

“First Aid in Flight” Air Forces Manual No. 45

Foreword by Ben C. Major:

This concise manual was prepared by the US Army Air Force to prescribe the numerous methods of administering first-aid while in flight. The manual itself is printed on heavyweight paper, and does not include a hard cover (as other manuals published by the War Department). The document measures approximately 11 cm x 15 cm and is printed in black and white throughout. It appears that this later version (published 17 October 1944) is heavily based upon War Department AAF Form No. 24 (approved 4-1-43).

The booklet is offered here in paper form. The original booklet was courtesy of Ben Major, and was used with his kind permission. Please feel free to use this as a reference source and print it out for personal use.

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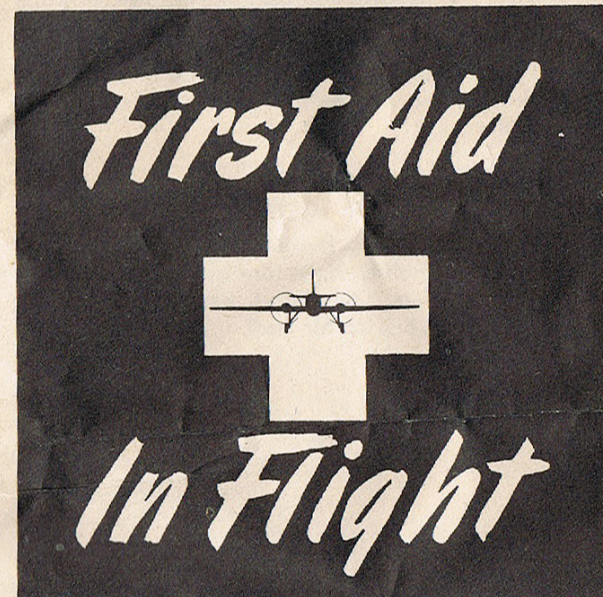
Many thanks,
The WW2 Medical Research Centre Staff



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AIR FORCES MANUAL NO. 45

HEADQUARTERS, ARMY AIR FORCES
Washington, 17 October 1944

Air Forces Manual No. 45, "First Aid in Flight", is published for the information and guidance of all concerned.

By Command of General ARNOLD:

BARNEY M. GILES
Lieutenant General, U. S. Army,
Deputy Commander,
Army Air Forces and
Chief of Air Staff.



BUREAU OF MEDICINE AND SURGERY
Navy Department, Washington 25, D. C.
22 November 1944

Army Air Forces Manual No. 45, "First Aid in Flight", is indorsed and recommended for insertion in the Kit, First Aid, Aeronautic issued to naval air forces.

ROSS T. McINTIRE,
Vice Admiral (MC), USN,
Chief of Bureau.

RESTRICTED

First Aid In Flight

Your airplane is a good first-aid station. You have the Kit, First-Aid, Aeronautic, and the Packet, First-Aid, Parachute. Oxygen is frequently available. Splints, or splint materials, are at hand. Hot drinks are often carried in thermos jugs. In certain bombers you will be provided with blood plasma. Familiarize yourself thoroughly with the first-aid supplies which you carry, and get clearly in mind just what you can do with them.

WOUNDS AND INJURIES

Wounds and injuries involve one or more of these problems: **pain, cuts, bleeding, broken bones, burns, frost-bite, shock, and unconsciousness.** Generally you will have to deal with combinations of these, such as cuts which are bleeding, burns that cause pain, broken bones associated with cuts or burns, and so on. Shock usually comes on after a good deal of blood has been lost either inside the body (where you may not be able to see it), or on the outside. Shock also accompanies deep or extensive burns. Unconsciousness may be produced by a head injury, may follow shock, or may occur as a result of failure to get enough oxygen.

In giving first-aid, try to size up the general situation accurately. Then attend to the most serious problems first. Above all, use common sense.

To any conscious man, the sulfa tablets included in the Kit, First Aid, Aeronautic must be given immediately as directed on the box containing the tablets. If sulfa pow-

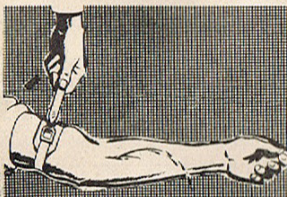
der is available it may be sprinkled lightly in the wound, however this application is not as important as the use of sulfa tablets by mouth. Use iodine only for small cuts and scratches, which should not be covered by a dressing. Never put iodine on or into large or deep wounds.

CUTS AND BLEEDING

1. Expose wound by cutting nearby clothing with scissors.

2. Cover cuts with sterile dressings and apply firm pressure.

3. If this does not stop the bleeding, elevate the bleeding part.



4. If these measures fail to stop the bleeding in arms or legs, apply a tourniquet in the middle of the upper arm or middle of the thigh. The tourniquet must be loos-

ened every 20 to 30 minutes and then tightened again after 10 or 15 seconds.

Tourniquet (WARNING)

A tourniquet must be loosened every 20 to 30 minutes and then tightened again after 10 or 15 seconds. Failure to release the tourniquet often enough or long enough to provide an adequate circulation to the blocked portion of the arm or leg may necessitate amputation later.

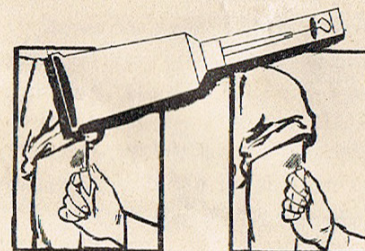
PAIN

Use morphine at once for severe pain, except as listed on page 4. This makes it possible for the patient to lie quietly, preventing aggravation of the injuries. Do not use more than one tube (1/2 grain) of morphine at any one time.

When giving morphine, mark down the time and dose on the patient's forehead or clothing with a pencil. Remember that an excess of morphine can be fatal. Do not give morphine to a person who is unconscious, who has a head injury, who is breathing less than 12 times per minute, or who has had morphine within the previous 2 hours.

TO GIVE MORPHINE

1. Paint any small area of skin with iodine.
2. Remove the transparent cover from the morphine syrette.
3. Push in the wire loop to puncture the inner seal; then pull the wire out.
4. Thrust the needle through the skin, using care not to press morphine out of the tube while doing so.
5. Squeeze the tube slowly to inject the morphine.



Give Morphine:

1. To stop pain.
2. To decrease shock.
3. To facilitate moving the patient.

DON'T Give Morphine:

1. To an unconscious person.
2. To a person with a head injury.
3. To a person who is breathing less than 12 times per minute.
4. To a person who has had morphine within 2 hours.

SHOCK

You can tell when a patient is in shock by the total picture he presents rather than by any single sign. Usually he will have:

1. Lost considerable blood, or
2. Suffered severe burns, or
3. Been subjected to intense pain, or
4. Received a head injury.

His skin is pale, cold, clammy, or moist.

His breathing is shallow, and may be irregular.

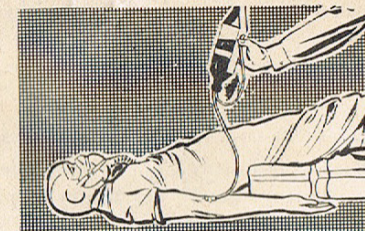
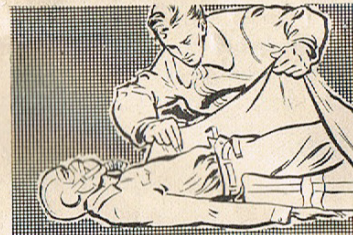
His pulse is weak, rapid, thready, and often difficult to find.

Sometimes there is nausea and vomiting.

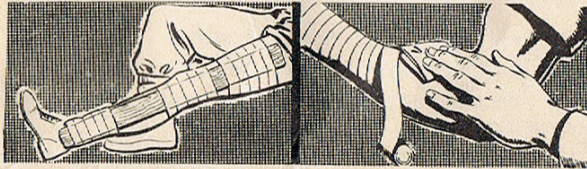
The above symptoms are not always apparent. Therefore, shock should be assumed in all cases of serious injury.

Treat shock by doing the following things as promptly as possible:

1. Stop any obvious bleeding.
2. Give pure oxygen to breathe. (Automix "OFF.")
3. Give morphine. (Exception: Head injury or unconsciousness.)
4. Keep the patient warm with blankets, extra clothing, or a sleeping bag, but avoid excessive heat.
5. Loosen any tight clothing.
6. Place the patient with his head lower than his feet, to promote better circulation to the brain.
7. Inject plasma, when it is available, in accordance with the directions on the plasma package.



FRACTURES



1. If a broken bone is associated with an open wound, cover with a sterile dressing. If the dressing is firmly bound in place it will almost always stop the bleeding.
2. Give morphine.
3. Apply a temporary splint to the extremity, using wood, strips of metal, heavy cardboard, or any convenient pieces of equipment such as a machine-gun barrel or fire ax.
4. Do not attempt to set the bone. Handle the arm or leg very gently. Manipulation causes shock.

BURNS

For minor burns:

Squeeze burn ointment onto a sterile dressing. Then cover the burn gently with the dressing.

For severe burns:

1. Give morphine.
2. Treat shock. (Oxygen; plasma, if available.)
3. Apply burn ointment on sterile dressings, and bind the dressings gently but firmly in place.
4. Never open blisters resulting from burns.



FOR EYE BURNS

Apply Metaphen ophthalmic ointment directly to the eyeball. Then apply the boric acid ointment to the inner surface of the eyelid. Cover the eye with a dressing and secure in place with adhesive strips, provided the skin around the eye is not burned. Do not touch the eye with your fingers, and do not rub it—either before or after the ointment has been applied.

TRANSPORTATION OF WOUNDED

If it becomes necessary to move an injured crew member improvise a litter with 2 poles and a pair of flying jackets. Turn the sleeves inside out and insert the poles through them. Then close the jacket over the outside of the poles. Additional support can be obtained by using boards or cardboard splints inside the jackets. Litters can also be improvised with poles and blankets. Take great care to be as gentle as possible in moving an injured person onto a litter. Keep his body as flat as possible at all times. Have 3 or more persons move and support him by placing their arms under his legs, buttocks, back, shoulders and head.



UNCONSCIOUSNESS AND NEAR-UNCONSCIOUSNESS

Amoxia, carbon monoxide poisoning, and head injury are important causes. Immediate treatment is vital, especially if breathing has stopped.

1. Give artificial respiration:

First, lay the patient face down with one arm bent at the elbow, his face resting on his hand, and his other arm extended beyond his head.

Second, open his mouth and remove all foreign substances such as false teeth and chewing gum. If his tongue has fallen back into his mouth, grasp it with your fingers and pull it well forward.

Third, give him pure oxygen. (Automix "OFF.") If the patient has stopped breathing, turn on the emergency flow.

Fourth, kneel astride the patient's thighs with your knees about even with his. Place the palms of your hands against the small of the patient's back, with your little finger over the lowest rib.

Fifth, with your arms stiff, swing your body forward slowly so that your weight is applied over the patient's back. This should take about 3 seconds.



Sixth, release your hands with a sudden snap and swing backward to remove all pressure from the patient. After about 2 seconds repeat the cycle.



Continue giving artificial respiration without stopping for 2 hours or longer, unless the person to whom it is being given begins to breathe normally.

2. Keep the patient warm.
3. Do not give morphine.

FROSTBITE

1. Fingers, toes, ears, cheeks, chin, and nose are the parts most frequently affected.
2. Numbness, stiffness, and whitish discoloration are the first symptoms.
3. Wrinkle your face to find out if it is numb; watch for blanched faces of your crew mates.
4. If frostbite occurs, warm the affected part gradually. Never rub or attempt to thaw it rapidly.
5. If blisters develop, do not open them.