the question! :laugh:

Hey Nick, help me here. Where is your photo climbing on Flip flops, wearing pajamas and wearing a dust mask on a tree near the road in a park in CA? Inquiring minds want to see it again to show what climbing in Style is all about. :lol:

I'm hoping that someone (Nick) will run an "alternate footwear only" climb at the next rendezvous. There would be qualified medical personnel on hand to treat stubbed toes.

-moss

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## Re:ACP- Carabiners

Posted by moss - 01/30/2008 02:24pm

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Trebuchet wrote:

moss and oldtimer: Many thanks.:cheer: Great recommendations! Let's see: Be consist, i.e. "no flip flops in trees" (good tree-climber wardrobe decision, too?); tailor your climbing style to accommodate when you're tired; commit to safety and be responsible for maintaining safe habits and systems. Please correct me if I've misinterpreted either of you.

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Thanks again.

You got it. If you're fatigued, stressed or in a crisis (rescue) situation you may accidentally attach to a screwgate and treat it like an autolocker. Imagine using your climbing system if you were sleep deprived for one night. Can you still use it smoothly and safely? Give yourself room for mental mistakes in your setup.

I don't like the idea of trying to "improve" the security of a screw gate. Added security may make it difficult to undo when you need to get off it fast (change over to SRT rappel during stinging insect attack). Using a screw gate means that you're aware that rope movement or branch contact could potentially unscrew the gate. Therefore you accept it and climb with that awareness to protect yourself.

It's well known that autlockers can also be opened by rope movement and branch contact. Again, the climber using an autolocker must be aware of this and pay attention during the climb.

A versatile climber can make use of either when they need to but why undermine yourself by mixing gate technology on purpose?

-moss

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## Re:ACP- Carabiners

Posted by moss - 01/30/2008 02:39pm

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On the subject of redirects, I don't like a doubled rope running through either type of gate. Redirects are more a technique of work climbers. For a rec climber it makes more sense to simply double crotch with the other end of your rope rather than redirect. The advantage being that you don't have to climb up to take it out like you do with a redirect. It takes a little longer to set up a double crotch (not much longer)but you eliminate the problem of rope running though a biner. It's also much easier to come back to the tree from an outer branch tie-in on a double crotch than it is on a redirect.

Rec climbers can learn a lot by paying attention to how pro arborists climb but there's a point where some work climber technique makes less sense for rec climbers. Secured footlock ascent is a good example, makes no sense for rec climbing. Cool skill to master but otherwise not useful for rec climbing.

-moss

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## Re:ACP- Carabiners

Posted by oldtimer - 01/30/2008 10:17pm

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I have used redirects while working in a tree by wrapping a small dynema sling around the branch thru a binner holding a small pulley. The rope follows along the pulley and it moves fairly easy. It works well in some instances but like Moss mentioned you will have to go back and remove it before being able to get down from the tree. It works but it is not that practical in general. In this set up I used screw link biners or self locking it does not matter because the rope never touches the binner but instead moves along the mini-pulley.

Edited: rapping vs wrapping

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## Re:ACP- Carabiners

Posted by moss - 01/31/2008 12:42pm

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oldtimer wrote:

I have used redirects while working in a tree by rapping a small dynema sling around the branch thru a binner holding a small pulley. The rope follows along the pulley and it moves fairly easy. It works well in some instances but like Moss mentioned you will have to go back and remove it before being able to get down from the tree. It works but it is not that practical in general. In this set up I used screw link biners or self locking it does not matter because the rope never touches the binner but instead moves along the mini-pulley.

I was thinking that a redirect would be safer if you ran the rope through a pulley or a screwlink. You'd need a double pulley though, right? Screwlink might be a happy medium, you can crank it down tight (carry a little wrench), or tighten it with grippy gloves. Even if it did somehow become unscrewed it would difficult for two ropes to jump out of the narrow gap on an open screwlink.

-moss

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## Re:Re-Directing Main Climbing line

Posted by oldtimer - 01/31/2008 03:48pm

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You'd need a double pulley though,

I have a Fixe pulley like this one=>(http://www.rei.com/product/635119?vcat=REI\_SEARCH )that is wide enough to fit both ropes at the same time. Since you are not moving long distances away from the redirect point the amount of friction is very minimum and the main benefit is to allow the rope to follow you along in a different direction without dragging over several rough branches and in the case you loose control the distance from the redirected TIP to the climber is shorter and the potential for a mayor tree trunk hit is significantly reduced or eliminated. Using a Screwlink is definitely overkill in this scenario because even if the redirect where to fail completely you are still tied to the main TIP way up higher from where you are currently working. IMO.

This set up technique I used many times in a couple of large take downs I did on three dead trees in from of my house. I tied as high as possible and worked along large limbs way out and this gave me a lot of extra balance while making the cuts with both hands on the chainsaw. :cheer:

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## Re:ACP- Carabiners

Posted by Baker - 02/21/2008 09:10pm

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Rock climbers have been hanging in non-locking biners for many years. Would I? Prob. not.

I have some biners made by Black Diamond that ARE positive lockers and automtic at the same time. To open, just twist and open, but as they close, they automatically lock. Once closed, slide the sleeve up turn in the opposite direction and the sleeve snaps down into the lock slot. Gate can not be twisted or opened unless you lift, twist, drop, twist again and finally open the gate. Sounds very complicated, but they are VERY, VERY secure. Rated at 25 Kn. I don't think they make these any more, but I would never part with them. Pear shape is good for hitches too. All of a sudden I feel warm

inside!

I need a hobby - oh wait...never mind.

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## Re:ACP- Carabiners

Posted by Baker - 02/22/2008 02:45pm

I'm certainly no pro-arborist but I would say that there are two reasons for not using screwlinks in climbing systems: 1) a rope moving through the screwlink could cause the gate to turn with it, undoing the gate...

I've found when using screwlinks for non-personal-safety fixings (I've used Maillon Rapide links) the links can be very hard to undo, particularly with wet/cold hands and if they've been done up too tight.

A friendly observation - As I read the comments from the many pros and ams on the board something struck me...Aren't the above statements contradictory?

The NFPA,(National Fire Protection Agency)who regulate ALL safety and operations concerned with high angle rescue, require screwgate biners. Until recently, they required those biners to also be steel.

IMO, if a screwgate is closed properly, it should never come open, and even if it does, think about the strength rating on your biners. I'm sure someone has mentioned this on this forum before, but...

1 kN is equal to approx 224.8 foot pounds of force. I don't have a biner rated less than 25 kN. or 5,620 lbf.(closed) The same biner is rated 11kN or 2,023.2 lbf with the gate open - not unscrewed, but wide open.

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## Re:ACP- Carabiners

Posted by michaeljspraggon - 02/23/2008 07:22am

It's all relative! A screwgate done up tightly might be hard to undo with cold hands (particularly with my circulation) but could it still be moved by a rope with a person's weight on it?. However I did use a couple of them in mountains of Scotland after posting the original message. They were holding my snow shovel onto my rucksack. As the wind chill was about -20°C I had to keep my mountain mitts on and found that the gates undid smoothly, despite my being hampered by the mitts.

I've found on my Maillon Rapides that the tightness of the screwthreads varies so I'm still not sure that a rope sliding over it wouldn't turn the gate on some links. The main concern then wouldn't be the loss of strength in the link, but the possibility of the rope coming out of the gate.

I'm sure the NFPA use equipment which is totally safe for their applications, but perhaps their use differs somewhat from tree climbing techniques?

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## Re:ACP- Carabiners

Posted by Baker - 02/23/2008 09:08am

Sorry, you're right there. I wasn't thinking about the rope slipping out, only the strength issue.

I now realize that the same tool (biner) can be used by 2 different professions in different ways. I encountered this with rock climbing, and rescue as well. Why not 3?

I learned something else. While discussing this very subject, an arborist/rock climber friend reminded me that if I were to use a munter hitch to rappel(with a screw gate pear)it is possible to tie the hitch in such a way that if the rope does come in contact with the gate, it can actually tighten it.

As I said in an earlier post I DO like my BD posi-locker biners, and will use them when/wherever I can.

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Time for me to sit back and read some more from those who have been doing this a lot longer than me - at least the tree part. I've been rock climbing and doing rescue work for 20+ years, but have just gotten into the trees and I love it!

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### Re:ACP- Carabiners

Posted by michaeljspraggon - 02/23/2008 08:20pm

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I've also done both rock climbing and tree climbing for many years and I have to say that I prefer climbing trees - the canopy is a beautiful place to be and I actually feel like I've left the ground! (I don't when I'm hanging off a wall of rock).

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### Re:ACP- Carabiners

Posted by wildrice - 06/22/2008 11:08pm

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If one is so concern about an unlocking biner, then I suggest what the French are using::: A combonation biner. As French climbers( Rock climbers and cavers) descend and unhook to take a look around; someone would still their biners that they used as tie offs. It got to such a hugh problem that the police where doing investigations. Finally, a life rated biner with a combonation lock was created.

I do not think a tree or treebranch could unlock that one.

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### Re:ACP- Carabiners

Posted by wildrice - 06/22/2008 11:15pm

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Website links to combo-biner:

<http://www.ocscoutshop.org/cg0369.html>

<http://www.asia.ru/ProductInfo/1427009.html>

I am still trying to locate the one from France that is life rated.