

WTS SURVIVAL GUIDE

By Nick Weighton, February 2008

I. PRIOR PLANNING & PREPARATION - "THE 3 PS"

- Surviving begins long before venturing into the wilderness. Applying the “3 Ps” will give you a fighting chance.
- Training courses provide knowledge and skills on what to do and how to use your equipment.
- You are individually responsible for having the right gear. Evaluate your pack for the proper equipment and basic survival items.
- Think through some simple survival scenarios. Consider what you would do in response and prepare and equip yourself accordingly.
- Hiking plan should include contingencies for medical and survival emergencies, telling someone about your trip, overdue time and follow-on actions by your emergency POC.
- Old scout motto "Be prepared" definitely applies.

II. SURVIVAL VS BIVOUAC

- There are major differences between bivouac and survival but many fundamentals of bivouacking carry over to a survival mode.
- If prepared to bivouac, you have greatly increased your chances of enduring a critical event.
- There are workable solutions to most survival situations, use your mind.
- Ultimate goal in survival is to survive. Your task is to determine the best way to do that.

III. LEADERSHIP & ORGANIZATION

- Identify hiking, medical and survival leaders for your group beforehand. Choose the best qualified.
- In a medical emergency, hiking leader remains in charge while supporting the medical leader's needs. In a survival mode, survival leader takes charge, determines course(s) of action and oversees the group's activities.
- After developing a survival plan, the leader should task organize everyone into small work teams: shelter building, collecting firewood, getting water, (taking care of casualty).

Emergency Situations

- Leader monitors the group's tasks, rotates people doing harder tasks, adjusts priority of tasks as needed, motivates and encourages the group.
- Think ahead about follow-on tasks. Anticipate what has to be done next, where it fits into your priorities, how long it might take and the best time to get started.
- Consider upcoming phases of survival: Getting through the first night, what does the group need to do the next day and the next.

IV. TEAMWORK

- Everyone must do their part as team members, you can offer suggestions but support and follow the leader's decisions and instructions. Work as a team, survive as a team.
- Pack the proper gear, don't force others to give up their equipment for your oversights or selfishness.
- A good attitude increases one's ability to get through a survival situation. Try to maintain a positive outlook and encourage fellow team members.
- Do your assigned tasks with determination. When done, help another person or ask the leader what's next to do.
- Surviving won't be easy -- stresses will build, your true worth will come out.

V. CASUALTY

- An injured person gets first priority of everything. They are very susceptible to effects of both the injury and elements. If you're feeling a little down, think how they feel!
- The entire team functions around the casualty, but try to avoid more casualties resulting from hypothermia or frostbite. If you can only construct one shelter, rotate members to tend to the casualty and get some temporary relief from the elements. Frostbite and hypothermia can set in fast, check each other frequently (you can't check your own face and ears without a mirror) and take action to remedy problems.
- Rescue can take a long time, it may take crews several hours just to get to a group and many hours more getting them out. If the situation warrants, you may need to send 2 runners for help if there are sufficient hikers remaining to tend to the casualty(ies). General rule is don't try to carry someone out. If critical, the group might make a stretcher to litter someone but carefully consider this alternative. Transporting a person could worsen an injury or injure team members.

VI. INITIAL STEPS, SITE SELECTION AND OTHER CONSIDERATIONS

- First thing you should do in a survival situation is “STOP” (calm down and regain control of yourself), this will help you make rational decisions.
- Follow-on steps are Think, Plan and then Take Action.
- Evaluate the situation, quickly consider options and make a decision or set of decisions (i.e. "Dark in one hour, we must start shelters now." or "We'll descend below tree line then evaluate resources. We'll attempt cell phone calls and review basic survival procedures on the way down.").
- Develop a quick plan of action based on equipment, natural resources, forecast, time of day, time of year, status of group, and other factors. Start implementing your plan ASAP. If there is daylight it will pass rapidly, simple tasks become harder at night. Adjust your plan later if needed.
- Select an adequate survival site, it doesn't have to be perfect. Can consider hiking a short distance to a good site but weigh the pros and cons.
- Below tree line – usually there are ample resources but no guarantees. Forested areas provide windbreaks, shelter building materials, fuel and possible sources for water.
- Above tree line – generally there are limited resources, move down to tree line if feasible. If you have no choice, seek shelter on the leeward side of rock outcrops or ridges. Caves and rock overhangs will be rare. May be able to build rock walls for shelters and/or windbreaks. Use caution around tunnels and mine shafts.
- Analyze resources: Includes natural and manmade items. Physically see what is on hand and evaluate their uses. Knowing what you have to work with will help you make better decisions.
- Natural resources: Consider all possibilities. Use fallen or cut trees for walls and roof rafters; rocks for walls or windbreaks; snow for building trenches, snow blocks or snow caves; leafy or needle branches to insulate roof, outer walls and floor; and snow to insulate roof and outer walls.
- Build uphill from streams and lakes (cold, damp air flows down and spreads away from them at night). Don't build on ridges or in open, windy areas if a better spot is nearby.
- Sources of water: Use common sense and map analysis. If far away, it will require teamwork.
- Firewood: Finding and gathering wood are big variables. Helps to have cutting tools.

VII. SHELTER TYPES & TECHNIQUES

- Based on resources and time; determine the best type of shelter to build for your situation.
- Basic types (warm to cool weather): Lean-to and Open ended “pup tent” or Closed ended “pup tent” and Tarp roof hut using log or rock walls.
- Advanced types (chilly to cold weather): Tree tent, Log hut, Snow trench, Snow blocks, Blowout, Snow cave.
- Build strong for worst case scenario, anticipate what might happen (wind, rain, snowstorm).
- On level terrain, align entrance downwind; on sloping terrain, align down slope. Critical to close up the entrance as best possible. Can lash small logs to make a door, fill a tarp with pine boughs and tie the corners together to make a “cork in the bottle” closure, make a snow block door or use a tarp over the entrance (anchor the bottom of it). You can make an extended entryway (covered “tunnel”) 6-10’ long and 2’ wide by 2-3’ high coming off the main shelter entrance with closures at each end. This provides double closures thus more protection from the elements.
- Insulate floor and roof with 12-18” of pine boughs/leafy branches (plus 12-18” of snow if available)
- Improve each day but you must balance workload with conserving energy if limited food. Work for short periods then rest, stay hydrated.

VIII. FIRES

- Carry 2-3 igniters (matches, lighter, flint) and 2-3 fire accelerators (trioxane tablets, candle, cotton balls rolled in vaseline). What you carry must work under severe conditions and be easy to use. Test beforehand before relying on for real.
- Determine if a fire is feasible or worthwhile before spending time and resources starting one. Shelter and fire can alternate as 1st and 2nd priorities depending on circumstances. Shelter is vital to avoid exposure to the elements, fire is a necessity if someone is wet or hypothermic. Don’t let old schools of thought override common sense and doing what is smart.
- Gather up all sizes of wood before starting. Can often find dry twigs and small dead branches on the interior of large trees. Look for larger limbs and logs among deadfall. Finding logs under deep snow can be difficult, look for standing dead trees.
- Check before you build a fire - no snow on overhead branches, not too close to your shelter.
- Use natural windbreaks or make one from logs and/or snow to block the wind and reflect heat.

- If the snow is shallow, dig down to the ground or rock base. If on deep snow, make a base of green logs and/or stones. Might use a metal shovel but it must be steel, aluminum will melt.
- Based on resources and time of year, it may be sufficient to sit around a fire all night and not build a shelter. Or it may not be beneficial to keep a fire going all night, hunker down in your shelter and start a new fire in the morning. Your decision.

IX. RESCUE SIGNALS

- Carry several manmade signal devices and augment them with natural materials when available.
- Employ multiple signaling techniques, i.e. mirror or smoky fire for long range signaling and whistles and bright colored tarps for close range recognition.
- “3 of anything” is the international signal for help. Realize it will be awhile before someone is looking for you and not everyone knows what certain signals mean. Save one-time signal devices until the best opportunity to use them is evident.
- Use bright colored thermal blankets/tarps to form an “equals sign” or letters like V, T, H, L (such patterns don’t form naturally). Cut thermal blankets/tarps in half if needed and anchor well (could get blown away in high winds, and flying objects are hazardous to helicopters landing nearby). Can also use logs/pine boughs on snow to form the symbols or letters.
- In winter, you can stomp SOS or HELP letters in snow but they should to be filled in with dark colored materials like branches/logs/rocks to make them more visible to searchers. Letters on sloping terrain can be seen from greater distances. In summer, make letters from materials that contrast with the ground.
- Mark snow shelters with bright colored flagging material.
- When using a signal fire, don’t cover the fire completely with pine boughs, leave a quarter “pie wedge” uncovered so air can flow in and under the boughs causing the heat and smoke to rise.
- Have signal items handy – bright colored tarps, green branches for smoke, mirrors, whistles, flares, other.

SIGNAL MIRRORS:

- Manufactured types – specifically made mirrors with a clear glass center area and embedded mesh wire. Instructions for using the mirror are printed on the back of it.
- Techniques for using special mirrors:

Emergency Situations

- Angle the mirror so a sun spot appears on the palm of your hand. Move the mirror to your eye while keeping the sun spot on your palm.
- Slightly rotate the mirror until you see a small image of the sun in the center mesh area of the mirror. You will use it as a “sighting device.”
- Raise your head and mirror together while keeping the “sun image” in the mesh area.
- Turn head and mirror simultaneously to “sight” where you want the sun’s reflection to go. The sun’s reflection is beamed wherever you position the small sun image.
- Field expedient methods for using glass or metal mirrors (CDs and credit cards don’t work very well):
 - Method 1--Extend your arm full length with fingers together and pointed upward with the back of your hand toward you.
 - Hold mirror just below one eye and adjust until sunlight appears on your fingertips. You should be able to barely sight over the top of the mirror with your eye.
 - Flicker sunlight on your fingertips while positioning what you want to sight to at the top of your fingers. Your eye, mirror and hand must be aligned in a straight row for this method to work otherwise the reflected light will beam out at a left or right angle.
 - Method 2--(Good for signaling aircraft and moving vehicles.) Extend your arm full length and hold up two fingers in a “V” fashion with the back of the hand toward you.
 - Hold mirror just below one eye and adjust until sunlight appears at the base of the V.
 - Position a helicopter/low flying plane or vehicle between the first finger joints up from the bottom of the V and flicker your mirror while maintaining the object between the joints you track its movement. Turn your upper body and arm simultaneously to keep your eye, mirror and V’d fingers in a straight line with the object.
- You can sometimes use a signal mirror on hazy or thin cloud days but results vary with conditions.
- CDs and credit cards don’t work well, they diffuse the light.

X. TRUTHS OF SURVIVAL

- Average survival situation lasts less than 72 hours if someone knows you are overdue and where you went.
- Stay put. You can be found easier and quicker. Hiking out cross country is exhausting and can become deadly unless well equipped and experienced.

- Water is important, food isn't but you will tire easily without nutrition. Essential to stay hydrated. Can warm the body by heating water to make a hot beverage or hot water bottle.
- Carry purification tablets, filter devices or metal containers to purify water or melt ice/snow. If water is reasonably clean but can't be purified, drink it anyway, see a doctor later about giardia.
- Water rationing - If in limited supply, drink one or two mouthfuls periodically, your body can process small amounts more efficiently. Space out drinking intervals based on supply and situation. Excess consumption wastes water. Leader may need to keep tight control on the rationing process.
- Eating snow can kill you by inducing hypothermia if not active but it's okay to consume small amounts when very active, i.e. while building a shelter, but not when stationary in the shelter. It's better to melt a small piece of ice in your mouth rather than handfuls of snow. Best solution is to use a metal container to melt snow via a fire or other heat source.
- Food rationing - Like water, the body processes small amounts more efficiently. Space out food intake for periodic energy boosts and psychological uplift.
- Don't waste time hunting animals, you have very limited chances of finding game and can burn up more energy than gained in obtaining, preparing and cooking something. Your body might reject the food or the animal could be diseased. The whole process might attract predators.
- Don't burn 3 fires at night unless children are involved. Rescuers generally search during daylight when visibility is better and it's safer.
- If you have a problem person, try to determine the root cause. Assign them simple tasks with a good partner and try to rationally persuade them to adjust. If totally resistant, use verbal force to order them to follow the group's rules. If all fails, leave them to their own devices but be prepared to defend against irrational actions.
- Face reality, approach problems with determination to succeed, work as a team, accept and bypass overwhelming obstacles and keep up a good attitude.

Think Positive – Be Positive!

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