

CHAPTER 6

EVASION, SURVIVAL, AND ESCAPE

The tactical need for greater individual and unit dispersion in warfare increases the possibility that your unit may be temporarily isolated from friendly forces. Experience shows this temporary isolation is fairly common and normal in both conventional warfare and counterinsurgency operations. For example, enemy action may cause relocation of adjacent units so you lose immediate contact with friendly forces; a sudden massing of guerrilla forces may isolate your unit in a guerrilla-controlled area; or as a member of a patrol operating in an enemy area, you may become separated from your patrol and find yourself alone or with a small group. If you do become isolated, you and your group or unit must still try to accomplish your assigned mission. After you complete your mission, your primary task is to rejoin friendly forces.

When you are isolated in an enemy area, your major problems are (1) avoiding the enemy (EVASION), (2) the possibility of living in the field with limited equipment (SURVIVAL) until you can return to friendly forces, and (3) the problem of escaping from the enemy if captured (ESCAPE).

This chapter contains information on the principles and techniques of evasion, survival, and escape that have been used successfully worldwide. The information given here is by no means all-inclusive, but it should serve as an aid if the need arises.

EVASION

Obviously, the most important consideration in evasion is knowing the location of the enemy. If you do not know where the enemy is located when you become separated from your unit, some of the more obvious signs to help you determine this are the following:

- Signs of the passage of groups, such as crushed grass, broken branches, footprints, cigarette butts, or other discarded trash. These may reveal the identity, size, direction of travel, and time of passage of the people.

- Workers in fields may indicate the absence of the enemy.

- Apparently, normal activities in villages may indicate the absence of the enemy.

Less obvious signs are conditions that are a type of negative information, for example:

- The absence of workers in fields is an indication that the enemy is near.

- The absence of children in a village is an indication that they have been hidden to protect them from action that may be about to take place.

- The absence of young men in a village is an indication that the village is controlled by the enemy.

No identifiable specific techniques are involved in evasion, but you need to use all other phases of your combat training. You will use cover, concealment, camouflage materials, day-and-night movement techniques, maintaining direction, security, passing of obstacles, silent weapons, health measures, physical conditioning, and patrolling. These are basic to evasion as well as to survival and to escape.

You must know the following:

1. Ways of concealing yourself when the enemy is near and how to move without silhouetting yourself against the skyline; ways to keep from being spotted from enemy aircraft.

2. The distance that noises carry in fog, falling snow, heavy foliage, or over rocky surfaces.

3. How smells from food being cooked, tobacco and wood smoke, body odors, and body wastes can reveal your location.

4. The dangers of sudden, rapid movement.

5. Ways to observe the enemy without being observed.

6. Methods to use for camouflaging yourself, your camp, and your equipment without using too much camouflage.

7. How to select routes for movement that avoid exposed areas; ways to move quietly without leaving obvious tracks; and how to determine travel time for yourself or for a group.

8. How to signal using your voice, hands and arms, pebbles, and pieces of wood.

EVASION TRAVEL

The route that you select to travel while trying to evade the enemy depends upon the situation in which you find yourself, the weather conditions, and the nature of the terrain. Whether you select a ridge, stream, valley, coastline, dense forest, or mountain range to follow, be sure it is the safest rather than the easiest way. Experience has proven that the most difficult route is frequently the safest.

A route along a ridgeline is usually easier to follow than one through a valley. Game trails are frequently on top of ridges, and you can use them to guide your travel. Also, you find less vegetation, frequent high points for observing landmarks, and few streams and swamps to ford.

The use of a stream as a route is of particular advantage in strange country because it provides a fairly definite course and might lead to populated areas; also, the stream may provide you with fish and water and serve as a vehicle for travel by boat or raft. However, be prepared to ford, detour, or cut your way through the thick vegetation lining the stream. When you are following a stream in mountainous country, watch for falls, cliffs, and tributaries as checkpoints. In flat country, streams usually meander, are bordered by swamps, and are thick with undergrowth. Travel on these streams provides little opportunity to observe landmarks.

When you decide to follow a coastline, you can figure on a long, roundabout route. But it is a good starting point, an excellent base line from which to get your bearings, and a probable source of food.

In strange country, study outstanding terrain features as you travel, and concentrate on maintaining your course. Climb to a high point and look at the general pattern of the land, character of the vegetation, the drainage patterns, and the trend of mountains and ridges. Choose a prominent landmark that you can see while you travel. As you near this landmark, line up another one ahead of you.

If you are traveling in a dense forest, you probably will not be able to spot distant landmarks. You can hold a course by lining up on two trees forward of your position in your direction of travel. As soon as you pass the first one, line up another beyond the second. You might find it helpful to look back occasionally to check the relative positions of landmarks or ground slope and contour.

You can usually use streams, ridges, and trees as guides in open country and as a means of retracing your route. On overcast days, in areas where the vegetation is dense, or whenever the country appears the same, mark your route. Use bent bushes, rocks, or notches placed on the back sides of trees at approximately eye level. Mark bushes by cutting vegetation or bending it so the under and lighter side of the leaves are facing upward. These signs are especially conspicuous in dense vegetation. But use them with discretion because you risk discovery by the enemy when you mark your route too plainly.

Even with a map, do not guide too confidently on man-made features or landmarks that are likely to change. The only safe landmarks are natural features, such as rivers and hills. In the jungle, for example, when a village site marked on a map is investigated, it often is an overgrown clearing. Similarly, one rainy season can change the course of a small stream or close an unused trail with dense shrub.

Use trails as guides that lead in the general direction of friendly forces; and when you come to a fork, use the path that appears most traveled as a guide. If you guide on the wrong trail and find yourself lost, stop and try to remember the last time you were sure of your location. Mark your location where you were lost and start backtracking. Sooner or later you will discover a recognizable feature with which you can pinpoint your position.

Traveling at night is safe in the desert or open country but is not advisable in strange, wooded country. However, if you do travel at night, use a shielded light only when necessary to find your way over rough, dangerous spots or to read a map or compass. Since your eyes adjust to the darkness, a light blinds you to all but a small area that is illuminated. You can keep a fairly accurate course for short distances in open country by picking a bright star near the horizon as a guide star in your line of travel. Then line up the trees and other skyline landmarks ahead with the star. Be sure to check your direction frequently with the North Star or the Southern Cross and change guide stars whenever you need to change direction.

You may have to detour frequently in rough country. To do this, you should try to follow methods, such as the one shown in figure 6-1. This method is used for estimating distance and average angle of departure for short detours. On your return from the detour, you estimate the angle and distance to regain your original line of travel. For greater accuracy, count paces and use a compass. Another method (fig. 6-2) allows you to

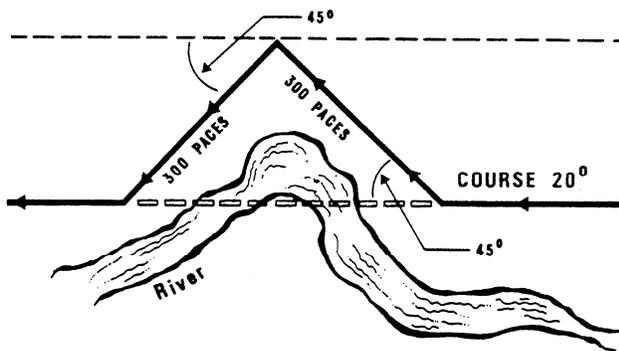


Figure 6-1.—Estimating distance and average angle of departure.

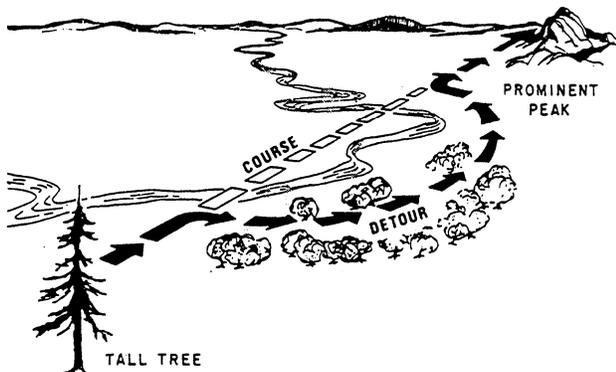


Figure 6-2.—Using a prominent landmark.

select a prominent landmark ahead and behind your line of travel. On returning from your detour, walk until you are again “lined up” on the two landmarks; then follow your original course. Another example for detouring is by compensating by paces and right angles, as shown in figure 6-3.

TRAVEL TIPS FOR EVASION

Be patient, cautious, and avoid overconfidence. An enemy approach is no cause for panic. Normally, the chances of remaining unobserved are good.

Conserve your strength by avoiding exhaustion. When you are compelled to remain in one place for an extended period, exercise moderately in order to keep fit.

Generally, avoid eating uncooked food or drinking unboiled water. Select a hiding place, cook the food, and boil the water to be used en route to the next evasion objective.

Retain items of personal clothing and equipment that can serve a useful purpose during evasion. Keep some item that identifies you as a serviceman, such as

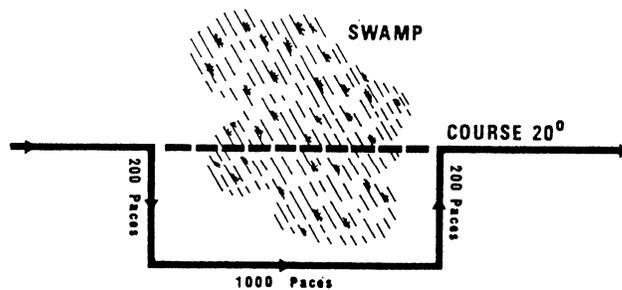


Figure 6-3.—Compensating by paces and right angles.

your dog tags. If you are not able to identify yourself as a serviceman, you maybe treated as a spy, if captured. You may also be refused assistance by escape organizations or friendly locals.

Do not leave or throw away articles that, if found would reveal your presence. Bury or otherwise dispose of the effects of your campsite; otherwise, these effects could give the enemy a clear picture of your direction of travel.

Practice supply economy. The same jacket or pair of shoes may have to be used throughout the entire evasion trip. This may cover hundreds of cross-country miles during both winter and summer seasons. Build up your food and water supplies and ration them carefully so they last until you can reach an evasion objective or replenish them or both.

Use firearms only in an emergency, and keep them concealed at all times during your evasion unless a situation arises that requires a show of arms.

Avoid people as long as possible. However, if you find that you can no longer hope to go ahead on your own because of sickness, lack of food, or other compelling reasons, then, and only then, should you seek help from the local populace. Assistance may come from individual locals who are sympathetic to the Allied cause or from members of the underground who operate escape lines for the purpose of returning evaders to friendly forces. You must be wary when contacting locals regardless of what they claim to be. When you are fortunate enough to travel through an area where an organized escape line exists, the chances are good that a spotter will seek you out. Spotters for resistance or underground organizations are particularly alert when they have reason to believe that friendly forces are in their area. But this also applies to the enemy police and counterintelligence agents. Persons wearing civilian clothing in enemy-held territory are not necessarily civilians; many enemy soldiers have been found disguised as civilians.

CRUCIAL PHASE OF EVASION

Establishing contact with friendly lines or crossing the border to a neutral country is the most crucial point of evasion. All of your patience, planning, and hardships have been in vain if you are not wary when contacting friendly frontline forces. Many personnel operating behind enemy lines have been killed by friendly outposts while attempting to pass through friendly lines. Evaders have been shot by friendly patrols because they did not identify themselves properly. Many refugees have been accidentally killed by friendly forces. While trying to escape to freedom, most of these refugees would not have been shot if they had used caution and followed a few simple rules. The normal tendency is to throw caution to the wind when you are in sight of friendly forces. Realize that the situation is very sensitive, and this tendency should be overcome.

Regular patrols or special-mission personnel operating behind enemy lines are given the challenge and password of the day as a security measure. This provides for the identification of the patrol as it approaches a friendly position. In addition, frontline troops are told the time and place where patrols are to leave and enter the lines. The password of the day will not help you unless you are able to rejoin your unit within 24 hours after separation. You must follow certain established procedures and hope the frontline troops also follow them. Frontline troops (especially those employed several miles forward of the battle area) usually shoot first and ask questions later. It is obvious that contact with these troops is, at the least, sensitive and a calculated risk. However, in the absence of an opportunity to contact a friendly patrol, this may be the only alternative. Generally, frontline troops are told that the display of a white flag or another white object should be honored and that the unknown person be allowed to advance and be recognized.

Once back in friendly hands, it is natural to talk about your exploits. And you will undoubtedly be asked countless questions by frontline troops. This is the time for you to remain silent because if you talk at this point, you may endanger the lives of those who helped you. In addition, your answers may compromise the methods used to evade the enemy that could be used by some other unfortunate serviceman in evading safely. You are authorized to give only information of immediate tactical importance to frontline units, unless you are a member of regular patrol actions. Advise the first officer or petty officer you contact that you are returning to duty from missing in action, prisoner of war, or internment

status; then request someone authorized to receive evasion and escape information.

SURVIVAL

The experience of hundreds of servicemen isolated during World War II, the Korean conflict, and the Vietnam conflict proved that survival is largely a matter of mental outlook. The will to survive is the deciding factor. Whether with a group or alone, you experience emotional problems resulting from fear, despair, loneliness, and boredom. Also, your will to live is sure to be taxed by injury and pain, fatigue, hunger, and thirst. When you are not prepared mentally to overcome all obstacles and accept the worst, your chances of coming out alive are greatly reduced.

INDIVIDUAL SURVIVAL

The shock of finding yourself isolated behind the enemy lines, in a desolate area, or in enemy hands can be reduced or even avoided if you remember the meaning of the letters in the keyword *S-U-R-V-I-V-A-L* (fig. 64).

- **S**—Size up the situation by considering yourself, the country, and the enemy.

When you think about yourself, hope for the best, but be prepared for the worst. Recall your survival training and expect it to work. After all, you have been

Size up the situation
Undue haste makes waste
Remember where you are
Vanquish fear and panic
Improvise
Value living
Act like the natives
Learn basic skills

Figure 6-4.—Factors for survival.

through this before—the only difference is that this is the real thing. If you think this way, you can increase your chances for success by being confident that you can survive. Get to a safe, comfortable place as quickly as possible. Once you find a safe place, look things over, think, and form a plan. Your fear will lessen; your confidence will increase. Becalm. Take it easy until you know where you are and where you are going.

Part of your fear may come from being in a strange country; therefore, try to determine your location by landmarks, by compass directions, or by recalling intelligence information passed on to you by your leaders.

When you think about the enemy, put yourself in the shoes of the enemy. What would you do? Watch the habits and routines of the enemy. Base your plan on your observations. Remember, you know where the enemy is, but he does not know where you are.

- U—Undue haste makes waste.

Do not be too eager to move. It makes you careless and impatient. You begin to take unnecessary risks, and you might end up like the man who rushed ahead without a plan. He tried to travel at night but only injured himself by bumping into trees and fences. Instead of laying low and trying to evade the enemy, he fired at them with his rifle and was caught. Do not lose your temper. Loss of self-control may cause you to stop thinking. When something irritating happens, stop. Take a deep breath and relax; start over.

Face the facts—danger does exist. Trying to convince yourself otherwise only adds to the danger.

- R—Remember where you are.

You may give yourself away because you are used to acting in a certain way. Doing “what comes naturally” could be the tip-off that you do not belong there.

- V—Vanquish fear and panic.

To feel fear is normal and necessary. It is nature’s way of giving you that extra shot of energy just when you need it. Learn to recognize fear for what it is and control it. Look carefully at a situation and determine whether your fear is justified. After you investigate, you will usually find many of your fears are unfounded.

When you are injured and in pain, controlling fear is difficult. Pain sometimes turns fear into panic and causes a person to act without thinking. Panic can also be caused by loneliness. It can lead to hopelessness, thoughts of suicide, and carelessness—even capture or

surrender. Recognition of the effect of fear and its results helps you overcome panic.

- I—Improvise.

You can always do something to improve the situation. Figure out what you need; take stock of what you have; then improvise. Learn to put up with new and unpleasant conditions. Keeping your mind on SURVIVAL helps. Do not be afraid to try strange foods.

- V—Value living,

Conserve your health and strength. Illness or injury greatly reduces your chance of survival and escape. Hunger, cold, and fatigue lower your efficiency and stamina, make you careless, and increase the possibility of capture. Knowing this makes you especially careful because you realize that your spirits are low due to your physical condition—not from the danger involved. Remember your goal—getting out alive. Concentrating on the time after you get out alive will help you value living now.

- A—Act like the local populace.

“At the railroad station, there were German guards,” one escapee related. “I had an urgent need to urinate. The only rest room was an exposed one in front of the station. I felt too embarrassed to relieve myself in front of all the passersby. I walked throughout the entire town stopping occasionally and inquiring if a rest room was available.” This man was detected and captured because he failed to accept the customs of the locals. When you are in a strange situation, accept and adopt local behavior. In this way, you avoid attracting attention to yourself.

- L—Learn basic skills.

The best life insurance is to make sure that you learn the techniques and methods of survival so thoroughly that they become automatic. Then the chances are that you will do the right thing, even in panic. Work on the training you are given because it may mean saving your life. Be inquisitive and search on your own for additional survival knowledge.

GROUP SURVIVAL

You and your entire squad, platoon, or group must make your reactions to survival situations automatic. The best chance for survival belongs to the group that works TOGETHER and has a leader who fulfills his responsibilities to the group. If the group remembers the following factors while evading capture, their return to friendly forces should be successful.

Group survival activities should be organized. Group survival depends largely upon the organization of its manpower. Organized action by group members that know what to do and when to do it, during ordinary circumstances and during a crisis, prevents panic. One technique for achieving organized action is to keep the group well informed. Another is to devise a plan and then stick to it.

Assigning each man a task that fits his personal qualifications most closely is another way of organizing a group. If one man feels he can fish better than he can cook, let him provide the fish. Always determine and use special skills of members within the group.

Panic, confusion, and disorganization are lessened by good leadership. It is the responsibility of the senior member of a group to assume command and establish a chain of command that includes all members of the group. Make certain that each man knows his position in the chain of command and is familiar with the duties of every other man, especially your duties if you are senior. Under no circumstances should leadership of the group be left up to chance acceptance by some member after a situation arises.

If senior, lead your men. Group survival is a test of effective leadership. Maintain respect for your leadership by using it wisely; be the leader, set the example. Watch out constantly to prevent serious arguments. To keep troublemakers from attracting undue attention, to keep those who may "crackup" from disrupting the group, and to prevent carelessness caused by fatigue, hunger, and cold are important parts of your job. Know yourself and your men and be responsible for the welfare of each individual.

Develop a feeling of mutual dependence within the group by stressing that each man depend on the other men for survival. Emphasize that wounded or injured men will not be left behind—that responsibility of each member is to see that the group returns intact. This attitude fosters high morale and unity. Each member receives support and strength from the others.

No matter what the situation, the leader must make the decisions. Because he needs intelligence upon which to base his decisions, he should ask for information and advice from other members of the group—much as a general uses his staff. Above all else, the leader must, at all times, appear to be decisive.

Situations arise that must be acted upon immediately. The ability to think on your feet usually determines successful survival. Consider the facts and make decisions rapidly.

SURVIVAL TECHNIQUES

According to the Code of Conduct for members of the armed forces, it is your duty to evade capture by the enemy. Also, if captured, you must make every effort to escape. As a Seabee, you face the chance of being exposed to conditions that can force you into a life-or-death struggle. Survival, in this case, depends on your ability to apply the techniques of evading and escaping. There can be no more important reason for making survival techniques part of your basic combat skills.

You can remain alive anywhere in the world when you keep your wits. This is a major lesson in survival. Remember that nature and the elements are neither your friend nor your enemy. Instead, your determination to live and your ability to make nature work for you are the deciding factors.

Your job is to get back. The more you know about conditions peculiar to the region you are in, including the plant and animal life, the better your chances are for survival.

Survival in remote and desolate areas, in the Arctic, desert, or jungle, depends on you. You must be physically fit, have a fundamental knowledge of how to locate water, know what foods are available, and ways to find and prepare them. You must also be able to recognize plants and animals that can harm you.

Water

Without water your chances of living are nil, and all the food in the area means nothing. This is especially true in hot climates where you perspire a lot. Even in cold weather your body needs at least 2 quarts of water each day; a lesser amount reduces your efficiency.

When you cannot find surface water, tap through the earth to the water table for groundwater—rain or melted snow that has sunk into the ground. Access to this table and its supply of water depends upon the contour of the land and the character of the soil.

In rocky soil look for springs and seepage. Limestones have more and larger springs than any other type of rock. Because limestone is easily dissolved, caverns are easily etched by groundwater. Look in these caverns for natural springs. Because lava rock is porous, it is also a good source for seeping groundwater. Look for springs along the walls of valleys that cross the lava flow. Be on the lookout for seepage where a dry canyon cuts through a layer of porous sandstone. In areas with a lot of granite rock look over the hillsides for green

grass. Dig a ditch at the base of the greenest area and wait for the water to seep into it.

Water is usually more plentiful and easier to find in loose soil than in rocks. Look for groundwater along valley floors or on the slopes bordering the valley because the water table is more likely to surface in these areas. Land above a river valley also yields springs or seepage along the base, even when the stream is dry. If you decide to dig for water, first look for signs that it is present. Dig in the floor of a valley under a steep slope, or dig out a green spot where a spring was during the wet season. In the low forests, along the seashore, and in river plains, the water table is close to the surface. Very little digging can yield a good supply of water. Runoff water is found above the water table and includes streams, stagnant pools, and water in bogs. Consider this water contaminated and dangerous, even if it is away from human habitation. Boil or treat this water with water purification tablets before you drink it.

You can find water in the dunes above the beach or even in the beach itself. Look in hollows between sand dunes for visible water, and dig if the sand seems moist. On the beach, scoop holes in the sand at low tide about 100 yards inland of the high-tide mark. This water may be brackish, but it is reasonably safe. Run it through a sand filter to reduce the brackish taste. **DO NOT** drink seawater. The salt concentration of seawater is so high that body fluids must be drawn to eliminate it. Eventually, your kidneys will cease functioning.

Watch for water indicators when you are isolated in the desert or arid regions. Some of the signals include the direction in which certain birds fly, the presence of plants, and converging game trails. The sand grouse of Asia, crested larks, and zebra birds visit water holes at least once a day; parrots and pigeons must live within reach of water. Note the direction in which these birds fly and chances are you will find something to drink. Cattails, greasewood, willows, elderberry, rushes, and salt grass grow only where groundwater is near the surface. Look for these signs and dig. If you do not have a bayonet or entrenching tool, dig with a flat rock sharp stick, your knife, or a spoon. Places that are visibly damp, where animals have scratched, or where flies hover indicate recent surface water. Dig there for water.

Collect dew on clear nights by sponging it up with your handkerchief. During a heavy dew, you should be able to collect about a pint an hour.

When you are unsuccessful in your search for ground or runoff water or if you do not have time to purify the questionable water, a water-yielding plant

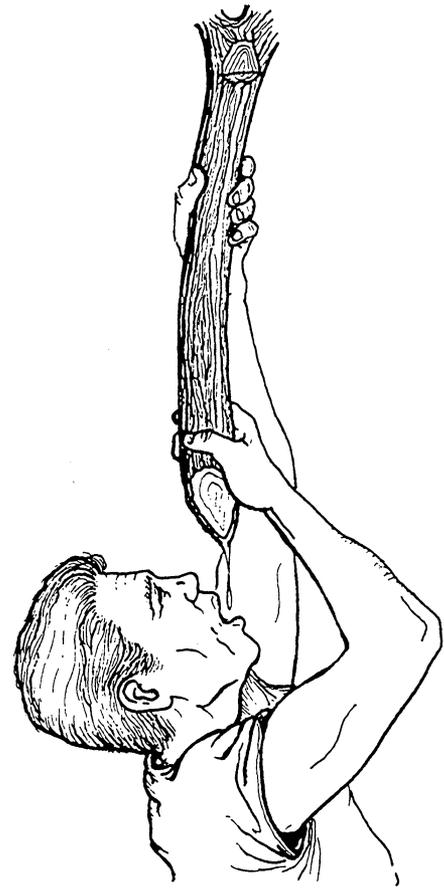


Figure 6-5.—Extracting water from vines.

may be your best bet. Clear, sweet sap from many plants is easily obtained. This sap is pure and chiefly water. Many plants with fleshy leaves or stems store drinkable water. Try them wherever you find them. Desert plants often have their roots near the surface. The Australian water tree, desert oak, and bloodwood are some examples. Pry these roots out of the ground and cut them into 24- to 36-inch lengths. Remove the bark and suck out the water.

Not all vines yield palatable water, but try any vine you find. Use the following method for tapping a vine. It works on any species.

1. Cut a deep notch in the vine as high up as you can reach.
2. Cut the vine off close to the ground and let the water drip into your mouth or a container.
3. When the water ceases to drip, cut another section off the top.
4. Repeat this until the supply of fluid is exhausted. (See fig. 6-5.)



Figure 6-6.—Wild potatoes.

If the liquid in sap is dark in color, it is not drinkable. If the liquid is clear, test it for odor. When slightly pink or red in color, it probably contains tannic acid. If it has no taste or does not taste bad, then it is a good source of water.

Buri, coconut, sugar, and nips palms contain a drinkable sugary fluid. To start the fluid of coconut palm flowing, cut off the tip of the flower stalk after bending it downward. If you cut off a thin slice every 12 hours, you can renew the flow of liquid and collect up to a quart a day.

Food

In a short time, you will realize your second requirement is food. This is especially true during a survival episode when you need every ounce of energy and endurance that you can muster.

Men have been known to live for more than a month without food. But unless you are in extremely difficult circumstances, there is little need to be deprived of something to eat. Nature can be your provider if you

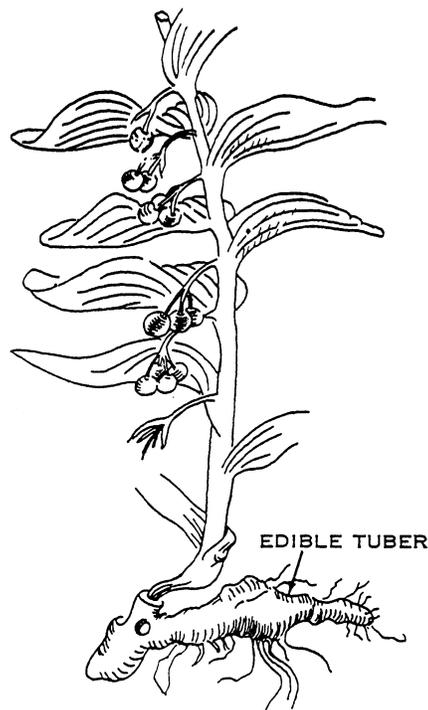


Figure 6-7.—Solomon's seal.

know how to use her bounty. Apply the following rules as soon as you realize that you are isolated:

1. Inventory your rations and water. Estimate the length of time you will be on your own.
2. Divide your food—two thirds for the first half of your isolation and one third for the second half.
3. Avoid dry, highly flavored foods and meats when you have less than 1 quart of water each day. Remember—eating makes you thirsty. Eat food high in carbohydrates—hard candy and fruit bars.
4. Keep strenuous work to a minimum. The less you work, the less food and water you require.
5. Eat regularly when possible; do not nibble. Plan one good meal each day and cook it if you can. Cooking makes food safer, more digestible, and palatable. Also, the time you spend cooking gives you a rest period or time to relax.
6. Always be on the lookout for wild food. With few exceptions, everything you see that walks, crawls, swims, or grows from the soil is edible. Learn to live off the land.

Plants

Experts estimate that about 300,000 classified plants grow on the surface of the earth, including many

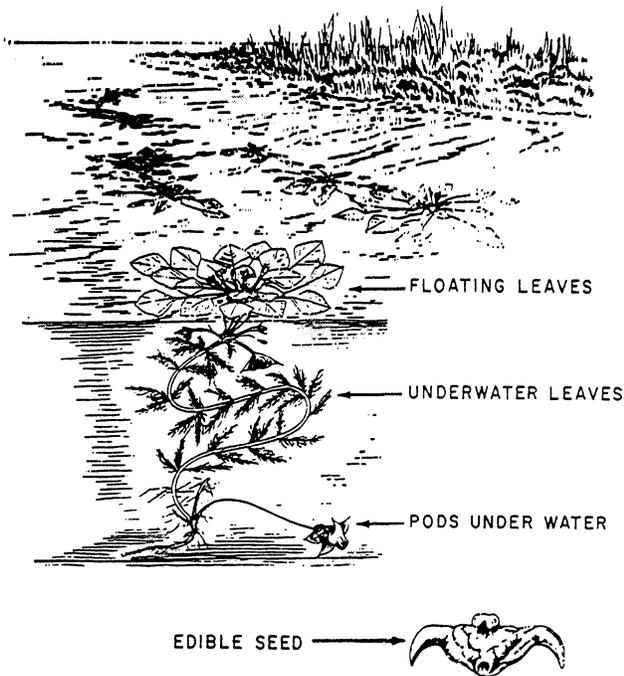


Figure 6-8.—Water chestnut.

that grow on mountaintops and ocean floors. Of these, 120,000 varieties are edible. Obviously, you will not be able to learn about all of these plants from reading this manual. But if you know what to look for in the area in which you find yourself stranded, can identify it, and know how to prepare it properly, you should find enough to eat to keep you alive. You may even surprise yourself with a delicious meal.

Although plants may not provide a balanced diet, especially in the Arctic where the heat-producing qualities of meat are essential, they will sustain you. Many plants, such as nuts and seeds, will give you enough protein for normal efficiency. All edible plants provide energy and calorie-giving carbohydrates.

Plants are available everywhere to provide the necessary energy while you forage for wild meat. You can depend on them to keep you alive if you are injured and unarmed in enemy territory or in an area where wild life is not abundant.

It is generally safe to try wild plant foods if you see them being eaten by birds and animals; however, you find few plants of which every part is edible. In addition to the obvious sources of plant foods (fruits, nuts, berries, etc.), many plants have one or more identifiable parts that have considerable food value. For example, certain roots and other underground parts of plants are rich in starch and are excellent source of food. Some examples are the following:

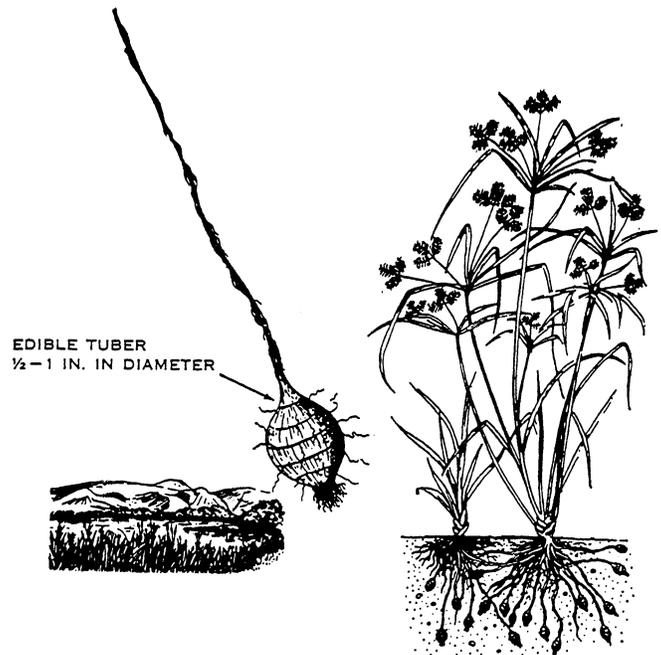


Figure 6-9.—Nut grass.

1. **WILD POTATO.** This is an example of an edible tuber. The plant is small and found throughout the world, especially in the Tropics. (See fig. 6-6.)

2. **SOLOMON'S SEAL.** Tubers of Solomon's seal grow on small plants and are found in North America, Europe, northern Asia, and Jamaica. Boiled or roasted, they taste much like parsnips (fig. 6-7).

3. **WATER CHESTNUT.** The water chestnut is a native of Asia, but it has spread to both Tropical and Temperate areas of the world, including North America, Africa, and Australia. It is found as a free-floating plant on rivers, lakes, and ponds in quiet water. The plant covers large areas wherever it occurs and has two kinds of leaves—the submerged leaves that are long and rootlike and the feathery and the floating leaves that form a rosette on the surface of the water. The nuts borne beneath the water are an inch or two wide with strong spines that give them the appearance of a homed steer. The seed within the horny structure may be roasted or boiled. (See fig. 6-8.)

4. **NUT GRASS.** Nut grass is widespread in many parts of the world. Look for it in moist, sandy places along the margins of streams, ponds, and ditches. It occurs in both Tropical and Temperate climates. The grass differs from true grass because it has a three-angle stem and thick underground tubers that grow 1/2 to 1 inch in diameter. These tubers are sweet and nutty. Boil, peel, and grind them into flour. This flour can be used as a coffee substitute. (See fig. 6-9.)

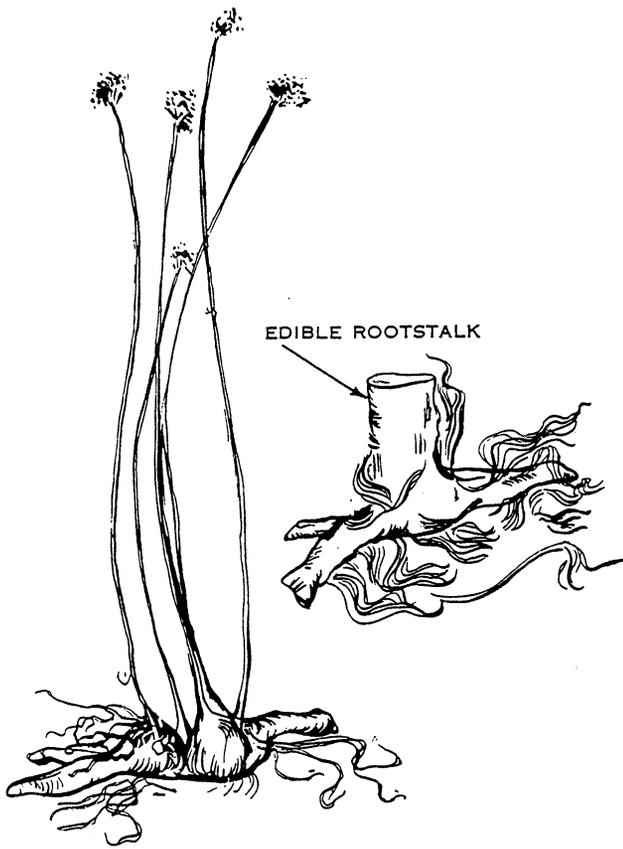


Figure 6-10.—Bulrush.

5. TARO. The taro grows in moist, forested regions of nearly all Tropical countries. Taro looks much like a calla lily with leaves up to 2 feet long and stems about 5 feet high. The bloom on this plant is a pale yellow flower about 15 inches long. It has an edible tuber growing slightly belowground level. This tuber must be boiled to destroy irritating crystals. After boiling the tuber, eat it like a potato.

6. BULRUSH. This familiar tall plant is found in North America, Africa, Australia, East Indies, and Malaya. It is usually present in wet, swampy areas. The roots and white stem base may be eaten cooked or raw. (See fig. 6-10.)

7. TI PLANT. This plant is found in Tropical climates, especially in the islands of the South Pacific. It is cultivated over wide areas of Tropical Asia. Both the wild and cultivated plants have coarse, shiny, leathery leaves arranged in crowded fashion at the tips of thick stems. The leaves are green and sometimes reddish. This plant grows a large plumelike cluster of flowers that usually droop. It bears berries that are red

when ripe. The fleshy rootstalk is edible and full of starch, and it should be baked for best results.

Animals

Foods derived from animals have more food value per pound than those derived from plants. You can increase your chances of survival by learning the edible or otherwise useful parts of animals. Also, learn how to prepare the edible parts for cooking.

Most birds should be plucked and cooked with the skin on to retain their food value. After a bird is plucked, cut off the neck close to the body and clean out the inside through the cavity. Wash it out with fresh, clean water. Save the neck, liver, and heart for stew. Most birds are easier to pluck after being scalded. Waterfowl are an exception; they are easier to pluck dry. Scavenger birds, like buzzards and vultures, should be boiled at least 20 minutes before you cook them. This kills the parasites. Save all the feathers plucked from birds. You may want to use them for insulating your shoes or clothing or for bedding. Bird eggs are among the safest of foods. You can hard-boil eggs and carry them for days as reserve food.

Clean and dress the carcass of a fur-bearing animal as soon as possible after killing it because to delay will make your job harder. Cut the throat of the animal and allow the blood to drain into a container. The boiled blood is a valuable source of food and salt. Save the kidneys, liver, and heart. Use the fat surrounding the intestines. All parts of the animal are edible, including the meaty parts of the skull, such as the brain, eyes, tongue, and fleshy portions. Save the skin. It is light when dried and is good insulation as a bed cover or article of clothing.

The meat of rats and mice is palatable, particularly if cooked in a stew. Rats and mice should be skinned and gutted, then boiled about 10 minutes before cooking. Either may be cooked with dandelion leaves. Always include the livers. Snakes (excluding sea snakes) and lizards are also edible. Remove the head and skin before boiling or frying snakes.

Dogs, cats, hedgehogs, porcupines, and badgers should be skinned and gutted before cooking. Prepare them as stew with a quantity of edible leaves. Dog and cat livers are especially valuable.

Crabs, crayfish, shrimps, prawns, and other crustaceans require cooking in order to kill disease-producing organisms. They spoil rapidly, however, and should be boiled alive immediately after capture. Shellfish can be steamed, boiled, or baked in the shell. Shellfish make excellent stew with greens or tubers.

Grasshoppers, locusts, large grubs, termites, ants, and other insects are easy to catch and will provide nourishment in an emergency.

Methods of Cooking and Preserving Foods

Other than making most foods more tasty and digestible, cooking makes them safer to eat by destroying bacteria, toxins, and harmful plant and animal products in the food. Your survival chances increase as your knowledge of field survival skills increase, as you improve your ability to improvise, and as you learn to apply the principles of cooking and preserving the foods you obtain in the field.

ROASTING OR BROILING.— This is a quick way to prepare wild plant foods and tender meats. Roast meat by putting it on a stick and holding it near embers. Roasting hardens the outside of the meat and retains the juices.

BAKING.— Baking is cooking in an oven over steady, moderate heat. The oven may be a pit under your fire, a closed vessel, leaf, or clay wrapping. To bake in a pit, first fill it with hot coals. Drop the covered vessel containing water and food in the pit. Place a layer of coals over it; then cover the vessel and pit with a thin layer of dirt. Whenever possible, line your pit with stones so it holds more heat. Pit cooking protects food from flies and other pests and reveals no flame at night.

STEAMING.— Steaming can be done without a container and is suitable for foods that require little cooking, like shellfish. Place your food in a pit filled with heated stones over which leaves are placed. Put more leaves over your food. Then force a stick through the leaves down to the food pocket. Pack a layer of dirt on top of the leaves and around the stick. Remove the stick and pour water to the food through the hole that remains. This is a slow but effective way to cook.

PARCHING.— Parching maybe a desirable method of preparing some foods, especially grains and nuts. To parch food, place it in a metal container and heat slowly until thoroughly scorched. In the absence of a suitable

container, a heated, flat stone may be used. Anything that holds food or water may be used as a container—turtle shells, seashells, leaves, bamboo, or a section of bark.

DRYING.— Plant food can be dried by wind, sun, air, fire, or combination of these four. The object of drying food is to get rid of the water. Cutting meat across the grain in 1/4-inch strips and either drying it in the wind or smoke produces “jerky.” Put the strips of meat on a wooden grate and dry them until the meat is brittle. Use willow, alders, cottonwood, birch, and dwarf birch for firewood because woods that contain pitch, such as pine and fir, make the meat unpalatable. Hang the meat high and build a slow smoldering fire under it. Perhaps a quicker method of smoking meat is the following:

1. Dig a hole in the ground about a yard deep and one-half yard wide.

2. Make a small fire at the bottom of the hole. (After starting the fire, use green wood because it will smoke.)

3. Place an improvised wooden grate about three fourths of a yard up from the bottom.

4. Use poles, boughs, leaves, or other available material to cover the pit.

The methods of preserving fish and birds are much the same as for other meats. To prepare fish for smoking, cut off the heads, and remove the backbones. Then spread the fish flat and skewer in that position. Thin willow branches with bark removed make good skewers. Fish also may be dried in the sun. Hang them from branches or spread them on hot rocks. When the meat dries, splash it with seawater to salt the outside. Do not keep seafood unless it is well dried and salted. Plantains, bananas, breadfruit, leaves, berries, and other wild fruits can be dried by air, sun, wind, or fire, either with or without smoke. Cut fruit into thin slices and place in the sun or before a fire. Mushrooms dry easily and may be kept indefinitely. If the mushrooms are dried, soak them in water before you use them.

Harmful Plant and Animal Foods

There are relatively few poisonous plants and animals. Learn to recognize and avoid them.

In some places, such as the arctic and subarctic regions, there are less than a dozen plants that are

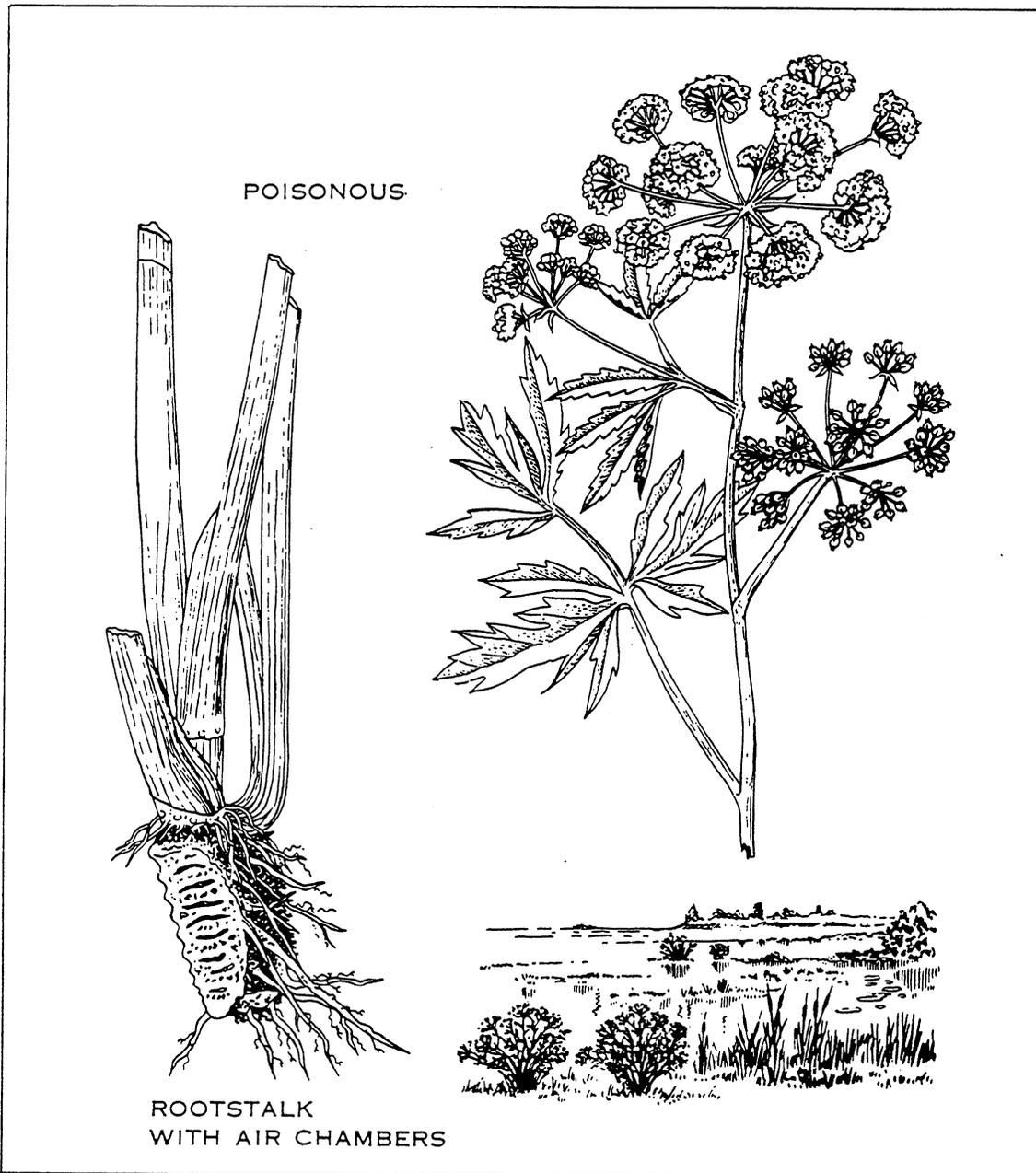


Figure 6-11.—Water hemlock.

poisonous. Included are the water hemlock (fig. 6-11) and poisonous mushrooms shown in figures 6-12 and 6-13.

Poisonous plants are found in the Tropics in no greater proportion than in the United States. When in doubt about whether plants are poisonous or nonpoisonous, use the following rules:

- Observe the habits of vegetable-eating animals, such as birds, rodents, monkeys, baboons, and bears. Usually, the foods these animals eat are safe for humans.

Cook all plant foods because cooking removes plant poisons, except those in mushrooms.

- Avoid eating plants that taste bitter. Also avoid eating untested plants that have milky juices. Do not let the milky juice contact your skin. This does not apply to the numerous figs, breadfruits, papaya, and barrel cactus.

- Guard against fungus poisoning from infected heads of cereals or grasses by discarding grain heads having black spurs in place of normal seed grains.



Figure 6-12.—Fly agaric.

Most animal foods that you encounter are edible; but some, like mollusks, may introduce parasites into your body, especially when eaten uncooked or when they are not fresh. Crustaceans are almost always edible; but they spoil rapidly and harbor harmful parasites. Be sure to cook the freshwater variety; eat the saltwater variety raw if you desire.

There are no simple way of telling whether or not a fish is edible. Often fish that are edible in one area are not in another. This depends on the place, their source of food, or even the season of the year. At first, eat only small portions of any fish. If you feel no ill effects, it is probably safe to continue eating the fish.

In the Arctic there is a fish called the sculpin that lays poisonous eggs; the black mussel maybe poisonous at any season, and its poison is as dangerous as strychnine. If you kill a seal or polar bear, do not eat its liver. This liver is too high in vitamin A, which can make you sick Do not eat polar bear meat before it is cooked. It is always diseased.

ESCAPE

What happens if you become a prisoner of war? After all, it is possible. Isolation, fear, injury—all work

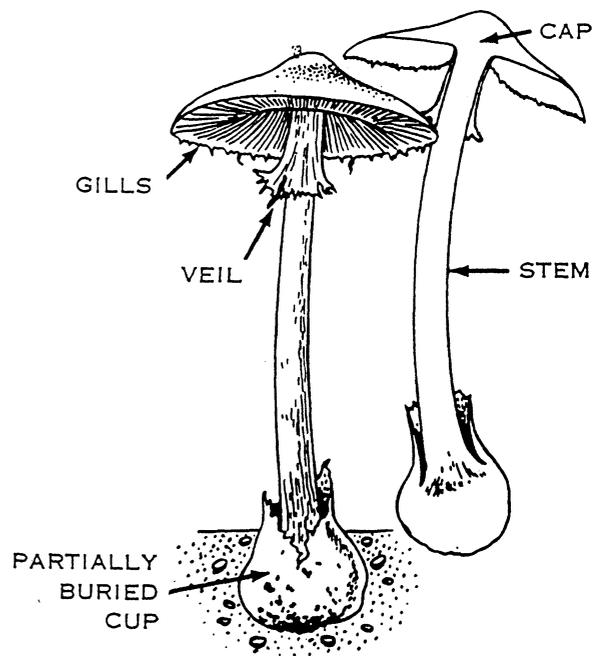


Figure 6-13.—Death angel with gills, veil, stem, and cap.

in favor of the enemy to increase your chances of capture in spite of a determined effort on your part to evade. The surrender of your weapon, however, does not mean that you forfeit your responsibilities as a member of the fighting forces of the United States. The Code of Conduct of the armed forces directs you to begin planning your escape the minute you are taken prisoner.

Escape is tough; making it work is even tougher. It demands courage, cunning, and much planning-of seeking ways out, a route to follow, and the location of friends. Above all, escape demands physical stamina—stamina that you must acquire under the worst conditions imaginable. Experience has proved that “model” camps, where rations are regular and treatment considerate, are the exception. But no matter what extremes you encounter as a POW, your aim should be—to keep yourself as physically able and sufficiently equipped-breaking out as soon as possible.

If you are captured, try to make your escape early. You may never be in better physical condition to escape than at the moment you are captured. Prison rations are barely enough to sustain life, certainly not enough to build up a reserve of energy. The physical treatment, lack of proper medical care, and insufficient rations of prison life soon show their effects in morale and physical weakness, night blindness, and loss of coordination and reasoning power. There are other reasons for making your escape early.

Friendly artillery fire or air strikes may give you a chance to escape. The first guards you will have are not as well trained in handling prisoners as the guards that are farther back from the front lines. Some of the first-line guards may even be walking wounded and distracted by their own physical condition. You know something about the terrain where you are captured, and you know the approximate location of friendly units. Several days later and many miles away, you may be in strange territory.

The exact way to make your escape depends on what you can think of to fit the particular situation. The only general rules are to make an early escape and to do it when the enemy is distracted.

To escape from a prison camp is much more difficult and requires more detailed planning. It must be organized and supported in the same way as other military operations.

Once you escape, it may not be easy to contact friendly units, even when you know where they are. Approach the solution of the problem in the same way as you would if you were a member of a lost patrol. Time your movements so you can pass through the enemy forward areas at night and arrive between the enemy and friendly units at dawn. A good plan is to find a ditch or shell hole where you have cover from both friendly and enemy fire. Attract the attention of the friendly forces by waving a white cloth, shouting, exposing or laying out a panel, or some other method. Doing this alerts friendly forces, who are prepared to accept any small group that appears willing to surrender or regain contact. Alerted, they are not as likely to shoot you on sight.

S-A-T

Since the conditions in various POW camps differ, it is impossible to provide a specific survival plan for each situation. What you need is a guide so you can make the best of what you have. Here is one such plan that you can remember by the word *S-A-T*—Save, Add to, Take care of.

Save

What can you save in a POW camp? Everything—clothing, pieces of metal, cloth, paper, string—anything. A piece of twine may mean success or failure when it comes time to breakout. Hide these items under the floor or in a hole in the ground. If these items are discovered, they may appear harmless and little or nothing will be done to punish you.

Wear as few clothes as possible. Save your shoes, underwear, shirts, jacket, and any other items of clothing that protect you from the elements when you begin your trip back.

Save any nonperishable foods you receive from the Red Cross or your captors. Candy, for example, comes in handy as a quick source of energy when you are traveling. If you do not receive candy, save each issue of sugar given you by the enemy. When you get enough, boil it down into hard candy. **SAVE** it until you build up your supply. Canned foods that you might receive are ideal for storing. However, if the enemy punctures the cans to prevent your saving them, you may still preserve the food by resealing the cans with wax or some other field expedient. It may be feasible for you to save this food by re cooking it and changing its form. Other foods to hoard for the day of your escape include suet and cooked meat, nuts, and bread.

Save pieces of metal no matter how insignificant they may seem. Nails and pins can serve as buttons or fasteners. Old cans are excellent for improvised knives, cups, or food containers. If you are fortunate enough to have a razor blade, guard it. Use it for shaving only. Devise ways of sharpening it—rub it on glass or stone or some other hard surface. A clean shave is a good morale booster.

Save your strength but keep active. A walk around the compound or a few mild calisthenics keep your muscles toned. Sleep as much as you can. You will not get much rest on your way back after you escape.

Add To

Use your ingenuity. Select those items that you cannot get along without and supplement them; for example, your rations. There is more to eat in and around your compound than you think. When you are allowed to roam around the campgrounds, look for natural foods native to the area, such as roots, grasses, leaves, barks, and insects. If possible, add these foods to your escape cache. They will keep you alive when the going gets tough.

Supplement your clothing so the more durable garments are in good repair when you escape. A block of wood and a piece of cloth make good moccasins; they will save your boots. Rags can substitute for gloves; straw can be woven into hats. Do not forget to salvage clothing from the dead.

Take Care Of

Probably the most important part of any plan for survival is the “take-care-of” phase. Maintain what you have. There will not be reissue when your shoes wear out or your jacket is lost. Also, it is easier to maintain good health than to regain it once you lose it.

Put some of your clothing into your escape cache. Watch the rest for early signs of wear and repair it with improvised material, if necessary. A needle made from a thorn, nail, or splinter and threaded with unraveled cloth can mend a torn pair of trousers. Wood, canvas, or cardboard bound to the soles of your shoes can save them from wear. Even paper can suffice as a reinforcing insole when your shoes do wear through.

Good physical health is essential to survival under any circumstances. It is especially important in a POW camp where living conditions are crowded and food and shelter inadequate. This means you must use every device possible to keep yourself well.

Soap and water is a basic preventive medicine; so keep clean. If water is scarce, collect rainwater, use dew, or simply rub yourself daily with a cloth or your bare hands. Pay attention to areas on your body that are susceptible to rash and fungus infection—between your toes, your crotch, and your scalp.

Keeping clean also applies to your clothing. Use soap and water when you can spare it. Hang your clothes in the sun to air if soap and water are not available. Examine the seams of your clothing and hairy portions of your body frequently for lice and their eggs. Lice infected with disease can kill you. A possible way to get laundry service or even a bath is to tell your guard that you are infested with lice, whether or not your complaint is true. The prison authorities, fearing that lice on prisoners may cause an outbreak of disease among the civilian and guard population, might provide this service.

In the event you become ill, report your condition to the camp authorities. The chance that you could receive aid is well worth the try.

