CANADIAN ARMY

TRAINING PAMPHLET
No. 14

FIRST AID

1942

Prepared under the direction of
The Chief of the General Staff, Canada

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CONTENTS

LIST OF ILLUSTRATIONS

FIRST AID

GENERAL

First Aid is a practical and common sense subject because in emergencies it saves many lives and is a means of preventing injured persons from getting more seriously hurt.

In the army, it must be stressed that First Aid is not a substitute for proper medical care and attention. That is the job of the Royal Canadian Army Medical Corps.

First Aid treatment for the average soldier is based on the use of the First Field Dressing, occasional use of the Shell Dressing, improvisation of bandages and splints from clothing and equipment. Throughout the entire First Aid course, the use of these articles and their improvisation must be constantly stressed.

Military First Aid is not meant to be a complicated subject. It is important that the use of technical terms be avoided. Instruction must be such to encourage men to think quickly and act promptly with the articles and equipment available to them in the field. Useless arguments about medical theory and treatment must be avoided.

Successful instruction in this subject depends on proper preparation for each period. Lectures must be short and simple, being clarified by simple demonstrations, and followed by actual practice. Demonstrations should be arranged and rehearsed well ahead of time. Have materials for practice in the class-room before starting the lesson.

A brief review of main points in the preceding lesson will help the class to recall essentials forming a groundwork for the next lesson. Above all, do not forget to ask questions. In this way, the instructor will find out if the class understands the lesson. It will assist the men to remember the important points.

Impress upon the Recruit that his own life and the lives of his comrades may be saved by remembering a few essentials and by acting quickly with courage in an emergency.

Training Film:

Where the First Aid Training Film is available, it should be used to introduce the subject in the first period. It should be used again as a review of the syllabus in the ninth period.

This training film has been made under conditions which approximate modern warfare. It is meant to acquaint soldiers with wounds and injuries which they will probably meet in battle. After seeing this film several times, soldiers should have the pluck to examine wounds carefully and then render the proper treatment quickly and effectively. It should give them the necessary courage to reassure the wounded and prevent other men from losing their nerve in the face of danger.

References:

This manual has been written purposely in simple form to teach essential First Aid knowledge from a military point of view.

If further study is desired, the following civilian text is recommended:

"*First Aid to the Injured*"—Text book of St. John Ambulance Association.

Chapter I

INTRODUCTION

Instructor's Notes

Stores:

Sound projector and First Aid Training Film.

Explain what the subject is about and immediately show the training film. Summarize the film stressing the value of First Aid knowledge for every soldier. The detail in this chapter will provide material for the summary.

Necessity for First Aid Knowledge:

Every soldier should know how to give First Aid treatment to his comrade if he is injured.

Very often in battle, trained medical orderlies and stretcher-bearers are not immediately available. If a soldier gets wounded, his comrades must know how to give him First Aid quickly. This may save his life and he will be eternally grateful.

If a soldier is wounded and there is no one present to help him, he may be able to *save his own life* by applying the simple rules which will be taught in this subject. That is a good reason why it is so important.

First aid for soldiers in the field consists of applying a few, simple rules for assisting wounded comrades. It is a practical and common sense subject. In emergencies it saves men's lives and helps lightly wounded men to keep on fighting.

Military First Aid is not a substitute for proper care and medical treatment. It is emergency assistance rendered quickly to a wounded man with appliances available to every soldier. Proper medical care and attention will be given the wounded by the Medical Corps. On the battlefield, there isn't time for complicated treatment. A soldier must do what he can quickly and leave the rest to the Medical Corps.

Remember. In total war, anyone is liable to get wounded. Soldiers must be prepared to look after their own wounds and those of their comrades.

Finding a Wounded Man:

When finding a wounded man, the following points must be remembered:

1. Treat him first; move him later.
2. Look at the wound carefully. (See Fig. 1).
3. Stop bleeding.
4. Look for further injuries.
5. If there are broken bones, splint them.
6. Make him warm and comfortable. (See Figs. 2 and 3).
7. If possible notify the stretcher-bearers so they can evacuate him.

Figure 1—*Don't be afraid of wounds. Look at them.*

Figure 2—*Give him a drink (if he hasn't a belly wound).*

Figure 3—*Keep a wounded man warm to prevent shock.*

Chapter II
WOUNDS AND BLEEDING

Instructor's Notes

Stores:

First Field Dressing and Shell Dressing.
Chart Showing Circulation of Blood.
Materials for Tourniquet.

Wounds Generally:

A wound is any break in the surface of the skin caused by an injury. Wounds may be large or small. Wounds may appear differently due to the nature of the instrument causing the injury. For example a wound may be torn or lacerated by a shell fragment; it may appear bruised as a result of a blow from a rifle butt; it may appear as a puncture from an injury caused by a bayonet or commando knife.

Wounds may be bleeding mildly, or seriously, but it is important to remember that the first thing to do is STOP BLEEDING.

TREATMENT of Wounds:

This is the way to treat a wound:

1. Look at it carefully. If there is more than one, first treat the one that is bleeding the most.
2. If a wound is bleeding, try to stop it by firm pressure with the hand from a dressing or bandage applied directly to the wound.
3. Do not attempt to clean the wound. If there is a large foreign object in the wound, such as a shell fragment, which interferes with the control of bleeding, remove it. Do not attempt to sterilize the wound by washing or the use of iodine if the latter is available.
4. Cover the wound up with a F.F.D. or Shell Dressing to keep from getting more dirt into it.

First Field Dressing:

Every soldier is equipped with a *First Field Dressing* which is kept in the special pocket of his battle dress. (See Fig. 4.) He must be familiar with the way to tie the dressing on wounds or use it to stop bleeding. The Field Dressing must be carefully unwrapped in order to keep it clean and sterile. The outer wrapper (See Fig. 5) may become dirty but the inside will remain clean and dry because of the waterproof wrapping that is inside.

When you come upon a soldier who has an open wound which is bleeding, cut away the clothing so that you can get a good look at the wound then quickly and carefully unwrap his first field dressing and apply it to the wound in the following way:

First take off the outer wrapper and discard it. Next take off the waterproof covering and lay it down on a clean place to be used to cover the wound later. (See Fig. 6.) Then carefully unfold the dressing holding it by the bandage ends (See Fig. 7) and apply the pad or dressing directly over the wound. (See Fig. 8.) After you have wrapped the bandage around

the arm or leg twice put the waterproof covering over the wounded area wrapping the bandage over it (See Fig. 9), then tie the two ends of the bandage or pin with the safety pin. (See Fig. 10.) The First Field Dressing may in this way be applied to wounds in any part of the body. Every soldier must know the proper way to apply this dressing to his own body if he is wounded. He can very easily apply it to any wound of his legs or body, but will need his friend to help him apply it to his arms, hands or head. *Do not use your own Field Dressing on another soldier because you may need it if you get wounded later on.*

Shell Dressing:

The Shell Dressing is just the same as the First Field Dressing only it is much larger. It is used for a large wound and is applied in exactly the same way.

Normally the Shell Dressings are in possession of the Medical Officer and his trained medical orderlies and stretcher-bearers. However, during every engagement these are available in large numbers. Shell dressings are distributed to key points in haversacks containing twelve dressings. (See Fig. 13).

Improvised Dressings:

Dressings may be made from a number of articles of soldiers' clothing, if the First Field Dressing or Shell Dressing is not available. They may be made from handkerchiefs, towels, a piece of shirt, underwear, or battle dress, and should be as clean as possible. Dressings may be held in place by a scarf, strips of clothing or pieces of web equipment. Remember to act quickly to stop bleeding and cover the wound.

Triangular Bandages:

Practice in bandaging is usually carried out with triangular bandages in Training Centres. They are used to prevent waste of time and loss of money in tearing up articles of serviceable clothing during training.

Triangular bandages are also used in the field at the Regimental Aid Post, but they are not generally available to soldiers in the field.

Control of Bleeding Generally:

A man can bleed to death within a few minutes, so the First Aider must act quickly.

First, make the wounded man lie down as this decreases the flow of blood throughout the body.

Second, if the bleeding is from a limb, elevate it slightly. This will further decrease the flow of blood to the injured limb. However, this must not be done if the limb is fractured.

Third, remove the clothing from around the wound and look at it carefully. Decide which is the best way to stop bleeding and carry out this action immediately.

Fourth, after bleeding is stopped, cover the wound with the First Field or Shell Dressings. If a fracture is present, splint the injured limb.

FIRST FIELD DRESSING

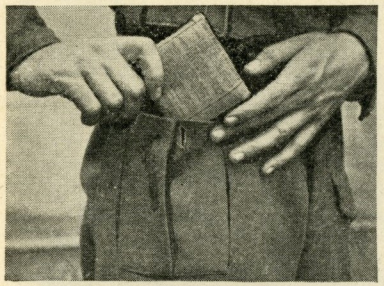


Figure 4—*Pocket in Battle Dress for* F.F.D.

Figure 5—*Close up of F.F.D. showing the outer cloth cover.*

Figure 6 — *F.F.D. showing waterproof cover and dressing folded.*

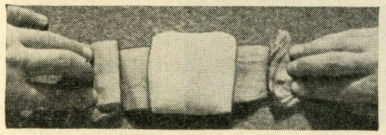


Figure 7 — *F.F.D. open, showing dressing and bandage.*

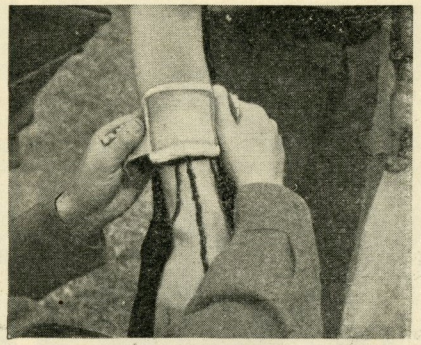


Figure 8—*Applying F.F.D. to arm wound.*

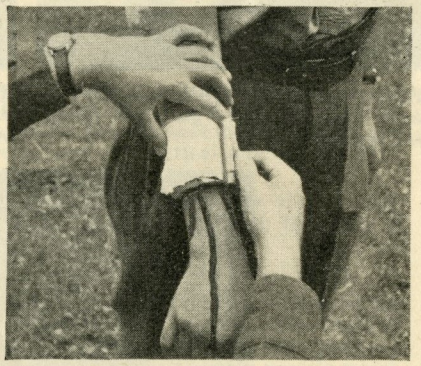


Figure 9—*Waterproof covering protecting the dressing.*

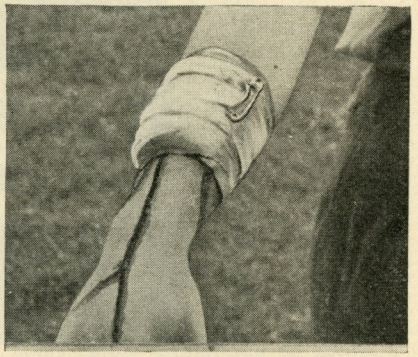


Figure 10 — *Dressing completed, the bandage secured by a safety pin.*

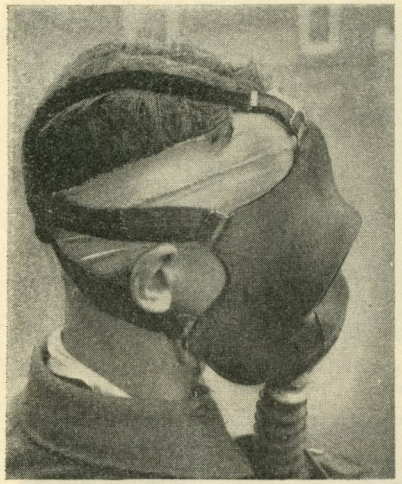


Figure 11—*F.F.D. applied correctly to head wound to give gas tight fitting for respirator.*

Figure 12—*F.F.D. applied incorrectly leaving gap between forehead and respirator.*

Figure 13—*Shell dressing haversack carried by stretcher bearer.*

Methods of Control:

Moderate Bleeding. Apply the First Field Dressing directly to the wound and with the hand apply firm pressure to the dressing. If the wound is not large, direct pressure will nearly always stop moderate bleeding.

Serious Bleeding. When an artery has been cut, this is termed serious bleeding. Arteries are strong rubber-like tubes which carry the blood from the heart to different parts of the body. The heart acts as a pump, and so the blood is forced through the arteries under great pressure. It returns to the heart through the veins but the pressure is considerably less.

Arterial bleeding is easily recognized. The blood spurts out from the wound with a pulsating movement which corresponds to the pumping action of the heart. This type of bleeding is stopped by shutting off the supply of blood to the injured part of the body.

By studying the diagram showing the circulation of the blood in the human body, (See Fig. 14), it is noticed that at certain points large arteries come close to the surface. By pressing with the fingers on these points, the arteries are compressed against the bone. This shuts off the supply of blood to the area or part of the body supplied by this artery. They are called pressure points.

Pressure Points:

Soldiers must know the four most important pressure points. These points are located at the *Neck, Collar Bone, Upper Arm* and the *Groin* or *Upper Leg.* There are other pressure points, but the ones already mentioned must be known. Pressure points are located in identical positions on each side of the body.

Neck. This pressure point is located in front at the side of the windpipe, slightly above the Adam's Apple and is used to stop bleeding of head wounds.

The method of applying pressure at this point is shown in Fig. 15.

Collar Bone. This pressure point is located at the inner end of the collar bone and is used for wounds of the chest or shoulder. The method of applying pressure at this point is shown in Fig. 16. Notice that the head is turned downward toward the side. This is to relax a large muscle which otherwise shields the pressure point.

Upper Arm. This pressure point is located on the inner side of the upper arm about three fingers width below the armpit, and is used for wounds of the arm. The method of applying pressure at this point is shown in Fig. 17.

Groin or ***Upper Leg.*** This pressure point is located in the centre of the leg where it joins the trunk and is used for wounds of the leg. The method of applying pressure is shown in Fig. 18. The man should be made to lie down and the wounded leg raised slightly. With the thumbs press firmly against the edge of the haunch bone at the centre of the groin.

A second pressure point for use of a tourniquet is located on the inside of the thigh, a hand's breadth below the fold of the groin. In Fig. 18 this point is marked with "T".

Pressure must not be relaxed on pressure points until the assistance of a Medical Officer is secured. Because this is difficult, a tourniquet may be used for serious bleeding in the wounds of the arm or leg. Remember, stop bleeding first at the pressure point before attempting to adjust a tourniquet or dress the wound.

PRESSURE POINTS

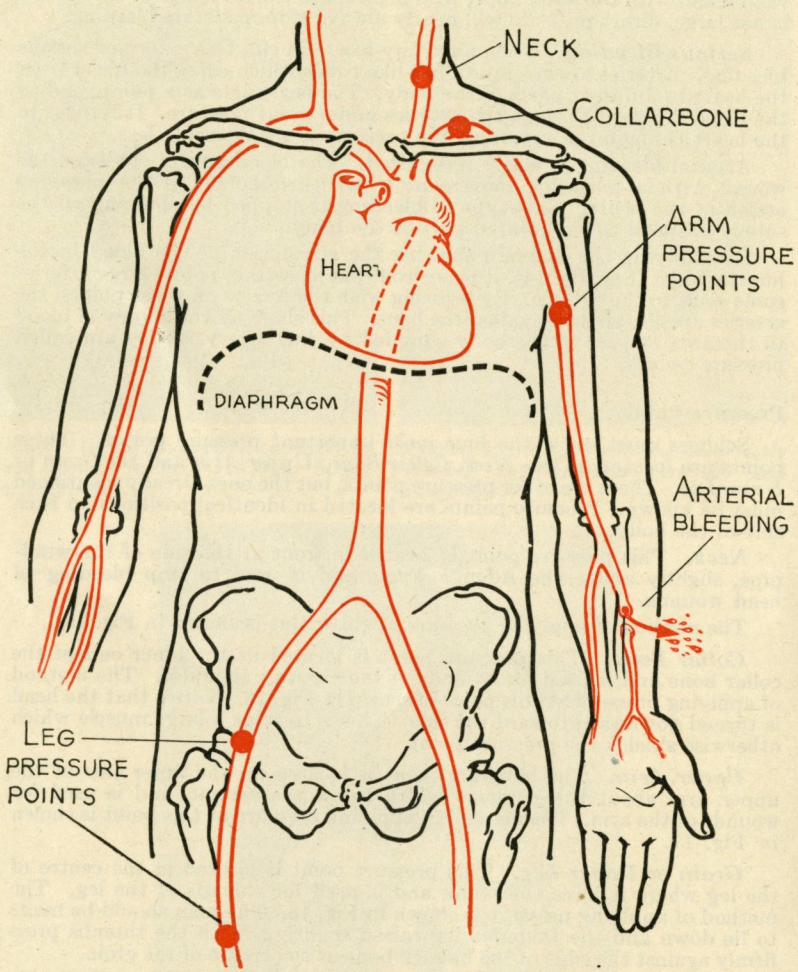


Figure 14
Circulation of the Blood and Pressure Points.

Tourniquet:

While pressure is being maintained on the pressure point, the tourniquet is adjusted. This is done by placing a small firm pad, a stone or similar hard object on the pressure point. Then place a bandage around the limb over the pad and tie a stick into the knot. See Fig. 19. Twist the stick, which tightens the bandage, until the bleeding stops. Do not tighten the tourniquet more than is necessary to stop the bleeding. Methods of applying tourniquets to the arm and leg are shown in Figs. 19 and 20.

Although a means of saving men from bleeding to death, tourniquets are dangerous instruments if they are not loosened every 15 to 20 minutes for they also stop the flow of blood to the injured limb. In a short time the limb will die without a supply of blood and will then become gangrenous. When gangrene sets in, the limb must be amputated or it will kill the wounded man. Remember that tourniquets must be loosened every 15 to 20 minutes for a minute or two. This restores some life-giving blood to the injured limb. If the bleeding has stopped, loosen the tourniquet. Do not remove it in case the bleeding starts again.

If the wounded man must be left after applying a tourniquet mark the letter "T" on his forehead. If a pencil is not handy, dip your finger in some blood and use it for tracing the letter on his forehead. Also take a scrap of paper and mark it with "T" (for tourniquet), the time and date of application. See Fig. 21. This is placed in a conspicuous place under the pocket flap, etc.

Notify the stretcher-bearers so that the wounded man can be evacuated to the Regimental Aid Post quickly for proper treatment by the Medical Officer. This is important. In the interim, cover the patient to keep him warm. This will help to prevent shock from developing.

Improvising Tourniquets:

Tourniquets may be improvised from a number of articles contained in every soldier's equipment, such as: a rifle sling, a pullthrough, strip of shirt or towel, two handkerchiefs tied together. If a stick isn't handy, use the bayonet or scabbard to tighten the bandage. Tie the end of the tourniquet down to prevent it from slipping.

Make a Wounded Man Comfortable:

After wounds have been attended to, the First Aider must do everything possible to make the man comfortable, and as free from pain as possible. This can be done as follows:

1. Use gentleness and care in handling the man and dressing the wound.
2. Be calm and confident in manner and reassure him that he isn't seriously hurt.
3. Splinting a wounded arm or leg will keep it from moving and assist to ease the pain.
4. Keep the patient warm by covering him with spare clothing, ground sheets or blankets. (See Fig. 3). (This is to prevent shock which will be dealt with more fully in a later chapter).
5. Give him a drink, but if he has a stomach wound *do not give him a drink* as this will kill him. (See Fig. 2).
6. Tell the patient you will get him evacuated as quickly as possible. Then make sure that the stretcher-bearers are notified, or the position of the wounded man marked by shoving the rifle, bayonet first, into the ground.

PRESSURE POINTS

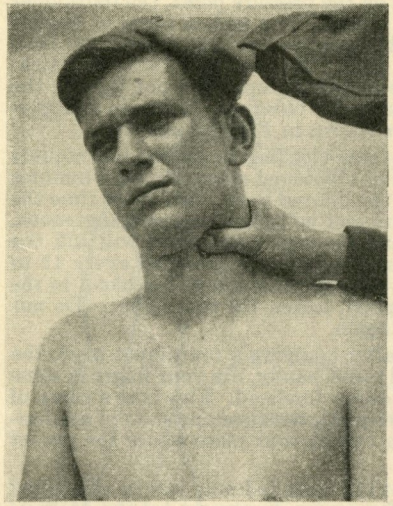


Figure 15—*Neck.*

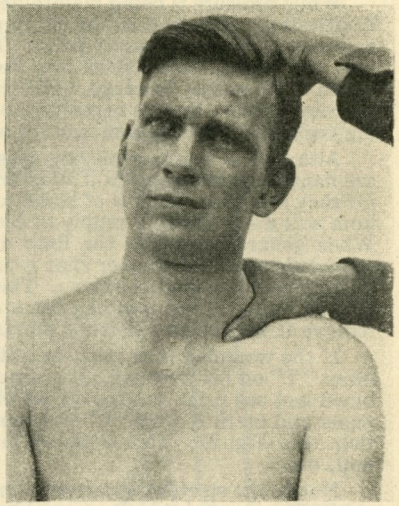


Figure 16—*Collar bone.*

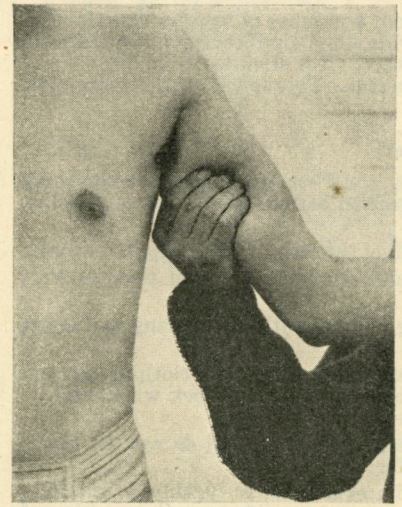


Figure 17—*Upper arm (also tourniquet point).*

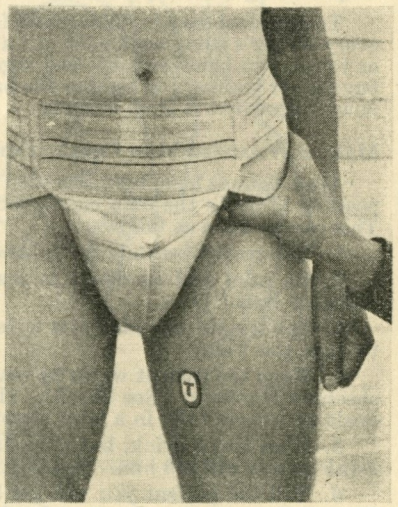


Figure 18—*Upper leg or groin ("T" marks tourniquet point).*

Chapter III
FRACTURES

Instructor's Notes

Stores:

First Field Dressings and Shell Dressings.
Branches, Boards and Sticks for Splinting.
Rags, white or near white.

Fractures Generally:

DEFINITION: A fracture is a broken bone.

Fractures are divided into two kinds.

1. ***Simple Fracture:*** In this type the bone is broken but there is no wound connecting the break in the bone to the skin. (See Fig. 22).

2. ***Compound Fracture:*** In this type the bone is broken and there is also a deep wound between the break and the skin surface. The wound may have been caused by the broken end of the bone forcing its way through the muscles to the skin surface and damaging large blood vessels. *Compound fractures may sometimes result from improper handling of simple fractures* by the first aid assistant. Compound fractures are much more serious than simple fractures because of the danger of infection getting into the broken ends of the bone. This will prevent the two broken ends of the bone from healing, and the soldier will be laid up for many months. In compound fractures, important nerves or blood vessels may be damaged with serious consequences. (See Fig. 23).

How To Tell When a Bone Is Broken:

1. ***Pain.*** Usually quite severe at the spot where the bone is broken.

2. ***Tenderness.*** The first aid assistant will always find one point of very extreme tenderness immediately over the break in the bone.

3. ***Unnatural position.*** (Deformity). If the limb is bent or twisted in some unnatural way, it must be regarded as broken.

4. ***Unnatural movement.*** If a limb bends where it should not bend it must be broken.

Note: If you are in doubt as to whether there is a fracture of the bone, treat it as a fracture anyway and put a splint on. Every time you see a wounded person, examine his arms and legs to see if he has a fractured bone before you move him.

Objects of TREATMENT of Fractures:

1. To prevent further injury by the soldier using the injured limb or by carelessness or rough handling of the limb.
2. To relieve pain.
3. To control shock—especially liable to develop if large bones are broken.

USE OF TOURNIQUET

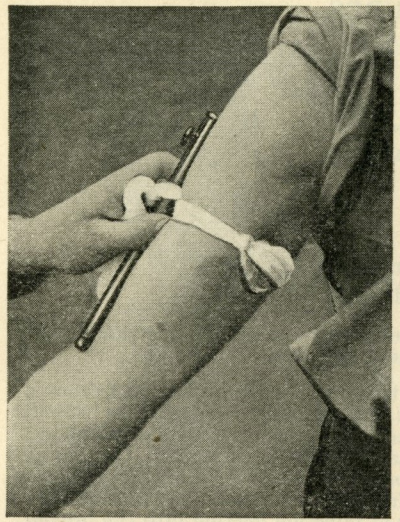


Figure 19 — *Tourniquet applied to upper arm.*

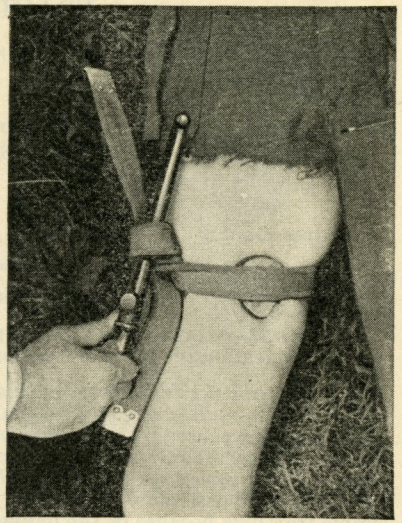


Figure 20 — *Tourniquet applied to upper leg.*

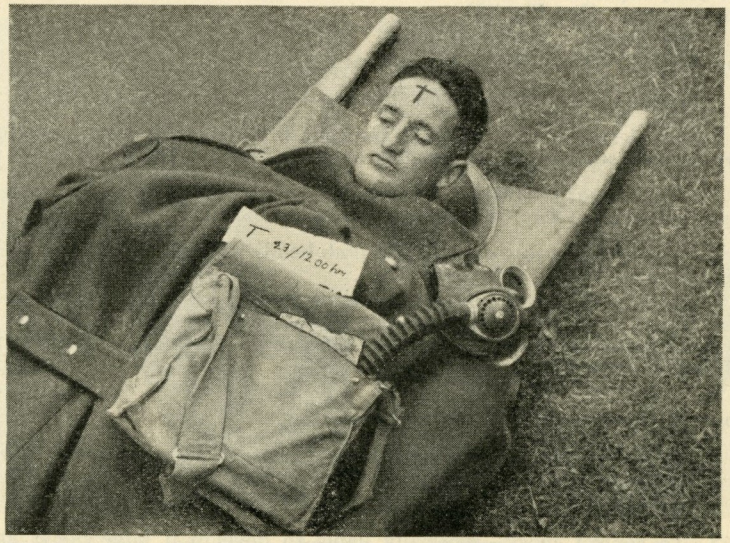


Figure 21—*Patient with tourniquet applied, note "T" marked on forehead; also label on chest. Patient covered for warmth to prevent shock.*

FRACTURES

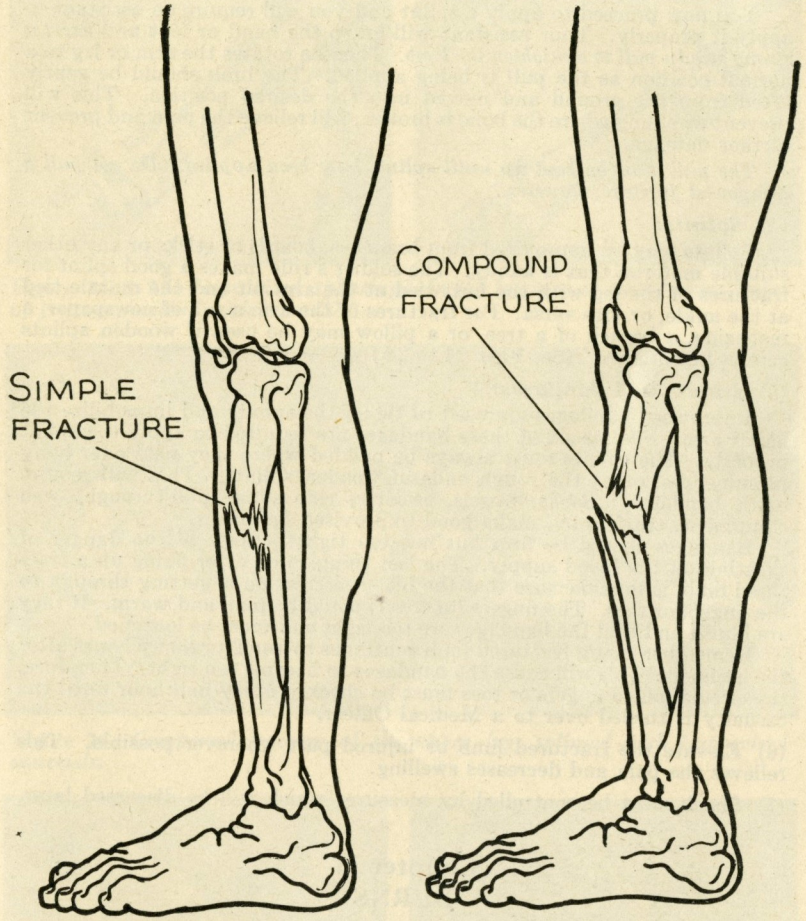


Figure 22—*Simple fracture.* Figure 23—*Compound fracture.*

(1) ***In Simple Fractures:***

"Splint them where they lie". Do not transport the patient even for a very short distance, before splints have been applied.

(2) ***In Compound Fractures:***

Apply the soldier's First Field Dressing to the wound immediately in order to keep all dirt out of the wound. After it has been tied in place and splints applied, gently move the patient on to a stretcher with one man supporting the fractured arm or leg. Have a tourniquet ready to use if necessary.

(3) ***In a Simple Fracture of the Leg or Arm:***

You now proceed to apply a splint and you will require an assistant to apply it properly. Your assistant will grasp the hand or foot and *exert a strong steady pull to straighten the limb.* Then he rotates the arm or leg to a normal position as the pull is being applied. The limb should be gently lifted from the ground and moved into the desired position. This will prevent wobbling where the bone is broken, will relieve the pain and prevent further damage.

The pull must be kept up until splints have been applied. Do not pull a compound fracture, however.

(4) ***Splints:***

Splints may be improvised from branches, boards or sticks or any other suitable material that is handy. The soldier's rifle makes a good splint for fractures of the leg with the butt tied at the arm pit and the muzzle tied at the ankle, or vice versa. For fractures of the arm a roll of newspaper, a magazine, a branch of a tree, or a pillow may be used if wooden splints cannot be obtained. (See Figs. 24 to 28.)

(5) ***Improvised Bandages:***

Improvised bandages are used to tie on the splints and immobilize the leg or arm. Five or six of these bandages are required to apply the splint properly. The splints must always be padded where they pass over bony prominences, or at the rough ends of wooden splints. This will require extra bandages. Socks, towels, sweater, rifle sling, pull-through, web equipment, scarfs, etc., make good improvised bandages.

Bandages should be firm but not too tight because of the danger of shutting off the blood supply. The last thing to do after fixing up a fractured limb, is to make sure that the blood circulation is getting through to the fingers or toes. The fingers (or toes) should be pink and warm. If they are bluish and cold the bandages are too tight and must be loosened.

Remember that a fractured limb continues to swell for many hours after the accident. This will cause the bandages to become too tight. Therefore, the circulation to fingers or toes must be checked every half hour until the casualty is turned over to a Medical Officer.

(6) Elevate the fractured limb or injured part wherever possible. This relieves the pain and decreases swelling.

(7) Shock must be controlled by measures which will be discussed later.

Chapter IV
BURNS

Instructor's Notes

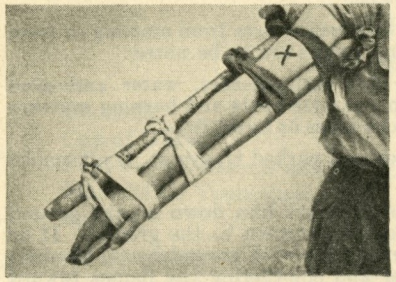
Stores:

First Field Dressings and Shell Dressings.
Rags, white or near white.

Burns:

In modern warfare the treatment of burns is of increasing importance due to the use of incendiary weapons and motorized equipment. Burns are far more serious than are commonly supposed and it is important to know how to render First Aid quickly with articles available in the field.

Burns might be caused by any of the following: Fire, Burning Gasoline or Oil; Hot Metals; Hot Liquids; Escaping Steam; Electricity and Chemicals.



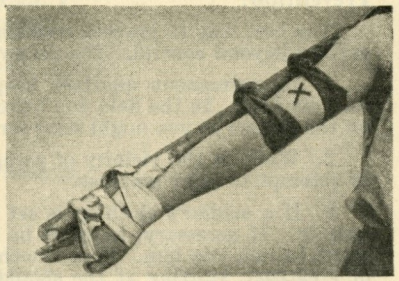


Figure 24 & 25—*Improvised splinting, simple fracture of upper arm. Point of fracture, marked with letter "X".*

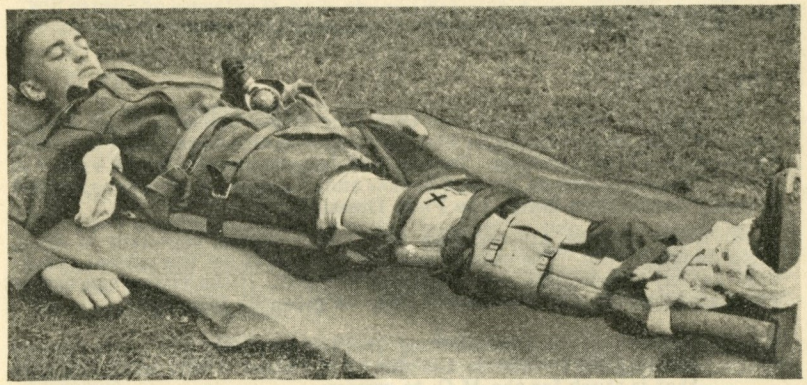


Figure 26—*Compound fracture of the upper leg, splinted with improvised materials.*

Figure 27—*Compound fracture of lower leg showing unnatural position of limb.*

Figure 28—*Rifle splint and improvised bandages for fracture of the lower leg.*

Prevention:

The best way to prevent burns is to prevent fires from starting or from getting beyond control. The following points are to be noted:

1. In permanent quarters keep fire extinguishers, water and sand buckets filled. In the field don't drop cigarette butts and burning matches on the ground as you might start serious grass or forest fires.

2. While in the vicinity of garages and parked transport, don't smoke or attempt to light matches.

3. If a soldier's clothing is set on fire, get him down on the ground quickly. If necessary, he must be forcibly thrown to the ground. If he starts to run, trip him. Then smother the fire with groundsheets, blankets or greatcoat, starting at the shoulder and smothering the flames toward the feet.

Danger of Burns:

Large burns usually cause severe shock which may cause death.

TREATMENT:

1. Slight or trivial burns, less than four inches across and not deeper than the skin, do not endanger life. They should be covered with the Field Dressing or a Shell Dressing. Tannic Acid Jelly is provided in the First Aid Kit in Tanks and Army Cars and Trucks and, if available, should be applied liberally to the burn before the Field Dressing.

2. Serious burns, greater than four inches across, especially if deep, are a danger to life. The most important thing is to get the patient evacuated quickly so adequate treatment can be given. If the victim can not be evacuated quickly then treatment may be given as follows:—

(1) Remove all the loose clothing over the area. Do not try to remove clothing that sticks to the skin; cut around it and leave the part that is stuck for the M.O. to remove.

(2) Cover the burn with Field or Shell Dressings and bind it up in the ordinary way. If the burns are too large to cover with dressings wrap the man in a blanket over his clothes.

(3) If a tank or army vehicle with a First Aid Kit is handy get the tube of Tannic Acid Jelly and apply it liberally to the burned area before wrapping it up.

(4) If the evacuation of the patient is delayed *strong boiled tea* may be obtained from the company cooker, and the dressings should be kept moistened by repeated applications. If tea is not available boiled water may be used to keep the dressings moist and prevent them from sticking.

(5) DO NOT
 (a) Apply grease or oily substances.
 (b) Apply iodine or antiseptics.

(6) Treat shock by making the patient comfortable. Keep him warm, with a blanket over his clothes. Give him frequent small drinks of hot tea or water if available.

Chapter V
SHOCK

Instructor's Notes

Stores:

Blankets.
Cup of Water.
First Field Dressings and Shell Dressings.
Material for Tourniquet.
Splints.

Shock Generally:

Definition: Shock is a condition of depressions of all the vital functions of the body resulting from severe injury.

Cause: Any serious injury such as a wound, fracture or severe burns will cause the casualty to be in the condition of shock. Certain factors tend to increase the liability to shock and make shock more severe.

1. Serious bleeding.
2. Pain.
3. Fear, anxiety, worry.
4. Cold.
5. Fatigue.

How to Recognize Shock:

Shock usually becomes apparent one-half to two hours following the injury. Once the causes are removed and the proper treatment is started by the First Aid Assistant, the patient usually recovers gradually. Otherwise the condition may become progressively worse until death occurs. Shock may be recognized by:

1. The appearance of the patient. He is limp and listless. He may be conscious but does not want to be bothered doing anything, even to answer questions.
2. His colour is very pale, lips are bluish.
3. Skin is cold and sweaty.
4. Pulse is very rapid and feeble: It may be difficult to feel.
5. Breathing is slow, shallow and irregular.

TREATMENT of Shock:

1. Stop all bleeding.
2. Make the patient comfortable and as warm as you possibly can. Wrap him in warm blankets, apply extra heat with hot water bottles if available. Also give him repeated hot drinks of tea or coffee, except where abdominal wounds are present. Remove wet clothing, boots, etc.
3. Relieve the pain as much as possible by splinting and bandaging.
4. Reassure the patient and prevent any unnecessary rough handling or moving him too often. Gentleness and sympathy is very important.
5. The patient's head is lowered below the level of the body (the head down position). This ensures a good blood supply to the vital centres of the brain.
6. Obtain Medical assistance as quickly as possible. Evacuate the patient with severe shock to the nearest Medical Post.

Chapter VI.

UNCONSCIOUSNESS & ARTIFICIAL RESPIRATION

Instructor's Notes

Stores:

Blankets.
Cup of water.
Hot water bottles.

Unconsciousness Generally:

A patient is unconscious when he can not be roused by noise, bright light or pain as from pinching. In most cases a patient should be taken to a Medical Officer as quickly as possible.

Common Causes of Unconsciousness and their TREATMENT:

1. Drinking Alcoholic Beverages—Treat for shock.
2. Skull Fracture—Get Medical Aid as quickly as possible.
3. Severe Bleeding—Stop bleeding, bind up wound and treat for shock.
4. Shock—Treat for Shock.
5. Sunstroke and Heat Exhaustion—Keep the patient cool and apply cold water to the head.
6. Fainting—Keep the head down.
7. Carbon Monoxide Gas (exhaust gas)—Get the patient into the fresh air and apply artificial respiration.

It is very important to determine the cause of the unconsciousness as treatment depends on the cause. When you find an unconscious soldier look for:

Empty poison or whiskey bottles.
Escaping gas from pipes, stoves or motor vehicles.
Electric wires.
Injury to the head.
Bleeding or Fractures which will cause shock.

Stoppage of Breathing and Artificial Respiration:

Artificial Respiration is used following accidents which cause stoppage of breathing.

1. Drowning.
2. Electric shock (or lightning).
3. Carbon monoxide poisoning. (Illuminating gas, furnace gas, gasoline motor fumes, etc.).

General Rules for Artificial Respiration:

1. If the victim is not breathing *start artificial respiration immediately*. Let some one else attend to other details. Don't take time to move victim to some convenient spot before starting respiration.

2. CONTINUE ARTIFICIAL RESPIRATION WITHOUT INTERRUPTION until natural breathing is restored or until death rigidity

sets in, or a doctor declares the patient dead. Lives have been saved after artificial respiration has been carried on as long as 6 to 8 hours.

3. While artificial respiration is being given have an assistant *keep victim warm* with blankets, hot water bottles, and massage of the limbs.

4. Keep the victim lying down after he has been revived.

Technique of Artificial Respiration:

Standard Method:

1. Lay the patient on his belly, one arm extended directly overhead, the other arm bent at elbow and with the face turned outward and resting on hand or forearm, so that the nose and mouth are free for breathing. Feel around the mouth and throat with a finger to make sure the passage is clear. (Fig. 30).

2. Kneel, straddling the soldier's thighs, or straddling one leg if it is more comfortable, with your knees placed at such a distance from the hip bones as will allow you to assume the position shown in Figure. (Fig. 31).

Place the palms of the hands on the small of the back with fingers resting on the ribs, the little finger just touching the lowest rib, with the thumb and fingers in a natural position and the tips of the fingers just out of sight.

3. With the arms held straight, swing forward slowly, so that the weight of your body is gradually brought to bear upon the patient. (See Fig. 29). The shoulder should be directly over the heel of the hand at the end of the forward swing. Do not bend your elbows. This operation should take about two seconds. (Fig. 32).

4. Now immediately swing backward so as to remove the pressure completely.

5. After two seconds swing forward again. Thus repeat unhurriedly twelve to fifteen times a minute the double movement of compression and release. This gives a complete respiration in four or five seconds.

6. As soon as artificial respiration has been started and while it is being continued, an assistant should loosen any tight clothing about the soldier's neck, chest or waist. KEEP THE PATIENT WARM. Do not give any liquids whatever by the mouth until the patient is fully conscious.

7. Continue artificial respiration without interruption until natural breathing is restored,—if necessary four hours or longer or until a Medical Officer has declared the soldier dead.

8. To avoid strain on the heart when the soldier revives, he should be kept lying down and not allowed to stand or sit up. If the Medical Officer has not arrived by the time the soldier has revived, the soldier should be given some stimulant such as a hot drink of coffee, or tea, etc. The soldier should be kept warm to prevent shock.

9. In carrying out resuscitation it may be necessary to change the operator. This change must be made without losing the rhythm of respiration. By this procedure no confusion results at the time of change of operator and the regular rhythm is kept up.

(1) DROWNING:

(a) Start artificial respiration immediately victim is recovered from the water.
(b) Feel around in the mouth and throat with the finger to make sure the passage is clear.
(c) Keep victim warm.

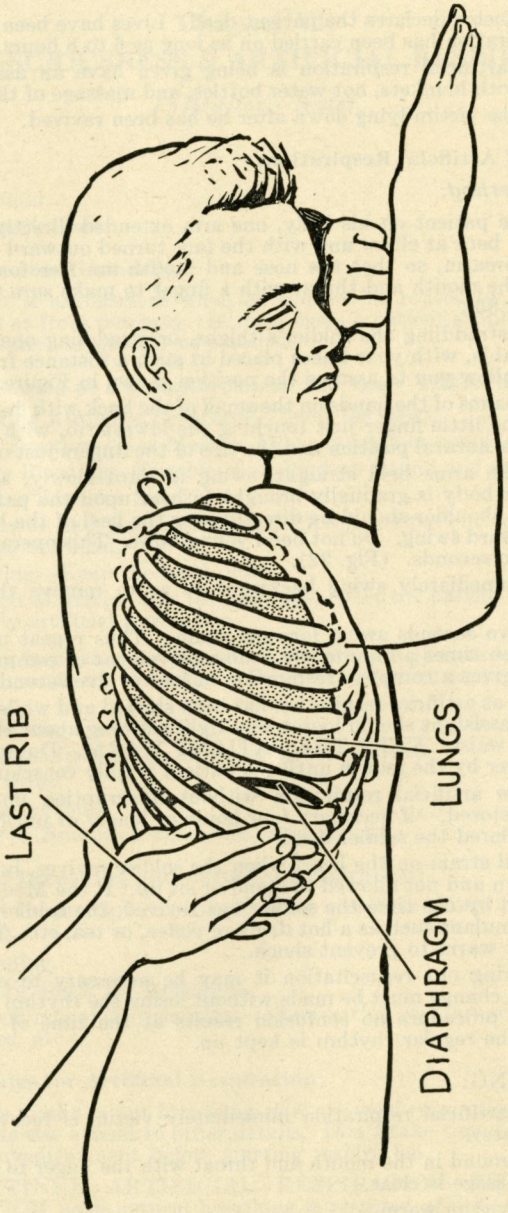


Figure 29

POSITIONS OF ARTIFICIAL RESPIRATION

Figure 31

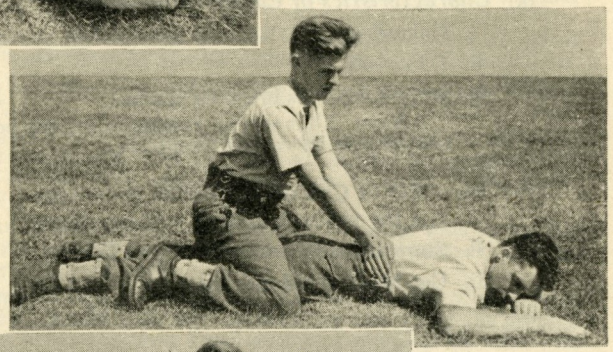


Figure 30

Figure 32

(2) ELECTRIC SHOCK:

If severe may cause sudden stoppage of breathing due to the effect on the brain. Death will occur very quickly unless breathing starts again by itself or unless artificial respiration is given.

(a) ***Rescue of Victim.*** Be careful if victim is still in contact with "live wire" or you will have two casualties instead of one.

Shut off circuit if you know where it is.

Use a long dry stick, dry board, or dry rubber tire, etc. to knock the wire away from victim. If possible stand on dry board or rubber while you are doing this.

(b) ***TREATMENT of Electric Shock.***

i. Start artificial respiration immediately and keep it up for a long time.

ii. Keep victim warm.

iii. Get a Medical Officer.

(3) CARBON MONOXIDE POISONING—due to inhaling exhaust gases from motor vehicles, or the air in dugouts where brasiers have been burning.

(a) ***Characteristics of Carbon Monoxide:***

i. Colourless.

ii. Odourless.

iii. Only dangerous in closed spaces.

Note: Your service respirator affords no protection whatsoever against carbon monoxide.

(b) ***First Aid in Carbon Monoxide Poisoning:***

i. Get the victim into fresh air immediately.

ii. Start artificial respiration immediately.

iii. Get Medical aid quickly.

Chapter VII

EVACUATION OF CASUALTIES

Instructor's Notes

Stores:

Poles and blankets for stretcher.

Greatcoats.

Door, Shutter or wide board.

Methods of Transportation of Wounded Cases:

Any soldier may be called upon at any time to assist the Regimental Stretcher Bearers to evacuate the wounded, and the following points should be remembered:

1. Handle the patient firmly but gently.

2. When carrying a stretcher always walk out of step.

When stretchers are not available the following methods can sometimes be used:

(1) The four handed seat: Two bearers face each other behind the patient and grasp their left wrists with their right hands and each others right wrists with their left hands and stoop down. (See Figs. 33 & 34).

(2) The three handed seat: One of the bearers frees a hand to support the patient's leg or back and the three hands are linked up as in the four handed seat. (See Fig. 36).

The above methods should only be used in cases where the wound or injury will not be made worse by the movement or position of the patient.

(3) (a) When no help is available a patient can be carried "Pick-a-back".

(b) "Fireman's Lift"—The patient is carried across the shoulders with the bearer's right arm passed around the patient's left thigh to grasp the patient's left arm in front of the chest. (See Fig. 37).

(c) Human Crutch—The patient may be helped to walk by passing one arm around his back and having the patient pass an arm around your neck.

(d) "Fireman's Drag"—Under fire you may be able to save some soldier's life and your own by dragging him along the ground. Tie his wrists together, kneel over him and loop his arms over your neck and crawl along on all fours. (See Fig. 35).

(4) ***The Improvised Stretcher:***

A satisfactory stretcher may be made by using two poles about 7 feet long and two blankets. (See Figs. 38 to 40).

The blankets are wrapped around the poles which are turned outwards until the stretcher is only two feet wide. The poles are kept apart by lashing cross members at each end.

Stretchers may also be improvised from two greatcoats, three battle dress blouses, a door or shutter.

When carrying a stretcher the bearers should always march out of step to prevent jarring the wounded man unduly.

The respirator can be used as a pillow and other equipment should be placed across the stretcher.

HAND CARRIERS

Figure 33—*Position of hands, four handed seat.*

Figure 34—*Patient being transported by four handed seat.*

Figure 35—*Fireman's Drag.*

Figure 36—*Three handed seat.*

Figure 37—*Fireman's lift.*

IMPROVISED STRETCHERS

Figure 38
Improvised stretcher made from blanket and two poles.

Figure 39
Door used as improvised stretcher S.Bs marching out of step.

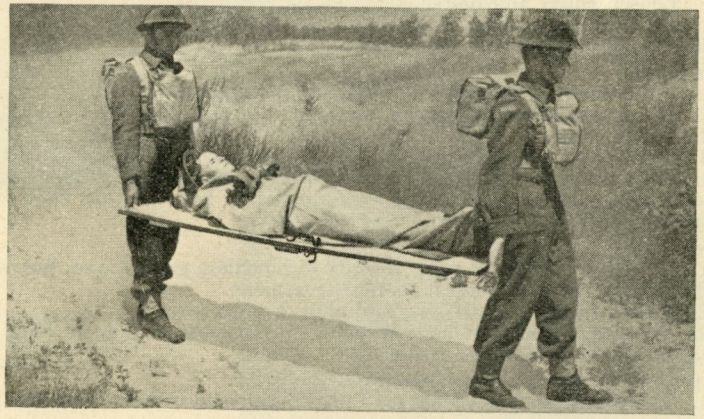


Figure 40
Lift the patient carefully onto a stretcher.

Chapter VIII

FIRST AID TO GAS CASUALTIES

Instructor's Notes

Stores:

Articles for Personal decontamination.

Introduction Generally:

Delay in the treatment of gas casualties endangers life. For early and correct treatment, the soldier should be able to recognize each type of gas by its effect on the human body, and also to render effective First Aid.

TREATMENT:

Choking Gases (Also Arthur and Dick):

1. If respirator lost or damaged, place a wet cloth over the face.
2. Remove from the gassed area on a stretcher; evacuate as quickly as possible.
3. Warmth and rest is essential.
   Cover with blankets or extra clothing.
   Give hot sweet tea or coffee to drink.
   Loosen collar and belts.
   Do not allow patient to smoke or take alcoholic drinks.
4. Do not use artificial respiration.

Tear Gases:

1. Adjustment of the respirator usually gives relief.
2. If tear gas liquid or solid has entered the eyes wash them out thoroughly with water.
3. Only those men whose eyes have been seriously affected by the actual entrance of tear gas liquid or solid will be transferred to the nearest medical post. Advise men whose eyes are lightly affected that they will recover within an hour or two.

Nose Gases:

1. Casualties will walk away from the immediate gassed area, but will not be transferred to a medical post for treatment.
2. Remove the outer clothing and allow him to rest.
3. Encourage him that he will completely recover within an hour or two (this is true even in bad cases).

Blister Gas (Mustard and Lewisite):

1. The soldier is responsible for his own personal decontamination by using his anti-gas ointment.
2. Speed is the essential thing in First Aid treatment for Blister Gas.
3. It is important that the Medical Services are not responsible for First Aid treatment to Blister Gas cases until casualties are suffering from actual skin blisters or injury to the eyes. These cases will be evacuated as quickly as possible.
4. If blister gas liquid has entered the eyes, they should be washed out thoroughly and immediately with water before he is transferred to the nearest Medical Post.
5. For Blister Gas liquid on the skin and clothing, remove or cut away the contaminated clothing; anti-gas ointment is applied to the skin affected and rubbed vigorously in for 30 seconds. If ointment is not available, bleach paste, or soap and water may also be used. (See Figs. 41 to 44).
6. If blisters form, they should not be pricked but should be covered with a First Field Dressing or an improvised dressing.
7. Men whose eyes or lungs have been injured by blister gas vapour should be transferred quickly to the nearest medical post.

PERSONAL DECONTAMINATION

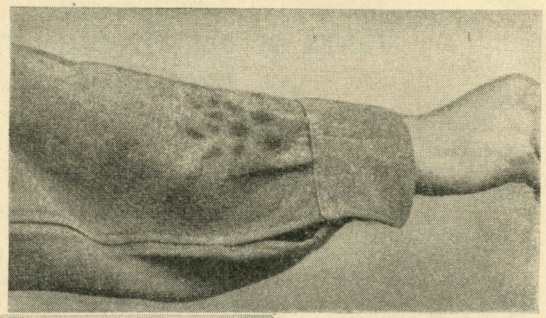


Figure 41
Sleeve contaminated by gas spray.

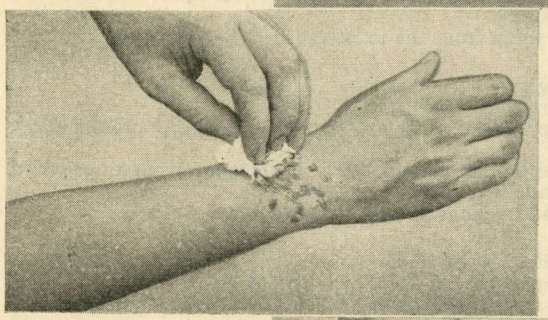


Figure 42
Wipe contaminated area with cotton waste.

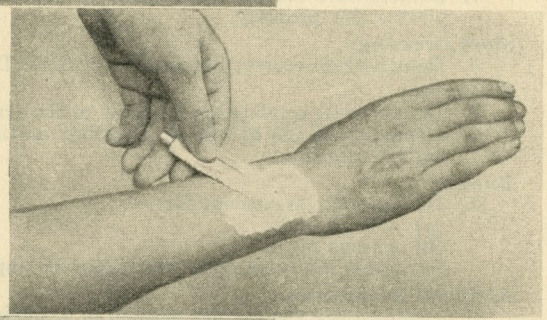


Figure 43
Apply anti-gas ointment.

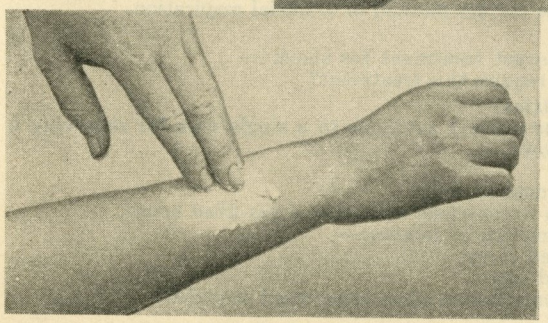


Figure 44
Rub ointment in vigorously for 30 seconds.

Chapter IX
TESTS OF ELEMENTARY TRAINING
Instructor's Notes

Stores:
Stores as for all previous lectures.

General:
All tests will be practical and verbal. In order to qualify a recruit must show 80% efficiency.

Tests may be done in small groups with each soldier being given a different case to handle.

Practice periods should be used for applying tests as well as the final period. Men who fail to make satisfactory progress will be given additional instruction and every effort will be made to have them reach the standard before the end of the course.

Tests should be made up from the following list (Standard 80% correct and efficient):—

Wounds and Bleeding:
1. Demonstrate direct pressure with F.F.D.
2. Demonstrate 4 pressure points and explain the kind of wounds they are used for.
3. Demonstrate correct application of a tourniquet from improvised materials, also labelling and slip of paper.
4. Apply improvised bandage to arm, head or leg.

First Field Dressing:
5. Show where F.F.D. is carried.
6. Demonstrate application of F.F.D. to arm or leg.
7. Demonstrate correct application of F.F.D. to head wound so respirator fits properly.

Shell Dressing:
8. Demonstrate correct application of Shell Dressing to chest wound.

Fractures:
9. Demonstrate application of splint to the arm.
10. Demonstrate use of rifle as leg splint including the use of the good leg for splinting.

Burns:
11. Demonstrate treatment for:—
    (a) a small burn;
    (b) a large burn;
    (c) name the substances which may be applied to a burn.

Artificial Respiration:
12. Demonstrate the correct method of artificial respiration.

Shock:
13. Demonstrate correct treatment for shock:—
    (a) what cases require this treatment?

Evacuation of Casualties:
14. Demonstrate the method available to a single man for removing a casualty as follows:—
    (a) under fire;
    (b) assisting a man to walk;
    (c) carrying an unconscious man from a gas-filled house.
15. Two men demonstrate as follows:—
    (a) three handed carry;
    (b) four handed carry.
16. Demonstrate construction of an improvised stretcher.