

SWR-Student Handout

Student Handout:

Safety Plan/Risk Management

1. **Medical Forms:** All participants should fill out a medical form
2. **Waivers and Assumption of Risk:**
All participants must fill out a waiver and risks will be verbally explained.
Challenge by choice will be explained to students.
3. **Insurance**
4. **Protocal:**
know site, prior site visits and scouting for danger
have lesson plans
have emergency plan
know students
5. **Document any accidents and injuries**
6. **Use upstream safety when appropriate**
7. **Always have one “safety observer” during each drill performed in or near the water.**

Equipment List

Students:

Hypothermia Prevention:

Skull Cap
Dry Top
Stretchable Fleece or
Synthetic Layers
Wet Suit (padding against rocks)
Neoprene/Wool Socks
Dry Suit (if you have one)
Gloves

MA Gear:

(3) locking carabiners
(2) 12-15ft (1in tubular webbing)
(1) Throw Rope (70ft+)
*bring extra if you have them
(2) 8ft prussic cord (5.5-7mm)
(1) 10ft piece of rope
(1) pulley

Safety:

Helmet
RESCUE PFD
Knife
Whistle (attached to PFD)
River Shoes (closed toe)

Paddling Gear:

Boat (with floatation)
Paddle
Skirt

Misc:

Pens
Paper
Folder
Sunscreen

SWR-Student Handout

Hazards and Hydrology

Hazards: **Why Dangerous** **Solutions**

Hydraulic VS Hole

Characteristics of Swiftwater:

1. Relentless
2. Powerful
3. Predictable

Tutorial: How To Scout Rapids

1. **Get out of your boat carefully.** do not swim down the rapid you are scouting.
2. **Store your boat in a safe spot.** be sure it wont float away, fall in
3. **BRING YOUR THROWBAG!** you may slip and fall in
4. **Analyze the rapid. Look at it for a line.**
 hazards (caves, sieves, undercuts, holes, etc).
 look at it from different angles as not everything is obvious from a single angle
 (a rock could look fine from one angle, undercut from another)
5. **Choose your line.** visualize running it, if you cant picture it, walk
6. **Make a "worst case scenario".** This should be what would happen if something went wrong. Lets say that you got off line: Where would you go now? How do you get back on line? Where is safety set for help?
7. **Communicate to others.** Let everyone know you are go/nogo
8. **Look at the horizon line.** You need to know where to enter (see line from boat level)
 Find markers on this horizon line.
9. **Focus, Ferry out and STOMP YOUR LINE!**

SWR-Student Handout

Rescue Philosophy **Prevention-Prevention-Prevention**

Accident Timeline:

Long Before:

Before:

Just Before:

Just After:

After:

Long After:

Rescue Priorities:

Rescue Action:

Be Prepared to Act-don't assume someone else will help, don't wait
Assess the Situation-look for more than one victim, don't get tunnel vision
 look at Mech of Injury, rescuer hazards
Decide to Act, be decisive, but don't rush
Have a backup plan

Take Home Message:

Go Home Safe
PREVENT Rescues
Play What If? Plan prevention and worst case scenario, back up plan
Develop paddling and rescue skills
PRACTICE< PRACTICE

Rescuer Progression:

RETHROG - good rescues are SIMPLE, SAFE, FAST
Reach-voice (they cant see!), throw rope, boat, stick...
Throw-shore based, stabilization lines
Paddle-boat based rescue
Go-live bait, V lower, contact rescue, wading

SWR-Student Handout

Anchors

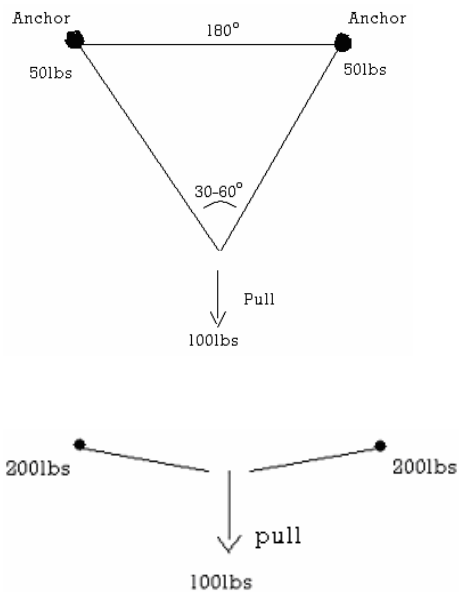
Types:

Attaching an anchor:

- Avoid sharp edges or pad them
- tie it low
- if weak use multiple anchor points (equalize)
- back up anchor (with another that can also hold entire load-dont shock)

Angle:

Ideal Angle-30-60 degrees



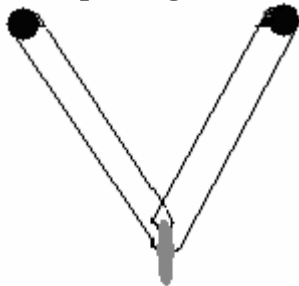
Anchors:

- wrap 3 pull two
- twist one so carabiner inside loop (self protecting)
- water knot in front so you can watch it

Self Equalizing Anchors:

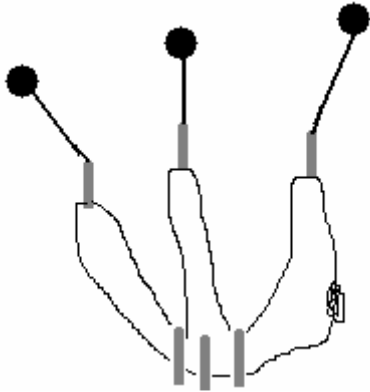
2 point Anchor

Self Equalizing/Self Protecting (twist)



SWR-Student Handout

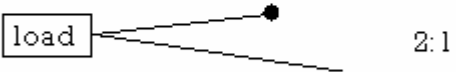
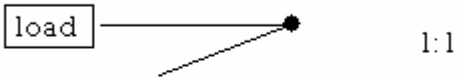
Three Point Anchor Self Equalizing/ Self Protecting



Mechanical Advantage Reasons Rope Systems Fail:

Safety:

Mechanical Advantage:



Increasing Force: (how?)

SWR-Student Handout

Throw Ropes

Rope Qualities:

Rope Care:

1. dont stand on rope
2. clean the rope (sand can cut rope)
3. dry the rope (not in dryer)
4. avoid sharp edges
5. retire old ropes (3 years) or used ropes
6. keep out of the sun
7. inspect your rope often

Rope Safety:

1. be sure you have to use rope
2. communicate (do they want a rope)
3. 1 rope at a time
4. have a knife on you at all times!

Setting Ropes/Scouting:

1. where will accident happen? (go far enough downstream)
2. what will happen after the accident
3. what is downstream
4. where will swimmer land/pendulum (prevent swim into hazard)
5. set multiple ropes if necessary

Throwing a Rope:

1. hook two ropes together
2. yell "ROPE!!"
3. hold the end, be ready for pull
4. throw over/past the victim
5. if miss, give directions "behind you"
6. tell to put over opposite shoulder, lay on back (not front, get water up nose, snowplow)
7. belay around waist, rope on downstream hip (open downstream)
8. judge where you will swing them

Rescue Vests

Sell it: (Uses):

Characteristics:

SWR-Student Handout

Knots

Characteristics of a Good Knot:

When Tying Knots:

Terms:

- Bight-bend
- Bitter End-working end
- Standing End-on ground

Important SWR Knots:

Create a loop in end of a rope:

- *Figure 8 on Bight
- *Figure 8 follow through
- Double Eye Figure 8
- Bowline
- Equalizing Figure 8

Create a loop in the middle of rope:

- *Butterfly Knot
- *Directional Figure 8

Knots that connect two lines:

- *Water Knot-connect two ends of webbing
- *Barrel Knot (Double Fishermans)-connect two ropes
- *Sheet Bend-connect two ropes of different sizes
- Square Knot

Knots for brakes/cinching:

- *Prussic Knot
- *No Knot
- *Clove Hitch
- *Truckers Hitch
- Bachman Brake
- Munter Hitch

Back up Knots:

- *Overhand knot
- Fishermans Knot

MA Knots:

- Equalizing Figure 8

Unpinning

Avoidance:

Types of Pins:

Pinning Results from all Forces Being Equal:

Self Rescue:

Options:

Equipment Unpinning (NO BOATER):

-Techniques

SWR-Student Handout

Entrapment

How Does it Happen:

Avoidance:

Action:

1. Determine if they are heads up or heads down

A. Heads Down (you have 2-4 min)
extreme methods may be in order

B. Heads Up

quickly stabilize the victim so rescue efforts can begin

Stabilization Line

-Floating Tag Line (two ropes with PFD between can work or float bag)

-Weighted Line (use if victim is underwater-put rocks in throw bag)

Tethered Raft-provides a secure platform to work from

2. Extracation:

Be sure you plan for after they are free-dont let them float free away downstream

Stabilization Lines

Rescue Sequence:

1. Assessment

2. Stabilization-buys you time to think/organize

3. Extracation

4. Evacuation

Floating Tag Line:

*a line across the river with a float on it (lifejacket, float bag...)

*easy way is to clip two throw ropes to a PFD

Purpose: to get a line to a victim in a fixed position (low head dam, foot entrap)

gives the victim something to grab onto

Snag Tag/Weighted Line:

*very difficult to keep the line under (best as a secondary option)

Purpose: to keep a line under surface to release foot entrapped victim

Bare Line:

*easier to control than weighted or floating line

*can be forced under when needed

*simple

Purpose: to stabilize a foot entrapped victim (get into “heads up” position)

*use two lines at once, one for them to grab, next to free legs

SWR-Student Handout

Line Ferries

Purpose:

- get a line across the river to:
 - v lower, stabilization line, snag lines, zip lines
- often very time consuming (practice)

Safety:

- set downstream safety
- communicate
- be sure have opposite shore “catcher” secure--belayers (tons of force-dont get dragged in)
- person ferrying line needs a knife

Methods:

Considerations:

1. Line will create a ton of drag
 - try to keep line up out of water
 - throw line in water when they go
 - two lines+
2. Safety checks (what is downstream...)
3. Set line below
4. Good swimmer-experienced rescuer in vest
5. No rescue vest-- hold in teeth or loop over shoulder
6. Look for shortest distance, short ferries work better even if in current

Scene Management

- Rescue Sequence:**
- Locate**-communicate/establish a leader
 - Access**-RETHROG (get safety gear to victim-PFD)
 - Assess**-injuries, state of mind (communicate with victim)
 - Stabilize** (do not make the situation worse—evaluate carefully)
 - Extricate**-move the victim to safety
 - Evacuate**-get victim to medical treatment

Incident Command System:

- *most rescues are quick and informal

Key Roles:

Leader

- Hands OFF
- Look at the big picture
- There is only **one** leader

Rescuer

- Hands ON
- Go to the victim (may have medical or other rescue skills)

Safety

- Upstream and Downstream
- Control upstream traffic
- Use a strong, loud person (use river signals, be firm)

SWR-Student Handout

Other Roles

Rigger-MA, knots...

Medic-provide medical care (doctor in the group?)

Evacuation-develops evac route/plan

Gofer-gathers needed equipt, fills other roles

Security/Info Officer-avoid talking to media, dont give out info

Alternative Teams-est new ideas, work on more complex techniques

Comfort Teams-set up camp, distribute food, take care of rescuers

Key Points:

YOU are the most important-keep rescuers safe

Do whatever needs to be done

Keep the Leader Informed (COMMUNICATE)

Have alternate plan-have someone working on it

Signals:

Angle Boat R/L-point to nose, then direction (put nose of boat angle that way)

Are you OK?-tap head and point

Boat-point to boat or ?

Boof-flat hand jumping off fist

Drive L/R(when you want them to paddle hard that direction, not just go there)-

hold hands like driving car, then point direction you want them to go

Eddy Out-pump paddle or twirl finger

Go/All clear-vertical arm/paddle

Go Back/Abort-wave hands in front of face, wave paddler back

Go Right/Left-vertical arm slant R or L

Go Far Right/Left-slant arm/paddle and move up and down at angle

Go 5 feet off the wall-point to wall, then to foot, then give # with fingers

Help/emergency-wave arm

Hole-circle arms above head or hold nose and point, waving hand as if it smells bad

Bad Hole-hold nose or wave hand in front of nose (stinks!) then give hole signal

Grabby Hole-clench and unclench hand (grabbing motion) then give hole sign

Look/Scout-2 fingers pointed at eyes

Me (something you are going to do)-point to yourself and give second signal

Paddle Hard-paddling motion with hands/arms

Piton-crash pointed hand into fist

Portage/Walk-walking motion with index and middle fingers pointed down

Raft coming-flat hand, palm to face, rub face

Rock-fist

Rope-throwing motion and holding ball motion

Safe Drop-two hands in front of face with ok sign in hands

Scout-shade eyes with flat hand

Stop-horizontal arms

Surf Wave-hand up and down in wave motion as if going over big waves

Tongue-point to your tongue (wag your tongue if you feel frisky)

Tree/strainer-vertical arm w/spirit fingers and falling arm

Undercut Rock-hover flat hand over fist

You(something you want them to do)-point to them and give second signal

Whistle: 1 blast-pay attention to me

3 long repeated blasts-emergency