OUTDOOR SURVIVAL

a game about wilderness skills
Get playing QUICKLY - read this card FIRST

PREPARE FOR PLAY: Punch out Person Counter "A," only, from the die-cut set of Counters and distribute one to each player. Disregard remaining Person Counters for the Basic Game. Place these components in view: LOST Scenario Card No. 1, the inner box lid showing the Mapboard Movement Chart, the die, and the mapboard itself. For the Basic Game, disregard Life Level Cards, and remaining Scenario Cards.

HOW TO WIN: Be the first player to move his Person Counter off any edge of the mapboard.

HOW TO START: Place each player's Person Counter "A" in the middle of the mapboard on the hexagon (hex) marked "BASE NO. 5." Determine sequence of player turns simply by roll of the die. (High roll goes first, second high roll goes second, etc.)

HOW TO PLAY: As this is a Basic Game, you need be concerned with only two things: 1) Direction of movement, and 2) How far you may move. (Ignore "Necessities" and "Wilderness Encounters" shown on the Scenario Card.)

1) DIRECTION: If you were actually lost in the wilderness somewhere, chances are you would have very little idea of direction. This is reflected in the game. So, at the beginning of each player's turn, he refers to the Direction Ability chart printed on Scenario Card No. 1 and rolls the die. He must then move his Person Counter in the direction stated.

2) HOW FAR YOU MAY MOVE: The number "6" printed on Person Counter "A" states how many movement points it can spend to travel cross-country in each turn. In real life, people can travel farther in a given time limit across clear terrain than across mountains, rough terrain, swamps, etc. This is reflected in the game. The Mapboard Movement Chart printed on the inner box-lid states how many movement points it costs to enter each mapboard hex. For example, since it only costs one movement point to enter a Clear terrain hex, you could move your Person Counter 6 hexes in one turn as long as all 6 hexes were Clear terrain hexes. On the other hand, since it costs 2 movement points to enter a Woods/Rough hex, you could only move a total of 3 hexes per turn through Woods/Rough terrain.
You may move through any combination of varying terrain in one turn providing you have the proper number of movement points to spend. For example, you could spend your 6 movement points by entering a Clear terrain hex, (1), then a River hex (3), then another Clear terrain hex (1), and then a Ford hex (1). Suppose, however, that the final move would take you into a Woods/Rough hex instead of a Ford hex; you would not be allowed to enter the Woods/Rough hex because it requires 2 movement points which you did not have left to spend. Thus you would only be able to spend 5 movement points in this particular turn. Unused movement points cannot be accumulated and used on later turns.

You MUST move as far as your movement points will take you, even if you don't really want to go that far.

If you begin your turn or happen to land on a TRAIL hex somewhere in the middle of your turn, you have the option to follow that Trail regardless of how it bends and winds and still be considered moving "in straight line only." Thus if you are required to move in "straight line only," you are allowed to follow a Trail as far as your movement points will take you. If you emerge from a Trail with movement points left over, you have the option of continuing in any direction even if you are restricted to "straight line only" movement for that turn. You may, of course, ignore a Trail and continue across it in a true "straight line only" movement.

It costs you 3 movement points to enter a RIVER hex, regardless of whether you are crossing the river or traveling along the river. You may, however, negate this cost by crossing a river at a FORD in which event it only costs you 1 movement point. Note, however, that moving into a Ford hex at other than its entrance hex, such as another River hex, costs you 3 movement points instead of 1 movement point.

**STRATEGY:** In the Basic Game, speed is the most essential element. Since your Person Counter will be limited in the direction it can travel by the Direction Ability Table, you must plan ahead, making sure that you are always moving in the general direction of open, clear terrain. Use trails whenever possible as these are tremendously faster than cross-country travel. Wherever possible, avoid moving towards the mountain or desert areas: these can slow you up to the point where you may only travel two or three hexes per turn. Plan ahead! Know where your Person Counter is going to be at least one turn ahead. Good Luck!

*(When you have become familiar with this Basic Game, go on to the regular game contained in the Rules of Play folder. Included therein are rules that provide for even MORE realism and excitement. Once you have mastered the Basic Game, you will have no difficulty with the regular game.)*
INTRODUCTION
OUTDOOR SURVIVAL is a simulation of the essential conditions for staying alive when unprotected man is beset by his environment. It recreates real world conditions of the wilderness, and places trained and untrained people in emergency situations. The players have varying abilities to make the necessary decisions for survival. This is done through a number of scenario situations of increasing complexity, which state the abilities of the Player(s) to survive, and their objectives.

Each scenario contains a "To Win" section explaining the goal of that particular game. These may be solo (for one person) or competitive (for more than one player). Each turn in the game represents one day; each hexagon on the mapboard represents a width of five kilometers (three miles).

OUTDOOR SURVIVAL is actually five different games. LOST is the "basic" game in which you must get out of the wilderness before lack of food and water ends your survival ability. In SURVIVAL you must get across a large wilderness area before your opponent. In SEARCH you must find someone who's lost before the other search parties do. In RESCUE you must not only find the lost party, but by using your survival skills, get them out of the wilderness. In PURSUE you must, as the escapee, get out of the wilderness into a neutral country or, as the pursuer capture the escapee. Or, in an adaptation of this scenario, one or more players can take the part of hunters while one player assumes the role of their quarry.

GAME COMPONENTS:
1. Rules of Play Folder
2. Primer on survival tips
3. 22" x 24" Mapboard of "the Wilderness"
4. One set of die cut playing pieces representing persons.
5. Mapboard Movement Chart — printed on Lid of Inside game box.
6. Five scenario cards
7. Four Identical Life Level Index chart cards
8. One die
9. Basic Game Rules Card: Newcomers to simulation gaming should play the Basic Game first. Once mastered, move onto the regular game described in this Rules of Play Folder.
THE PRIMER
Survival tips; but not used in the play of the game. For reading before and after playing.

THE MAPBOARD
The mapboard is a representation of approximately 13,200 square miles of wilderness—a tract that includes all of the deterrents inherent within, such as woods, rough terrain, desert, swamp, river, and mountains. A hexagonal grid is superimposed to determine location and movement much in the manner of squares on a chess board. We will refer to these “squares” hereafter as “hexes.”

DIE CUT PLAYING PIECES
Each set of colored pieces represents one person, hereafter called “Person counters.” The letters A through O reflect the physical condition of that person. We will hereafter refer to physical condition as “Life Level.” Life Level “A” is the peak condition which can deteriorate if that person’s daily requirements of food and water are not satisfied. The number printed on each Person Counter is its “Movement Allowance” and it tells how many clear terrain mapboard hexes a person can move through when he is in that life level. For example, a person starting out in Life Level “A” can move through 6 clear hexes per turn. However, if the physical condition has been weakened to, say Life Level “D,” he could move only 4 clear terrain hexes per turn. Each player also has a “Food Index” counter and a “Water Index” Counter which are used on the Life Level Index Chart cards. Counters labeled “Life Level Index” are used only when employing optional rules. Set them aside for now.

LIFE LEVEL INDEX CHART
Each player takes one chart, all charts being identical. Before starting the first turn, each player places all of his Person counters on the row of boxes labeled “LIFE LEVEL INDEX.” He also places a Water Index Counter on the “Start Here” box of the Water Index row, doing likewise with his Food Index counter.

MAPBOARD MOVEMENT CHART
This chart is printed on the lid cover of the inside game box and should be kept in view at all times, or until such time as it has become memorized by each player. It determines exactly how many hexes a person may travel through, depending upon the “difficulty” of specific terrain.

BASES AND OUTPOSTS
The “houses” on the mapboard are bases. These serve simply as markers to set up Person counters at the beginning of a scenario. Outposts are bases of unlimited supply. Players use blank counters to indicate these outposts. They are immobile, and may be placed anywhere on the board at the beginning of the situation as called for by the respective scenario.

SCENARIO CARDS
There are actually five different games in OUTDOOR SURVIVAL, graduating in expertise from No. 1 to No. 5. Instructions for play relevant to an individual scenario are printed on each card itself. When selecting a specific scenario, it must be kept out on the table in easy view of each player.

1. LOST — This recreates the situation of someone who, while camping or hiking has lost his way and run out of supplies. This situation could also apply to someone stranded in a desolate area through an accident.

2. SURVIVAL - This situation is actually something of a variation on the LOST situation. In this case the lost people must traverse a wide tract of wilderness in order to get home. This situation could also represent a “race” between people who like to live dangerously.

3. SEARCH — This is one of the most common real life situations. Someone is lost and you have to go looking for him. This situation assumes that once the lost party is found, transportation can be provided to lift rescued and rescuer to civilization.

4. RESCUE - A variation of SEARCH in which the rescuer, having found the lost party, guides them to safety through the wilderness. For the search phase of this game it is assumed that the searchers have the appropriate equipment and supplies.

5. PURSUE — Offers two adaptations on which players can add their own variations. For the war game buff, this game provides the ingredients for an escaped-prisoner-of-war-chased-by-guards situation. For the outdoorsman, the adaptation applies to hunters pursuing a beast.

It is suggested that the WILDERNESS ENCOUNTERS situations on the reverse side of each scenario card be used only after becoming familiar with the play of several scenarios. Then consult the OPTIONAL RULES section of this folder.
How to Play

SEQUENCE OF PLAY

Step 1: Select one of the five scenarios. It should be kept in full view, or passed around to each player when it becomes that player’s turn to play. Place Person counters on the mapboard where so stated by the scenario card. Place correctly all Life Level counters.

Step 2: Determine (by roll of a die) the order in which each player takes his turn. The player rolling the higher number moves first. Game length is determined in the “TO WIN” section of the scenario card.

Step 3: Refer to the DIRECTION ABILITY chart of the scenario card and roll the die. This tells you in which direction you must move. How far you can move is determined by your counter’s movement allowance (the printed number).

Step 4: Refer to the NECESSITIES chart of the scenario card. Then determine whether or not the current day’s needs for food and water have been satisfied as a result of your move. Adjust your Food Index and Water Index counters accordingly on the Life Level Index card.

Step 5: If movement of your Food Index and Water Index counters have triggered a change in your Person counter Life Level, make the proper exchange between the Person counter that is in play on the mapboard and one that is on the Life Level Index row of your Life Level Index card.

Optional: (Steps 6 and 7 are for use with the optional rule only.)

Step 6: Having completed your normal movement turn, roll the die once. If you roll a 1, 2, 3, or 4 your turn has ended and your opponent may now return to step 3 and proceed normally. However, if you roll a 5 or 6 you must play the WILDERNESS ENCOUNTER chart. You then announce which of the three columns you’ll play (NATURAL HAZARDS, ANIMAL/INSECT, or PERSONAL) and then roll the die. Adjust your Food Index and Water Index counters accordingly.

Step 7: Repeat Step 5.

Step 8: Repeat steps 3 to 7 until game is concluded.

(F) If forced to go off the board by the dictates of the Random Direction chart when not desirous of doing so, you may opt to remain stationary instead.

(G) Person counters may never make a 180° turn, that is, re-enter a hex just left. Counters must move straight in the new direction after turning. They may turn at any point after the first hex is entered, but it is never required for them to turn.

TRAIL MOVEMENT

Whenever a unit moves into a hex containing a trail, the player has the option of ignoring the dictates of the Direction Ability chart and continuing his movement along that trail.

Cases:

(A) Turns in movement incurred by bends or twists in a trail do not count against movement limitations as called for by the Direction Ability chart. In other words, movement along a trail is considered a straight line. When you land on a trail hex you may follow that trail regardless of turns.

(B) When leaving a trail you must move straight ahead in the direction that the trail points to, unless you have a "turning" ability in that turn due to your roll on the Direction Ability chart.

(C) When traveling on a trail you may ignore the results of the Random Direction chart. However, you still roll for the Direction Ability chart to see what your "turning" capabilities are should you wish to leave the trail that turn or should the trail end.

(D) If you leave a trail hex after having entered that hex at the trail movement rate of 1 point per hex, in a direction other than that which the trail points to, you do so at the movement cost of the other terrain in that trail hex. Exception: If the movement cost of the terrain moved into is greater than that of the terrain in the exited trail hex, you always use the greater cost of the two.

(E) You may change direction when leaving a trail only if the Direction Ability chart gives you a "turning" capability for that turn.
HOW TO MOVE PERSON COUNTERS

Person Counters must be moved as far as possible in accordance with its direction instructions, and in accordance with the limitations of its movement allowance and the Mapboard Movement Chart. Procedure: Move each unit individually, tracing the path of movement through the hexes.

CASES:

(A) Movement is calculated in terms of hexes. Basically each unit expends one movement point of its total movement (point) allowance for each hex entered. To enter some types of hexes requires more than one movement point; see the Mapboard Movement Chart printed on the Box Lid.

(B) In any turn, the Player may decline to move his Person counter at all, and remain stationary in a hex. This must be decided before he rolls for his direction instructions, unless stated otherwise on the Direction Ability chart.

(C) Person counters must be moved in accordance with their direction instructions, as given to them by the DIRECTION ABILITY chart and a die roll.

(D) Person counters may move over different types of terrain as long as they have sufficient movement points to enter that particular type of terrain. Thus, a Person counter with a movement factor of 2 could not move at all if surrounded by mountain or swamp hexes.

Person counters must be moved in the direction instructed. Movement may be in two ways: straight, with no turns; or straight with turns. Examples of these are:

- straight, no turns:

- straight, with turn:

FORDS

Fords do not have the same qualities as trails. They merely negate the river in that particular hex for purposes of movement across the river. In other words, you may not change direction on a ford hex unless the Direction Ability chart gives you a "turning" capability for that turn.

RIVERS

The cost of entering a river hex is always 3 movement points regardless of whether or not the river is actually crossed. Exception: Swamp hexes which include rivers are traversed at a cost of 4 movement points, not 3.

HOW TO USE THE LIFE LEVEL INDEX CHART

Each player has his own card and places his own Person counters, Food Index, and Water Index counters where indicated.

WATER INDEX: At the end of each turn in which the current day's needs for water are not met, (Note: swamp squares may not be used to satisfy water needs) that player must move his Water Index counter one block downward (to the right). Blocks are separated by "trigger points" (where it might say "1 Life Level"). Whenever the downward movement of a Water Index counter crosses such trigger points, that player's Person counter loses the stated life level. That means he must replace his Person counter now on the mapboard with that of the next letter shown on the Life Level Index row. For example, if at the end of the first turn (each turn represents one day) Player No. 1 did not satisfy that first day's needs for water, he must move his Water Index counter into the next block down from the "Start Here" block. That move does not trigger a life level change. However, if he does not satisfy his current day's needs for water in his second turn, then he must move his Water Index counter down to the third block. That move does trigger a life level change. Thus he also has to exchange Person counter (A) with Person counter (B) on the mapboard.

You will note that Person counter (B)'s movement allowance reduces that player to a
It is possible that a person could trigger a change in life level on both the Food and Water Indexes. The same is true of "variant" cases, where the effects are added together and the resulting sum is subtracted from the Life Level Index. In cases where a player is able to satisfy more than just the current day's needs, he may recover life levels by passing trigger points in the opposite manner (upward, or to the left). When that player is instructed to recover steps on the Water Index, he moves his Water Index counter to the left one block for each step he is to recover. He then substitutes for his Person counter accordingly if a trigger point has been crossed. For example, if a player's Water Index counter is on the fifth block, and he is instructed to "recover 2 steps," that counter is moved back to the third block. And if his mapboard counter is at Life Level "D," it is replaced with Life Level "C."

FOOD LEVEL: Treat the same as for Water Index. You will note, however, that one's physical condition deteriorates at much a faster rate from lack of water than from lack of food. Again, as with water, it is possible to recover lost life levels. However, in no case may food or water indexes regain food or water further to the left than the "start here" boxes.

LIFE LEVEL INDEX: Counters A through 0 reflect that player's physical condition. No more than one of the 15 may be on the mapboard at any one time. If a player has counter 0 on the mapboard, and he is required to lose one or more life levels, he has not "survived" and is automatically out of the game.

You are NOW ready to play OUTDOOR SURVIVAL. "Examples of Play" (below) are for ready reference. "Optional Rules" (at right) may be adopted to add realism to the play of the basic game.

For current replacement parts list send a stamped, self-addressed envelope marked "parts list" to: The Avalon Hill Game Company, 4517 Harford Road, Balto., Md. 21214.

Optional Rules

WILDERNESS ENCOUNTER CHART

The Wilderness Encounter chart is adopted at step 6. At the end of your normal move each turn, roll the die once to determine if you must play the Wilderness Encounter chart. If you roll a 1, 2, 3, or 4 your turn has ended and your opponent should proceed immediately to step 3. If you roll a 5 or 6 you must play the Wilderness Encounter chart. Call out -- verbally -- one of the three encounters you wish to take a chance on. Then roll the die once, and cross index the die roll with the proper encounter column. Adjust the Food and Water indexes and the Life Level counters accordingly. Your turn ends and play continues in like manner to the next player. You may never ignore the gains or losses called for by the Wilderness Encounter chart, even if you currently occupy a food or water hex.

When the Wilderness Encounter chart calls for the loss of a "life level," the Food and Water indexes are not affected. Simply replace the Person counter with a lower Life Level Counter making no additional changes in the Food or Water indexes. This simulates a weakening of condition resulting from causes other than lack of food or water.

You will note that we give you a choice in the selection of the encounter for the sake of adding strategy to the play of the game. But in real life, travelers would not have this control over Wilderness Encounters. If you wish to simulate this aspect, substitute another die roll for the choice: a roll of 1 = Natural Hazards; 2 & 3 = Animal-Insect encounters; 4, 5 & 6 = Personal elements.

You will note that the three encounter options provide for a variety of decision making ranging from the conservative to the panic stage. They are, of course, slanted in real life, travelers would not have this control over Wilderness Encounters. If you wish to simulate this aspect, substitute another die roll for the choice: a roll of 1 = Natural Hazards; 2 & 3 = Animal-Insect encounters; 4, 5 & 6 = Personal elements.

BASES: If you find that survival in any of the scenarios is too difficult to achieve, you may wish to consider each "base" hex to have the same advantages as a combination food and water hex. Furthermore, by remaining on that particular hex for two additional turns, you may regain one food and one water step. This optional rule would be most useful in the SURVIVAL scenario.

Scenario 6: One of the most interesting aspects of OUTDOOR SURVIVAL is the opportunity it provides for devising your own scenarios. Once you have mastered the mechanics of play, many additional ideas, providing more testing of outdoor knowledge and skills, will come to you. Integrating these situations with the standard games will add pleasure and skill-sharpening to the playing.

To illustrate this possibility we will briefly outline the rules for a "man vs. beast" pursuit scenario below.

For the purposes of this illustration we will assume the "beast" to be a whitetail buck and the pursuer a deer hunter. To reflect the greater speed and agility of the deer, double the movement factors of the animal's "person counter" for all levels. The animal satisfies its current day's food needs every time it ends movement on a plain or forest square. Water needs are satisfied by passing through or ending movement on a catch-basin, stream, or swamp square. The deer, not having the reasoning powers of a man, must roll the direction ability chart used in the Lost Scenario on every turn. The deer may not leave the board — the game continues until either the prey is caught or the pursuer is reduced to life level G — at which point he admits defeat and gives up the hunt. The hunter, for his part, uses the direction ability and necessities chart found in the Search scenario. To successfully conclude the scenario the hunter must occupy a clear terrain hex adjacent to the deer (at which point it is assumed his rifle will bring the hunt to a successful conclusion) or else actually occupy the same non-clear terrain hex as the deer (i.e., swamp, mountains, forest). In addition, to simulate the difficulty of a rifle shot in heavily wooded terrain, force the hunter to roll a 1, 2, or 3 to make a successful shot whenever the hunter is in a woods hex. It must be emphasized that the above "scenario" should, by no means, be considered a hard and fast rule. It was included only to show you the possibilities for innovation that exist in the creation of new scenarios. Indeed, the creation of "variant" scenarios is one of the reasons why OUTDOOR SURVIVAL is such an excellent game for solitaire play. It's open-endedness should make it a favorite for those who lack opponents.

HINT: Another variant on the same theme could be easily constructed by changing the scale of the mapboard to 1 hex equals 100 yards, thus paving the way for chance tables which could reflect the accuracies of rifle fire at ranges of 100 through 500 yards. As you can see, the possibilities are endless, and the situations limited only by the powers of one's imagination.
Examples of Play

No. 1 — I2 may not move because it is surrounded by terrain requiring a movement expenditure of "3" to enter.

No. 2 — B5 is not allowed to make any turns. He proceeds straight north until reaching the trail on square A. He then abandons his northerly direction to follow the trail. He may do this because "Movement along a trail is considered a straight line."

No. 5 — A6 has no turning capability. However, he elects to follow the trail as "movement along a trail is considered a straight line." Note that although he ends his turn going in a direction other than that which he started, he has not violated his turning capabilities.

No. 2 — B5 is not allowed to make any turns. He proceeds straight north until reaching the trail on square A. He then abandons his northerly direction to follow the trail. He may do this because "Movement along a trail is considered a straight line."

No. 4 — H2 may cross the river to "A" due to the effects of the ford at "B."

No. 6 — B5 may move from square B to square C with an expenditure of only one MP because it used the full woods expenditure (2) to reach square B and hence is not subject to the rules of movement governing trails in this instance.

No. 8 — To move from A to B would cost two movement points. To move from A to C would cost 4; one to enter square D on the trail, and 3 to leave the trail for square C because the trail does not lead to square C and the counter moved onto square D at the special trail rate of one MP.

No. 9 — A6 exits from square D at a cost of 3 movement points rather than the "2" cost of the forest terrain in square D due to the rules governing exit from a trail hex (case D).
Outdoor Survival Primer

This 24-page booklet, based on the best and latest of what the experts know, fully illustrates in text and pictures the techniques of: direction finding, signaling, making shelter, building fires, dealing with natural hazards, first aid, living off the land... and lists basic supplies needed for a planned wilderness adventure. Also included is a bibliography of the very popular Stackpole Books used as a basis for translating wilderness expertise into the design elements of this game.

OUTDOOR SURVIVAL
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R9802
a primer about WILDERNESS SKILLS for players of the game—OUTDOOR SURVIVAL

This booklet is not for sale separately. It is published as one of the elements in the game of OUTDOOR SURVIVAL

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Direction Finding Page 3
- how to read a compass • orienting a map with a compass • using a watch as makeshift compass • how to improvise a compass • methods using sun and stars • landscape features that reveal direction

Water Purification Page 5
- boiling • halazone tablets • iodine water purification tablets • how to recognize poisonous water holes

Obtaining Water Page 5
- finding water by reading the landscape • water from vegetation • how to make a solar still in desert country • water from snow and ice

Obtaining Water Page 5
- ways to improvise fishline • where to look for natural bait • makeshift fishhooks • spearing • traps • stranding fish • using bare hands

Killing Game Page 7
- jacking • how to drive animals from their burrows • rabbits • porcupines • turtles • snares • deadfalls • primitive weapons for catching and hitting birds

Tracking Game Page 9
- tracks of common North American game animals • the problem of dead end tracks

Butchering Game Page 10
- improvised cutting tool • skinning

Building a Fire Page 10
- what to use for kindling • how to make kindling • making little sticks from big limbs without knife or ax • lighting with a single match • how to proceed in cold weather • ways to start a fire without matches

Obtaining Shelter Page 11
- nature’s ready-made shelters • trenches • shelters made with snow • lean-tos

Distress Signals Page 12
- signal fires • universally recognized distress signals • how to send messages in Morse Code • signaling with improvised flag • how to signal an airplane with a mirror

First Aid Page 13
- medical kit for wilderness use • insect bites • poison ivy, oak, and sumac • snakebite • heat exhaustion • heat stroke • frostbite • sprains • shoulder dislocation • dislocated jaw • hip dislocation • arm fractures • thigh bone fracture • other fractures • stopping bleeding and preventing infection from cuts • shock • arm-lift and mouth-to-mouth methods of resuscitation • food poisoning

Dealing with Natural Hazards Page 21
- how to predict storms by watching clouds, sky, dew, frost, and smoke • forest fire danger signals • how to avoid flash floods • ways to escape from mire, quicksand, and snowslides • minimizing the danger of travel on ice-covered streams • handling animal encounters

Equipment and Supplies Page 22
- canteen • food • guns and ammunition • fishing gear • tents and plastic shelters • sleeping bag • matches • flashlight • jackknife • compass

In the wilderness, as in civilization, the basic necessities are water, food, and shelter. A person who is lost or stranded must decide whether his chances of obtaining these necessities will be better if he attempts to find his way back to civilization or if he stays where he is and summons help. If he decides to get out by himself, the aid of a compass will be invaluable.

**Using a Compass**

The compass dial is divided into 360 degrees, which may be most easily visualized as 360 possible routes fanning out like wheel spokes from its user’s location. Compass degrees are customarily numbered in a clockwise direction starting at north. East is one-fourth of the way around the dial. East in terms of degrees is, then, one-fourth of 360°, or 90°. The distance between each of the four cardinal points—north, east, south, and west—is the same 90°. South is therefore designated as 180° and west as 270°.

Halfway between north and east is called northeast, which in terms of degrees is half of 90°, or 45°. The other corresponding points are similarly named: southeast, southwest, and northwest.

Halfway between north and northeast is north-northeast, or 22.5°. Halfway between northeast and east? East-northeast. Each of the four cardinal points always comes first.

Compasses are even more helpful when used together with maps. To orient a map with the aid of a compass, however, allowance must be made for compass declination, which is the difference between true north and magnetic north. This variance, caused by the fact that compass needles point toward the magnetic pole rather than the North Pole, is indicated on most local maps.

**Suppose that where you are the compass declination is 14° east of north. An arrow marked N verifies that north is at the top of your chart, which unless otherwise indicated is the case with most maps. Move the map until the arrow, or until one side of the upright rectangular sheet if there is no such mark, points 14° west of compass north.** For all practical purposes, you can now read the map in terms of the surrounding countryside.

**If you do not know the local compass declination and it is not marked on the map, find the North Star by one of the methods described below under Direction Finding by Sun and Stars. This star lies almost exactly over the North Pole. Then either note immediately the variation between almost exact north and where the compass needle is pointing, or scratch a line pointing to the North Star or indicate such a line by two stakes so that you can compare your compass north to the thus established north-south mark by daylight.**

In the United States and Canada a watch can be used as a makeshift compass accurate within 8°, provided that: (1) the sun is shining brightly enough to throw a shadow, (2) the watch is accurately set, and (3) the watch shows the local standard Greenwich time. Lay the watch face up with the hour hand pointing directly toward the sun. To check this, hold a twig or pine needle upright along the edge of the dial. It should cast a shadow directly along the shorter hand. South will lie midway along the smaller arc between the hour hand and twelve o’clock. At eight o’clock in the morning a line drawn from the center of the watch through the numeral ten will point south.

**Telling Direction by Watch and Sun**

Suppose you do not have a compass? Then improvise one. Stroke an ordinary needle in one direction with a piece of silk. Rub the...
DIRECTION FINDING BY
methods employs the North Star, which is
run roughly west. Mark the tip of a pole’s shadow. Wait five
shadow’s new tip through the first mark will
(1) is bright enough to cast a shadow.
from head to tip, the head will point north.
distract it. If you have stroked the needle
poles unless some metal is near enough to
floated by surface tension, will turn until it is
aligned with the north and south magnetic poles unless some metal is near enough to
distort it. If you have stroked the needle
head to tip, the head will point north.

DIRECTION FINDING BY
SUN AND STARS

Here is a way to find where south is without a

Telling Direction by Sun, Pole, and Stakes

There is a less accurate but far swifter
method of telling direction any time the sun
(or moon) is bright enough to cast a shadow. Mark the tip of a pole’s shadow. Wait five
minutes. Then a straight line drawn from
the shadow’s new tip through the first mark will run roughly west.

One of the most accurate direction-finding
methods employs the North Star, which is
located almost directly above the North Pole. To find this bright star, follow an imaginary
line through the two stars that form the outer
edge of the Big Dipper. When the Big Dipper
is not visible, use the constellation Cassiopeia to find the North Star. It will be helpful to
memorize the relationship between the North
Star and Cassiopeia, which is always on the
opposite side of the North Star from the Big
Dipper and about the same distance away.

When the North Star is not visible, use any
star to get a general idea of direction. Select
two fixed points over which to watch. These
may be two stakes driven into the ground with
their tops aligned carefully. If you so observe
a star for several minutes, it will seem to rise,
to move to one side or the other, or to sink. If
the star seems to be rising, it lies generally to
the east. If the star loops flatly to the right, it
lies roughly south. A star swinging flatly to
the left is in the north. A falling star is
situated in the west.

DIRECTION FINDING BY
LANDSCAPE FEATURES

In cloudy weather, landscape features can be
used to determine direction. The growth rings
exposed in standing stumps tend to be widest on
the sunniest side, which under ideal
conditions will be on the south. Downfall is
another valuable sign. Trees generally fall in
the direction of the prevailing wind. The tops
of such trees as hemlocks and pines naturally
point toward the rising sun, that is, toward
the east, unless the wind turns them in
another direction. Plant growth is larger and
more open on a north slope, and smaller and
denser along a southern exposure.

Water Purification

A lost or stranded person who has been
without water for some time and suddenly
comes upon a source is naturally tempted to
drink his fill. This is most unwise. For, short
of laboratory tests, there is no way to
determine whether water is pure. Contaminated
water can incapacitate anyone for
travel whether it is used for drinking, rinsing a
toothbrush, washing food utensils, or cooking.
As far as purity is concerned, ice and the
water obtained from melting ice differ in no
respect from the water originally frozen. Although heat kills germs, cold does not.
Neither, by the way, does liquor.

To rid water of germs, boil it for five
minutes at sea level and an additional minute
for each additional thousand feet of elevation.
If you have no utensils for boiling water,
 improvise them. A large shell can be used as a
container. If there is a small stone with a
hollow in it, build a fire around it. Water can
be boiled in a container made from birchbark
if flames are kept from touching it above the
water level. To make such a container, fold a
large rectangle of moist birchbark inward at
each of its four corners and hold the resulting
receptacle in shape with wooden skewers. If
you have a long wide strip of bark, fold it in
at the two ends to make a container shaped
like a split log.

Finding water in the wilderness is less a
problem than purifying it. Everyone knows
that water flows downhill and that it en-
compassing vegetation, especially such brush and
shrubs as alder and willow; so look for water
near the base of hills, where it can many times
be distinguished in distant ravines and can-
yons by the intensity of plant cover. Follow-
ing game trails in whatever direction they
become wider and deeper is also a good way to
find water.

Not only does vegetation indicate the
nearness of water; it sometimes is a direct
source. Rain water may accumulate in the
large leaves of plants and trees. Look also for
water in natural basins such as are frequent in
rocky terrain.

In the desert, cacti furnish a watery fluid.
To get this juice, cut off sections of cactus and
mash them in a container. Then either
drink any resulting fluid on the spot or pour
it into a second container and repeat the
process as often as necessary. If you have no
utensils, mash the cactus segments one by one
and suck the pulp. Barrel cactus provides its
own utensils. Just slice off the top, crush the
interior to a pulp, and either scoop out the
watery sap with a cupped hand or imbibe
from a hole tapped in the side.

When everything else fails in desert
country, you can distill your own water. Scoop out a bowl-shaped hole some twenty inches deep and forty inches across. Place a cup, upturned hat, or other receptacle in the center of the cavity. Then anchor a sheet of plastic six feet square, such as is often carried in a shirt pocket for use as a shelter, all the way around the top of the hole with stones or dirt, and set something such as a rock in the center of the sheet so that the plastic will sag in a point directly over the container. Heat from the sun will cause moisture in the ground to condense on the bottom of the plastic and drip into the receptacle. Such a solar still can extract up to three pints of water a day. To get even more fluid, cut cacti and other water-holding plants into pieces and drop them under the plastic. Incidentally, contaminated water can be purified by pouring it into the hole and allowing it to vaporize and drip in the heat.

If you are stranded in a cold climate, clean snow can quench your thirst. Its only drawback is that a considerable amount is required to equal a glass of water. One soon learns to break off sections of crust when this is available. Heavy granular snow from former storms is usually better yet. Most concentrated, of course, is ice itself.

Even sea ice can furnish drinking water. Ocean ice loses its salt loses its salt so rapidly that ice one year old is nearly fresh, and ice formed two or more years before cannot be distinguished in taste from river ice. Melted hollows in sea ice usually contain ample fresh water.

**Catching Fish**

Naturally, a person who is stranded or lost in the backcountry may not have his fishing gear with him, but he can still catch fish. Fishing line can be improvised by unraveling a bit of sweater. A small strip of bright cloth such as the corner of a handkerchief tied on the line will do for bait. In virgin fishing territory a fish that bites the cloth can often be flipped out on the bank.

**Improvised Fishing Line**

Another way to make fishline is to cut unraveled fabric by knotting lengths of four or so threads together at frequent intervals. This forms a continuous lace around and around a section of leather, wood, or a burning pine knot. A bent pin really works, though care must be taken that the fish doesn't slip off. Open safety pins and bent nails can also be used with considerable success. For a really rugged hook, lash the blade of a pocket knife partly open against a wooden wedge. Open a second blade at an opposite angle to form a barb. Then hide the knife in a gob of bait.

You can also cut hooks from hard, tough wood. Whittle out the shank first. Lash one or more sharp slivers so that they slant upward from the lower end. To add a barb, lash another sliver more acutely downward from the top. If you have no knife, use thorns or fish bones for points and barbs.

You can catch fish by spearing them as well as by using hook and line. To make a spear, sharpen a long dry stick and harden its point over the embers of a fire. It's easy to add a barb by whittling the point of the joint of an inverted crotch and slivering an inch or two of the angle into a sharply reassuring projection. Barbs and tips of bone, metal, or stone can also be lashed into place.

When hunting fish with a spear, thrust the weapon very slowly through the water toward the target, often to within inches of the fish before making the final jab. At night, with the help of a light, it is often possible to spot a fish lying almost motionless in shallow water. Advancing the spear cautiously and aiming low enough to counteract deceptive refraction make it easier to pin the fish against the bottom.

Fish can also be caught in improvised traps. To make one such trap, drive sticks and branches into the bottom so that their tops protrude above water. Arrange the sticks to form a narrow-mouthed enclosure into which the fish are led by a wide funnel-like V. Attracted by some such bait as spoiled fish or meat, fish guided into the pen through the slit at the apex often cannot find their way out. Similar traps can be made from wire or vines.

**Improvised Fishhooks and Spear**

**Killing Game**

Practices contrary both to game regulations and sportsmanship are justified by the law of survival. One of these generally forbidden practices is jacking, in part the act of attracting and holding an animal's eyes at night by the beam of a light. Deer can often be spotted and held in this fashion long enough to be shot. Likely places for jacking are the downhill sides of well-used game trails and water holes.

It is sometimes possible to drive a small animal from its burrow by smoking it out or pouring water into the hole. The animal may come within reach of a club, or the opening may be such that the creature can be impaled on a barbed pole or secured by twisting a forked stick into its hair and skin. If this doesn't work, try digging. Or, spread a noose in front of the hole, hide nearby, and jerk the loop tight when the quarry ventures out.

The sluggish porcupine is the one animal that even the greenest and weakest tenderfoot can kill with only a stick. To do so, just reach over the animal, which usually presents the raised quills of back and tail, and strike it on the head. The best way to skin a porcupine is first to turn it over and make the initial incision along the smooth underside.

**Fish Trap**

Simpler means will often suffice to catch fish. It is sometimes possible to splash up a shallow brook, driving any fish ahead of you. When these are cornered in a pool, block their retreat if necessary with piled stones and go in and kill them with a club. Or try stranding fish in pools by diverting a small stream.

Another way to strand a catch is to pry an opening in a beaver dam. Sometimes you can wade in, kick up the muck that amasses behind such a dam, and catch the mud-blinded fish with bare hands. Fish can also be caught with bare hands by feeling carefully among the cavities in streambanks. Try cupping your hands and holding them motionless against a bank. Fish will often investigate, and you can catch them by closing your hands quickly but not too hurriedly.
To skin a rabbit, begin by pinchng up enough of the loose back skin to slit by shoving a knife through. Insert your fingers and tear the fragile skin apart completely around the rabbit. Now peel back the lower half like a glove, disjointing the tail and finally cutting off each hind foot. Do the same thing with the top section of skin, loosening it finally by severing the head and two forefeet. Finish by pulling the animal open just below the ribs, flipping out the entrails, and retrieving heart and liver.

Turtles are an especially valuable food source. Sometimes it is possible to backtrack a female to a nest of eggs, generally buried in sand or mud not far from water. Turtle blood and juices are often used to quench thirst.

You can kill a turtle by concussion or by beheading, but be careful even after it is dead to avoid both jaws and claws. If possible, drop the turtle in boiling water and scald it for several minutes. It is then easy to quarter the under shell, remove the entrails, and simmer the meat free of the upper shell.

Snares are effective for catching game, both large and small. With a strong enough thong or rope, you can snare deer and larger animals. Rabbits and squirrels can be caught with nothing huskier than horsehair or light fishline.

**Tracking Game**

Of course, if you are to kill enough game to stay alive, you must know where to look. Tracks are among the best clues to animal whereabouts. Illustrated here are the tracks of some common North American game animals. These tracks appear on the page as they would in soft snow, damp sand, or mud, though clear prints are rare on the leaf-strewn forest floor or on hard, dry ground. Tracks are often distorted, and you may see only disturbed leaves, clots of thrown-up earth, bent grass, broken twigs, and other clues running in a line. It’s impossible to tell what animal made them without following them for a while. The animal will probably cross a soft spot, and then you may find just one clear print of one foot.

If tracks suddenly come to a dead end, the animal may have backtracked in its own prints in order to get to cover where it can jump aside. It is therefore unwise when following the trail of an animal to step right on the tracks. This makes it harder to backtrack and find the jumping-off place. The animal may also have jumped to a leaning tree, log, or other object well off the ground. Look around for such a means of escape.

If tracks fade, try moving from side to side to get the right light. From one angle, tracks may be almost invisible. From another, the line of slight depressions may be clear because of the shadows that they cast.

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**Tracking Game**

Butchering Game

In butchering, a thin-edged rock or the jagged end of a dead limb can be used as substitute for a knife. Birds can be dressed in a few minutes with bare hands. To minimize damage to the succulent skin, pull out the feathers while the fowl is still warm. Pull out the small pouch near where the neck disappears into the body, for it is the crop. Then, grasping the bird above and below the ribs, pears into the body, for it is the crop. Then, end of a dead limb can be used as substitute

In butchering, a thin-edged rock or the jagged edge whenever it becomes necessary to free the hide from the body, pull down the skin. Remove all the vitals with as little cutting and puncturing as possible. Save the liver, heart, and kidneys.

Building a Fire

The question of warmth is often the deciding factor in determining whether you should stay put and await rescue or try to get out of the wilderness by yourself. During extremely cold spells it is usually wise to find the best shelter available and lay up beside a fire until the frost moderates.

The best kindling is birchbark. Enough small shreds of this can be pulled off by hand so that there is seldom any need to disfigure a tree.

In evergreen country it’s easy to start a blaze in any kind of weather. A fairly tight handful of the dead resinous twigs that abound in the lower parts of all conifers will readily burst into flame at the touch of a match. In wet, cold weather when the trees are covered with ice, you have only to expose the dry oily interiors of the dead branches. Shavings from pitch pine light very easily. So do shavings from any dead wood adhering to standing evergreens. If no softwood is about, look for dead wood on other trees. When fallen litter must be used for kindling, be sure to choose only wood that is firm and dry.

Fuzzsticks also start a fire quickly. They are made by shaving a piece of wood repeatedly, not detaching the accumulating curls.

One way to start a fire is to bunch a few wisps of birchbark on the bare ground. Place a handful of evergreen twigs above this. Over this nucleus, lean a few larger seasoned conifer stumps. Also in wigwam fashion, lay up some dead hardwood. Then ignite the birchbark so the flames will eat into the heart of the pile.

There is no time in any wooded area when a fire cannot be built from materials at hand. A sheltered nook can always be found or a fire cannot be built from materials at hand. A sheltered nook can always be found or

Obtaining Shelter

Nature sometimes offers readymade shelter. A fallen tree is often at hand under whose roots a browse bed can be laid so as to benefit from the luxury of a crackling night blaze, nor is it unusual to come upon a dry indentation in a streambank that can be quickly roofed with brush and cheered by a campfire in front. Don’t overlook caves, either. A cave to be used as shelter should be dry, protected from wind, and small enough to be easily heated.

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The back of a knife or an iron object against a

Focusing the sun’s rays on tinder with the aid of a small magnifying glass or lens from a pocket telescope or pair of binoculars will also start a fire. Sometimes a piece of ordinary glass will do as well. A satisfactory lens can be made by shaving a piece of clear ice and then smoothing it with the warm hand. Or use the magnifying properties of water to make a fire by (1) holding the curved crystals of two watches or pocket compasses of about the same size back to back, (2) filling the space between with water, and (3) directing this makeshift enlarging lens so as to converge the rays of the sun in a point sharp enough to start tinder glowing.
long evergreen boughs from ridgepole to ground along each side. Finish by closing at least one end, perhaps by laying several small firs against it.

More complicated frames can easily be assembled, especially when the joints are fastened by lashing them with fine but tough spruce roots or with wiry birch or willow withes. Natural forks can be used instead, of course. The accompanying drawings illustrate some of the more common types of lean-tos.

**Distress Signals**

Very often the best procedure to adopt when lost, stranded, or in trouble is to stay where you are, conserve energy by moving about as little as possible, improvise the easiest shelter, and set about to attract aid.

A fire makes one of the better distress signals. One way to send up smoke that is conspicuous by daylight is to throw evergreen boughs into a hot fire. Burning rubber articles will send up black billows. A rubber article will absorb a considerable amount of water and will absorb some of the smoke from the fire and send up a white cloud. This is often visible for miles under favorable conditions.

**First Aid**

**MEDICAL KIT**

Anyone traveling in the backcountry or undertaking a rescue mission should have with him a lightweight medical kit. The items discussed below comprise a kit that can be used to treat everything from dysentery to a laceration. It includes:

- **A.P.C. (Same as Empirin) or Aspirin.** Twelve 5-grain tablets. For headaches. Dose: one each four hours.
- **Probanthine.** Six to eight tablets. For stomach spasms or diarrhea cramps. Dose: one each four hours.
- **Lomotil.** Twelve tablets. For diarrhea. Dose: one or two tablets each three to four hours until diarrhea is under control, then one each four hours.
- **Compazine.** Four to six 5-mg. tablets. For nausea or vomiting. Dose: one each four hours.
- **Sulfasuxidine.** Sixteen 5-gm. tablets. For dysentery, if there is fever and it does not respond to simple measures. Dose: two or three each four hours.
- **Erythromycin.** Twelve 250-mg. tablets. For respiratory and other infections. Dose: one each four hours, at meals and bedtime for three to four days. Use longer for tonsillitis and pneumonia.
- **Dexedrine.** Two or three 5-mg. tablets. For energy in emergency only. Dose: one every four to six hours.

**Simple Lean-to Frame**

**Elaborate Lean-to Frame**

**Overnight Shelter in Evergreen Country**

**Signaling Plane with Mirror**

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Hold the base of the staff at waist level in the palm of one hand and grip the stick a dozen inches or so higher by the master hand. All letters start with the staff held straight upward. The dot is made by swinging the flag down to the right and then back again. The dash is made by swinging the flag in a similar arc to the left and back.

To keep the flag flat for maximum visibility, move it in tight loops. Hold the flag upright a moment to end a letter. Lower and raise it in front of you to finish a word. Swinging right-left-right-left-right signifies the conclusion of a message.

A mirror can also transmit messages in Morse Code or attract rescuers simply by reflecting sunlight. Anyone traveling in the bush will do well to carry the Emergency Signaling Mirror, available at some surplus stores, in a pocket. If help is needed, it is a good idea to sweep the horizon with an aimed beam of reflected sunlight even if no rescuer is visible. If an airplane is in sight, signal it as follows. When the angle between the sun and the plane is not greater than 90°, hold the mirror three to six inches from your face and sight at the plane through the small hole in the center. The light from the sun shining through the hole will form a spot of light on your face, reflected in the rear surface of the mirror. Still sighting on the plane through the hole, adjust the angle of the mirror until the reflection of the light spot on the rear of the mirror coincides with the hole and disappears.

If the angle between the sun and the plane is more than 90°, sight the target through the hole; then adjust the angle of the mirror until the reflection of the light spot on your hand coincides with the hole in the mirror. This method works even when the plane is almost on one horizon and the sun almost 180° away on the opposite horizon.
**Butyn,** or Metycaine and Merthiolate. Ointments for anesthetizing the eye in cases of snow blindness or when removing a foreign body.

**Spectrocin Eye Ointment.** For eye infection or external otitis in ear. Apply each four hours.

**Ophthalmic Pontocaine,** 4%. Liquid eye anesthetic. Apply each four hours.

**Surgical Supplies.** (1) Roller gauze, 1- or 2-inch. (2) Telfa, a nonsticking gauze. (3) Small assorted adhesive bandages. (4) 3 x 3 or 4 x 4 flats. (5) Scalpel blades, 11 Bard-Parker and curved blade. (6) Suture material, three-0 and five-0 nylon with needle attached in sterile packet. (7) Mosquito clamp. (8) Manicure scissors. (9) Package of Butterfly plastic tapes for holding wounds together without suturing. (10) Packet of three-0 plain catgut and five-0 nylon with needle attached in sterile packet. (11) Oil of cloves for treating toothache.

**Suction Cups and Antivenom Kit.** For treating snakebite.

**MEDICAL TREATMENTS**

**Insect Bites.** Limbs sometimes become badly swollen from multiple By and mosquito bites. The swelling can be reduced with cool starch baths, aspirin by mouth, and one 50-mg. tablet of Pyribenzamine each four hours. To make a starch bath, add a cup of starch, flour, or oatmeal to a quart of boiling water. Stir this into a container of lukewarm water in which the patient soaks for fifteen to twenty minutes. A paste of starch and water — or, better yet starch boiled with a little water to make a thick, gravylike concoction — can be applied locally to allay itching.

People who are sensitive to insect bites may suffer shortness of breath, then shock and loss of consciousness. In such a case, treat for shock (see below). Fortunately, sensitive people can get a special kit from their doctor before taking off for the wilderness.

Ticks attach themselves to the body and become engorged with blood before dropping off. They pass on a group of diseases, mostly in the Rocky Mountains. Everyone going into this area should be immunized against Rocky Mountain spotted fever beforehand.

It is a good idea to inspect the body at least three times daily for ticks in tick country. The best way to remove a tick is to dig the head out by lifting the tick upwards to arch its back and work around the head from the back forward with an 11 Bard-Parker scalpel blade.

The bite of the black widow spider - a glossy, moderately large black spider with a reddish hourglass marking on its underside - can cause severe muscular cramps and pain in some. Use aspirin for the pain and cramps. Cold compresses applied to the site of the bite help reduce swelling and delay absorption of the venom. Recovery is the rule.

**Poison Ivy, Oak, and Sumac.** Contact with these plants, pictured here, causes a skin irritation. Avoid them. Treatment with a starch bath or paste, described under Insect Bites, helps to allay the itching. Try at all costs to avoid scratching the affected areas.

**Heat Exhaustion.** This occurs among those who exert themselves in an excessively warm climate, such as in the desert. There may be weakness and dizziness or headache for several days. Often there is fainting. Sweating may be profuse at first. Before collapsing, the patient becomes weak, pale, and clammy. The body temperature is normal or subnormal. If the latter, use hot packs. Rest in a cooler location is the treatment. Recovery is the rule.

**Heat Stroke.** Heat stroke is entirely different from heat exhaustion and often fatal. In this condition, the body temperature rises, often as high as 112°. The skin is hot and dry. The body temperature must be lowered. Treatment consists of removal to a cool spot and cool baths or rubdowns. Try not to use ice, as this may force the blood into the body away from the skin, thereby further increasing the body temperature. If ice is used, massage the extremities of the body vigorously to keep the circulation going. Medical help must be sought.

**Frostbite.** Frostbite is indicated by a sudden blanching of the skin on the nose, ear, cheek, etc., accompanied by a tingling sensation. The skin is yellow-white. Feeling in the affected part decreases. Frostbitten skin feels cold, frosty, and crisp or resilient to the touch.

The best treatment is quick thawing in a water bath of 102°. The water should be warm, but not hot, to the touch. In the field, a bare hand can be held over the face until the latter hurts, a foot thawed on a friend's stomach, or a hand put in your warm armpit.

**Sprains.** Sprains in the wrist and ankle are hard to tell from fractures. Either a fracture or sprain can cause swelling and pain with motion. If an ankle or wrist is badly swollen, apply an elastic Ace bandage, leave it in place for a month, and use the part gingerly. This assumes that there is no evident gross deformity of the bone that would make you suspect a fracture.

**Sprains in the Wrist and Ankle.** A sprain is an injury to ligaments or tendons which supports the joint and which permits movement of the joint. With a sprain there is pain and swelling, and the joint becomes stiff. A sprain is usually caused by moving the joint in a way that is too much for it. The cause may be a kick or fall, or a blow.

**Sprain in the Ankle.** Treatment is a cold compress for the first twenty-four hours. After this time, a warm compress is used. A compression bandage, or a bandage which is tied tightly and then allowed to loosen slightly, should be applied to the ankle, and the ankle should be elevated. If the pain is severe, an aspirin or other pain medicine should be taken. The patient should be moved to a cooler place, and should not do any more walking or running until the ankle has healed. The patient should also avoid any physical exertion which will cause the ankle to swell.

**Sprain in the Wrist.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the wrist has healed. The patient should also avoid any physical exertion which will cause the wrist to swell.

**Sprain in the Shoulder.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the shoulder has healed. The patient should also avoid any physical exertion which will cause the shoulder to swell.

**Sprain in the Knee.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the knee has healed. The patient should also avoid any physical exertion which will cause the knee to swell.

**Sprain in the Elbow.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the elbow has healed. The patient should also avoid any physical exertion which will cause the elbow to swell.

**Sprain in the Hip.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the hip has healed. The patient should also avoid any physical exertion which will cause the hip to swell.

**Sprain in the Finger.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the finger has healed. The patient should also avoid any physical exertion which will cause the finger to swell.

**Sprain in the Toe.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the toe has healed. The patient should also avoid any physical exertion which will cause the toe to swell.

**Sprain in the Finger.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the finger has healed. The patient should also avoid any physical exertion which will cause the finger to swell.

**Sprain in the Toe.** Treatment is similar to that for a sprain in the ankle. The patient should be moved to a cooler place, and should not do any more moving or lifting until the toe has healed. The patient should also avoid any physical exertion which will cause the toe to swell.
Any back injury not resulting from a blow can be assumed to be a sprain. Rest for two to seven days in flexion (pillow under knees and back, as shown in drawing) will heal the back ligaments. In minor cases, rest and aspirin suffice.

Shoulder and elbow sprains may require that the affected part be put at rest in a sling (see illustration). Knee sprains can be rested in an elastic bandage.

Do not use heat for neck sprains, although heat helps other sprains. Take two aspirins each four hours. Neck sprains are slow to mend. If full motion is possible, even though painful, it is unlikely that a fracture or dislocation is present.

To reduce the swelling associated with sprains, apply cold compresses for the first 12-18 hours. After that, use heat.

Shoulder Dislocation. The head of the arm bone is obviously out of place and can be displaced forward or backward. Reduce dislocation as shown. Hold arm in place with a Desault’s bandage (see illustration). Keep immobilized for three weeks.

Dislocated Jaw. The jaw is held open, and a prominence can be felt on the side where the jaw is dislocated. The dislocation may occur on both sides.

Reduce by wrapping the thumbs well in a towel or other padding and inserting them in the mouth. Exert downward pressure on the lower rear teeth while the fingers lift the chin. The jaw will go back into place with a pop.

Hip Dislocation. Reduce by the four maneuvers shown in the drawing. Then splint the leg for ten days.

Arm Fractures. For fractures of the upper arm, use a hanging arm cast, as shown. Healing usually takes 6-8 weeks.

In forearm fractures, two bones are involved. If one bone breaks, it is likely that the other has broken too. If the forearm bones are obviously misaligned, reduce by holding.
Reduction of Hip Dislocation


Thigh Bone Fracture. Splint as shown and seek professional help.

Other Fractures. Compound fractures, in which the bone tears through the flesh and skin, and fractures of the hip, kneecap, and lower leg need professional medical treatment.

Cuts. In treating cuts, you must stop the bleeding, bring the skin together to promote healing with a minimum of scarring, and prevent infection. To stop bleeding, exert steady, firm pressure over the cut with a folded gauze, handkerchief, or whatever is available. Hold the compress at least five minutes. If there is still bleeding, repeat the process.

Employ a tourniquet only if the bleeding is uncontrollable. Tourniquets are used only to control bleeding from the arteries of the arms and legs (blood from arteries spurts; blood from veins seeps). Bleeding from the arteries of face and body can be stopped by pressure alone. To improvise a tourniquet, roll up a handkerchief. Tie it loosely between the wound and the heart and as close to the wound as possible; then tighten it with a twisted stick. The tourniquet should be just tight enough to control the bleeding while other preparations are carried out. Loosen it every 8-10 minutes.

If the bleeding is not controlled, grasp the end of the bleeding artery with a Mosquito clamp and clamp it. This crushes the end of the artery and, if left on five minutes, often stops the bleeding. If the artery starts to bleed again when the clamp is released, re-clamp it and tie a ligature of three-0 plain catgut around the base of the bleeding artery, as illustrated.

Clean the wound next. Use drinking water for a clean wound. If the wound is dirty, pick out the foreign matter with the tips of the Mosquito clamp. Then irrigate the wound gently but firmly with soapy water. Bits of frayed and

Arm-Lift Method of Artificial Respiration

1. Kneel at patient’s head. Place hands on back just below shoulders. 2. Press down slowly on patient’s back to force air from lungs. 3. Rock back. As you do so, grasp patient’s arms just above elbows. 4. Lift patient’s arms to pull air into lungs. Let arms fall and press down on back again. Repeat cycle 12 times per minute.
Devitalized tissue are best trimmed with manicure scissors. If the wound is gaping, bring it together with a Butterfly plastic tape, as shown.

How to Use Butterfly Tape

Laceration held together by butterfly tape

How to Use Butterfly Tape

Laceration held together by butterfly tape

Shock. Shock often follows a severe injury, blow, or fracture. It may be induced by rough handling, cold, severe pain, or excessive bleeding. The skin is cold and clammy, and the patient feels light-headed and faint. The pulse is rapid and weak. To treat, lower the head below the level of the heart and raise the feet. Keep the patient warm and control pain with codeine. Avoid moving the patient.

Breath Stoppage. Immediate action is needed whenever breathing stops as a result of drowning, smoke inhalation, or electric shock as from lightning. If the arm-lift method of artificial respiration does not produce results, use mouth-to-mouth resuscitation.

Food Poisoning. Some symptoms are nausea, sharp stomach pains or cramps, faintness, vomiting, and weakness. To treat, induce vomiting by giving the patient several glasses of water, preferably warm, and sticking a finger down his throat. Do this several times. Keep the patient warm and quiet.

Mouth-to-Mouth Resuscitation


Dealing with Natural Hazards

Storms. Bad weather can be a catastrophe in the wilderness, and weather considerations will naturally play a crucial part when anyone lost or stranded is deciding whether to stay where he is or try to get out of the backcountry by himself. An ability to predict the weather comes in handy in such a case.

Clouds provide the most accurate signposts for wilderness weather forecasting. It is necessary to keep watching them, however. Even more important than momentarily pre-dominant cloud formations is the way they change. Nimbostratus, cirrostratus, altostratus, and cumulonimbus clouds, pictured here, are harbingers of rain or snow.

The higher the clouds, the better the weather. Prospects are even finer when scattered clouds, decreasing in number, are separated by brilliant clear blue. The combining of clouds, especially in a milky sky, does not augur so well. When thin but tight cloud cover slowly blankets the moon, wet weather is not far away.

When the sky is cloudy, watch the corona, the circle that appears around the sun or moon. When the corona grows larger, the drops of water in the atmosphere are evaporating and the weather probably will be clear. When the corona shrinks, water drops in the clouds are becoming so large that rain is almost sure to fall.

Watch the color of the sky, too. A red sky in the morning and a gray sky in the evening indicate approaching rain. A gray sky in the morning and a red sky in the evening forecast fair weather.

When neither dew nor frost forms during the night, precipitation is ahead. When smoke from a fire beats downward after rising a short distance, you can likewise expect wet weather.

Forest Fires. In the woods fire danger can be detected by the following signs: (1) the air is dry and hot, often with a strong odor of pine pitch; (2) grass and dead leaves underfoot crackle as you walk; (3) the bark peels off some trees in dry, brittle sheets; (4) the sky is a hot brassy blue; (5) the voices of animals and birds are muted or silent; (6) the soil is dry and often hard. Anyone who finds
Equipment and Supplies

Whether you are on a wilderness or a rescue mission, it pays to start out with the best equipment and supplies. Some are collapsible and others have waterproof caps.

Food. In calculating how much food to take along on a wilderness expedition, a good yardstick is to allow at least 25 ounces of reasonably water-free foods per adult per day. Figuring in terms of calories, allow at least 3,000 per person per day. Include fats, proteins, and carbohydrates in proportions which will furnish this amount remembering that every ounce of fat food has about 200 calories while protein and carbohydrates yield about 100 calories per ounce. Freeze-dried and dehydrated foods are the only kind to take along for an emergency in the wilderness.

Temperature and Insulation

Temperature (in degrees Fahrenheit)
-40
-20
-10
0
20
30
40

Insulation (in inches)
2
2%
3
4
5
6/2
8

Canteen. Lighter plastic containers are now replacing the customary metal canteens. Some are collapsible and others have waterproof caps.

Flashlight. Make it a rule never to be without a flashlight and know where it is in your pack. The best buys in flashlights are the palm-sized models weighing 2-3 ounces, including a pair of alkaline batteries. Alkaline batteries give seven times longer service than standard batteries. Carry an extra set of batteries and an extra bulb. Keep the bulb with personal items where it is not likely to be crushed.

Jackknife. This is the only cutting tool needed. It can be used in butchering, making fuzzsticks for a fire, cutting laces from leather, improvising a fish hook, removing splinters, and a myriad other ways. Get a sturdy knife with at least two blades, an opening and closing device.

Compass. Any compass carried for wilderness use should have a luminous dial. It should be rugged and have some provision so that it can be attached securely to the person. Carry a spare for insurance.
For more about Wilderness Skills …

The information in this booklet, and the illustrations, have been drawn from these books about the outdoors published by Stackpole Books:

**LIVING OFF THE COUNTRY**

in which veteran outdoorsman Bradford Angier shows how to stay alive in the woods. $5.00

**POCKET GUIDE TO ANIMAL TRACKS**

pictures, describes paw and hoof prints and characteristics of 44 North American small and big game. $2.95

**INTRODUCTION TO BACKPACKING**

offers step-by-step ways to wander in comfort with good living and good eating always along. By Robert Colwell. $5.95

**SKILLS FOR TAMING THE WILDS**

is a handbook of woodcraft wisdom on fires, cooking, shelters, survival, making-do. By Bradford Angier. $6.95

**READING THE WOODS**

unfolds the stories told by rocks, soil, forests, plants when one sees more in nature's familiar faces. By Vinson Brown. $5.95

**BEING YOUR OWN WILDERNESS DOCTOR**

in which Dr. E. R. Kodet, with Angier's help, tells what to do and how to do it if you must. $3.95

These and many other Stackpole Books about the outdoors are available through bookstores and in school and public libraries.
Column (A) shows the terrain; column (B) shows how many Movement Points it costs to enter:

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>COLUMN B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear Terrain</td>
<td>1</td>
</tr>
<tr>
<td>Woods/Rough</td>
<td>2</td>
</tr>
<tr>
<td>Desert</td>
<td>2</td>
</tr>
<tr>
<td>Mountains</td>
<td>3</td>
</tr>
<tr>
<td>Rivers</td>
<td>3</td>
</tr>
<tr>
<td>Swamp</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COLUMN A</th>
<th>COLUMN B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fords</td>
<td>1</td>
</tr>
<tr>
<td>Catch-Basin</td>
<td>Same as dominant terrain feature</td>
</tr>
<tr>
<td>Base</td>
<td>Same as dominant terrain feature</td>
</tr>
<tr>
<td>Food Source</td>
<td>Same as dominant terrain feature</td>
</tr>
<tr>
<td>Trails:</td>
<td>1</td>
</tr>
</tbody>
</table>

**EXAMPLES:** Players may elect to, and in many cases be required to, move across several combinations of varying terrain. The distance in hexes is dictated by the Movement Allowance number printed on that player’s Person Counter.

**Example 1:** Person at Life Level A has a Movement Allowance of 6. Since it only costs him 1 Movement Point to enter each Clear Terrain hex, he could move 6 Clear Terrain hexes in one turn. Of course if he were at Life Level D he could only move 4 Clear Terrain hexes in one turn.

**Example 2:** Showing Point costs in parens, here is how a Person at Life Level A would move over varying terrain — onto Rough Terrain (2), then onto Clear Terrain (1), and finally onto a Mountain hex (3) where he must end his turn — $2 + 1 + 3 = 6$.

**Example 3:** Suppose in Example No. 2 the third hex is a Swamp instead of a Mountain hex. To move onto the Swamp would cost 4, 1 more point than he has remaining. Thus, such movement would not be allowed and he would be required to end his turn on the second hex entered which was the Clear Terrain hex. Unused movement points, as in this example, are not transferable or accumulated from turn to turn.

**Example 4:** In the event a player’s only movement would take him into a hex that would cost more Movement points than he has available for that turn, he is required to remain stationary until an alternate route becomes available or he recovers sufficient Life Levels. This could happen to a Person at, say H, who only has 2 Movement Points to spend but must enter a Mountain hex, which costs 3, if he is to move at all.
OBJECTIVE: Get out of the wilderness (off the board) before thirst and starvation render you not survived.

START all Person Counters at Base No. 5.

TO WIN: First player to move off any side of the mapboard wins. Players rendered not survived before moving off the mapboard must drop out of the game. (Alternative: require players to move off East side only.)

### DIRECTION ABILITY

<table>
<thead>
<tr>
<th>Die Roll</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2, 3</td>
</tr>
<tr>
<td>4, 5, 6</td>
</tr>
</tbody>
</table>

Consult Random Direction Chart printed on board, then roll the die again: you then must move in the direction indicated by the arrow on the Random Direction Chart. Move in straight line only – no turns permitted – as far as possible subject to current movement allowance and terrain restrictions.

Consult Random Direction Chart printed on board, then roll the die again: you must then start in the direction indicated by the arrow on the Random Direction Chart. After moving one or more hexes you may make one direction change if desirable. Move as far as possible (subject to current movement allowance and terrain restrictions).

Start in any direction but you must move in straight line only – no direction change permitted – as far as possible (subject to current movement allowance and terrain restrictions).

### NECESSITIES

**FOOD:** You satisfy current day's needs only if you end movement on a Food hex (moving through a Food hex does not satisfy your needs).

**WATER:** You satisfy current day's needs only if you end movement on a Catch-basin or Stream hex (moving through such hexes does not satisfy your needs).

---

GAIN 0: LOST 1. Lose a = Adjust Person Counters on Mapboard and Life Level Index Card.

**MAIN STAT CHARACTERS:** 1. Lose 1 = - Adjust Person Counters on Mapboard and Life Level Index Card.

**FOOD INDEX:** Lose a = Adjust Food Index Card. If necessary, such gains in food index are in addition to the turn's normal expenditures.

**LIFE LEVEL INDEX:** Lose a = Adjust Life Level Index Card. If necessary, such gains in life level index are in addition to the turn's normal expenditures.

**WATER INDEX:** Lose a = Adjust Water Index Card. If necessary, such gains in water index are in addition to the turn's normal expenditures.

### WILDERNESS ENCOUNTER

Die Roll

<table>
<thead>
<tr>
<th>Roll</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

Natural Hazards

Animal/Insect

Personal

---

**Lose 1:**

- Lose 1 step on the Water Index Card. If necessary, such gains in water level index are in addition to the turn's normal expenditures.

**Lose 2:**

- Lose 2 steps on the Food Index Card. If necessary, such gains in food level index are in addition to the turn's normal expenditures.

**Lose 3:**

- Lose 3 turns on the Life Level Card. Such gains in life level index are in addition to the turn's normal expenditures.

**Lose 4:**

- Lose 4 turns on the Food Level Card. Such gains in food level index are in addition to the turn's normal expenditures.

**Lose 5:**

- Lose 5 turns on the Water Level Card. Such gains in water level index are in addition to the turn's normal expenditures.

**Lose 6:**

- Lose 6 turns on the Life Level Card. Such gains in life level index are in addition to the turn's normal expenditures.

**Gain 1:**

- Gain 1 step on the Food Index Card. If necessary, such gains in food level index are in addition to the turn's normal expenditures.

**Gain 2:**

- Gain 2 steps on the Water Index Card. If necessary, such gains in water level index are in addition to the turn's normal expenditures.

**Gain 3:**

- Gain 3 turns on the Life Level Card. Such gains in life level index are in addition to the turn's normal expenditures.

**Gain 4:**

- Gain 4 turns on the Food Level Card. Such gains in food level index are in addition to the turn's normal expenditures.

**Gain 5:**

- Gain 5 turns on the Water Level Card. Such gains in water level index are in addition to the turn's normal expenditures.

**Gain 6:**

- Gain 6 turns on the Life Level Card. Such gains in life level index are in addition to the turn's normal expenditures.
**Survival**

**SCENARIO 2**

**OBJECTIVE:** Get across large wilderness area as quickly as possible.

**START** all Person Counters at Base No. 9.

**TO WIN:** First player to move off West side of the mapboard wins. Failing this, the player who gets closest to the West edge before expiring may be considered the relative winner.

---

### DIRECTION ABILITY

<table>
<thead>
<tr>
<th>Die Roll</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Consult Random Direction Chart printed on board, then roll the die again: you must start in the direction indicated by the arrow on the Random Direction Chart. After moving one or more hexes, you may make one direction change if desirable. Move as far as possible (subject to current movement allowance and terrain restrictions).</td>
</tr>
<tr>
<td>2, 3, 4</td>
<td>Start in any direction but you must move in straight line only — no direction change permitted — as far as possible (subject to current movement allowance and terrain restrictions).</td>
</tr>
<tr>
<td>5, 6</td>
<td>Start in any direction. After moving one or more hexes you may make one direction change if desirable. Move as far as possible (subject to movement allowance and terrain restrictions).</td>
</tr>
</tbody>
</table>

---

### NECESSITIES

**FOOD:** You satisfy current day’s needs if you pass through or end movement on a Food hex. You may also recover 3 steps on the Food Index by remaining stationary for the following three turns on a Food hex.

**WATER:** You satisfy current day’s needs if you pass through or end movement on a Catch-basin or Stream hex. You may also recover 1 step on the Water Index by remaining stationary for the following three turns on a water hex.

---

### WILDERNESS ENCOUNTER

<table>
<thead>
<tr>
<th>Die Roll</th>
<th>Natural Hazards</th>
<th>Animal/Insect</th>
<th>Personal</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>LOSE 2 steps on Food Index, adjust Person Counters on Mapboard and Life Level Index Card.</td>
<td>LOSE 1 step on Water Index, adjust Person Counters if necessary.</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>LOSE Food Index, 1 turn</td>
<td>LOSE Water Index, 1 turn</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>GAIN 2 steps on Food Index</td>
<td>GAIN 2 steps on Water Index</td>
<td>X</td>
</tr>
<tr>
<td>1</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
OBJECTIVE: Locate a lost person.

START: all Person Counters at either Base No. 7 or No. 9 at the individual player's choice. Take one MISSING Counter (of any color) plus 6 blank Counters and place them upside down in separate locations randomly on the middle board.

TO WIN: First player to move into or through the hex containing the MISSING Counter wins.

**DIRECTION ABILITY**

<table>
<thead>
<tr>
<th>Die Roll</th>
<th>Ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2</td>
<td>Start in any direction but you must move in straight line only — no direction change permitted — as far as possible (subject to movement allowance and terrain restrictions).</td>
</tr>
<tr>
<td>3, 4, 5</td>
<td>Start in any direction. After moving one or more hexes you may make one direction change if desirable. Move as far as possible (subject to movement allowance and terrain restrictions).</td>
</tr>
<tr>
<td>6</td>
<td>Start in any direction. After moving one or more hexes you may make as many direction changes as desirable. You are not required to move at all, and may move less than your current movement allowance.</td>
</tr>
</tbody>
</table>

**NECESSITIES**

**FOOD:** You satisfy current day's needs if you pass through or end movement on a Food hex. You may also recover 3 steps on the Food Index by remaining stationary for the following two turns on a Food hex.

**WATER:** You satisfy current day's needs if you pass through or end movement on a Catch-basin or Stream hex. You can also satisfy current day's needs simply by rolling a 1 or 2 on the die after ending movement on a non-water hex. You may recover 1 step on the Water Index by choosing to remain stationary for the following two turns on a water hex (including a non-water hex after rolling a 1 or 2).
OBJECTIVE: Locate lost persons and bring them out of the wilderness.

START all Person Counters at either Base No. 7 or No. 9 at player's choice. Place as many MISSING Counters as there are players plus 6 blank Counters upside down randomly anywhere on the middle board. Procedure is identical to that of SEARCH scenario. Each player may only rescue one MISSING person. Once joined, rescuer and rescued cannot separate and both move at rescuer's movement ability. It is assumed that current day's supplies are satisfied for both persons.

TO WIN: First player to move off any edge of the mapboard with the rescued person wins. (Alternative: require players to move off the same side they started from.)

### DIRECTION ABILITY

<table>
<thead>
<tr>
<th>Die Roll</th>
<th>Ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>Start in any direction. After moving one or more hexes you may make one direction change if desirable. Move as far as possible (subject to current movement allowance and terrain restrictions).</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>Start in any direction. After moving one or more hexes you may make as many direction changes as desirable. You are not required to move at all, and may move less than your current movement allowance.</td>
</tr>
</tbody>
</table>

### NECESSITIES

**FOOD:** You satisfy current day's needs if you pass through or end movement on a Food hex. You can also satisfy current day's needs simply by rolling a 1 or 2 on the die after ending movement on a non-food hex. You may recover 1 step on the Food Index by choosing to remain stationary in the following turn on a Food hex (including a non-food hex after rolling a 1 or 2).

**WATER:** Current day's needs are automatically satisfied — except where indicated otherwise on the Wilderness Encounter Chart.

### WILDERNESS ENCOUNTER

<table>
<thead>
<tr>
<th>Die Roll</th>
<th>Natural Hazard</th>
<th>Animal/Insect</th>
<th>Personal</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>1</td>
<td>Natural Hazard</td>
<td>Animal/Insect</td>
<td>Personal</td>
</tr>
</tbody>
</table>
**OBJECTIVE:** As an escaped prisoner, get out of the wilderness to safety; as the pursuer, recapture the escapee before he gets off the board.

**START** one player as the Escapee at Base No. 5, a second player as pursuer (Guard) at either Base No. 1, 2, 3 or 4. (If three players, employ as another Guard; and a 4th player as another Escapee.) In addition, for each Guard player add three blank Counters to be used as Outposts. Place Outposts randomly anywhere on board at the Guard’s option. Guards automatically satisfy current day’s needs each turn in which they pass through or land on Outposts. Escapee always moves first.

**TO WIN:** First Escapee to get off any side of the mapboard wins at which point the game ends. Guards win if they capture one Escapee (by moving into a hex containing an Escapee) before any get off the board.

### DIRECTION ABILITY

<table>
<thead>
<tr>
<th>Pursuer</th>
<th>Pursued</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1, 2</td>
</tr>
<tr>
<td>2, 3</td>
<td>3, 4, 5</td>
</tr>
<tr>
<td>4, 5, 6</td>
<td>6</td>
</tr>
</tbody>
</table>

Consult Random Direction Chart printed on board, then roll the die again: you then must start in the direction indicated by the arrow on the Random Direction Chart. After moving one or more hexes you may make one direction change if desirable. Move as far as possible (subject to current movement restrictions).

Start in any direction but you must move in straight line only — no direction change permitted — as far as possible (subject to movement allowance and terrain restrictions).

Start in any direction. After moving one or more hexes you may make one direction change if desirable. You are not required to move at all, and may move less than your current movement allowance.

### NECESSITIES

**FOOD:** You satisfy current day’s needs if you pass through or land on a Food hex. You may also recover 3 steps on the Food Index by choosing to remain stationary for the following three turns on a Food hex.

**WATER:** You satisfy current day’s needs if you pass through or land on a Catch-basin or Stream hex. You may also recover 1 step on the Water Index by choosing to remain stationary for the following three turns on a Water hex.

### WILDERNESS ENCOUNTER TABLE

<table>
<thead>
<tr>
<th>X: No Encounter (no change in LIFE LEVEL status)</th>
<th>Lose or Lose Levels</th>
<th>Adjust Person Counters on Mapboard and Life Index Card.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>LOSE</strong></td>
<td><strong>LOSE</strong></td>
<td><strong>LOSE</strong></td>
</tr>
<tr>
<td><strong>Lose 2 turns</strong></td>
<td><strong>Lose 1 step</strong></td>
<td><strong>Lose 2 steps</strong></td>
</tr>
<tr>
<td><strong>Water Index</strong></td>
<td><strong>Food Index</strong></td>
<td><strong>Food Index</strong></td>
</tr>
<tr>
<td><strong>Lose 2 steps</strong></td>
<td><strong>Lose 1 step</strong></td>
<td><strong>Lose 2 steps</strong></td>
</tr>
<tr>
<td><strong>Water Index</strong></td>
<td><strong>Food Index</strong></td>
<td><strong>Food Index</strong></td>
</tr>
</tbody>
</table>

**Die Roll**

- Natural Hazards
- Animal/insect

**Personal**

- 1
- 2
- 3
- 4
- 5
- 6

Remain stationary while in a non-food hex. He loses 1 step on the Food Index for each turn he remains stationary in a non-water hex. He must still roll for the Wilderness Encounter every turn.
Life Level Index Chart

**WATER INDEX**

Start Here | 1 Life Level | 1 Life Level | 2 Life Levels | 4 Life Levels | 7 Life Levels

**FOOD INDEX**

Start Here | 1 Life Level | 1 Life Level | 1 Life Level | 2 Life Levels | 2 Life Levels | 3 Life Levels

**LIFE LEVEL INDEX**

A | 6 | B | 5 | C | 5 | D | 4 | E | 4 | F | 3 | G | 3 | H | 2 | I | 2 | J | 1 | K | 1 | L | 0 | M | 0 | N | 0 | O | 0

**AT START:** Place WATER INDEX AND FOOD INDEX Counters at respective “Start Here” spaces. Place ALL Person Counters on respective lettered spaces.

**DURING PLAY:** Move WATER and FOOD INDEX Counters downward (to the right) only at the end of turns in which a person’s current day’s needs are not satisfied. When passing downwards through trigger points, lose that number of Life Levels; when recovering upwards, gain that number. Substitute Person Counters as called for when passing through trigger points.
OUTDOOR SURVIVAL

a game about wilderness skills

A BRAND NEW WAY TO KEEP UP WITH THE OUTDOORS WHEN YOU HAVE TO BE INDOORS

...and have FUN too!

For two, three, or four players or teams (and any number of Kibitzers) OUTDOOR SURVIVAL is more than just a game. Indoors, at home or in camp, it teaches what there is to know about getting along away from civilization—or sharpens whatever knowledge and skills players may have, for when they might be needed in real life.

It's actually five games, all played on the game board representing approximately 13,200 square miles of woods, rough terrain, mountains, plains, rivers, lakes. Each of the game situations allows for adaptation to suit the players ideas. What each player knows—or wants to learn—becomes quickly evident as he decides which way to go, where to look for food and water, what risks to take.

There are dozens of real-life situations in these five basic Outdoor Survival games!

LOST . . . in which all players take the part of a most inexperienced woodsman.

SURVIVAL . . . places experienced outdoorsman in emergency situations.

SEARCH . . . a game of experience versus inexperience—three players trying to locate one who is lost.

REScue . . . searchers must not only find a lost party but return all to safety in good shape.

PURsue . . . the hunted and the hunters, escape, people after people, or man chasing beast.

For easier playing—quick reference during a game or leisurely browsing to pick up new tricks for the next one—check the how-to Outdoor Survival primer. This 24-page booklet—based on the best and latest of what the experts know—fully illustrates, in text and pictures, the techniques of direction finding, signaling, making shelter, building fires, dealing with natural hazards, first aid, living off the land, and lists basic supplies for a planned wilderness adventure.

THE EASY-TO-LEARN OUTDOOR SURVIVAL GAME HAS

- 22" x 24" mapboard of typical wilderness terrain
- 4-player set of die-cut Person Counters
- Life-Level Index cards for each player
- 1 die
- Scenario cards for—LOST, SURVIVAL, SEARCH, RESCue, PURSue
- Rules of Play folder
- 24-page primer of outdoor survival techniques