

MISCELLANEOUS NOTES

CALLING OUT THE N.F.S.—If possible, contact a Warden who will deal with the matter. Local arrangements vary for Fire Guards calling out the N.F.S. direct, but the following procedure is general:—

- (1) If N.F.S. Station is nearby send a messenger direct.
- (2) If Wardens' Post is nearer, send messenger to Wardens' Post.
- (3) If neither of above is practicable, phone direct to N.F.S., using preferably a public kiosk, police box, etc.
- (4) Fire alarms must not be used unless special instructions are issued.
- (5) Detail someone to meet N.F.S. on arrival to supply information.

GAS AND ELECTRICITY.—Turn off gas, but leave electricity on.

FORCING AN ENTRANCE.—Smash a lower window rather than a door. If door must be forced smash panel near lock, insert hand and open from inside.

PREMISES DAMAGED BY BLAST.—Look out for live coals scattered by blast and extinguish. Buildings adjacent to fires should be guarded against embers.

LADDERS.—When scaling a ladder grip the "rungs" or "rounds," not the "strings" (vertical pieces of wood). Co-ordinate the movements of hands and feet, move right hand and right foot, left hand and left foot.

FIRE EXTINGUISHERS.—Extinguishers containing carbon tetrachloride or methyl bromide should not be used for controlling incendiary bombs as noxious gas is generated when the contents come into contact with hot metal.

Soda acid or compressed carbon dioxide extinguishers may be used in emergency. Approved extinguishers bear a special label.

RESPIRATORS.—Should not be worn in smoke as smoke particles ruin the filter.

REVERTING.—After raid is over report to Wardens' Post position of unlighted incendiary bombs and details of any bombs or fires successfully extinguished, etc.

"CIVILIAN FIRE."—Be ready to extinguish fires, however caused. 65 2718

THE FIRE GUARD'S POCKET CHART

including

A TABLE OF WAR GASES

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PICTURES
DIAGRAMS
TABLES

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Compiled by
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4d.

100 copies, 30s.

5-lb. EXPLOSIVE
INCENDIARY
PHOSPHORUS,
OIL AND
MULTIPLE-
EFFECT BOMBS
FIRST AID
TABLE OF WAR
GASES
ORGANIZATION
DUTIES
TRAILER PUMPS
STIRRUP PUMP
TEAM
IN ACTION
METHODS
OF ESCAPE
RESCUE
CARE OF
STIRRUP PUMP
MISCELLANEOUS
NOTES

JORDAN & SONS, LIMITED, 116 Chancery Lane, London, W.C.2

FIRST AID

SHOCK.—The patient must lie down. Cover with coats, rugs, or blankets. Keep warm with hot-water bottles. Loosen tight clothing. Give hot sweet tea if patient is conscious and can swallow.

BURNS (CHEMICAL).—Apply dry unmedicated dressings (clean handkerchief, cotton-wool, lint, etc.) immediately. No oil, petroleum jelly, butter or grease should be used. Treat for shock as above.

(PHOSPHORUS).—Keep the part affected under water or covered with a wet pad. If possible, bathe the burn with a solution of two tablespoonfuls of ordinary washing soda dissolved in one pint of water. (This solution should be stored in bottles.) Remove the phosphorus while wet by scraping off with a blunt knife, but it is advisable to seek medical aid as quickly as possible. On no account use grease or oil, they spread the phosphorus. Treat for shock as above.

BLEEDING.—When no bones are fractured or joints dislocated lay the patient down, and if wound is in a limb raise the limb. Place a clean pad (folded handkerchief, lint, etc.) on wound and, unless a foreign body such as glass is present, bandage firmly. Treat for shock as above.

FRACTURES.—Use cushions, coats, etc., to make patient as comfortable as possible; do not move the patient; control bleeding if present. Treat for shock as above.

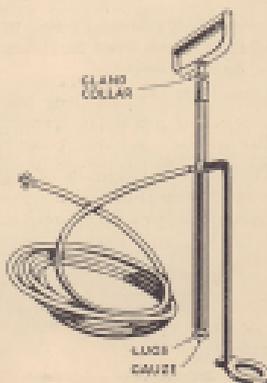
UNCONSCIOUSNESS.—If breathing has ceased, perform artificial respiration. If breathing present, lay patient on back, head to one side. If face flushed, raise head and shoulder; if pale, lower. Undo tight clothing and make sure the patient can get air.

ARTIFICIAL RESPIRATION.—Clear nose and mouth of obstructions, lay patient face down, head turned to one side. Face patient's head, kneel on one side in a line with patient's thighs and sit on your heels. Place palms of hands on small of patient's back. Keep arms stiff throughout. Press down, saying 2000, 3000, relax pressure (but keeping hands on patient) by sitting back on your heels and saying 4000, 5000. Repeat 12 times a minute; keep going until arrival of medical aid.

Remember: Summon assistance immediately

CARE OF STIRRUP PUMP

- (1) Stirrup pump should be used once a fortnight. Plain water only should be passed through, otherwise the metal may corrode or the hose be damaged.
- (2) If the pump will not draw water from a pail the fault can usually be traced to the ball valve at the bottom.
 - (a) Turn pump upside down, push a pin or a piece of thin wire through gauze at the bottom and so release ball.
 - (b) If (a) ineffective, unscrew bottom of the pump by means of legs and release ball with a thick stick.
- (3) If water is leaking from top of barrel.
 - (a) Screw down gland collar just tight enough to stop leak. If tightened too much the pump will be difficult to operate.
 - (b) If above ineffective remove gland collar and repack gland with soft wool soaked in oil.
- (4) Look after the hose. Remember strong light and heat may cause rubber to perish. Therefore store the pump in a cool place.
- (5) Drain as much of the water out of the hose as possible; this is especially important during frosty weather. Always coil the hose and, by means of the hose strap, attach it to the pump.
- (6) Dust and grit hinder the smooth operation of the pump. Keep the gauze at the bottom and the nozzle clean. Unscrew the nozzle from the hose when cleaning it. Do not dismantle the nozzle as any obstruction can be removed from the back.



WAR GASES

(Table originally compiled by C. A. Stewart)

War Gas.—Any substance—solid, liquid or gas—used in warfare for its poisonous and/or irritant effects on the human body.

Non-Persistent Gas on release disperses quickly, leaving no liquid contamination.

Persistent Gas evaporates slowly, gives off vapour and remains dangerous for a long period.

IDENTIFICATION OF GASES

It should be remembered that Tear Gas or other chemical may be used in conjunction with more dangerous gases to render identification difficult. Therefore, if in doubt, regard all non-persistent gases as Phosgene and all persistent gases as Mustard until the identity is definitely established.

First Aid for Blister Gas Casualties

(See also First Aid Column in Table)

LIQUID CONTAMINATION

Skin:

- (a) Remove contaminated clothing. (Treat skin under area of contamination as though it is fully contaminated)
- (b) Wipe up, without spreading, liquid contamination on skin with cotton-wool, etc. Do not spend more than a few seconds on this, but proceed to (1) or (2)
- (c) If within a few minutes of being contaminated, either application of—
 - (1) **5% 2-Amino-2-naphthol**.—Rub the detergent into the contaminated skin until the detergent disappears and afterwards wash with soap and warm water; or
 - (2) **Almond Paste** (in buckets outside chemical shops after gas attacks).—Rub well in for one minute and wash with soap and warm water; or
 - (3) **Solvent** (petrol, paraffin, etc.).—Scrub contaminated area repeatedly with cotton-wool, etc., contained in solvent. Do not spread contamination by allowing solvent to run, and wash with soap and warm water afterwards
- (d) If five or more minutes elapse between contamination and treatment, then—
 - (1) Wash with soap and water only, as all other methods after five minutes increase damage.

Eyes:

- (1) Immediately flush out the eye with either—
 - (i) Warm water
 - (ii) Saline or sodium bicarbonate solution

VAPOURS

Skin: Remove clothing; wash the whole body with soap and water

Eyes: As for liquid

Lungs: Treat for shock

Group	Name (and type)	Description	Purpose	MEANS OF DETECTION		
				By Smell	By Visible Signs	By Chemical
NON-PERSISTENT	Phosgene (Liquid)	Tear Gas	Highly lethal (10 times as toxic as Chlorine) Highly lethal	Starry haze	White cloud if atmosphere humid, otherwise invisible	N
	Chlorine (Liquid)	Tear Gas readily liquefied		Unpleasant choking smell as of bleaching powder Practically odourless	Greenish-yellow cloud when undiluted	N
	B.C., B.C., D.M., etc. (None)	Arsenical compounds listed as "smoke" consisting of fine particles	Harassing		None	N
NON-PERSISTENT	C.A.P. (Tear)	Crystalline solid, varying from colourless to deep orange-red, vapourless when heated	Chiefly used for tracking	Floor polish	None	N
	Di-Phosgene Chloropicrin	Oily liquid Yellow liquid	Highly lethal Highly lethal	As for Phosgene above As for Chlorine above	As for Phosgene above As for Chlorine above	N N
NON-PERSISTENT	H.S.C. (Tear)	Dark brown oily liquid, evaporates slowly	Harassing	Faintest fruitier smell as of pear-drops, and vanilla	Liquid generally dark in colour. Vapour is invisible	(a) Liquid yellow to red (b) Vapour
	H.S.C. (Tear)	Yellow oily liquid, evaporates very slowly	Harassing	Peanutting bitter-sweet	Liquid is brown in colour	
PERSISTENT	Mustard (Blister) (a) Liquid (b) Vapour	Dark, heavy, oily liquid, evaporates slowly	Causally-producing	Faint smell of mustard, garlic, etc., but the vapour soon causes choking of the nose or smell	(a) Liquid varies in colour from dark brown to pale straw. Pale liquid difficult to detect on grass, etc. Gives slight iridescent effect on wet roads or earth, similar to effect of paraffin (b) The vapour is invisible	(a) Liquid indicates special white paint which red on liquid as (b) The vapour give very little detail
	<p align="center">Blister Gas, Special Characteristics</p> <ol style="list-style-type: none"> 1. Persistence and power. 2. Penetration of materials and of the body. 3. Irritating character. 4. Delayed action. 5. Unusual action. 					
PERSISTENT	Lewisite (Blister) (a) Liquid (b) Vapour	A dark, heavy, oily liquid. Contains arsenic. Rapidly destroyed by water and any alkali. Low freezing-point	Causally-producing	Strong smell of geraniums	(a) As for Mustard above (b) The vapour is invisible	(a) Liquid detector pen (b) Vapour indicator
	Asphyxiating Hydrogen	Gas—non-persistent Liquor—persistent	Causally-producing	None	May see grey powder	Type "W" & turns white

ON AND IDENTIFICATION

Indication	By Immediate Irritant Effects
100	Irritation of the breathing passages; coughing, sneezing, itching, choking, tightness of chest, rapid pulse. With Phosgene possibly also watering of the eyes As for Phosgene but more irritant
100	Effects slightly delayed at onset (a few minutes), intense irritation and pain in nose and skull cavities, forehead, ears, teeth, and gums, burning. Watering of eyes. Nose watering. Much saliva. Burning throat. Pain in chest and stomach, INTERSE MITAL DISTRESS, Possibly convulsion or paralysis
100	Immediate profuse watering of the eyes. Smarting and pain. Spasms of the eyelids. Interference with vision. (Effects soon pass off in fresh air) (C.A.P. only, slight skin irritation)
100	As for Phosgene above but more effect on eyes
100	As for Chlorine above but strong "tear gas" effect on eyes. Causes more irritation of respiratory passages than Chlorine
only forms visible point of redness	In high concentrations is also a respiratory irritant As for C.A.P. above Lipid in eyes causes severe irritation and injury Not quite as intensely tear-producing as C.H.K. As for C.A.P. above
detected by existing of no detector turns bright black with small gas can does not show on 2 point	Lipid in eyes causes very irritation and injury THESE ARE NO IMMEDIATELY APPRECIABLE EFFECTS. Although damage is caused very rapidly, the signs are DELAYED , except in the case of liquid blister gas in the eye. This causes immediate irritation which passes off, to be followed about 1 hour later by inflammation, smarting, watering, and closure of the eye. (FOR SUBSEQUENT EFFECTS SEE LAST COLUMN)
turn yellow at rusty and give no show	(a) Immediate sharp tingling on contact with the skin in the eyes, immediate and severe pain (b) Immediate irritation of the nose
sober paper or brown	None

FIRST AID

Put on respirator. Remove from the gas. Loosen tight clothing ABSOLUTE REST. Definitly stretch case, even if patients think he feels well. KEEP PATIENT WARM. NO ARTIFICIAL RESPIRATION. REMOVE TO HOSPITAL ON STRETCHER
Remove from the gas. Remove contaminated clothing and shake-out before removing respirator. REST and FRESH AIR. Gargle and nasal douche of bicarbonate of soda solution (50 grs. in the pint). Draughts of the same to relieve vomiting. BLASSURE PATIENT AND KEEP HIM UNDER OBSERVATION
No treatment usually required. Adjust respirator or remove to fresh air. Restroom. If necessary, wash out eyes with normal saline (1 teaspoonful 1 pint). If liquid in eyes, washing will be necessary. Also liquid on skin wiped off. Clothes, if contaminated, should be removed and aired
As for Phosgene above
As for Chlorine above
As for C.A.P. above
As for C.A.P. above
IMPORTANT 1. Speed 2. Prevent shock by ensuring with bleach cream or ointment before commencing treatment of other parts of the body 3. Do not spread contamination by allowing water, bleach or soda to run 4. Destroy (presumably by burning) all rags, cotton-wool, etc., used during process of decontamination 5. Contaminated clothing should be placed outside or in an airtight bin 6. The method of decontamination nearest to hand, speed is more important (See also First Aid for Blister Gas Casualties)

None

LATER EFFECTS AND SUBSEQUENT TREATMENT

After 2-3 hours symptoms of damage to the lungs develop. Phosgene especially has a delayed action. Early symptoms disappear and patient may feel quite recovered. A few hours later patient may be gravely ill. THESE ARE HOSPITAL CASES
None. Effects should quickly pass off on removal to fresh air. HOSPITAL TREATMENT UNNECESSARY
None. RECOVERY IS SPEEDY AND PATIENT SHOULD NOT (save in exceptional cases) BE SENT TO HOSPITAL
As for Phosgene above
As for Chlorine above
As for C.A.P. above
As for C.A.P. above
LATER EFFECTS Skin. —If redness, blistering, or ulceration appears after First Aid, seek medical aid. Eyes. —Danger of blindness. Always after First Aid seek medical aid without delay, but immediate First Aid is vitally important. Lungs. —Immediate medical aid
Symptoms: Headache, headache, pain in back and stomach Medical or Hospital treatment

TEAM IN ACTION

(Continued - "Water on")



He in position and attacks fire and boards with jet, but cooperatively on fire. No. 1 does not expose himself unnecessarily, but makes the utmost use of available protection. Hoses pump at the rate of 70 double strokes per minute. None of pump will cut through and danger from fragments of barrels supplies of water, keeps in contact with No. 1, and No. 2 is present when required.

No. 1 is satisfied that fire and bomb are extinguished he will command, "Water off," when No. 2 will stop pumping, but No. 2 will remain at their posts until No. 2 is satisfied by close inspection looking over of burnt and charred material, that no fire breaking out again is seen. He will then give the check off and make up.

5-lb. EXPLOSIVE INCENDIARY



Length, 21 inches
Diameter, 2 inches
Weight, 5 lb. (Approx.)

5-lb. EXPLOSIVE INCENDIARY

- (4) **BOMBS FALLING IN OPEN.**—Take cover behind a stone or brick wall or well out of range. Leave bomb to burn itself out unless likely to start a fire. Do not attempt to cover with sand mat.
- (5) **BOMB FALLING WHERE IT CAN START A FIRE.**

BEFORE BOMB EXPLODES

- (1) Take cover behind a stone or brick wall. (Note.—Furniture, shield, lath and plaster walls, and wooden doors do not afford protection.) 44-inch brick wall gives adequate protection.
- (2) As roomy interior walls are of lath and plaster, unless Fire Guard is certain that a dividing wall is of brick it is usually wiser to attack the bomb through a window, thus securing the protection of outside walls.
- (3) Only the nozzle of the stirrup pump should be exposed. A holding device can be used.
- (4) The jet should be used to attack both fire and bomb. Concentrate on the fire.

AFTER BOMB EXPLODES

(or after 2 minutes from time of ignition)

- (5) It is now possible to attack the fire from close range, bearing in mind the following points—
 - (a) Use furniture as a protection against fragments of broken magnesium scattered while playing the jet on the magnesium.
 - (b) Crawl into the room keeping the nose and mouth as close to the floor as possible to avoid being overcome by smoke.
 - (c) Tackle the fire closest to you and gradually work further into the room.
 - (d) Do not approach closer to the fire than is necessary.

IMPORTANT POINTS

- (1) The fire is more important than the bomb.
- (2) Direct the jet at the base of the flames.
- (3) Always rake over all burnt material and make certain that nothing is left smoldering.
- (4) Make thorough search for bombs on all floors.

PHOSPHORUS BOMBS

Phosphorus will not burn if kept wet, but re-ignites on drying. Therefore any materials which have been in contact with phosphorus must be kept wet until removed. Do not allow any phosphorus to come into contact with the skin or clothes. Phosphorus flames in heavy concentrations are dangerous.

OIL BOMBS

Oil should be smothered with sand or similar material, or controlled by "foam type" extinguishers, or stocked with water in the form of a spray.

Large calibre bombs require attention from the N.F.S., but where possible Fire Guards should endeavor to keep the resultant fires in check until the more powerful appliances of the N.F.S. are on the scene.

MULTIPLE-EFFECT BOMBS

Designed to contain a number of separate incendiaries which are scattered when the bomb functions. Deal with each separate unit as an incendiary bomb.

EQUIPMENT—(continued from Col. 1)

HOSE.—(1) Delivery Hose, commonly referred to as "hose," conveys water from the pump to the fire.

- (2) Suction Hose, commonly referred to as "suction," conveys water from the source of supply (hydrant, tank, etc.) to the pump.

STRAINER.—A device used when drawing water from open supplies (tank, pond, etc.) to prevent leaves, twigs, sand, etc., from being sucked up.



BRANCH.—A tapering metal pipe connected to the delivery end of a length of hose. **NOTES.**—Screwed on the outlet end of the branch and controls the size of jet.



BUSHING PIECE.—Metal device to form a junction (a) bringing two lengths of hose into one, or (b) dividing one length of hose into two.



STAND-PIPE.—A metal pipe for connecting to a hydrant having one or two outlets at the upper end.



OPENING DOOR TO GAIN ACCESS TO FIRE

INWARDS

Door opening inwards: Keep down on "knees slide" of door and reach over to handle. Keep face away from the opening or a sudden rush of smoke or flame may render you a casualty.



OPENING DOOR
INWARDS

OUTWARDS

Door opening outwards: Place foot three inches from door, shoulder leaning against door and open gently, uttering a caution of gas caused by heat may force door open and injure you.



OPENING DOOR
OUTWARDS

MOVING IN SMOKE-FILLED ROOM

Do not attempt to stand up. Crawl with nose and mouth as close to floor as possible, and keep close to a wall.



SCAPING IF TRAPPED UPSTAIRS

Trapped upstairs, make your window a free pass, close door behind you and smoke and flames, and endeavor to attract attention so that a ladder can be brought.

- (1) This fails and it is necessary to escape through a window, do it **slowly**, but proceed as follows:
 - 1) Sit on sill with legs outside.
 - 2) Turn over on stomach.
 - 3) Lower yourself gradually until your fingers just grip the edge of sill, then drop. This reduces length of drop by length of your reach and body.

