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# Your First Big Wall

*By Mark Synnott*

**Solid on 5.9 gear routes? Ready for the greatest adventure of your life? Our step-by-step guide will show you the way!**

It all started for me back in high school, when I saw a photo of the most awe-inspiring piece of rock I'd ever laid eyes on—the Nameless Tower. I've spent years of my life dreaming about that Karakoram spire, and though I still haven't climbed it, Nameless inspired me to head to Yosemite, more than 20 years ago, to climb my first big wall.

My friend Simon and I rode a Greyhound from Boston, and showed up in Camp 4 with our eyes on the south face of Washington Column. We'd read it was the perfect first wall. Unfortunately, we fell under the spell of some locals who called themselves the "wall pirates." They claimed the Column was choss and steered us to the Direct North Buttress of Middle Cathedral, aka DNB. They left out the part about its nickname: Do Not Bother.

We spent two nights on the DNB, barely sketching our way up the pitches, hauling a ducttaped army duffel behind us. We never found the huge bivy lege the pirates had promised. Early on the second day, we figured we'd be off soon, so we dumped the rest of our water—the only time I've ever done that on a wall. By the time we got down on the third day, we hadn't had a sip of water in 24 hours.

It was worth it, in the end, if for no other reason than to see the look on the pirates' faces when we pulled back into camp. The wall pirates and their kind are still lurking out there, so hopefully this article will help you off to a better start. But the most important thing is simply to make the first step, as Simon and I did, and commit to doing a wall. Do it this year. Just don't start with the DNB.

**CAUTION:** Don't embark on a wall climb until you have many long multi-pitch routes under your belt. There is obligatory free climbing on almost every wall—which usually feels quite difficult with the extra gear you're carrying—so you should be comfortable leading at least 5.9 trad. Be thoroughly proficient with gear placement, anchor building, knots, rope management, and self-rescue. You'll also need a lot of heart, without which you'll probably throw in the towel after your hips are chafed raw from the first haul.

## THE BASICS

A "big wall climb" is just an overgrown rock route, but complicated by aid climbing and the need to haul a bag. You'll need some special gear, as well as new techniques.

The basic procedure goes like this: The leader climbs up the first pitch, free and/ or with aid, trailing a second rope (the haul line). When he reaches the anchor, he ties in and fixes (ties off) the lead rope, which the second will climb with ascenders.

Next, the leader sets up a haul system and lifts the bag off the anchor. The second then follows the pitch by ascending the lead rope, taking out the gear along the way. While the second follows, the leader hauls the bag.

When the second reaches the anchor, he moves off the rope onto the belay anchor, and the team organizes ropes and gear for the next pitch. They repeat this process until they reach the night's bivy spot.

## 1. LEADING

Leading on a big wall is similar to leading on a long day climb, except your rack will be bigger, and you'll usually be doing a lot more aid climbing. Expect to feel heavy and encumbered—and to use aid on many moves you would usually climb free. Practice basic aid by clean-aiding (no pitons!) short cracks. Then try a few three- to five-pitch routes where you can practice all the necessary wall skills and transitions.

#### THE SET-UP

At the base of the wall, gear up for leading or following in a similar way. Girth-hitch your two daisy chains into your belay loop. Daisies are all-purpose tethers that you'll attach to the gear when aid climbing, to your ascenders when jugging, and to the anchor when you're at the belay. Clip a keylock biner (not a locker) to the end of each daisy. Also girth-hitch the short sling on a fifi hook to your belay loop; you'll use this to hang temporarily on gear, instead of constantly clipping and unclipping a carabiner.

If you're leading, clip your aiders to the end of your daisy chains. If you're seconding, attach daisies and aiders to your ascenders. When you're not using your aiders, you can clip them up short and carry them on a back gear loop.

#### WHAT YOU NEED

We've all seen the classic photos of Robbins and Frost with all their goodies laid out on a Camp 4 picnic table. Those guys had a packing list, and you should, too.

**Technical Gear**

Guidebooks and online resources may give specific gear lists for the wall route of your choice, but a standard rack might look like this:

- 2–3 sets of cams
- 2 sets of nuts, including micronuts and offsets
- 2–3 small Tri-cams
- 2 hooks (1 Black Diamond Talon; one Cliffhanger or equivalent)
- 2 wire rivet hangers
- 12 quickdraws
- 25 spare carabiners
- 15 locking carabiners
- 10 shoulder-length slings
- 1 double-sided gear sling
- 3 double-length slings
- 1 60m x 10.5mm lead rope
- 1 60m x 9mm static haul rope
- 1 progress-capture pulley
- 1 swivel for haul bag

**Personal Gear**

- daisy chains (2 per person)
- aiders (6 per team of two)
- ascenders (2 per person)
- fifi hook

- helmet
- comfy, well-padded
- harness with detachable leg loops
- approach shoes or oversized, high-top crack-climbing shoes
- fingerless gloves
- nut tool
- hammer (optional on many “easy” walls, but can be useful for cleaning or for emergencies)


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Figure 1: A climber bounce-testing while leading an aid pitch. Note the aider and daisy setup. If her top pieces passes the test, she'll move up into the higher set of aiders and clip the low ones to her harness gear loop. It's possible that the bounce-test will rip out the piece. If so, she'll catch herself on the lower aiders and try another placement. Illustration by Mike Clelland

**THE MOVES**

Here's the basic procedure for leading an aid pitch:

1. Place a piece of gear and clip one of your daisy chains to it, along with a set of aiders.
2. Aggressively bounce-test the piece. (See figure 1.)
3. If the piece holds, step into the rungs of the aiders, fifi in to a convenient loop on your daisy, and rest on the fifi.
4. Before moving up the ladder, reach down and clip your rope into the previous piece (not into the piece you just placed), and then remove your daisy chain and aiders from it.
5. Move as high as you can in your aiders, and fifi so you can stand comfortably, leaning back in your harness, and use both hands to reach as high as possible and engineer your next piece.

#### BOUNCE TESTING

The concept of bouncetesting is simple: You try to rip out the piece you just placed by shockloading it with your bodyweight, before you fully commit to it. If you can't rip it out, you move onto it with confidence.

Remember not to bounce-test bolts, rivets, or any other fixed mank that you're not prepared to replace. Also, it's not necessary to fully test bomber pieces. If a piece of pro is obviously solid, just clip and go. Otherwise, you're just making it harder for your second to clean the gear, especially when you bounce-test small nuts.

### Aider testing

Clip one aider/daisy combo to the piece you want to test. Maneuver so the aider step you're going to jump on is even with your current position or slightly below. If you're too high, and the new piece fails, you'll shock-load your previous piece.

Grab a high aider rung or a carabiner on the new placement, step into the aider with one foot, and jump up and down on it, with your other foot and hand still positioned on your previous piece. Don't be wimpy with your test, because if the piece is questionable you'd rather it pull during the test than when you move high up an aider clipped to it. Undo your fifi hook so it doesn't take any weight during the test, and be ready to shift back onto the other foot and lock off with your arm on the old piece if the new piece blows.

### Daisy testing

This style of bouncetest applies a little more force, and may make it easier to keep your balance if a piece blows. Clip your daisy into your new piece, but keep both feet in the aiders on the lower piece. Clip a carabiner from your belay loop into the highest daisy loop you can reach. Stand up tall and then drop down hard onto the daisy, while holding onto the lower piece. Repeat until you're satisfied the piece is good.

Avoid the temptation to look at the piece you're testing. If it blows, you'll be eating it. Look down (and wear a helmet).

Testing is difficult on traverses, particularly when the pieces are widely spaced. Try asking your partner to give you tension with the rope, then use the aider method.

#### LEADING TIPS

**Clip high.** Clip your aiders as high on the piece as you can get (e.g., into the rubber loop on the end of a cam stem, rather than its sling) to gain extra inches of height. This lets you space out your placements, and fewer placements generally means faster progress. That said, an occasional short move to reach the next quick-and-easy placement might be more efficient than futzing with a trickier long move.

**Biner first.** Place a "working" biner or quickdraw onto bolts, pitons, and other fixed gear, then clip your daisy/aider combo to that biner. This will simplify clipping the rope into the piece after you've moved off it.

**Rivets.** These come in many varieties, but are essentially bodyweight-only bolts that don't have hangers, used to pass blank sections of rock. To aid-climb past them, you'll slip a rivet hanger, either wire or the keyhole variety (RP hangers or Dubloons), over the stud. In a pinch, you can use a wired nut by sliding down the aluminum wedge to expose a wire loop. Don't bounce-test rivets, because if you pull one, you may not be able to get past the hole. Just clip and go.

**Copperheads.** Depending on the wall, you may come across fixed copperheads, which are malleable nuts hammered into tiny seams. Copperheading is an art in itself, and on trade routes you should not have to place your own. Unless you are prepared to replace the head if it blows, don't bouncetest— just clip and go.

**Tension traverses and pendulums.** These are common techniques on big walls, used to move from one crack system to another. To do a tension traverse, ask your partner to slowly lower you from a piece of pro while you lean against the rope; use your feet and hands to friction and pull yourself across the wall. A pendulum is the dynamic version of a tension traverse. Have your partner lower you to a certain point, then lock off the belay. Now run back and forth across the wall until you're able to swing past the blank section. The tricky part is judging how far to lower; when in doubt, start out high.

**Free climbing.** Many pitches on a big wall will have sections where you need to move from aid to free, which can be awkward and unnerving. Look ahead, select a few pieces of protection, and clip these to the front of your gear sling. Clip your highest aid piece for protection, then step out of your aiders onto footholds. (If there are no good footholds, attach a shoulder-length sling to the piece and step into that.) Remember, you need to take your aiders with you, so unclip them from the piece and either dangle them or clip them short to your gear loops. It may help to fifi directly to your top piece while you prep. Get psyched, unweight the fifi, and start free climbing.

## 2. FOLLOWING

In wall climbing, the second climber seldom gets put on belay. Instead, when the leader finishes a pitch, he ties the rope to a power point at the anchor, and the second "jugs" the fixed rope with ascenders and aiders.

#### THE PROCEDURE

After the leader has tied off the rope, take him off belay, then tie an overhand on a bight in the rope near the point where you had it in your belay device. Using a dedicated locking carabiner, clip this bight to your belay loop. This now becomes your primary protection point, and the first of the "back-ties" you'll be doing as you ascend the pitch. More on those later. You can let the rest of the rope hang, or collect it in coils and carry it on a sling.

Next, clip your ascenders onto the rope, attached to your daisy chains with locking biners. It is critical to get the length of these attachments right. Each brand of daisy is different, so get this dialed on fixed ropes near home before the climb.

There are two basic setups for jugging: one for less-than-vertical rock, and one for overhangs.

### Less Than Vertical

1. With one aider on each ascender, push both ascenders as far up as you can reach. Put your right foot in a low rung of the right aider.
2. With your left foot, step into the third rung from the top of the aider on the bottom (lefthanded) ascender.
3. With your hands on both ascenders, use your left arm to pull your weight completely onto your left leg, and at the same time unweight your right leg and slide the right ascender as far up the rope as it will go.
4. Shift your weight onto the right aider, pull with your right arm, unweight the left ascender and aider, and slide them up the rope, just underneath the right ascender. Don't hang on your daisies between

moves on low-angle rock. All of your weight should stay over your legs as you move. But if you need a rest, just sit back in your harness.

**Overhangs**

1. Attach both aiders to the bottom ascender. Once you get going, each foot will be in the third step (from the top) of a different aider. (See figure 2.)
2. Use both arms to haul your weight over your feet, then stand up. Lock off on the bottom ascender, and slide your top ascender as far up as it will go.
3. ]Sit back on the daisy attached to the top ascender.
4. Unweight your legs and slide the bottom ascender as high it will go. Repeat.

If it's hard to reach one of your ascenders, your daisy connections are too long. If you can't slide your ascender nearly to full arm's reach, your connections are too short.

Sometimes it's necessary to help an ascender slide up the rope by using the thumb catch to slightly disengage the cam. Don't forget to release the thumb catch before weighting the device.


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Figure 2: Cleaning: The second removes all pro as he moves up an aid pitch. Note his aider and daisy setup, and the back-ties. Illustration by Mike Clelland

**DAISY LENGTH**

With your ascenders attached to the rope, right ascender directly above the left, clip a loop of your daisy chains to locking biners on the ascenders and sit back in your harness to check for length. When you have the lengths right, your elbows should be slightly bent with your hands on the handles. This description is for righthanders. Lefties can reverse right and left without changing the basic system.

**CAUTION:** the loops on most daisy chains are not full strength. If you clip through two different loops with the same carabiner, and then rip out the daisy's stitches with a severe load, it's possible to become completely

unclipped. To keep the unused portion of the daisy from flopping around, but still keep the system "closed," don't clip the end loop directly into the locking carabiner on your ascender. Rather, attach the end loop to the locker with a separate carabiner. When you arrive at the anchor and you want to move off the rope, clip this biner into a bolt or a master point to begin anchoring in.

#### BACK-TYING

A back-tie is a "catastrophe knot" in case both ascenders somehow pop off the rope. Use back-tying like you would protection on a pitch of climbing: as a way to keep yourself from hitting the ground or a ledge, should your ascenders fail.

Back-tie with a simple overhand (or Figure 8) on a bight, clipped to a dedicated locker attached to your belay loop. Use a big, pear-shaped biner so there's room for multiple knots. If you run out of room, you can drop some of the old back-tie knots or, better, start a second biner.

Way up on El Cap, when there's no ledge to hit, you might back-tie only every 40 feet. On ledgy, traversing terrain you might back-tie every 10 feet. When in doubt, throw one in. Your back-ties also function to shorten up the loops of dangling rope, which can get caught on flakes.

#### CLEANING TRAVERSES

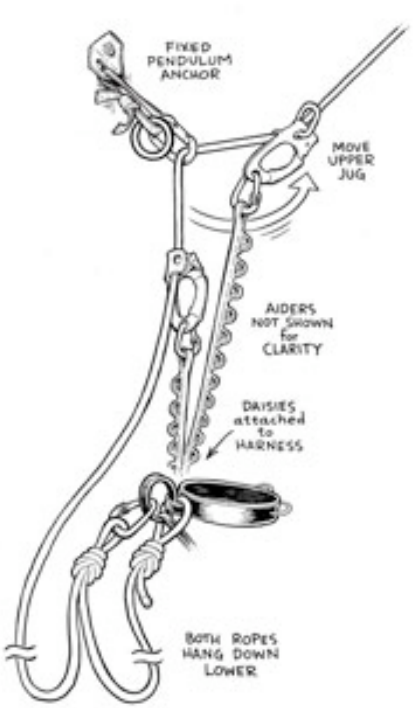
At the beginning of a traverse, the rope often will make a sharp bend, making it impossible to unclip the carabiner where the rope is under tension. (This can also happen at the base of overhangs.) Here's what to do:

1. Ascend to a few feet below the pinned carabiner and back-tie, since you'll be removing an ascender from the rope.
2. Remove your top ascender from the rope and reattach it just above the biner.
3. Weight the top ascender. This maneuver will change the tension in the rope and tend to jam your lower ascender against the biner. If the traverse isn't too extreme, and you have the spacing right, you will be able to shift onto the top ascender without jamming the bottom one. If it does jam, move the top ascender down, slide the bottom ascender down a bit, then try again.
4. If you can't get quite enough slack to unclip the rope from the biner, firmly grab the rope near the bottom ascender, pull down, remove the bottom ascender from the rope, then gradually let the tension out of the rope. Place the ascender back on the rope above the piece and clean.

### Troubleshooting

If there's a big horizontal span between pieces—e.g., after the leader has done a pendulum—you'll need to use a different method, the lower-out. See below to learn how to do it.

When faced with a tricky horizontal jugging challenge—for example, the Kor Roof on the popular south face of Washington Column—consider following on aid instead of trying to ascend the rope. Back-tie, clip your aiders onto the end loops of your daisy chains, and clip the aiders onto the gear as if you were leading, sliding your ascenders along the rope as a self-belay. Once you're on the next piece, reach back to clean the piece you just passed.

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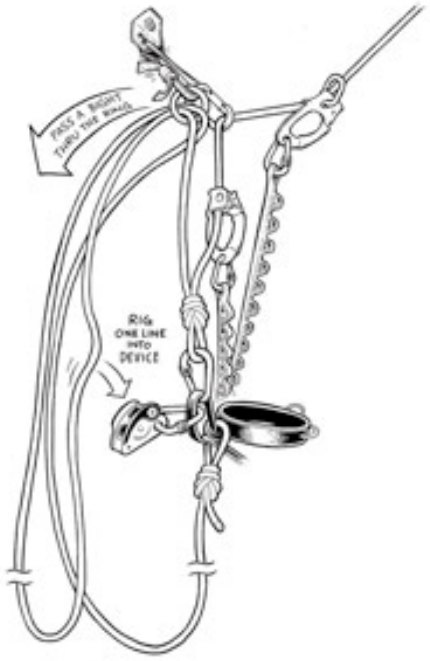
Number 1

**LOWER-OUTS**

Sometimes a traverse will be impossible to follow simply by sliding ascenders along the tensioned rope. If the leader has done a tension traverse or pendulum, for example, the follower usually will have to lower out from a piece in order to swing back to the plumb line. *(Note: Usually, you will lower out by passing a bight of rope through the pendulum point. This method, shown here, allows you to avoid untying from the end of the rope. For very long lower-outs near the beginning of a pitch you may need to thread the end of the rope, rather than a bight, through the pendulum point.)* Here's what to do when you're jugging up a pitch and you arrive at a pendulum point.

1. Put in a back-tie, as you would before any tricky maneuver. You will need some free rope to lower yourself across the wall—at least twice as much as the diagonal distance you'll lower—so you may need to remove some or all of your previous knots. Move your top ascender past the pendulum point. The rope is tensioned at an angle, so be extra careful to attach the ascender properly. To decrease the chance of it popping off the rope, clip a carabiner through the hole at the top of the ascender and around the rope.

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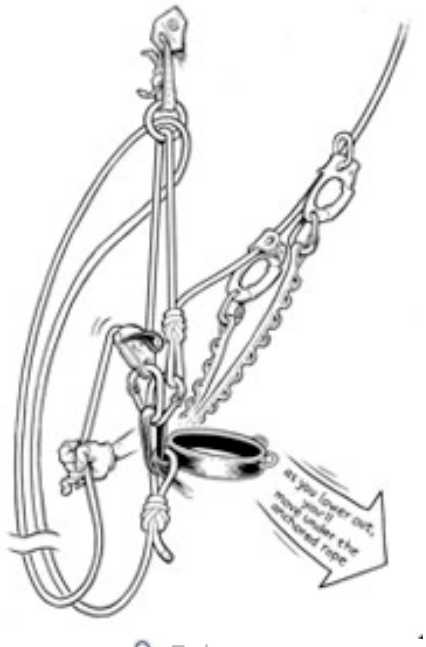
Number 2

2. Grab a bight of rope from below your back-tie and feed it through a biner or ring on the pendulum point. Pull through enough rope to complete the lower-out. You'll need enough slack for the doubled rope to pass back and forth between your final lowering position and the pendulum point. If you don't have that much rope, untie and feed your end through the pendulum point.

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Number 3

3. Grab the strand of threaded rope that goes through the ring to your back-tie. Rig that strand through your belay device. Take up all the slack, and suck yourself in tight to the lowering ring until the main lead rope is unweighted enough to unclip the carabiner at the pendulum point. Now lower yourself out by letting rope through your belay device. When you reach the plumb line on the main lead rope, undo the device and pull the bight of rope free from the ring. Continue up the now-vertical fixed line.

Most pendulums are short and relatively easy to follow once you've done these a few times and get all the different strands of rope sorted out. Sometimes, they can present quite a technical challenge, even though the principle is the same. For the famous King Swing on the Nose, for example, the leader does a long pendulum at the beginning of the pitch, and there is not enough rope for the second to do a proper lower, even if he unties and threads the rope. Here, the second generally uses a separate line for the lower-out.

**3. BAGGAGE HANDLING**

The worst part of any long trip is dealing with luggage. Now imagine that instead of carrying your gear in a comfortable pack or on a rolling suitcase, you're dragging it behind you at the end of a rope. Hauling will likely be the crux of your first wall. If you fail, it will probably be because of the pig. Here are some tips to ease the load.

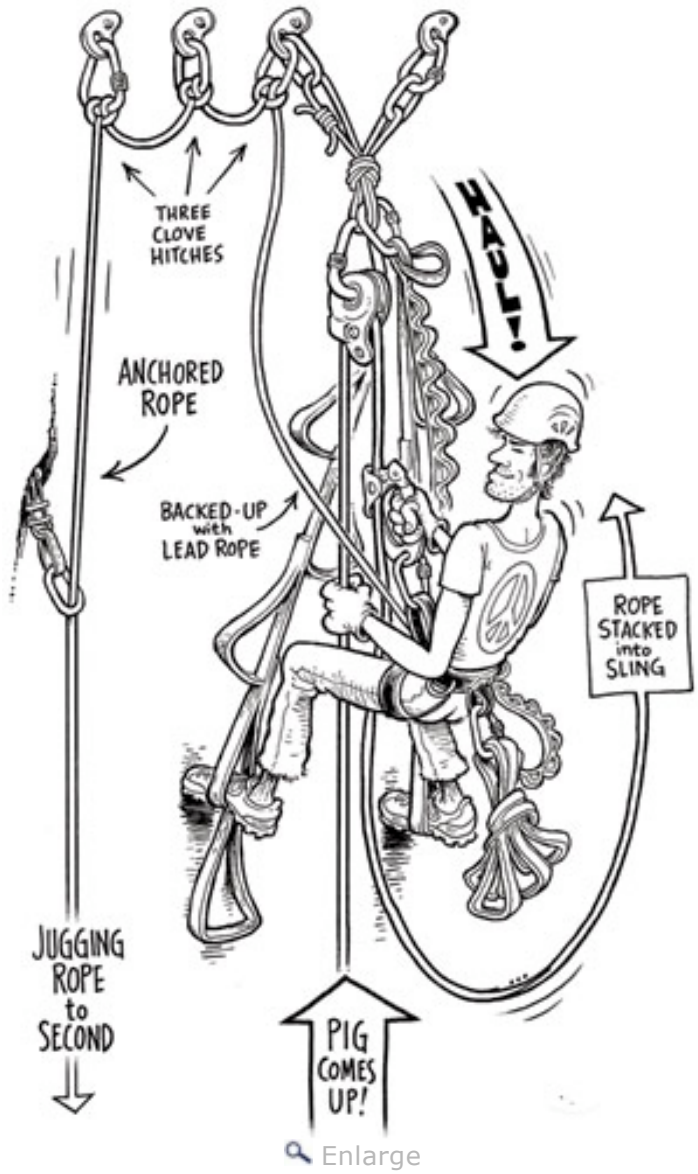

Figure 3. Illustration by Mike Clelland

**SETTING UP THE HAUL**

When you reach an anchor and prepare to haul, envision how you want the whole anchor/haul system to look, keeping in mind things like the path by which the second climber will arrive, the best stance for hauling, and how you'll free the lead rope when you're ready to start the next pitch. These organizational skills take some time to learn, so practice them before the big climb.

In general, you'll fix your lead rope on one side of the anchor and haul from the other, in order to minimize tangles and spread the load. Though you were taught to equalize your anchors, most big-wall trade routes have multiple solid bolts at each anchor, and it is accepted practice to simply clove-hitch your lead rope across the anchor pieces, from one side to the other, thus providing backup in the system but not equalizing it. Use a locker for the first clove hitch, which will be weighted by the second as he ascends the rope, and non-lockers for the others. Leave about five feet of slack in the rope connecting you to the anchor—you'll need that maneuvering room for hauling. (If you are building the anchor from scratch or beefing up a minimally bolted

stance, you'll create two equalized power points, one on each side of the anchor, one for fixing and one for hauling.)

Once the lead rope is fixed, create a master point on the opposite side of the anchor for the load-intensive task of hauling. Use separate biners so you don't trap the lead rope for the next pitch. Rig this master point as high on the anchor as possible, because you will need to hang a couple of

feet below it do the hauling. Pull up slack on the haul line until you hit the bag, then load the rope into a progress-capturing pulley such as the Petzl Pro Traxion or Rock Exotica Wall Hauler. Pull up any remaining slack, make sure the pulley's ratchet is engaged, and call down to your second: "Ready to haul!"

**The Dirty Work**

Clamp one ascender to the strand of rope coming out of the pulley opposite the load, and attach it directly to your belay loop. Clip your aiders at a point where you can stand in them with the pulley at about chest or head height. Many big-wall belay stances are hanging, but even if you have a ledge, you might want to set up to haul in your aiders to keep the system tight and efficient. Allow enough slack in your daisy attachments so that you can drop into a full crouch in your aiders. (See figure 3.)

Weight the ascender, dropping into a crouch to lift the bag. Yes, it's burly. Lift the bag about two feet. This should be enough for the second to release the pig from the anchor below. (See "The Second's Job.") Wait for his call: "Bag's free!"

Start hauling for real. Experiment with your feet in different steps in the aiders (but with both at the same height) until you find the sweet spot. You may try pulling up on the other end of the haul line as you drop, using one or both hands. Stack the rope into a sling or rope bag as it comes through the pulley— this is a good excuse to rest. Pace yourself, knowing that this procedure is the crux of big-wall climbing.

Unless the pitch is completely overhanging, expect the bag to get stuck once in a while. For minor snags, you can sometimes lower the bag a few feet, then yank it up past the obstacle. Other times, your second will need to free it as he ascends the rope. On bad hauls, the second may need to babysit the bag all the way up the pitch. Keep your cool and communicate with your second to solve problems in a systematic way. This is what big-wall climbing is all about—technical problem-solving in a vertical environment—so relax and embrace the challenges.

**Docking the Bag**

Haul the bag until the knot is about six inches below the pulley. Grab the docking line and attach it to a locking biner on a secure point on the anchor with a Munter/mule hitch. Make sure the attachment doesn't pin the lead rope in place or you'll create a big organizational hassle when you try to start the next pitch. (See figure 4 on next page.)

Counterweight the bag enough to disengage the pulley ratchet (this might take some practice), then let the rope back through the pulley until the bag hangs on the docking tether. Attach the haul line to another secure point, then prepare the pulley to carry up the next pitch.

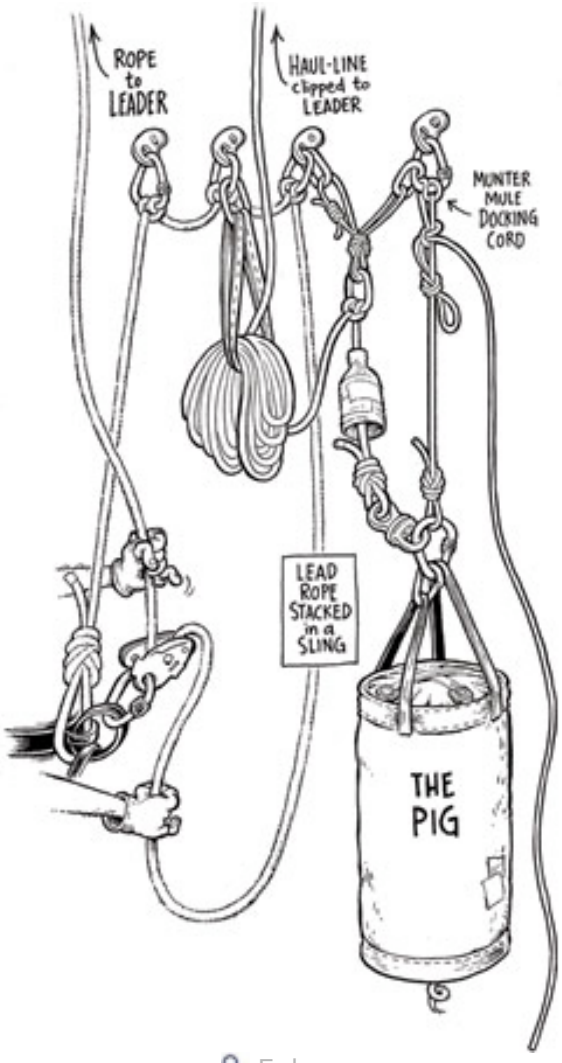


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Figure 4: A "docked" (anchored) haul bag, showing the Munter/mule hitch that allows you to easily lower out the bag on overhanging or traversing pitches. The docking line is approximately a 30-foot length of 7mm cord. Illustration by Mike Clelland

**UNDOCKING THE BAG (THE SECOND'S JOB)**

The leader does almost all of the hauling work; as the follower, all you need to do is free the bag from the anchor once the leader has set up the haul system.

Work out a series of commands so the leader knows: 1) when he has pulled up all the slack in the haul line and can engage the hauling pulley; 2) when he has lifted the bag off of your anchor; and 3) when you have completely freed the bag from the anchor and lowered it out, if necessary.

The leader will first haul the bag off the anchor until the docking tether is unweighted. Call for the leader to stop, then undo the mule hitch and lower the bag out, using the Munter hitch like a belay device. When the bag is hanging straight off the haul line and the tether rope is slack, undo the Munter and call, “Bag’s free!” Now

the leader hauls and you break down the anchor and second the pitch. Be ready to help if the bag gets stuck.

#### STUFFING THE PIG

The goal of haul-bag packing is to protect delicate items like your water and food, plus allow access to the right things at the right time. There is nothing more depressing than finishing a haul only to see water dripping out of the bottom of the bag, and your rain gear or lunch food won't do you much good if they're buried at the bottom.

Most first walls are Grade Vs, which can be done in two days, with one overnight. For the average party, a single Grade VI– size haul bag will be more than adequate. Two Grade V bags also can work; that way, each person can approach and hike down with a bag, but a two-bag system is much more prone to snags.

Pad the inside of the haul bag with your foam sleeping pads (air mattresses are not recommended). With a large haul bag, stack the pads on top of each other to completely cover the inside of the bag. Pack your water bottles into the bottom, but leave enough water near the top for the day. Camping gear and extra clothing can be shoved down into the nooks and crannies to fill out the cylindrical shape of the bag. Leave room near the top for your rain gear, lunch, and daily water ration. Securely close the lid, and make sure to cinch down any straps so the contents don't spill out when the bag gets tipped upside down.

#### FOOD AND WATER

In warm weather, I keep it simple and don't bring a stove. (Addicts can always bring canned coffee drinks.) If you carry a stove, a hanging set-up is required, and you'll need to be vigilant about the flame's proximity to ropes, clothing, and rainfly.

Canned food—ravioli, beef stew, fruit cocktail— has long been standard fare on walls because it's virtually indestructible and doesn't require extra water. Pringles, jerky, nuts, and energy bars are wallfriendly snacks, as are foil packs of tuna, peanut butter, tortillas, and bagels.

Lay out a meal plan for the number of days you expect to be on the wall, plus one day. Divvy up your food into various stuff sacks. One system is to make a dinner/breakfast sack for each bivy, plus a miscellaneous food bag, plus a day bag for energy bars and snacks at the top of the haul bag.

When it's not too hot, many climbers can get by on two quarts per person per day on a wall. In midsummer, you'll likely need four. I add at least one additional day's ration of water, then try to get by on as little as possible each day to build up a secondary reserve.

Two-liter soft-drink bottles are ideal. At least some of them should have clip in loops so you can hang them on the anchor. Make sure these loops are bomber—a falling water bottle could take someone's head off.

## 4. WALL LIFE

I know some wall climbers—specializing in speed ascents—who brag how they've never bivied on a wall. To me, this means missing out on the best part of big-wall climbing. There is nothing like watching the sunset while perched above the world like a kid in a treehouse. But bivys can also turn bad if you're unprepared.

If you're climbing without a portaledge, carefully plan where you will bivy each night; be realistic about how many pitches you can climb in a day, and imagine worst-case scenarios. Depending on your skill level, it's entirely possible that you'll only do three to four pitches per day. Also keep in mind other parties on your route, and have a plan B in case you arrive at a cramped bivy spot that is already occupied.

When you arrive at your ledge, rig it for safe living by fixing your rope from one side to the other, clove hitching it into as many pieces as you can. Use this horizontal fixed line to help organize your gear, and to serve as a zip line that you can traverse by clipping your daisy chains onto it, via ferrata style. Once the line is rigged, both climbers can untie from the rope and use their daisies, with locking biners, as their attachment points.

Yes, you will be sleeping in your harness. If the ledge is big, you can remove your leg loops from your harness and just use the waist belt for your nighttime attachment, facilitating a better night's sleep as well as the inevitable calls of nature.

In a storm, expect to get wet. Sleeping bags and your puffy jacket must be synthetic.

**CALL OF NATURE**

On a big-wall climb you're completely self-contained—you bring your own food and water, and you pack out your waste. All of it. Human waste can make a disgusting mess out of popular routes, so keep the nasty off the rock. Urinate into the air, away from ledges, cracks, and climbers, to disperse your golden shower into tiny droplets. Never urinate in cracks behind ledges. Feces must be hauled up and carried back down, and for this you need a durable "poop tube." The old standard is made from 4-inch PVC pipe; a dedicated dry bag is another option. There is plenty of information online—just Google "climbing poop tube." Do your business in single-use toilet kits such as Wag Bags that can be stuffed into the poop tube. These are a bit too bulky for long walls, but they're perfect for a night or two out.

**EMERGENCIES**

When things go south, think "self reliance and self rescue." Even in Yosemite, a rescue might not be possible in bad conditions, so NEVER count on it. Imagine a bad fall resulting in injury, or a gnarly, unexpected storm. How will you survive? How will you get down?

Going up on a wall without at least a Wilderness First Responder level of training is asking for trouble. If a serious injury occurs on the wall, you will be the first responder. At the very least, you should have a full first aid kit with alcohol swabs, assorted bandages, athletic tape, painkillers, latex gloves, and sticky gauze.

Carry heavy-duty rain gear for your top and bottom, in addition to warmwhen- wet mid and base layers. If you are caught on a wall in a sustained storm, you will get wet, so your clothing must keep you alive and functioning in those conditions.

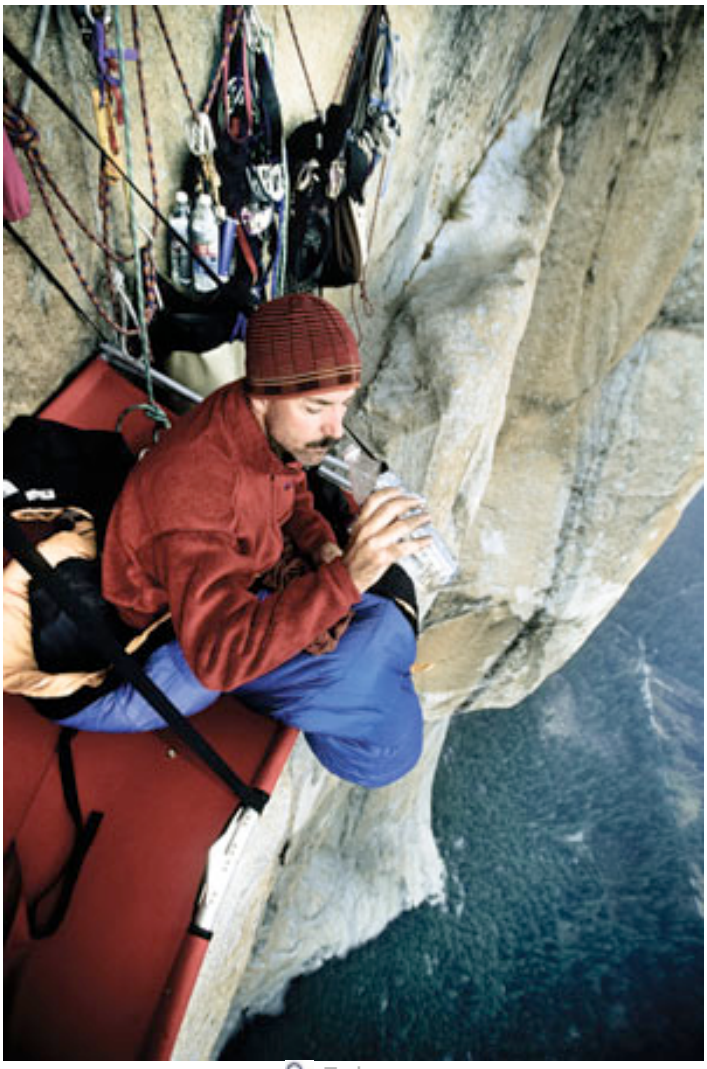
Non-functioning hands are a common cause of serious trouble during storm epics; bring a pair of mixed climbing– type gloves for rappelling in the rain. The hood of your rain shell must fit over your helmet. Sleeping bags should be synthetic.

The toughest decision in a storm will be deciding if you should bail or hang tight. A bad Yosemite storm can easily last three to five days, in which case waiting it out may not be an option. A weather forecast, if you can get one, will be essential in making the right decision. If you do decide to bail, bring all your gear and bivy stuff with you. If anything happens, and you don't make it all the way down, the clothing and survival gear in the bag could save your life.

When bailing from a wall, one of the biggest challenges is your haul bag. Generally, the first person will descend with a light rack to the next anchor, then the second can either rappel with the pig or lower it down. Both options are difficult with a heavy bag, so practice each when training for your first wall. To rap with the bag, it's best to put it on rappel, then attach yourself to the system. Make sure you have a good backup!

In Yosemite and Zion, where the walls are near the road, you may be able to yell loud enough to call for a rescue, but don't count on it. A cell phone or radio of some sort is now considered standard gear. In Yosemite

or Zion, a call to 911 will get the word to the rescue team. If you have a contact on the ground—always a good idea—a family-band radio often gets better reception.



Enlarge

The simple life: a portaledge camp high on El Cap. Photo by Kevin Steele / Wonderful Machine

**PORTALEDGE PROS AND CONS**

Most of the classic "first" big walls have natural rock ledges that allow them to be climbed without a portaledge in relative comfort. But these routes are crowded, and your ledge of choice may already be occupied. A portaledge gives you the option to bivy wherever you happen to end up at night, as it can be hung anywhere there is a solid anchor.

A portaledge also gives you a huge advantage in storms. Tarps and bivy sacks, regardless of quality, don't provide nearly the protection of a portaledge with a well-fitting fly. Portaledges can literally mean the difference between life and death in a serious rain or snow storm.

The downsides of portaledges, of course, are cost and weight. Set-up and hauling can also be hassles.

**BETTER LIVING**

**Take care of your hands:** Fingertip splits are common, so clean up with baby wipes each night, then apply hand lotion. Use antibiotic cream and bandages to treat nicks and cuts.

**Don't sleep in:** Set your alarm and force yourself to get a move on in the morning. An early start is the best guarantee of making your next bivy before darkness.

**Tune in:** A small transistor radio can be nice for music, NPR, or weather forecasts.

**Stay dry:** If you are bivying without a portaledge and rain fly, make sure you have bivy sacks, plus a tarp or tent fly, even if the forecast calls for clear weather.

**Tidy up:** Before going to bed, coil or stack ropes, organize the rack, and stuff food and other items back into the haul bag.

**Make a pillow:** Use a stuff sack and puffy jacket, but make sure it's clipped in before you bed down. I often put a cotton shirt around the stuff sack so my face isn't pressed against nylon.

**Tie it down:** Make absolutely sure everything is attached well. Foam pads, especially, love to take flight from ledges, so rig yours with a clip-in loop.

**Prep for trouble:** Assume all hell is going to break loose at 3 a.m. Have your headlamp, rain gear, and other survival items within easy reach.

**Use your rope:** Fill ledge nooks and crannies to make your sleeping platform more comfortable.