

**SURVIVAL AND EMERGENCY  
USES OF  
PARACHUTE**

The Parachute	5
Self Aid	6
Signaling	10
Personal Protection	14
Equipment	20
Water and Food	24

**1 June 1983**

DEPARTMENTS OF THE AIR FORCE AND THE ARMY

## **Search and Rescue**

### **SURVIVAL AND EMERGENCY USES OF PARACHUTE**

This pamphlet provides personnel with basic information on survival should a situation arise that would thrust them into a hostile environment with only limited resources. This pamphlet supplements AFM 64-5, Survival, and FM 21-76, Survival, Evasion, and Escape, with useful information concerning use of the parachute and other survival techniques.

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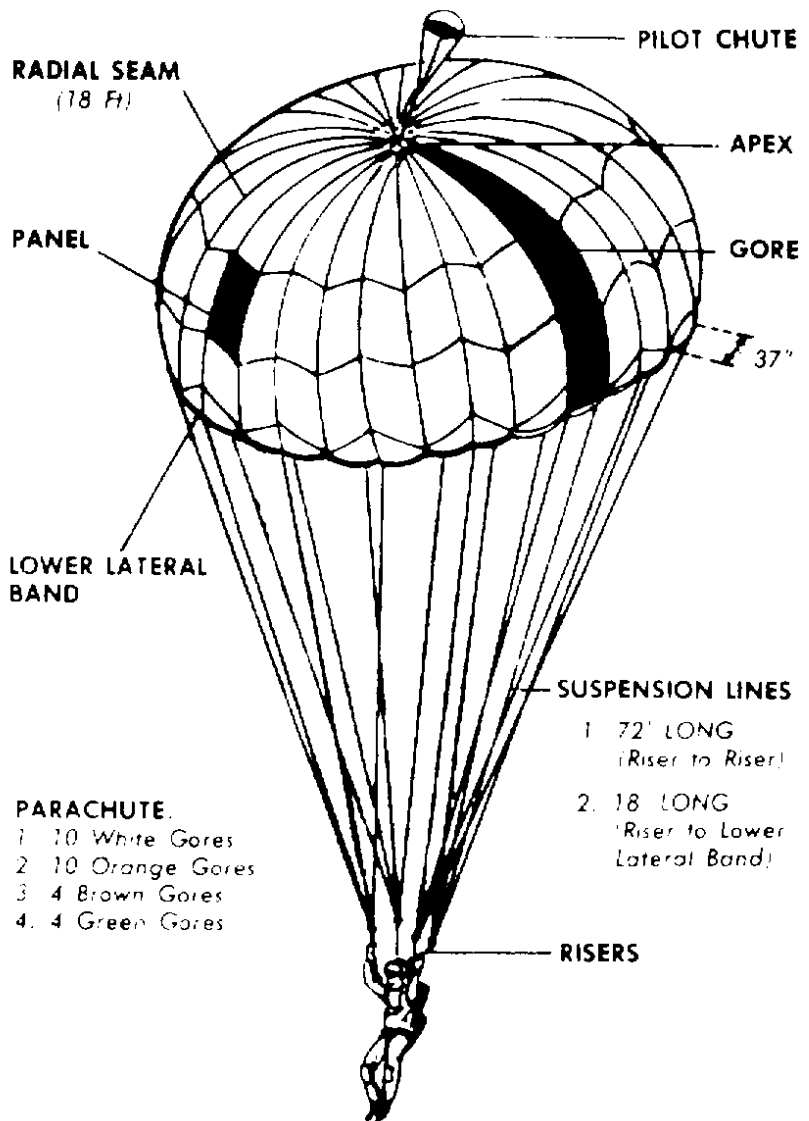
Air Force: F

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## **FOREWORD**

Survival in any hostile environment depends largely upon the ability of the individual to meet personal needs through Improvisation Initiative is important, but so is proper planning for conservation of materials available for personal safety The following rules will help you improvise equipment to meet your needs

- 1 Determine your needs
- 2 Inventory your possessions and available natural materials.
- 3 Consider all the alternatives to solving your needs
- 4 Select the alternative that provides the most efficient use of materials, time, and energy
- 5 Plan all construction to ensure that it is durable and safe, thus preventing unnecessary Injury or delay during future operations

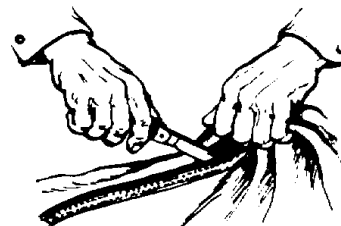


## THE PARACHUTE

### Stripping the Chute and Harness

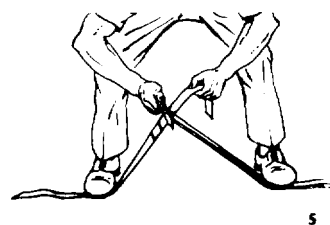
Plan your needs to conserve materials Use a sharp tool and safe cutting techniques.

- 1 REMOVING GORES. Cut suspension lines at apex and below lateral band Cut through lower lateral band or apex at radial seam, keeping tension on the material and holding the knife at a 45° angle, as Illustrated



- 2 STRIPPING SUSPENSION LINES. Disconnect or cut lines from risers (NOTE There are several corelines In each suspension line Each pulls out separately.) Use suspension lines (550 pound tensile strength) for lashing, tying, etc. Use the individual corelines (35 pound tensile strength) for sewing, weaving, tying, fishiness, and emergency suturing. (NOTE Coreline is nylon and does not absorb moisture Prevent unraveling by melting the end Needle will thread easier If coreline is doubled)

- 3 STRIPPING HARNESS. For maximum use, cut harness stitching between webbing.



## SELF AID

### Bleeding

To stop bleeding, first use direct pressure (a pressure bandage made from a parachute panel, undershirt, etc ). If possible, elevate the wound above the heart. Apply hand or finger pressure to the pressure points (see illustration) if direct pressure is ineffective. Use a tourniquet only as a last resort. Once applied, leave the tourniquet in place until removed by competent medical personnel.



**BLEEDING IN SCALP ABOVE THE EAR** Light Pressure n front of the middle ear



**BLEEDING ON OUTSIDE OF INSIDE OF HEAD** Moderate pressure on neck about 3' below ear and 3' above collar bone



**BLEEDING IN THE CHEEK.** Very light pressure in notch on under edge of low, 2/3 back from tip of chin.



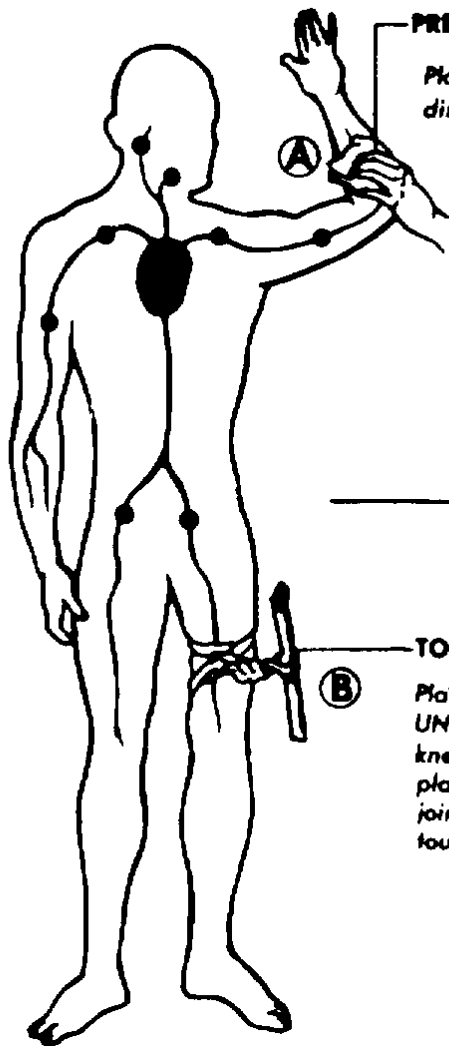
**BLEEDING IN THE LOWEE ARM** Strong pressure on inside of arm ½ between shoulder and elbow



**BLEEDING IN THE ARM** Firm pressure behind the middle of collar bone-push artery against clavicle



**BLEEDING ABOVE THE KNEE** Strong pressure in groin with heel of hand push artery against pelvic bones.



**PRESSURE BANDAGE**

Place pressure dressing bandage directly over injury and elevate.

Retain for 5 minutes, or until bleeding stops.

Make compresses of triangular bandages or pieces of sponge rubber from seat pads

**TOURNIQUET**

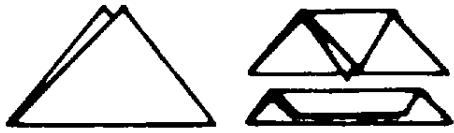
Place tourniquet just above wound **UNLESS**—bleeding just below knee or elbow; in which case place tourniquet just above the joint. Once applied, leave the tourniquet on.

Make tourniquet from harness webbing, or from the triangular bandage.

## Bandages

Use triangular bandages (parachute panels, undershirts, etc ) for bandaging wounds, fractures, and for slings.

### TRIANGULAR BANDAGES



### BANDAGES OF CUTIE CLOTH



4" by 4 yds for thigh, groin, trunk

3" by 4 yds for extremist

2" by 4 yds. for hands, toe, hood

### SOME BANDAGE USES



For  
jaw  
injuries

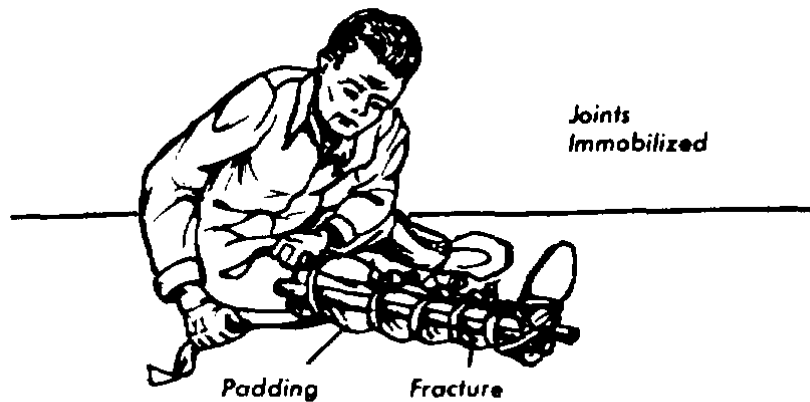
For  
sprained  
ankles





## Splitting

Immobilize the joint above and below the fracture. Pad the splint (panels, clothing, grass, leaves, etc.) and attach it securely, using suspension lines, belts, vines, bark, etc.



## Shock

The best self aid against shock is mental preparedness. To treat or reduce shock, keep calm, treat any injury, assume a comfortable position (lying down if possible), and keep warm.

## Dehydration

You must maintain your body fluid. As dehydration increases, your mental and physical efficiency decreases. A 1½-quart decrease in body fluid decreases your efficiency 25 percent. If water is a problem, regulate body fluid loss (perspiration) by staying in the shade, working at night, etc. Do not ration your water.

## SIGNALLING

### Electronic Communication

Transceivers, beacons, and Crash Position Indicators will normally be your prime means of communication. In using them, remember:

1. Read and follow Instructions printed on the device.
2. All such electronic devices are line of sight..
3. A cone of silence is formed at the top and base of antennas Do not point the antenna at the rescue aircraft.
4. Avoid grounding the antenna on vegetation or clothing.
5. Ensure that only one device is in operation at any one time.
6. Talk clearly, distinctly, and in a normal tone of voice.
7. Keep all batten's warm and dry.

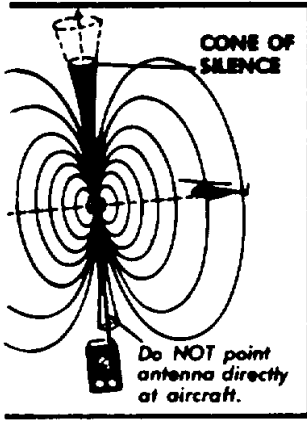
### IN CONTACTING SEARCH AND RESCUE:

1. Use the beeper, talk, listen cycle.
2. Try to establish contact regardless of the time of day.
3. Use beacons to transmit tone, transceivers to receive.
4. Observe radio discipline procedures (for example, only one person at a time will transmit).

**VECTERING.** Most aircraft used in search and rescue can "home" in on your electronic signal. However, if you have a transceiver, you can talk the aircraft to your position thereby expediting rescue. Use these procedures:

1. When you can see or hear the aircraft, determine its direction of flight. If it is moving to your left, direct it to turn left. If moving right, direct it right. When the aircraft looks or sounds as though it is coming toward you, stop its turn. Make additional adjustments as necessary.

2. Transmit estimated range from the aircraft to yourself by providing decreasing range estimates (such as "1 mile," "½ mile," "A mile," etc.)
3. Provide a description of the surrounding terrain, including prominent features and vegetation.



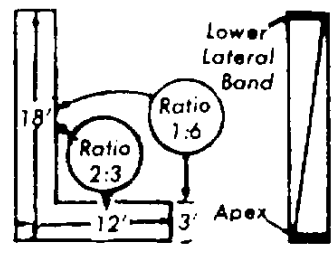
4. As the aircraft approaches your position you should continuously transmit, providing the search aircraft a short count down, for example, 5,4,3,2,1, o head, mark; or 5, 4, 3, 2, 1, mark, 3 o'clock 50 yards.

NOTE: The survivor should strive to bring the aircraft directly overhead.

#### **Visual Communication**

Gores of the parachute and natural materials may be used to construct visual signals. By laying the gores of materials small end to large end, a rectangle can be made. Be sure that your panels are large enough to be seen from the air (at least 3-feet wide by 18-feet long) and that they contrast with the background upon which they are placed.

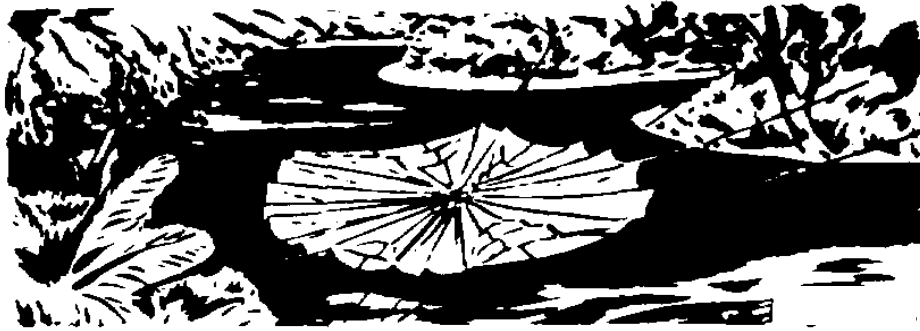
In constructing the signal, use straight lines and definite angles, and place the signal in an area providing maximum visibility from the air. Indicate requirements as follows:



<b>X</b> Require Medical Assistance	<b>↑</b> Proceeding in this Direction	<b>N</b> No or Negative
<b>V</b> Require Assistance		<b>Y</b> Yes or Affirmative

A large gore affixed to a tall tree top can be very effective. Incorporate movement when possible as it tends to catch the eye.

The parachute may also be spread, intact, over vegetation, across streams, or in ground clearings. Secure all suspension lines.



*Figure 10.*

If a mirror is available, it can be very effective even on hazy days. Reflect the rays of the sun directly at passing aircraft. There is a good chance they will see it.

Extreme caution should be used in the use of fire or pyrotechnics. The sparks from a fire or hot projectiles of a pyrotechnic could cause a disastrous fire. Items having a one-time use, such as the pyrotechnic, should not be used unless you can actually see rescue forces.

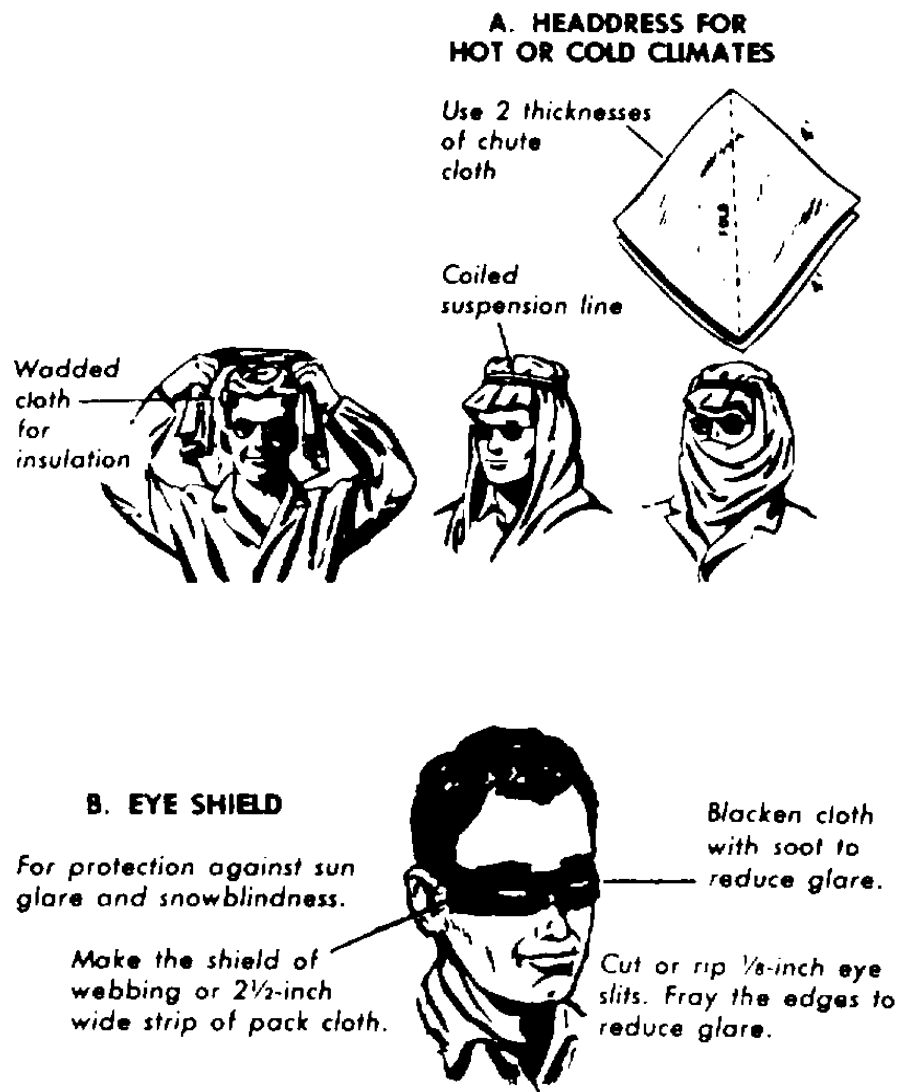
The signaling method you choose will depend on your environment and situation. If in hostile territory, remember that a potential captor can also see and hear poorly disciplined signals. Your lack of signal discipline could endanger both yourself and those who are trying to recover you.

## PERSONAL PROTECTION

### Clothing

Clothing provides your primary protection against environmental hazards. You should keep it as clean and dry as possible. Wear it loose and in layers to increase insulation. Patch all rips or tears immediately. (NOTE: Use coreline as thread. A needle may be improvised from a piece of wire, silver of hard wood or bone, or a ration can opener.)

You may have to supplement your wardrobe with makeshift clothing made from the parachute. Below are five examples:



C. WRISTLETS: For protection against cold or insect bites.



**D. GAITERS**

Use  
2 - 3 inch  
wide strips  
9 feet long



**E. FOOTWEAR**

OUTER SHOE  
Use pack cloth.



CHUTE CLOTH FOOT WRAP  
Use 2 - 4 thicknesses, 30"  
square, folded into triangle.



Wind strips of chute cloth over wrists, overlapping gloves and sleeves.

Make from chute cloth, webbing or pock cloth. Wind strips spirally, overlapping shoe top and pants leg. Gaiters help keep sand and snow out of shoes and protect legs against bites and scratches.

**Shelter**

If clothing is insufficient, you may have to find or develop additional protection.

Look over the area for possible natural shelter, such as caves, logs, etc. Whether you use natural or improvised shelter, you should select an area that provides as much.

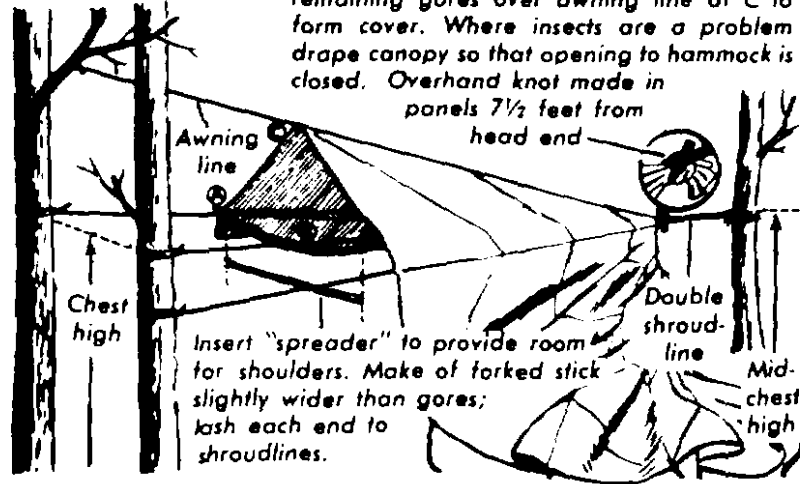
natural protection as possible, and where food, water, fuel, and shelter materials are available. Avoid drainages, avalanche areas, dead standing trees, or other possible unsafe areas

There are several types of shelters which can be constructed and which offer adequate protection against the elements. In all cases, the shelter need be no larger than the occupants and their equipment. Doorways should be 90° to the prevailing wind. A 60° pitch to a parachute material roof provides the best combination of living space and water shedding. Allow for ventilation if fire is to be used in the shelter. The five most common shelters are

1. The "A" frame design is adaptable to all environments through modification

a. Tropic (Parahammack)

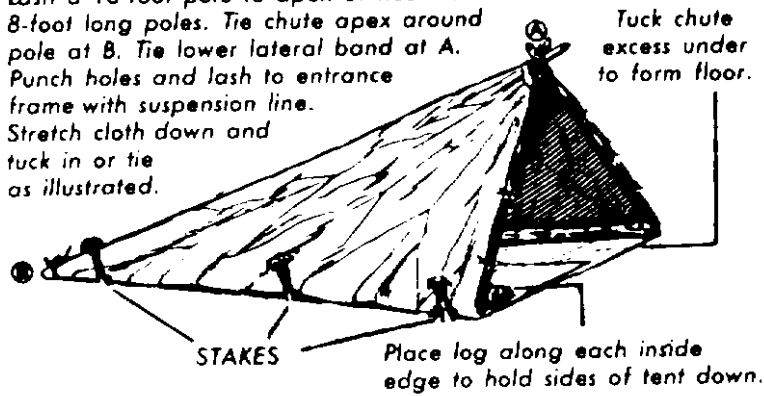
Use 4 to 7 gores. Fold first two gores together and tie at A to form bed B. Throw remaining gores over awning line at C to form cover. Where insects are a problem drape canopy so that opening to hammock is closed. Overhand knot made in panels 7½ feet from head end.



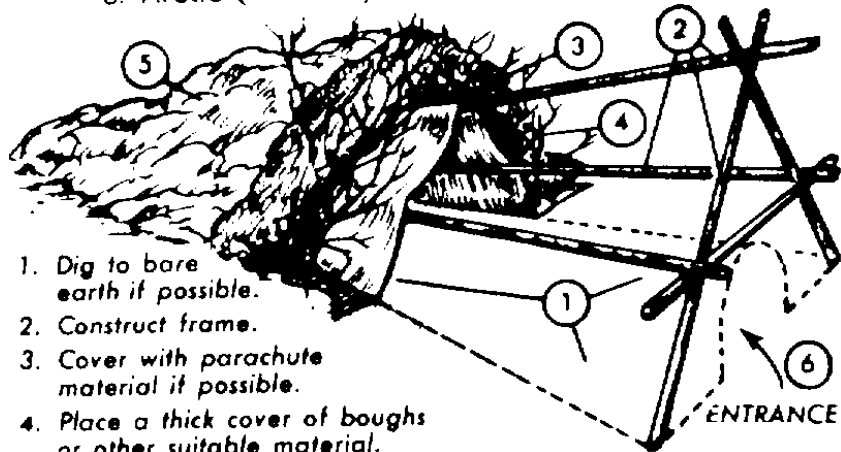


b. Temperate —

Lash a 13-foot pole to apex of tied frame of 8-foot long poles. Tie chute apex around pole at B. Tie lower lateral band at A. Punch holes and lash to entrance frame with suspension line. Stretch cloth down and tuck in or tie as illustrated.



c. Arctic (Thermal)

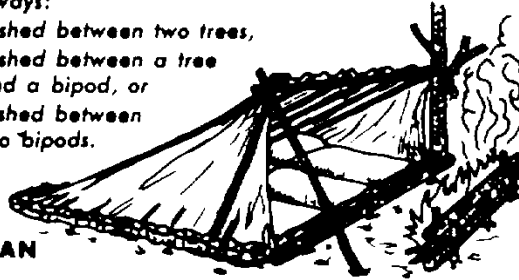


1. Dig to bare earth if possible.
2. Construct frame.
3. Cover with parachute material if possible.
4. Place a thick cover of boughs or other suitable material.
5. Cover entire shelter with a minimum of 8" of snow.
6. Make low entrance below cross bar.

2. The lean-to with reflector fire is an excellent nontactical survival shelter in temperate and subarctic environments.

a. Lash a ridge pole in a horizontal position 5 to 5½ feet above the ground. This pole can be supported in the following ways:

- (1) Lashed between two trees,
- (2) Lashed between a tree and a bipod, or
- (3) Lashed between two bipods.



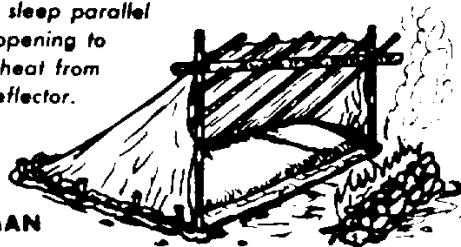
**3-MAN**

b. After lashing the ridge pole, add roof support poles and secure as necessary. The poles should have a 60 degree pitch and provide an area large enough for the survivor and his or her equipment.

c. When the frame is complete, apply covering. Cover material may be boughs, parachute, etc.

d. Reflector fires are constructed by placing logs, rocks, airplane parts, or similar items behind a fire.

e. In the one man lean-to the survivor should sleep parallel to the shelter opening to get maximum heat from the fire and reflector.



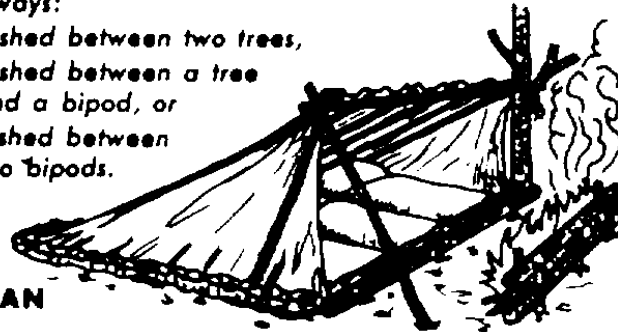
**ONE MAN**

2. The lean-to with reflector fire is an excellent nontactical survival shelter in temperate and subarctic environments.

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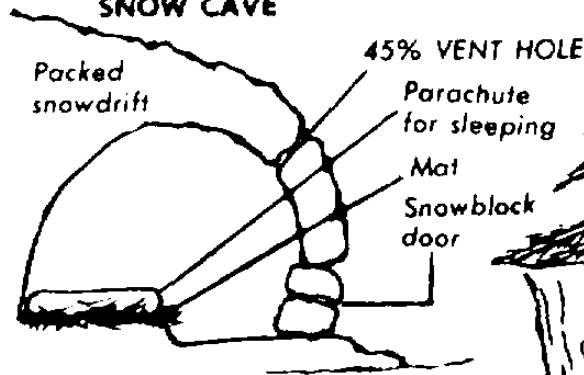
- (1) Lashed between two trees,
- (2) Lashed between a tree and a bipod, or
- (3) Lashed between two bipods.

**3-MAN**

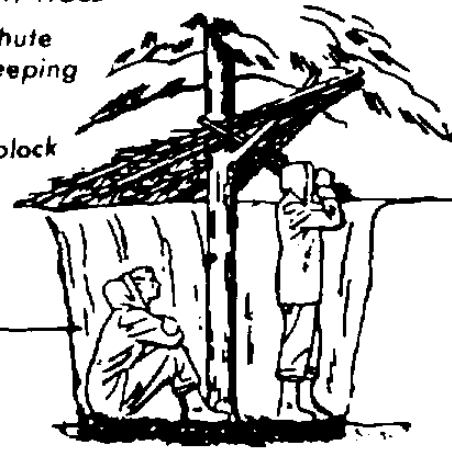


4. Snow cave. Make interior small to conserve body heat. If possible, dig to bare ground . . . use the earth's radiated heat. Roof should be concave and have ventilation hole.

**SNOW CAVE**



**TREE-PIT SHELTER**



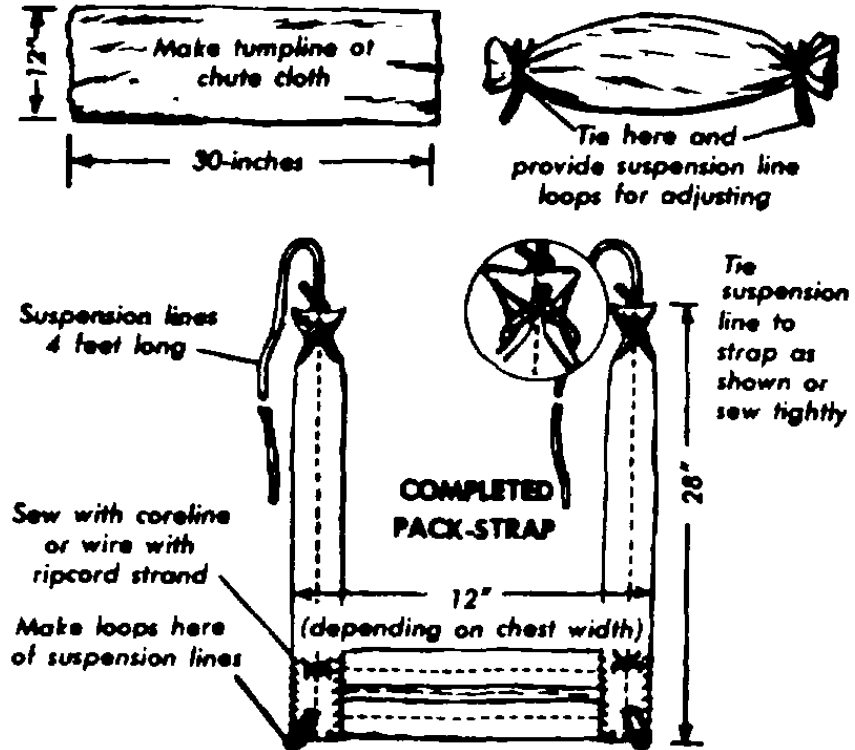
5. Tree pit. Dig from under boughs or around trunk of tree.

## EQUIPMENT

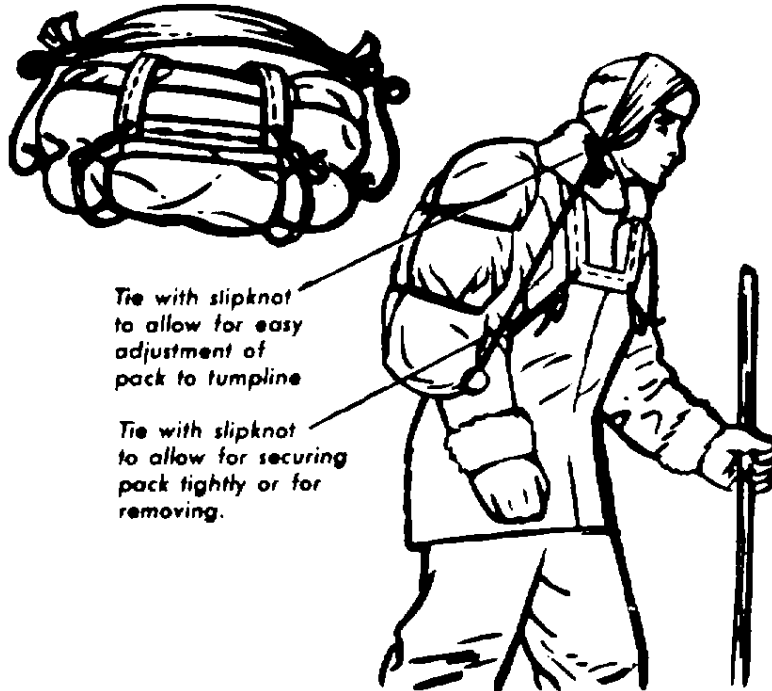
You may need to travel, in which case you can fashion useful equipment from your parachute. This includes:

1. Carrying devices:
  - a. Pack strap
  - b. Tumpline

### PACK STRAP WITH TUMPLINE



**PACK ASSEMBLED**



*Tie with slipknot to allow for easy adjustment of pack to tumpline*

*Tie with slipknot to allow for securing pack tightly or for removing.*

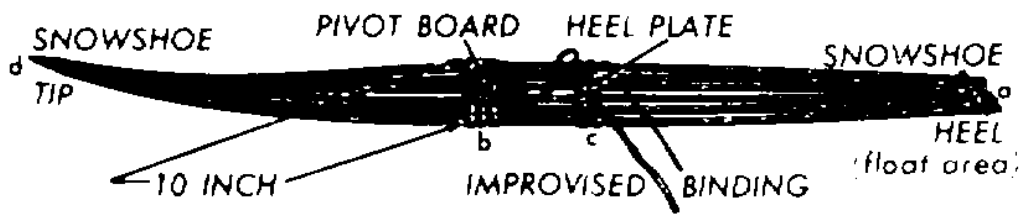
- 2. Travel aids.
  - a. Snow shoes
  - b. Blaze markers
  - c. Map
  - d. Sea anchor
  - e. Rope

**FOR CARRING**

Roll supplies n chute cloth. Camouflage pack with dirt, mud, soot, etc. if necessary. Probed a loop at bottom of each side of pack for attaching and adjusting tumpline.

## CANADIAN EMERGENCY SNOWSHOES

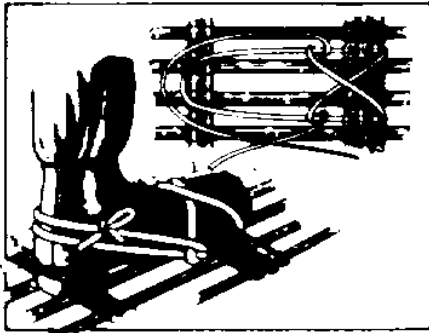
- 1 Select 6 poles 6-feet long (individuals height), 3/4 Inch (thumb size) at the base, 1/4 inch (little finger size) at the tip  
Cut 6 sticks approximately 10-inches long and 1/2-inches wide and tie them in the following manner.



- a Lash stick to the snowshoe float area (cut off excess)
- b Lash three sticks forward of the center of the shoe to form the pivot board This position of the pivot board allows the float to remain on the snow and causes the tip to rise when walking
- c Lash two sticks where your heel strikes the snowshoe to form the heel plate
- d Tie the snowshoe tips together

- 2 The snowshoe binding must be secured to the snowshoe so that the survivor's foot can pivot when walking

Binding - make as shown from continuous length of split harness webbing or form suspension. Lines (braided lines preferred)



## SKETCH MAPS



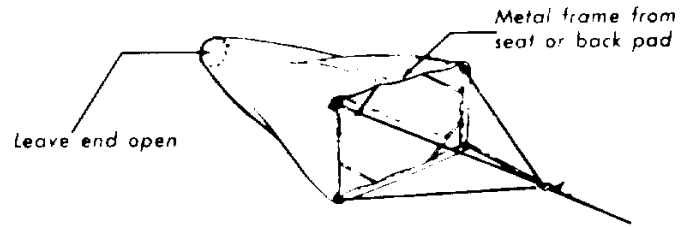
Map course of travel on chute cloth. Withstands wear and wetness.

## BLAZE MARKERS

Use small pieces of chute cloth to mark or "blaze" trails.

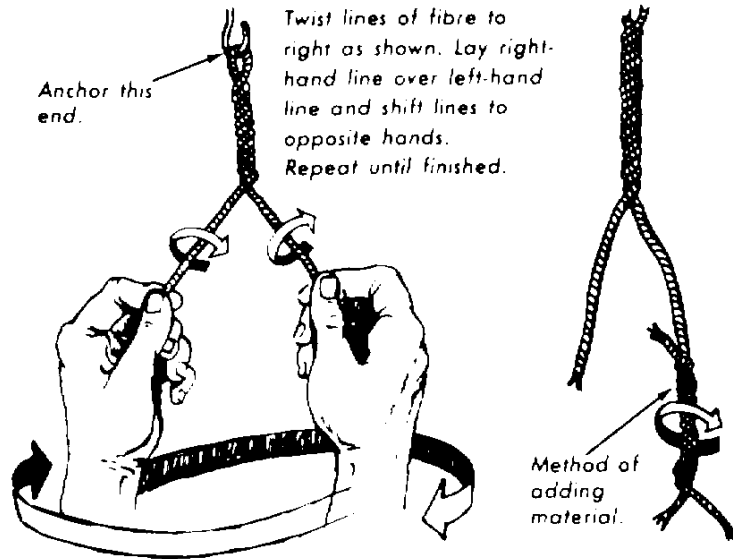


### SEA ANCHOR



In rough seas rig sea anchor to bow of raft keep sea anchor sine long so that when raft is at crest of wove see anchor stay in trough of wane. If larger sea anchor is needed, wrap chute canopy around oar and tie securely.

### MAKING A ROPE



## WATER AND FOOD

### Water

There are several sources for water, including rain, condensation (dew), plant life, etc. However, your most likely source will be from a pond or stream. Water obtained from open sources should be purified. Boiling for 10 minutes is the best method as it conserves purification tablets for emergencies. To remove debris, water may be filtered through cloth, charcoal, sand, porous rock, etc. Use a desalted kit or solar still; to remove salt from water

### Food

PLANTS All unknown plants must pass the edibility test:

- 1 Test only one plant at a time
- 2 Find a plant that is abundant in the area
- 3 Prepare it in the way it will be used (baked, boiled, raw, etc )
- 4 Touch a small portion to the tongue or lips If there are no unpleasant effects, place a teaspoon full in your mouth for 5 minutes If still no unpleasant effects are encountered swallow it and wait 8 hours
- 5 If no ill effects (cramps, diarrhea, nausea, or vomiting) come about, eat a handful and wait another 8 hours. If no ill effects are noted the plant may be considered edible only in the way it was prepared, and only that portion of the plant used in the test if other parts of the plant are to be used, test them as above

NOTE Avoid plants with milky sap, hairs or spines, or those with an extreme bitter taste. They may be poisonous Mushrooms and other fungi should also be avoided as they provide little or no nutritional value and many are poisonous



## ANIMAL TRAPS AND SNARES

Small animals may be caught in traps or snares (sets) Follow these rules

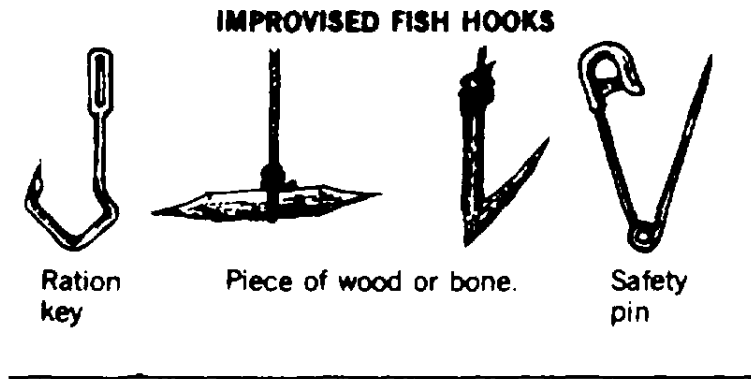
- 1 Keep them simple
- 2 Loop snares of any flexible material are the easiest to construct
- 3 Select narrow spots on game trails
- 4 It may take 15 "sets" to catch one animal
- 5 Blend "sets" in with natural surroundings
- 6 Check all "sets" in the morning and evening  
(Cold weather may cause your "set" to become Inoperative )



SMALL GAME TRAIL SNARE WITH DRAG.

**FISHING:**

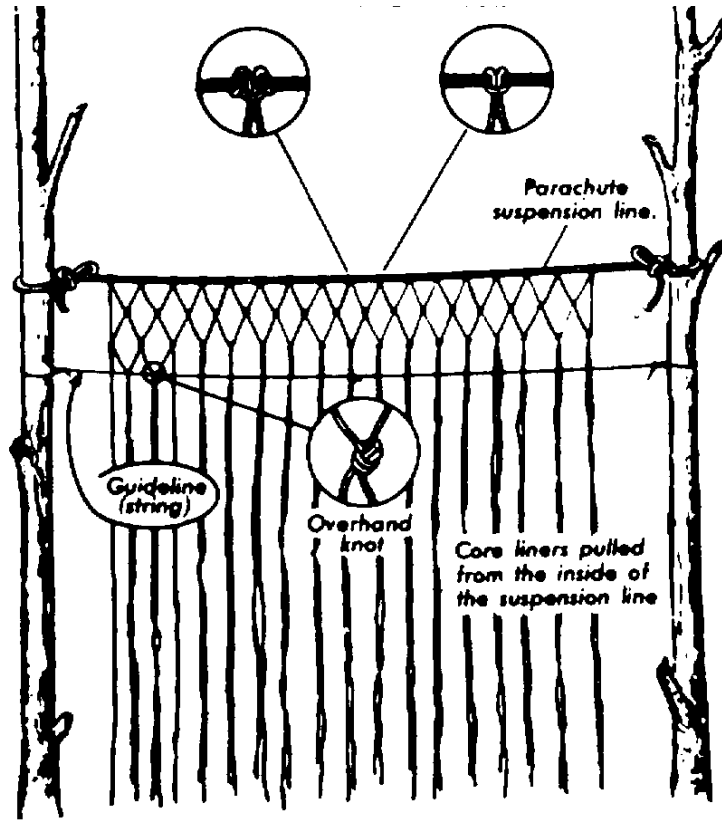
Use hooks from your kit or improvise one



In preparing food, use these guidelines.

1. Cook all foods (Exception: Salt water fish may be eaten raw.)
2. Boiling Is the best method of preparation. This method retains the most nutrients and provides warm liquids for the body.
3. Boiling In several changes of water may be required for some plants (that is, acorns).
4. Cut meat into meal size portions prior to freezing.
5. Foods may be dehydrated (sun dry or smoke) to retard spoilage.

Improvise a net if one is not included In your survival kit.  
**CONSTRUCTION OF GILL NET**



**BY ORDER OF THE SECRETARIES OF THE AIR FORCE AND THE ARMY**

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JAMES H DELANEY, Colonel, USAF  
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Chief of Staff

ROBERT M. JOYCE  
Major General, United States Army  
The Adjutant General

**SUMMARY OF CHANGES**

Page 11, Additional guidance is provided on vectoring. Page 12, Verbal descriptions have been added to the ground to air signals. The ground to air signals conform with International Civil Aviation Organization (ICAO) and Intergovernmental Maritime Consultative Organization (IMCO) guidance Page 18, the lean-to shelter with reflector fire has replaced the paratepee. Page 22, the emergency Canadian snowshoe has replaced the emergency snowshoe.

\* U.S. GOVERNMENT PRINTING OFFICE 1996 - 406-421 (62377)

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS



THEN...JOT DOWN THE  
DOPE ABOUT IT ON THIS FORM.  
CAREFULLY TEAR IT OUT, FOLD IT  
AND DROP IT IN THE MAIL.

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PUBLICATION DATE

PUBLICATION TITLE

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NO.

PARA-  
GRAPH

FIGURE  
NO.

TABLE  
NO.

IN THIS SPACE, TELL WHAT IS WRONG  
AND WHAT SHOULD BE DONE ABOUT IT.

TEAR ALONG PERFORATED LINE

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER

SIGN HERE

# The Metric System and Equivalents

## Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

## Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 dekagram = 10 grams = .35 ounce  
 1 hectogram = 10 dekagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

## Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

## Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

## Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

To change	To	Multiply by	To change	To	Multiply by
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

## Temperature (Exact)

°F Fahrenheit temperature      5/9 (after subtracting 32)      Celsius temperature      °C

**PIN: 027659-000**