FIRST AID

1. GENERAL

1.01 The purpose of this practice is to outline the latest first aid procedures as recommended in the American Red Cross First Aid Textbook.

1.02 It is essential that all Continental Telephone employees *know first aid.* Do not attempt to save time and effort by using second best first aid methods. It is just as important to know the "don'ts of first aid as it is to know the "do's".

1.03 Report all injuries to your supervisor as soon as possible.

2. THE WHY AND HOW OF FIRST AID

2.01 First aid is defined as the immediate and temporary care given to the victim of an accident or illness until the services of a physician can be obtained.

2.02 First aid training also shows how injuries occur and helps to reduce accidents by increasing the desire to prevent injuries.

2.03 In case of serious injury, act quickly as each second of delay is important. Take care not to make statements to the victim and to bystanders about the injuries. It is not the First Aider's duty to diagnose, evaluate, or predict.

2.04 Follow these general directions:

a. Keep the victim lying down. Do not transport a seriously injured person unless it is necessary to do so.

b. Treat injuries in this order:

(1) Severe bleeding.

(2) Stopped respiration.

(3) Poisoning by mouth.

(4) Shock.

c. Check for injuries and plan what to do.

d. Obtain the services of a physician.

3. GETTING THE DOCTOR OR AMBULANCE

3.01 If possible, stay with the victim and ask someone else to call a doctor. If necessary, call the police for this purpose. (Consult a list of physicians and hospitals, if available).

3.02 When the doctor is called, give him the following information:

a. Cause and probable extent of the injury.

b. Location of the victim.

c. What first aid is being given.

d. What first aid supplies are available.

e. Whether an ambulance is needed and if one has been called.

4. WOUNDS AND BLEEDING

4.01 A wound is a break in the skin. It is caused by force and usually extends into the underlying tissue. Control bleeding and protect wounds from contamination. The danger of tetanus (lockjaw) should be considered in all wounds. Guard against infection. (If it occurs, see paragraph 13.12.) Wounds with severe bleeding are treated as follows:

a. Severe bleeding must be stopped without delay. Apply direct pressure to the wound using a cloth pad or even a bare hand, if necessary. See Figure 1.

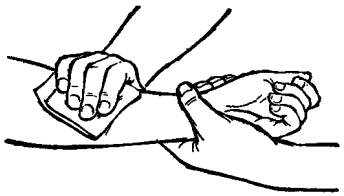

FIGURE 1. Direct Pressure on the Wound.

b. Elevate the bleeding part, if possible.

c. Pressure points are as follows:

(1) If an arm or leg is involved and direct pressure must be delayed or is not entirely effective, apply digital pressure at pressure points (Figures 2 and 3).

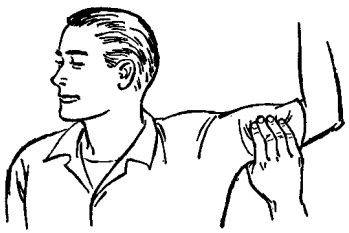

FIGURE 2. Finger Pressure on Brachial Artery.

(2) Pressure on the inner half of the arm (midway between the elbow and the armpit) compresses the brachial artery against the bone, causing bleeding in the arm, beyond the pressure point to be controlled.

(3) Pressure applied just below the groin on the front inner half of the thigh compresses the femoral artery against the underlying pelvic bone. If considerable force is applied, bleeding below the point of pressure will be controlled.

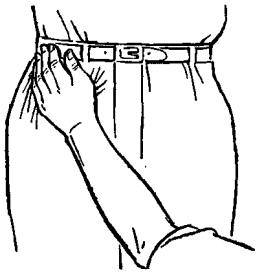

FIGURE 3. Hand Pressure on Femoral Artery.

d. Bandage the pad firmly into place on the wound. Do not remove it once it is in place. If blood saturates the dressing, place additional layers of cloth on top of the original dressing.

e. *The tourniquet should be used only in extreme cases, where it is necessary to risk losing the victim's limb in order to save his life.* If it is to be used:

(1) Place it above and near the wound, between the body and wound.

(2) Make sure that it is applied tightly enough to stop bleeding.

(3) Wrap the material tightly twice around the limb if possible and tie a half knot. (See Figure 4A.)

(4) Place a short stick on the half knot and tie a full knot. (See Figure 4B.)

(5) Twist the stick to tighten the tourniquet until the flow of blood ceases. (See Figure 4C.)

(6) Secure the stick in place with the loose ends of the tourniquet or another strip of cloth. (See Figure 4D.)

(7) A notation must always be made and attached to the victim, giving the time of application and location of the tourniquet. Be certain that the ambulance attendants are verbally notified also.

(8) *Do not release the tourniquet once it has been applied. It is urgent that such cases have medical attention as soon as possible.*

4:02 Neck Wounds–These are most frequently made by knives, razors and windshield glass. A large artery, vein, or both, may be cut. First aid for neck wounds is as follows:

a. Apply hand pressure both above and below the cut and continue to hold until a doctor directs that pressure be released. Do not worry about getting the hand in the wound in such severe cases.

b. A bulky compress of the cleanest immediately available material to maintain pressure may be a great help.

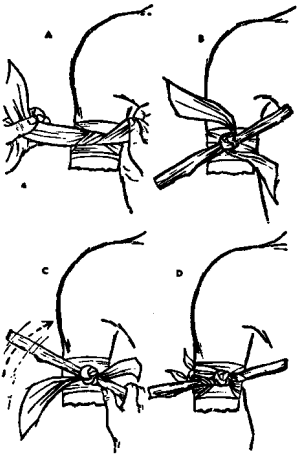

FIGURE 4. Application of Tourniquet.

4.03 Minor wounds in which bleeding is not severe. First aid for minor wounds is as follows:

a. Wash your hands thoroughly with clean water and soap.

b. Cleanse the injury thoroughly, using antiseptic soap and boiled water or if not available, use merthiolate on a sterile compress.

c. Apply merthiolate from first aid kit if available. If not, cover with sterile or clean dressing and bandage snugly.

d. See a doctor promptly if evidence of infection appears.

4.04 Wounds with internal bleeding are caused by head injury (see paragraph 9.02), or are caused by other than head injury and may be recognized by the appearance of blood at the uninjured mouth or nose. First aid for internal bleeding is as follows:

a. Keep the victim lying on his back. Turn the head to one side.

b. Raise the head and shoulders if breathing is difficult.

c. If the patient is in shock or is unconscious, turn him on his side with the head and chest lower than the hips to prevent blood from being drawn into the lungs.

d. *Do not* give stimulants.

4.05 First aid for gunshot wounds and other deep wounds is as follows:

a. Keep the victim as quiet as possible. Moving may aggravate fractures or the existing damage to internal organs.

b. *Do not* give stimulants. If the wound is abdominal, do not give any food or water.

c. If air passes through a chest wound as the victim breathes, cover the wound firmly with dressing material.

d. If intestines protrude, do not force them back into the abdomen; cover with wet cloths at body temperature. Water and dressings should be as sterile as possible under the circumstances.

5. BITES AND STINGS

5.01 First aid for animal bites is as follows:

a. Wash the wound thoroughly to remove all animal saliva. Use a gauze compress and a soap and water solution to scrub the wound; antiseptic soap is best, but any soap will do. Thorough washing of the bite wound should be continued for at least 10 to 15 minutes; then rinse with clean running water and apply a sterile dressing.

b. If possible, steps whould be taken to confine the animal so that it will be available for examination to determine whether or not its bite may have transferred rabies or tetanus.

c. Always consult a physician promptly.

5.02 Snake Bites (poisonous)—Most snake bites can be prevented when working in snake infested regions by wearing high topped boots or heavy leggings, and by being extremely careful about putting the hands in places where they may be bitten. Snake bite symptoms and first aid are as follows:

a. Symptoms of poisonous snake bite:

(1) The bite of a rattlesnake, copperhead or cotton-mouth moccasin leaves one or two small puncture wounds. Since the coral snake chews rather than bites, it leaves no fang marks. Severe pain, swelling and discoloration of the poisoned part occurs rapidly.

(2) General weakness, shortness of breath, nausea, vomiting, weak and rapid pulse, dimness of vision, and possible unconsciousness occurs.

b. First aid for poisonous snake bites:

(1) Begin at once. Have the victim lie down and keep quiet, as muscular activity increases circulation resulting in more rapid absorption of the venom.

(2) If the bite is on an extremity, tie a constricting band—*not* a tourniquet—firmly above the bite.

(3) Sterilize a knife or razor blade with a match flame, merthiolate, or alcohol and make incisions. Try with one incision to get into the venom deposit point. Crosscuts about 1/4" long may be made at each fang mark and over the suspected deposit point. Make shallow cuts through the skin in the crossways direction; longitudinal cuts may be deeper. Muscles and nerves run in a longitudinal direction and a deep crosscut may sever them. Beware of cutting muscles and nerves of the finger, hands, or wrist, for they lie immediately below the skin and their injury may cause disability. Apply suction, using the mouth or a suction cup. Continue suction for an hour or more.

NOTE: When a snake bite kit is available, the instructions inside the cover should be followed.

5.03 Snake Bites (nonpoinsonous)–This paragraph covers the symptoms of and first aid for nonpoisonous snake bites.

a. Symptoms of these bites are:

(1) Horseshoe-shaped row of teeth marks.

(2) Absence of symptoms other than those usually following a minor wound.

b. First aid for nonpoisonous bites is to:

(1) Cleanse the wound thoroughly with clean water.

(2) Apply sterile dressing.

5.04 Insect Bites and Stings–First aid procedures to be followed for bites and stings are:

a. Remove the "stinger" if it is still present.

b. If possible, apply ice or ice water to the wound.

c. Apply medicated ointment.

d. Avoid scratching the bite.

5.05 Tick Bites–Rocky Mountain Spotted Fever is transmitted by tick bites. Despite its name, the disease can occur in any part of the country. First aid for tick bites is as follows:

a. If a tick is present, grasp it with tweezers, remove it, and apply merthiolate to the wound.

b. If the hands come in contact with ticks, wash them thoroughly with antiseptic soap and water. Gently scrub the area of the tick bite thoroughly with antiseptic soap and water.

c. If any unusual symptoms develop, see a doctor.

5.06 Spider, Scorpion and Tarantula Bites–First aid for these bites is:

a. If the bite is on an extremity, apply a constricting band for *5 minutes only* just above the bite.

b. Keep the affected part lower than the rest of the body and apply ice, ice water, or any cold application locally for two hours.

c. Obtain medical attention.

6. SHOCK (DUE TO PHYSICAL INJURY)

6.01 *All seriously injured persons should be treated for shock.*

6.02 Shock is defined as a depressed condition of many bodily functions due to failure of sufficient blood to circulate through the body following serious injury. Shock causes low bodily resistance and possibly death. Shock factors, symptoms, and first aid are discussed in the following paragraphs:

a. Factors which make shock worse are:

(1) Pain.

(2) Rough handling.

(3) Improper transportation.

(4) Continued bleeding.

(5) Excessive cold or heat.

(6) Stopped respiration.

(7) Sight of blood.

b. Symptoms of shock are:

(1) Weakness of the victim.

(2) The skin is pale, cool, and moist. Perspiration appears on the forehead, lips, and palms.

(3) The pulse is rapid and sometimes weak or even absent.

(4) Breathing is fast, shallow, irregular, and sometimes comes in occasional deep breaths.

(5) The eyes appear vacant and lusterless.

c. More general and less severe shock symptoms are:

(1) Thirst.

(2) Nausea.

(3) Indifference.

(4) Restlessness.

d. First aid for shock is:

(1) Keep the victim lying down.

(2) Do not add heat. Simply prevent loss of body heat by covering (if necessary with a blanket, overcoat, or newspapers). *Do not* cause the victim to sweat.

(3) Fluids should be administered in small amounts if the victim is conscious.

7. ARTIFICIAL RESPIRATION

7.01 Rescue is usually the first step in aiding the victim. Electric shock, gas inhalation, and drowning are the most common causes of stopped respiration. Every plant man should be thoroughly familiar with rescue techniques where injury due to electricity or gas is involved, including rescue from manholes, poles, and power wires. Some of the important points to remember in effecting rescues are listed below:

a. For injury due to electricity:

(1) Break the contact by separating the victim from the electrical power source, making sure that in the process you do not expose yourself to contact with the victim or the source of electricity. Use rubber gloves, long dry sticks, dry rope, dry folded clothes, and stand on insulating material if possible.

(2) Cut off the current supply if possible.

b. Proceed as follows for gas inhalation:

(1) Recognize the danger of explosion.

(2) If in a building, shut off both gas and electricity supply.

(3) Ventilate the area thoroughly before attempting rescue.

c. Drowning–Unless you are an expert swimmer and trained in life saving, keep out of the water when rescuing a drowning person. Instead, "row or throw." (Learn American Red Cross life saving and water safety techniques.)

7.02 General Directions for artificial respiration are as follows:

a. *Start at once and do not give up.* There are many cases on record where a person apparently dead has been revived after several hours of continuous artificial respiration.

b. The purpose is to restore normal respiration by maintaining an alternating decrease and increase in the expansion of the chest and thereby an adequate air exchange.

c. The mouth to mouth rescue breathing method is the Continental Telephone standard for general use. However, in the rare case where it is impractical to use this method, another means of ventilating the lungs should be used.

d. The only equipment necessary to perform rescue breathing is carried with you at all times–your hands, your mouth, and your repetitive breathing.

7.03 Additional related directions for artificial respiration are:

a. Begin artificial respiration immediately.

b. A mechanical resuscitator operated by a trained person should be used when available.

c. If assistance is available, have blankets or other suitable material placed over and under the victim.

d. When breathing starts, keep the victim lying down and treat for shock.

7.04 Mouth-to-mouth (rescue breathing) Artificial Respiration—If there is foreign matter visible in the mouth, wipe it out quickly with your fingers or a cloth wrapped around your fingers. Proceed as follows:

a. Tilt the head back so that the chin is pointing upward (Figure 5). Pull or push the jaw into a jutting-out position (Figure 6 and 7).

FIGURE 5.

FIGURE 6.

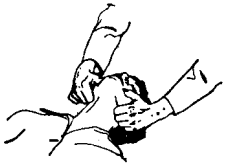

FIGURE 7.

These maneuvers should relieve airway obstruction by moving the base of the tongue away from the back of the throat.

b. Open your mouth wide and place it tightly over the victim's mouth. At the same time pinch the victim's nostrils closed (Figure 8) or close the nostrils with your cheek (Figure 9). An alternative is to close the victim's mouth and place your mouth over his nose (Figure 10). Blow into the victim's mouth or nose. (Air may be blown through the victim's teeth, even though they may be clenched.) The first blowing efforts should determine whether or not obstruction exists. This will be apparent if there is resistance to your blowing effort and if the victim's chest fails to rise.

FIGURE 8.

FIGURE 9.

FIGURE 10.

c. Remove your mouth, turn your head to the side, and listen for the return rush of air that indicates air exchange. Repeat the blowing effort. For an adult, blow vigorously at the rate of about 12 breaths per minute. For a child, take relatively shallow breaths appropriate for the child's size, at the rate of about 20 per minute.

d. The rise and fall of the victim's chest wall is the best indication that you are correctly administering rescue breathing. Observe chest movement.

e. If you are not getting an air exchange, recheck the head and jaw position (Figures 5, 6, and 7). If you still do not get an air exchange, quickly turn the victim on his side and administer several sharp blows between the shoulder blades. This should dislodge any obstructing matter (Figure 11). Again sweep your fingers through the victim's mouth to remove any foreign matter.

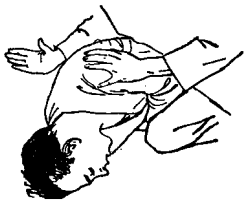

FIGURE 11.

f. Those who do not wish to come in contact with the person may place a cloth over the victim's mouth or nose and breathe through it. The cloth does not greatly affect the exchange of air.

7.05 Mouth-to-mouth (rescue breathing) Technique is possible for infants and small children. If foreign matter is visible in the mouth, clean it out quickly as described previously in paragraph 7.04. Proceed as follows:

a. Place the child on his back and use the fingers of both hands to lift the lower jaw from beneath and behind, so that it juts out (Figure 12).

b. Place your mouth over the child's mouth and nose (Figure 13), making a relatively leakproof seal. Breathe into the child, *using shallow puffs of air* in order to prevent damage to the child's lungs. The breathing rate should be about 20 per minute. Observe chest movement.

FIGURE 12.

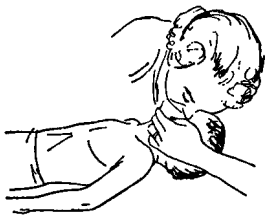

FIGURE 13.

If you meet resistance in your blowing efforts, recheck the position of the jaw. If the air passages are still blocked, the child should be suspended momentarily by the ankles (Figure 14) or inverted over the arm (Figure 15) and given two or three sharp pats between the shoulder blades to dislodge any obstructing matter. Check the mouth for obstructing matter and remove it quickly.

7.06 Back Pressure–Arm Lift Method of Artificial Respiration–It is possible that because of the nature of the injury or other circumstances, the manual method of artificial respiration should be used. It is re-emphasized that mouth-to-mouth (rescue breathing) is the preferred method because of its effectiveness, practicality, speed, and simplicity. Proceed as follows:

a. Place the victim in the facedown, prone position. Bend his elbows and place his hands one upon the other. Turn his face to one side, placing the cheek upon the hands (Figure 16).

FIGURE 14.

FIGURE 15.

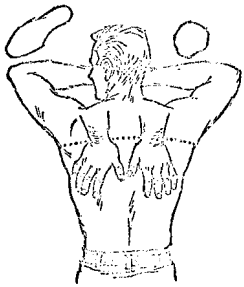

FIGURE 16. Position of Victim.

b. Position of the operator—kneel on either the right or left knee at the victim's head, facing him. Place your knee at the side of the victim's head close to his forearm. Place your other foot near his elbow. If it is more comfortable, kneel on both knees, one on either side of the victim's head. Place your hands on the flat of the victim's back so that the palms lie just below an imaginary line running between the armpits. With thumb tips just touching, spread your fingers downward and outward (Figure 17).

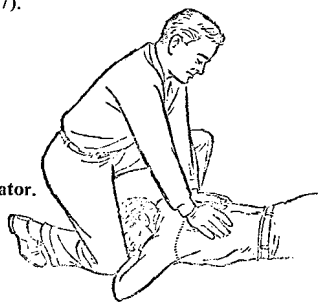

FIGURE 17. Position of Operator.

c. Rock forward until the arms are approximately vertical and allow the weight of the upper part of your body to exert slow, steady, even pressure downward on the hands. This forces air out of the lungs. Your elbows should be kept straight and the pressure should be exerted almost directly downward on the back. You do not need much pressure (Figure 18).

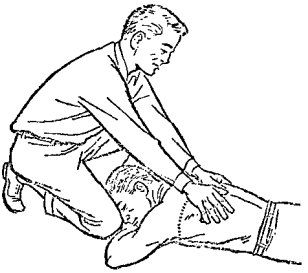

FIGURE 18. Compression Phase.

d. Release the pressure, avoiding a final thrust and commence to rock slowly backward. Place your hands upon the victim's arms just above his elbows (Figure 19).

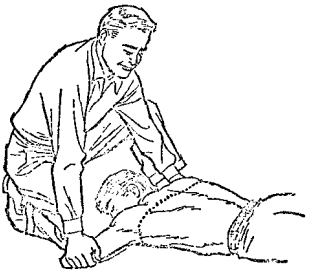

FIGURE 19. Position for Expansion Phase.

e. Draw his arms upward and toward you. Apply just enough lift to feel resistance and tension at the victim's shoulders. Do not bend your elbows, and as you rock backward the victim's arms will be drawn toward you. Then lower the arms to the ground. This completes the full cycle. The arm lift expands the chest by pulling on the chest muscles, arching the back, and relieving the weight on the chest. The cycle should be repeated 12 times per minute at a steady rate. The compression and expansion phases should occupy about equal time with the release periods being of minimum duration (Figure 20).

7.07 Pole Top Resuscitation—The conditions surrounding the victim and the exposure of the rescuer to danger would have a marked relationship as to what method should be used and how soon it could be started. Whenever conditions and safety of the rescuer will permit, the following basic principles should be applied:

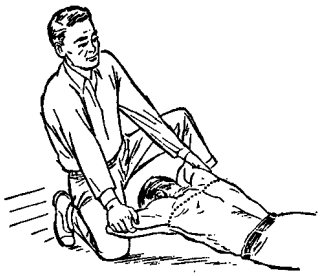

FIGURE 20. Expansion Phase.

a. *Get the first breath of air into the victim quickly.* This should be accomplished by simple compression of the chest by any means possible. The importance of early ventilation of the lungs is shown by the following:

% Chance for Survival	Minutes after Suspension of Breathing
98%	1 min.
90%	2 min.
55%	3 min.
30%	4 min.
15%	5 min.

b. If practicable, move the victim to a more desirable position described in step c.; however, this should be done without interrupting the exchange of air in the lungs.

c. The rescuer, after checking the conditions and assuring himself that artificial respiration can be safely administered, lets the victim hang from his safety strap, alongside the pole. He should then take a position from which he can secure his safety strap around the pole and between the legs of the victim, then proceed upwards until the victim is straddling the strap. By moving the safety strap as high as possible on the pole, much of the victim's weight is carried by the rescuer's strap as he places his weight against it (Figure 21).

d. Compression Phase–Pressure can best be applied by the rescuer locking his fingers over the lower abdomen, lifting up and back as he rocks back in his safety belt. This expels the air from the lungs as the rib cage is compressed and the intestines are forced up against the diaphragm. After firm resistance is met, release the pressure by rocking forward (Figure 22).

NOTE: Sometimes electric shock produces a muscle block which can be broken by additional finger pressure against the diaphragm.

FIGURE 21.

FIGURE 22.

Expansion Phase–Immediately after the completion of the compression phase, raise the arms beneath the victim's so that the rescuer's elbows hook beneath the victim's arm pits. The rescuer again rocks back in his safety belt lifting the victim's shoulders up and back, simulating the American Red Cross Arm-Lift Technique (Figure 23).

FIGURE 23.

f. The compression and expansion phases described should take approximately 2-1/2 seconds each.

8. POISONING BY MOUTH

8.01 *Hurry* is the word to associate with poisoning by mouth. Give first aid without delay. If possible have someone call a doctor, poison control center, or hospital while you give first aid.

8.02 Symptoms of poisoning vary greatly according to the kind and amount of poison taken and the time elapsed. Many poisons cause no symptoms until absorbed into the system. Others cause burns in the mouth or abdominal pain. There may be nausea, vomiting, visual disturbances, convulsions, headache, or deep sleep.

8.03 First aid for poisoning is as follows:

a. When the poison is not an acid, alkali, strychnine, or kerosene:

(1) Dilute the poison. Quickly administer fluid (milk and/or water) in large amounts.

(2) Induce vomiting–strong baking soda solution or milk of magnesia. Repeat the dilution and induction of vomiting until the fluid is returned clear. If fluid cannot be administered, use fingers or a spoon in the mouth to induce gagging and vomiting.

(3) If the antidote is given on the label, administer it as directed. If no specific antidote is known, administer a universal antidote of two parts by volume of crumbled burnt toast, one part strong tea, and one part milk of magnesia.

b. When the poison is an acid:

(1) Dilute the poison. Quickly administer fluid (milk and/or water).

(2) *Do not induce vomiting.* Neutralize with weak alkali (baking soda in water, or milk of magnesia); then give milk, olive oil, or egg white to protect the digestive tract lining.

(3) If the antidote is given on the label, administer it as directed.

c. When the poison is an alkali:

(1) Dilute the poison. Quickly administer fluid (milk and/or water).

(2) *Do not induce vomiting.* Neutralize the poison with weak acid (vinegar, lemon juice). Follow with milk, olive oil, or egg white.

(3) If the antidote is given on the label, administer it as directed.

d. When the poison is a petroleum product such as kerosene, solvents, or insecticides:

(1) Dilute the poison. Quickly administer fluid (milk and/or water).

(2) *Do not induce vomiting.*

9. INJURIES TO BONES, JOINTS, AND MUSCLES

9.01 Fractures are defined as a break in a bone. The various kinds of fractures, their symptoms and first aid are discussed in the following paragraphs.

a. The various kinds of bone fractures are:

(1) Simple fracture—a closed fracture not associated with an open wound.

(2) Compound fracture—an open fracture that has a wound extending from the skin to the fracture area.

(3) Comminuted fracture—The bone is broken into small pieces and it may be closed or open.

b. Symptoms of fractures are swelling, tenderness, deformity, pain on motion, discoloration, and possibly bleeding.

c. First aid for fractures is:

(1) Do not disturb or move broken ends.

(2) Do not disturb or move the joints on each side of the broken bone.

(3) Treat the victim for shock. See paragraph 6.05.

(4) When in doubt, handle the injury as a fracture.

(5) If possible, apply an ice bag over the painful area.

(6) Do not move the limb before immobilizing. Use splints, arm sling, newspapers, etc.

(7) Provide transportation.

(8) Call a doctor.

d. Additional measures for compound fractures are:

(1) Control the bleeding.

(2) Apply a clean dressing to the wound.

9.02 Head Injuries—These consist of concussion and skull fractures.

IMPORTANT: A concussion is is an injury to the brain caused by a blow to the head and may or may not involve a skull fracture. Concussion must be expected due to force in any accident. Whether or not the skull is fractured, it is not important compared to the possible injury to the brain. The primary treatment for both is the same and *in both cases it is essential to keep the victim as quiet as possible.* Symptoms of and first aid for head injuries are as follows:

a. Some or all of the following symptoms may be present:

(1) Evidence of a blow, head wound, or swelling.

(2) Unconsciousness—total or partial—even if only for a few seconds after an accident.

(3) Eye pupils are unequal in size.

(4) Headache and dizziness.

(5) Paralysis of extremities.

(6) Bleeding from the nose, an ear canal, or the mouth.

b. First aid for head injuries is as follows:

(1) **It is extremely important to keep the victim lying down and quiet.**

(2) *Do not give stimulants.*

(3) If the face is flushed, elevate the head slightly.

(4) If the victim is unconscious, turn the head to one side.

(5) Loosen clothing about the neck.

(6) Merely lay a dressing on the wound.

(7) Reassure the victim if he is conscious.

9.03 Fracture of the neck or spine is treated as follows:

a. If at all possible, do not move the victim; summon a physician to the scene.

b. Keep the victim flat on his back.

c. Do not allow the head to tilt forward or sideways.

d. If transportation is absolutely essential (even for a few feet), use a firm support such as a shutter, board, or door.

9.04 Dislocations–These injuries are defined as a displacement of the bone end from the joint. The surrounding ligaments and other soft tissue always suffer some injury. Symptoms and first aid for dislocations are:

a. Symptoms of dislocation are swelling, tenderness to the touch, deformity, pain on motion, and discoloration.

b. First aid for dislocation is as follows:

(1) Do not disturb the affected part.

(2) *Do not* attempt to reposition the dislocated bone.

(3) Obtain medical attention.

(4) Treat for shock as in paragraph 6.05.

9.05 Strains and Sprains–A strain is defined as an injury to a tendon or muscle. A sprain is a stretching or tearing of the ligaments around a joint. The symptoms of and first aid for these injuries are as follows:

a. Symptoms of these injuries are:

(1) Strain–pain and stiffness.

(2) Sprain–pain, swelling, lack of use, and discoloration.

b. First aid for a strain is:

(1) Rest and apply heat.

(2) Rubbing may help.

(3) In severe cases, call a doctor.

c. First aid for a sprain is:

(1) Elevate the injured member and apply cold.

(2) If the ankle is sprained, apply a bandage over the shoe to immobilize the ankle.

(3) If lower extremities are involved, avoid placing weight on the limb.

(4) In severe cases, see a doctor.

(5) Always have suspected sprains x-rayed.

10. BURNS

10.01 Most burns are caused by the following:

a. Dry heat.

b. Flame.

c. Hot metal.

d. Hot liquid.

e. Steam.

f. Electricity.

g. Sun.

h. Chemicals.

10.02 Possible effects of burns on the body are:

a. Shock

b. Infection.

c. Permanent tissue damage.

d. Death.

10.03 There are three degrees of burns which are:

a. Skin merely reddened–first degree burn.

b. Skin blistered–second degree burn.

c. Deeper tissue is destroyed–third degree burn.

10.04 First aid for burns is as follows:

a. Thermal burns are extensively burned areas, such as those covering the back or chest area or a large portion of one or more extremities. First aid methods to be followed are:

(1) Treatment for shock.

(2) Keep air from the burn by application of a thick dressing; if the dressing is sterile, it will help prevent further contamination. Use a lint-free material.

(3) The dressing should be kept dry.

(4) Do not break blisters.

(5) Transport the victim at once to a doctor or hospital.

b. Small area burns should be treated by applying vaseline and a sterile dressing.

c. Thermal burns of the eye should be treated thusly:

(1) If pain can be tolerated, irrigate the eye gently to remove the foreign material.

(2) Cover the eye with a dry sterile dressing or clean cloth.

(3) Obtain medical aid immediately.

(4) *Do not* apply oil or ointments.

d. Chemical burns should be treated by:

(1) Washing away the chemical with large amounts of water.

(2) If specific chemicals for treatment are indicated on the label and they are available, apply them after washing with water.

e. Creosote burns should be treated by washing with hot soap and water and applying vaseline to the burned area.

f. Acid or alkali burns of the eye should be treated thusly:

(1) *Quickly* irrigate the eye thoroughly with plain tap water for several minutes.

(2) Remove any particles of the chemical.

(3) Have the victim close his eye.

(4) Place a dressing over the lid and bandage snugly.

(5) Obtain immediate medical attention.

g. Sunburn—The two types of sunburn should be treated. They are:

(1) Mild sunburn—Treat with medicated ointment, cold cream, salad oil, or shortening.

(2) For severe sunburn, obtain medical advice.

11. ILL EFFECTS OF EXCESSIVE HEAT

11.01 Exposure to excessive heat may result in heat exhaustion, heat stroke, or heat cramps. Symptoms of and first aid for heat are as follows:

a. Symptoms of heat exhaustion are:

(1) Temperature is normal.

(2) Fatigue.

(3) Headache.

(4) Vomiting or nausea.

b. Symptoms in severe cases of heat exhaustion are:

(1) Profuse perspiration.

(2) Extreme weakness.

(3) Pale and clammy skin.

(4) Heat cramps may be present.

c. First aid for heat exhaustion is to:

(1) Provide bed rest.

(2) Every 15 or 20 minuets give a half glass of water in which a half teaspoon of salt has been dissolved.

d. Symptoms of heat stroke are:

(1) Usually begins with a sharp pain in the head and dizziness.

(2) Almost immediate unconsciousness.

(3) Skin is dry and very hot.

(4) The face is flushed.

(5) Breathing is difficult.

(6) Very high temperature.

(7) Pulse is rapid.

e. First aid for heat stroke is as follows:

(1) Arrange for medical care immediately.

(2) Move the victim to a cool place; indoors if possible.

(3) Provide bed rest.

(4) Remove clothing.

(5) Sponge the body with alcohol or lukewarm water to reduce the body temperature. Pulse rate should be 110 per minute or less. Resume the sponging if the temperature rises again.

(6) When the victim is fully conscious, give a half glass of water with half a teaspoon ful of salt dissolved in it.

(7) Provide covering according to the victim's comfort.

f. Symptoms of heat cramps are pain in the abdominal muscles or limbs with profuse perspiration.

g. First aid for heat cramps is to:

(1) Apply firm, steady pressure to the painful area.

(2) Apply warm wet towels to the painful area.

(3) Give a half glass of salt water. Repeat this several times at 15 minute intervals.

12. ILL EFFECTS OF EXCESSIVE COLD

12.01 Frostbite is defined as the freezing of a body part, usually the nose, ears, cheeks, fingers, or toes. Symptoms of frostbite vary and the condition may not be evident to the victim. Symptoms and first aid for this condition are as follows:

a. Frostbite symptoms are:

(1) Feeling of intense cold or numbness.

(2) Pain in the early stages, later subsiding.

(3) Dead white, glossy skin, later changing to yellow.

(4) Blisters may appear.

b. First aid for frostbite is:

(1) Handle a frozen or frostbitten area with the greatest care.

(2) Firm pressure applied against the area with a warm hand is helpful but *rubbing with the hand or snow is definitely harmful.*

(3) If outside, cover the frozen area with woolen material.

(4) Make the victim warm and remove him to a warm room as soon as possible.

(5) If the frozen area is still cold or numb, rewarm it by immersing it in *lukewarm* water, or by wrapping it in blankets. **Do not rub or expose to extreme heat,** such as a hot stove, hot water bottle, or heat lamp, etc. **Excessive heat may increase the damage.**

(6) Once the fingers or toes are rewarmed, encourage the victim to exercise them.

(7) Do not disturb blisters.

12.02 Prolonged Exposure to Cold–Symptoms of and first aid for this type of exposure are:

a. Symptoms of exposure:

(1) General numbness.

(2) Difficulty in moving with staggering.

(3) Drowsiness or failing eye sight.

(4) Unconsciousness in advanced cases.

b. First aid for this exposure is:

(1) Start artificial respiration if breathing has stopped.

(2) Move the victim to a warm room as soon as possible.

(3) Rewarm the victim as rapidly as possible by wrapping him in warm blankets or by immersing him in warm *but not hot* water.

(4) When the victim responds, give him a hot drink and dry his body thoroughly if wet.

13. OTHER EMERGENCIES (LISTED ALPHABETICALLY)

13.01 Apoplexy—is defined as a sudden loss of consciousness, sensation, and motion. Symptoms of and first aid for apoplexy are as follows:

a. Symptoms of apoplexy are:

(1) Unconsciousness usually occurs.

(2) Loud, heavy breathing.

(3) Slow, strong pulse rate.

(4) Partial paralysis. This is seen in an unconscious person by lack of muscular tension if one of the extremities is moved.

b. First aid for apoplexy is as follows:

(1) Obtain medical care immediately.

(2) Place the victim on his back. If breathing is difficult, place him on his side to allow saliva to drool from his mouth.

(3) Cover the victim sufficiently to prevent chilling.

13.02 Appendicitis—is defined as inflammation of the appendix.

a. Symptoms of appendicitis are as follows:

(1) Abdominal pain usually generalized in the beginning, later localizes especially in the lower right abdomen.

(2) Nausea or vomiting.

(3) Mild fever.

(4) Constipation or diarrhea may be present.

b. First aid for appendicitis is as follows:

(1) Obtain medical attention without delay.

(2) *Do not* administer laxatives, food, or water.

(3) An ice bag placed over the painful area may help relieve discomfort but it should be understood that this merely removes a symptom and does not correct the condition.

13.03 Blisters—are defined as an elevation of the skin containing watery liquid. This paragraph applies only to blood blisters and water blisters caused by pinching and chafing. See paragraphs 10.04 and 12.01 for blisters due to burns and frostbite. First aid for blisters is as follows:

a. Wash the blister thoroughly with antiseptic soap and warm water. Dry, and apply a small amount of merthiolate to the edge of the blister. Puncture the blister at this point with a sterilized needle, or other sharp sterile object. Press out the fluid.

b. Apply a sterile dressing held in place with a bandage.

c. If the blister has already burst, wash with antiseptic soap and water and apply a dressing.

d. Consult a doctor if the blister is very extensive or if there is evidence of infection.

13.04 Boils and Sties—A boil is defined as a localized swelling and inflammation of the skin due to infection in a skin gland and containing pus. A sty is an inflammed, swollen sebaceous gland at the edge of the eyelid. First aid for these ailments is as follows:

a. Boils and sties in the facial region should be kept free from pressure.

b. Boils in other regions may be covered lightly with compresses saturated with a solution of 1 tablespoonful of epsom salts dissolved in 1 pint of warm water.

c. NEVER squeeze a boil. If it breaks, wipe away the pus with a sterile pad soaked in rubbing alcohol.

13.05 Bruises and Contusions—A bruise or contusion is an injury that does not break the skin but causes rupture of small underlying blood vessels with discoloration of the tissues. First aid for these injuries is:

a. Apply cold packs, use ice when available.

b. Elevate the injured area to reduce swelling and relieve pain.

13.06 Convulsions in Young Children—These are abnormal, violent, and involuntary contractions of the muscles. Symptoms of and first aid for convulsions are as follows:

a. Symptoms of convulsions are:

(1) Muscle spasms and twitching of various degrees.

(2) Stupor or sleep may follow the spasms.

b. First aid for this condition is:

(1) Remain calm in the child's presence.

(2) Provide bed rest and quiet.

(3) Call a doctor.

(4) *Do not* give an enema, bath, or warm packs unless so directed by a doctor.

13.07 Epileptic Fits–are any of the various disorders marked by disturbed electric rhythms of the central nervous system. Symptoms of and first aid for epileptic fits are as follows:

a. Symptoms of epilpsey are:

(1) An attack of epilepsy is generally preceded by a loud cry and the victim generally falls.

(2) The victim becomes unconscious and has convulsive, jerking movements of the muscles.

b. First aid for this condition is as follows:

(1) Prevent the victim from harming himself by placing a pillow, coat, or blanket under his head.

(2) Place folded compress, clean handkerchief, or piece of wood, etc., between his teeth at one side of his mouth to prevent him from biting his tongue. *Do not* obstruct breathing.

(3) *Do not* restrain convulsive movements.

(4) *Do not* give stimulants.

(5) When jerking has ceased, loosen clothing about the neck and keep the victim quiet.

13.08 Eye Injuries–are classified according to the following types:

a. Group 1 cases–injury to the eyelids and soft tissue around the eye.

b. Group 2 cases–injury to the surface of the eyeball.

c. Group 3 cases–injury that extends through the surface of the eye into the deeper tissues.

d. First aid for Group 1 injuries is as follows:

(1) Open wound should be covered with a sterile dressing and bandage.

(2) Bruises or "black eyes" may be given cold compresses immediately after injury.

(3) Use warm compresses after swelling has been controlled.

e. First aid for Group 2 injuries is as follows:

(1) If the injury is due to entry of a chemical, flush the eye thoroughly and repeatedly with clean water.

(2) Obtain medical attention immediately.

(3) If the injury is due to entry of a foreign body, pull down the lower lid and see if the foreign body lies on the surface of the lid lining. If so, it can be lifted off gently with the corner of a clean handkerchief or a piece of moist cotton. *Never* use dry cotton around the eye.

(4) Grasp the lashes of the upper lid gently between the thumb and forefinger while the victim looks upward. Pull the upper lid forward and down over the lower eyelid. A foreign body on the upper lid lining can be dislodged and swept away with tears. Flush the eye with a cool solution. This can be done with an eye dropper or small bulb syringe if available.

f. First aid for Group 3 cases is as follows:

(1) Lay a sterile compress or clean cloth over the eye.

(2) *Make no attempt at further first aid.*

(3) Obtain medical care as quickly as possible.

(4) If necessary to transport the victim, keep him FLAT, using a stretcher.

13.09 Fainting–is defined as losing consciousness due to a temporary decrease in the blood supply to the brain. First aid for fainting is as follows:

a. Often a person feeling faint can prevent fainting by lowering his head as though to tie a shoe.

b. If further care is necessary, treat for shock as in paragraph 6.05.

13.10 Heart Attack–is an interruption of normal heart functions. Symptoms of and first aid for heart attack are as follows:

a. Symptoms of heart attack are:

(1) Chest pain.

(2) Shortness of breath.

(3) Bluish color of the lips and fingernails.

b. First aid for heart attack victims is as follows:

(1) Keep the victim quiet and as comfortable as possible.

(2) **Obtain medical care at once.**

13.11 Hernia–is the protrusion of an organ or part through connective tissue or through the cavity wall in which it is enclosed. Symptoms of a hernia are protrusion or bulging in any region of the abdomen from the navel to the crotch. First aid for a hernia is as follows:

a. Have the victim lie down and refrain from physical activity.

b. If the bulge does not subside, apply cloths saturated with cold water to the area.

c. If the above measures fail, have the victim lie on his abdomen and bring his knees up under the chest.

d. *Do not* attempt to reduce the bulge by pressure.

e. Send for a doctor.

13.12 Infection—is defined as a condition caused by contaminating disease-producing germs.

a. Symptoms of infection are:

(1) Pain and swelling.

(2) Redness and heat.

(3) Pus and red streaks.

(4) Tenderness.

b. First aid for infection is as follows:

(1) Apply hot compresses—2 teaspoonfuls of salt per quart of boiled water.

(2) Be sure that the hot compresses do not burn the victim.

(3) Keep the victim at rest.

(4) **Obtain medical attention as soon as possible.**

13.13 Insulin Reaction—is caused by excessive insulin in the system and is characterized by the progressive development of a coma. The symptoms of and first aid for insulin shock are:

a. Symptoms of insulin reaction are:

(1) Confusion.

(2) Stupor.

(3) Mental disturbance.

(4) Unconsciousness.

NOTE: Diabetics should and generally do wear a tag or carry a readily accessible card to identify them. **Search for such identification only in the presence of a witness.**

b. First aid for insulin shock is:

(1) Administer any food or drink containing sugar.

(2) Send for a doctor.

13.14 Nosebleed—First aid for a nosebleed is as follows:

a. Have the victim sit up with his head thrown slightly back.

b. Have the victim breath through his mouth.

c. Loosen clothing around the neck.

d. Apply cold packs of the nose.

e. Pressing the nostrils together firmly for 4-5 minutes often stops the bleeding and gives opportunity for a clot to form.

f. Have the victim avoid blowing his nose for a few hours.

g. If these measures do not stop the bleeding, **obtain medical attention immediately.**

13.15 Plant Poisoning–There are three types of poisonous plants:

a. Poison Ivy–see Figure 24.

b. Poison Oak–see Figure 25.

c. Poison Sumac–see Figure 26.

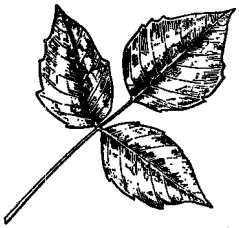

FIGURE 24. Poison Ivy.

Grows as a climbing plant and is found on fences, poles, and trees. Also, grows as a crawling plant and a low shrub. Leaves are green in spring and summer but turn to brown in fall. All of the plant, including the roots, is poisonous. The berries, when present, are white.

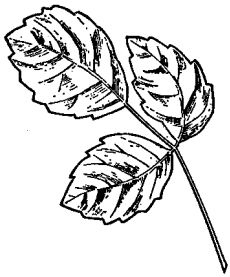

FIGURE 25. Poison Oak.

Closely related to the ivy plant, similar in appearance and habits of growth, but with the edges of the leaves more deeply notched. It is not a tree and is in no way related to the oak family.

13.16 Preventive measures are as follows:

When exposure to poison oak is expected, it is advisable for employees to immunize themselves by taking oral immunizing Broemmel. Immunizing extracts and injections administered by physicians should be continued in lieu of or in addition to the use of ointment by those employees who have found the treatment to be helpful.

13.17 Employees who are known to be susceptible to oak or ivy poisoning should not be assigned to work in known infested areas unless they have been immunized against the infection by the doctor or as covered in the preceding paragraph.

FIGURE 26. Poison Sumac

A shrub or small tree which may grow 20 feet high. Distinguished from the nonpoisonous sumac by its loose, drooping clusters of berries, which are always white. Leaves are orange colored in spring, green in summer and orange or russet in the fall.

13.18 Before entering poison oak areas rub in B-Y's Medicated Ointment thoroughly to all exposed areas. Continue rubbing until greasiness or stickiness disappears. Repeat application after washing or bathing.

13.19 Use of immunizing mixture–This extract may be ordered as a first aid supply. The following precautions and instructions should be observed:

a. It should be taken only by persons known to be susceptible to the poisoning.

b. *No more* than the contents of one bottle should be taken each season and it should be taken in doses only as directed on the bottle.

c. For best results, the mixture should be taken up to one month in advance of exposure, but it may safely be used and generally proves helpful if taken after known exposure or after reaction has started. When used for treatment after reaction has started it should *not* replace the use of calamine lotion or other approved first aid measures.

d. In cases where the reaction has become serious and widespread, or when it involves the eyes, medical care should always be secured in addition to the use of the mixture and other approved first aid measures.

e. Preventive measures outlined in the foregoing should not be discontinued after taking the mixture.

13.20 First aid for plant poisoning is as follows:

a. As soon as possible, wash the exposed part with soap and water.

b. Apply B-Y's medicated ointment liberally. Repeat as often as necessary and continue treatment until the rash disappears.

NOTE: The use of calamine solution or other preparations for first aid treatment *should be discontinued when using B-Y's medicated ointment.*

c. If calamine lotion is used rather than B-Y's medicated ointment, the following instructions should be followed:

(1) The lotion should *not* be rubbed into the skin, but should be painted on or daubed over the areas involved by means of a small wad of cotton, cloth, or sponge, or it may be daubed with the fingers.

(2) Repeated applications of the lotion should be made at intervals necessary to keep the infected parts covered until the rash heals or disappears.

d. *In severe cases and cases involving the eyes, a physician should be consulted.*

13.21 Splinters are thin pieces of an object which become imbedded in the skin. First aid for splinters is as follows:

a. If the splinter is near the surface, it may be picked out.

b. Apply merthiolate to the skin.

c. Remove the splinter with a knife point, needle, or tweezers that have been sterilized.

d. Induce bleeding.

e. Apply merthiolate to the wound.

f. Cover the wound with a clean compress.

g. If the foreign body is buried deeply or if the wound is of considerable size, apply merthiolate and a proper dressing. See a doctor.

13.22 Unconsciousness (cause unknown) is defined as not possessing mind, sensation, or feeling.

a. Possible causes of unconsciousness are:

(1) Asphyxia (see paragraph 7).

(2) Shock (see paragraph 6).

(3) Poisoning, including sleeping pills (see paragraph 8).

(4) Head injury (see paragraph 9.02).

(5) Heat stroke (see paragraph 11.03).

(6) Heart attack (see paragraph 13.10).

(7) Apoplexy (stroke) (see paragraph 13.01).

(8) Epilepsy (see paragraph 13.07).

(9) Insulin reaction (see paragraph 13.13).

b. First aid for an unconscious victim is:

(1) Give artificial respiration if the victim is not breathing.

(2) Move the victim as little as possible until the cause of unconsciousness can be determined.

(3) If necessary to prevent the victim from choking on vomitus, blood, etc., place him on his abdomen, with his head turned to one side.

(4) Send for a doctor without delay.

14. TRANSPORTATION

14.01 In rendering emergency assistance in serious accident or illness, there is no greater need for calmness than in the procedures associated with transportation.

14.02 The objective is to avoid subjecting the patient to unnecessary disturbance during planning, preparation, and transfer, to prevent injured body parts from twisting, bending, and shaking. **Take the necessary time and effort to provide good transportation.** (More harm is done through improper transportation than through any other measure associated with emergency assistance.)

14.03 If a person must be lifted to safety before a check for injuries can be made, the body should not be jackknifed. An attempt should be made to give adequate support to each extremity, the head and the back, keeping the entire body in a straight line and maintaining it immobile. One method for accomplishing this is the 3-man hammock carry–victim lying face up–supine. Steps for this method of carry are:

a. Step 1–All carriers kneel on the knee towards the victim's feet (see Figures 27 and 28).

b. Step 2–No. 1 cradles the victim's head and shoulders with his top arm. His other arm is placed under the victim's lower back.

c. Step 3–No. 2 slides his top arm under the victim's back above No. 1's bottom arm, and his other arm just below the buttocks.

d. Step 4–No. 3 slides his top arm under the victim's thighs above No. 2's bottom arm. His other arm is placed under the victim's legs below the knees.

NOTE: The hands of carriers No. 1 and No. 2 should be placed about halfway under the victim's body at this stage (see Figure 29).

e. Step 5–At a signal, the victim is lifted to the carriers' knees and rested there while the hands are slid far enough under the victim to allow rotation of the hands inward to secure an interlocking grip. (See Figure 30.)

f. Step 6–At the next signal, all carriers stand erect with the victim. (See Figure 31.)

g. Step 7–To lower the victim to the ground, merely reverse the procedure.

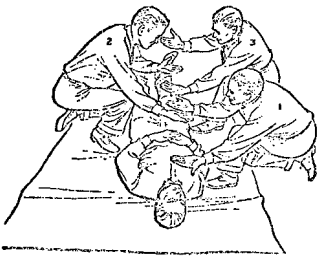

FIGURE 27. Hammock Carry Step 1–Position of Bearers.

FIGURE 28. Hammock Carry–Showing Interlocking Grip.

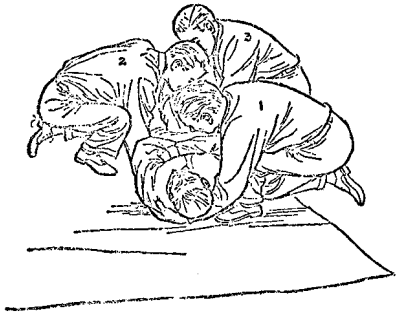

FIGURE 29. Position of Bearers–Ready to Lift.

FIGURE 30. Position of Bearers–Lifting Victim to Knees.

FIGURE 31. Ready to Carry.

14.04 If the victim must be pulled to safety, he should be pulled in the direction of the long axis of his body, not sideways. If available, a blanket or similar object placed beneath the victim will serve as a drag and lessen the danger of aggravating any injuries. Blanket drag is performed as follows:

a. Place the blanket diagonally beneath the victim.

b. Cross the arms of the victim over his chest, then fold the lower end and sides of the blanket over the victim.

c. Drag the victim by grasping the end of the blanket near the victim's head. (See Figure 32.)

FIGURE 32. The Blanket Drag.

14.05 Persons who may have head injuries, fractures of the thigh, leg, arm, and pelvis bones, or possible back injuries should not be transported in a sitting position.

14.06 Methods of transportation are:

a. Litter (stretcher). If no litter is available, one may be improvised. Use a cot or door, or use two poles with a blanket as shown in Figure 33; a strong sheet, rugs, or coats may be substituted for the blanket.

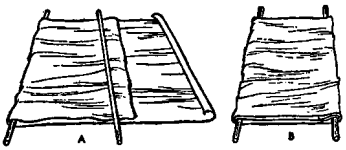

FIGURE 33. Improvised Litter.

b. Traction Blanket Lift (5 men and victim)—position of victim—supine. Proceed as follows:

(1) Step 1—Pleat a standard army blanket in folds about 1' long and place on the floor just above the victim's head so that the pleated blanket will "feed out" from the bottom.

(2) Step 2—Fold back the top pleat so that the man at the head and the two men at the shoulders can kneel on the fold.

(3) Step 3—No. 1 takes the position on one or both of his knees and grasps the victim's head in the standard manner for applying traction. (See Figure 34.)

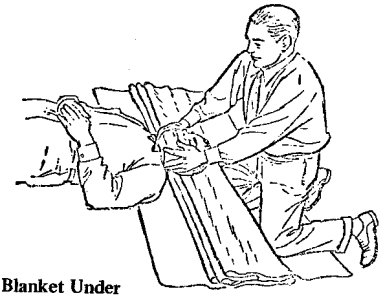

FIGURE 34. Placing the Blanket Under the Victim.

(4) Step 4—Nos. 2 and 3 kneel on one or both knees at the victim's shoulders, placing one hand flat under his shoulder blade and the other in his armpit. (See Figure 35.)

FIGURE 35. Holding Victim Against the Pull of the Blanket.

(5) Step 5--Nos. 4 and 5 grasp the bottom pleat of the blanket and pull the blanket under the victim while Nos. 1, 2, and 3 hold the upper portion of the victim's body in place. (See Figure 36.)

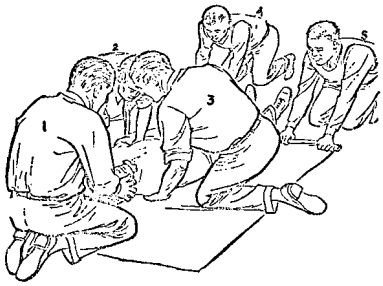

FIGURE 36. Pulling the Blanket Through

(6) Step 6--Roll the blanket tightly at the sides until it fits the contour of the victim's body. (See Figure 37.)

FIGURE 37. Rolling Edges Tightly for Firm Grip.

(7) Step 7--Nos. 2 and 3 (on opposite sides) grasp the blanket with the top hands at the victim's shoulder and the bottom hands at his lower back. Nos. 4 and 5 grasp blanket with top hands at his hips and lower hands at his legs (below knees). No. 1 remains at his head, holding slight traction. (See Figure 38.)

FIGURE 38. Blanket Fits Contour of Body.

(8) Step 8--At a signal, Nos. 2, 3, 4, and 5 lean back in opposite directions, using the back muscles and body weight. This will lift the victim 6" to 8" from the floor so that a litter can be slid underneath him. Use same procedure for victim in prone position. (See Figure 39.)

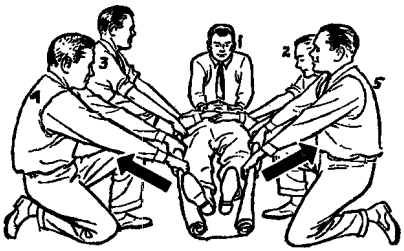

FIGURE 39. Bearers Lean Backward and Litter is Placed under Victim.

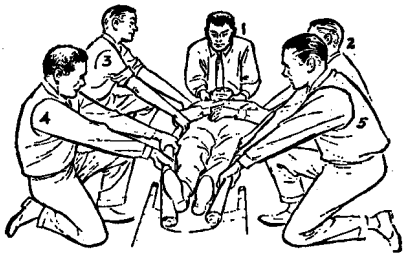

FIGURE 40. Lowering Victim to Litter.

c. The suspension lift is performed as follows:

(1) Step 1--The victim lies in a prone position with his hands under his chin, similar to the position assumed in applying artificial respiration. (See Figure 41.)

FIGURE 41. Position of Victim.

(2) Step 2--Carrier 1 kneels on one or both knees at the victim's head. He carefully slides his hands under the mid-forearms of the victim until the upturned palms of his hands rest under the victim's armpits. (See Figure 42.)

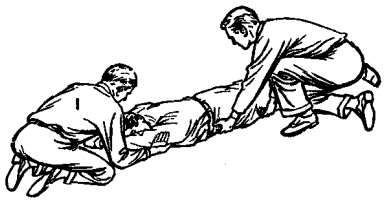

FIGURE 42. Position of Carrier No. 1.

(3) Step 3--Carriers 2 and 3 grasp the victim's hipbone with their top hands and his knee cap with their lower hands. (See Figure 43.)

FIGURE 43. Position of Carriers.

(4) Step 4--On signal, all lift together so that the victim is raised 5" or 6" from the floor (just high enough to slide a litter underneath). (See Figure 44.)

NOTE: Care should be taken so that the body is lifted as a unit. Also, carriers Nos. 2 and 3 should shift the weight toward carrier No. 1 when raising the victim.

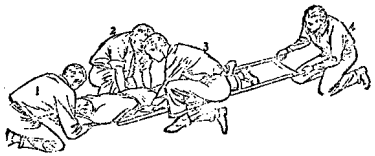

FIGURE 44. Lifting and Placing of Litter.

d. **Many other methods of transportation are useful. Learn first aid and know them all.**

14.07 Methods of Transfer–These include special methods for short-distance transfers, the walking assist, manual carries, transfer by supporting devices such as stretchers and cots, and transfer by vehicles. It is difficult for inexperienced people to lift and carry a person gently. Their efforts may not be well coordinated. They need careful explanations.

14.08 The best device for short-distance transfers is the stretcher or cot. It is important to remember that the short-distance transfer is harmful unless the injured parts are immobilized. "Splint them where they lie" unless there is urgent danger in delay. Unless there is unusual urgency, it is best to wait until an ambulance is available.

14.09 Aside from rare exceptions, the drive should be at moderate speeds, with gentle stops and starts, and with observance of all safety rules.