

## Cooking (continued)

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If no cooking pots are available, food can be baked by wrapping it in several layers of green leaves and burying it in hot ashes, keeping the fire on top burning until cooking is completed.

A similar but cleaner method is to place a number of stones which have been heated very hot in a fire in the bottom of a shallow, dry trench scooped in the ground. Cover the stones, with green leaves, place the leaf-wrapped food on the leaves, surround it closely with other hot stones, and cover the whole thing with more hot stones and a light topping of dirt. It will take about two hours for most food to cook.

Game: Big game is rare in the jungles -- and the small animals are usually hard to get because most of them live high up in trees. One must be content with anything that comes along -- monkey, snakes, water-rat, or lizard. Any animal caught alive is safe to eat. Roast meat on a stick over the fire, or wrap it in wet leaves and place it on the glowing embers.

In wet forests, guns will rust in a few hours, and the mechanism soon gets clogged with dirt. In fact, many oldtimers never bother to carry a gun in the jungle. To catch small game, evaders should make snares, and set them up where they see little tracks, or near water.

Monkeys are very common in some jungles. They are the tastiest of jungle animals, and if they are abundant, don't waste ammunition shooting hawks or owls.

Turtles may be found along river banks or in bays and shallow lagoons of the forest. They make broad parallel tracks like the furrows of a tiny plough, from the side of the water to the edge of the woods. Follow the turtle tracks and poke in the sand or mud with a big stick for turtle eggs. They are very nourishing.

Snakes are a great delicacy, especially when broiled over a fire. Skin and clean them, as if they were eels, cutting off entire head.

Pigeons as big as peacocks are abundant in some New Guinea forests. They can be killed with a slingshot.

Fish: A wet jungle may have many little streams which are full of fish, easily caught. If one has no fish hook, he should try making one from a thorn lashed to a long piece of wood, and use it to gig fish in the body. For bait, try the fat white grubs which swarm in rotten logs. Other ways of catching fish:--

At night, shine a flashlight on the water.

When fish come to the surface they will be blinded and can be flicked out with a machete.

Try a trick of the Borneo women. Make a small dike in the bend of a stream to form a pond, and then scoop up the water. Little shrimps and fish will be stranded in the mud.

NEVER EAT FRESH-WATER FISH RAW. COOK THEM THOROUGHLY.  
THEY MAY CONTAIN HARMFUL PARASITES.

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Fruits and Plants: Some jungles are like vast fruit orchards. They have hundreds of plants which are good to eat, like pineapples, coconuts, bananas, limes, and oranges. But evaders must watch out for the poisonous plants. A description of even the most common poisonous and edible jungle plants in the tropics would fill a book as big as this one. For practical purposes remember these simple rules:-

1. Before biting into a strange plant or fruit, try a speck on the tongue. If it's bitter, spit it out.
2. Fruit showing tooth-marks of animals is usually safe to eat, but test it for bitterness first. Watch the monkeys. Whatever they eat is safe for human beings.
3. Avoid trees and plants with milky sap.
4. Avoid seeds of fruit and plants. That's generally where the poison is concentrated. Sample the tender young twigs, buds and flowers.

Poisonous Plants: The number of poisonous plants is not great, and few are common in the jungles and forests. A safe rule to follow is to eat nothing that a monkey won't eat, and avoid all those that have a milky sap or a disagreeable taste.

Fat: Fat should be part of the diet. Save unused fat from animals killed. Don't waste it. Starchy foods are easily obtained in most jungles, but proteins and fats are not. It may not always be possible to get birds and animals, so a reserve of protein and fat should be carried. Melt the excess fat in a pan, boil it for a few minutes, skim off any solid material, and pour it into a small can with a tight-fitting top -- one or two empty friction-top coffee containers from the emergency ration kits will serve nicely. The fat then can be used for preparing starchy plants and other foods.

Insects: If necessary a person can subsist for days or weeks on bugs. They're not harmful, and some of them taste very good, like nuts, Grasshoppers, locusts, and crickets all provide nourishment. Termites are considered edible. They live in big, cone shaped houses, sometimes hard as rock. Hack them open for both termites and eggs.

- f. Fire: In a wet forest it's very difficult to build a fire. Try making a little basin or fireplace of stones the way the natives do. It is important to design a fire so that air can circulate through it freely. Start the fire very economically, with scraps of dry moss, or some gauze from the first-aid kit. To this add a few splinters of dry wood, or some pieces of dry rattan. It is not necessary to make a bonfire; in fact, the natives use small fires. Have ready a reserve pile of dry kindling. Blow up through the fire to start it going. After the fire is burning well, add a little wet wood without ruining it. To dry wet wood, stack it around the fire.

In the Jungles, survivors won't really need a fire to cook food and water. They can live on uncooked fruits and vegetables and drink water from vines. The dampness of jungles makes it most difficult to light fires.

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- g. Shelter: Only in very rare instances will it ever be necessary to sleep in the open without some sort of shelter. For reasons of health, every attempt should be made never to sleep in the open. Likewise, never sleep on bare ground. Parachute cloth will make an ideal shelter and likewise a ground cloth. Two notched sticks stuck in the ground, with a light stick across the top or a shroud line rope strung between two trees is all that is necessary for the framework. Poles of bamboo or other light wood laid on this frame at a 45 degree angle with parachute cloth, palms, bananas, or other large leaves laid over the top will complete the sides. The shelter can be camouflaged with leaves: It will shed most showers and afford ample protection. Rain will also be shed by banana leaves spread over the lightest of frames. Boughs or large leaves for a flooring will keep one off the ground.

No animals will come near a shelter of this kind, fearing a trap. It should be on a hillside if possible and in a thicket. It should not be built on a path or game trail, to prevent being disturbed during the night.

#### G. EVASION AND ESCAPE.

1. How to Get Back: This all-important fundamental of escape from the jungle begins, of course, with all of the knowledge which airmen have learned of the terrain, landmarks, enemy areas, landing areas, and vegetation, in order not to get or be lost. But it begins, too with the jungle clothing and equipment which airmen have when they step in their plane, continues through the way they make the best out of landing, their signalling to friends, travelling, camping, guarding their health, eating, and dealing with natives.

2. Travel: All personnel should observe the following advice in traveling:

Part the jungle, don't try to push through it. Travel in the jungle forests is slow. Try to follow a stream downstream, and try as far as possible to stick to natural trails, or native trails. Don't try to break a way through. Blundering ahead only leads to bangs on the head and thorn scratches. Personnel will get through faster if they watch their step and pick their way carefully.

If a person can't find a stream or a native trail, he should follow the swampy hollows which generally run in chains and eventually join a stream. In hilly country, the ridges are easier to follow than the valleys, but precipices may make long detours necessary.

In elephant country, follow the elephant trails. Elephants do not wander aimlessly. If a track shows frequent use, follow it. Elephants never go where they are likely to fall or get bogged. Elephant trails are 3 or 4 feet wide; other game trails are a foot to 18 inches wide.

One cannot look through the jungle, but sometimes one can look under it. The heavy growth of foliage generally ends about a foot above the ground. Often, one can see much more of the surroundings by getting

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## EVASION AND ESCAPE (continued)

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flat on the stomach than by standing up.

Travellers must rely on their compass and map, but must not try to follow a direct compass line. It will take too long and be too tiring. All walking should be done early in the day. Darkness comes early in the jungle. By five in the afternoon very little light can penetrate through the thick foliage. Start looking for a place to camp around three or four. Take plenty of time for sleep and rest. Members must not force themselves beyond their physical limits.

Plotting A Course Through the Jungle: In the morning, get an early start. The evader's, or survivor's aim is to find a clearing where he can send up signals. But suppose signals bring no results, and after a day or two the evader decides no rescue planes are coming....what then?

The evader should then plot a course to the nearest or most accessible river, and plan to go downstream. Somewhere on the shore he will almost always find a native village. The natives will bring help, lead him to a white settlement, or carry messages for him.

Before setting forth, evaders should study the map very carefully, pick a goal, and then stick to it. They must use their head about the course chosen. For instance, if they happen to be on a mountain top and decide to walk downhill, they should first make sure that they are not descending into a desert. Food and water are obtainable in a jungle, but not in the desert. So try to find a means of walking across the mountain, or circling it.

All evaders should also have an idea of the type of jungle they are in. The word, "jungle" includes many varieties of tropical forest, and each one presents different problems of travel.

A New Guinea tropical rain forest with dripping wet trees, is tall and leafy enough to shut out the sunlight. After walking 15 minutes personnel may feel as though they were in a Turkish bath. No need to hack one's way through the underbrush, for there is none -- there's not enough light for brush to grow. The ground is soft mud that sucks men in up to their ankles or knees. Generally, in this kind of forest, it's best to walk on the fallen trunks of trees, using them as a bridge or road.

No matter what type of jungle a person may land in, patience, quick wits and proper equipment will get him out. Travel lightly.

A pilot must resort to instrument navigation even on the ground, for in strange territory everyone has a natural tendency to go round in a circle. Don't rely on instincts. Consult the compass frequently. When taking bearings with it leave the knife, gun, and machete a few steps away.

Jungle travel is hard and tedious. Be patient and go slowly. At best, one can normally make five miles a day in thick forest. A few travel tips:--

Don't travel at night! Stop half an hour before dark, for plenty of time to make a bed.

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## EVASION AND ESCAPE (continued)

Don't try to slosh through a bog. Stop, look, try to go around it on either side, to avoid sinking up to the hips in mud.

Whenever possible, pick a campsite on open ground where there is a breeze. The site should be at least half a mile from marshes or pools of water. Reason: - malaria mosquitoes breed in stagnant pools.

When coming to a river, build a raft and float downstream. Cut down palm stems or saplings to make the raft. If no rope is available to bind them together, use thick jungle vines. Some fliers who have landed near a river have used their life raft, but one must be sure it doesn't get punctured by rocks.

One of the main causes of death in the jungle is drowning in the rapids. When traveling on a river, travellers should keep their ears open and listen for the sound of roaring water. It can be heard a long way off. As soon as they do hear the sound of roaring water they should land, reconnoiter, proceed cautiously.

3. Water Journey: Tie all loose articles of equipment to the raft so that they are not lost by sudden motion or overturning. Lie or sit on the raft, and keep a close watch for hidden rocks and obstructions which create changes in the surface of the water. If the evader finds himself being carried by the current onto a snag and paddling is insufficient to clear it, grab one of the two tow ropes, jump overboard and swim, pulling the raft to one side.
4. Walking in the Jungle: If cricket spikes have been provided, put them in the shoes. If the soles are thick enough, put about 12 in each, 9 in the soles and three in the heels. If the soles are not thick enough, put 5 in each heel and keep the rest for spares. Spikes on the feet will save a great deal of fatigue and many falls, especially when one has to go down steeply. Put the feet down with care on the best spots possible. Put the heels down flat, and walk off the heels. A person will tire himself needlessly if he rises off his toes when walking across wet or slippery ground. The heels are the best points of traction.

Get off the feet whenever possible. Take a five-minute break every half-hour. March all day long, but take many short breaks to cool off, and rest. And as stated above don't waste energy on trail making. Don't sit on the wet ground or a rotten log. If necessary, make a cushion of leaves. Don't try to walk fast in the humid tropics. Easy swinging steps are the best. If the evader must descend cliffs, instead of going around, use parachute cords to help, and if in a party, a "lifeline" of cord or layer cane. A strong walking stick is useful in slippery weather, but beware of using it in moss forests; it may sink as much as three feet and throw one off balance.

5. "Lost and Found": When lost, the evader is in danger only if he loses his head. Being alone in the jungle is not a pleasant experience, but it provides no basis for fear, which can only lead to panic and exhaustion. Instead of fear, remember that:-The evader is not lost unless he has no idea in which direction to travel. The direction of the prevailing daily wind should be some clue. The evader will never find a jungle where it is impossible to find some habitations within a week's march. Even if there are no natives near, the evader will be able to keep going for at least 14 days on what food he had and what he

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## EVASION AND ESCAPE (concluded)

can find, and he should reach a native village well before that time. He can march for many days without food at all, provided he keeps calm. Once the evader finds friendly natives (and the chances of their being friendly are almost 100%), he will be fed, guided and looked after until he reaches his base.

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## A. INTRODUCTION

This data is primarily applicable to Air Transport operations, but much of it applies as well to combat operations.

Survival on the ocean is like survival on the desert; one must have an ample supply of drinking water to live. But there is one great difference -- while the arid desert yields practically nothing, survivors can get food and water from the ocean, provided they have proper equipment. With a portable still or vaporizing apparatus one can make sea-water drinkable; with proper lines and fishhooks survivors can supply themselves with nourishment.

The main problems: 1) Make sure each person has the newest and most modern equipment. 2) To have equipment and rations packed in a fool-proof manner, so it can be gotten at easily. 3) To practice the procedure of abandoning the plane so thoroughly that nothing will be lost if the need should arise.

To avoid chaos and confusion when a plane comes down on the ocean, the whole crew must practice abandon-ship procedure before leaving the field. Every man should have an assigned position and assigned duties in case of a forced landing.

Personnel are advised to be sure to wear all the clothes they can before leaving the plane! The more clothes, the better. The Mae West will keep a man afloat no matter how much he is wearing. Even on the equator it gets miserably cold at night. And in the daytime the skin must be completely covered against the burning sun.

## B. FIRST DUTIES ABOARD THE RAFT

Treat wounded comrades. Rig up canvas or tarpaulin as an awning for protection against the sun. Take bearings. If the raft is new and equipped with a sail, pick an objective, chart a course, head for it, no matter how far away it is.

Take stock of all provisions. An individual or a group may be adrift for several days, or even a couple of weeks. So start a strict system of rationing at once. Take no food or water for the first 24 hours. If it's very hot, take a few sips of water, no more.

Don't gripe! Cooperate with the officer in charge. Survivors should neither shout nor sing. It will only exhaust them and waste valuable water in their breath. If members are packed in the raft like sardines, they must make the best of it. It may not be so long. Survival depends on good morale.

The Coast Guard Advises:--"If you can't be cheerful, be quiet!"

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## C. EQUIPMENT

1. Signaling: Remember that there are several ways of doing this:

The metal signaling mirror for sunny days.

The V-K smoke signal for daytime. Instructions are printed on the can. Send up this signal only when a rescue plane is overhead.

The V-K flare for night-time. Also to be used only when a plane is overhead.

The sea marker and sea dye. These are the longest-lasting of all the signals.

## D. HEALTH

1. Raft Ailments: Besides hunger and thirst, the great causes of suffering are sun and seawater. The sun burns unprotected skin; the salt stings and scours till flesh is raw and bleeding.

Cracked skin may be prevented by using anti-sunburn lotion, or sulfadiazine ointment.

Cracked and parched lips: smear with vaseline.

Saltwater burns (boils):

Do not squeeze the boils

Do not prick them to let the matter out.

If the boils burst of their own accord, do not squeeze the matter out of them.

Cover large, angry-looking boils with sulfanilimide paste. Then bandage.

Inflammation of the eyes: Smear the upper and lower eyelids with vaseline to the outer corner of the eye itself. Wear goggles if available. If not, and the eyes are very painful and bloodshot, cover them lightly with cloth and bandage.

Constipation: When taking little or no food survivors cannot expect a bowel movement. No treatment is required for this condition -- in fact, laxatives are liable to do harm.

Difficulty of Urination: One cannot expect to pass much water when not drinking much. There may be some difficulty in passing urine, and the bladder may feel uncomfortably full. Dangling the hands in the sea will help urination. The urine will most likely be dark and thick. Don't be alarmed.

Swollen Legs: This is a common occurrence on rafts and occurs to practically everyone for a few days after rescue. The swelling goes down without treatment and by itself is nothing to worry about.

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## HEALTH (continued)

"Immersion Foot": If feet or legs are soaked for many hours in cold water or mud, the tissues gradually suffer damage. At first, cold wet feet may hurt a little, but this does not last long. After a while the feet get red and numb, and the toes seem to freeze stiff. The numbness and weakness gets worse; the legs swell. If the legs can be taken out of water and warmed, all these troubles disappear. But there is likely to be serious trouble with legs which have been soaking for several days. Blisters or dark patches may appear and the skin may break, leaving the way open for infection.

To prevent "immersion foot":

Keep feet out of water as much as possible. Try to keep them raised above body level. If socks are wet, wring them out and put them on again quickly or put on dry ones if available. Try wiggling the toes frequently, and moving the feet. If the feet become swollen, don't rub them. Handle them very gently. Rubbing bruises delicate flesh, invites infection. Sprinkle sulfanilamide powder on the sores. Keep the upper parts of the body dry and warm; this also helps to keep the limbs warm. Keep damp or wet clothes on the body under waterproof covering rather than stripping and wringing out clothes in a cold wind. Do not wear tight garters, suspenders, tight boots, or any other tight clothing on the legs.

2. Water: The smallest amount of drinking water needed to keep a man in good physical condition is eighteen ounces a day -- two ounces more than a pint.

If survivors have enough water on hand and can make a conservative guess as to the time when they will be picked up, they should adopt the eighteen ounce ration.

If they are going to float a long time, they should hoard their water. Suggested rations: Two to eight ounces daily.

Make the most of each portion of water by keeping it in the mouth for a long time. Rinse, gargle, then swallow. Keep some water to drink before going to sleep.

Seawater: The amount of salt in seawater is equal to that of a teaspoon of salt in a six-ounce cup of water. This is three times as much salt as is present in the bloodstream. Don't drink seawater! It's suicide! The precious body water will be used up to dilute the extra salt. Men who fill themselves with seawater increase their thirst, suffer from terrible retching and cramps, run a high fever, finally go out of their minds. Seawater enemas are just as dangerous. Don't try to put seawater into the rectum.

How about seawater in small doses? "The experience of survivors from shipwreck," say British medical authorities, "as well as the results of experiments, point to the value of using seawater in small quantities for moistening the lips, and for moistening the mouth as an aid to swallowing food. If the total amount of seawater consumed daily in this way is not more than six ounces, no harm is likely to result in the course of a lifeboat voyage of at least ten days. Taken in large quantities, however, seawater is very dangerous."

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Water (continued)

Emergency Measures: A man in good health can live from eight to twelve days without water. But he's likely to get giddy after four days.

If members have no drinking water, they should not eat. Reason: the body will have to use up its water supplies in digesting and assimilating the food. Cover up as much as possible in order to lose a minimum of water in sweating. They should not drink liquor -- it will make them sick and delirious. Save it for men who are severely wounded: It's a pain-killer and will put them to sleep. Don't drink urine: It's poisonous waste-products will increase thirst, contribute to the drying-out process, and raise the body temperature as high as 105 degrees. When they do get fresh water after a long period of thirst, they should sip it slowly like wine. Otherwise they will throw up. For relief, one can chew on untanned leather, cloth, or buttons.

The principal source of water at sea is from rain squalls. It may be gathered in the following manner: At beginning of rain, rinse out clothing, then as the garments get wet rinse out the fresh rain water into containers.

3. Food: Water is more important than food. On a life-raft one has little to do and will use little energy. A pound of the body's own fat will supply a man with 3500 calories -- more than enough for a day on a raft. With enough water to drink, a person can get along without food for several weeks.

Eat, suck, or chew food slowly.

If crackers are available, break them up, and nibble the crumbs throughout the day. Crackers can be soaked in the water ration if there is sufficient fresh water.

If the crew have condensed milk, they can spread it on crackers, mix it with water, or best of all, take it by itself an hour before the water ration.

One should not eat seaweed unless there is plenty of fresh water. Although full of vitamins, seaweed is too salty.

Fish: Remember these ten rules!

- 1) Never make the fishing line fast to the finger, hand, or foot, or to the boat. A big fish might cut the fisherman, or break the line and carry off the tackle.
- 2) One member should let another man hold the end of the line while he is fishing. This provides two chances to save the tackle and catch fish.
- 3) Do not lean over the side of the raft when a fish is hooked. The raft may turn over.
- 4) Try to catch small fish rather than large ones. Big fish may snap lines, steal bait, cut the hands, even upset the raft.
- 5) Keep the bait moving to make it look alive.
- 6) Be sure to keep a part of any bird or fish caught to use for bait. Fresh bait is better than the pork rind in the fishing kit.

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Food (continued)

- 7) After using them, clean hooks and lines, wind them up as they were in the kit. See that the hooks are not sticking into the lines. Dry them in the sun, return them to the cloth pockets and try to keep them dry.
- 8) When not fishing, lash the tackle to the raft so it won't get lost.
- 9) Don't let lines get tangled or let hooked fish tangle them. Two men can fish at the same time but they must watch out.
- 10) Be careful not to stab the rubber raft with knife, harpoon, or fish hooks. Don't let the line wear or cut into the rubber side of the raft. Members must be careful where they lay tackle down, especially after catching a fish.

Any fish caught in the open sea out of sight of land is good to eat raw. One can also drink the blood. Always divide the catch equally among all crew members.

Turtles may swim to the raft on moonlight nights. Keep perfectly still until a turtle comes close, then grab it by the hind legs and turn it over. Kill it by knocking it on the head. Drain the blood from the breast and drink it at once before it coagulates. It's cold, refreshing, and filling. Eat the liver immediately. Throw out the stomach and kidneys, but drink up all the fluid and save the grayish fat to eat with fish. After removing the fat, hang the extra meat up to dry on the sail. When a turtle's head is cut off, the jaws may snap and claws scratch. Watch out!

All birds are good to eat. Save their feathers to stuff inside shirts for warmth, save their guts and toes for bait.

Phosphorescent fish and albatross are safe to eat. Don't pass up a meal just because the fish glows green at night. The only poisonous fish occur along rocky or coral reefs, and along muddy and sandy shores of tropical seas. Examples: parrot fish, (brilliant coloring, sharp beak), puffer fish (snubby nose, inflates its body like a balloon), porcupine fish, cone-shaped shellfish. Eels are good, but don't eat sea snakes. They can be distinguished from eels by the big plates that cover their heads and bodies.

If crew members get a good catch, they can dry fish for future meals. Clean them as soon as they are caught and wash the flesh free of blood, preferably in fresh water. Then cut the fish in strips and hang them up in the sun. Fish liver can be eaten if it's pink. If it's dark, throw it away. Shark is tough to carve, and tastes awful, but men have survived on nothing but raw shark meat and water for several weeks. If members don't have an emergency fishing kit they have to improvise.

Clinging to masses of seaweed are shrimps and little phosphorescent fish. Lift the seaweed out of the water carefully and shake it over the bottom of the raft so the fish and crabs will fall out. They can be eaten or used for bait. If the crew can't get live bait, they should try a piece of bright-colored cloth, a small scrap of lamp wick, or a piece of bright tin made into the form of an oval spinner attached to the hook.

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Food (continued)

For hook and line one will have to use whatever is at hand. Nine Norwegian seamen who drifted on two rafts for 48 days, used safety pins and string. They "jigged" about fifty twelve-inch baby dolphins in one day by dangling the pins in the water and hooking the fish in the body. Sometimes they used the eyes or gills of raw fish as bait. The dolphins were "delicious".

There are two ways to get fish at night: 1) By shining a light on the water: 2) By hanging a mirror on the edge of the raft so it catches the moonlight. The fish, attracted by the light, will rise to the surface. They can be scooped up in a dip net or speared with a knife. Flying fish come skipping across the water like a flat stone spun across the surface. They bang against the side of the raft or fall into the water and lie blinded on the surface. Some men have speared as many as 100 an hour, and have found them good to eat.

4. Sharks: Some men have shark trouble, some don't. Most everyone agrees that sharks are playful -- up to a point. When they rub against a lifeboat, they're not trying to overturn it: They want to get rid of their sea-lice. They rarely attack, and can usually be scared off by vigorous splashing or by a crack on the snout with a paddle. However:-

Don't provoke sharks! Don't trail hands and feet in the water! If the coast is clear survivors may enjoy a dip in the ocean twice a day. But don't take any chances. On rare occasions sharks have jumped into rafts, started up wrestling matches. Watch out for their tail! Shark hide is tough so try to stab them in the nose or gill, their most vulnerable spots.

E. PROBABILITIES

Men vs. The Sea: The will to live is half the battle. Men who give up right away are sure to be licked. Time after time rescued sailors from the Merchant Marine tell of crew members and officers who gave up and died after a few days afloat, without any apparent reason. They were usually in good health, had the same rations as everybody else, but took no interest in their plight and quietly passed out. Don't give in to the sea! Life is worth a gamble. Just when survivors think they can't go on a minute longer, help may be on the way.

Alone in the middle of the ocean, everyone thinks of suicide. But few men actually make a move to take their own lives. While one still has breath in the body, there's always hope. Men have been adrift without provisions for forty, fifty, sixty, and even seventy days, and have lived to tell the tale. Even women and children have lived on crowded life rafts for more than three weeks.

Pipe Dreams. The broiling sun, the vast gloom of the night, the ceaseless pitching of the raft, the cramped quarters, sore bodies, terrible craving for water and food -- all these hardships are enough to make the mind wander. What about the man who says in the middle of the night, "I'm going round the corner for a glass of beer" and then calmly steps overboard? Or the man who insists on shaking hands over and over again? Or the one who dumps fresh water in the ocean and cries, "I'm serving my God"?

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## PROBABILITIES (continued)

Survivors will need all their strength and patience to keep these men from harming themselves and others. They may even have to be knocked out. But remember, it's only temporary delirium -- the result of starvation and thirst -- and not really "insanity". In most cases they'll come to themselves in the morning.

There's nothing one can do about hot tempers. But it's surprising how much a good rainfall will pep up spirits, how much new hope survivors can get from a half-cup of water or a piece of smelly fish.

## F. LANDING

A single cumulus cloud lying low over water in a clear sky is usually a sign of an island.

In the South Pacific, lagoon islands may give off lagoon glare -- a light greenish tint in the sky, sometimes visible for 75 miles.

Coconuts, driftwood, and floating plants in the water are also indications of land.

Water can be found on coral reefs if survivors dig a hole at low tide, just below high water mark six to nine inches below the surface of the ground. The hole should be about six to eight inches in diameter. After a few minutes, surface water will collect and may be scooped out. It's blackish, but don't dig any deeper or salt water will be reached.

Crabs and lobsters of various kinds live in crevices of the reef, and among rocks. They come out at night and crawl around in shallow water. Survivors can catch them by using a light or torch, and a dip-net or spear.

Turtles shuffle their feet in the sand and leave little parallel tracks; where they end, dig for the turtle eggs with a long stick.

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## A. INTRODUCTION

All air travellers should learn how to meet and overcome problems arising from forced landings in desert areas. They may become lost in a sandstorm or be forced down by enemy action or mechanical failure. If they land or bail out safely, and if they keep their head and know what to do, there is no reason why they should not survive.

Airmen are advised to stay near their plane until nightfall, or longer, if they expect a search to be made for them. If they bailed out, and the wrecked plane is not too far away, they should make their way to it -- the plane will be easier for rescuers to locate than isolated persons.

If stranded persons follow the practical suggestions given in this section, and add to them common sense and ingenuity, they have every chance to come through safely.

1. Climate: Desert weather is variable with temperatures ranging from 125 deg. F. midday in the summer to 25 deg. F. in the early morning hours of the winters. Winds seldom if ever reach hurricane velocities, but winds of 35 miles an hour are common and velocities of 50 miles an hour do occur occasionally. Rains are infrequent, but may be of cloudburst intensity when they do occur. Hailstorms are rare. Thin low ground fogs occur occasionally in the early morning hours, but they almost invariably clear up when the sun rises. In general, desert flying weather is uniformly good.

Climate conditions are largely the result of the presence or absence of water. The lack of water in the atmosphere makes the desert air; and the absence of water in the ground makes the wide daily variations in the temperature. The baking sun beats down unhampered by clouds and mist, raising the temperature of the ground, tents, planes, and everything on which it strikes to such heat that metal objects can scarcely be touched; while at night with no insulation by moisture the ground and air cool rapidly.

## B. PRE-FLIGHT PRECAUTIONS

General Points of Emphasis while at Base: Personnel should learn the geography of the area thoroughly, and study the survival handbook prepared by the Allied Geographical Section in Australia;

Familiarize themselves with local foods, both wild and domestic;

Learn a few necessary phrases of both Malay and Pidjin English; Malay to be used in Dutch New Guinea and westward, Pidjin to the east;

Learn how to tell direction from the stars.

1. Equipment: Survival equipment must be checked before each flight.

The decision as to what emergency equipment will be taken aloft on any flight rests, in the last analysis, with the individual pilot and crew. It is their lives which are at stake and the decision is up to them.

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## PRE-FLIGHT PRECAUTIONS (continued)

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That decision will depend on these factors:-

Weight and space allowances of aircraft, and terrain over which they will operate. We will assume that it has desert characteristics and that it lacks the water essential to human life.

The nature of their mission (whether in enemy or friendly territory)..

If the weight allowance is small (10 pounds or less) put all of it into water. Only if they are carrying adequate water and have weight allowance left, should they pack food, emergency equipment, etc.

If they can be accommodated, the Emergency Kits that seem to be most suitable for any given type of mission should be packed. These should be revised and adapted to the crews purpose. For example, the machete and Fishing Kit can be dispensed with in favor of more water, etc. If it is impractical to carry any or all of the kits available, be sure to have at least a small reliable compass, good maps, (showing roads and water sources if possible), a knife, sun glasses, matches or flint, salt tablets, a suitable sun helmet, a minimum of rations (concentrated) and a signaling mirror or Very Pistol.

## C. FORCED LANDINGS

If air crews are definitely lost, in a sandstorm or otherwise, they should not waste their last drop of gas in aimless flight. The desert offers plenty of suitable landing places. Remember that a precautionary landing with the gear down and with gas in reserve has every chance of success and makes takeoff and resumption of flight possible after the weather clears or after the crew is found by relief planes. A dead stick landing leaves little choice of terrain and is hazardous at best.

Prevailing ground wind direction can be generally determined by observing dust or sand dune formations. Dunes usually run roughly parallel to prevailing wind. If possible, land parallel to dunes and into the wind. If landing cross-wind, land uphill and not down or across the slope.

If forced down by enemy action, or by mechanical or structural failure, the crew must make the best landing possible under the circumstances. It may or may not be desirable to land with gear retracted; it's a matter of judgement and up to the crew. But try to stick with the plane and bring it down. If, as a last resort, the crew bails out, they should observe the plane's descent and make their way to the wreckage if it is not too far distant. The plane can provide them with useful emergency equipment.

If crews are forced down in enemy territory, they MUST burn all papers, smash and bury secret instruments, burn the plane and strike out on foot to avoid capture.

If forced down in friendly territory, the crew should always stay with the plane unless:

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## FORCED LANDINGS (continued)

They are positive of their position and know they can either get back to base on foot, or know definitely where to go to get water and assistance and feel they can make it safely.

Above all, avoid panic and stay calm. The chances of rescue are good. Get into the shade -- under wings or fuselage or in natural cover -- relax and rest; conserve water. Weigh the situation calmly; balance all the factors involved in staying with the plane or proceeding on foot. If forced to land by day, stay with the plane until dark. If landing at night, stay with the plane until the next evening. This provides a chance of being spotted by rescuers. Keep an eye out for enemy patrols.

If members decide to stay with the disabled plane, they should make themselves as comfortable as possible while waiting for rescue. Stay out of the sun; improvise shelter and shade. Each member can make a good tent out of his parachute; form it into a half-fold and tie it down with shroud lines cut from the harness; anchor the shroud lines with stones and improvised stakes.

1. Signals: If the plane has been camouflaged for the desert, the crew will have to take special pains to attract the attention of the pilot in a rescue plane.

Set up a system of signals immediately. Here are some of the more practical methods:

Scrape the camouflage paint from portions of the plane wing surface; polish the metal brightly with sand or gravel: The reflection will be very apparent from the air in daylight.

Use a metal reflecting mirror for signaling, if available. The rear-vision mirror or polished food tins will also serve for signaling. Learn to aim the mirror properly.

If the survivors hear aircraft in the daytime or see ground vehicles in the distance, they should build a big smudge fire -- use plane cushions, rubber hose, floor mats, etc.; doused with cylinder oil or gasoline and ignited. From time to time douse with a little water -- it will make a cloud of ashes and white smoke of great visibility. Use a smoke or fire signal in friendly territory.

The best type of signal on the desert is a fire -- bright flames at night, smoke in the daytime. Camel dung makes a good emergency fuel.

If the crew cannot find fuel, they should take the toilet or a similar container out of the plane, fill it with sand, add a little gasoline, and ignite. When there is no container, just pour some gasoline on a small patch of ground, and ignite. When the sand is hot and the gasoline still burning, add a few drops of oil for a dense smoke.

Look for scrubby desert bushes to use as fuel. They'll burn very easily. Sometimes bushes cannot be found, but there may be slender stems no thicker than a man's little finger, growing in the sand. Underneath the stems are thick masses of roots which burn well.

In emergencies, fire the Very Pistol, but don't waste shells.

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## Signals (Continued)

Spread out a parachute if it is not being used for shade. It makes a good daytime signal.

At night, one member should be stationed at the highest ground point and start a good fire. Also fire the Very Pistol at five minute intervals. Don't use all the shells at once. Save some for emergencies.

Use rocket flares and smoke bombs if available. Keep them in readiness for immediate use if planes are seen or heard overhead. Have some sort of signal ready at all times.

If equipped with an emergency parachute kit, use the colored signal marker. If a plane is heard at night, light the signal fires or flares or fire the signal pistol. If a plane is sighted during the day, signal it with a mirror or any piece of shiny metal. Properly aimed it will be more effective than fires.

An additional ground strip type of signal can also be used. It consists of scratching shallow trenches in the sand to form large letters, pouring gasoline into the trench, and lighting it when a rescue plane is sighted. The smudge formed will be visible from the air as a message.

If W/T is in working order, erect a vertical aerial; it will prove more efficient than the horizontal aircraft aerial. Compose an S.O.S. message, giving position if known. Transmit or pre-arrange frequency and listen for reply. If no reply is received, switch off and call again at fixed intervals. Conserve the batteries. Listen out before transmitting; ensure that frequency is reasonably clear and that target station is not transmitting. Be certain that circuits other than W/T, i.e. lights, gunsights, etc., are switched off. If possible run the engine charging the generator during both transmission and reception. This will provide better signals and lengthen battery life. It will require sufficient R.P.M.'s to bring cut-out into that generator which takes over load. Intersperse with 15 seconds dashed to allow D/F station to take position bearing.

REMEMBER THAT RESCUE PARTIES ARE DOING ALL THEY CAN TO BRING STRANDED PERSONNEL HOME. HELP THEM BY OBSERVING THESE INSTRUCTIONS.

## D. HEALTH

Precautions in the use of water are of first importance in maintaining health. Much of the water which is available in desert regions comes from wells or springs which are so comparatively few that they are the favorite meeting places of men and animals. Generally these water sources are thoroughly dirty and contaminated by germs or diseases to such an extent that inoculations received may give insufficient protection, if one drank the water straight. None of these diseases will be caught from the water if it boiled thoroughly before drinking, no matter how muddy or full of scum the well or spring may be.

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## HEALTH (continued)

The diseases carried by water and which are quite common in these areas, are typhoid fever, bacillary dysentery, and amoebic dysentery. Asiatic cholera is also carried by water. The most dangerous foods are the ones which grow close to the ground and have to be irrigated and fertilized. Water or food are the means of carrying the germs from the intestinal tract of a sick person to the mouth of one who is well. Many of the people in desert regions use human sewage for fertilizer just as they do in a great many places in Europe. Water supplies are not sufficiently protected from sewage so that the vegetables which grow inland (irrigated by this water) are often contaminated with germs that cause intestinal diseases.

Survivors must keep out of the sun, especially the mid-day sun, as much as possible, because they will absorb so much extra heat from it that they may expose themselves to the dangers of sunstroke. Wear some sort of hat, preferably one with a wide brim, in order to shade the head as much as possible. It should be removed inside a tent or shelter where wind is less and where, therefore, the head may get very much hotter. Keep clothes on, not only as protection from the sun, but also to absorb sweat and to conserve water.

There is no mysterious power in the rays of the sun which is dangerous to human beings or affects their brain. People collapse in the sun because their bodies absorb more heat than they can throw off. A man working in the engine-room of a ship is just as liable to collapse from heat as a man digging ditches in the sun. There are three kinds of heat collapse; each needs different treatment. Personnel should study the following information carefully so they will know what to do in an emergency.

1. Heat Cramps: These occur in the muscles of the legs or abdomen, and are usually a warning of heat exhaustion. Treatment; 1) massage the sore muscles gently; 2) apply moderate heat to legs and abdomen; 3) give the victim a teaspoonful of salt in some water, to replace the salt he has lost in sweating, and see that he gets rest.
2. Heat Exhaustion: This may occur from direct exposure to the sun, or from staying in the hot interior of the plane too long. The face first turns red, then pale; there is a great deal of sweating; the skin is moist and cool. Body temperature sinks below normal (98.6°F.). The victim feels faint, but does not become unconscious. If he does pass out, it is only for a few seconds or minutes. Treatment: Place the patient flat on his back and lower his head. Since he is cool, heat must be applied. Give him whiskey, coffee, or tea. Remember that much of the body's salt content has been lost through excessive sweating. So give the patient some salt - about one teaspoonful in a glass of water. This should be repeated three times a day.
3. Sunstroke: The face becomes beet red; there is severe headache; the skin becomes hot and dry; all sweating stops. The pulse is fast, full, and strong; body temperature soars above normal. The victim becomes unconscious or semi-conscious. Treatment: Shelter the patient from the sun. Lay him down flat. Apply cool sponges (made of clothes or rags) to his body. Warning: Do not give him whiskey, coffee, or tea.
4. Clothing: The individual should not let the mid-day heat of the desert fool him. The desert sun can burn quickly, and desert nights can be cold. In consequence, wear light clothes that cover the body when it is necessary to be out in the sun during the day, and wear something warm at night.

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## Clothing (Continued)

One very important piece of clothing is an improvised woolen band that can be worn around the middle and over the stomach to prevent stomach chills. This is particularly important in the summer, and the hotter the day the more important it is. The purpose of the band is to absorb perspiration and prevent any rapid chilling of the stomach due to sudden evaporation.

All members should take care of their shoes, and wear two pairs of socks if available. The condition of the feet may mean the difference between getting back and not getting back. Keep shoes free of sand and take them off during the day when resting under a shelter so they can dry out.

If shoes are thin, reinforce them by lacing on an outer sole improvised from the rubber floor matting in the cockpit.

Unless aircrew members are wearing boots or high shoes, they can fashion a pair of gaiters or leggings from strips of fabric torn from the parachute or from the plane. Roll the strips spiral-puttee fashion so they cover an inch or two of the shoe tops and two or three inches of each leg. These improvised wrap leggings will keep the sand out of shoes.

An effective sun hat can be made from a seat cushion. Slit through the stuffing, and mold a hollow for the head in the filling. A piece of shroud line, or a length of fishing line from the emergency kit, can be used as a chin strap to hold it on the head. It may make a funny looking hat, but it will protect the head from the sun when it is necessary to be out in the open during the day.

5. Water: Water is the one essential thing which cannot be gotten along without. Carry all the water possible, even to the exclusion of food or other emergency equipment. A man can get along for days without food, but he hasn't a chance without water. Individual canteens should be carried by all flight personnel on all aircraft with a range exceeding three hours. Carry a routine water supply in thermos jugs, but stow an emergency supply in cans.

Life in the desert depends on water supply. Protect and conserve it. Sip water, never gulp it. The first cravings can be lessened by merely moistening the mouth and throat at intervals. Water consumed rapidly is merely thrown off as excessive sweating and therefore wasted. Take salt tablets regularly; the salt will make up for the loss of body fluids. If beginning to feel particularly weak, add two tablets to the canteen of water.

Don't smoke, particularly during the day. Smoking only increases thirst.

Water from desert holes and wells should be purified either by boiling for more than three minutes or by dissolving at least one Halazone tablet to each quart (more than one tablet may be necessary). Iodine also can be used as a purifier if there are no Halazone tablets.

Under difficult circumstances, the ration may have to be a minimum of about a quart a day for all purposes. On this amount a man may be able to go for about five days without losing too great efficiency. For shorter periods of emergency, a pint a day may keep a man going for several days, provided exertion is kept at an absolute minimum and activity takes place only at night when it is cool.

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## Water (Continued)

One way of saving water is by regulating the amount and time of bodily activity, because with efficient movements one produces less heat and, therefore, will only need to get rid of a minimum of excess heat.

As soon as their plane has landed, crew members should take stock of provisions and water. Ration them carefully. If there is plenty of water, it's safe to eat. Reason:- When eating, the body uses up its water reserves to digest the food. Every mouthful helps to drain precious water from the body tissues. In the heat of the desert survivors won't feel like eating anyhow. Don't worry about starving. A man with plenty of water to drink can live without food for many weeks.

Don't gulp down water. This will only cause sweating and will require drinking soon again. Instead, follow the Arabs' practice:- Just moisten the lips and rinse the mouth with water. This does not require much water. Survivors should think of their water supply as a bank account, and put themselves on a budget, conserving their liquid assets.

Members should not wash. If there are a few drops of water to spare, they can rub themselves with a damp rag.

Finding Water in an Emergency: Some deserts become very humid at night. After the sun goes down survivors may be able to utilize the humidity to collect dew. Scoop a shallow basin in the ground, about three feet in diameter. Cover the basin with a piece of canvas. Over this build a pyramid of stones at least three feet high. During the night, dew will collect in the chinks between the stones, trickle down through the inside of the pyramid onto the canvas. The canvas will sag with water. If there is no canvas, use whatever cloth is available, but try placing a metal object like a hub-cap into the basin so the water won't seep into the ground. When there are leafy bushes in the vicinity, collect dew off the leaves. If there is damp sand, dig a hole and wait. Water will percolate into the well.

Look for water in hollows and chinks of rocks, under the stones of dry river beds, especially in districts of limestone and granite. Dig wells where animals have scratched, or where flies hover. Follow the tracks of animals, the flight of birds -- they may be going toward water. But don't go far or lose sight of the plane, no matter how thirsty.

Remember: All water from wells must be boiled or sterilized. It may be polluted with urine from the nomads' cattle, rotting vegetable fibers, other filth from travellers. It is especially dangerous to drink any water in the desert without purifying it. One may get typhoid, dysentery, or other diseases. If a water hole with very muddy water is found, grass may be used for a filter.

6. Food: Food spoils quickly in the desert. Canned emergency rations should be eaten as soon as the cans are opened.

Unfortunately, game is neither abundant nor uniformly distributed in the desert. In the immediate vicinity of a water hole, or where there is a light growth of brush, such game as rabbits, antelope, and birds may be found in limited numbers. However, in localities where there is nothing but drifting sterile sand, not even snakes and lizards can survive.

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## FOOD (concluded)

Palms around water holes do provide a good source of food in the form of the palm cabbage. It can be eaten raw or cooked.

When survivors get to a native camp or inhabited area, they should avoid native foods prepared by natives. Instead, they should barter for raw food and prepare it by boiling. Almost all native-grown fruits and vegetables are contaminated; boiling will make them safe for eating. Likewise, milk as well as water provided by natives should be boiled before drinking.

## E. ABANDONING THE PLANE

1. Conditions: When forced down in the desert, stick by the plane; do not budge, no matter how strong the impulse to get going. Personnel may be ten minutes flying time from their base, but on the ground this may mean a week's walk.

If survivors stay with their ship, they have a chance of being picked up by a rescue plane. The plane will be clearly visible from the air. But if they leave the ship, their chances of being seen from the air are practically nil. An isolated individual is just a tiny dot on the vast desert.

So members should sit tight and make themselves as comfortable as possible. Stay out of the sun. Park in the shadow of the fuselage or rig up an awning with a parachute. Don't stay inside the plane; the heat may cause illness. Don't work while the sun is up. Wait till the cool of dawn or evening.

THERE IS ONLY ONE EXCEPTION TO THE RULE OF STICKING BY THE PLANE. IF FORCED DOWN IN ENEMY COUNTRY, CREWS MUST DESTROY THEIR PLANE AND LEAVE. TRAVEL LIGHTLY. TAKE ONLY THE EQUIPMENT LISTED BELOW:-

Abandon the plane only after a careful appraisal of the situation. Study maps and determine position; consider water supply, equipment, physical condition, etc. If crews decide to leave the plane and proceed on foot, they should do the following:

Salvage from the plane anything that may help travel on foot. If there isn't a reliable compass, remove the one in the plane. Take all maps. Cut a 10 foot square of silk from each parachute. Take all available water supply along.

Go over the plane carefully; there are a number of things that can be taken along to make travel easier.

Don't forget: All water and food.....and water is more important than food. Sun glasses, they will protect the eyes from the sun and from blowing sand. Salt tablets, maps, matches, emergency kit, first-aid kit, signal pistol or flares, warm clothes or a blanket. In spite of the terrific heat during the day, night temperatures often drop as low as 25 deg. F. in the winter. Octant and compass. If the

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## ABANDONING THE PLANE (continued)

small compass in the kit has been broken or lost, remove the compass from the instrument panel of the plane. The desert is one place where instinct cannot be trusted. Travellers will need all the navigation aids available.

If in friendly territory, follow the British practice of leaving a sign on the plane urging troops and others who may find it, to refrain from souvenir-hunting. Prepare a sign along these lines:- "Don't touch, damage, or remove parts from this plane. It will be salvaged soon and will fly and fight again. It may some day help to save your life. Leave it alone!"

Leave another note in the plane outlining the proposed route, giving date of departure, etc. It may help speed rescue by searchers.

If there is a group, appoint a leader, who will be responsible for water conservation, plan of action, routes, etc.

DO'S AND DON'TS:

DO -Rest before starting out; keep calm, make a plan, collect all necessary kits, water and rations.

Travel slowly and carefully, and mostly at night.

Travel in the right direction.

Examine the aircraft and make sure no water or essentials that can be carried have been left behind.

Realize that there may be a long journey ahead and plan accordingly.

Stick to the resolution to use water sparingly.

Use every opportunity of replenishing water used.

DON'T-Get frantic, or waste strength.

Drink the alcohol from any compass. It will weaken a man and cause terrible stomach pains.

Use urine; used externally it will produce sores; used internally, its high salt content will draw water from the body and make a man thirstier than ever. It has the same effect as salt sea water. The only exception possible is its use to moisten biscuits, which will not be harmful.

Waste drinking water. Forget that air crews have proved they can get along on half a pint a day per man.

2. Equipment: Before flying over the desert, take a tip from the camel: See that the plane carries a full quota of water. For emergency purposes, have at least two gallons of water per man. Crews must check on this themselves and not leave it to anyone else. A person can live on the desert only if he has water.

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3. Travel

Don't walk during the heat of the day. Travel only in early morning, the late afternoon, and at night when there is a moon. Bury the body in sand during the day to preserve moisture.

Avoid exertion in the daytime, particularly if the water supply is low. Remember that exertion increases sweating, and that sweating increases thirst. Conserve strength. Stay in the shade as much as possible. Seek natural cover. If there is none, dig a hole in the ground, get in, and rig up a piece of parachute silk for shade. (It can also be used as a shawl for the cold night.)

If possible, rest during the hottest part of the day, and get out of the sun and in the breeze as much as possible. The main idea is to keep from absorbing additional heat from the sun, and so having to get rid of the extra load absorbed by the body in this way. In emergencies, as in the case of a forced landing and a long march back to camp, travel at night, and keep quiet in the shade in the daytime. Personnel should be able to devise some sort of shelter from the parachute, or improvise an umbrella to keep off the sun.

Eyes may suffer not only from the bright light of the sun and the reflection from the desert, but probably even more from the dry, dust-filled wind. Eyes may become irritated, red, and the lids somewhat thickened on the inside so that even when there is no sand actually in the eyes, the traveler may feel as though he had a cinder constantly there. Wear goggles; if possible, ones with side-pieces which will help keep out the dust and sand. This is the best means of preventing a most uncomfortable condition.

Persons in the desert will find that dust will get into their nose; they will breath it down into their lungs, and in times of dust storms they may feel as though somebody had tried to make mud pies in their throat. They will cough, spit, and bring up matter that is full of dust and dirt. If a respirator is available, it should be used during dust storms; if not, take a tip from the desert tribes and cover up the nose and mouth tightly with a heavy scarf that will serve as a fairly good filter. But there is almost nothing that will keep the dust out entirely and there are authentic reports of watches or clocks packed in suitcases, stored in the baggage compartment of a car, which were ruined by the dust that had filtered into the works in time of real dust storms.

Particular care should be paid to the feet. Blisters from too-tight shoes may become infected even more easily than cuts and scratches on other parts of the skin. Athlete's foot, starting between the toes, spreads easily when the skin is moist and dirty, but it can be prevented by keeping the feet clean and dry and by using powder twice or more times a day between the toes and over the feet. Heavy wool socks on the whole are much more comfortable than cotton ones, and are more effective in absorbing perspiration and helping to keep the feet dry.

Don't part with any clothing - it will be needed. Survivors should keep their shirt on, literally and figuratively. It will prevent dangerous sunburn and exposure to insect bites.

Travel only at night. Usually the moon will give plenty of light. Don't use a flashlight in hostile country -- it will easily be spotted by enemy planes. Travelers should first check their course with the

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## TRAVEL (concluded)

compass; then follow the stars. When day comes, dig a trench in the sand, get in, cover the top of the trench with the piece of parachute, and go to sleep. If there is nothing to cover the top of the trench, wear a helmet or hat. If a sandstorm comes up, dig a trench and stay there till the storm blows over.

In some deserts, caravan routes are marked by little heaps of stone. Sometimes these landmarks are a few inches high, so they have to be looked for carefully.

Remember: Travel in the daytime is suicide. The sun draws water from the body, causing heat exhaustion. And mirages will make it very difficult for travelers to keep their course. But after the sun sets, mirages fade away, and vision is no longer distorted.

a. Where to go:

Set a course by compass and follow it by dead reckoning; travel a measured distance. Don't trust to instinct - use every navigational trick known, including compass, sun, stars. If traveling in a group, keep together.

Always head toward a known route of travel, a source of water, or an inhabited area. Always follow the easiest route possible - avoid soft sand and rough terrain, and keep exertion at a minimum.

## IV. ARCTIC SURVIVAL

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## A. INTRODUCTION.

The general consensus of opinion has been for many years that the Arctic is no place to be.

This theory has, by necessity, been exploded during the course of the war. We have had to have large numbers of troops and civilians living and working in the far-north since the beginning of the war. These people found out, in some cases to their intense surprise, that Arctic conditions are perfectly possible to live in, and are sometimes more pleasant than conditions found in many other parts of the world.

There are two enemies in the far-north that must be fought constantly. They are cold and hunger. The maxim for living in cold is the same as in the tropics: "Use your head". Instead of having to be constantly wary about contaminated food and water, disease-bearing insects and infection, one must concentrate on conserving body heat and food supply. If personnel realize that it is perfectly possible to live in Arctic climates without any marked discomfort, they have half the battle won. Personnel must be taught not to be afraid of the Arctic, but to respect its hazards and be able to take advantage of what it offers should they suddenly come down there.

Keeping alive and comfortably warm in the extremely low temperatures of the polar regions is a matter of maintaining the proper balance between two factors: heat production by the body, and heat loss to the environment. When an individual feels cold he can produce more heat by working harder. When he feels too hot he can assist his body's cooling system by removing some clothing. However, survivors must not work to the point of exhaustion to keep warm. When they are exhausted their resistance to cold is tremendously decreased. The most important single rule to remember is: one must keep putting on and taking off clothes according to whether one feels warm or cold, and above all, KEEP FROM SWEATING AS MUCH AS POSSIBLE. Clothing wet from perspiration or damp and dirty from oily skin secretion loses its insulating qualities and invites freezing. Uncontrolled sweating in Arctic regions can mean disaster. A person can strip to the waist in below zero weather as long as there is no wind, without freezing as he works. As soon as the wind starts blowing, clothes must be put back on.

1. Climate: The Arctic has a real, though brief, summer. The sun does not set. As a result, the interior regions of the north retain a great deal of heat. The coasts remain rainy, windy, and cold, but in other sections the snow melts. The land takes on colors of red, gold, pink, and blue from patches of flowers and berries; grass and mosses grow thick as a carpet, and there are hundreds of fresh lakes.

All this may sound like paradise, but it's uncomfortable for three reasons: heat - sometimes up to 90 degrees in the shade; mud - everywhere; and mosquitoes - billions of them. Some places have ten times more mosquitoes than in the tropics. They can cover a man's hands black, swarm on his gun, and keep him from taking accurate sight. Sometimes they even drive the animals mad. But there is one consolation; northern mosquitoes don't carry diseases like those in the tropics. The most they can do, when biting, is to draw a little blood. During the middle of June and up to the middle of September the mosquito is most bothersome. Headnet, leggings, and gloves should be available. Wear heavy clothes covering the entire body, no matter how hot it is. Leggings, gauntlets, and a wide brimmed hat are necessary.

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## CLIMATE (continued)

Underwear with tight elastic at the ankles and wrists is a great help. Wear a very fine mosquito net on top of the hat, hanging down over the face. Make sure it has a band at the top, gripping the crown of the hat. The net should hang over the brim and be tied loosely about the shoulders. Don't leave it hanging loose.

## B. FORCED LANDING.

If air crews are forced down they should stay by their plane. They should not move any distance away no matter how much they may want to leave. Chances are that a searching party will be after them soon and their job is to attract the attention of searchers. If they leave their plane, they may prolong the search by several days. The plane is large and can be seen from the air; a man is small and can't be seen.

Force-landed crews should first take inventory of everything they have. If it is not possible to stay in the plane, remove anything which might possibly be of any help. Don't think of each tool or piece of equipment in terms of its ordinary use, for one can never tell when it may come in handy for another purpose. For instance, don't disregard the parachute; it may make a good tent, or warm foot wrappings. Large-sized inspection plates may make good snowshoes; the kapok lining of the plane makes fine weather-proof bedding. If air crews have crashed they must work fast. The plane may burst into flames long after landing.

Of course, if any of the crew members are wounded, stop the flow of blood, doctor them, and make them as warm and comfortable as possible. Watch out for symptoms of shock in wounded men: pale face and lips, chilly sweat, nausea, weak pulse, rapid breathing, mental confusion. If not treated, shock results in quick death. Treatment: Lay the victim down flat, with head low, feet raised. Use blankets and wrap over and under him. Keep him warm. Give him warm, sweet drinks, but only if he is conscious and not injured internally. Do NOT give him liquor.

There are only two exceptions to the rule of sticking with the plane: If landing in enemy country, the ship must be abandoned. Destroy it first.

If survivors have waited a long time for help and are certain they cannot be reached - they must set forth on their own. But they should not leave unless they have adequate equipment, know how to travel, are positive of their position, and know that a settlement is close at hand.

## 1. Equipment:

Axe — Gun — Snowshoes  
Shovel — Small Primus Stove  
Eiderdown Sleeping Bag  
Army galley kit, containing cooking pan, cup, fork, spoons.  
Small housewife's kit, containing large safety pins, needles, cotton, darning wool, buttons.  
Four ounces of light flexible wire for making a snare.  
1-gallon container for gasoline.  
Candle (for starting fires and heating up tent).

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## EQUIPMENT (continued)

A flint lighter or waterproof matches in a waterproof box.  
Hunting Knife  
Pocket Compass.

Signaling Devices:Rockets

Very Pistol

Special glass signaling mirror, about  $5\frac{1}{2}$  inches x  $7\frac{1}{4}$  inches,  $\frac{1}{2}$  inch thick, with a cross in the center for sighting.

V-K smoke signals.

Fishing Kit: (No. 5 Pinchot-Kerner lightweight fishing kit for rafts)-complete with instructions, net knife, assorted hooks and lines, bait, etc. Personnel must be sure it contains a pair of cloth gloves, so they won't cut their hands on the line.

Winter clothing: (also needed for summer on the coasts)

Complete Arctic Suit, including:

Inner pile parka (hair-side worn toward skin)

Outer pile parka (hair-side out)

Windproof fabric parka (to be worn over the other two.)

Inner pile trousers (hair-side worn toward the skin)

Outer pile trousers (hair-side out)

Windproof trousers (to be worn over the other two)

Arctic belt.

1 pair wool cushion-sole socks

1 pair wool ski socks or Arctic socks

1 pair duffel socks

1 pair net socks

1 pair big-size mukluk boots, with insoles.

(take two extra pair of socks)

2-piece woolen underwear and change

1 pair wristlets

2 pair woolen mittens

1 pair leather gauntlets

Important: 2 pairs of best amber-colored sun glasses with shields at the edges. Ordinary beach glasses are no good. For chapped lips, carry a stick of pomade.

Additional Equipment (for summer in the interior)

Broad-brimmed hat.

Fish mesh net to cover hat and face.

Mosquito net for sleeping.

Food: Make it a rule not to carry less than five pounds of concentrated food per man. Pack it in waterproof packages or containers. If carrying food in 5-gallon cans, use the empty cans for cooking or melting snow. The following food is carried by Canadian fliers: Tea, sugar, salt, flour, beans, rice, prunes, raisins, slab bacon, baking powder, oxo cubes, dried potatoes, and apples, dried vegetable soup, hard tack, powdered skim milk, butter, jam, chocolate.

First Aid Kit:

1 burn injury set containing sulfadiazine ointment.

3 packages small first aid dressings.

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## EQUIPMENT (continued)

- 1 set eye dressing.
- 100 halazone tablets (for purifying water).
- 2 ampoules of morphine.
- 1 pair scissors.
- 1 package sulfadiazine tablets (to be taken when wounded).
- 1 package sulfanilamide powder (to be sprinkled on wounds).
- 1 tourniquet.
- 1 large gauze adhesive bandage.
- 1 box iodine swabs.

Crews should check everything over themselves! Before starting out on a trip they should spread all equipment on the floor and count it over. Inspect food to make sure it's not spoiled.

2. Signaling Procedure: First Steps:- Remove all snow from the plane - it will stand out better against the snow. Remove the cowl panels from the engine, or engines, and place them, unpainted side up, on the wings of the plane. They will serve as reflectors.

Make a smudge fire with oil-soaked rags, green branches, damp leaves and moss, or by throwing snow on hot embers. If short on materials, build the smudge only when rescue planes are in the vicinity.

If wood is available, lay several large signal fires about fifty feet each side of the plane. Lubricating oil thrown on the fire will make a smudge visible for many miles.

Send off a rocket or shoot a Very pistol only when the engine of a plane headed toward the landing point is heard. Don't make a Fourth of July celebration with rockets as soon as a plane comes by. This may waste them all at a time when the pilot can't see them.

Tramp out a huge S.O.S. in the snow, or make a large circle of spruce boughs on an open spot nearby.

If no trees are available and the snow is soft enough to sink into, tramp out the distress letters. Also, of course, use the signals provided in the emergency kit.

When a rescue plane comes by, use a special mirror with a cross, or a piece of polished metal from the plane, as a lens to focus the sun's rays and create a beam directed onto the plane. Don't touch the metal with bare hands.

To use the glass signaling mirror with a cross:-

Face toward a point about halfway between the sun and the plane.

Hold the mirror in one hand about four inches from the face and sight the plane through the cross in the mirror.

Hold the other hand about 8 inches away, the mirror in line with the sun, and cross on the mirror, so that a small cross of light appears upon the hand. This cross of light is reflected upon the back face of the mirror (side toward holder).

Then tilt the mirror so that the cross of light on the back face disappears through the transparent cross on the mirror. At the same time

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## SIGNALING (continued)

keep the plane sighted through the cross in the mirror. With the mirror in this position, the light rays from the sun will be reflected on to the plane, even though it is ten miles away.

When the angle between the sun and the plane is small, the cross of light will appear on the user's face, thus allowing him to employ both hands in tilting the mirror.

## C. HEALTH

1. Clothing: Travellers in northern countries should have an outer shell of wind-proof cloth designed to function only as a protection against wind. These outer wind-proof garments should be water repellent but definitely not water-proof. Remember that in order to get rid of even the small amount of perspiration that goes on imperceptibly, clothes must be able to "breathe". Under the outer shell, have several layers of warm clothing that will guard against loss of body heat by radiation and conduction. Never wear anything that binds, as binding will hamper circulation and thereby invite cold.

Several layers of loose thin woollens are better than one layer which is heavy and tight. Reason:- The border of air between skin and clothing imprisons the warmth of the body. When wearing tight, heavy clothes, personnel will perspire, and feel clammy. Wear woolen underwear with separate shirt and drawers so one can be changed without removing the other. Don't tuck the shirt in the pants, and never wear a tight belt or garters - they cut off circulation. If a sweater and windbreaker are available, wear the sweater inside. A wind-proof outer garment is most important against cold.

When working around the plane be careful not to become overheated. If the wearer starts to sweat, he should open his shirt a little. If he gets hot, he should take it off! But when he stops, he should bundle up at once.

Keep clothes as dry as possible, and brush off all snow immediately. If personnel fall into water, they should jump into a snowbank at once and roll around. The snow acts as a blotter and sucks up moisture.

2. Frostbite: Frostbite is the preliminary to freezing, and is recognizable by the whitish or grayish color of the areas affected. There is no particular pain to frostbite. On the contrary, there is an absence of feeling; numbness then sets in. Frostbite can occur without a person being aware of it.

Face: The face is particularly susceptible. The face is normally the only exposed part of the body and hence most likely to be frostbitten. Face masks are not much use in Arctic cold. However, it is a good idea to hang a handkerchief across the front of the parka just below the eye-line. Grease is worse than nothing. A tight face mask will freeze from the condensed moisture of breathing. Do not let the beard grow, but shave as often as possible, or at least keep a beard trimmed with clippers. Otherwise breathing will form frost on the beard and the

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## HEALTH (continued)

face will freeze so badly that it will feel as though being slashed with a knife.

Examine the faces of all companions frequently for gray or white spots. Keep making faces to discover stiffness. Upon discovering a stiff spot, take off one glove at once and press the bare hand gently to the spot. In a few seconds it will warm up. If this practice is followed, personnel will have no trouble, even though the face is frozen many times a day. NEVER RUB A FROST-BITTEN SPOT. DON'T USE SNOW: IT WILL ONLY BRUISE THE SKIN AND OPEN THE WAY FOR INFECTION.

Hands: Keep them covered: It is harder to warm them up once they get cold. Wear one or two pairs of woolen mittens and over these a pair of strong, horsehide gauntlets. When working around the engine, use just ordinary canvas gloves. Frozen hands should be put next to the skin, under the armpit, or the stomach, or between the legs.

Don't touch metal with the bare hands. The skin will freeze to the metal, leaving hands raw and bleeding. Crews should tape tools on all parts likely to come in contact with their hands.

If members must work with bare hands and have any oil or kerosene, these can be used to warm tools. Heat up the oil or kerosene in a can, drop the tools into it and remove them when they reach skin temperature. As soon as they cool off, put them back in the pot to get warm again.

If clothes are loose enough, warm hands Eskimo fashion; withdraw the arms from sleeves and fold them across the bare chest, or tuck them under the armpits. Cold hands should be treated as gently as cold feet.

Feet: Watch feet constantly. Frozen feet usually result from carelessness. The two main causes of freezing are tight socks and shoes, which cut off the circulation; and wet feet.

If wearing shoes instead of mukluks, they should be large and loose -- two sizes bigger than usual. Wear two pair of light wool socks, a pair of heavy ones, a burlap boot sock or an insole of felt or burlap. If no boot socks are available, wind a strip of burlap or similar material outside the socks and over the feet and ankles, but make sure the binding is not too tight.

Always keep feet dry. Never put on damp socks or shoes, and keep them as clean as possible. If shoes get wet, scuffle the feet in the snow to absorb the moisture.

To dry wet shoes: Heat some gravel in a can and shake the warm gravel around inside the shoes.

To warm feet: Use dried grass or kapok stuffed loosely between socks and shoes for insulation against cold. Remember, body heat is the safest heat for thawing cold hands or feet. Never use friction. Do not rub cold feet with snow. White, frozen flesh is like wax. It is easily broken, and once flesh is mauled, infection, inflammation and gangrene may set in.

Treatment for Frozen Hands and Feet: If members care for their hands and feet properly, they should not become seriously frozen. But if they do freeze, handle them as carefully as glass, and follow this treatment to the letter:

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## HEALTH (continued)

Thaw hands and feet gradually. Do this in a place which has a warmer temperature than outside, but is still cool. Do not thaw out before a fire and do not use hot water. Hot water can do great harm, by making the skin sodden and increasing the danger of infection. Severe pain is a sign that warmth is being too quickly applied.

If feeling and warmth do not return, paint the frozen part with a mild antiseptic. The first-aid kit should have one of the sulfa powders (sulfanilamide or sulfathiazole). Sprinkle a little powder over the frozen surface two or three times a day till the crystals give it a frosty look. Wrap the frozen area in sterilized bandages, and keep it clean.

As a frozen part thaws it becomes swollen. The skin turns pink, red or purple, and blisters form, filled with clean fluid or blood. Leave the blisters alone. Unbroken skin is the best protection against infection.

To heal frozen fingers or toes the entire body must be kept in good condition. Keep the patient warm; put him in his sleeping bag, and give him hot coffee or tea. Liquor is dangerous! If a person is frozen, it upsets his circulation and prevents natural healing.

Frozen hands and arms must be carried in a sling and rested as much as possible.

For frozen feet, the patient should be kept lying down with his feet raised. On no account should he use his feet.

The best treatment:- INACTIVITY.

If these rules are followed, inflammation and infection should not occur. When there is no throbbing, no pain, and the swelling goes down, do not worry about the appearance of the frozen part. Even if it grows black and looks dead, don't worry, for the decaying skin may peel off. Don't be upset if a "line of demarcation" appears between healthy and black skin. That is no sign that amputation is necessary.

3. Snow-blindness: It is very easy to go snow-blind even on a cloudy day. Arctic light attacks from two directions, from the sun, and from the snow by reflection. The glare is terrific, so crews should always include two pairs of very dark glasses in their equipment.

If forced down in timberless country, put on a pair of colored goggles upon landing. Otherwise, the dazzling light reflected from the snow will cause snow-blindness. This condition is not real blindness but a burn so painful that one cannot use the eyes for several days. Snow-blindness occurs not only on bright days, but also on dark, cloudy days when the light is evenly diffused. Keep glasses on at all times. Don't let the metal of the glasses touch the skin. If any propeller de-icing fluid is available, use a couple of drops on the lenses to keep them from clouding over.

If no glasses are available:- Do what the Eskimos do - take a piece of bone or wood and cut a small slit for each eye. These snow shields can be held on by a short length of shroud-line from the parachute.

Make a mask from a handkerchief, cardboard, or similar material and

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## HEALTH (continued)

make slits for the eyes, but don't use metal. Blacken the nose with carbon from the fire or exhaust manifold of the engine. Paint circles under the eyes. Keep the eyes half-closed. Use one at a time and look through the lashes.

When moving around keep the eyes on a dark object, or throw something dark on the ground and fix the eyes on it.

Snow-blindness comes on very gradually. At first one may not be able to see uneven places on the ground, and then they become inflamed; this causes shooting pains in the head, similar to severe toothache.

Treatment For Snow-blindness: Snow-blindness is not permanent, so individuals need not be afraid that their eyes are ruined. Stay in a dark place and do not use the eyes for several days. Place warm, moist compresses upon the eyelids. If there is no shelter from glare, bandage the eyes with dark cloth. Take care not to suffer a second attack.

General: The factor of shock following an accident is greatly increased by the cold. A person suffering from shock may not feel cold and yet be freezing and sweating at the same time. Cover an injured person up with as much covering as obtainable. Remember that he must be protected from the cold ground as well as from the air.

4. Water: In Arctic seas there are two kinds of ice: sea ice and old ice. Sea ice is gray, milky, hard as rock. Do not use it for drinking water, because it is salty. Old ice is good for drinking water. It is bluish, with rounded corners, splinters easily, and has a glare.

On the coast, where the ice to seaward is solid and salty, there may be neither fresh water nor fresh ice. In that case use granular snow -- the more granular the better. Scoop it up in buckets, cloth, or skins. New spongy snow takes more fuel to melt, gives less water.

When using a tin can to melt snow, feed in a little at a time, or the bottom of the pot will burn. Snow can also be melted by spreading it out on a black cloth in the sun.

When survivors are short of food they can eat snow. Never take it in large quantities but nibble small amounts almost constantly. In this way one will keep ahead of normal water requirement and save much trouble. Warm the snow first and compress it, otherwise it will freeze the mouth and stomach. When hands get cold, remember to warm them on the bare chest, under the arms, or in the crotch. Melt ice rather than snow for drinking purposes. It takes less time and less heat.

5. Food: The Arctic abounds in various kinds of animals.

Hunting: Seal live in strong ocean currents amidst grinding ice floes. They eat fish, and in turn are eaten by polar bears. While the bears strip off the seal blubber, the foxes wait around for the meat. Finally, after bears and foxes leave the carcass, the gulls come to pick the bones. There are, also, herds of caribou -- cousins of reindeer -- as well as rabbits, ground squirrels, and other small groups.

If members have luck in hunting, their main trouble will be learning to like new kinds of meat and conquering their disgust at the thought of seal or field mice. However, meat is an excellent diet in the Arctic.

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## FOOD (continued)

If both the lean and the fat are eaten, survivors need neither bread nor vegetables, for they will have plenty of vitamins and nourishment. If a man eats only the lean, he will eventually get sick. Fat is very important for a balanced diet and gives excellent protection against cold. Learn to like it. Eat as much of both fat and lean as possible.

Cook meat in the most convenient way. Brief boiling is best; drink the cooking water for soup. But be sure not to overcook meat, or it will spoil the vitamins. Survivors can also eat meat raw -- it won't hurt them.

Lemming, a chubby, rat-like animal about five inches long, with a stumpy tail and no external ears, is very common. In summer its coat is brownish or gray; the rest of the year it is usually white. Lemming can be caught by digging a pit the size of a gallon jar in the winding furrows they dig under the snow.

Fish are quite plentiful. If on the coast, personnel can use handkerchiefs for a net to scoop up tiny shrimp. Herring are sometimes very common and can be swept up in a net. Sea trout or salmon are found in fresh water, and also in salt water near the mouths of rivers. Whitefish, cod, and pike are also abundant. In winter, catch them through the ice with hooks which are baited with something red or bright in color. Clean the fish right away.

Whale carcass might by chance be found lying on the shore. Even if the whale is old and decayed, don't be afraid to eat every part of it -- both the meat and the dried-out blubber which looks like felt.

Foxes are very inquisitive and not bright. They will probably hang around a camp site where they can be trapped. They follow polar bears around to scavenge off the sea carcasses left by the bears.

Rabbits and ground squirrels: They are common all year round and are easy to snare, when there are rabbit signs such as tracks, droppings, nibbled twigs, etc. If there are such signs, make a series of nooses out of string, small gauge wire, rawhide, etc., and hang them in the little game trails in the bushes. The bottom of the loop should be about an inch off the ground and be about 5 inches in diameter. The running end of the noose should be attached to a bent over branch of sapling that will yank the rabbit up in the air as soon as he brushes against the noose. The more snares set out the better percentage of chances; one or two snares won't produce much. At night if hunters sit perfectly still with a flashlight in their lap, they can attract rabbits. Rabbit meat has no fat in it so don't plan to subsist on it entirely.

Birds such as geese, ducks, owl and ptarmigan make very good eating. Ptarmigan looks like a cross between a grouse and a bantam. White in winter, and brown flecked in summer, they wear long white stockings and cackle as they fly into snow-banks to sleep. Birds can be snared with very thin wire or string. An Ojibway bird trap is very useful to catch birds alive. For bait use a piece of pork rind from the fishing kit. Some birds are so tame that one can kill them by throwing stones.

Plants: There are no known poisonous plants in the Arctic above timberline. It is best, however, to avoid raw cow parsnip, and moss-like lichens.

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## FOOD (continued)

Seal are plentiful in strong currents and broken ice. They may be far from shore. In summer they live near open water; in winter they stay near breathing holes in the ice. Don't rush up to a seal. There are two ways of hunting them. The first method is for hunters to pretend they are a seal. To get results, the hunt should take about 2 hours. Study the seal while he is basking, then imitate his movements while crawling up to him. Aim from 25 to 75 yards away, for his brain, then rush up and grab him before he sinks. The other way is to build a white shield that a hunter can push along the ice in front of him. The white shield should have a hole in it for the muzzle of the rifle and another for aiming. If the hunter stays behind the shield and doesn't make noise, this method should prove successful. When boiling seal, pour some blood into the boiling water to make Eskimo soup.

Bears will probably amble in if personnel are camped on an ice-floe. Wait until he presents a broadside view; then shoot him in the heart. Don't eat polar bear livers; they might be poisonous. The less polar bear meat is cooked, the better it will be; at best it is tough and stringy.

Caribou is the best meat available in the Arctic. They travel in herds, frequently up river valleys. If it is extremely cold -- 40-70-below, try and find some elevation such as a dead tree or small hill. Climb up on top and locate any caribou herds in the vicinity by the cloud of steam that rises from their bodies. This cloud will hang just above the tops of the trees. Caribou frequently travel into the wind and have a very keen sense of smell. Consequently when hunting them, one must go upwind, never approaching them from the windward. Get within 200 yards before shooting.

Musk-Ox has a strong flavor that is not pleasant; however, he is rich in fat. If approached from downwind, one should not have too much trouble shooting musk-ox.

Wolves seldom travel in large packs. They run from man if he stands still when they threaten to attack.

6. Fire: If no wood is available, the main source of fuel will be the oil and gas drained from the plane. Be sure to drain the oil immediately after coming down; otherwise it will congeal in the cold and personnel will be unable to drain it. Mix a little gasoline with the oil, put the mixture into a can over an improvised wick consisting of twisted cord or rag supported on a bent wire tripod frame, and light the wick. If the oil is congealed, mold it into small balls. Place one of these in the bottom of an open-top can or any other receptacle that has a draft hole cut near the bottom. Cover it with Kapok or other stuffing from the seat cushions, pour a small amount of gasoline over the top, and light it.

Animal fats and hides also provide a source of fuel. Caribou fat, musk-ox, and bear hide, and blubber make excellent fuel.

If crews come down on wooded land, they are advised to pick a camp site close to fuel; green timber, boughs for bedding and material for a smudge fire. Try to stay out of the prevailing winds. If the snow is not too deep, tramp it down or cover it with boughs. Don't build a fire under a snow-laden tree; it will drip and put out the fire. After the fire gets going, make some tea and plan the next move.

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## FIRE (continued)

Fuel: If near the coast, or a river, survivors may find willow trees, some no bigger than shrubs. They can be recognized by their long graceful branches; in summer their leaves are like draperies. Even in mid-winter willows can be found in many places where snow has been swept from the tops and slopes of hills. In river valleys coal may be found lying around loose. Sometimes it looks like wood compressed into bricks. Members may also find a black, tar-like or gummy substance, called pitch, which can be burned.

A good fuel is white heather, or an evergreen plant with bell-shaped flowers, which grows from three inches to a foot high. It is very common in big patches even in winter. Burning heather is a special art. Make a small fire and feed in a handful at a time, keeping the blaze uniform. When wet, heather is not easy to ignite, but, once ignited, it lasts a long time.

Look under the snow for dry, spiky caribou moss. It can be burned between two flat stones set on edge to make a fireplace. It takes about a bale of moss to cook a meal.

Tinder: In wet weather tinder can be obtained by cutting out the middle portion of a dead standing tree, or by looking for dry moss or twigs.

On the lower twigs of most spruce trees is a black, dry moss, very inflammable. The outer bark of birch trees is a good starter; so is pussy willow fuzz.

If survivors can find nothing else, they should use their ties, or some scraps of gauze from the first-aid kit.

Using Oil for a Fire: Dip a few slivers of wood in oil and start them burning. They don't have to be any bigger than toothpicks. Place them on the pile of fuel, and as the fire takes hold, slowly feed in the oil, a drop at a time.

Another method of utilizing oil:- Take a piece of metal about six inches square. It should be heavy enough to retain heat. Aluminum is too light; steel is best. Arrange a few stones on the ground to make a little prop for the metal. The metal can be heated by pouring a little gasoline on the ground under the prop, igniting it, then placing the metal on the props over the flames. When the metal is good and hot, keep the fire going by dripping the oil onto the metal a drop at a time. The metal should be so hot that the oil smokes. If possible, suspend some kind of can over the plate with a tiny hole in the end so that the oil drips out; this will save the trouble of feeding it by hand.

If there are no matches, look for iron pyrites, or "Fool's Gold", common both on the coast and in the interior. The pyrites are hard chunks or chips of ore -- shiny, pale brass-yellow with a greenish black streak (not worth a penny -- don't bother to load up). Find a couple of pieces the size of lemons. Cover them up to the tip with whatever materials available to avoid having to touch them with bare hands. Strike the tips of two pyrites together to get a shower of sparks.

One should not have much trouble striking sparks, but it takes a lot of cursing to ignite tinder and get a fire going. Don't let the fire go out! To keep it burning, blow on it or fan it gently with an inspection plate or other flat ware.

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## FIRE (continued)

If no iron pyrites are available, a fire can be started with gunpowder and a bit of cotton rag or scrap of gauze. Pry a bullet out of the cartridge. Insert gauze into empty cartridge. Fire straight up into the air. Pick up the smoldering cloth and quickly carry it to the tinder, fanning it to a flame. If the ground is wet, make a little dry nest for the tinder from whatever materials handy.

Or, a fire can be started by soaking a scrap of cloth in gasoline and using the magnets to get a spark.

7. Carbon Monoxide Poisoning:

WARNING: This is a direct result of carelessness. Often, sleepers may be tempted to keep their shelter warm by shutting out all the air. But if there is a stove going through the night, it may generate carbon monoxide gas and sleepers will be asphyxiated. Always make certain that there is proper ventilation. Keep snow brushed off the tents so air can come through the fabric. CARBON MONOXIDE GAS HAS NO SMELL... DEATH COMES WITHOUT WARNING. CUTTING OFF VENTILATION MEANS SUICIDE.

The only advance symptoms of carbon monoxide poisoning are a slight pressure on the temples, a beating of the pulse like a slow drum. If overcome by fumes and still conscious:

Turn off the stove at once.  
Crawl outside for air.  
Take even breaths to clear out the lungs.  
Crawl into a sleeping bag to avoid freezing.  
Get a good long rest.

How to act in a Blizzard: If caught in a storm, don't fight it... the best thing to do is sleep. Sit down before getting chilled and conserve energy. Ride it through. The more energy saved, the warmer one will be. Survivors are advised not to run, since this will only wear them out, make their clothes wet, and chill them. Remember: through overheating and excessive sweating one can freeze to death. The best policy out in the open is to dig a long, narrow trench and sit in it with one's back to the wind and take a nap. After a while a person will feel chilled; this is the body's automatic safeguard against freezing. To warm up, walk up and down in the trench a little, then go back to sleep again.

D. SHELTER

Don't sleep in the cabin of the plane; it's usually the coldest possible place. Try to pick a camp site as much out of the prevailing wind as possible. If there is a gale blowing and survivors are near a high cliff, they should get right up close to it. It will protect them from the wind sweeping down over the edge. Valleys surrounded by high mountains may be 30 degrees colder than the slopes or ridges.

Sleeping Bags: A down-filled sleeping bag will keep a person warm out in the open almost anywhere. Never spread it on the bare ground or snow, but place

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## SHELTER (continued)

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it on brush, grass or insulation from the plane. Since moisture condenses in the bag, it must be dried out thoroughly as often as possible. Never wear frosted clothing in a sleeping bag; it will surely induce a chill. Be sure to loosen the belt, collar, underwear, etc., before getting into the bag to prevent cutting off the circulation of blood. The fewer clothes worn in a sleeping bag, the warmer one will be. The Eskimos sleep naked.

Tent: In open country, if snow is drifting, never pitch a tent next to a large sheltering object, such as a rock, the plane, baggage, etc. The snow will bury the tent. If snow is not drifting, survivors can build a low, semi-circular windbreak from snowblocks, or parts of the plane, or evergreen boughs, right close up to the tent on the windward side. Make the wall two or three feet high. Cover the floor of the tent with evergreen boughs.

Lean-to: If boughs can be found, build a framework of poles in the shape of half an A-tent divided lengthwise. Cover the three sides thickly with evergreen boughs. Keep the twigs pointing downward, and start laying them on from the bottom. Have the open side of the lean-to facing away from the wind toward the fire, and build a wall of green logs behind the fire to increase warmth.

Using the Engine Cowling: A snug shelter can be made with the two halves of the engine cowling. Place each half on the ground with the curved surface upward. Fit the outer edges end-to-end like a tunnel. Block-up one end with snow, canvas, or brush. Pile the same stuff over the top and sides for insulation. If survivors want to make a shelter higher, they must first build a low snow wall or foundation and set the cowling firmly on top of it. If members can't use the engine cowling, they are advised to take whatever is handy for making a large, hollow shape, and pack snow around it.

Parachute Tent: Survivors can use a parachute for a tent in several ways: by hanging the peak from a tree and tying out the skirt to stakes or rocks; by raising the chute over crossed poles like an Indian tepee, and spreading the skirt as described above. In both cases, the vent in the top of the chute will act as a chimney and let the smoke out; by folding the chute double and pitching a low, A-shaped tent. The first two methods will give a fairly high peak which sheds water; the third method will produce a low tent which gives good protection against the wind. They can also wrap up in a parachute for protection from cold.

1. Tundra:

- a. Summer (bare ground) On the Tundra plain, where there are no trees, personnel should try and find a lee for their camp. This does not necessarily mean the bottom or valley floor or a depression, because there may be considerable ground moisture which will be very annoying.
- b. Winter (snow-covered ground) Where the ground is snow covered and tree-less, it is inadvisable to pitch camp in a lee. Lees are snow traps and drifting snow will cave the tent in. Pitch a tent out in the open and build a wind-break out of snow blocks on the windward side and close to the tent. If the wind-break is built close enough to the tent the snow will blow over or around it. A five foot wall is sufficient for a seven foot tent.

If caught out on the snow-covered tundra without a tent or shelter of any kind, a person need not feel that he must, of necessity,

Unclassified

## SHELTER (continued)

freeze to death. The old theory that you will die as soon as you fall asleep in the cold is true only when you are exhausted and in near freezing condition to start with. Consequently, if survivors have no tent, parachute, or shelter of any kind, they are advised not to get panicky and wear themselves out running around in circles. It is perfectly safe to hole up in a snow-bank or slit-trench. Always try to have a roof of some sort; snow-blocks are good. When living in a snow house or cave, sleepers will need insulation under them, rather than over them. They can crawl in and go to sleep. The cold will wake them and they should then hit the trail again to warm up, repeating the process of holeing up for sleep before they get exhausted.

2. Forest:

- a. Summer-A lean-to is not hard to construct. Take advantage of such things as standing trees for uprights and such trees as aspens and willows for framework. Pine boughs, willow branches, pine needles, grass, and moss are good thatching materials. Always cover the floor of the lean-to or tent with a good heavy layer of thatching.

If possible build a vertical wall of green logs on the far side of the fire. It will act as a reflector and brace for the fire. The Firms build their fires out of the largest logs they can find, piled neatly lengthwise on top of each other with two stakes driven in the ground at either side and both ends of the large logs to hold them in place. This type of fire acts as its own reflector and will often go for 48 hours without being touched. The one disadvantage is that one must have an axe to make one of these fires because the sides of the logs that touch each other must be chopped with an axe to get sufficient circulation of air.

- b. Winter-Build a lean-to in the same way, paying particular attention to the floor. If possible, scrape down to the bare ground and then lay a good deep cover of boughs. Thatch the roof and then heap snow all over the house. It acts as better insulation than anything else. Look among the lower branches of trees for small dead twigs to start a fire. Dry moss found under dead logs is also useful. Even if evaders have a tent or parachute with them, they will often find it easier not to pitch it, but to use it as the roof of the lean-to.

## E. EVASION AND ESCAPE

1. Probabilities:

- a. Natives: When the evader meets natives, most of his troubles will be over, for they can lead him to a settlement. He must make his wants clearly known. Don't wait for them to make the first move, but speak up in a pleasant voice, make gestures, ask for whatever is wanted. Be friendly and follow their ways; they know better than inexperienced personnel how to live off the land.

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## EVASION AND ESCAPE (continued)

2. Destinations - Where to go: If alone, the evader should not take a sled, but pack all his provisions onto his back. If he has no pack he can make one out of the parachute; it will also double as a tent. Take as much food and necessary equipment as possible. Don't forget a compass, axe, rifle, ammunition, first-aid kit and matches.

If there are several evaders or survivors in a group, they should make a sled out of a part of the plane. Whatever part used must have a curved edge and a boat-like shape so it doesn't drag flat in the snow. A nose-wheel door or cabin door is fine. Be sure to make the sled long and narrow rather than square and wide; it will be easier to pack and to pull. Use parachute lines for rope. It may be possible to make snowshoes out of a nose-wheel door or large-sized inspection plates. Use line for ties.

Travel: Evaders should never trust their own judgment, but always rely on their maps and compass. Arctic air is so clear that a mountain which seems a mile away may actually be twenty miles distant. In very low temperatures on an exceedingly clear day, one can hear a man chopping wood ten miles away.

Don't over-travel. On a good winter day, 10-12 miles is far enough. Remember to nibble snow constantly so there will be no necessity to build a fire for melting water.

Don't get overheated; unbutton clothes to cool off. Personnel may get so warm while exercising, even at temperatures of 40 or 50 degrees, that they can take off everything but their underwear. However, they must be sure to cover up as soon as they stop, to prevent freezing. Never decrease foot protection. Change socks often, or change socks from one foot to another, first massaging the socks to soften them.

Foot travelers are advised to watch their step. There are deadly crevasses under innocent-looking snow. Poke for crevasses with a long stick. Snowshoes are good for heavy work like hauling sleds; skis are better for quick travel.

When crossing river ice, jab a spear into the snow every three or four steps to discover cracks. The danger signs are never visible; safe-looking snow may be most treacherous. In climbing or descending a glacier, men should be roped together at a distance of 40 feet or more, so if one man falls, the others have more chance to hold him.

If there are no signs of game, ration all provisions carefully.

If travelers should become lost, they must try to find a river and follow it straight down... it may lead them to a settlement. Once a general course has been chosen, evaders - whether singly or in a group - should not be turned aside from it.

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## **ASIATIC THEATER**

- |             |                        |
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| <b>VI</b>   | <b>BURMA</b>           |
| <b>VII</b>  | <b>SOUTHEAST ASIA</b>  |
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## V. INDIA (Assam and The Himalayas)

A. Topography.

In India is the world's highest mountain peak, Mount Everest in the Himalayas, towering more than 5 miles. Some of the wildest and least explored country on the globe is to be found in the north. There are the blazing deserts of Sind and Baluchistan, the flat moist tracks of Bengal, and the wheat fields of the Punjab and the United Provinces.

B. Japanese Control.

Japan was successful in the early days of her campaign in driving the United Nations forces from Burma. She still retains control of most of that country. With the exception of an occasional air raid on coastal cities, India has not suffered an enemy attack in this war. India's part in this conflict has been a most important one. Besides recruiting more than a million men for the British Armed Forces, the Indian nation has backed the United Nations' cause with a tremendous industrial effort, supplied H. Q. and operating bases and is an ideal territory for training purposes of all types.

C. Forced Landings.

Landing in a Jungle (India or South-East Asia). The pilot who knows only the woods and forest of U. S. will find new problems if he ever flies in India or South-East Asia.

This is a suitable time, in the progress of the war, to consider what might happen to personnel if they have to make a forced landing in or near a jungle. All sorts of things may happen and unless they have some idea of the conditions, it is likely that even after a safe landing they may be killed through their own ignorance.

The first essential to walking out is to put the aircraft down with the minimum of damage to passengers and crew. The methods vary according to the ground and it is essential not to make a mistake at this stage. In a very few places it is possible to make a normal wheel landing, but over the larger part of the area a crash landing must be attempted. The types to be discussed are tree forest, bamboo forest, swamps and rice field, sand banks, beaches and mud.

In tree forest, remember that the trees are hard and avoid them as much as possible. Approach slowly with flaps down and try to hit as near the ground as possible. It is probably best to have the wheels UP. The landing gear leg may catch in a branch and alter the direction of motion. Do not try to land on top of a tree. The branches or broken ends of them are stronger than the fuselage covering.

In bamboo forest, a different technique should be used. Come in slowly, with everything down, and try to sit on top of a clump. The aircraft will be stronger than the bamboos which are very stringy and strong in bending, and will act as a cushion. It is not likely that any will come through the floor and impale passengers. The technique for the remaining types is as flat a glide, with landing gear UP, as can be managed. Only on beaches should an ordinary landing be attempted, and then only if it is certain that the sand is hard. Several pilots in Malaya landed on what turned out to be quicksand and were drowned when the landing gear caught and the machines turned over. So, with a few

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## Forced Landings (continued)

simple rules and good forced landing drill, one may expect to get away with it almost anywhere.

If airmen should come down in the forest and mountains, they may have to walk for a couple of days. But nearly everywhere else a village may be expected within reasonable distance. Having seen one and knowing where it lies, he can head for it. The people will certainly not eat a human. It is probable that, with the gift of a watch, torch or other small trinket, the villagers will help evaders all they can. Traditions of hospitality in the East are very strong.

D. Population and Customs.

1. Languages. There are well over 100 different languages spoken in India, not counting the many different dialects. It is often impossible for the people of one village to understand the language of neighboring villages only a few miles away.

✓ Hindustani is as near a national language as exists in India. In most villages, at least one or two individuals can be found who understand this language. The pure Hindustani is derived from Sanscrit and is a very grammatical language. However, few people speak the pure Hindustani and most conversation is carried on in the language of the section commonly known as "Bombay bahit", "Calcutta bahit", etc.

E. Survival.

1. Equipment. Equipment includes the Jungle Kit for operations over India, Assam, The Himalayas, Burma, and Southeast Asia. The British are furnishing the standard evasion kits to both the 10th and 14th Air Force and the A.T.C. Blood chits are also used. This field of operations is new to evasion work and special equipment and instructions will be included to meet the conditions peculiar to the Asiatic Theatre.
2. Climate. The monsoon or rainy season usually breaks about the first week in June. This is usually the healthiest season, although the rains continue for the next three months. A warm season follows the rainy season. December, January and February, are the coldest months of the year and from March until the monsoon breaks again, the climate is hot.

The southern part of India has a more even climate. The country is warm the year around with slight seasonable variations. In the north and the Sind desert in the central section, the hot seasons are warmer than in the south. In the cool season, the days are warm and the nights very cold.

In the mountain country in the far north, snow remains on the peaks the year around.

ASSAM.

Assam is that portion of India north of the Bay of Bengal where India merges into Burma. The blending of the Mongolian race and the Brown race is noticeable in the characteristics of the people.

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## Assam (continued)

Since the outbreak of the war, this province has been the buffer against the Japanese. The country, which was previously rural, has been traversed by the armies from India and supplies for the army have been passing through. The Brahmaputra river which flows into the Ganges delta flows the entire length of Assam. This river is now choked with commerce beyond its capacity to handle.

Airplanes bound for China with material are flying continually over the country. Airfields are common.

G. Survival.

Forced landings in this territory offer no problem other than survival. Japanese planes rarely come into this area. The country is thickly populated with friendly natives under the control of India. The Brahmaputra river offers an ideal route out of the country. Local briefing will provide additional information for escape routes.

1. Special Note: Health Precautions. Precautions against Malaria are more important in Assam than in any other section of India.

THE HIMALAYAS.

The air route from India to China passes over this mountainous range in northern Burma where the peaks, although high and rugged, do not rise to the same heights as farther north. At some places this air route passes close to Japanese air fields.

Allied planes have been shot down going over the "Hump". ✓

H. Evasion and Escape.

Escape routes are either north-east back into Assam or west into China. These routes are covered fully under EVASION AND ESCAPE - BURMA.

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## VI. BURMA

A. Topography.

Burma lies between India on the west and China and Thailand on the east. It was from this last-named country that the Japanese invaded it in 1942, moving up from the narrow and attenuated "tail" of Burmese territory which flanks lower Thailand.

There are two main valleys and three hill ridges, all of which run north and south. The country is cut by many small rivers called "Chungs". Most of these dry up in the dry season.

Burma is approximately the area of Texas, but with fewer wide-open spaces. The means of transportation are generally quite primitive, and the lines of communication are relatively limited except for the great watercourses which cut through Burma running north and south, and for the roadways paralleling these watercourses. The roads and tracks running east and west throughout the country are inadequate and the distances seem vast.

Burma has few cities and much of its cultivated lowland area is given over to rice fields. For the most part, it is an extremely rugged mountain country and its ranges spreading from border to border are cut through by some of the largest rivers on earth, one draining down from the snows of the Himalayas. Therefore much of the back country is quite inaccessible.

B. Population and Customs.

1. Languages. Burma has many tribes, five or six of which make up the majority of its 16,000,000 people. All of these tribes have their own customs and languages. Burmese is the most widely used of these languages.
2. Attitude. Most of Burma's population live in the valleys of the Irrawaddy, Sittang, and Salween, and upon the fertile deltas. They are a non-warlike people, and under normal circumstances Americans can count upon their friendship. The record shows, however, that a small percentage of them were willing to swallow the promises made by the Japanese, and actively aided them at the time the country was invaded. There was a Fifth Column which pillaged the cities, harassed the British rear, and made the retreat difficult.

C. Survival.

1. Equipment. All personnel will be equipped with the jungle kit with which they are supplied at the base. This consists of a combination 410 shotgun and .22 caliber rifle with necessary ammunition, machette, matches, compass, sewing kit, medical kit, flashlight, all necessary flares and signaling equipment, and emergency rations. It may be highly desirable to augment this very complete and practical kit with a few personal items. A small but strong pocket or sheath knife will be useful.
2. Climate. Although the climate varies in various parts of Burma, it may be roughly stated that it has three seasons as follows:

Unclassified

## Climate (continued)

October to February	-	Cool and rainless
March to May or June	-	Hot and rainless
June to October	-	Hot and rainy

The country itself is not too difficult. Its climate is not extreme. There are periods of very heavy rainfall and of excessive heat. But there is low humidity in the hottest seasons, and despite the heavy rains of the monsoon, Central Burma is not sodden and fever-ridden. Consequently, the safe-guarding of health, while necessitating extra precautions on the evader's part, is not the extraordinarily difficult problem faced by some of our forces in other tropical and near-tropical countries. This is so, even though the hills surrounding Central Burma are very malarious. Observe the common-sense rules which will be discussed briefly in this manual, and follow the more detailed instructions which will be given by medical officers in the theatre.

3. River Crossings. The rivers, like the mountains, generally run from north to south, and in the rainy season will flood wide areas, making it almost impossible to detect the true channels. Because of their swiftness, it is dangerous to swim across most of the rivers. The Toying River is not dangerous and can be swum, if necessary, at almost any point between Kanai and the frontier. Normally, reed or bamboo rafts and small native dugouts can be found along its banks. On no account should one attempt to swim the Shweli River at any season, due to swirls and under-currents. There are a number of ferries, some controlled by the Japanese or their puppets, others by Chinese or guerrillas. Watch out for the ferries--their possession is continually changing hands.

The best and usual method of crossing, particularly to avoid detection, is to make a raft of bamboos which grow plentifully along the banks. Be careful not to cross just above rapids or whirlpools, for a raft is apt to be carried downstream a mile before a crossing can be effected.

4. Food. Burma is practically self-sustaining and with a little ingenuity a person could live off the country indefinitely. Fish are plentiful in the larger streams. The fish livers are extremely rich in vitamins and should be eaten. For game there are several types of deer, wild pig, and big game of all sorts. Jungle hen, pea hen, and pheasant, are plentiful. All meat should be thoroughly cooked and only enough cooked for one meal as it spoils rapidly in this climate. All surplus meat should be smoked over a fire.

Roots of creeping vines, shoots of palm or cane, or fern leaves in the curl stage will make up the vegetable requirements. All vegetables however, should be cooked and never eaten raw. Edible fruits and berries will also be found. However, if uncertain, none of these should be eaten and all fruits should be peeled. Generally speaking "red" in the jungle means danger and, if uncertain, eat no red fruit no matter how harmless it looks.

Although the country is self-sustaining, it will be found highly desirable to take along other food. Learn to eat rice. Ten pounds of rice will support a man for a whole week. Never cook this up in advance, as it spoils rapidly. Sugar, salt, tea, dried fruits, and nuts take up little space or weight and will do much to make the meals more varied and palatable.

4. Fire. Fires should always be extinguished and later cleaned up. The jungle evader should be careful about leaving obvious signs for the enemy. The core of bamboo clumps will furnish ample kindling wood even in the wettest weather.

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D. Evasion - Escape.

1. General. Escape conditions in Burma differ materially from those in occupied China. With the exception of the territory north of Bhamo, the Japanese occupation extends throughout the entire country. Although the occupation is not thorough, and in this respect similar to occupied China, there are no unoccupied or "free" geographical areas such as one finds in China.

The Burmese and the tribal people living there do not have the innate friendliness toward the Allies that the Chinese have. In general they will be apathetic toward the plight of an evader, and although they will help, they would prefer not to be bothered. It is necessary to use salesmanship and bribery on them. In general, northern Burma is both friendlier and easier to escape from than southern Burma. Keep going as far north as possible before bailing out or crash-landing. One is ordinarily safer with the hill tribes than with those who live in the valleys.

Unless in the company of friends or guerrillas, it is wiser to avoid the main routes and centers of population. There may be Jap agents. It is better to travel along the top of hill ranges, particularly during the rainy season; and avoid any village of more than 50 huts. Kachin or other paths will always be found on or near the crests of the range. When crossing a range, keep to the crest of a spur; don't attempt to ascend by a valley or gully as these head up in sloughs and become impassable near the head. Avoid, except for concealment, forests of scrub bamboo, which are often to be found near the summit of the higher ranges--it is better to make a detour of miles than to attempt to force one's way through one of these forests.

It may be assumed that all main roads behind the Japanese forward lines are either patrolled or frequently used, and should be avoided. Crossing at night must be made with great care, for our Air Force activities have compelled the Japanese to carry on most of their transport and troop movements after dark. Even the lesser or secondary roads should be travelled or crossed with caution. Remember, too, that the rivers are often used for military transportation.

Any town, mining area, airfield, railroad, - in fact any military or strategic installation - should be assumed to be patrolled or garrisoned by the Japanese. Their influence is greatest around these areas, so don't attempt to contact villages that are nearby.

With the exceptions mentioned above, the enemy is spread thin. Crossing the Japanese lines is not a difficult problem, but first an evader should try to secure detailed information from friendly natives as to when, where, and how to cross.

Even a person well-informed on Burma cannot tell exactly where one tribe's territory ends and another begins, since they are usually scattered. Nor can he tell you what to expect from each tribe, for their actions may differ in different localities. It is sufficient to remember that of approximately 15 or 20 tribes, the Wa and the P'on are relatively unfriendly. The friendliest tribes are located in the hills and it is in these areas that Japanese control is at a minimum, so head for the hills and make your contact. The smaller the village, the less likelihood of the Japanese having influence, so pick a small village of less than 50 huts or houses. Following this procedure will put you in the hands of people who will and can help you.

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Evasion - Escape (continued)

The latest intelligence from the vicinity of the War tribal area reports that one need have no fear of them. In fact, they are afraid of all whites and their guns; they will not molest you, and by the same token are not likely to help you. If you are forced down in Wa country, keep moving; endeavor to make friends with any you encounter--give them cigarettes, coins, anything you may have, in purchasing food.

The Shans are found for the most part in the valleys. They are generally unreliable. However, if you land in a valley area and are unable to make for the hills, because of injury or discovery by the natives, do not decide the case is hopeless and attempt to shoot the first you see. Your chance of finding people who can and will help you are better than ever, due to recent difficulties with the Japanese. Try bargaining, try bribery, and above all use your common sense.

Some things to remember:

- a. Be prepared for a forced landing--have your equipment, warm clothing, money, GI shoes, and knowledge of how to sustain life in the jungle.
- b. Acquire a straw hat locally (Kamauk), a pair of black trousers (Bombeas), to help form a disguise; potassium permanganate can be used for staining purposes.
- c. Drink no water that has not been boiled or sterilized. Water near the head of a stream in the mountains is safe if there is no village above.
- d. Dew, which is heavy in Burma, can be caught on your parachute and collected in the morning.
- e. Big, ropey vines are really water tubes. Make a notch as high as you can reach, cut off near the ground, and drain out the water. Bamboo is a water carrier: notch at the bottom of a section, but first shake to be sure there is water in it -- it will gurgle. } 1 MP.
- f. All food should be cooked thoroughly and eaten hot. Most of the native foods are palatable and good, but remember that cholera and dysentery are carried by food as well as water.
- g. Malaria is prevalent in the valleys below 4,000 feet. Have your headnet along. Get under a net at night if possible, and keep your arms and legs covered after sundown. Take quinine or atabrine, and, if you contract malaria lie down and stay quiet until able to go on.
- h. Approach villages in daytime and not at night. Most villages are on or near the crest of ridges, away from the bottoms of the valleys.
- i. See the village headman. He is more likely to understand your situation and can influence the other villagers.
- j. Get away from the scene of your crash-landing or bail-out quickly; hide until things quiet down, and then you can make contact with the natives.

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Evasion - Escape (continued)

- k. Stick together in groups of two or three.
  - l. Approach an individual rather than a group.
  - m. Be friendly and do not threaten. Keep your pistol cocked but out of sight. One flyer died recently because he lost his head and shot the village headman.
  - n. The smaller and more remote the village, the better.
  - o. Watch out for your health--sickness may mean failure.
  - p. Keep your mouth shut when you get back. Talk only to authorized Army personnel.
2. Destination - Where to go. The best escape route out of most of Burma is due north, avoiding all large towns, installations, and rivers. The new Ledo Road under construction cuts directly across northern Burma and will connect with the old Burma Road. As soon as the new road is completed and the southwestern section is recaptured, it will offer an excellent escape route. The road can be followed into Kuuming in Yunnan Province, China, or into Assam in India.

In western Burma there are seven well-known passes leading across the mountain range into Assam. These will be guarded and the evader should travel them with caution, possibly traveling at night to avoid an ambush. Many other smaller paths cross the mountains, but none of them should be attempted without a guide.

The entire western or Arkan coast should be avoided. But should the flyer be forced down here, he can get help from the Moslem fisherman in this area. The Burmese in this section are generally hostile, but our men have received assistance from the Moslems whom the Japs have permitted to keep small fishing vessels. These people are Indians and can be distinguished from the Burmese by the fact that they are bearded and do not have slant eyes. For a suitable reward they will return the evader by sea to his own lines in the north.

Unclassified

VII. SOUTHEAST ASIA.

Unclassified

A. Thailand (Siam).

1. Introduction. Thailand is bordered on the north, east and south-east by Indo-China; and on the west by Burma. The Japanese are in control of the entire country.

2. Topography. Thailand has four separate and distinct types of terrain as follows:

In the north four rivers unite to form the Menam River. The country is hilly with precipitous heights.

The center portion is the section through which the rivers of the north flow. It is a great plain flanked by mountains.

The northeast section is a huge basin only two or three hundred feet above sea level. It is a country of sluggish rivers, swamps and lagoons.

South Siam is really a part of the Malay peninsula with tropical jungle and vegetation.

There are many large rubber and tea plantations, large teak forests and large areas given over to rice production. The interior is very mountainous.

Three rivers and mountains run north and south. The central plain is similar to that of Burma.

3. Population and Customs.

- a. Religion. Of the 16 million people in Thailand, the Malays number about 500,000; The Chinese, between a million and a half and two million; and the Thai make up the rest. Those three races mingle to form three social classes: The peasant-farmer class, which is in general made up of Thai and Malaysians; the commercial or middle class, consisting mostly of Chinese, with some Indians, and a few Thai; and the official or professional class, largely Thai.
- b. Attitude. The Thais are mostly peasants and are a simple people, who submitted to Japanese occupation. The Thai government collaborated with the Japanese government in 1939-40, in persecuting the Chinese residents. In addition, the Thai government has declared war on the United States, and they should properly be considered our enemies. Their armies are in Burma and in Thailand fighting side by side with the Japanese. The natives in general are more friendly with the Japs than with the Allies. Even if bribed, they are more than likely to take the money and turn one in, anyway. Japanese influence is stronger along the coast, the deep waterways, and the highways and railroads. As a consequence, all areas of strategic importance should be considered as under Jap influence.

4. Evasion and Escape. Evasion is difficult because of the enormous distances back to friendly territory, the general attitude of the natives, and the fact that the country, as in southern Indo-China, is an enormous rice paddy, where hiding out for any extended period of time is out of the question. There is also the "jungle telegraph" in the northern sections which will give one away.

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Evasion and Escape. (continued)

Although the interior of the country is less under Japanese domination, paradoxically the best hope of escape is by sea, where Chinese junks carry most of the traffic. These junks should not be confused with native fishing boats, which are smaller (about 30 to 60 feet) and sit lower in the water. If the captain of the junk wants pay, and he probably will, the evader should agree. Before contacting a junk, hide out in the mangrove jungles. These mangrove jungles or swamps are not to be feared, as one can walk on the "knees" or roots.

In the northeastern bulge of Thailand, Europeans are practically unknown, but there are many Chinese, who are a better bet than the Thais. Throughout the forests and jungles of this region are to be found open sand areas large enough to stall in a plane in the event of a crash-landing, and close enough to the jungle to see that your plane is burning and then set out, heading for the timber with your chute and equipment.

The west side of the Gulf of Siam is very sparsely populated. If you are forced down in this vicinity, and if you fail to make contact with a Chinese junk, it is possible to get up or across the peninsula, but it will take plenty of strength, clear-headed thinking, and nerve. On the west side of the peninsula, where the borders of Burma and Thai meet the Bay of Bengal, are tin mines that are now under Jap control, but the relations of the British, the former owners and managers of these mines, were always good, and Europeans are well known to the natives. Consequently there is a good chance of finding help.

In the area around Bangkok, there are some Chinese. As in other parts of Thailand, try to find one alone before making contact.

In approaching the Chinese for aid, remember that wealthy Chinese merchants may not prove to be as inclined to run the risk of giving aid to the evader as the poor classes.

GI shoes and other evasion aids are absolutely essential in Thailand.

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B. Malaya.1. Introduction.

- a. Theatre Dimensions. Malaya is a long narrow peninsula stretching a thousand miles to the southern most extreme of Asia. It is bounded on the east by the South China Sea and on the west by the Bay of Bengal and the Straits of Malacca.
- b. Japanese Control. The Japanese have been in complete control of this area since the fall of Singapore.

2. Geography. The country is one long mountain ridge running Southeast from Burma. All the streams flow off this ridge east and west to the sea on each side. Being nearer the equator than Burma, the vegetation is more tropical, mostly evergreen type with the exception of the mangrove forests along the shore. The mountains and wilder country is an impenetrable mass of huge forests, dense undergrowth, and interlaced with vines and cane. Many species of trees and plants are found, palms and rubber trees are numerous. Cinnamon, cloves, nutmeg, melons, cucumbers, pumpkins, grow wild.

3. Population and Customs.

- a. Attitude. During the invasions, the population was neither for nor against the invader. They witnessed the battle for their country between the Japanese and the British more as spectators than as participants. Like the Burman, the Malaysians are a kindly people and even if they are disinclined to help, they may not harm the evader.

4. Survival.

- a. Climate. Being nearer the equator than Burma, the climate is more equable. It rarely goes over 100° Fahrenheit or under 60°. Since they get both the Southeast and Southwest monsoon, the rainfall is heavy.
- b. Health. The same rules for health hold for this area as in Burma.

5. Evasion and Escape.

- a. Probabilities. The chances of evasion in this area depend entirely on the ability of the evader to make an early contact with the friendly country population and avoid Japanese patrols. The undergrowth is extremely dense and a guide will be necessary since only the paths through the jungle are known to the local inhabitants.
- b. Destination. By land the only route is north through northern Thailand or southern Burma and into China.

At certain seasons of the year, it may be possible with the aid of friendly natives and a boat, to escape by sea across the Bay of Bengal to Ceylon or India or across the South China Sea to the southern coast of China.

It may be possible to escape by sea from the western side of the peninsula to Sumatra and thence to India or Australia depending on the seasonal winds. The large towns in Sumatra should be avoided. Also avoid the Japanese occupied Nicobar and Andaman Islands.

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C. French Indo-China.

1. Introduction. French Indo-China lies just south of China. It is bordered on the east and south by the South China Sea and the Gulf of Siam. Thailand is on the western border. It was controlled by France and before the war was governed by French officials. The Japanese now occupy the country by consent of the Vichy French Government. It is valuable to the Japanese as a troop corridor to Thailand and Burma, and also for training purposes.

2. Topography. The country is divided into three parts by two rivers and an "S" shaped range of mountains as follows:

The southern section is made up of the basin region of the Mekong River, one of the largest rivers in Southeast Asia.

The northern region is the area around the Red River, known as the Rouge or the Yuan King.

The areas in between are the mountains of Laos.

Except where cultivated, the country is highly forested.

3. Population and Customs.

a. Economy. With all trade (except with Japan) cut-off, the country is not prosperous. However, they are not as badly off as some of the other occupied countries.

b. Attitude. Although the French submitted to Japanese occupation, it was never popular. Except for a very few collaborationists, Germanophiles and Nipponophiles, conceded to be recruited from among persons of little repute, the French as a whole are reliably reported to favor the Allies. Japanese occupation had the effect of humiliating the French, and as a result most of them look forward to the time when they can turn on the Japanese and drive them out. There is no love lost between the two.

Recent intelligence reports that many of the French will aid Allied flyers whenever the opportunity arises. They have in some instances hospitalized our flyers, refused to turn them over to the Japanese, and have performed other services. However, they cannot, nor should they be expected to, jeopardize their security, the security of their families, and their relations with the Japanese. Most are closely watched, and it must be remembered that some of the French will turn flyers in anyway. Contact with them should in general be avoided. If necessary, contact with the French in a small town is far better than in a large city, but in all cases extreme caution must be employed in order not to compromise them.

As a whole, the native population has been intimidated to the point where they are, despite their wishes, working with the Japanese. The natives farther away from main roads and cities are less likely to have felt the pressure of the Japanese than those closer to heavily occupied or garrison areas.

It has been reported recently that due to the conduct of the Japanese with the Annamese and the growing knowledge that the Japanese are suffering reversals in the war, the Annamese are undergoing a change of heart. Inference may be made that, at least away from areas of occupation and garrisons, flyers may find aid through some of the better educated Annamese who are leaders in the small villages with which one might be forced to make contact.

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4. Survival.

- a. Climate. Although the climate varies in different parts of the country, generally speaking it is hot and damp.
- b. Health. The same general rules on health apply as in all other tropical and sub-tropical climates. Malaria of a very malignant type abounds in many parts of French Indo-China.

5. Evasion and Escape.

- a. Tongking Area. Typical of most of the areas occupied by the Japanese, occupation in the Tongking area is not solid. For the most part, their occupation has been strategic, occupying ports, larger cities, taking over railroads and main highways and airfields, and depending on the local gendarmes and officials for local control. It may be said in the main that Japanese troops are to be found near any important or strategic installation.

The headquarters of the Japanese troops in the Tongking area are at Hanoi and Haiphong. In this area the streets of the towns are patrolled. Some of the roads are not, the Japanese depending on road barriers to stop anyone using the roads.

Below Hanoi and Haiphong, the Japanese have stayed close to the coastal roads, widening the sphere of their control only where the highways and railroads come to a large city or an industrial area. Customarily they patrol the highways and railroads, depending on the local magistrates of the small villages to take care of evaders in their areas.

Flyers are advised to stay clear of the chrome mines at Mui Mua and Mui Nason, three miles south of Thanh Hoa, and to avoid the area around all open pit mines, for these are carefully watched by the Japanese. Natives and French in the vicinity of these mines are sure to be intimidated to the point where they are useless to the evader.

Langson is to be avoided at all costs, because of the concentration of Japanese troops there.

There are many Chinese, mostly in towns, in Indo-China. They will be the best people to help an evader, if contacted alone.

Keep away from main roads, towns and villages unless you are certain that there will be help in any particular town. Travel through Japanese-held territory only at night. Stay in the hills; avoid the valleys. If unavoidable, take chances with farmers and country natives. Travel toward China cross-country.

If forced down near the coast, an evader should try to hail a junk and, if possible, encourage the captain of the junk to carry him beyond the Indo-China border to an unoccupied section of the China Coast and put him ashore there. On the other hand, if the aircraft has suffered damage and he knows it will eventually be necessary to crash-land or bail out, he should head his plane, if he has altitude and some control left, toward the northwest part of Northern Indo-China. There the country is rough, sparsely settled, and mountainous, and therefore he should bail out rather than attempt to land it.

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Evasion and Escape. (continued)

If the flyer succeeds in getting help and getting out of French Indo-China, on no account will he tell how his escape was effected, except to Allied Intelligence Officers.

- b. Southern Indo-China. The chances of evasion from Southern Indo-China are fewer and materially tougher than from the northern part, for several reasons. The distances back to friendly territory are great. The country itself is an enormous rice paddy, and hiding out for any length of time is impossible. The northern sections, though hilly and sparsely settled, will afford little seclusion because once the evader is seen, the "jungle telegraph" will more than likely give him away. Finally, the natives have been so thoroughly dominated and terrorized that they are likely to turn an evader over to the Japanese.

All towns, mines and mine areas, industrial areas, roads, railroads, in fact everything of any strategic importance should be considered as enemy held and controlled.

The best hope of escape and evasion is not by land, but by sea. Up and down the coasts Chinese junks carry the bulk of the sea traffic. Like all Chinese, they hate the Japs, and are willing to help an evader. Native fishing boats should not be confused with junks. They are relatively small, 30 to 60 feet, and sit very low in the water to make for ease in handling nets. The Chinese junks are big, many of them of more than 100 tons burden, and they stand high out of the water. They will undoubtedly want pay. The evader should promise them a liberal reward, and they will be paid after he has been delivered into safe hands.

If it becomes necessary to crash-land or bail out, try to set in near the shore, at least close enough to roll up your chute and hide in the mangrove jungles along the shore until you become oriented and can make contact with a junk. Do not worry about the mangrove swamps or jungles. The trick is to clamber into one, then make your way forward to a safe hideout by walking on the "knees" or roots of the mangrove that are entwined together.

If inland from the coast, the evader's best hope for escape is in the Laos area, a province which runs along the Thai border south from Yunnan. There one should make for the hills, and if he makes contact in a small village along the ridges, he is very likely to find natives who are not under Japanese influence and consequently are not afraid to help him. They are friendly; money will help, not so much for bribery as for the payment of expenses.

Remember that in this area GI shoes and other aids are more necessary than elsewhere.

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French Indo-China (continued)

Unclassified

c. SPECIAL NOTE:

1. Official Travel Requirements: An area called the "Forward Zone" has been created by several decrees of the Government of Indo-China. It consists of an area which follows along the entire Chinese Border and which has a depth of 100 kilometers in places.

Travel in the Forward Zone and between the northern section of Tonkin and the rest of Indo-China is controlled as follows:

- a. Barriers, both fixed and mobile, and guard stations have been placed along the roads and certain trails and in several other places in the territory. This duty is performed by the police, the gendarmerie, the militia, the partisans or the army.
- b. It is the duty of the natives to report immediately to competent authority any white man traveling without escort. A reward of 200 Indo-Chinese piastres is offered for reporting a white man coming from or going toward China.
- c. An announcement published in Indo-Chinese papers in January 1943 states that in order to pass the barriers it is necessary for travelers to secure a "frontier card", without which they will be sent back to their point of departure.
- d. In Hanoi and Haiphong the frontier card is furnished by the police. Elsewhere it is furnished residents, by the Provincial Governors or by Government Officials designated by them.
- e. The proclamation announcing the establishment in Laos and Tonkin of "frontier cards" which permit the holder to circulate freely in the "Forward Zone" reads as follows:

The privilege of the Frontier Card is accorded to those showing good reason for living in the frontier zone, persons forced to live there in order to carry on their occupations, especially land owners cultivating their land and government officials, professional, business or industrial men, farm labor...

The frontier card is furnished by the commanders of military territories, by French Residents and by the Chief of Police. These latter may delegate this power to government officials or police under their orders.

The frontier card will be good for no more than six months and can be issued for a shorter period of time at the discretion of the issuing authority. The same authority can withdraw the card for the public interest.

## French Indo-China (concluded)

Unclassified

Renewal of frontier cards is under the jurisdiction of the issuing authority. It is accomplished by means of a notation on the reverse of the card.

Persons found in the Forward Zone without Frontier Cards will be returned to their place of departure and/or subjected to 15 days imprisonment or a fine of 300 francs or both.

- f. Passengers in private automobiles in theory are not restricted. However, they may be on occasion and especially since the recent imposition of travel permits (each automobile can be used only on certain days and in fixed areas; this measure aims at the conservation of fuel).
- g. On the large bus lines, such as Paigon-Pnom Penh and Saigon-Delat, travelers usually pass inspection at the station.
- h. A very strict supervision is maintained over departures and arrivals on the direct Saigon-Hanoi train. Inspection of departures and arrivals in Saigon take place between Saigon and Bien-Hoa. At times, the police of Annam inspect trains passing through Hue.
- i. Rigid control is maintained over private cars, buses and railroads at all times in the Forward Zone.

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Substitute the following for pp. 76-86 of Manual:

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ASIATIC THEATRE - CHINA

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Unclassified

VIII. CHINA

A. General

1. Chinese-American Relations
2. Japanese Control
3. Unoccupied China
4. Organization of the Chinese Forces
  - a. Regular Army
  - b. Provincial Armies
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B. Occupied China

1. General
2. Yangtze River Valley and Northern China
  - a. Japanese Control
  - b. Communists and Guerrillas
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  - e. Population
8. West China

C. Use of AGAS

~~SECRET~~  
Unclassified

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VIII. CHINA

Unclassified

A. General.

1. Chinese-American Relations: Our government has had friendly relations with China for many years. Americans who have been in China, missionaries, doctors, teachers, officials, and businessmen, have established a good record. So the way to friendship has been paved for the evader. Added to this, we are Allies---a fact in which the Chinese take pride. The first thing an evader should learn to say in China is "I am an American." It is the best passport he can have.

The Chinese for their part, particularly the guerrillas, have shown enthusiasm in assisting our evaders, feeding them, willingly sharing their food and clothing, and often sacrificing their own lives. The loss of some of these might have been avoided, if the flyers had kept appropriate silence after their return. Goodwill; to remain lasting--cannot be one-sided. Therefore military personnel, - actual and possible evaders, must make an effort to know, understand and appreciate the Chinese, whose ways are so often different from our own.

China is passing through one of the most difficult periods of its existence. Allied assistance, helpful as it has been, has caused the Japanese further to increase their territorial gains in China by seizing forward American air bases.

Although Generalissimo Chiang Kai-shek has said that final victory will be won in 1945, our recent Naval victories and even the re-opening of the Burma road, do not bring immediate relief to China. Therefore, PATIENCE, the most often repeated word of advice of successful evaders, is imperative together with TOLERANCE, regarding the Chinese way of doing things in general.

2. Japanese Control: The Japanese drive to "cut China in half" by connecting their forces in the interior (Hankow) with the Southern Coast (Canton), and by occupying the main coastal cities greatly increases the so-called occupied, or threatened areas. While the Japanese may occupy the principal cities and lines of communication in the centers of these areas, highways and waterways are still open and Japanese lines can be crossed at night. Parts of the entire coast are still "open". Therefore, a flyer coming down in China must never lose hope or "shoot his way out" unless he is definitely surrounded by Japanese in uniform. The Chinese included in these areas will be very willing to help - however, care must be taken not to fall into the hands of persons in the employ of the Japanese near the ports and railroads who might return an evader to the Japanese. Pirates along the coast should be approached carefully. If their rescuing activities are not disclosed and rewards offered, it is very probable that the pirates will return an evader to a safe area.
3. Unoccupied China: The ruggedness of the terrain and the danger of over-extended lines of communication will probably prevent the Japanese from taking the vital centers of Kunming and Chungking. The enduring qualities of the Chinese and the ever increasing Allied aid, small as it may be, are the other two most important factors.

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## ASIATIC THEATRE - CHINA

4. Organization of the Chinese Forces: There are three main classifications: (a) the Regular Army, (b) the Provincial Armies, and (c) Guerrilla forces.
  - a. Regular Army. This consists of 300 "Divisions", but most of these are less than 5,000 men strong. Artillery is so scarce it is distributed at the rate of one battalion per Army. The "recruits" are often "Shanghaied." Therefore, they and their officers are sometimes less enthusiastic than are other Chinese forces in promoting the war effort, and in greeting Americans. Moreover, the Regulars, near to our bases, have seen more of our men and therefore do not find them such a novelty as do the provincial soldiers and guerrillas.
  - b. Provincial Armies. Most provinces have their own armies which often act quite independently of the Central Government. On them would normally fall the principal burden of holding back or defeating the enemy. The support given them by our airmen is greatly appreciated, and they will give our flyers every assistance. However, in some cases the provincial armies are subject to Japanese propaganda and influence.
  - c. The guerrillas, who operate behind the Japanese lines are well organized; many of them are ununiformed. They are most generous and enthusiastic in helping out our flyers. In some cases, they cooperated closely with China's uniformed troops but in large areas, such as in North China and around Canton, they are communists and for that reason are not recognized by the Chinese National Government. For this reason, lengthy negotiations may be necessary before our personnel can be returned through the Chinese lines.
5. Topography: China is divided into 28 provinces --- 24 in China proper, 3 in Manchuria, and 1 in Chinese Turkestan. Besides this, she has certain regions that correspond to our territory of Alaska --- the special territories --- outer Mongolia and Tibet. China has two of the greatest rivers in the world, the Yangtze and the Yellow Rivers. The sea coast is long, and there are high mountains to the west and south, deserts to the north and northwest. The climate varies, and with much the same changes as in America. On the whole the northwest is dry and desert-like; whereas the northeast is a great deal like our midwest. The south is damp and tropical with the exception of the Alpine plateaus. Kunming is 6,300 feet while Chungking is only 300 feet. China is a big country, larger than Europe, half again as large as the United States, and a population three times as large.
6. Population and Customs: Throughout the Southern part of the Asiatic Theatre as well as China, there will be many Chinese to assist an evader. Their aid and support constitutes the single greatest factor in successful evasion work in this theatre. It is consequently of high importance that potential evaders have some knowledge of how to deal with them. The Chinese people are a simple kindly race and respond quickly to a smile. Much will depend upon an evader's personality in establishing a successful contact with these people.
 

The Chinese are individualists, they are practical and easy-going. Some can be trusted, some can't. Some will want money, others won't.

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Population and Customs (continued).

Here are a few simple rules regarding behavior towards them.

Try to size them up before trusting them.

Be easy and friendly. They will sit and talk and take their time. Prod them on, but do it gently.

Once certain of their good intentions, let them run their own show. Don't try to interfere - a carefully worked-out plan may be ruined.

Chinese have a great respect for the feelings of the individual. Don't let irritations, delay, etc., lead into quarrelling with them or forcing them to lose face. They are more sensitive to indignities than the average Westerner. An evader should never lose his temper in dealing with them.

They can usually be reasoned with. If an evader finds it difficult to get their help, he should appeal to their self-respect, their honor and patriotism -- also their pocket books.

Don't worry about "face" and complicated courtesy. Simply be an American, in the best sense. They don't expect an evader to know all their ways of polite behavior. They will not think less of an evader if he breaks a rule or two, if they are convinced he wishes to respect them and to be friendly with them.

- a. Cities. Chinese cities are of two kinds: Those which have been modernized and those which remain as they have been for centuries. The largest of the modern ones are Shanghai, Tientsin, Nanking, Hongkong, Canton, Hankow, Peiping --- now all in Japanese hands.
- b. Languages. The official language, or cultural tongue, is called Mandarin. This language is used generally all through China, by the educated class. Cantonese is the dialect used in the southern provinces, consequently a working knowledge of it is fairly wide-spread among the Chinese. Most of the Chinese in America came from south China, around the city of Canton. In both Canton and Shanghai areas, English speaking Chinese are most likely to be found.
- c. Attitude. Hatred of the Japanese is universal throughout China; however, remember that there is a pro-Japanese puppet government established in Nanking. Beware of Japanese agents. Learn to distinguish between the characteristics of the Chinese and Japanese.

7. Survival:

- a. Equipment. Since most of China is densely populated, emergency rations and equipment should enable evaders to carry on until they have made contact with a friendly native.
- b. Climate. Climatic conditions found in northern China are comparable to those of northern United States. As one goes south the climate becomes sub-tropical with greater increase in rainfall.

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8. Evasion and Escape.

Probabilities: In unoccupied China, an evader will technically be neither escaping nor evading because he will be in friendly territory. However, he will run into many difficulties in making his way through strange country; one of the greatest is transportation, which is of most primitive nature, and the language difficulties will probably bother him, but his only real danger is that of sickness. Even when in Chinese hands, he must watch his health, and strictly observe the precautionary points on food and water.

As soon as natives (they will probably be farmers) appear on the scene, their attention should be drawn to the Chinese or Allied flags which, together with an explanation written in Chinese characters, are stitched to the flying jacket.

Repeat several times the words "MAY GWO" (American) or "YING GWO" (English).

Once the bystanders are convinced that fliers are not Japanese they will, in all probability, prove to be friendly.

Fliers should be in possession of a chit promising reward for safe delivery to unoccupied territory. This chit should be printed on good paper and made to look as impressive as possible i.e. should be "chopped" with seals of high Chinese and Allied authorities.

This chit should be produced as soon as possible after landing and preferred with the words "PAO CHANG" (Headman) and "CHING KAH" (reward).

If there is doubt as to whether the landing has been made in unoccupied territory, contact with anyone in uniform should be avoided. Friendly guerrillas in occupied territory will wear plain clothes and will probably carry one or two large caliber Mauser pistols. Chinese wearing uniforms in occupied territory will probably be puppet troops who are working for the Japanese.

If puppet troops or police arrive before it is possible to avoid them, it is worthwhile producing the chit promising reward. The majority of the puppet troops are "rice" soldiers and are only working for the Japanese because there is no other way of earning a living.

Priests, particularly if they wear long whiskers, are to be avoided in the Shanghai area, for they are probably Spanish or French, of whose political sympathies there may be some doubt. Missionaries and priests in other parts of China can be relied upon to help. In such instances, they will need full cooperation and one must be prepared to follow their instructions in regard to discarding uniform, mode of travel, and so on.

Towns and large villages should be avoided as they are quite likely to be occupied by Japanese troops.

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4. Evasion and Escape (continued)

When evaders have decided to seek assistance they should go to an isolated farm and produce their chits. This will probably not be understood (most peasants are illiterate) but in any case repeat the words "MAY GWO" or "YING GWO" and point to the sky saying "FEE GEE" (aeroplane) - this should have the desired effect of establishing identity.

Once in the hands of friendly Chinese, the evader must put absolute faith in his guides and resign himself to what may prove to be a long period of waiting. Don't attempt to hurry guides who may think it advisable that the evader should lie-up for a week or two.

At some stage in their journey evaders will have to cross the Japanese lines. The Chinese guides will arrange this either by bribing the puppet sentries or by finding an unguarded section at which to cross.

If while crossing there is an outbreak of rifle-fire, don't be unnecessarily alarmed - puppet sentries who have been bribed, frequently fire off a few rounds in order to safeguard themselves should explanations be subsequently requested by their Japanese masters.

Even though fliers are certain they have landed in unoccupied territory it would be advisable not to move until daylight - they might, in the darkness, be mistaken for Japanese aviators.

If down in unoccupied territory adjacent to the Shanghai area, it will almost certainly be mountainous country. Walking downstream along any of the valleys will bring the evader to a village. Ask for the "PAO CHANG".

Once established the fact that you are an Allied flier, you will be treated with the greatest friendship and expected to attend feasts in your honour wherever you go. Make some pretense of eating at these feasts because not to do so is a great insult to your Chinese host, and may make things awkward for the next flier who has had to bail out.

You will be able to send a telegram from almost any town in unoccupied China.

Food: Certain of the original group of fliers who bombed Tokyo and who baled out when they got to China, went hungry for several days because they were afraid to eat the food that was offered to them.

The general dirtiness of utensils, of the persons preparing the food, and so on, may, of course, appall one. But no matter how grimy the hands of the cook or how dirty the pot he uses, there is very little danger once the rice, or whatever it is he is preparing, has been brought to the boiling point.

One will, nearly always, be given rice and vegetables with, perhaps, a little meat or egg - these, if cooked, are perfectly safe.

Never drink the water from paddy-fields, or from streams unless certain that they do not drain cultivated areas.

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4. Evasion and Escape (continued)

In a Chinese house one will be offered hot water or tea - either is reasonably safe. Never drink cold water unless certain it has been boiled.

Candies, pastries, uncooked vegetables, soft-skinned fruits - all should be avoided.

The local "wine", a potent white spirit, is good and a reasonably efficacious disinfectant.

Remember the incredible poverty of the great majority of Chinese and realize that in offering meat (which he sees, perhaps, once a fortnight) or an egg (which normally he would sell in the market and which he himself can only afford to eat on feast days) the farmer is making, what to him, is an enormous sacrifice.

The traveler must resign himself to the fact that, while with Chinese guides, he is going to be verminous. Travel in the interior of China entails the constant companionship of fleas, bed-bugs and, quite possibly, lice.

Fleas and bed-bugs cannot be avoided - to avoid lice, wash!

Do not bathe in lakes or ponds - running water is fairly safe from hook-worm.

If being entertained by the Chinese military or civil authorities do not enter into discussion regarding our campaigns in Burma, Malaya or the Philippines. The Chinese take a very jaundiced view of our military efforts in the Far East and it is difficult to keep one's temper if an argument is allowed to develop.

At a feast your host will try to get you drunk. Don't compete with him in a drink for drink contest - you are drinking neat spirit while he is drinking cold tea, or, (quite fair in Chinese circles) has appointed one or two representatives to drink for him.

When among Chinese who speak or understand English, do not address them as "John" or refer to them as "Chinks" or "Chinamen". "Chinese", singular or plural, is the term.

In making contact for aid, never accost Chinese country-women. They have no part in male conversation, know little of what is going on, and are timid. Startled, they might run chattering to a village, giving word of your presence. The same applies to children. However, if a child approaches and beckons to follow, he has probably been instructed to give help.

Generally speaking, try to size up the individual, before making contact. A senile old man might not understand the situation and be worthless--or even dangerous. However, it is not likely a Chinese villager or farmer will turn in an Allied airman to the Japs, regardless of promised rewards.

Poor people and poor dwellings are good places to make contacts. Avoid merchants, business men, large villages, roads and railways.

Also try to avoid dogs. The smell of a white man sets them to baying loudly. Also the Chinese water buffalo, docile under his master, becomes dangerous upon smelling a white man.

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Unclassified

4. Evasion and Escape (continued)

Approach villages, if necessary, in the early morning or evening, not at night or by day. Be careful not to walk into "honey pools" which are large pits of human excrement, saved for fertilizing the soil.

The Oriental appreciates strength, decision and leadership. They automatically assume a white man has this. Any bickering, or dissension, within your own ranks, causes them to feel you have lost "face" and will lessen their respect.

Remember, with the Chinese, a friendly smile is your best passport.

A few useful Chinese terms are appended. The evader must repeat himself many times before he can hope to be understood.

EAT FOOD	-	CHUN FAN	AEROPLANE	-	FEE GEE
TEA	-	CHAR	AMERICAN	-	MAY GWO
BOILED WATER	-	KAI SHWAY	ILL OR	-	MOR BING
SLEEP	-	KWUNG	WOUNDED	-	SANG BING
FRIEND	-	PUNG YU	WANT (to eat)	-	YO (chun fan)
GOOD	-	HOW	GO	-	CHEE
BAD	-	BOO HOW	I	-	WO

B. Occupied China:

1. General.

Complete Japanese control exists only in certain vital areas within the huge block of "occupied territory" shown on the maps. Actually, organized Chinese Guerrillas control most of the "occupied territory", a few miles from the railroads, waterworks, etc.

Therefore, if airmen are shot down in the supposedly occupied area, they should not lose hope. If not in the guerrilla territory, one may easily be able to reach it. Get away from the plane and make every effort to contact the Chinese. The flyer who fails to get back to unoccupied China will be exceedingly unlucky.

However, the areas of Japanese domination and influence must not be considered isolated, in any sense of the word, but rather are connected, from one to the other, by highways, railroads and rivers, over which there is a constant stream of Japanese traffic. These lines of communication should be crossed only at night, unless the evader's guide has reason to believe otherwise. Successful evasions have been made by means of (1) boat (sampan); (2) covered up by a blanket, feigning tuberculosis; (3) in a coffin; (4) under a load of fish.

If no early contact is made with the guerrillas, the following procedure should be pursued:

Avoid towns, rivers, bridges, railroads and main highways.

Make contact with Chinese farmers (not city people), who will almost invariably help an evader get in touch with the guerrillas. Farmers are easily distinguishable by a headgear of rough cloth wound in a turban, or a straw coolie hat, rough blue trousers and jacket.

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B. Occupied China (continued)

Be prepared to bribe the way to guerrillas. If an evader falls into the hands of bandits or other unscrupulous people he will be sold to the highest bidder. Beware of Chinese puppet troops in Japanese employ. The guerrillas can easily bribe them, but the puppets would more than likely turn evaders over to their Japanese masters. Learn to differentiate between the different uniforms and modes of dress in China.

Have the highest regard for the bloodchit and any other identification equipment furnished. The Chinese in Occupied China will be suspicious---they may even suspect an evader of being a spy.

An evader should identify his nationality and objective. No disguise is completely practicable for white men, although potassium permanganate is used for staining features. Therefore night travel, even when in native clothes, is most advisable.

Because of lack of transportation, travel in China is almost exclusively restricted to foot and water.

Once in the hands of the guerrillas, the evader need not worry about evasion routes. These will be arranged for him.

Don't forget:

- a. Take escape aid kit, silk map, heavy GI shoes, warm clothing that is strong enough to stand wear and tear, extra socks, razor blades and alcohol or other disinfectant. It is the crew member's responsibility to see that he has these items.
- b. Get away from a crash or bail-out scene as quickly as possible and hide until things quiet down; then make a contact if possible.
- c. Approach villages only at dusk.
- d. Approach an individual rather than a group.
- e. Be friendly and not threatening. Keep pistol cocked, but out of sight. Don't get "trigger happy". It may ruin chances and lose your life.
- f. The smaller and more remote the village, the better.
- g. Watch your health. Take all precautions. Sickness can mean failure. Boil all water, or drink only hot tea; and eat cooked food only.
- h. Get to see the village headman. He is more likely to understand your situation and will influence the other villagers.
- i. Stick together in groups of two or three.
- j. Distances in China are tremendous. Be patient and keep your head and your health.
- k. Keep your mouth shut when you get back. Do not tell of your experiences to any other than such personnel as authorized by the AC of S G-2, W.D.G.S., or the corresponding organization in overseas theatres of operations (AGAS, China, or MIS-X in other theatres).

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B. Occupied China (continued)

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2. Yangtze River Valley and Northern China.

Evasion from the Yangtze Valley and from those areas of China lying north of the Yangtze River Valley should prove comparatively easy with the following information in mind.

a. Japanese Control. The occupation of the Japanese in this area is thin strategically. It is aimed at strangling the economic and communication systems of the country. It is therefore an occupation of key positions such as the most important sea and river ports, highways, river systems, and railroads, and at locations where their troops will be readily available for terrorizing and controlling a vast rural population from whom a large portion of their supplies is obtained.

The Japanese are quartered in the larger cities with smaller garrisons of both Japanese and puppet troops in small or cross-road towns, and maintain their control over the area by patrols and "listening posts" of intimidated villagers and village magistrates.

The result of this strategic occupation is that interspersed throughout the areas nominally under Japanese control are numerous areas actually controlled by the Northern Communist Army. Such areas are normally friendly to an evader.

Thus despite Japanese domination it is entirely possible to go through the Japanese lines under the guidance of the guerrilla forces. In those areas definitely under the control of the Communists, evasion is relatively simple, and almost equally so in those areas simply under Communist influence.

b. Communists and Guerrillas. The Communists claim to have 500,000 regular troops and 2,000,000 guerrillas. The guerrillas are local inhabitants, farmers, workers, and the like, and perform periodic military service, as guards, patrols, supplying intelligence, etc., and are called on to meet emergencies such as Japanese drives when confiscating crops, and in local guerrilla activity.

While the Japanese-occupied areas are in the more cultivated and smoother portions of the Yangtze River Valley and northern China, the Communists, on the other hand, dominate or influence areas that are hilly, rough, not so highly productive, and sparsely settled. Therefore bail-outs or crash landings should be made, if possible, in the flats near timbered or hilly areas. Immediately after destroying security materials and burning his plane, the evader should head for the hills.

The Communists have seen few Americans, and are likely to be suspicious at first. But once the evader has identified himself, they will help him get back. They know the country and the enemy, and are to be trusted implicitly.

The majority of the Chinese throughout these Japanese-dominated areas are willing, even anxious, to help American flyers. But in practically every Japanese-controlled village there is an individual or group of individuals who either through intimidation or through pay, is working with the Japanese.

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B. Occupied China (continued)

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3. Shanghai Area.

Evasion and escape can be made from the Shanghai area, for many have been made during the Japanese occupation there. However, the majority of these escapes have been by natives for whom disguise was not necessary, or by Occidentals who were thoroughly familiar with the area and who had the assistance of friendly natives. Within Shanghai itself, it would be almost impossible for the occupants of a crash-landed plane or a bail-out to evade, simply because the Japanese patrols would be on the watch and would immediately go to the scene to make a capture.

Outside of Shanghai it is possible that one might immediately secure the assistance of friendly Chinese, of whom there are many, who would help disguise a flyer, feed him, and render him the necessary assistance for getting out of the area.

Occidentals must disguise themselves, but since every individual moving along the highways or railroads is subject to close scrutiny, it has been almost invariably too dangerous to depend simply on a disguise. Consequently most Occidentals have come away from the Shanghai area by hiding in the holds of boats as arranged through friendly natives. Once away from the area they are sent inland toward Free China, always under the supervision of friendly natives, who eventually turned them over to the guerrillas. This route of escape requires the use of money.

The Japanese have made a thorough occupation of Shanghai itself, and there is a more or less constant patrol of the Shanghai streets day and night. Furthermore, there are areas in which Occidentals are not supposed to be abroad during the night hours. Also, all non-enemy refugees -- Germans, Austrians, Czechs and Poles -- have been ordered to live within a certain area. This fact alone, if one were free in Shanghai proper, would require the use of disguise outside this area.

Practically all bridges in the Shanghai area have military or puppet guards on them, and inspection is particularly careful at night. Every railroad station has a military guard and inspectors who check passports or good citizen certificates before a person is allowed to buy a ticket. On all the principal highways leading out of Shanghai, northward toward Kiating, the Japanese have road-guard garrisons to check traffic. However, it is conceded that at best the Japanese guard is loose and that with nerve, bribery and assistance one can get through.

Due to patrol activities, the evader's chances are much better if he keeps at least five miles away from either side of main highways and railroads. Away from them he is more likely to find friends who will help; Japanese control is primarily through influence and not so much through direct domination; and away from such patrols the flyer who has crash-landed or bailed out is more likely to have time to hide himself and his chute and to get some distance away from his landing, which is surely to be investigated by the Japanese as quickly as possible.

Whenever possible, the evader should move southward, for the main westerly and northerly routes are almost closed to a possible evasion.

As the Japanese are freed to move their China troops elsewhere, it is believed they will depend more and more on puppet troops. They frequently do guard duty. In the event an evader encounters puppets, he should try to strike a deal with them. Recently it has been discovered that the puppets are playing both sides against the

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B. Occupied China (continued)

3. Shanghai Area (continued)

middle--where they are in close proximity to guerrillas, who are almost everywhere, they are willing to make a deal and turn a flyer over to the guerrillas; where even they are close to the Jap forces there is some question how they will react, but a quick head, some money, and the ability to bargain can and will bring the evader into the hands of guerrillas or other friendly troops.

4. East Coast of China.

Prior to the recent landings by the Japanese on east China, evasion there was relatively easy. The Japanese controlled only the port areas of Canton, Hongkong, Swatow and Amoy and Ningpo. But even from some of these, American airmen and escapees have been successfully brought out.

This entire coastal area, from Ningpo down, is thoroughly inleted and has always been the home of smugglers and pirates. This does not imply that a flyer who comes down in this area is going to land in trouble. During the past several years of hostilities these natives have been increasingly helpful, rendering assistance, sending back word to aiders, feeding and guiding flyers out of the country and back to their bases. There is every reason to believe that as action is joined in this vicinity they will be increasingly helpful, for they have not been kindly treated by the Japanese.

Along the coast, the people lead a marine life as fisherman, cargo carriers, and, particularly between Amoy and Foochow, opposite Formosa, they have been notorious for centuries both as smugglers evading the customs authorities and as pirates preying on the coast-wide traffic. These very factors render them all the more capable of giving assistance to an evader, particularly in avoiding the Japanese patrols that are to be found in these waters.

Inland, along the coast, the people have long enjoyed a relatively higher culture than is to be found throughout the rest of China. Consequently they have a wider acquaintance with the forces involved in this war. Missionaries have been present in the larger villages for several generations; in some towns and cities hospitals have been established, and most are on a highway or railroad leading from one large city to another through which they have become familiar with emigre traffic. Consequently, in most of these towns there will be found assistance which may enable an evader to avoid capture.

The garrisoning of islands and areas by Japanese or puppet troops has varied both in the places garrisoned and the size of the garrison. Particular areas to avoid are: Shen Chia Men, opposite Ningpo; Nam Kan Tong, Pei Kan Tong, and Si Yang, all islands at the mouth of the Min Kiang River; Sharp Peak Island or Chuan Cheok; Kulangsu, at Amoy; Quemoy Islands; Aw Kwei Su Island, south of Amoy; Gah Su Island, southeast of Amoy.

The Japanese troops usually confine themselves to their garrisons except in campaigns or when called out to forage for supplies, as at crop-gathering time, or to search an area when a plane is reported down. Such activities ordinarily give the natives enough time to assist a flyer out of the vicinity and to strip or burn his plane.

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B. Occupied China (continued)

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4. East Coast of China (continued)

Since the smuggling traffic with Formosa is virtually at a standstill, the whole coast swarms with junks that will be glad to render help, even among the pirates. The promise of a sufficient reward will swing any of these junk crews over to the side of an evader. It is also reported that the puppets in this area are now more or less pro-Chungking, are being told of the rewards for the return of Allied flyers, and want to get some credit for the assistance they can give. If an evader is not at first sure of them, the promise of a reward or the giving of a bribe will bring them around. A pilot forced down in the sea should take the chance of signaling a junk as he is likely to fall into friendly hands.

A word of caution as to junks: the Japanese have curtailed virtually all smuggling traffic with Formosa, and they have augmented their patrols of the sea in this area with PT boats, a few old destroyers, and some old sea or float planes, and diesel-equipped junks. One must be on the watch for these. They are larger than most junks, show some modifications to help them in their work, and since they were originally designed for anti-submarine work will undoubtedly show some evidence of depth charge and heavy gun structure. However, it is likely that they will operate well away from shore in making patrols, whereas the junks normally used in the smuggling trade have, to the contrary, been driven close inshore.

Along the coast, except for those areas and islands indicated as being in the hands of the Japanese, and inland, missionaries are to be found. The help to be expected from these missionaries will vary, depending on their proximity to Japanese-occupied areas. However, in those areas containing missionaries there are to be found friendly natives.

In most instances of bail-outs or crash-landings, guerrillas, Central Government troops, or natives have been on the scene almost immediately. The guerrillas are there to fight the Japanese and will help whenever possible. The puppets, who are now more or less in sympathy with the Allied effort, can be encouraged, bribed, or promised rewards to give help. In most instances the native farmers or workers help simply because they want to, and it must be remembered that they risk everything if caught. They know the roads and the by-paths. An evader should obey them implicitly, keep his head and his health, and keep moving along, but should not hurry them.

5. Hongkong-Canton Area.

a. General. Due to the number of Japanese troops, both old and new, and the number of puppet troops under their domination, any flyer forced down in this area should consider all towns and villages, and all railroads and rivers, as dangerous until contact has placed himself in the hands of friendly guerrillas, friendly Chinese, or other agencies.

If contact can be made with guerrilla forces immediately, the chances of reaching safety are excellent. These guerrillas are of three types: some are government-sponsored organizations, some are independent local bands, and others are simply farmers or villagers with a hatred of the Japanese. The vast majority will never be seen wearing a uniform in this section, but will, in all probability, wear the typical Chinese blue peasant clothing. Almost without exception they will help American flyers.

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B. Occupied China (continued)

5. Hongkong-Canton Area (continued)

On the other hand, any Chinese seen in uniform will almost invariably be a puppet. Recent intelligence confirms the reports that these puppets are becoming more and more amenable to bribery, and an attempt to bribe will do more good than an attempt to shoot it out. The evader must use his head and try to win them over.

It is doubtful that any of the guerrillas in this area will accept a reward for any help that they give and often will not allow an evader to pay for his expenses, but the evader should offer him a reward and should pay or try to pay any expense normally incurred on his behalf. The good will of these people must be kept, for it will benefit not only the particular evader but also those who follow him.

When a flyer comes down in this area, he should follow standard evasion procedure, always remembering that the most important thing is to get away from the point of landing as quickly as possible. Japanese patrols in this vicinity are everywhere and are constantly on the look-out.

Lines between concentrations of Japanese and puppet troops can be crossed, as the lines are really nothing more than patrol areas; but risk is involved. The strongest Japanese guards are maintained at Hongkong, Kowloon, and Canton, and along the railroad right-of-way. Recent intelligence reports that they are digging in along the railroad, setting up pill-boxes, used barbed wire in places, and throwing out a flanking patrol for five miles on either side. The railroad runs from Kowloon through Sheklung and Canton to Samshui.

b. Where to go: The vicinity around Macao is a delta region, filled with rich farms and orchards, and crossed by a network of small streams, making islands out of the land which in turn makes travel by small boats fundamentally necessary and evasion of the Japanese somewhat easier. The Chinese here can be counted on to help, for this is one of the best developed sections of China, and most of the well-to-do families know English and are familiar with the reasons why an evader might find himself there. A guide and a boat are necessary, as there are many travel routes.

Macao itself presents a problem that must be remembered. It is Portuguese and nominally neutral territory, and according to the Geneva Convention one is subject to internment unless he is an escaped prisoner of war. Try to avoid Macao proper. Get out as quickly as possible.

If a flyer should get into trouble over Hongkong or the New Territory, he should head his ship toward the east side of the railroad and try to cover at least fifteen miles before crash-landing or bailing out, and the moment he is down he should move east by north until he finds help. If landed west of the railroad, he should head east and work his way across it, preferably under guerrilla guidance. He should remember that the best time to cross is at night. He should stay away from the mouth of the Pearl River (Canton River). The people in this area are apathetic and timid--get out as quickly as possible.

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B. Occupied China (continued)

6. Luichow Peninsula.

Early in 1944 when there were only about three to six thousand Japanese reported on the Luichow peninsula, evasion possibilities there were still fairly good, particularly in the southern portions, where one was reasonably sure of falling into the hands of the guerrillas who could get the evader a passage on a junk for an unoccupied area. Since the Japanese are said to have landed over 100,000 men in the peninsula to prevent allied landings and as a base of operations inland, and since these forces have spread out to the north and along the coast, evasion possibilities have decreased greatly.

The west coast of the peninsula is a bandit area and should be avoided. Many of the puppet troops are from this area but they can be bribed.

Kwangchowan is still administered to a certain extent by the French. The Chinese of this area speak a separate dialect which makes even the use of the Pointie-Talkie difficult. Much patience is required to make them understand one's wishes. In any case, it is best to avoid contacting anyone in the towns or villages.

The coastal towns should be avoided. If landed on or near the coast, or on the water, one should try to make contact with a junk and have it land him if possible on unoccupied territory.

If landed inside the perimeter control, he should head inland to the guerrillas, who will make arrangements for evacuation by junk at night.

The Hainanese hate the Japanese because of the atrocities committed. They are great sailors, and can be counted on to help.

7. Yunan Province.

a. Introduction. Yunan Province is bounded on the west by Burma and on the south by French Indo-China. Its capitol is the old city of Yunan-fu, better known as Kuming, the eastern terminus of the Burma road. At the present time, the lifelines of China extend from the province of Yunan, west, over the Hump to India.

b. Japanese Control. The Japs have not succeeded in getting far into Yunan.

c. Topography. In the west and northwest, the country is extremely rough with ranges of mountains as high as 16,000 feet, cut by the deep gorges of the Kinsh-kiang, Mekong, and Salween Rivers. Forests are heavy on the mountain sides and in the valleys.

d. Climate. April to August is the warm season, with the rainy season from March to August. Mean temperature varies from 47 degrees F. in December to 69 degrees F. in July. Annual rainfall is 37 - 38 inches.

e. Population. The population is the same as the rest of south China with the addition of some border tribes of people whose derivation is Burmese.

Since Kuming is the Eastern terminus of the Burma road, which traverses the western half of the province, a higher percentage of the Chinese here will be familiar with Americans and will, consequently be more anxious to help an evader.

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C. Organization of AGAS.

AGAS ( Air Ground Aid Section ) is the representative MIS-X Organization in China. Its headquarters are in Kunming, in Yunnan Province. From there its activities are directed in all areas of China, French Indo-China, and Thailand. The main areas which AGAS concentrate their efforts on are Eastern China, Northeastern China, French Indo-China, and Eastern Tibet. Per agreement between the London War Office and the War Department, AGAS is held responsible for all E and E work in China; however it is agreed to retain the BAAG group in the Hongkong-Canton area. The BAAG is the British MI-9 representative organization in China. Also by special dispensation from the DMI in Delhi, French Indo-China also becomes a responsibility of AGAS. AGAS maintains close liaison with MIS-X India, who has the responsibility of maintaining liaison with E Group in India and briefing and supplying American units stationed in India or Burma.

Representatives of AGAS, totaling twenty officers and enlisted men as of November 1944, are stationed in each sector of any operational importance, whether it be for Evasion purposes or POW work. Their present headquarters, subject to change, are located near the following cities and cover the areas indicated: (See sketch map on following page).

1. Luichow. (formerly at Kweilin) Hongkong-Canton, and the area between it and Changsha.
2. Shangjao, -- Shanghai, and East China Coast.
3. Mintsing. (formerly at Foochow) Formosa and the South China Coast. (report to Shangjao).
4. Yungan. Hankow area and Central China.
5. Sian.--( 5th War Zone )--South of Yellow River.
6. Yen-an. North East China.

The responsibilities and duties of each post are as follows:

1. AGAS HQ.-Kunming.
  - a. Equipping all combat units based in China with Escape and Evasion Aids.
  - b. Briefing all units stationed in China on E and E. (Kunming Headquarters, is actually responsible for units based in China West of the 108th Meridian)
  - c. Collection, evaluation, and coordination of all information concerning downed aircraft in China, French Indo-China, and Eastern Tibet.
  - d. Search and rescue activities in China. (This is coordinated with the China Air Service Command Search and Rescue Section, recently being activated under the guidance of AGAS).
  - e. Collection and dissemination of all E and E information. This information is passed to the S-2's for their information.
  - f. Investigation and the payment of rewards.
  - g. Investigation of atrocities.
  - h. Collection and dissemination of all POW information to higher headquarters, as well as the location of POW camps to prevent their bombing by Allied planes.

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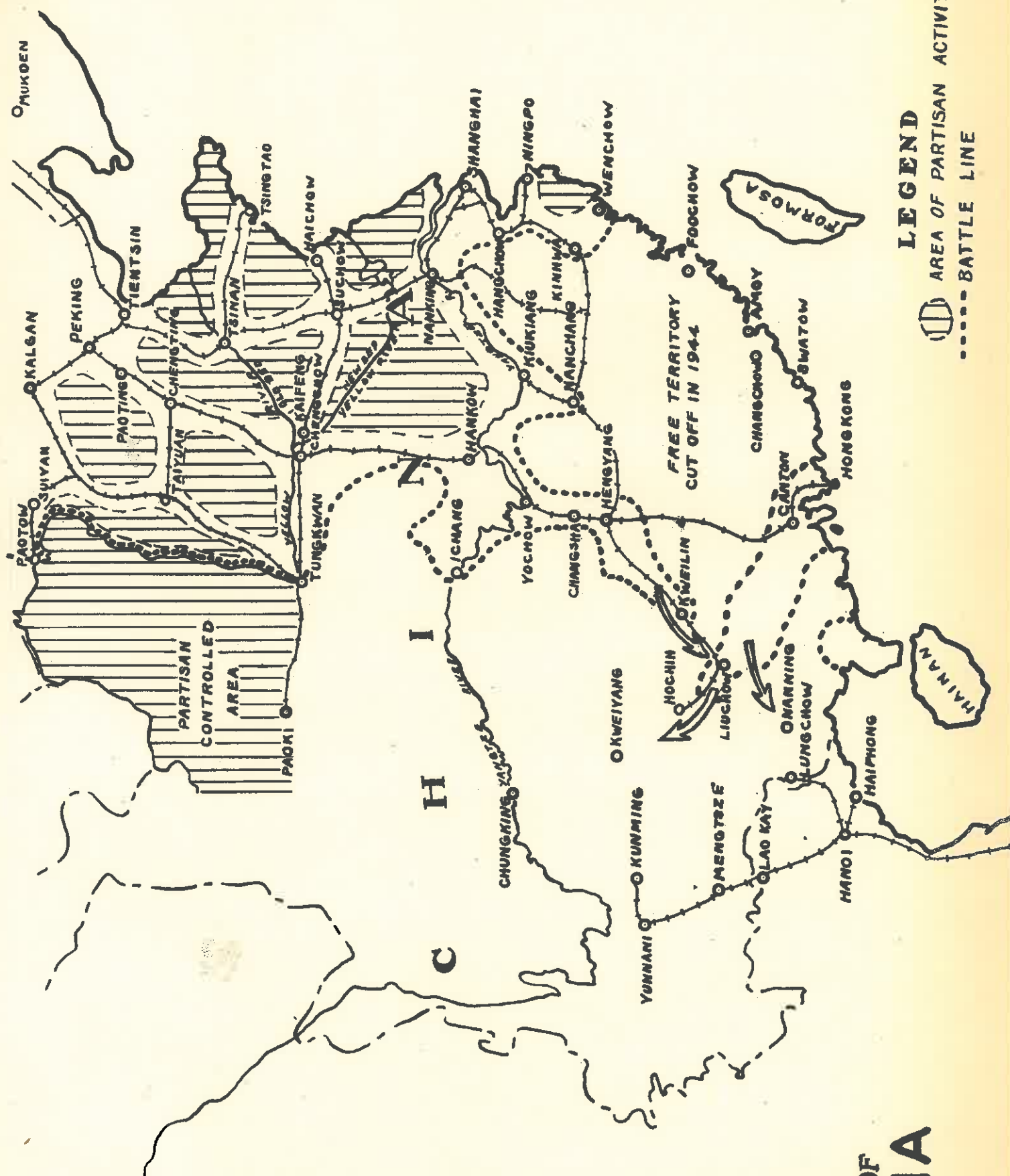
Organization of AGAS (continued).

- i. Collection of all information which might assist the Adjutant General in making a decision on "Missing in action cases".
  - j. Interrogation of all evaders, escapees and refugees.
  - k. Dissemination of operational and general intelligence.
2. Luichow Liaison Office--Luichow.
  - a. Briefing, equipping and maintaining liaison with all units of the 68th Composite Wing. (East of the 108th Meridian).
  - b. Maintaining liaison with the BAAG (British Army Aid Group).
  - c. Assisting in Escape and Evasion in the areas south of Changsha and the Hongkong-Canton areas.
  - d. Assisting the Kunming office in the execution of all of its functions.
3. Mintsing (formerly at Foochow). This post is an operational post.
  - a. Escape and Evasion on the South China Coast, Formosa and Japan.
  - b. Collection of information concerning POW's and aiding the prisoners of war and effecting escapes.
  - c. Collection of general and operational intelligence.
4. Yungan. This post is really an intermediary post for the maintenance of communication and supplies with the Kunming office.
  - a. Maintaining communications, and pushing forward supplies to the forward areas.
  - b. Escape and Evasion in Central China.
5. Shangiao. This is the field headquarters in Eastern China.
  - a. Supervising and controlling all activities of all AGAS units in Eastern China.
  - b. Escape and Evasion in Shanghai, the Eastern waters of the Yangtze, and the East China Coast.
  - c. Collection of information concerning POW's and aiding the prisoners of war, and effecting escapes.
  - d. Maintaining liaison with the Third War Zone Hdqs., and guerrilla units in the immediate vicinity.
  - e. Assisting the Kunming office.
  - f. Collection of general and operational intelligence.
6. Sian.
  - a. Escape and Evasion in the Fifth War Zone area and the area on the Yellow River not in Communist hands.
  - b. Briefing of units staging from Sian or Liangshan.
7. Yenan. This is the field headquarters for North East China.
  - a. Maintaining liaison with the Communist, and soliciting their aid.
  - b. Instructing and organizing the Communist to further our efforts in North Eastern China.
  - c. Escape and Evasion in North Eastern China.
  - d. Prisoner of war work in North Eastern China.
  - e. Collection and dissemination of general information in its respective area.

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# MAP OF CHINA



## LEGEND

AREA OF PARTISAN ACTIVITY  
----- BATTLE LINE

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IX. FORMOSA (Taiwan)

A. Introduction.

1. There is very little late information relative to Taiwan as the Japanese have not allowed any Europeans to go ashore.

Taiwan, an oval-shaped island, lies 248 miles north of Luzon, parallel to and approximately 100 miles off the China Coast. It is 249 miles long N/S, 93 miles wide E/W and has an area of 13,807 square miles. The Pescadores Islands, 48 square miles of land area, lie 26 miles west in the Formosa Channel. Chinese immigration to Taiwan began in the 16th century but the Japanese have controlled the island since 1896. Taiwan and the Pescadores are important Japanese bases for naval forces, for troops moving south, and for wounded, convalescent and recalled troops moving north.

2. Japanese Control. Excluding the main Japanese Islands, Formosa is Japan's strongest and best-developed base to the south. Both the main island and the Pescadores serve as training areas for large forces of the Japanese army. Units of the Japanese fleet also use the harbors of Takao and Keelung on the main island and Mako in the Pescadores as bases. The whole island is heavily fortified.

There is a civil police force of roughly 15,000, of whom around 5,000 are on permanent patrol duty on the eastern part of the island. This force consists of both regular and secret police, and must be included in any estimate of the armed forces of the island.

The majority of the Japanese civil population lives in the towns and villages, there being at least 200 Japanese in any community large enough to have a district office.

Geography (Topography).

Taiwan is mostly mountainous, there being only 3,000 square miles of plains and foothills, virtually all of them on the west coast. The foothills and mountains, up to 5,000 feet, are covered with dense, subtropical forests. Above 5,000 feet, the mountains are forested with spruce, hemlock and pine. The highest peak is 13,075 feet and there are 78 others 9,842 feet or higher.

The arable lowlands are intensely cultivated, the climate allowing two and sometimes three crops a year. The lowlands are dotted with clumps of giant bamboo, 10 to 12 inches thick and 30 to 80 feet high, surrounding each farmhouse.

Rivers are short, swift and torrential, mostly flowing east or west. Dry stream beds may quickly become raging floods due to rains in the mountains.

Small swamps and lagoons lie along the west coast. The east coast mountains generally extend to the shore, 300-foot perpendicular cliffs being common.

Taiwan's mountain barrier runs north-south the length of the island.

The island averages 330 earthquakes a year; few are of great violence.

The Pescadores are flat, windswept wastes, with no forests and very little vegetation. Agriculture requires intense cultivation, terracing and irrigation.

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C. Climate.

The climate is sub-tropical, the average annual temperature being slightly above 70 degrees. There is no severe cold, though in winter (November to March), the north and northeast have cold, chilling, sunless days while southern and western weather is pleasant. The higher peaks have a light winter covering of snow. Precipitation ranges from 289 inches annually on the north coast to 65 on the west coast and 37 on the arid Pescadores. The summers are hot and humid.

Taiwan averages six typhoons a year and at least four can be expected during the normal season, July to September. Typhoons usually traverse the island west-northwesterly at a speed of 10 or 11 nautical miles per hour. Wind velocities exceed 60 miles an hour, accompanied by torrential rains.

D. Population and Customs.

There are three racial groups on Taiwan, the Chinese, the Japanese, and the Aborigines. As of 31 December, 1939, the population was approximately 6,000,000, of whom 94 per cent were Formosan-Chinese and 5 per cent Japanese, with the Aborigines numbering about 150,000.

Population density ranges from 1,400 per square mile in the Pescadores to the sparsely inhabited Aboriginal areas in the mountains. Taiwan's population is concentrated in the western coastal plain and foothills.

The Japanese live mostly in the cities and occupy all administrative posts in governmental, educational and economic life. There are few Japanese farmers.

The Formosan-Chinese are virtually all farmers. They despise the Japanese, but generally respect Japanese policing powers and conform to Japanese orders as the course of least resistance. The Japanese have destroyed all out-spoken opposition or have driven it underground. The Chinese and the Aborigines hate each other but both mutually hate the Japanese.

The Aborigines are probably of Malayan or Polynesian stock. They are short, have yellowish brown skin and straight black hair. Their other physical characteristics, language and customs show a strong resemblance to the Malays. Some of them who have submitted more to Japanese control, live in the foothills, but about two-thirds of them are classed as "savages" and live in the mountains. Their huts are wooden or stone in villages averaging 100 to 150 and presided over by a head man with a chief over each tribe.

They admire physical strength and courage, are very strong and agile, have a high moral code. They are excellent woodsmen, living mainly by hunting and fishing with small garden plots cultivated by primitive methods.

The Japanese have maintained a continual effort to subjugate the Aborigines, using guns, air and naval bombardment and gas. The Japanese police their areas closely.

The Aborigines have been head-hunters for centuries and indications are that the practice has not been completely stamped out. As late as 1930, Aborigines took 190 Japanese heads in one battle, brought on by Japanese promiscuity with Aborigine women. Japanese retaliation was brutal, including the arming of other Aborigine tribes against the unarmed group. Japanese policy has been to play one tribe against another, using old tribal rivalries.

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