Technical Canyoneering Practice
February 11-12, 2012

Bring proper personal gear and daily necessities:

Canyoneering gear each person needs to have for the weekend:

- Helmet (bike helmet is OK)
- Harness, rappel device, 2 or more locking carabiners; extra locking or non-locking ‘biners are good to have
- 1” webbing; at least 1 4-5’ over shoulder sling and one longer piece for assorted uses
- Leather/ fake leather gloves (optional: additionally, sticky face gloves for climbing & warmth)
- Pack to carry it all in (must carry clothing, water bottles, etc. inside once we get in the canyon since they will fall out or get beat-up outside the pack)

Personal gear:

- Water, lunch, snacks; thermos of hot beverage (optional)
- Clothing for the day including ‘rough n tough’ outer layer to withstand sandstone abrasion
- Warm hat that can be worn under the helmet; neck gaiter can really add warmth in a cold canyon
- Toilet paper & plastic bags or ReStop bags for disposal
- Chemical hand warmers (optional but you know if you are likely to want/need them)

Getting to the canyon

- Pick the right cars &/or trucks to get to the trailhead
- If you have a GPS be sure to mark a way point at the trailhead &/or vehicle location
- Overland travel means avoiding crypto-soil as much as possible by walking on sand or rock
- Evaluate the weather before going into the canyon, where you can see the sky and map; making an informed decision about whether to go in or not. Discuss flash flood and exit/ safety.

Gearing Up

- Harness and helmet buckles checked by at least 1 other person. Tuck in all clothing under the harness to avoid getting cloth caught in rappel device or carabiners.
- Set up a safety sling on your harness so you can clip in for safety at anchor locations with ‘exposure’
- Put all odds n ends INSIDE the pack. If things drop or fall they can hurt people down below or fall into hard to get to locations causing you to lose important gear &/ or waste group time trying to retrieve.

Knots – practiced earlier – apply that knowledge today
• Clove hitch for ‘biner block; to adjust rope length &/or move abrasion point (Figure 8 rappel device may be used in this application too)
• European Death Knot to tie 2 ropes together
• Figure 8 (or 9) to tie knot in end of rope or create a loop to clip you or your pack into
• Half hitch or Mule Hitch to back up other knots

Anchors

Discuss D-E-A-R

• Dry location
• Efficient use of martials
• Accessible location for safely getting onto the rope for rappel and clipping in at top of the drop
• Rope retrieval is easy to pull, easy on the rope and does not fray anchor webbing

Discuss E-A-R-N-E-S-T

• Equalized between more than one anchor point if possible
• Angle is good for both the rappel and the rope pull from the bottom
• Redundant means using more than one anchor if one is anything less than a 12” diameter tree
• No extension since extensions may mean creating addition wear n tear points
• Solid anchor for what we are doing; not all anchors need to be created equally, depending on size of group, slope angle, friction and other variables
• Timely means do not take an hour to build an anchor for a 20’ rappel

Single vs. multi point anchors. One anchor to rappel from. Another for safety tie-in? Other options

Most of the anchors we will use today will be slings around trees; a few may be slings and boulders. This is probably not a good location for building cairns (rock piles) though we will look for the opportunity.

Rig, test and evaluate your anchors or anchors present when you come on the scene

Back-up marginal anchors with packs &/or ‘meat’ anchors

Have first person down look to see if it is a 2-part; sequenced, rappel such that you need to use the anchor above for 2 rappels or sections below (ex: Lost n Found Canyon, Yellow Cat area; or to pass a pothole)

Rigging

• Personal safety first – if you are concerned or there is a possibility of a fall, clip yourself in to an anchor (your own for this purpose or the rappel anchor)
• Determine how much rope and friction are needed – decide on single or double rope rappel
• Blocked rope for single-rope rappel (‘biner block, figure 8 knot block or figure 8 device block)
• Releasable blocking system to be able to lower 1st rappeler or change abrasion point of rope
• Belay the 1st rappeler or any others who need it with a top-rope belay (same or separate anchor? simple hip belay-meat anchor or belay through rappel/belay device and clip to anchor? Depends on circumstances)
• Edge protection for the rope &/or anchor sling

Climbing, belaying, hand-lines

• 3rd class climbing is hands n feet all in use; 4th class adds a rope for a belay
• Up or down climbing may necessitate ‘spotting’ the climber, a belay or a hand-line (with or without a self-belay device)

Rappelling principles & practice

• Choose an appropriate rappel device (ATC? Figure 8? Piranha? Other? Why?)
• Only use as much rope as is needed. Carry & use short rope if that is all that is needed.
• Rig for appropriate amount of friction depending on single vs. double rope; fat or skinny rope; slope/rappel angle; personal experience/comfort level
• Control speed: proper breaking positions depending on various factors, adding friction on way down
• Forms of belay: top rope belay, fireman’s belay, auto-block prussic on carabiner on harness leg
• Pros & cons of auto-block (takes time, can jam, one more thing for a new canyoneer to worry about, gives a sense of real or false security, can be set above or below rappel device, other)
• Protect the rope and anchor as you go over the edge on rappel- careful to not snap the rope against the rock edge, use guide hand &/or proper-lean; or, sit-n-scooth technique to avoid rope bruising (the term is ‘core shot’)/ damage. Position a pack, clothing or ‘rope protectors’ to assure rope is not damaged
• Rappel off the end of the rope into water or any time some team members are using a Figure 8 device to rappel on since many types of ropes become badly twisted from a Figure 8.
• Courtesy rappel shortens anchor at the top to allow all but last person to get onto the rope and start their rappel away from a difficult or exposed edge
• Do a test pull to be sure the rope will come down before the last person rappels, on every rappel
• Pull rappel line and pull cord apart so they do not tangle, making pulling more difficult. Position pull-cord so is on the bottom or against the rock. This creates less likelihood of binding the rope tight to the rock face

Ascending the rope

• Use 1 ascender on gentle terrain. Tie a knot in the end of the rope, Clip the ascender to the rope and to your harness so it cannot get away.
• Use 2 ascenders on steeper terrain, one on the harness and one on a foot. Clip harness ascender low; foot ascender above. May use manufactured etriers (sling ladder) for the foot or improvise from slings at hand. By improvising you can carry less single-purpose specialized gear; though it may be appropriate depending on what is known or suspected of canyon conditions. Rubber bands may help keep the sling on that foot. Develop a smooth rhythm of stand up on the foot, push waist device up and sit, while sitting push foot device up. Stand up, push waist ascender up. . . . Be sure to clip foot ascender to your harness. Should it slip down the rope it can get away from you. Weight the bottom of the rope by having a person hold it or tie a pack on as a weight. It is much easier to ascend a tensioned rope.

Slot canyon technique (Saturday with Ruxton)

• Carry a small pack. Remove it when necessary and dangle it on a carabiner or webbing tether from your harness (side or center loop, you choose)
• Chimney, stem, bridge, arm lock, cam, grunt, cuss laugh or scream (well, not necessary but it may just come out) your way up
• Use hand-line if necessary. If so, sequence so everyone is not standing in one spot waiting for all the others to come up. Keep moving up or downward. Everyone should be carrying 15-50’ of webbing or 7-9mm rope for this or other canyon uses and learning to set up a hand-line on a body belay or by tying off to a hasty anchor.

Pothole Escapes (Sunday)

• Partner assist(s) on knee, on shoulders, other boosts
• Counter-weight (throw a pack, rock tied snuggly onto sling on end of rope, other?)
• Ascenders, Batman, or other assist once a rope is up and over
• One person (best climber) climb around a section others might fall off of, then belay others through the pothole (either walking or swimming pothole)
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Rigging

• Personal safety first – if you are concerned or there is a possibility of a fall, clip yourself in to an anchor (your own for this purpose or the rappel anchor)
• Determine how much rope and friction are needed – decide on single or double rope rappel
• Blocked rope for single-rope rappel (‘biner block, figure 8 knot block or figure 8 device block)
• Releasable blocking system to be able to lower 1st rappeler or change abrasion point of rope
• Belay the 1st rappeler or any others who need it with a top-rope belay (same or separate anchor? simple hip belay-meat anchor or belay through rappel/belay device and clip to anchor? Depends on circumstances)
• Edge protection for the rope &/or anchor sling

Climbing, belaying, hand-lines

• 3rd class climbing is hands n feet all in use; 4th class adds a rope for a belay
• Up or down climbing may necessitate ‘spotting’ the climber, a belay or a hand-line (with or without a self-belay device)

Rappelling principles & practice

• Choose an appropriate rappel device (ATC? Figure 8? Piranha? Other? Why?)
• Only use as much rope as is needed. Carry & use short rope if that is all that is needed.
• Rig for appropriate amount of friction depending on single vs. double rope; fat or skinny rope; slope/rappel angle; personal experience/comfort level
• Control speed: proper breaking positions depending on various factors, adding friction on way down
• Forms of belay: top rope belay, fireman’s belay, auto-block prussic on carabiner on harness leg
• Pros & cons of auto-block (takes time, can jam, one more thing for a new canyoneer to worry about, gives a sense of real or false security, can be set above or below rappel device, other)
• Protect the rope and anchor as you go over the edge on rappel- careful to not snap the rope against the rock edge, use guide hand &/or proper-lean; or, sit-n-scooth technique to avoid rope bruising (the term is ‘core shot’) / damage. Position a pack, clothing or ‘rope protectors’ to assure rope is not damaged
• Rappel off the end of the rope into water or any time some team members are using a Figure 8 device to rappel on since many types of ropes become badly twisted from a Figure 8.
• Courtesy rappel shortens anchor at the top to allow all but last person to get onto the rope and start their rappel away from a difficult or exposed edge
• Do a test pull to be sure the rope will come down before the last person rappels, on every rappel
• Pull rappel line and pull cord apart so they do not tangle, making pulling more difficult. Position pull-cord so is on the bottom or against the rock. This creates less likelihood of binding the rope tight to the rock face

Ascending the rope

• Use 1 ascender on gentle terrain. Tie a knot in the end of the rope, Clip the ascender to the rope and to your harness so it cannot get away.
• Use 2 ascenders on steeper terrain, one on the harness and one on a foot. Clip harness ascender low; foot ascender above. May use manufactured etriers (sling ladder) for the foot or improvise from slings at hand. By improvising you can carry less single-purpose specialized gear; though it may be appropriate depending on what is known or suspected of canyon conditions. Rubber bands may help keep the sling on that foot. Develop a smooth rhythm of stand up on the foot, push waist device up and sit, while sitting push foot device up. Stand up, push waist ascender up. . . Be sure to clip foot ascender to your harness. Should it slip down the rope it can get away from you. Weight the bottom of the rope by having a person hold it or tie a pack on as a weight. It is much easier to ascend a tensioned rope.

Slot canyon technique (Saturday with Ruxton)

• Carry a small pack. Remove it when necessary and dangle it on a carabiner or webbing tether from your harness (side or center loop, you choose)
• Chimney, stem, bridge, arm lock, cam, grunt, cuss laugh or scream (well, not necessary but it may just come out) your way up
• Use hand-line if necessary. If so, sequence so everyone is not standing in one spot waiting for all the others to come up. Keep moving up or downward. Everyone should be carrying 15-50’ of webbing or 7-9mm rope for this or other canyon uses and learning to set up a hand-line on a body belay or by tying off to a hasty anchor.

Pothole Escapes (Sunday)

• Partner assist(s) on knee, on shoulders, other boosts
• Counter-weight (throw a pack, rock tied snugly onto sling on end of rope, other?)
• Ascenders, Batman, or other assist once a rope is up and over
• One person (best climber) climb around a section others might fall off of, then belay others through the pothole (either walking or swimming pothole)
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References and suggested reading:

Climb-Utah Canyoneering Primer  http://climb-utah.com/Misc/natural.htm
Climb-Utah Technical Canyoneering Gear  http://climb-utah.com/Misc/gear.htm
Tom’s Utah Canyoneering Guide  http://canyoneeringusa.com/utah/
Canyoneering: Beginning to Advanced Techniques order new or used book from Amazon
Technical Canyoneering Practice
February 11-12, 2012

Bring proper personal gear and daily necessities:

Canyoneering gear each person needs to have for the weekend:

- Helmet (bike helmet is OK)
- Harness, rappel device, 2 or more locking carabiners; extra locking or non-locking ‘biners are good to have
- 1” webbing; at least 1 4-5’ over shoulder sling and one longer piece for assorted uses
- Leather/ fake leather gloves (optional: additionally, sticky face gloves for climbing & warmth)
- Pack to carry it all in (must carry clothing, water bottles, etc. inside once we get in the canyon since they will fall out or get beat-up outside the pack)

Personal gear:

- Water, lunch, snacks; thermos of hot beverage (optional)
- Clothing for the day including ‘rough n tough’ outer layer to withstand sandstone abrasion
- Warm hat that can be worn under the helmet; neck gaiter can really add warmth in a cold canyon
- Toilet paper & plastic bags or ReStop bags for disposal
- Chemical hand warmers (optional but you know if you are likely to want/need them)

Getting to the canyon

- Pick the right cars &/or trucks to get to the trailhead
- If you have a GPS be sure to mark a way point at the trailhead &/or vehicle location
- Overland travel means avoiding crypto-soil as much as possible by walking on sand or rock
- Evaluate the weather before going into the canyon, where you can see the sky and map; making an informed decision about whether to go in or not. Discuss flash flood and exit/ safety.

Gearing Up

- Harness and helmet buckles checked by at least 1 other person. Tuck in all clothing under the harness to avoid getting cloth caught in rappel device or carabiners.
- Set up a safety sling on your harness so you can clip in for safety at anchor locations with ‘exposure’
- Put all odds n ends INSIDE the pack. If things drop or fall they can hurt people down below or fall into hard to get to locations causing you to lose important gear &/ or waste group time trying to retrieve.

Knots – practiced earlier – apply that knowledge today
• Clove hitch for ‘biner block; to adjust rope length &/or move abrasion point (Figure 8 rappel device may be used in this application too)
• European Death Knot to tie 2 ropes together
• Figure 8 (or 9) to tie knot in end of rope or create a loop to clip you or your pack into
• Half hitch or Mule Hitch to back up other knots

Anchors

Discuss D-E-A-R

• Dry location
• Efficient use of martials
• Accessible location for safely getting onto the rope for rappel and clipping in at top of the drop
• Rope retrieval is easy to pull, easy on the rope and does not fray anchor webbing

Discuss E-A-R-N-E-S-T

• Equalized between more than one anchor point if possible
• Angle is good for both the rappel and the rope pull from the bottom
• Redundant means using more than one anchor if one is anything less than a 12” diameter tree
• No extension since extensions may mean creating addition wear n tear points
• Solid anchor for what we are doing; not all anchors need to be created equally, depending on size of group, slope angle, friction and other variables
• Timely means do not take an hour to build an anchor for a 20’ rappel

Single vs. multi point anchors. One anchor to rappel from. Another for safety tie-in? Other options

Most of the anchors we will use today will be slings around trees; a few may be slings and boulders. This is probably not a good location for building cairns (rock piles) though we will look for the opportunity.

Rig, test and evaluate your anchors or anchors present when you come on the scene

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Canyoneering: Beginning to Advanced Techniques order new or used book from Amazon