

Intermediate Rock

Kitsap Branch of
The Mountaineers
March 23, 2021



Agenda

Part 1 - Equipment

- Expectations
- Preparing for a climb
- Natural Anchors
- Fixed Gear
- Passive Pro
- Micro Stoppers
- Active Pro - Cams
- Other pro
- Directional Forces
- Racking
- Slings

Part 2 - Leading on Rock

- Before Climbing
- Leading a Pitch
- Anchor Review
- Seconding a Pitch
- Removing Gear
- Belay Changeover
- Descending
- Alternate methods for protection
- Anchor Evaluation
- Field Trips
- Homework

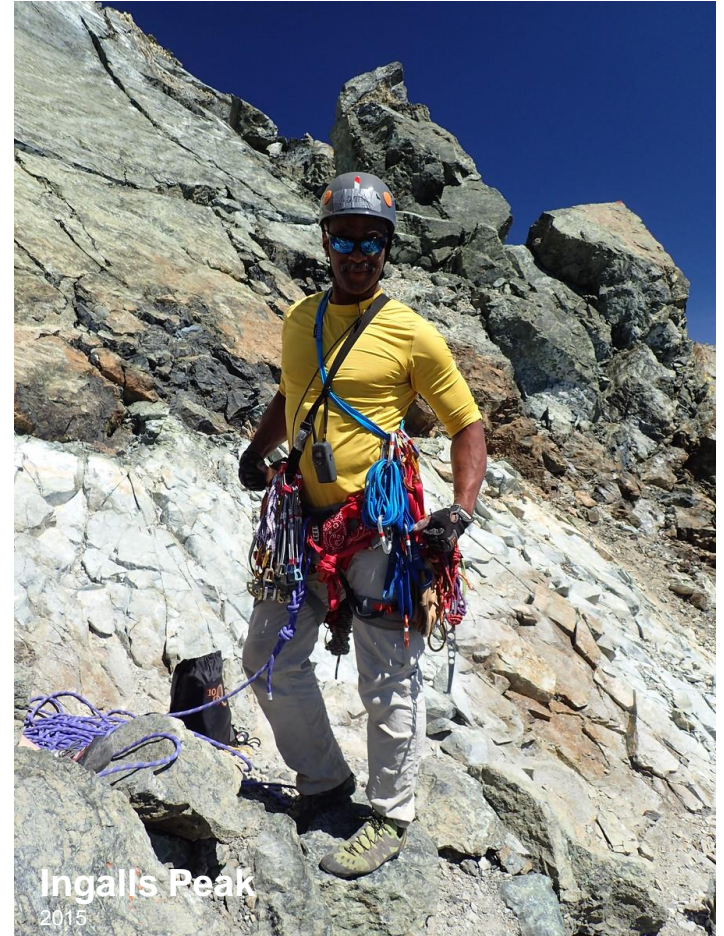
Expectations

Basic climbs

- As a Rope Lead you will lead all pitches
- You supply the rope and all of the pro
- Many Basic students have gear to share, don't hesitate to ask

Intermediate climbs

- You swing leads with another leader
- You share gear (each climber brings roughly half of what is needed)



Preparing for a climb

Research

Collect route beta, read trip reports, research conditions, print and carry topos

Determine the gear you're likely to need

How long are the pitches (how long is your rope)?

Descent options, including bailing

Share emergency contacts, inform someone of your plan and expected return time

Gear

Bring what you expect to need

Determine what gear will be shared

Have a plan for changeovers and re-racking

Other essentials - e.g. approach shoes, jacket, food, water, first aid

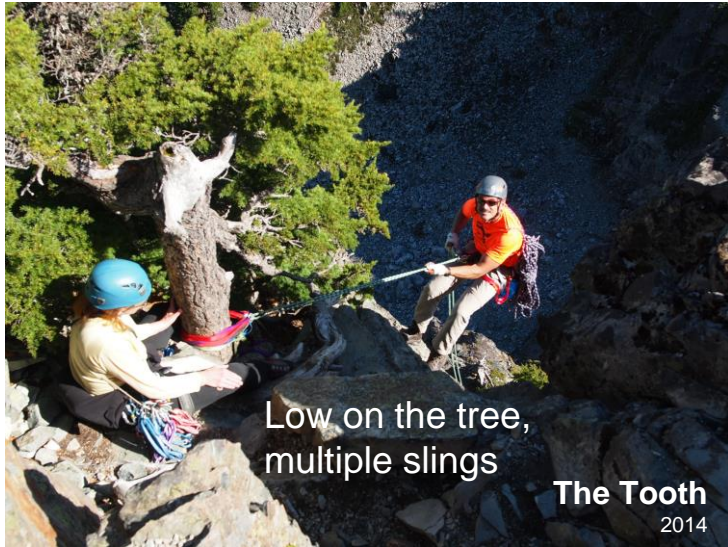


Prep for Liberty Bell
2011

Natural Anchors

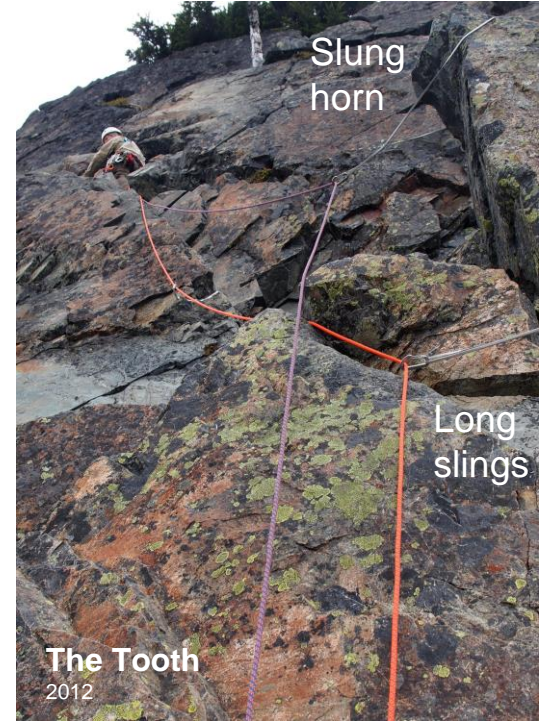
Trees - should be live and large

- Sling low
- Wrap 3, pull 2 or Girth hitch



Rock Features

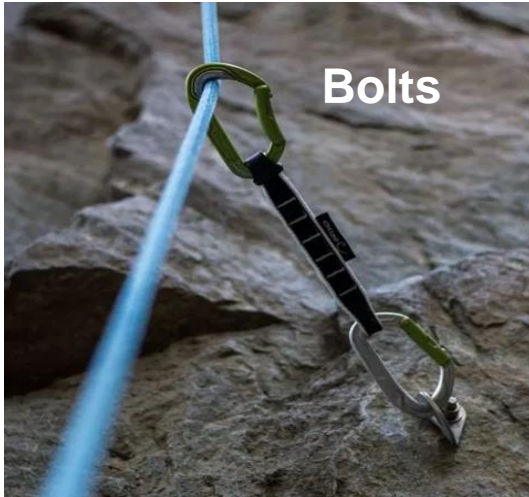
Horns, knobs,
chickenheads,
columns, tunnels,
chockstones, large
boulders



- Evaluate rock quality
- Use slipknot, clove hitch, or girth hitch

Fixed Gear

- Visually inspect bolt and hanger
- Clip away from your path (gates facing out)



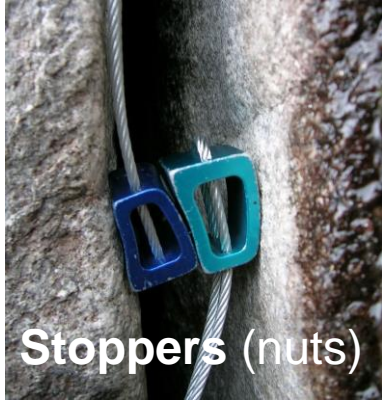
- Inspect piton condition and placement
- Clip to load with downward force, use long slings



Stuck pro

- Don't trust stuck pro as primary protection - ok to use as backup
- Inspect gear and placement
- Avoid old slings, clip to the hard points

Passive Pro



Stoppers (nuts)

Placed in a construction - not suitable for parallel cracks

Limited direction of pull - not multi-directional

Passive pro is stronger and less damaging than cams
Works better in many common Pacific Northwest conditions - dirty, mossy, wet, or icy rock



Hexes



Traditional and offset stoppers



Slung and wired hexes

Micro Stoppers

aka micro nuts or wires

Primarily intended for aid climbing - smallest are only strong enough to hold body weight

May be used as a backup or when no other pro is available

Stronger when paired up and equalized for additional strength

Brass - softest, best option for weaker rock



Aluminum - softer, lightest weight, least expensive



Silicone bronze - very hard
Conform to rock slightly better than steel, similar durability

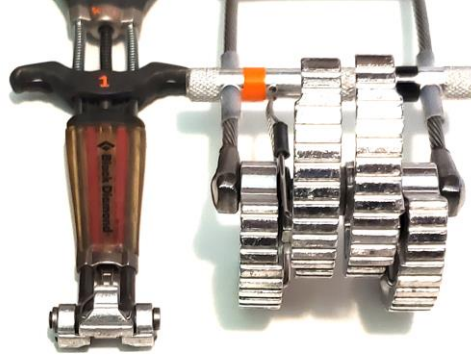


Steel - hardest
More likely to pulverize soft rock, useful on granitic rock

Active Pro - Cams

Spring Loaded Camming Devices

- Easy to learn, a lifetime to master
- Require friction to engage
- Can walk into less secure position or too deep to remove



May have 3 or 4 lobes

Smaller lobes mean more placement options

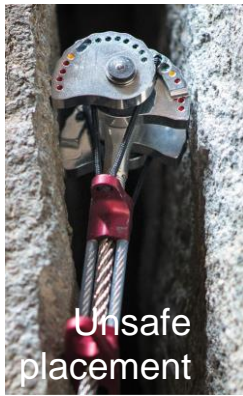
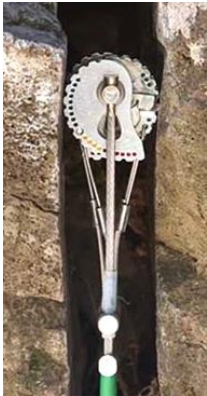


Wider lobes have more friction and work better in softer rock



Dual axle cams have a wider range of placement options

Flexible stems work in horizontal cracks



Other Pro

Big Bro

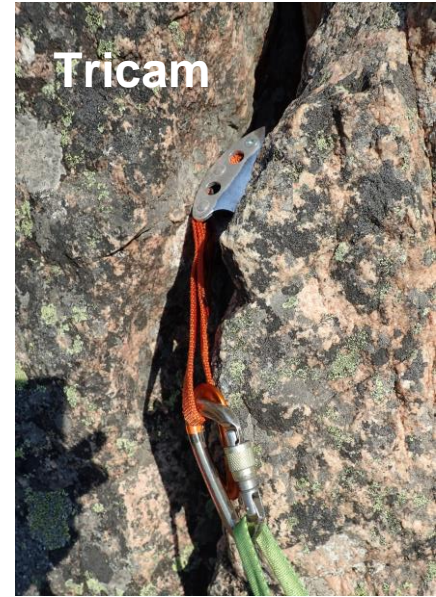


Spring loaded tube chocks

- Protect larger cracks
- Can use to keep rope out of a crack or flake
- Require parallel sided cracks

Tricams

- Can be passive or semi-active
- Hold better than cams in wet or dirty cracks
- Can be tricky to place and remove
- Largest are stackable



Spring loaded nuts

- For thin cracks and seams
- Work in horizontal cracks
- Lower strength rating (7-8Kn)
- Difficult to remove after a fall

Directional forces

The most critical direction is the downward force of a leader fall

Outward pull from rope drag or a fall on a piece above

Sideways pull from rope drag (or a fall) as the route or rope wanders

Gear can pull out from the bottom up!



Racking

Use a single runner or a padded gear sling over your shoulder

Having all shared/lead gear on a single sling makes it easier to pass gear in belay changeover

Gear that won't be transferred goes on your harness - belay device, nut tool, cordelette and anchor materials, bail kit, extra slings, etc.



Key lock carabiners recommended for wired stoppers



Sort by size and be consistent to make gear easier to find

Cords and slings

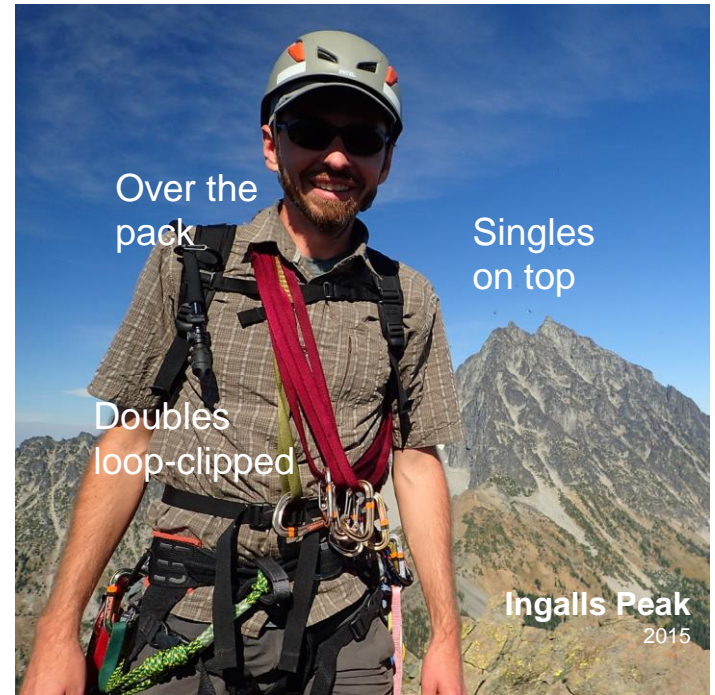
Carry enough runners for all protection you plan to place on a pitch

Shoulder runners with a single carabiner for cams

Alpine draws (tripled with 2 carabiners) for stoppers and other passive pro

Close double runners with a carabiner for easy release (green runner in photo)

Runners are part of your rack - keep them organized



Bring a cordalette or extra runners for the anchor

Carry slings over your pack

Before Climbing

Verbally review your plan

- Who is leading each pitch
- What gear is needed
- Where the anchors/belay stations are expected to be
- Plan for changeover
- Plan first piece of pro
- How much time it should take
- Establish turnaround time

Communication

- Will you be able to hear?
- Will you have line of sight?
- Confirm rope signals or use radios
- Set expectations - does the leader want to know how much rope is left (mid point, 5 meters, end)
- Use names with critical commands (“off belay Mike”)

Leading a pitch

Read the pitch, plan your attack, plan your protection as much as possible

First piece of gear should be solid and hold pull from any direction - the anchor may be the first piece

Anticipate direction of pull on each placement

Use longer slings to prevent rope drag

Protect your follower! Protect traverses, downclimbs, and easy sections if needed



Big Cottonwood Canyon 2005

Anchor Review

SRENE is the guiding principle

Strong

Equalized

Redundant

Efficient

No Extension



Start with the most solid piece and clip yourself to it (you are still on lead even if you are on a ledge).

Build and equalize the anchor, include a directional for upward force for the next pitch.

Attach yourself to the anchor shelf, backup with a figure-8 on the master point, and put your follower on belay on the master point.

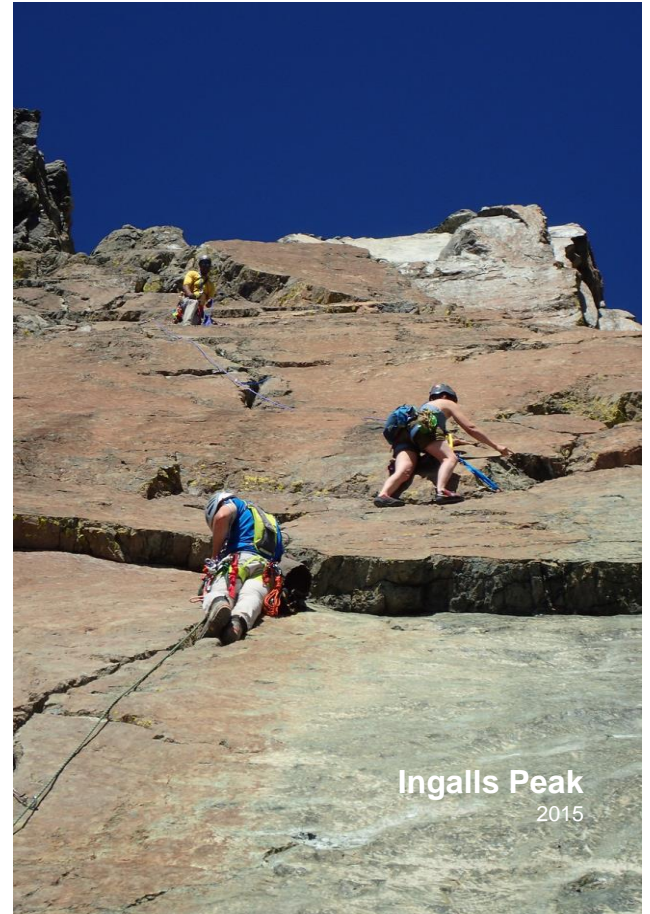
Seconding a pitch

Keep leader on belay until anchor is established and confirmed (“off belay John” or rope signals).

Keep gear organized as you clean - this will save time during belay changeover. Hang all pro on the same sling. Re-sling alpine draws if you can conveniently and safely.

Keep everything attached! Dropped gear is a hazard to other climbers and a risk to the team that needs it.

Know how to clean each piece of gear - practice with any piece of new gear. Bring a nut tool!



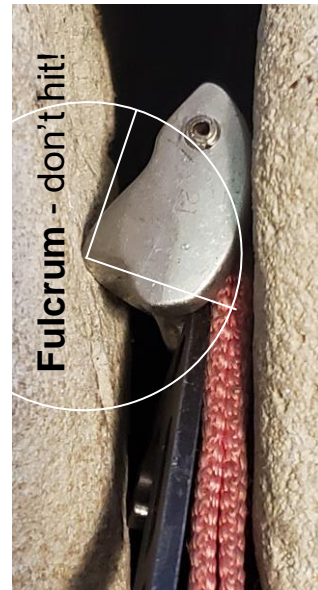
Removing gear

Try to reverse the process of placement

Always tap near the wire

Most gear has a fulcrum - the point it rotates around as it cams

Do not hit the fulcrum - apply force to the opposite side to release



Hook the trigger handle of a cam that is too deep to reach with hands

Belay Changeover

Attach yourself to the anchor first before doing anything else

If leading the next pitch, make sure you have all gear needed for the next pitch. Pro, slings, anchor material, belay device.

Rope management - easy if flaked, trickier if hanging. Flip the rope for block leads (Basic climbs).

Time check



Descending

Allow plenty of time for descent

Descent route information can be just as important as the climbing route information!

Research - have a detailed description, current beta, rap anchors, snow conditions, etc

Don't assume anchors will be there

Descent gear is part of your rack



Alternate methods for protection

Fixed hand line

- For less technical but exposed terrain

Running belay (simul-climbing)

- No anchor
- At least 2 pieces of pro

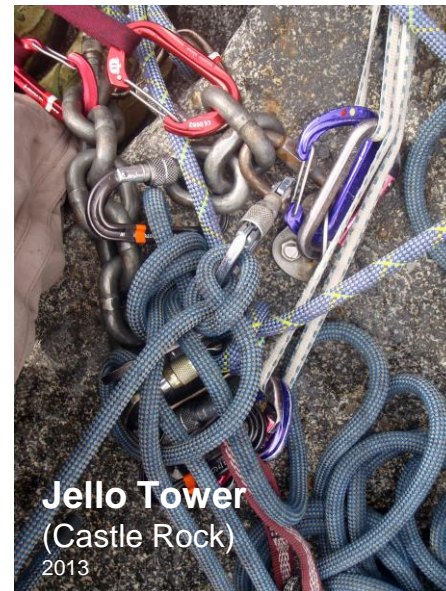
Climbing in coils

- Coil extra rope when scrambling between pitches



Anchor evaluation

Would you have any concerns encountering these anchors?



Two teams sharing a two-bolt anchor with chains on quicklinks

How would you improve them?

A dozen strands of tattered sun-bleached webbing, an aluminum rap ring, and a rusty quick link

Field Trips

April 3 - Spire Rock

- Gear placement
- Anchor building
- Multi-pitch belay changeover

April 10 or 11 - Vantage (Frenchman Coulee)

- Mock leads on bolts
- Mock multi-pitch leading, belay changeover practice
- Practice placing gear and building anchors from the ground
- Leading on bolts (optional)

Most field trips will be split over two days with 2 instructors and up to 4 students each day

April 24 or 25 - Tieton (Royal Columns)

- Anchor building (timed)
- Mock leads on gear, assess gear placement
- Mock multi-pitch leading, practice belay changeover

May 15 or 16 - Leavenworth (Castle Rock)

- Prepare and communicate a trip plan
- Execute a multi-pitch climb in teams of two, swinging leads

Homework

Practice with gear

- Get a feel for relative sizes - know the stoppers and cams that fit for thin and wide fingers, thin and wide hands, fist, etc.
- Practice gear placement and cleaning on the ground
- Spend time racking gear, slings, etc.

Practice belay changeover

- Go through the routine - focus on efficiency, gear and rope management, and communication



Get out and climb!

The Intermediate field trips alone are not enough experience to make you proficient at leading multi-pitch trad routes