

ARMY, MARINE CORPS, NAVY, AIR FORCE



**AIR LAND SEA
APPLICATION
CENTER**

SURVIVAL, EVASION, AND RECOVERY

***MULTI-SERVICE
TACTICS,
TECHNIQUES, AND
PROCEDURES FOR
SURVIVAL, EVASION,
AND RECOVERY***

FM 3-50.3

NTPP 3-50.3

AFTTP(I) 3-2.26

MARCH 2007

DISTRIBUTION RESTRICTION: Distribution authorized to DOD and DOD contractors only to protect technical or operational information from automatic dissemination under the international Exchange Program or by other means. This determination was made on 23 June 2006. Other requests will be referred to:

HQ TRADOC, ATTN: ATFC-EJ, Ft Monroe, VA 23651-1067;

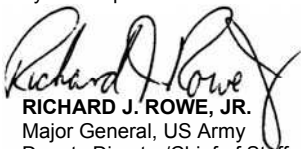
NWDC, ATTN: N5, Newport, RI 02841-1207; or HQ AFDC, ATTN: DD, Maxwell AFB, 36112-6112.

DESTRUCTION NOTICE: Destroy by any method that must prevent disclosure of contents or reconstruction of the document.

MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES

FOREWORD

This publication has been prepared under our direction for use by our respective commands and other commands as appropriate.



RICHARD J. ROWE, JR.
Major General, US Army
Deputy Director/Chief of Staff
Army Capabilities Integration Center



TIMOTHY L. DAVISON
Captain, US Navy
Commander, Acting
Navy Warfare Development Command



ALLEN G. PECK
Major General,
Commander
Air Force Doctrine Center

This publication is available through the ALSA Web site (www.alsa.mil); through the Army at Army Knowledge Online (AKO) (www.us.army.mil) and at the General Dennis J. Reimer Training and Doctrine Digital Library (www.train.army.mil) Web sites; and through the Air Force at the Air Force Publishing Web site (www.e-publishing.af.mil).

QUICK REFERENCE CHECKLIST FIVE PHASES OF EVASION

1. Immediate Actions—THINK BEFORE YOU ACT!

- a. Assess immediate situation.
- b. Assess medical condition; treat as necessary (chapter V).
- c. Take action to protect from chemical, biological, radiological, and nuclear hazards (chapter IX).
- d. Gather equipment; move to initial hole-up/hide site.
- e. Make initial radio contact in accordance with (IAW) combat search and rescue/special instructions (CSAR/SPINS).
- f. Sanitize uniform of compromising information.
- g. Sanitize area; hide equipment you decide to leave.
- h. Apply initial personal camouflage.

2. Initial Movement

- a. Move in the direction of your evasion plan of action (EPA), if possible.
- b. Attempt to break line of sight from your initial isolating area and move uphill if possible.
- c. Move out of area, zigzag pattern recommended.
- d. Use terrain and concealment to your advantage.
- e. Move to hole-up/hide site.

3. Hole-Up/Hide Site

- a. Select hole-up/hide site that provides:
 - (1) Concealment from ground and air searches.
 - (2) Safe distance from enemy positions and lines of communications (LOCs).
 - (3) Listening and observation points.
 - (4) Multiple avenues of escape.
 - (5) Protection from environment.
 - (6) Communications/signaling.
- b. Be prepared to authenticate IAW CSAR/SPINS.
- c. Establish radio contact IAW CSAR/SPINS.
(Communications/signaling devices may compromise position.)

- d. Drink water; treat injuries for long term.
- e. Evaluate combat needs.
- f. Inventory equipment.
- g. Review and execute your EPA.
- h. Determine specific location.
- i. Improve camouflage.
- j. Stay alert, maintain security, and be flexible.

4. Evasion Movement (Chapters I and II)

- a. Travel slowly and deliberately. (You are more at risk during movement.)
- b. Do not leave evidence of travel.
- c. Use noise and light discipline.
- d. Stay away from LOCs.
- e. Stop, look, listen, and smell.
- f. Move from one point of concealment to another point of concealment.
- g. Use evasion movement techniques (chapter I).

5. Recovery (Chapters III and IV)

- a. Prepare for conventional or unconventional recovery.
- b. Select best area and prepare for use of communications and signaling devices.
- c. Prepare to transmit position (range and bearing).
- d. Select site(s) IAW criteria in theater recovery plans.
- e. Observe/report enemy activity and hazards.
- f. Secure equipment.
- g. Stay concealed until recovery is imminent.
- h. Be prepared to authenticate via DD Form 1833, Isolated Personnel Report (ISOPREP) card.
- i. During recovery:
 - (1) Follow recovery force instructions.
 - (2) Secure weapon.
 - (3) Assume non-threatening posture.
 - (4) Beware of rotors/propellers.

**FM 3-50.3 US Army Training and Doctrine Command
Fort Monroe, Virginia
NTTP 3-50.3 Navy Warfare Development Command
Newport, Rhode Island
AFTTP(I) 3-2.26 Headquarters, Air Force Doctrine Center
Maxwell Air Force Base, Alabama**

20 March 2007

SURVIVAL, EVASION, AND RECOVERY MULTI-SERVICE TACTICS, TECHNIQUES, AND PROCEDURES FOR SURVIVAL, EVASION, AND RECOVERY

TABLE OF CONTENTS

Page

QUICK REFERENCE CHECKLIST	i
CHAPTER I EVASION.....	I-1
Planning	I-1
Camouflage	I-1
Shelters	I-3
Movement	I-3
CHAPTER II NAVIGATION.....	II-1
Stay or Move Considerations	II-1
Determine Navigation and Position	II-2
Travel Considerations	II-9
River Travel.....	II-9
Ice and Snow Travel	II-9

DISTRIBUTION RESTRICTION: Distribution authorized to DOD and DOD contractors only to protect technical or operational information from automatic dissemination under the international Exchange Program or by other means. This determination was made on 23 June 2006. Other requests will be referred to:

HQ TRADOC, ATTN: ATFC-EJ, Ft Monroe, VA 23651-1067;

NWDC, ATTN: N5, Newport, RI 02841-1207; or

HQ AFDC, ATTN: DD, Maxwell AFB, 36112-6112.

DESTRUCTION NOTICE: Destroy by any method that must prevent disclosure of contents or reconstruction of the document.

* This publication supersedes FM 3-50.3/NTTP 3-50.3/AFTTP(I) 3-2.26, 19 March 2003.

	Mountain Hazards.....	II-11
	Dry Climates	II-11
	Tropical Climates	II-11
	Open Seas.....	II-12
CHAPTER III	RADIO COMMUNICATION AND SIGNALING.....	III-1
	Radio Communications (Voice and Data)	III-1
	Signaling.....	III-2
CHAPTER IV	RECOVERY.....	IV-1
	Responsibilities	IV-1
	Initial Actions.....	IV-1
	Actions on the Ground/in the Water	IV-1
	Site Selection.....	IV-2
	Prepare for Recovery.....	IV-2
	Communicate with Recovery Force	IV-2
	General Principles of Recovery.....	IV-3
	Unassisted Recovery	IV-3
	Assisted Recovery	IV-5
CHAPTER V	SURVIVAL MEDICINE	V-1
	Immediate First Aid Actions	V-1
	Common Injuries and Illnesses	V-5
	Plant Medicine	V-9
	Health and Hygiene	V-12
	Rules for Avoiding Illness.....	V-12
CHAPTER VI	PERSONAL PROTECTION	VI-1
	Priorities.....	VI-1
	Care and Use of Clothing.....	VI-1
	Other Protective Equipment.....	VI-2
	Shelters	VI-3
	Fires.....	VI-8
CHAPTER VII	WATER	VII-1
	Water Requirements.....	VII-1
	Signs and Symptoms of Dehydration.....	VII-1
	Water Procurement.....	VII-1
	Water Preparation and Storage	VII-7
CHAPTER VIII	FOOD	VIII-9
	Food Requirements	VIII-9
	Food Preparation	VIII-15

	Food Preservation.....	VIII-17
CHAPTER IX	INDUCED CONDITIONS	IX-1
	Nuclear Conditions.....	IX-1
	Biological Conditions.....	IX-6
	Chemical Conditions	IX-6
APPENDICES		
	A. The Will to Survive.....	A-1
	B. Publication Information	B-1
GLOSSARY		Glossary-1
FIGURES		
	Figure I-1. Camouflage Patterns	I-2
	Figure II-1. Stick and Shadow Method to Determine North/South Line.....	II-2
	Figure II-2. Wristwatch Method to Determine North/South Line	II-3
	Figure II-3. Celestial Aids (Stars) Method to Determine North/South Line.....	II-3
	Figure II-4. Map Orientation with a Dial or Needle Compass.....	II-4
	Figure II-5. Map Orientation with a Compass Rose	II-5
	Figure II-6. Triangulation	II-6
	Figure II-7. Setting the Compass for Night Navigation	II-7
	Figure II-8. Dogleg and 90-Degree Offset.....	II-8
	Figure II-9. Improvised Snowshoes.....	II-10
	Figure III-1. Radio Transmission Characteristics.....	III-1
	Figure III-2. Size and Ratio.....	III-3
	Figure III-3. Signal Key.....	III-3
	Figure IV-1. Rescue Strap.....	IV-4
	Figure IV-2. Forest Penetrator.....	IV-4
	Figure IV-3. Fixed Loop.....	IV-5
	Figure V-1. Open Airway.....	V-1

Figure V-2. Combat-Application-Tourniquet	V-2
Figure V-3. QuickClot	V-3
Figure V-4. Useful Plants.....	V-11
Figure VI-1. Improvised Foot Wear.....	VI-2
Figure VI-2. Sun and Snow Goggles	VI-3
Figure VI-3. Gaiters	VI-3
Figure VI-4. Immediate Shelters	VI-4
Figure VI-5. Thermal A-Frame.....	VI-5
Figure VI-6. Snow Trench.....	VI-5
Figure VI-7. Snow Cave	VI-6
Figure VI-8. Poncho/Parachute Shade Shelter.....	VI-7
Figure VI-9. Elevated Platform Shelter	VI-7
Figure VI-10. Shingle Method	VI-8
Figure VI-11. Teepee Fire and Log Cabin Fire.....	VI-9
Figure VI-12. Sod Fire and Reflector	VI-10
Figure VI-13. Dakota Fire Hole	VI-10
Figure VII-1. Water Procurement.....	VII-2
Figure VII-2. Water Indicators.....	VII-3
Figure VII-3. Banana Plants.....	VII-4
Figure VII-4. Water Vines	VII-5
Figure VII-5. Beach Well.....	VII-5
Figure VII-6. Transpiration Bag.....	VII-6
Figure VII-7. Vegetation Bag	VII-6
Figure VII-8. Seepage Basin.....	VII-7
Figure VIII-1. Snare Placement	VIII-9
Figure VIII-2. Locking Loop.....	VIII-10
Figure VIII-3. Squirrel Pole	VIII-10
Figure VIII-4. Funneling	VIII-11
Figure VIII-5. Procurement Devices.....	VIII-12
Figure VIII-6. Procurement Methods.....	VIII-12
Figure VIII-7. Small Game Skinning	VIII-16
Figure IX-1. Immediate Action Shelter	IX-1
Figure IX-2. Improvised Shelter	IX-2
Figure IX-3. Radiation Shielding Efficiencies	IX-3
Figure IX-4. Filtration Systems, Filtering Water	IX-4
Figure IX-5. Filtration Systems, Settling Water	IX-4

Chapter I

EVASION

1,000 days of evasion are better than one day of captivity.

1. Planning

- a. Review the quick reference checklist at the front of this publication.
- b. Follow these guidelines for successful evasion:
 - (1) Keep a positive attitude.
 - (2) Use established procedures.
 - (3) Follow your EPA.
 - (4) Maintain radio discipline.
 - (5) Be patient.
 - (6) Drink water (**DO NOT** eat food without water).
 - (7) Conserve strength for critical periods.
 - (8) Rest and sleep as much as possible.
 - (9) Stay out of sight.
- c. Avoid food, perfumes, or any other odors that may stand out and give you away.
- d. Mask scent using natural materials such as dirt or vegetation.
- e. Determine where to go IAW theater recovery plans:
 - (1) Near a suitable area for recovery.
 - (2) Selected area for evasion.
 - (3) Neutral or friendly country or area.
 - (4) Designated area for recovery.

2. Camouflage

- a. Basic principles:
 - (1) Disturb the area as little as possible.
 - (2) Avoid activity that reveals movement to the enemy.
 - (3) Apply personal camouflage.
- b. Camouflage patterns should match environment (figure I-1):

(1) Face. Use dark colors on high spots and light colors on any remaining exposed areas. Use a hat, netting, or mask if available.

(2) Ears. The insides and the backs should have two colors to break up outlines if not covered.

(3) Head, Neck, Hands, and Under Chin. Use scarf, collar, vegetation, netting, or coloration methods.

(4) Light-colored Hair / No Hair. Give special attention to conceal with a scarf or mosquito head net.

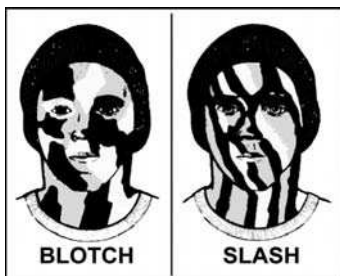


Figure I-1. Camouflage Patterns

c. Position and movement camouflage:

(1) Avoid unnecessary movement.

(2) Take advantage of natural concealment:

(a) Cut foliage fades and wilts; change regularly.

(b) Change camouflage depending on the surroundings.

(c) DO NOT select all vegetation from same source.

(d) Use stains from grasses, berries, dirt, and charcoal.

(3) DO NOT overcamouflage.

(4) Remember when using shadows, they shift with the sun.

(5) Never expose shiny objects (i.e., watches, glasses, pens, boots).

(6) Ensure watch alarms and hourly chimes are turned off.

(7) Remove unit patches, name tags, rank insignia, and so forth.

(8) Break up the outline of the body—"V" of crotch/armpits, head/shoulders.

(9) Observe from a prone and concealed position.

3. Shelters

- a. Use camouflage and concealment.
- b. Locate carefully—remember the acronym: BLISS.
- c. Choose an area with observable approach and escape

B – Blend (blend with environment). L – Low silhouette (smaller than surroundings). I – Irregular shape (natural looking). S – Small (enough for you and your gear). S – Secluded location (least likely to be searched).

routes.

- d. Use brush, ridges, ditches, and rocks to keep from forming paths to hole-up/hide site.
- e. Be wary of natural hazards such as flash floods in ravines and canyons.
- f. Conceal with minimal to no preparation.
- g. Ensure overhead concealment.
- h. Attempt to return the area to its original state before you start your movement.

4. Movement

- a. A moving object is easy to spot. If travel is necessary:
 - (1) Mask with natural cover.
 - (2) Stay off ridgelines, use the "military crest" (2/3 of the way up) of a hill.
 - (3) Restrict to periods of low light, bad weather, wind, or reduced enemy activity.
 - (4) Avoid silhouetting.
 - (5) At irregular intervals:
 - (a) **STOP** at a point of concealment.
 - (b) **LOOK, LISTEN, and SMELL** for signs of human or animal activity. Watch for trip wires or booby traps and avoid leaving evidence of travel. Peripheral vision is more effective for recognizing movement at night and twilight.

b. Camouflage evidence of travel. Route selection requires detailed planning and special techniques (irregular route/zigzag).

c. Concealing evidence of travel:

(1) **DO NOT** break branches, leaves, or grass. Use a walking stick to part vegetation and push it back to its original position.

(2) **DO NOT** grab small trees or brush. (This may scuff the bark or create movement that is easily spotted. In snow country, this creates a path of snowless vegetation.

(3) Pick firm footing. **TRY NOT TO:**

(a) Overturn ground cover, rocks, and sticks.

(b) Scuff bark on logs and sticks.

(c) Make noise by breaking sticks. (Cloth wrapped around feet helps muffle noise.)

(d) Mangle grass and bushes that normally spring back.

(4) Mask unavoidable tracks in soft footing:

(a) Place tracks in the shadows of vegetation, downed logs, and snowdrifts.

(b) Move before and during precipitation; allows tracks to fill in.

(c) Travel during windy periods.

(d) Take advantage of solid surfaces leaving less evidence of travel.

(e) Tie cloth or vegetation to feet or brush / pat out tracks lightly to speed their breakdown or make them look old.

(5) Secure trash and loose equipment; hide or bury discarded items.

(6) If pursued by dogs, concentrate on defeating the handler.

(a) Travel downwind of dog/handler, if possible.

(b) Travel over rough terrain and/or through dense vegetation to slow the handler.

(c) Travel downstream through fast moving water.

(d) Zigzag route if possible; consider loop-backs and "J" hooks.

d. Penetrate obstacles as follows:

(1) Enter deep ditches feet first to avoid injury.

(2) Go around chain-link and wire fences. Go under fence if unavoidable, crossing at damaged areas. DO NOT touch fence; look for electrical insulators or security devices.

(3) Penetrate rail fences, passing under or between lower rails. If this is impractical, go over the top, presenting as low a silhouette as possible.

(4) Cross roads after observation from concealment to determine enemy activity. Cross at points offering concealment such as bushes, shadows, or bend in road. Cross in a manner leaving footprints parallel to the road (do this by stepping sideways).

(5) Use same method of observation for railroad tracks as used for roads. Then, lower your body to the ground aligning parallel to the tracks with face down. Cross the tracks using a semi-pushup motion moving sideways.

Warning: If there are three rails, one may be electrified.

e. Urban considerations:

(1) Look for and move to “friendly” controlled location or stronghold point.

(2) Avoid movement into market-type areas and crowds.

(3) Avoid high rise buildings.

(4) Head to concealment to break visual contact.

(5) If seen, change direction radically.

(6) Use caution when passing windows and doors; try to avoid.

(7) Use cloth, rags, clothing, and other man-made material to blend in.

(8) Conceal movement utilizing buildings, rubble, and other structures.

(9) Observe structures for movement or life threatening obstacles.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter II NAVIGATION

Assess the threat and apply appropriate evasion principles.

1. Stay or Move Considerations

- a. Leave only when:
 - (1) Dictated by the threat.
 - (2) Certain of your location and your destination and you are able to get there.
 - (3) Able to reach water, food, shelter, and/or help.
 - (4) Convinced rescue is not coming.
- b. If you decide to move:
 - (1) Follow your EPA.
 - (2) Determine which direction to travel and why.
 - (3) Decide what equipment to take, cache, or destroy.
 - (4) It is usually better to move at night because of the concealment darkness offers. Exceptions to such movement would be when moving through hazardous terrain or dense vegetation (e.g., jungle or mountainous terrain). Stop movement with sufficient time to find concealment and shelter prior to sunrise.
- c. Avoid compromising information when using a map in a combat environment:
 - (1) **DO NOT** write on the map.
 - (2) **DO NOT** soil the map by touching the destination.
 - (3) **DO NOT** fold in a manner providing travel information.
- d. Considerations for non-combat:
 - (1) Stay in place (e.g., with vehicle).
 - (2) If you do not stay in place, leave information at your starting point that includes:
 - (a) Destination and route of travel.
 - (b) Personal condition.
 - (c) Supplies available.

2. Determine Navigation and Position

a. Determine general location.

Note: Determine best guess direction based on previous knowledge when navigating without a map, global positioning system (GPS), or compass (e.g., movement is east toward the border).

(1) Develop working knowledge of operational area.

- (a) Geographic checkpoints.
- (b) Man-made checkpoints.
- (c) Previous knowledge of operational area.

(2) Use formula: Rate x Time = Distance.

(3) Use information provided in map legend.

(4) Use prominent landmarks.

(5) Visualize map to determine position.

b. Determine cardinal directions (north, south, east, and west).

(1) Use compass.

(2) Use stick and shadow method to determine a true north/south line (figure II-1).

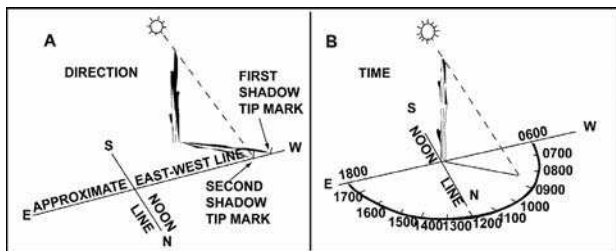


Figure II-1. Stick and Shadow Method to Determine North/South Line

(3) Remember the sunrise/moonrise is in the east and sunset/moonset is in the west.

(4) Use wristwatch to determine general cardinal direction, if current local time is known (figure II-2). With digital watches, visualize a clock face on the watch.

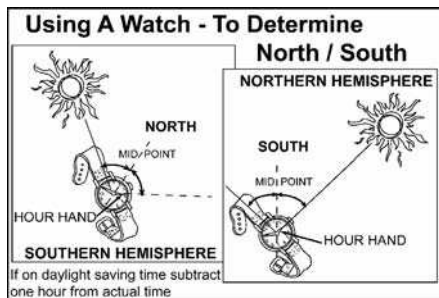


Figure II-2. Wristwatch Method to Determine North/South Line

(5) Use stars (figure II-3).

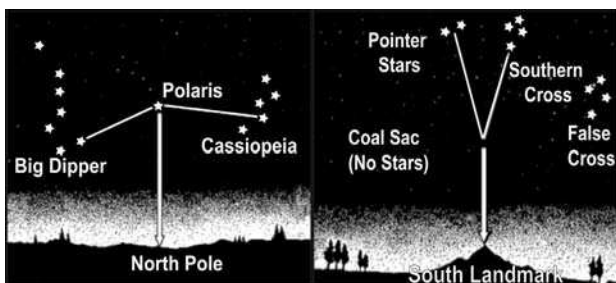


Figure II-3. Celestial Aids (Stars) Method to Determine North/South Line

c. To orient the map:

(1) Use a true north-south line (figure II-4).

(a) Unfold map and place on firm, flat, level nonmetallic surface.

(b) Align compass on true north-south line.

(c) Rotate map and compass until stationary index line aligns with the magnetic variation indicated in marginal information.

- Easterly (subtract variation from 360 degrees).
- Westerly (add variation to 360 degrees).

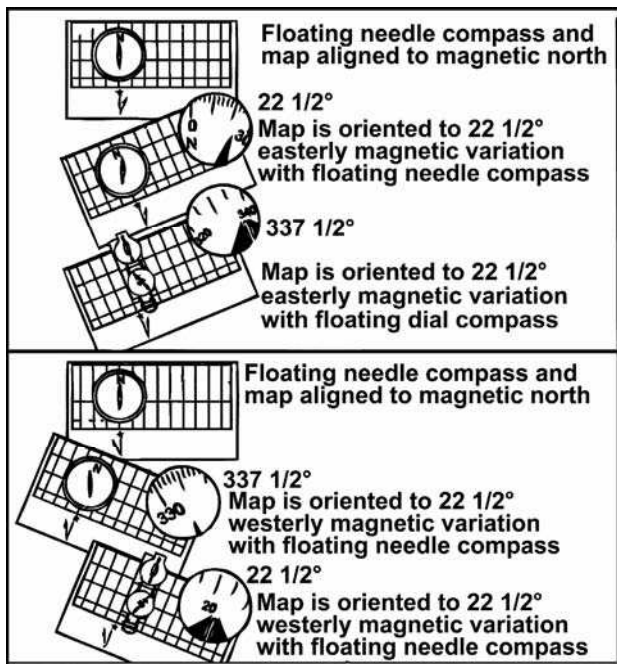


Figure II-4. Map Orientation with a Dial or Needle Compass

(2) Use a compass rose (figure II-5).

(a) Place edge of the compass on magnetic north line of the compass rose closest to your location.

(b) Rotate map and compass until compass reads 360 degrees.

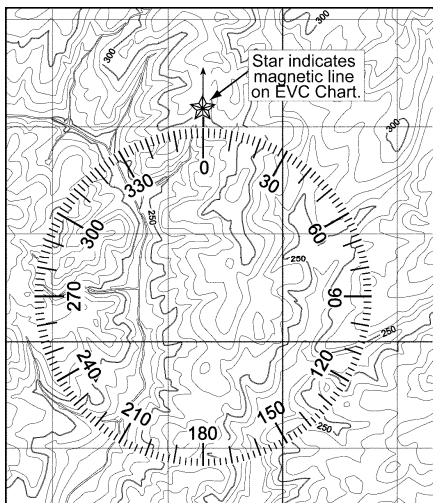


Figure II-5. Map Orientation with a Compass Rose

(3) If there is **NO** compass, orient map using cardinal direction, obtained by the stick and shadow method or the celestial aids (stars) method.

d. Determine specific location (be prepared to give coordinates and datum to rescue forces if asked).

(1) Using GPS and map.

(a) More sky = better accuracy and quicker position acquisition.

(b) More frequent position fixes = shorter time to acquire next position.

(c) Watch for jamming and interference. GPS satellite signals are very susceptible to jamming and interference. Indications include:

- **Continuous, one-directional “marching”**—receiver shows a continuous “marching” of latitude or longitude (for example the value continuously increases or decreases in a single direction).

- **Obviously incorrect position data**—you know your rough position but your GPS receiver shows a location that is

significantly and obviously incorrect (for example you know you are in Iraq but your receiver shows 0 degrees latitude and 5 degrees longitude).

- **“Jumping” position data**—receiver position jumps between significantly different positions (for example more than a tenth of a degree at a time).

- **Unexpected loss of position lock**—receiver has good view of the sky and good power supply and is operating normally, but cannot maintain position lock or is unexpectedly knocked off a position lock.

(d) Protect against jamming and interference.

Determine relative location of jamming and block jamming by using body/structure shielding from jamming signal, placing GPS receiver in a hole (16"x12") or building a wall (18"x14") between GPS receiver and jammer.

(e) Conserve GPS battery life.

(2) Triangulation (resection) with a compass (figure II-6).

(a) Try to use three or more azimuths (between 30 and 130 degrees apart).

(b) Positively identify a major land feature and determine a line of position (LOP).

(c) Check map orientation each time compass is used.

(d) Plot the LOP using a thin stick or blade of grass (combat) or pencil line (non-combat).

(e) Repeat steps (b) through (d) for other LOPs.

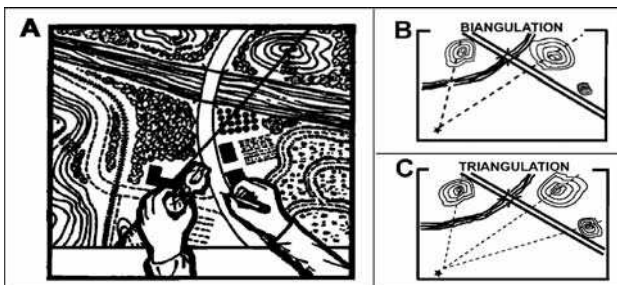


Figure II-6. Triangulation

e. Use the compass for night navigation by:

(1) Setting up compass for night navigation (figure II-7).

(2) Aligning north-seeking arrow with luminous line and follow front of compass.

(3) Using point-to-point navigation.

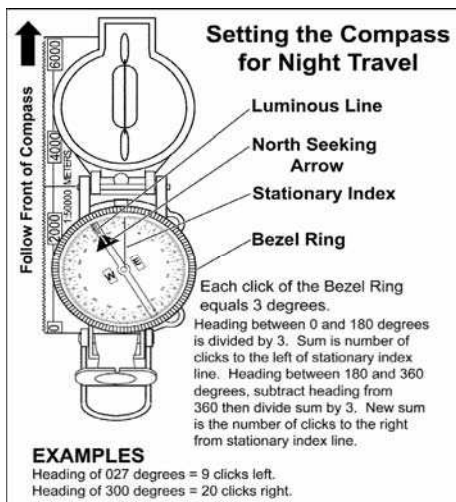


Figure II-7. Setting the Compass for Night Navigation

f. Use route selection techniques:

(1) Circumnavigation.

(a) Find a prominent landmark on the opposite side of obstacle on current heading.

(b) Contour around obstacle to landmark.

(c) Resume your route of travel.

(2) Dogleg and 90-degree offset (figure II-8).

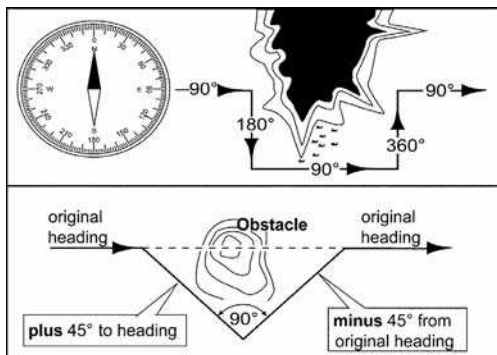


Figure II-8. Dogleg and 90-Degree Offset

(3) Straight-line heading:

(a) Maintain heading until reaching destination.

(b) Track number of paces traveled to monitor progress.

- One pace is the distance covered each time the same foot touches the ground.
- Distances measured by paces are approximate (for example: in open terrain, 65 paces per 100 meters [average]; in rough terrain or night, 90 to 100 paces per 100 meters).
- Keep track of your pace count (pebbles in pocket or knots in a string per 100 meters).

(c) Use pace count with terrain evaluation and heading to determine location. Individual pace varies because of factors such as steep terrain, day/night travel, or injured/uninjured condition. Adjust estimation of distance traveled against these factors to get relative accuracy when using a pace count.

(4) Deliberate offset:

(a) Use when finding a point on a linear feature (that is, road or river).

(b) Intentionally navigate to left or right of target so you know which way to turn at the linear feature.

(5) Point-to-point same as straight line:

(a) Pick out landmarks on the heading and walk the trail of least resistance to a point.

(b) On reaching a point, establish another landmark and continue.

3. Travel Considerations

- a. Maintain a realistic pace.
- b. Take rest stops when needed.
- c. Avoid overdressing and overheating.
- d. Consider food and water requirements.
- e. Take special care of feet (change socks regularly).
- f. Pack equipment to prevent loss, damage, pack imbalance, and personal safety.
- g. Go around obstacles, not over or through them.
- h. Avoid travel on trails, if possible.
- i. Travel in forested areas, if possible.
- j. Avoid creek bottoms and ravines with NO escape in the event of heavy rains.
- k. Consider the following for swamps, lakes, and unfordable rivers:
 - (1) Circumnavigate swamps, lakes, and bogs, if possible.
 - (2) Travel downstream to find people and slower water.
 - (3) Travel upstream to find narrower and shallow water.

4. River Travel

River travel may be faster and save energy when hypothermia is not a factor. It may be a primary mode of travel and LOC in a tropical environment (use with caution if evading).

- a. Use flotation device (such as raft, log, bamboo) when crossing rivers or large/deep streams.
- b. Use a pole to move the raft in shallow water and an oar in deep water.
- c. Keep near shore and stay near inside edge of river bends (current speed is less).
- d. Use caution when traveling on rivers; avoid submerged objects, rapids, waterfalls, and hazardous animals.

5. Ice and Snow Travel

- a. Use caution while traveling in blizzards, poor visibility, and bitterly cold winds.

b. Obstacles to winter travel include:

(1) Deep soft snow; if movement is necessary, make snowshoes (figure II-9). Travel is easier in early morning or late afternoon near dusk when snow is frozen or crusted.

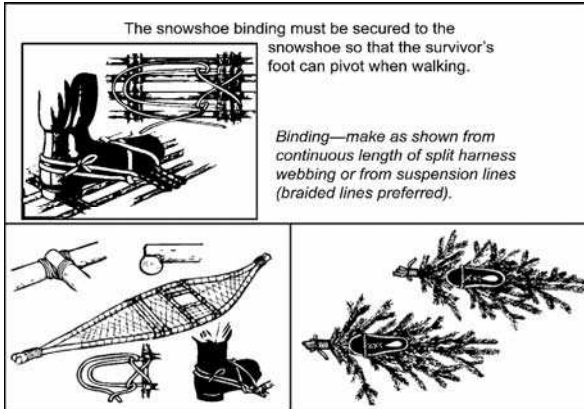


Figure II-9. Improvised Snowshoes

(2) Avoid avalanche prone areas:

- (a) Slopes 25 to 60 degrees.
- (b) Trees without uphill branches (identifies prior avalanches).
- (c) Heavy snow loading on ridge tops.

(3) If caught in an avalanche:

- (a) Move perpendicular to hillside.
- (b) Use swimming motion to remain on or close to surface.
- (c) Move hand around face to create air pocket as moving snow slows.

(4) Frozen water crossings.

(a) Weak ice should be expected where:

- Rivers are straight.
- Objects protrude through ice.
- Snow banks extend over ice.

- Rivers or streams come together.
- Water vapor rising indicates open or warm areas.
- Air pockets form when a frozen river loses volume.

(b) When crossing frozen water, distribute your weight by laying flat, belly crawling, or using snowshoes.

(c) Have long pole (to prevent total submersion) and knife or other pointed tools available to assist with self-recovery.

c. Glacier travel is hazardous and should be avoided because of unseen hazards.

6. Mountain Hazards

- a. Lightning. Avoid ridge tops during thunderstorms.
- b. Avalanche. Avoid areas prone to avalanches/falling rocks.
- c. Flash Floods. Avoid creek bottoms, ravines, and wadis with no escape in the event of heavy rains.

7. Dry Climates

- a. Consider remaining in place unless certain of reaching destination using water supply available.
- b. Travel at night to avoid heat.
- c. Stop movement with sufficient time to find concealment or construct shelter prior to sunrise.
- d. In sand dune areas:
 - (1) Follow hard valley floor between dunes.
 - (2) Travel on the windward side of dune ridges.
- e. If a sandstorm occurs:
 - (1) Mark direction of travel.
 - (2) Sit or lie down in direction of travel until storm passes.
 - (3) Try to get to the downwind side of natural shelter.
 - (4) Cover mouth and nose with piece of cloth.
 - (5) Protect eyes.

8. Tropical Climates

- a. Hazardous terrain and vegetation may force travel during daylight.

- b. Obstacles like thickets and swamps pose significant hazards, but may provide best evasion environment.
- c. Part the vegetation to pass through. Avoid grabbing vegetation; it may have spines or thorns (use gloves if possible).
- d. Go around logs when possible.
- e. Trails are often located along waterways or mountain saddles. While traveling trails:
 - (1) Watch for disturbed areas on game trails; they may indicate a pitfall or trap.
 - (2) Use a walking stick to probe for pitfalls or traps.
 - (3) **DO NOT** sleep on the trail.
 - (4) Exercise caution, the enemy uses the trails also.

9. Open Seas

a. Raft Procedures. For all rafts, remember the five "A's." These are the first things you should do if you are the first person into the raft:

- (1) Anchor—Ensure sea anchor is deployed so that when the anchor is on the top of a wave your raft is on the bottom of the wave or vice versa.
- (2) Assistance—Assist others into the raft.
- (3) Air—Ensure all chambers are inflated and all inflation valves are closed and equalization tube clamps are clamped off when fully inflated.
- (4) Accessory Bag—Locate accessory bag.
- (5) Assessment—Assess the situation and keep a positive mental attitude.

Note: Attach all equipment to raft or self.

- b. Using currents to travel:
 - (1) Sea anchor may be closed to make use of existing currents.
 - (2) Sit low in the raft.
 - (3) Deflate the raft slightly so it rides lower in the water.
- c. Using winds to travel:
 - (1) Pull in sea anchor.
 - (2) Inflate raft so it rides higher.

- (3) Sit up in raft so body catches wind.
- (4) Construct a shade cover/sail.
- d. Making landfall. Indications of land include:
 - (1) Greenish tint in sky (tropics).
 - (2) Lighter colored reflection on clouds (open water causes dark gray reflections in arctic).
 - (3) Lighter colored water (indicates shallow water).
 - (4) Odors, sounds, and debris.
 - (5) Directional flights of birds at dawn (from shore) and at dusk (to shore).
- e. Swimming ashore:
 - (1) Consider physical condition.
 - (2) Use a flotation aid.
 - (3) Secure all gear to body before reaching landfall.
 - (4) Remain in raft as long as possible.
 - (5) Use sidestroke or breaststroke to conserve strength if thrown from raft.
 - (6) Wear footgear and at least one layer of clothing.
 - (7) Try to make landfall during the lull between the sets of waves.
 - (8) In moderate surf:
 - (a) Swim forward on the back of a wave.
 - (b) Make shallow dive just before wave breaks to end ride.
 - (9) In high surf:
 - (a) Swim shoreward in trough between waves.
 - (b) When seaward wave approaches, face it and submerge.
 - (c) After it passes, work shoreward in next trough.
 - (10) If caught in undertow of large wave:
 - (a) Remain calm and swim to surface.
 - (b) Lie as close to surface as possible.
 - (c) Parallel shoreline and attempt landfall at point further down shore.
 - (11) Select landing point:

- (a) Avoid places where waves explode upon rocks.
- (b) Find place where waves smoothly rush onto rocks.
- (12) After selecting a landing site:
 - (a) Face shoreward.
 - (b) Assume sitting position with feet 2 or 3 feet lower than head to absorb the shock of hitting submerged objects.
- f. Rafting ashore:
 - (1) Select landing point carefully.
 - (2) Land on lee (downwind) side of islands or point of land, if possible.
 - (3) Head for gaps in surf line.
 - (4) Penetrate surf by:
 - (a) Taking down most shade/sails.
 - (b) Using paddles to maintain control.
 - (c) Deploying sea anchor for stability.

CAUTION: DO NOT deploy a sea anchor if traveling through coral.

- g. Icebergs, small flows, and disintegrating flows are dangerous. Making sea ice landings on large stable ice flows:
 - (1) Use paddles to avoid sharp edges.
 - (2) Store raft away from ice edge.
 - (3) Keep raft inflated and ready for use.
 - (4) Weight down/secure raft so it does not blow away.

Chapter III RADIO COMMUNICATIONS AND SIGNALING

Inventory and review the operating instructions of all communications and signaling equipment.

1. Radio Communications (Voice and Data)

a. Combat:

- (1) Ensure personal locator beacon is off.
- (2) Keep the beacon with you to supplement radio communications.
- (3) Follow personnel recovery instructions in SPINS for on/off operations.

b. Make initial contact as soon as possible, or as directed in SPINS.

c. If no immediate contact, attempt contact again, as directed in SPINS.

d. Locate spare radio and batteries (keep warm and dry).

e. Transmissions (figure III-1):

- (1) Use concealment sites that optimize line of site.
- (2) Face recovery asset.
- (3) Keep antenna perpendicular to intended receiver.

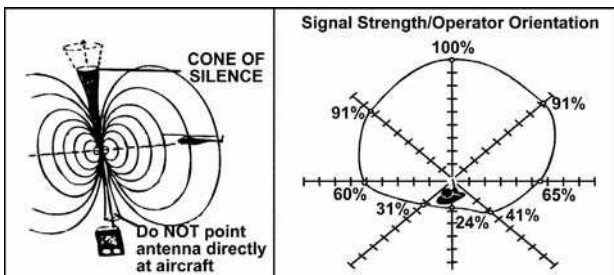


Figure III-1. Radio Transmission Characteristics

(4) DO NOT ground antenna (finger on antenna or attaching bolt, space blanket, and vegetation).

(5) Keep transmissions short (3 to 5 seconds) to avoid radio detection finding. Use data burst if available.

- (6) Face the equator, if transmitting in the blind.
- (7) Use terrain masking to hinder enemy direction finding.
- (8) Do not use your radio at the same time for several days in a row.

f. Listening (use reception times in applicable plans/orders, or as directed by recovery forces).

g. Non-combat:

(1) Ensure locator beacon is operational.

(2) Follow standing plans for on/off operations to conserve battery use.

(3) Use alternate radio frequency if aircraft beacon is interfering with radio transmission.

2. Signaling

a. Pyrotechnic signals:

(1) Prepare early (weather permitting).

(2) Use as directed in applicable plans/orders, or as directed by recovery forces.

(3) If in a raft, extend downwind over the raft's edge before activating.

b. Strobe/infrared lights.

(1) Prepare early, consider filters and shields.

(2) Use as directed by recovery forces.

(3) Conserve battery life.

Note: May produce one residual flash when turned off.

c. Signal mirror (additional directions on back of survival mirror):

(1) Use as directed by recovery forces.

(2) If no radio, use only with confirmed friendly forces.

(3) Cover when not in use.

Note: Make a mirror from shiny metal or glass.

d. Pattern signals (use as directed).

(1) Materials:

(a) Man-made (space blanket, signal paulin, parachute).

(b) Natural, use materials that contrast the color and/or texture of the signaling area (rocks, brush, branches, stomped grass).

(2) Location:

(a) Maximize visibility from above.

(b) Provide concealment from ground observation.

(3) Size (large as possible) and ratio (figure III-2).

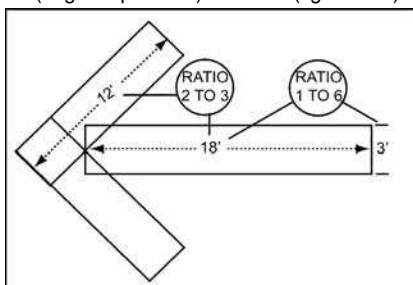


Figure III-2. Size and Ratio

(4) Shape (maintain straight lines and sharp corners).

(5) Contrasting colors.

(6) Height to create shadows.

(7) Pattern signals (figure III-3).

Number	Message	Code Symbol
1	Require assistance.	V
2	Require medical assistance.	X
3	No or negative.	N
4	Yes or affirmative.	Y
5	Proceed in this direction.	↑

Figure III-3. Signal Key

e. Sea dye marker.

- (1) Dye dissipates quickly in rough seas or fast moving water.
- (2) Sea dye is limited, use when recovery is likely.
- (3) Conserve unused dye by rewrapping.
- (4) May be used to color snow.

f. Non-combat considerations:

- (1) Use a fire at night.
- (2) Use smoke for day (tires or petroleum products for dark smoke and green vegetation for light smoke).
- (3) Use signal mirror to sweep horizon.
- (4) Use audio signals (voice, whistle, and weapons fire).
- (5) Internationally recognized signal for distress is a series of three of anything (such as gunshots, lights, fires).

Chapter IV RECOVERY

1. Responsibilities—YOUR EFFORTS ARE INSTRUMENTAL TO YOUR RECOVERY.

- a. Prepare well ahead and prior to mission execution.
- b. Construct an EPA and leave with vested authority. All missions require an EPA.
- c. Consider all potential actions before execution.
- d. Weigh potential cost-benefit of movement.
- e. Weigh tactical/peacetime situation versus survival needs.
- f. Follow EPA to best of ability.
- g. Upon contact with recovery forces, follow instructions explicitly.
- h. If applicable, be prepared to authenticate via DD Form 1833.
- i. Be prepared for any form of recovery.

2. Initial Actions

- a. Execute *“Mayday”* call using emergency frequency and/or follow air tasking order (ATO) SPINS.
- b. Identify self/call-sign (e.g., *“Mayday/Mayday/ Mayday—any station/aircraft, this is Cowboy 02”*).
- c. Be prepared to provide position using the appropriate codes listed in the ATO, SPINS section for CSAR procedures.
- d. Combat operations will require authentication when providing coordinates and datum.
- e. Non-combat information can be provided in the clear:
 - (1) Call-sign/location/nature of emergency.
 - (2) State number of souls on board.

3. Actions on the Ground/in the Water

- a. Prepare to communicate (see chapter III).
- b. Organize/prepare communication devices.
- c. Follow/establish communication plan (exception—opportune communication).
- d. Establish head count, either physically or by radio if in command.

- e. Determine threat—move as required.
- f. Treat injuries as required (see chapter V).
- g. Retain/destroy classified material, as required.
- h. Disable emergency locator transmitter (ELT)/turn off beacon (combat).

Note: If communication cannot be made, re-enable ELT/beacon (non-combat).

- i. Establish location (preference is latitude/longitude, military grid reference system, and universal transverse mercator).
- j. Inventory and retain all survival/recovery equipment until directed to do otherwise.
- k. Follow EPA/move to appropriate recovery location (non-combat—remain in place; see chapter II).

4. Site Selection

- a. Locate area for landing pick-up, if practical (approximately 150-foot diameter, free of obstructions, flat and level).
- b. Assess evidence of human activity at/near site.
- c. Locate several concealment sites around area.
- d. Plan several tactical entry and exit routes.
- e. Place prescribed visual signal/authentication.
- f. Locate key terrain features for quick navigation or to assist recovery forces in finding your location.

5. Prepare for Recovery

- a. Ensure equipment is packed and secure at all times.
- b. Be prepared to move.
- c. Prepare signaling devices (use as directed or as briefed).
- d. Mentally review recovery methods (such as aircraft, ground, or boat).

6. Communicate with Recovery Force

- a. Initiate contact.

Note: Once contact is made, follow recovery forces directions.

- b. Be prepared to authenticate.
- c. Switch frequencies as directed.

- d. Be prepared to provide/update threat information.
- e. Be prepared to provide medical condition.
- f. Be prepared to describe location/key terrain features.

7. General Principles of Recovery

- a. Assist recovery forces in identifying your position.
- b. Stay concealed until recovery is imminent.
- c. Assume non-threatening posture.
- d. Secure weapons and avoid quick movement.
- e. **DO NOT** approach recovery vehicle until instructed.
- f. Beware of rotors/propellers when approaching recovery vehicle, especially on sloping or uneven terrain. Secure loose equipment that could be caught in rotors/propellers.
- g. Use eye protection (glasses or helmet visor), if available.

8. Unassisted Recovery

- a. For unassisted hoist recovery (figures IV-1 and IV-2):
 - (1) Allow metal on recovery device to contact surface before touching, to avoid injury from static discharge.
 - (2) Sit or kneel for stability while donning the recovery device.
 - (3) Put rescue strap under armpits; when using the forest penetrator, fold arms around it.
 - (4) **DO NOT** become entangled in cable, keep cable in front.
 - (5) Keep hands clear of all hardware and connectors.
 - (6) Use a vigorous thumbs up, vigorous cable shakes, or radio call to signal you are ready.
 - (7) Drag feet on ground to decrease oscillation.
 - (8) **DO NOT** assist during hoist or when pulled into rescue aircraft. Follow crewmember instructions.

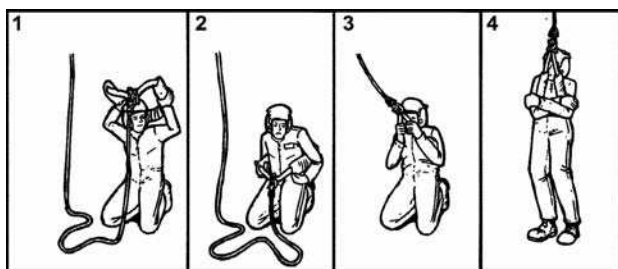


Figure IV-1. Rescue Strap

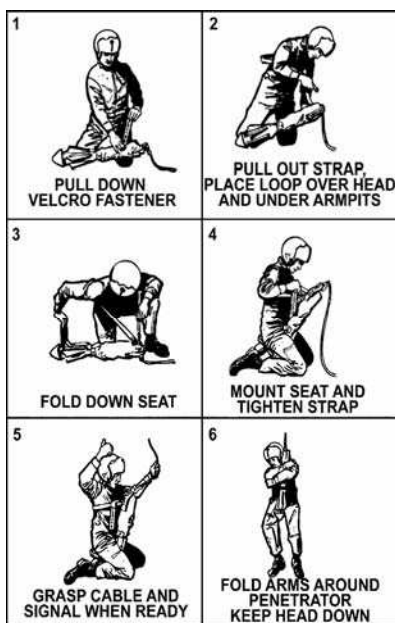


Figure IV-2. Forest Penetrator

b. For no-hoist recovery (rope or unfamiliar equipment).

(1) Create a “fixed loop” big enough to place under armpits keeping knot in front (figure IV-3).

(2) Be prepared to secure yourself to recovery device by any and all means available.

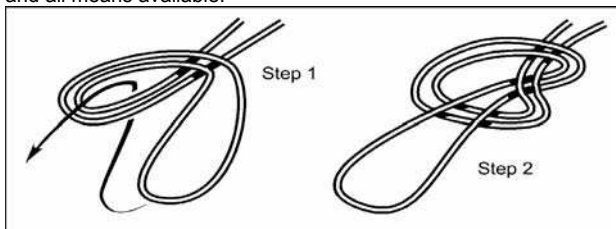


Figure IV-3. Fixed Loop

c. For water recovery—helicopter:

(1) Follow procedures for standard unassisted hoist procedures above.

(2) Take down canopy and secure all loose equipment (in the raft, in the accessory bag, or on person) prior to recovery. **REMAIN IN RAFT!**

(3) Deploy sea anchor and accessory kit.

(4) Add enough water to replace body weight to prevent raft from getting lifted into rotors.

(5) Secure yourself to raft until recovery device is in other hand.

d. For water recovery—surface vessel:

(1) Pull in sea anchor, accessory kit, or lines to prevent entanglement.

(2) Stay in raft until directed otherwise.

9. Assisted Recovery

a. Follow all instructions from recovery forces.

b. Remain in place until directed.

c. Make no threatening gestures/moves.

d. Retain all survival equipment until directed otherwise.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter V

SURVIVAL MEDICINE

1. Immediate First Aid Actions

Note: Following assessment and control of patient's airway, the next important step is to look for and control severe bleeding injuries.

- a. Determine responsiveness.
 - (1) If unconscious, arouse by shaking gently and shouting.
 - (2) If no response:
 - (a) Keep head and neck aligned with body.
 - (b) Roll victim onto back.
 - (c) Airway: Open airway (figure V-1).

Note: If spinal injuries are suspected use the jaw thrust method (figure V-1).

- (d) Breathing: Look, listen, and feel for air exchange for 3 to 5 seconds.

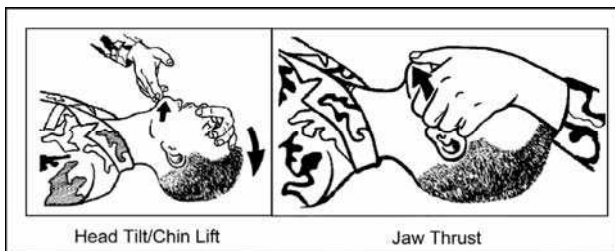


Figure V-1. Open Airway

- (3) If victim is not breathing:
 - (a) Check for a clear airway; remove any blockage.
 - (b) Cover victim's mouth with your own.
 - (c) Pinch victim's nostrils closed.
 - (d) Fill victim's lungs with two slow breaths that last for 1 to 1.5 seconds.
 - (e) If breaths are blocked, reposition airway; try again.

(f) If still not breathing victim is beyond the scope of care.

(4) If victim is unconscious but breathing:

(a) Keep head and neck aligned with body.

(b) Roll victim on side (drains the mouth and prevents the tongue from blocking airway).

b. Stop bleeding using conventional methods (direct pressure,

CAUTION: Use a tourniquet when severe, uncontrolled bleeding will cause loss of life

elevation, pressure points).

(1) Wrap wound with compression bandage. If no compression bandage is available, hold pressure with gauze or available bandage.

(2) If bleeding is still uncontrolled with conventional methods, apply a Combat-Application-Tourniquet (figure V-2) or improvised tourniquet (a band at least 3 inches or wider is best) just above bleeding site on limb.



Figure V-2. Combat-Application-Tourniquet

(3) If bleeding continues after applying a tourniquet, apply QuikClot.

(a) Hold pack of QuikClot (figure V-3) away from your face and tear open.

(b) Remove pressure dressing and gauze from wound and wipe any excess pooled blood, preserving any clots in the wound if possible.

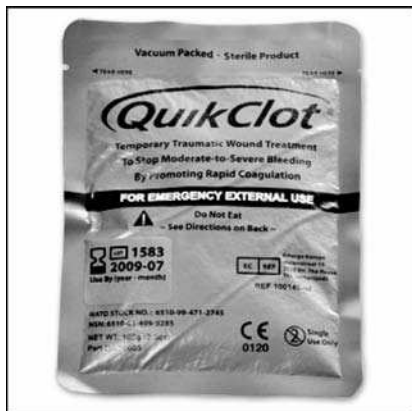


Figure V-3. QuikClot

CAUTION: When tactical situation allows, reassess tourniquet to determine if it should be replaced with direct pressure/dressing.

(4) Apply QuikClot.

(a) Slowly pour QuikClot directly into the wound until layer of tan granules is observed.

(b) Immediately wipe excess that falls onto surrounding tissue.

(c) Apply firm pressure to the wound with gauze roll.

(d) Only use enough QuikClot to stop the bleeding. Apply more QuikClot if bleeding does not stop.

(5) Reapply pressure.

(a) Pack wound with the gauze roll. Apply manual pressure for 3 minutes, and then apply a pressure dressing.

(b) If situation does not allow for manual pressure, apply pressure dressing directly over the roll of gauze.

c. Treat shock.

(1) Identify by one or more of the following:

- (a) Pale, cool, and sweaty skin.
- (b) Fast breathing and weak, fast pulse.
- (c) Anxiety or mental confusion.
- (d) Blood loss.

(2) Treat underlying injury.

(3) Maintain normal body temperature.

- (a) Remove wet clothing.
- (b) Give fluids.
 - **DO NOT** give fluids to an unconscious victim.
 - **DO NOT** give fluids if they cause victim to gag.
- (c) Insulate from ground.
- (d) Shelter from elements.

(4) Place conscious victim on side.

- (a) Allow mouth to drain.
- (b) Prevent tongue from blocking airway.

d. Treat chest injuries.

(1) Sucking Chest Wound. This occurs when chest wall is penetrated; may cause victim to gasp for breath; may cause sucking sound; may create bloody froth as air escapes chest.

(a) Expose wound and immediately seal wound with airtight material (e.g., candy wrapper, plastic bag, bandage wrapper, etc.).

(b) Monitor breathing and check dressing.

(c) If victim develops trouble breathing, lift side of dressing to allow trapped air to escape and immediately reseal.

(d) Position casualty on injured side or in a sitting position, whichever makes breathing easier.

(2) Fractured Ribs.

(a) Stabilize as follows:

- Place rolled-up clothing or bulky pad over site.
- Tape pad to site.
- **DO NOT** constrict breathing by taping ribs.

e. Treat fractures, sprains, and dislocations.

- (1) Control bleeding.
- (2) Remove watches, jewelry, and constrictive clothing.
- (3) If fracture penetrates skin—apply dressing over wound.
- (4) If no pulse below the break, attempt to straighten limb to restore circulation.
- (5) Position limb as normally as possible.
- (6) Splint in position in which found (if unable to straighten limb).
- (7) Improvise a splint with available materials:
 - (a) Sticks or straight, stiff materials from equipment.
 - (b) Body parts (for example, opposite leg, arm to chest).
- (8) Attach with strips of cloth at least 2-inches wide.
- (9) Keep fractured bones from moving by immobilizing joints on both sides of the fracture. If fracture is in a joint, immobilize bones on both sides of joint.

Note: Splint fingers in a slightly flexed position, NOT in straight position.

- (10) When resting, elevate injured area above heart level to reduce swelling.
- (11) Check periodically for pulse/signs of circulation beyond the injury site.
- (12) Loosen bandage or reapply splint if no pulse is felt or if swelling occurs because bandage is too tight.

2. Common Injuries and Illnesses

a. Burns:

- (1) Flush burned skin for chemicals and irritants.
- (2) Cool burned area with water.
 - (a) Use immersion or cool compresses.
 - (b) Avoid aggressive cooling with ice or frigid water.
- (3) Remove watches, jewelry, constrictive clothing.
- (4) Cover with dry sterile dressings.
- (5) **DO NOT** use lotion or grease.
- (6) Drink extra water to compensate for increased fluid loss from burns. (Add 1/4 teaspoon of salt and 1/4 teaspoon of sugar [if available] to each quart of water.)

(7) Change dressings when soaked or dirty.

b. Eye injuries.

(1) Sun/snow blindness (gritty, burning sensation, and possible reduction in vision caused by sun exposure):

(a) Prevent with improvised goggles (see chapter VI, figure VI-2).

(b) Treat by covering affected eye(s) with cool compress.

(2) Foreign body in eye:

(a) Irrigate with clean water from inside to outside corner of eye.

(b) If foreign body is not removed by irrigation, improvise a small swab. Moisten and wipe gently over affected area.

(c) If there is a foreign object in the eye – both eyes should be bandaged.

c. Heat injury.

(1) Heat cramps (cramps in legs or abdomen):

(a) Rest in cool or shady area.

(b) Slowly sip one quart of water. Add 1/4 teaspoon of salt per quart.

(2) Heat exhaustion (pale, sweating, moist, cool skin):

(a) Rest in shade.

(b) Slowly sip one quart of water.

(c) Protect from further heat exposure.

(3) Heat stroke, victim disoriented or unconscious, skin is hot and flushed (sweating may or may not occur), fast pulse:

(a) Cool as rapidly as possible (saturate clothing with water and fan victim). Remember to cool the groin and armpit areas. Cooling may be facilitated by pouring water on the head and back of neck (avoid overcooling).

(b) Maintain airway, breathing, and circulation.

d. Cold injuries.

(1) Frostbite:

(a) Signs and symptoms.

- Ears, nose, fingers, and toes are affected first.

- Areas will feel cold and may tingle leading to numbness that progresses to a waxy appearance with stiff skin that cannot glide freely over a joint.

(b) Re-warm areas with body heat.

(2) Hypothermia [fumble, mumble, stumble].

(a) It is a progressive injury.

- Intense shivering.
- Altered mental state, difficulty speaking.
- Impaired ability to perform complex tasks.
- Muscular rigidity with blue, puffy skin; jerky

movements.

- Coma, respiratory and cardiac failure.

(b) Protect victim as follows:

- Remove wet clothing and put on dry clothing.
 - Prevent further heat loss.
 - Cover top of head and back of neck.
 - Insulate from above and below.
 - Warm with blankets, sleeping bags, warm fluids,
- or shelter.
- Warm body core before extremities.
 - Skin-to-skin contact.
 - Place heat packs at groin, armpits, and around
- neck.
- Avoid causing burns to skin.

e. Skin tissue damage.

(1) Immersion injuries (skin becomes wrinkled):

(a) Avoid walking on affected feet.

CAUTION: Handle hypothermia victim gently. Avoid overly rapid re-warming, which may cause cardiac arrest. Re-warm victim with skin-to-skin contact by volunteer(s) inside a sleeping bag/shelter.

(b) Pat dry; **DO NOT** rub. Skin tissue will be sensitive.

(c) Dry socks and shoes. Keep feet protected.

(d) Loosen clothing and boots to improve circulation.

(e) Keep area dry, warm, and open to air.

- (f) **DO NOT** apply creams or ointments.
- (2) Saltwater sores:
 - (a) Change body positions frequently.
 - (b) Keep sores dry.
 - (c) Use antiseptic (if available).
 - (d) **DO NOT** open or squeeze sores.
- f. Snakebite:
 - (1) Treat all snakebites as poisonous. Remove watches, rings, boots, and other constricting items on the affected limb.
 - (2) Minimize activity and limit movement to prevent spread of venom.
 - (3) **DO NOT** cut bite site; **DO NOT** use mouth to create suction.
 - (4) Clean bite with soap and water; cover with a dressing.
 - (5) Splint bitten extremity to prevent motion (constantly check circulation/swelling).
 - (6) Treat for shock.
 - (7) For conscious victims, force fluids.
- g. Marine life.
 - (1) Stings:
 - (a) Flush wound with salt water (fresh water stimulates toxin release). Urine may be used to flush area in a survival situation.
 - (b) Remove jewelry and watches.
 - (c) Remove tentacles and gently scrape or shave skin.
 - (d) **DO NOT** rub area with sand.
 - (e) Treat for shock.
 - (2) Punctures:
 - (a) Cover with clean dressing.
 - (b) Treat for shock as needed.
- h. Skin irritants (includes poison oak and poison ivy):
 - (1) Wash with large amounts of water. Use soap, if available.
 - (2) Keep covered to prevent scratching.
- i. Infection:

- (1) Keep wound clean.
- (2) Change bandages, as needed.
- j. Dysentery and diarrhea:
 - (1) Drink extra water.
 - (2) Eat charcoal. Make a paste by mixing fine charcoal particles with water. (It may relieve symptoms by absorbing toxins.)
- k. Constipation (can be expected in survival situations). Drink extra water.

3. Plant Medicine

a. Tannin.

(1) Medical uses. Tannin solution prevents infection and aids healing. Use to treat burns and skin problems and for parasites, diarrhea, and dysentery. (See paragraph (4) below.)

(2) Sources. Found in outer bark of all trees, acorns, banana plants, common plantain, strawberry leaves, and blackberry stems.

(3) Preparation (to brew tannin tea):

- (a) Place crushed outer bark, acorns, or leaves in water.
- (b) Leach out tannin by soaking or boiling.
 - Increase tannin content by longer soaking time.
 - Replace depleted material with fresh bark/plants.

(4) Treatments.

(a) Burns:

- Moisten bandage with cooled tannin tea.
- Apply compress to burned area.
- Pour cooled tea on burned areas to ease pain.

(b) Diarrhea, dysentery, and worms. Drink strong tea solution.

(c) Skin problems (dry rashes and fungal infections).

Apply cool compresses or soak affected part to relieve itching and promote healing.

(d) Lice and insect bites. Wash affected areas with tea to ease itching.

b. Salicin/salicylic acid.

(1) Medical uses. Salicin/salicylic acid has aspirin-like qualities. Use to treat colds, sore throat, fever, inflammation, aches, pain, and sprains.

(2) Sources. Willow (*Salix alba*) and aspen (*Populus tremula*) trees (see figure V-4).

(3) Preparation:

(a) Gather twigs, buds, or cambium layer (soft, moist layer between the outer bark and the wood) of willow or aspen.

(b) Brew tea following method as described in paragraph 3a(3) above.

(c) Make poultice.

- Crush plant or stems.
- Make pulpy mass.

(4) Treatments:

(a) Chew on twigs, buds, or cambium for symptom relief.

(b) Drink tea for colds and sore throat.

(c) Use warm, moist poultice for aches and sprains.

- Apply pulpy mass over injury.
- Hold in place with dressing.

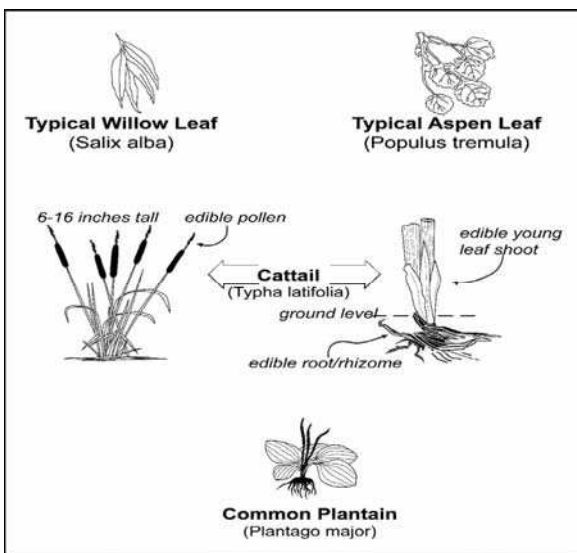


Figure V-4. Useful Plants

c. Common plantain (*Plantago major*).

(1) Medical uses. Use to treat itching, wounds, abrasions, stings, diarrhea, and dysentery.

(2) Source. There are over 200 species in the plantain family (*Plantaginaceae*) with similar medicinal properties. The common plantain shown in figure V-4 is *Plantago major* and is common in North America. (Do not confuse this plantain with the starchy, banana-like fruit, *Musa paradisiacal*).

(3) Preparation:

- (a) Brew tea from seeds.
- (b) Brew tea from leaves.
- (c) Make poultice of leaves.

(4) Treatments:

- (a) Drink tea made from seeds for diarrhea or dysentery.
- (b) Drink tea made from leaves for vitamin and minerals.

- (c) Use poultice to treat cuts, sores, burns, and stings.
- d. Common cattail (*Typha latifolia*).

CAUTION: Do not confuse with the poisonous daffodil (*Amaryllidaceae*) and poisonous iris (*Iris* species) shoots, which have similar leaves. If a stand is still topped by last year's cottony seed heads, you know you have the right plant

- (1) Medical uses. Wounds, sores, boils, inflammations, burns, as well as an excellent food source.
- (2) Source. Cattail plants are found in marshes (see figure V-4).
- (3) Preparation:
 - (a) Pound roots into pulpy mass for poultice.
 - (b) Cook and eat green bloom spikes.
 - (c) Collect yellow pollen for flour substitute.
 - (d) Peel and eat tender shoots (raw or cooked).
- (4) Treatments.
 - (a) Apply poultice to affected area.
 - (b) Use plant for food, vitamins, and minerals.

4. Health and Hygiene

- a. Stay clean (daily regimen).
- b. Prevent and control parasites:
 - (1) Check body for lice, fleas, ticks, leeches, or other parasites.
 - (a) Check body regularly.
 - (b) Pick off insects and eggs; DO NOT crush.
 - (2) Wash clothing and use repellents.
 - (3) Use smoke to fumigate clothing and equipment.

5. Rules for Avoiding Illness

- a. Purify all water obtained from natural sources by using iodine tablets or bleach, or bringing to a rolling boil for at least 10 minutes and then strain.
- b. Avoid contaminating water source with human waste.
- c. Wash hands before preparing food or water.

- d. Clean all eating utensils after each meal.
- e. Prevent insect bites by using repellent, netting, and clothing.
- f. Dry wet clothing as soon as possible.
- g. Eat what you can.
- h. Try to rest.

THIS PAGE INTENIONALLY LEFT BLANK

Chapter VI

PERSONAL PROTECTION

1. Priorities

- a. Evaluate available resources and situation and accomplish individual tasks accordingly.

2. Care and Use of Clothing

- a. Never discard clothing.
- b. Wear loose and layered clothing.
 - (1) Tight clothing restricts blood flow regulating body temperature.
 - (2) Layers create more dead air space.
- c. Keep entire body covered to prevent sunburn and dehydration in hot climates. When fully clothed, the majority of body heat escapes through the head and neck areas.
- d. Avoid overheating.
 - (1) Remove layers of clothing before strenuous activities.
 - (2) Wear a hat when in direct sunlight (in hot environment).
- e. Dampen clothing when on ocean in hot weather.
 - (1) Use salt water to dampen clothing, not drinking water.

Note: Only use drinking water for drinking.

- (2) Dry clothing before dark to prevent hypothermia.
- f. Keep clothing dry to maintain insulation qualities (dry damp clothing in sun or by fire).
- g. If you fall into water in winter:
 - (1) Build fire.
 - (2) Remove wet clothing and re-warm by fire.
 - (3) Finish drying clothing by fire.
- h. If no fire is available:
 - (1) Remove clothing and get into personal protection.
 - (2) Allow wet clothes to freeze/break ice out of clothing.
- i. Keep clothing clean (dirt reduces insulation qualities).
Examine clothing frequently for damage.
 - (1) DO NOT sit or lie directly on ground.

- (2) Wash clothing and repair when possible.
- j. Improvised foot protection or hiding foot signature (figure VI-1).

- (1) Cut two to four layers of cloth into a 30-inch square.
- (2) Fold into a triangle.
- (3) Center foot on triangle with toes toward corner.

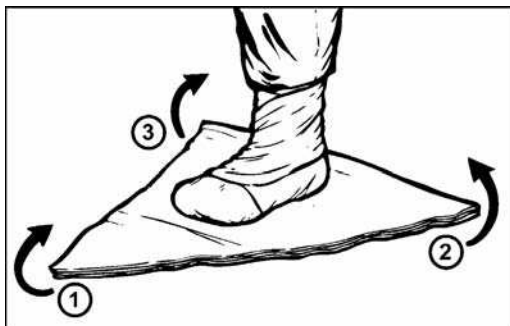


Figure VI-1. Improvised Foot Wear

- (4) Fold front over toes.
- (5) Fold side corners, one at a time, over instep.
- (6) Secure or tuck into other layers of material.

3. Other Protective Equipment

- a. Sleeping bag.
- (1) Fluff before use, especially at foot of bag.
 - (2) Air and dry daily to remove body moisture.
 - (3) Improvise with available material (i.e., dry grass, leaves, dry moss).
- b. Sun and snow goggles (figure VI-2).
- (1) Wear in bright sun or snow conditions.
 - (2) Improvise by cutting small horizontal slits in webbing, bark, or the back page of this publication.

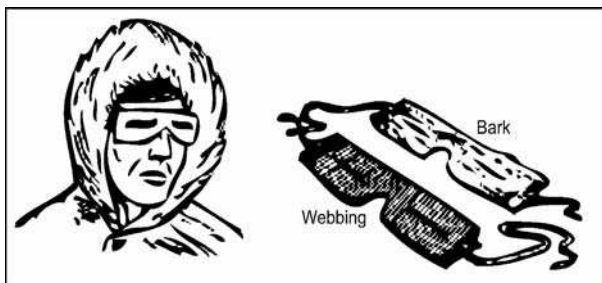


Figure VI-2. Sun and Snow Goggles

c. Gaiters (figure VI-3). Used to protect from sand, snow, insects, and scratches (wrap material around lower leg and top of boots).

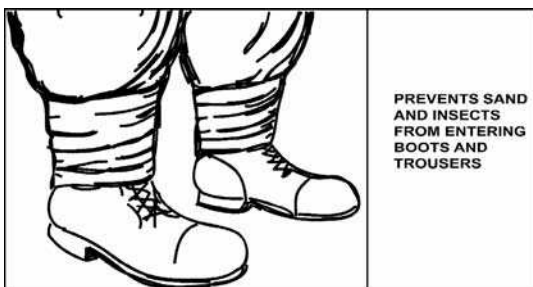


Figure VI-3. Gaiters

4. Shelters

Evasion considerations apply.

a. Site selection.

(1) Near signal and recovery site.

(2) Available food and water.

(3) Avoid natural hazards; i.e., dead standing trees, drainage and dry river beds, and avalanche areas.

(4) A location large and level enough in which to lie down.

b. Types.

(1) Immediate shelters. Find shelter needing minimal improvements (figure VI-4).

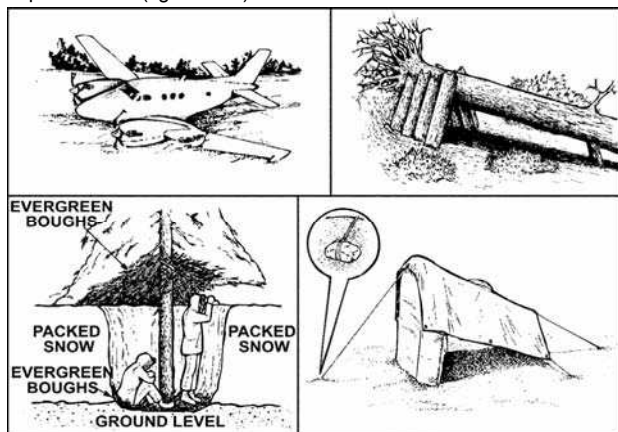


Figure VI-4. Immediate Shelters

Note: The metal skin of an aircraft will act as a heat exchanger in very cold weather making the interior of the aircraft as cold or colder than the outside air.

(2) General shelter. Temperate climates require shelter that protects from wind and rain.

(3) Thermal A-frame, snow trench, snow cave (figures VI-5 through VI-7). Cold climates require an enclosed, insulated shelter. Try to dig down to earth surface to utilize radiant heat.

(a) Snow is the most abundant insulating material.

(b) Air vent is required to prevent carbon monoxide poisoning when using an open flame inside enclosed shelters.

Note: As a general rule, unless you can see your breath, your snow shelter is too warm and should be cooled down to preclude melting and dripping.

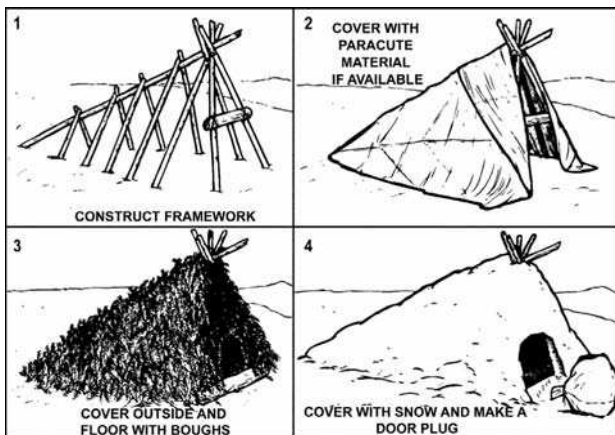


Figure VI-5. Thermal A-Frame

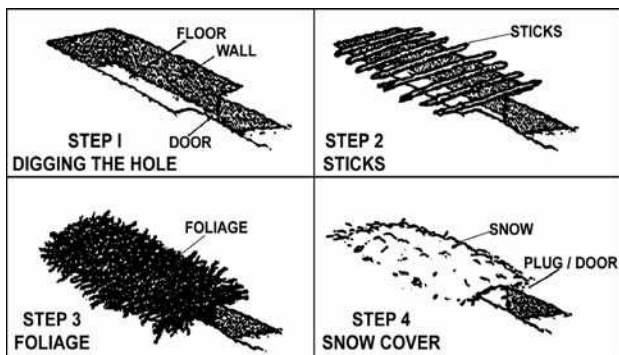


Figure VI-6. Snow Trench

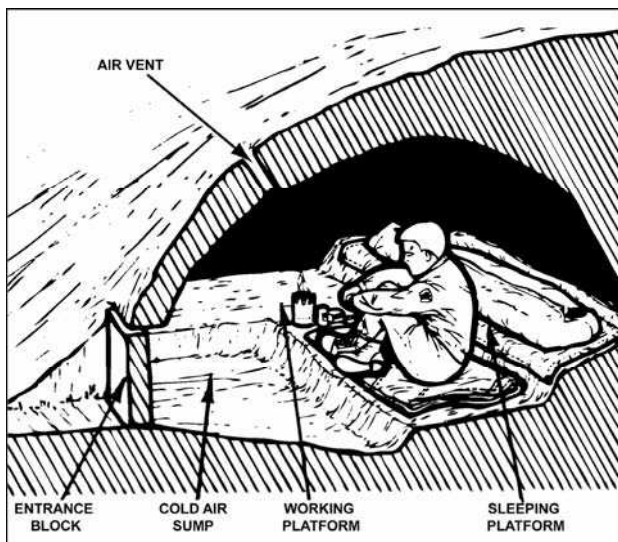


Figure VI-7. Snow Cave

(4) Shade shelter. Hot climates require shade shelter to protect from ultraviolet rays (figure VI-8).

(a) To reduce surface temperature, shelter floor should be elevated or dug down (approximately 18 inches).

(b) For thermal protection, a minimum of two layers of material (12 to 18 inches apart) are required. White is the best color to reflect heat (inner most layer should be of darker material).

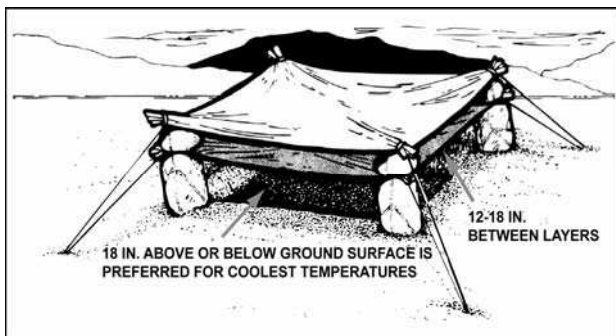


Figure VI-8. Poncho/Parachute Shade Shelter

(5) Elevated platform shelter (figure VI-9). Tropical/wet climates require enclosed, elevated shelter for protection from dampness and insects.

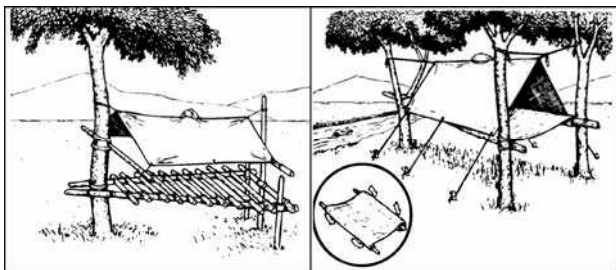


Figure VI-9. Elevated Platform Shelter

c. Shelter construction.

- (1) Have entrance 45 to 90 degrees from prevailing wind.
- (2) Cover with available material.

(a) If natural materials are used, arrange in layers starting at bottom with each layer overlapping previous layer (figure VI-10).

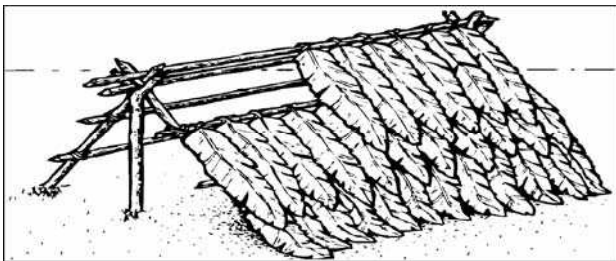


Figure VI-10. Shingle Method

(b) If using porous material like parachute, blankets;

- Stretch as tight as possible.
- Use a 40- to 60-degree slope.
- Use additional layers in heavy rain.

d. Shelter construction materials using natural and man-made materials at hand (i.e., raft vehicle/aircraft parts, parachute, sheet of plastic, bark, sod, sand, snow, and broad leaves).

e. Bed construction. Construct bed to protect from cold, damp ground (i.e., raft, foam rubber from vehicle seats, boughs, leaves, and/or dry moss).

f. In wet climates dig a ditch around the shelter to aid/improve drainage and prevent water from flowing into/through the shelter.

5. Fires

CAUTION: Use fire only as a last resort. Weigh hazards and risks of detection against the need for fire.

a. Evasion considerations:

- (1) Use trees or other sources to dissipate smoke.
- (2) Use fires at dusk, dawn, or during inclement weather.
- (3) Use fires at times when local populace is cooking.

b. Building a fire: Three essential elements for starting a fire are heat, fuel, and oxygen.

(1) Heat sources:

- Matches, lighter, spark devices, batteries, magnifying glass, flashlight reflectors, and pyrotechnics, such as flares (last resort).

- Friction. Without prior training, this source is difficult to master and requires a lot of time to build the device.

(2) Fuel is divided into three categories: tinder, kindling, and fuel. (Gather large amounts of each category before igniting a fire.)

(a) Tinder. Tinder must be very finely shaved or shredded to provide low combustion point and fluffed to allow oxygen to flow through. (To get tinder to burn hotter and longer, saturate with petroleum or alcohol-based products (Vaseline, Chap Stick, insect repellent, aircraft fuel). Many of these items can be found in first aid kit. Examples of tinder include cotton with Vaseline, dry bark, dry grasses, gunpowder, pitch (sap saturated coniferous wood), and candle wick.

(b) Kindling. Kindling is pencil-lead to pencil-size dry wood small enough to ignite from the small flame of the tinder. Gradually add larger kindling until arriving at the size of fuel to burn.

(c) Fuel (i.e., dry wood [removing bark and using hardwoods reduces smoke], bamboo [open chambers to prevent explosion], and dry dung).

c. Types. Fires are built to meet specific needs or uses.

(1) Tepee fire (figure VI-11). Use tepee fire to produce concentrated heat source for cooking, lighting, or signaling.

(2) Log cabin fire (figure VI-11). Use log cabin fire to produce large amounts of light and heat to dry wet wood and provide coals for cooking and so forth.

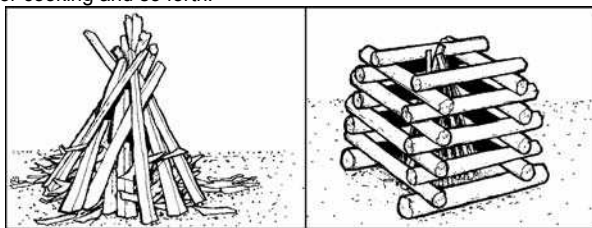


Figure VI-11. Tepee Fire and Log Cabin Fire

(3) Sod fire and reflector (figure VI-12). Use fire reflectors to get the most warmth from fire. Build fires against rocks or logs.

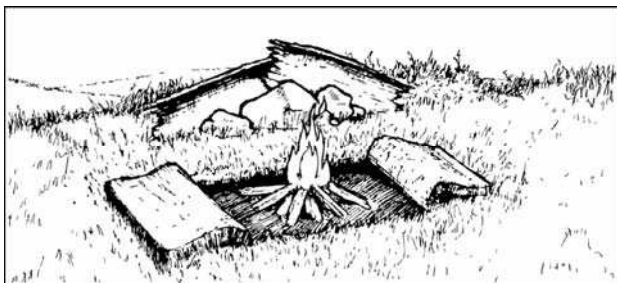


Figure VI-12. Sod Fire and Reflector

(4) Dakota fire hole (figure VI-13). Use the Dakota fire hole for high winds or evasion situations.

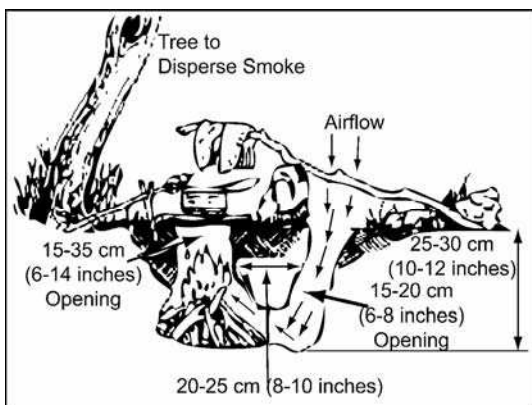


Figure VI-13. Dakota Fire Hole

Chapter VII

WATER

1. Water Requirements

Drink water. Exertion, heat, injury, or an illness increases water loss.

2. Signs and Symptoms of Dehydration

- a. Dry/chapped lips, dark urine.
- b. Thirst, weakness, fatigue, dizziness, and headache.

3. Water Procurement

c. There are no water substitutes. DO NOT drink urine, fish juices, blood, or sea water.

d. Water sources:

- (1) Surface water (streams, lakes, and springs).
- (2) Precipitation (rain, snow, dew, sleet) (figure VII-1).
- (3) Subsurface (wells and cisterns).
- (4) Ground water (arid or desert environment) (figure VII-2).
 - (a) Abundance of lush green vegetation.
 - (b) Drainages and low-lying areas.
 - (c) "V" intersecting game trails often point to water.
 - (d) Presence of swarming insects indicates water is

near.

(e) Croaking frogs and presence of bees.

(f) Bird flight in the early morning to water or late afternoon from water.

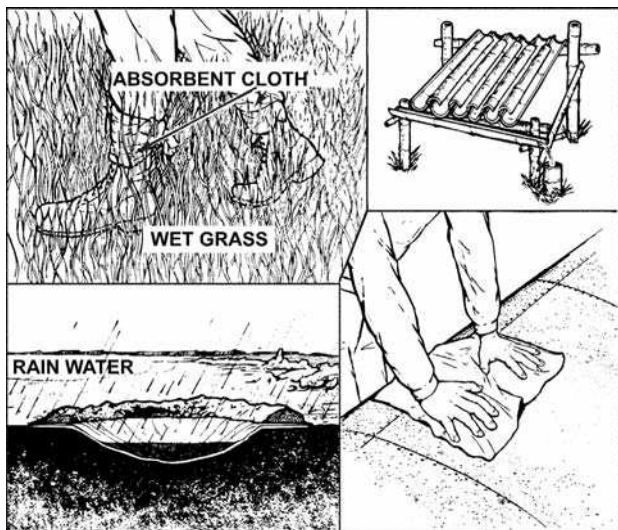


Figure VII-1. Water Procurement

(5) Snow or ice.

(a) Do not eat snow or ice. It lowers body temperature, induces dehydration, and may cause minor cold injury to lips/mouth.

(b) Melt with fire. Stir frequently to prevent damaging container.

(c) Melt with body heat. Use waterproof container and place between layers of clothing.

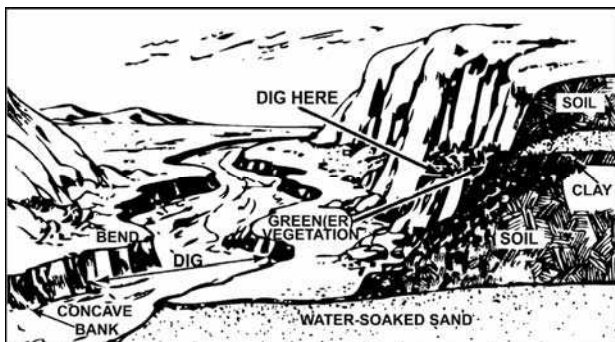


Figure VII-2. Water Indicators

(6) Open seas.

(a) Water available in survival kits.

(b) Precipitation: Drink as much as possible, catch rain in spray shields and life raft covers, and collect dew off raft.

(c) Fresh water from old sea ice or icebergs has rounded corners and tastes relatively salt-free.

(7) Tropical areas.

(a) All open sources previously mentioned.

(b) Vegetation.

- Plants with hollow sections can collect moisture.
- Banana plants (figure VII-3). Cut down the plant, leaving stump. Scoop out center of stump so hollow is bowl-shaped. Water from roots will immediately start to fill hollow. First three fillings of water will be bitter, but succeeding fillings will be palatable. Be sure to cover it with banana leaves to keep insects out.



Figure VII-3. Banana Plants

- Vines (figure VII-4). Cut bark (DO NOT use milky/red sap). If juice is clear and water-like, cut as large a piece of vine as possible (cut the top first). Pour into hand to check smell, color, and taste to determine if drinkable. DO NOT touch vine to lips. When water flow stops, cut off 4-6 inches of opposite end, water will flow again.

- Bamboo. Shake and listen for water. Bore hole at bottom of section to obtain water. Cut out entire section to carry with you. Filter and purify.



Figure VII-4. Water Vines

- Coconuts. Break through husk and nut to obtain water utilizing knife, saw, or pointed stick. Ripe coconuts (on ground) may cause excessive diarrhea.
- Beach well. Along coast, obtain water by digging beach well (figure VII-5).

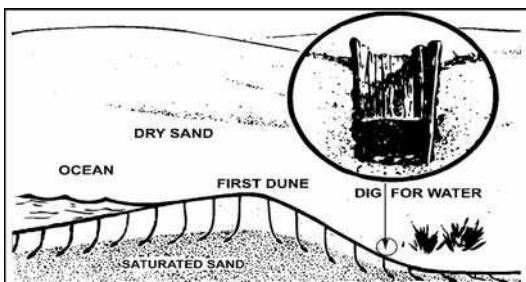


Figure VII-5. Beach Well

(8) Dry areas. Construct as many collection devices as possible/necessary.

(a) Transpiration bag (figure VII-6). Utilize clear plastic bag and ensure as airtight as possible.

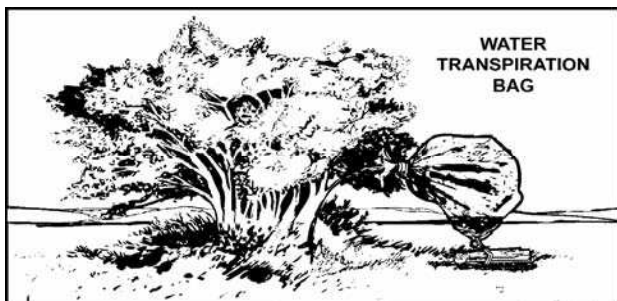


Figure VII-6. Transpiration Bag

(b) Vegetation bag (figure VII-7). Utilize clear plastic bag, bundle vegetation, and ensure as airtight as possible. Water may taste like vegetation.

CAUTION: DO NOT use poisonous/toxic plants in vegetation/transpiration bags.

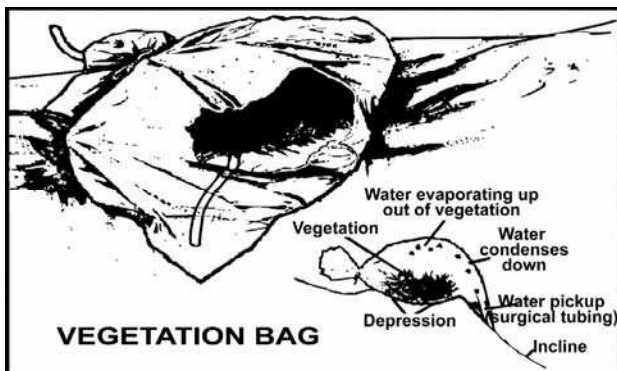


Figure VII-7. Vegetation Bag

(9) Urban areas.

(a) Purify all water even tap water. Consider all water polluted.

(b) Beware of chemically poisoned or treated water traps.

(c) Utilize unorthodox sources (i.e., drainages, puddles, sinks, and run-offs).

4. Water Preparation and Storage

Note: Filtration does not equal purification.

a. Filtration. When procuring dirty water, filter through porous material (sand/charcoal) prior to purifying. See figure IX-4 and figure IX-5 depicting filtration systems, in chapter IX. A seepage basin will also help to filter water (figure VII-8).

b. Purification.

(1) Water from live plants requires no further treatment.

(2) Purify all other water.

(a) Bring to a rolling boil for at least 10 minutes and then strain.

(b) Water purification tablets. Follow instructions on package or use one tablet for clear water and two for muddy/murky water.

(c) Bleach: 4 drops per quart

(d) Two percent Iodine Tincture (in first aid kit): 10 drops per quart.

(e) Ten percent Povidone Iodine Solution (in first aid kit): 1-2 drops per quart.

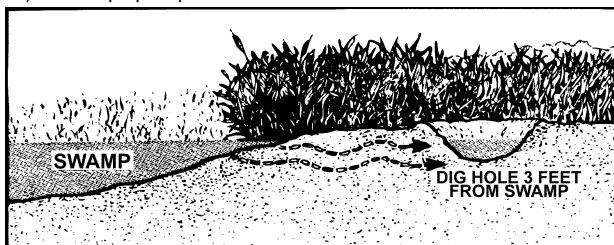


Figure VII-8. Seepage Basin

c. Potable Water.

(1) Pour from one container to another to improve taste, to aerate.

(2) If water cannot be purified, obtain water from the cleanest source possible and filter. Put in clear container and expose to the sun's ultraviolet (UV) rays to kill bacteria (4 hours of direct sunlight should be sufficient to kill bacteria). This may kill pathogens if temperature and UV light is optimal.

d. Storage. To prevent contamination, use a clean, covered, or sealed container (i.e., utilize clear plastic bag, trash bag, prophylactic, section of bamboo, or flotation gear).

Chapter VIII

FOOD

1. Food Requirements

a. Sources and location.

(1) Mammals can be found where:

- (a) Trails lead to watering, feeding, and bedding areas.
- (b) Droppings or tracks look fresh.

(2) Birds can be found by:

- (a) Observing the direction of flight in the early morning and late afternoon (leads to feeding, watering, and roosting areas).
- (b) Listening for bird noises (indication of nesting areas).

(3) Fish and other marine life locations.

(4) Reptiles and amphibians are found almost worldwide.

(5) Insects are easy to gather and could provide primary source of protein. Find them in dead logs and stumps and on ponds, lakes, and slow moving streams.

b. Procurement techniques.

(1) Snares:

- (a) Work while left unattended.

(b) Place at trails leading to water, feeding, and bedding areas, and mouths of dens (figure VIII-1).



Figure VIII-1. Snare Placement

(c) Construction of simple loop snare.

- Use materials that will not break under strain of holding a struggling animal.
- Ensure a struggling animal cannot use nearby vegetation or rocks to break loose from the snare.
- Use figure eight (locking loop) if wire is used (figure VIII-2).
- Once tightened, wire locks in place, preventing reopening, and animal's escape.
- Make noose opening slightly larger than animal's head (3-finger width for squirrels, fist-sized for rabbits).
- Placement of snares (set as many as possible) (figure VIII-3).
- Avoid disturbing the area.
- Use funneling (natural or improvised) (figure VIII-4).

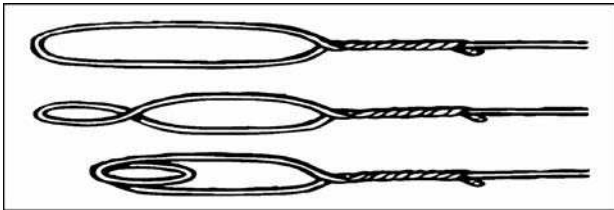


Figure VIII-2. Locking Loop

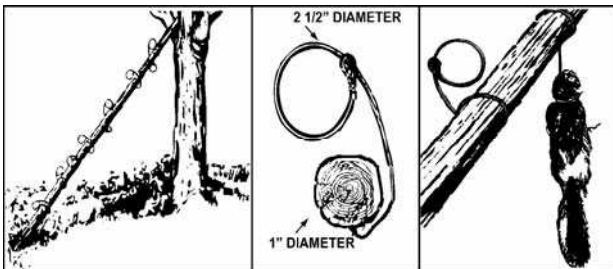


Figure VIII-3. Squirrel Pole

- (2) Noose stick (easier and safer to use than hands).

(3) Twist stick (figure VIII-5).

(a) Insert forked stick into den until something soft is met.

(b) Twist stick, binding animal's hide in fork, then remove animal from den.

(c) Be ready to kill animal; it may be dangerous.



Figure VIII-4. Funneling

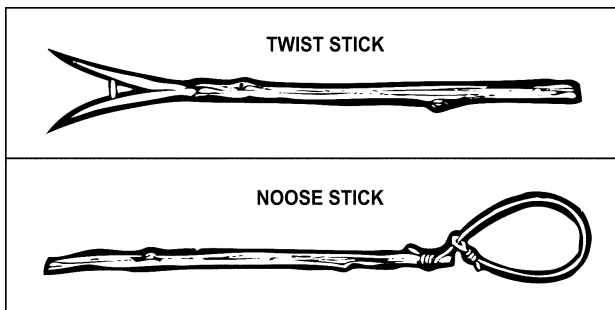


Figure VIII-5. Procurement Devices

(4) Hunting and fishing devices (see figure VIII-6 for fishing procurement methods); i.e., club, rock, spear, slingshot, line, hook, net, and trap.

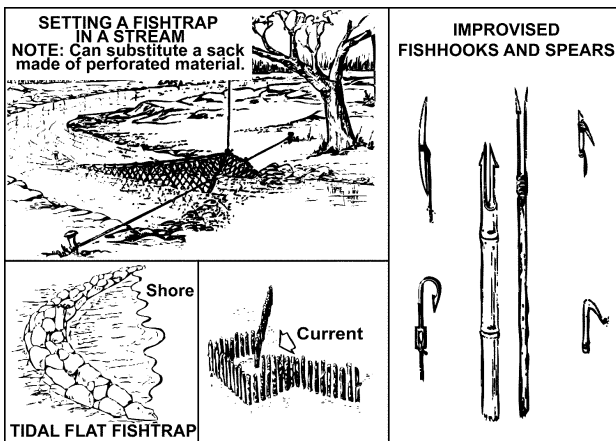


Figure VIII-6. Procurement Methods

(5) Precautions:

- (a) Kill animals before handling. Animals in distress may attract the enemy or larger, more dangerous animals.
- (b) Avoid reaching into dark holes.
- (c) Wear shoes to protect feet when wading in water.

- (d) DO NOT secure fishing lines to yourself or raft.
- (e) Kill fish before bringing them into raft.
- (f) DO NOT eat fish with spines, pale/slimy gills, sunken eyes, flabby skin, and flesh that remains dented when pressed.
- (g) DO NOT eat fish eggs or liver (entrails).
- (h) Avoid all crustaceans above high tide mark.
- (i) Avoid cone-shaped shells.
- (j) Avoid hairy and bright colored insects.
- (k) Avoid poisonous insects and arachnids.
- (l) Avoid disease carrying insects, such as—flies, mosquitoes, and ticks.

c. Plant foods. Before using the following guide, use evasion chart to identify edible plants:

Note: The critical factor in using plants for food is to avoid accidental poisoning. Eat only those plants you can positively identify and you know are safe to eat. If you cannot positively identify an edible plant and choose to try an unknown plant, these guidelines may help determine edibility.

(1) Selection criteria.

(a) Before testing for edibility, ensure there are enough plants to make testing worth your time and effort. Each part of a plant (roots, leaves, stems, bark) requires more than 24 hours to test. DO NOT waste time testing a plant that is not abundant.

(b) Test only one part of one plant at a time. Always prepare and test it the same way.

(c) Remember that eating large portions of plant food on an empty stomach may cause diarrhea, nausea, or cramps. Two good examples are green apples and wild onions. Even after testing food and finding it safe, eat in moderation.

(2) Avoid plants with the following characteristics:

Note: Using these guidelines in selecting plants for food may eliminate some edible plants; however, these guidelines will help prevent choosing potentially toxic plants.

(a) Milky sap (dandelion has milky sap but is safe to eat and easily recognizable).

(b) Spines, fine hairs, and thorns (skin irritants/contact dermatitis). Prickly pear and thistles are exceptions.

(c) Mushrooms and fungus.

(d) Umbrella shaped flowers (hemlock is eliminated).

(e) Bulbs (only onions smell like onions).

(f) Grain heads with pink, purplish, or black spurs.

(g) Beans, bulbs, or seeds inside pods.

(h) Old, wilted, and shiny leaves.

(i) Almond scent in woody parts and leaves.

(3) Berry rules:

(a) Aggregate berries (blackberry, raspberry). Almost all are edible.

(b) Blue or black. 90% are edible.

(c) Red. 50% are edible.

(d) White, yellow, or green. 10% are edible.

(4) Edibility test procedures.

(a) Test only one part of a plant at a time.

CAUTION: Test all parts of the plant for edibility. Some plants have both edible and inedible parts. NEVER ASSUME a part that proved edible when cooked is edible raw, test the part raw before eating. The same part or plant may produce varying reactions in different individuals.

(b) Separate the plant into its basic components (stems, roots, buds, and flowers).

(c) Smell food for strong acid odors. Remember, smell alone does not indicate plant is edible or inedible.

(d) **DO NOT** eat 8 hours before test and drink only purified water.

(e) During 8 hours you abstain from eating, test for contact poisoning by placing a piece of the plant on the inside of your elbow or wrist. Sap or juice should contact skin. Usually 15 minutes is enough time to allow for a reaction.

(f) During testing, take NOTHING by mouth EXCEPT purified water and the plant you are testing.

(g) Select small portion of a single part and prepare it the way you plan to eat it.

(h) Before placing prepared plant in mouth, touch small portion (pinch) to inside of wrist to test for burning or itching.

(i) If after 3 minutes there is no reaction on lip, place plant on your tongue and hold it for 15 minutes.

(j) If there is no reaction, thoroughly chew a pinch and hold it in your mouth for 15 minutes (DO NOT SWALLOW-spit excess saliva). If any ill effects occur, rinse out your mouth with water.

(k) If nothing abnormal occurs, swallow food and wait 8 hours. If any ill effects occur during this period, induce vomiting and drink a water and charcoal mixture.

(l) If no ill effects occur, eat 1/4 cup of same plant prepared same way. Wait another 8 hours. If no ill effects occur, plant part as prepared is safe for eating.

d. Urban Procurement

CAUTION: Ripe tropical fruits should be peeled and eaten raw. Softness, rather than color, is the best indicator of ripeness. Cook unripe fruits and discard seeds and skin. Cook underground portions to reduce bacterial contamination and ease digestion of their generally high starch content.

(1) Know your area of operation's flora and fauna, local foods, and their sources.

(2) Theft is not recommended and carries harsh consequences. If theft is necessary to sustain life, take great steps to go unnoticed, taking only what you absolutely need (in and around densely populated areas).

(3) Blend your procurement methods with local methods.

2. Food Preparation

Animal food gives greatest food value per pound.

a. Butchering and skinning.

(1) Mammals.

(a) Remove skin and save for other uses.

(b) One cut skinning of small game (figure VIII-7). Open abdominal cavity. Avoid rupturing the intestines or urine bladder when removing entrails. If the bladder ruptures and urine spills on the meat, wash the meat to avoid contamination. If eating inner

organs (heart, liver, and kidneys) cook well-done. Consume all meaty parts of skull, brain, tongue, and eyes

(c) Wash when ready to use.

(d) If preserving meat, remove it from bones.

(e) Unused or inedible organs and entrails may be used as bait for other game.

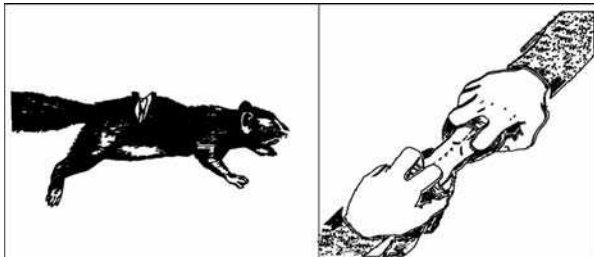


Figure VIII-7. Small Game Skinning

(2) Frogs and snakes. Skin, then discard skin, head (snake) with two inches of body (to avoid poison glands), and internal organs.

(3) Fish.

(a) Scale (if necessary) and gut fish soon after it is caught.

(b) Insert knifepoint into anus of fish and cut open belly.

(c) Remove entrails and gills to prevent spoilage.

(4) Birds.

(a) Gut soon after killing.

(b) Protect from flies.

(c) Skin or pluck them (skin scavengers and sea birds).

(5) Insects.

(a) Remove all hard portions such as legs, wings, and extremities.

CAUTION: Dead insects spoil rapidly, DO NOT save.

(b) Recommend cooking grasshopper-size insects.

(6) Fruits, berries, and most nuts can be eaten raw.

b. Cooking.

(1) Boiling (most nutritious method of cooking—drink the broth).

CAUTION: To kill parasites, thoroughly cook all wild game, freshwater fish, clams, mussels, snails, crawfish, and scavenger birds. Saltwater fish may be eaten raw.

(a) Improvise metal cooking containers from available resources.

(b) Drop heated rocks into containers to boil water or cook food.

(2) Baking.

(a) Wrap in leaves or pack in mud.

(b) Bury food in dirt under coals of fire.

(3) Leaching. Some nuts (acorns) must be leached to remove the bitter taste of tannin. Use one of the following leaching methods:

(a) First method:

- Soak and pour water off.
- Crush and pour water through. Cold water should be tried first; however, boiling water is sometimes best. Discard water.

(b) Second method:

- Boil, pour off water, and taste plant. If bitter, repeat process until palatable.

(4) Roasting.

(a) Shake shelled nuts in a container with hot coals.

(b) Roast thinly sliced meat and insects over candle.

3. Food Preservation

a. Keep animal alive.

b. Refrigerate.

(1) Long term.

(a) Freeze in meal-size portions.

(b) Mark cache/freezer location to relocate.

(2) Short term.

(a) Food wrapped in waterproof material and placed in a stream remains cool.

(b) Buried (shady areas or along streams work best).

(c) Wrap food in absorbent material, such as cotton, and re-wet as water evaporates.

c. Drying and smoking removes moisture and preserves food.

(1) Use salt to improve flavor and promote drying.

(2) Remove fat. Cut or pound meat into thin strips (1/8 inch).

(3) Avoid using fir or pine to smoke meat (produce soot and makes meat inedible).

d. Protecting meat from animals and insects.

(1) Wrapping food.

(a) Use clean material. Wrap pieces individually.

(b) Ensure all corners of wrapping are insect proof.

(c) Wrap soft fruits and berries in leaves or moss.

(2) Hanging meat.

(a) Hang meat in shade.

(b) Cover during daylight hours to protect from insects.

Note: This method should only be used in a permissive environment as the hanging of meat may reveal your position.

(3) Packing meat for movement.

(a) Wrap before flies appear.

(b) Place meat in fabric or clothing for insulation and place in pack.

(c) Carry shellfish, crabs, and shrimp in wet seaweed.

e. Food stored in shelter could attract animals.

Chapter IX INDUCED CONDITIONS

1. Nuclear Conditions

CAUTION: Radiation protection depends on time of exposure, distance from the source, and shielding.

a. Protection.

(1) **FIND PROTECTIVE SHELTER IMMEDIATELY!**

(2) Gather all equipment for survival (time permitting).

(3) Avoid detection and capture.

(a) Seek existing shelter that may be improved (figure IX-1).



Figure IX-1. Immediate Action Shelter

(b) If no shelter is available, dig a trench or foxhole as follows:

- Dig trench deep enough for protection, then enlarge for comfort (figure IX-2).
- Cover with available material.

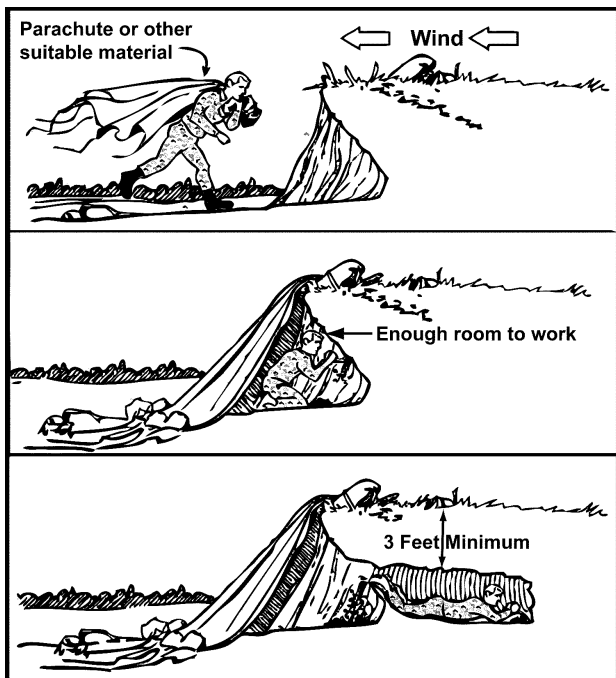


Figure IX-2. Improvised Shelter

- (4) Radiation shielding efficiencies (figure IX-3).
- (5) Leave contaminated equipment and clothing near shelter for retrieval after radioactive decay.
- (6) Lie down, keep warm, sleep, and rest.

NUCLEAR EXPLOSIONS: Fall flat. Cover exposed body parts. Present minimal profile to direction of blast. DO NOT look at fireball! Remain prone until blast effects are over.			
SHELTER: Pick, as soon as possible, 5 minutes unsheltered is maximum! Priority: (1) Cave or tunnel covered with 3 or more feet of earth. (4) Basements. (2) Storm/storage cellars. (5) Abandoned stone/mud buildings. (3) Culverts. (6) Foxhole 4 feet deep (remove topsoil within 2 feet radius of foxhole lip).			
RADIATION SHIELDING EFFICIENCIES			
Iron/Steel	.7 inches	Cinder Block	5.3 inches
Brick	2.0 inches	Ice	6.8 inches
Concrete	2.2 inches	Wood (Soft)	8.8 inches
Earth	3.3 inches	Snow	20.3 inches
One thickness reduces received radiation dose by 1/2. Additional thickness added to any amount of thickness reduces received radiation dose by 1/2.			
SHELTER SURVIVAL: Keep contaminated materials out of shelter. Good Weather: Bury contaminated clothing outside of shelter (recover later). Bad Weather: Shake strongly or beat with branches. Rinse and/or shake wet clothing. DO NOT wring out!			
PERSONAL HYGIENE: Wash entire body with soap and any water; give close attention to fingernails and hairy parts. No Water: Wipe all exposed skin surfaces with clean cloth or uncontaminated soil. Fallout/dusty conditions-keep entire body covered. Keep handkerchief/cloth over mouth and nose. Improvise goggles. DO NOT smoke!			
DAILY RADIATION TIME TABLE for NO RATE METER			
4-6	Complete isolation	9-12	2-4 hours exposure per day
3-7	Brief exposure (30 minutes maximum)	13	Normal movement
8	Brief exposure (1 hour maximum)		

Figure IX-3. Radiation Shielding Efficiencies

b. Sustenance.

(1) Water.

(a) Allow no more than 30 minutes exposure on 3rd day for water procurement. Water sources (in order of preference):

- Springs, wells, or underground sources are safest.
- Water in pipes/containers in abandoned buildings.
- Snow (6 or more inches below the surface during fallout).
- Streams and rivers (filtered before drinking).
- Lakes, ponds, pools, etcetera.

- Water from below the surface (**DO NOT** stir up the water).
 - Use seep well.
- (b) Water preparation (figures IX-4 and IX-5).
- Filtering through earth removes 99 percent of radioactivity.
 - Purify all water sources.

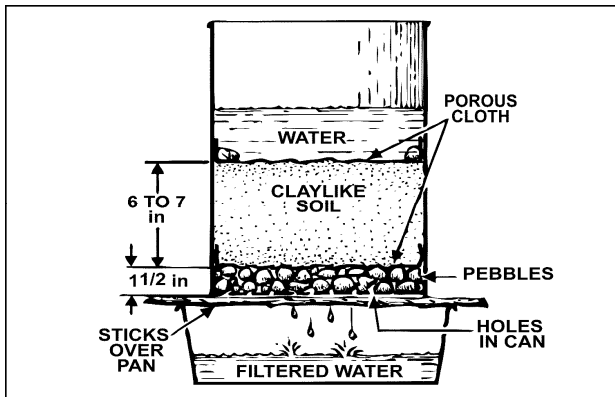


Figure IX-4. Filtration Systems, Filtering Water

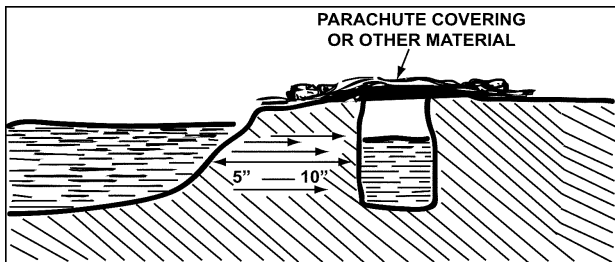


Figure IX-5. Filtration Systems, Settling Water

(2) Food.

- (a) Processed foods (canned or packaged) are preferred; wash and wipe containers before use.

- (b) Animal foods.
 - Avoid animals that appear to be sick or dying.
 - Skin carefully to avoid contaminating meat.
 - Before cooking, cut meat away from bone, leaving at least 1/8 inch of meat on bone.
 - Discard all internal organs.
 - Cook all meat until very well done.
- (c) Avoid.
 - Aquatic food sources (use only in extreme emergencies because of high concentration of radiation).
 - Shells of all eggs (contents will be safe to eat).
 - Milk from animals.
- (d) Plant foods (in order of preference).
 - Plants whose edible portions grow underground (for example, potatoes, turnips, carrots). Wash and remove skin.
 - Edible portions growing above ground that can be washed and peeled or skinned (bananas, apples, etcetera).
 - Smooth skinned vegetables, fruits, or above ground plants that are not easily peeled or washed.
- c. Self-aid.
 - (1) General rules.
 - (a) Prevent exposure to contaminants.
 - (b) Use personal hygiene practices and remove body waste from shelter.
 - (c) Rest, avoid fatigue.
 - (d) Drink liquids.
 - (2) Wounds.
 - (a) Clean affected area.
 - (b) Use antibacterial ointment or cleaning solution.
 - (c) Cover with clean dressing.
 - (d) Watch for signs of infection.
 - (3) Burns.
 - (a) Clean affected area.
 - (b) Cover with clean dressing.

(4) Radiation sickness (nausea, weakness, fatigue, vomiting, diarrhea, loss of hair, radiation burns).

- (a) Time is required to overcome.
- (b) Rest.
- (c) Drink fluids.
- (d) Maintain food intake.
- (e) Prevent additional exposure.

2. Biological Conditions

a. Clues that may alert you to a biological attack.

- (1) Enemy aircraft dropping objects or spraying.
- (2) Breakable containers or unusual bombs, particularly those bursting with little or no blast and muffled explosions.
- (3) Smoke or mist of unknown origin.
- (4) Unusual substances on the ground or vegetation; sick looking plants or crops.

b. Protection from biological agents.

- (1) Use protective equipment.
- (2) Bathe as soon as situation permits.
- (3) Wash hair and body thoroughly with soap and water.
- (4) Clean thoroughly under fingernails.
- (5) Clean teeth, gums, tongue, and roof of mouth frequently.

c. Survival tips for biological conditions.

- (1) Keep body and living area clean.
- (2) Stay alert for clues of biological attack.
- (3) Keep nose, mouth, and skin covered.
- (4) Keep food and water protected. Bottled or canned foods are safe if sealed. If in doubt, boil food and water for 10 minutes.
- (5) Construct shelter in a clear area away from vegetation, with entrance 90 degrees to the prevailing wind.
- (6) If traveling, travel crosswind or upwind (taking advantage of terrain to stay away from depressions).

3. Chemical Conditions

a. Detecting.

- (1) Smell. Many agents have little or no odor.

- (2) Sight. Many agents are colorless.
 - (a) Color. Yellow, orange, or red smoke or mist.
 - (b) Liquid. Oily, dark patches on leaves and ground.
 - (c) Gas. Some agents appear as a mist immediately after shell burst.
 - (d) Solid. Most solid state agents have some color.
- (3) Sound. Muffled explosions are possible indications of chemical agent bombs.
- (4) Feel. Irritation to nose, eyes, or skin and/or moisture on the skin are danger signs.
- (5) Taste. Strange taste in food or water indicates contamination.
- (6) General indications. Tears, difficult breathing, choking, itching, coughing, dizziness.
- (7) Wildlife. Presence of sick or dying animals.
- b. Protection against chemical agents.
 - (1) Use protective equipment.
 - (2) Avoid contaminated areas.
 - (a) Exit contaminated area by moving crosswind.
 - (b) Select routes on high ground.
 - (c) Avoid cellars, ditches, trenches, gullies, and valleys.
 - (d) Avoid woods, tall grasses, and bushes as they tend to hold chemical agent vapors.
 - (e) Decontaminate body and equipment as soon as possible.
 - Remove. Pinch-blotting.
 - Neutralize. Warm water.
 - Destroy. Bury.
- c. Self-aid in chemically contaminated areas.
 - (1) If a chemical defense ensemble is available:
 - (a) Use all protective equipment.
 - (b) Follow antidote directions, when needed.
 - (2) If a chemical defense ensemble is not available:
 - (a) Remove or tear away contaminated clothing.
 - (b) Rinse contaminated areas with water.

(c) Improvise breathing filter using materials available (such as T-shirt, handkerchief, or fabric).

d. Tips for survivor:

(1) **DO NOT** use wood from a contaminated area for fire.

(2) Look for signs of chemical agents around water sources before procurement (oil spots, foreign odors, dead fish, or animals).

(3) Keep food and water protected.

(4) **DO NOT** use plants in contaminated areas for food or water.

Appendix A

THE WILL TO SURVIVE

1. Psychology of Survival

a. Preparation.

- (1) Know your capabilities and limitations.
- (2) Keep a positive attitude.
- (3) Develop a realistic plan.
- (4) Anticipate fears.
- (5) Combat psychological stress.
- (6) Recognize and anticipate existing stressors (injury, death, fatigue, illness, environment, hunger, isolation).
- (7) Attribute normal reactions to existing stressors (fear, anxiety, guilt, boredom, depression, anger).
- (8) Identify signals of distress created by stressors (indecision, withdrawal, forgetfulness, carelessness, and propensity to make mistakes).

b. Strengthen your will to survive with:

- (1) The Code of Conduct.
- (2) Pledge of Allegiance and patriotic songs.
- (3) Faith in America.
- (4) Short term and personal goals.
- (5) Thoughts of return to family, friends, and future plans.

c. Group dynamics of survival include:

- (1) Leadership, good organization, and cohesiveness.
- (2) Promote high morale.
- (3) Prevent panic.
- (4) Create strength and trust in one another.
- (5) Favor persistency in overcoming failure.
- (6) Facilitate formulation of group goals.
- (7) Take care of your buddy.
- (8) Work as a team.

- (9) Reassure and encourage each other.
- d. Influencing factors.
 - (1) Enforce chain of command.
 - (2) Organize according to individual capabilities.
 - (3) Accept suggestions and criticism.

2. Spiritual Considerations

Note: Never press spiritual considerations in large groups if doing so divides the group and/or creates active dissention.

- a. Collect your thoughts and emotions.
- b. Rely on your personal belief system.
 - (1) Identify your personal beliefs.
 - (2) Use self-control.
 - (3) Practice meditation.
 - (4) Remember past inner sources to help you overcome adversity.
 - (5) Exercise personal religious rituals (e.g., prayer, worship, and/or recitation of religious writings, scripture, or songs), if any.
- c. With other survivors.
 - (1) Create an environment where each can openly discuss his/her personal beliefs without fear of judgment, if he/she chooses to do so.
 - (2) Encourage each other to maintain hope while waiting for rescue.

Appendix B

PUBLICATION INFORMATION

1. Purpose

This publication provides Service members a quick reference, weatherproof, pocket-size guide on basic survival, evasion, and recovery information.

2. Scope

This multi-Service tactics, techniques, and procedures publication is designed to assist Service members in a survival situation regardless of geographic location.

3. Applicability

The target audience for this publication is any Service member requiring basic survival, evasion, and recovery information.

4. Implementation Plan

Participating Service command offices of primary responsibility will review this publication, validate the information and, where appropriate, reference and incorporate it in Service manuals, regulations, and curricula as follows:

Army. Upon approval and authentication, this publication incorporates the procedures contained herein into the United States (US) Army Doctrine and Training Literature Program as directed by the Commander, US Army Training and Doctrine Command (TRADOC). Distribution is IAW applicable directives and the Initial Distribution Number (IDN) listed on the authentication page.

Navy. The Navy will incorporate these procedures in US Navy training and doctrine publications as directed by the Commander, Navy Warfare Development Command (NWDC)[N5]. Distribution is IAW Military Standard Requisition and Issue Procedure Desk Guide (MILSTRIP Desk Guide) Navy Supplement Publication-409 (NAVSUP P-409).

Air Force. The Air Force will incorporate the procedures in this publication IAW applicable governing directives. Distribution is IAW Air Force Instruction (AFI) 33-360.

5. User Information

a. TRADOC, NWDC, Headquarters Air Force Doctrine Center (AFDC), and the Air Land Sea Application (ALSA) Center developed this publication with the joint participation of the

approving Service commands. ALSA will review and update this publication as necessary.

b. This publication reflects current joint and Service doctrine, command and control organizations, facilities, personnel, responsibilities, and procedures. Changes in Service protocol, appropriately reflected in joint and Service publications, will likewise be incorporated in revisions to this document.

c. We encourage recommended changes for improving this publication. Key your comments to the specific page and paragraph and provide a rationale for each recommendation. Send comments and recommendations directly to—

Army

Commander, US Army Training and Doctrine Command
ATTN: ATFC-EJ
Fort Monroe VA 23651-1067
DSN 680-3951 COMM (757) 788-3951
E-mail: doctrine@monroe.army.mil

Navy

Commander, Navy Warfare Development Command
ATTN: N5
686 Cushing Road
Newport RI 02841-1207
DSN 948-1070/4201 COMM (401) 841-1070/4201
E-mail: alsapubs@nwdc.navy.mil

Air Force

Commander, Air Force Doctrine Center
ATTN: DD
155 North Twining Street
Maxwell AFB AL 36112-6112
DSN 493-2640/2256 COMM (334) 953-2640/2256
E-mail: afdc.dd@maxwell.af.mil

ALSA

Director, ALSA Center
114 Andrews Street
Langley AFB VA 23665-2785
DSN 575-0902 COMM (757) 225-0902
E-mail: alsa_director@langley.af.mil

GLOSSARY

PART I – ABBREVIATIONS AND ACRONYMS

A, B

AFDC	Air Force Doctrine Center
AFI	Air Force Instruction
ALSA	Air Land Sea Application
ATO	air tasking order

C, D

CSAR	combat search and rescue
-------------	--------------------------

E, F

ELT	emergency locator transmitter
EPA	evasion plan of action

G, H

GPS	global positioning system
------------	---------------------------

I

IAW	in accordance with
IDN	Initial Distribution Number
ISOPREP	isolated personnel report

J, K, L

JP	Joint Publication
LOC	line of communications
LOP	line of position

M

MILSTRIP	Military Standard Requisition and Issue Procedure
MTTP	multi-Service tactics, techniques, and procedures

N, O, P, Q, R

NAVSUP	Navy Supplement
NWDC	Navy Warfare Development Command

S, T, U, V, W, X, Y, Z

SPINS	special instructions
TRADOC	US Army Training and Doctrine Command
UV	ultraviolet

PART II – TERMS AND DEFINITIONS

authenticate—A challenge given by voice or electrical means to attest to the authenticity of a message or transmission. (JP 1-02)

camouflage—The use of natural or artificial material on personnel, objects, or tactical positions with the aim of confusing, misleading, or evading the enemy. (JP 1-02)

concealment—The protection from observation or surveillance. (JP 1-02)

datum—Any numerical or geometrical quantity or set of such quantities which may serve as reference or base for other quantities. Where the concept is geometric, the plural form is "datums" in contrast to the normal plural "data." (JP 1-02)

Department of Defense (DD) Form 1833 Isolated Personnel Report—contains information designed to facilitate the identification and authentication of an evader by a recovery force. Also called **(ISOPREP)**. (JP 1-02)

evasion and recovery—The full spectrum of coordinated actions carried out by evaders, recovery forces, and operational recovery planners to effect the successful return of personnel isolated in hostile territory to friendly control. (JP 1-02)

evasion plan of action— A course of action, developed before executing a combat mission, that is intended to improve a potential evader's chances of successful evasion and recovery by providing recovery forces with an additional source of information that can increase the predictability of the evader's actions and movement. Also called **EPA**. (JP 1-02)

20 March 2007

By Order of the Secretary of the Army:

Official:

GEORGE W. CASEY
General, United States Army
Chief of Staff


JOYCE MORROW
Administrative Assistant to the
Secretary of the Army
0000000

DISTRIBUTION:

Active Army, Army National Guard, and US Army Reserve:
Distribute IAW the initial distribution number (IDN) 115787,
requirements for FM 3-50.3.

By Order of the Secretary of the Air Force

ALLEN G. PECK
Major General, USAF
Commander
Headquarters Air Force
Doctrine Center

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-publishing.af.mil for downloading or ordering.

RELEASABILITY: Distribution authorized to DOD and DOD contractors only to protect technical or operational information from automatic dissemination under the international Exchange Program or by other means. This determination was made on 23 June 2006.

Supersedes AFTTP(I) 3-2.26, 19 March 2003.



0411LP1060669

Navy S/N: 0411LP1060669

PIN: 080832-000