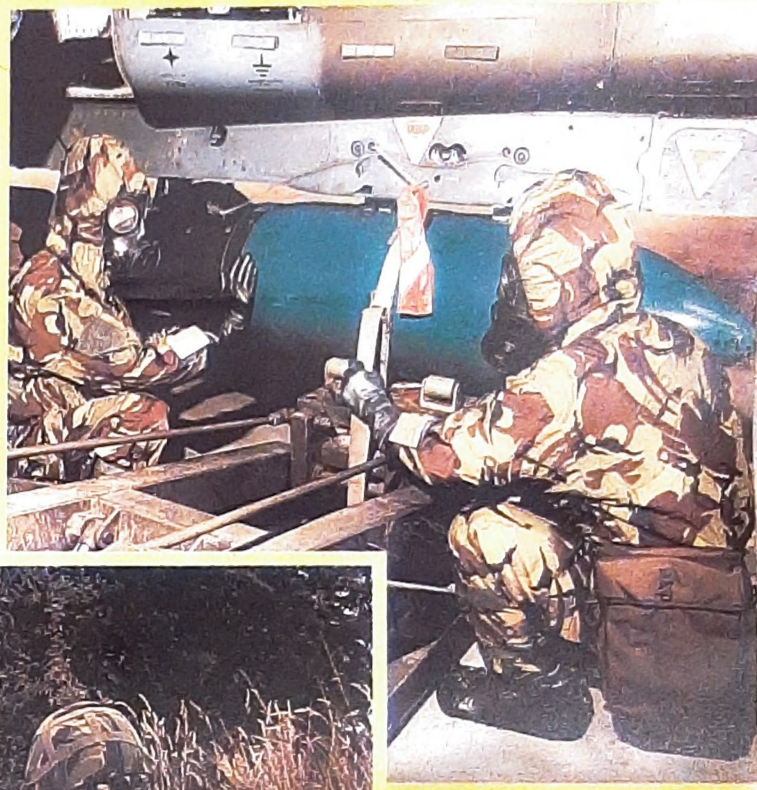
Survive to Fight



JSP 410

Survive to Fight

By Command of The Defence Council

JSP 410

Ministry of Defence
Directorate of Army Training
D/DAT 13/33/18 **1995 (Revised)**

Amendment Record

Amdt No.	Incorporated by :	Date

Contents

Preface

NBC Weapons may be used in any future conflict, whatever the level. We have the necessary equipment to enable us to survive their attack provided we know how to use it. If we are to survive and continue to operate we must be thoroughly familiar with the drills and procedures; they cannot be learnt at short notice but must be constantly practised. They are individual skills which we all must be able to carry out correctly first time, without reference or supervision.

To help you remember what you learnt during training we have produced this handbook which is divided into 21 basic Tasks. Tasks 1 to 13, headed in Red, are concerned with survival; Tasks 14 to 21, headed in Green, are concerned with operating safely in NBC conditions. Each Task is laid out in the same way:

a. What you have to know and be able to do.

b. Notes which give you the information you need.

c. What you have to practise to become proficient.

Your life could depend on your ability to perform these Tasks quickly and correctly. Use this handbook to maintain your skills so that you will survive to fight.

NOTE: Colour has been used in this handbook to highlight the drills being illustrated rather than to accurately reflect DPM pattern etc. which would often obscure important detail.

Where there is a risk of chemical attack, individuals must take the following measures to protect themselves:

a. Ensure all their IPE is readily available, and worn as ordered.

b. Apply fuller's earth to socks and inside of boots.

c. Attach detector paper - see Task 1.

d. Follow the Chemical Safety Rule when ordered, Task 4.

e. Follow the IA drill as required, Task 6.

f. Take NAPS as ordered, Task 9.

Wearing NBC Individual Protection Equipment (IPE)

You have to be able to:

a. Recognise all items of NBC IPE.

b. Put on IPE so that it fits correctly.

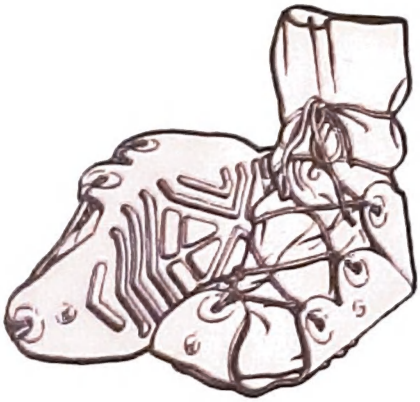
c. Stow the relevant items properly in the haversack.

d. Attach Detector Paper (one colour) to your IPE.

S10 Respirator and Canister

Mk 4 Protective Suit

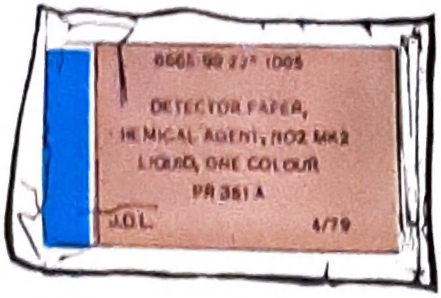
NBC Gloves Inner and Outer



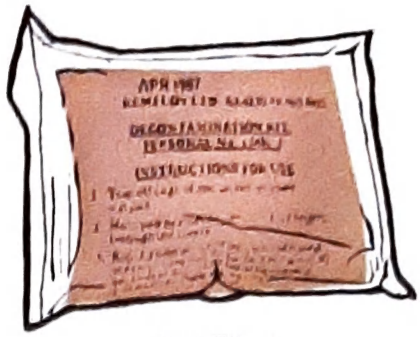
Mk 4 NBC Overboots

Mk 5 NBC Overboots

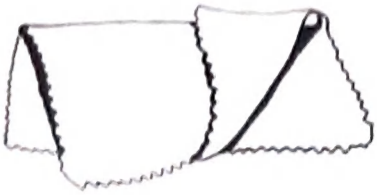
Wearing NBC Individual Protection Equipment (IPE)



Detector Paper No 2 (One Colour)

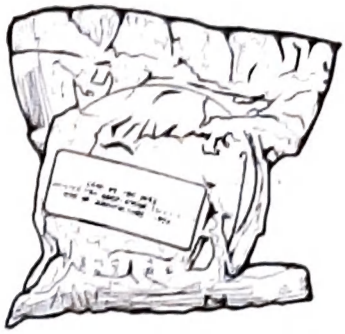


DKP 1

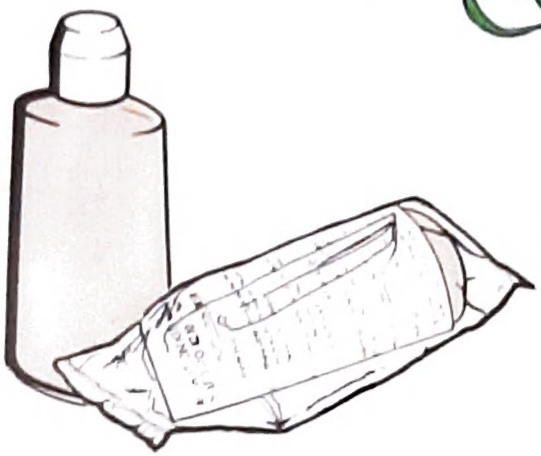


Cloth Disinfecting

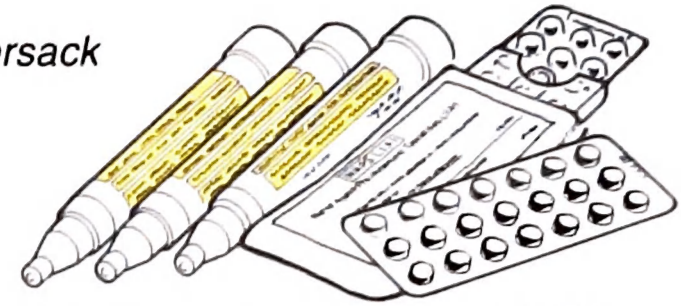
Haversack



Spare Canister (Sealed)



DKP 2



Combopens *NAPS*

Study Notes

Learn to recognise the items of IPE illustrated here. All items are packed to protect them during storage and from NBC contamination. The jacket and trousers are in separate, labelled packets. The Mk 4 suit comes in 5 standard sizes and a special size. Know your own size.

The suit must be worn over at least one layer of outer clothing, preferably a combat suit, together with underwear which covers the armpits and crotch.

Putting on IPE

Trousers

Cross the braces.

Pass through loops from the outside inwards and tie in a bow.

Take up spare material with Velcro fasteners.

Jacket

Do up zip to neck.

Fasten neck, waist and cuffs with Velcro fasteners.

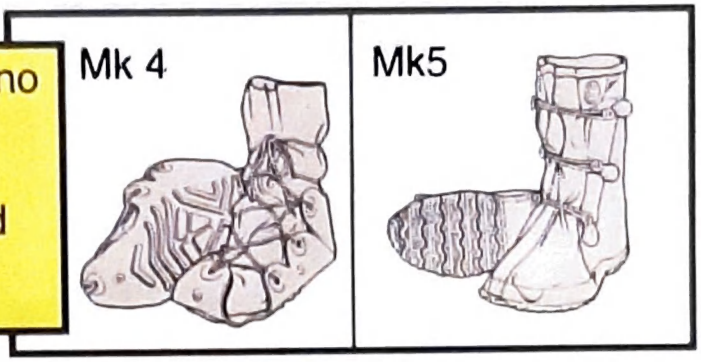
Wearing NBC Individual Protection Equipment (IPE)

Overboots

NOTE: The Mk4 Overboot is to be replaced by the Mk 5 Overboot.

The Mk 4 Overboot has 3 sizes, no left and right fittings.

The Mk 5 Overboot has 6 sizes, with left and right circular knurled indicators on the upper outside edge of the boot.



Mk 4 - Lace up following the diagram with each pair. Use the hooks or, if these are lost, holes through the tabs.

Mk 5 - Fasten by pulling the 3 elasticated loops across.

Pull trouser legs over top of overboots and secure the side velcro fasteners

Hood

Pull hood over head and secure by Velcro fastener. Pull out flap to ensure a good seal.

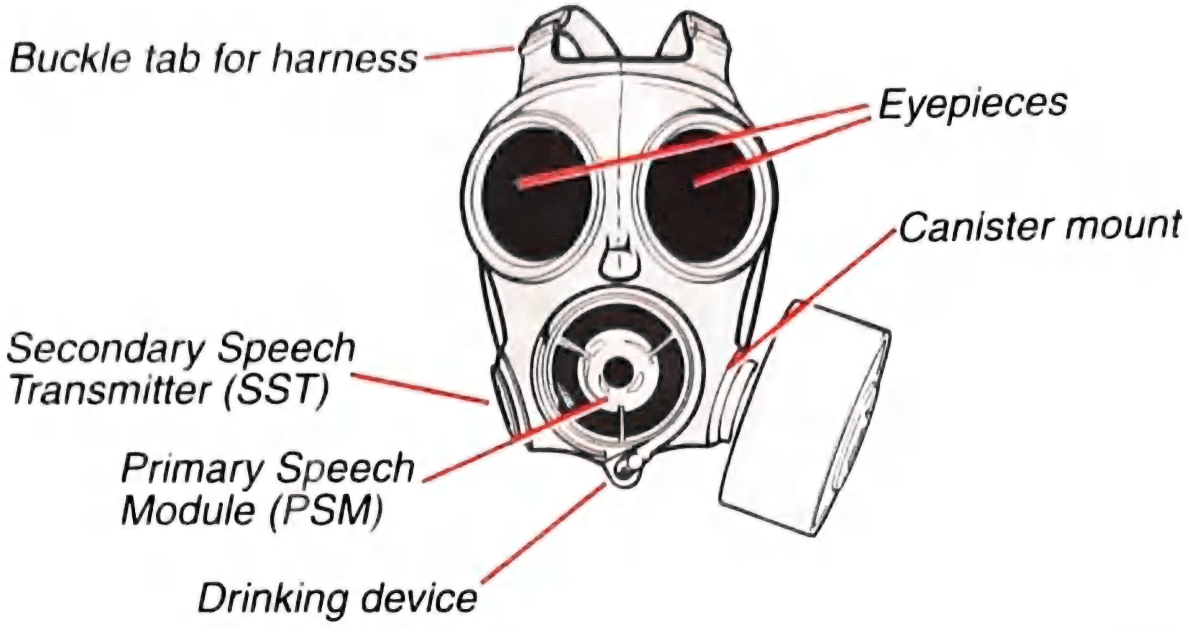
Gloves

White inner cotton gloves first, cuff under jacket cuff. Pull outer gloves on over the cuff of the jacket.

Wearing NBC Individual Protection Equipment (IPE)

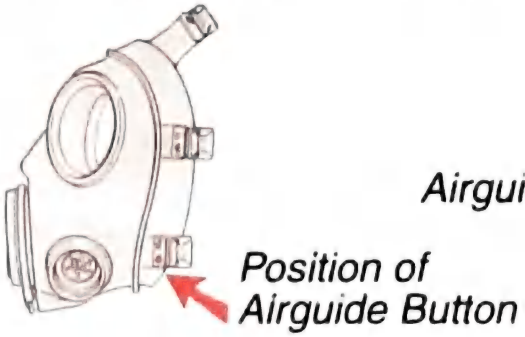
Donning your Respirator

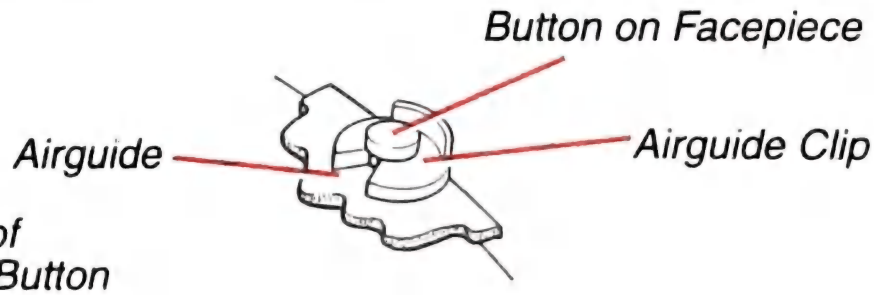
The S10 will protect your eyes, nose, throat, lungs and face against biological and chemical agents and radioactive dust. It comes in 4 sizes. The main parts of the facepiece are shown here. The canister mount can be fitted to either the left or right side, being changed by your NBC Instructor. There is a different eye piece for those who need corrective lenses.



Airguide Clip

An unbuttoned airguide may lead to misting of the eye pieces. Check it is correctly fastened at frequent intervals, particularly after cleaning.





Drill for Donning

Stop breathing, close eyes, turn back to wind, lean forward, shield hands. Remove helmet (and spectacles). Place helmet between knees, top uppermost.

Pull back hood.

Remove respirator from haversack, grasping it by the PSM.

With PSM in palm of hand, put thumbs under bottom 4 harness straps and pull apart. Thrust chin into facepiece.

Pull harness over head allowing plenty of space, release gently. Check head pad is in centre and no straps are twisted.

Wearing NBC Individual Protection Equipment (IPE)

Blow out hard.

Shout GAS, GAS, GAS.

Continue normal breathing, Open eyes.

Pull up hood.

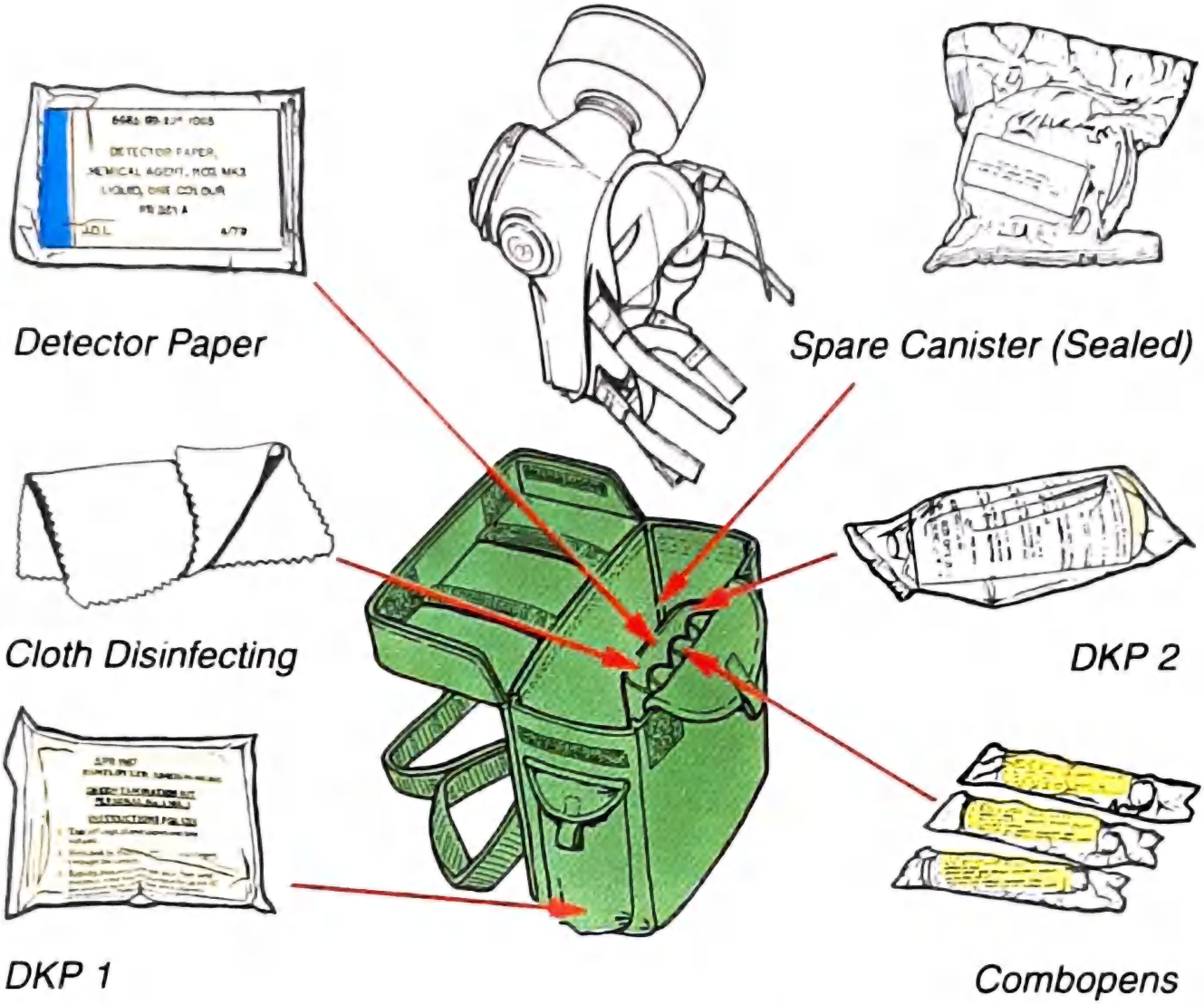
Check elasticated edge of hood locates over rib of respirator. Check seal of suit under chin.

Replace helmet, (Pick up glasses)

Do up haversack.

Respirator Haversack Stowage.

Respirator (forehead down, canister over spare canister)



Detector Paper

Spare Canister (Sealed)

Cloth Disinfecting

DKP 2

DKP 1

Combopens

NAPS Stowage as per SOP.

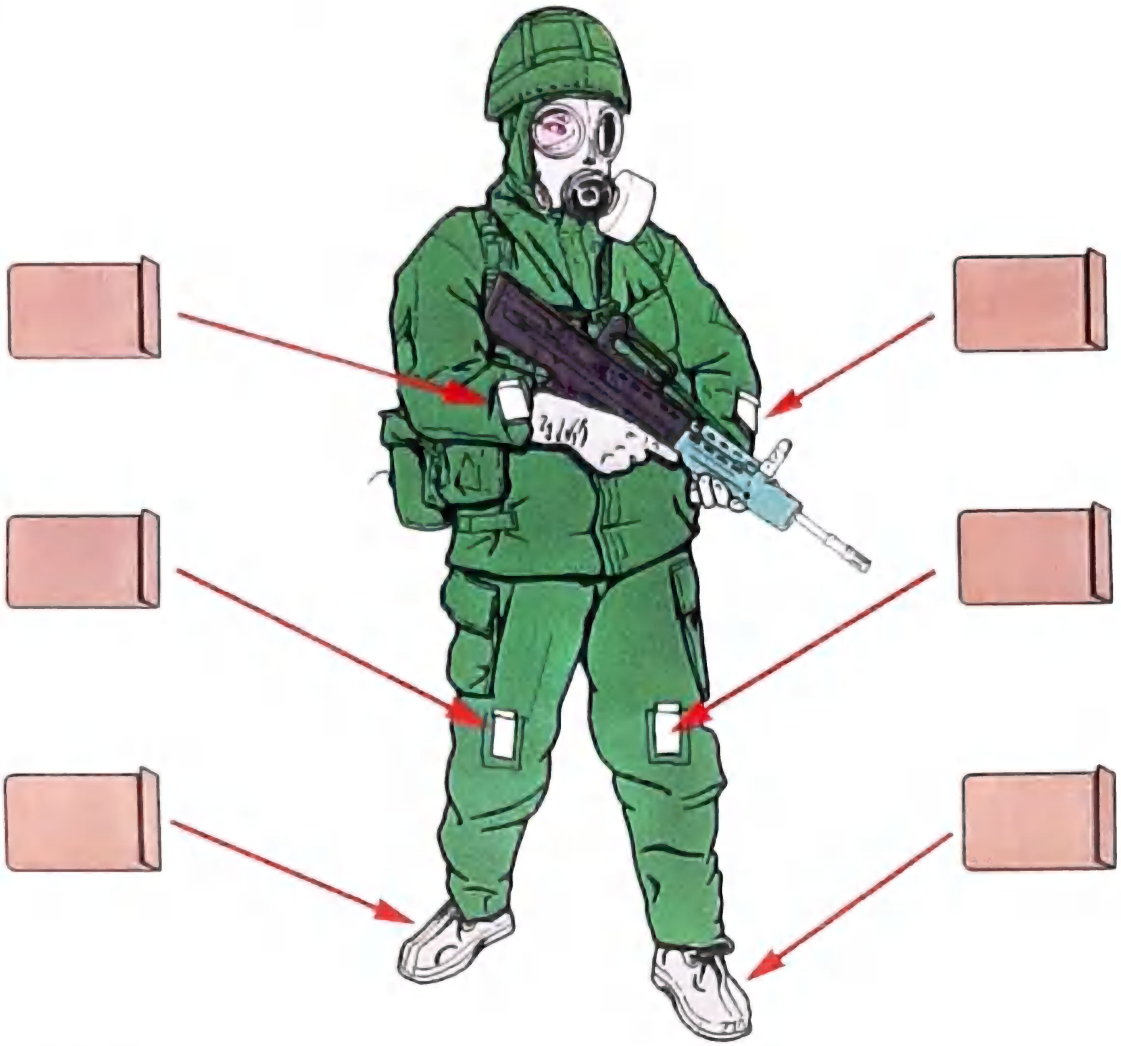
Haversack Stowage.

Stow articles in haversack as shown in diagram above.

Wearing NBC Individual Protection Equipment (IPE)

Detector Paper.

Stick one sheet to each receptor patch on suit and on overboots.



Practice:

a. Make sure you can identify and name all pieces of IPE.

b. Make sure your items are correct size.

c. Stow the haversack correctly.

d. Practise putting on suit and overboots.

e. Starting with hood up and helmet on, practise putting on your respirator and gloves. You must learn to don the respirator, following the correct drill, within 9 seconds.

Changing Your Respirator Canister

You have to be able to:

a. Know when you must change your respirator canister.

b. Be able to change your canister.

Study Notes

The canister will filter chemical and biological agents and radioactive dust. In peace you have a training and riot control canister marked with red paint. On declaration of a NBC threat you will be issued with 2 canisters, one for use and one spare stowed in your haversack. The protective seal is not to be removed until immediately before the canister is to be put on the respirator. Thereafter, there are 4 occasions when you must decide for yourself to change the canister.

a. If you feel the effects of chemical agent when wearing a properly fitted, functioning respirator.

b. If resistance to breathing becomes excessive.

c. If the canister is immersed in water (eg on crossing a river).

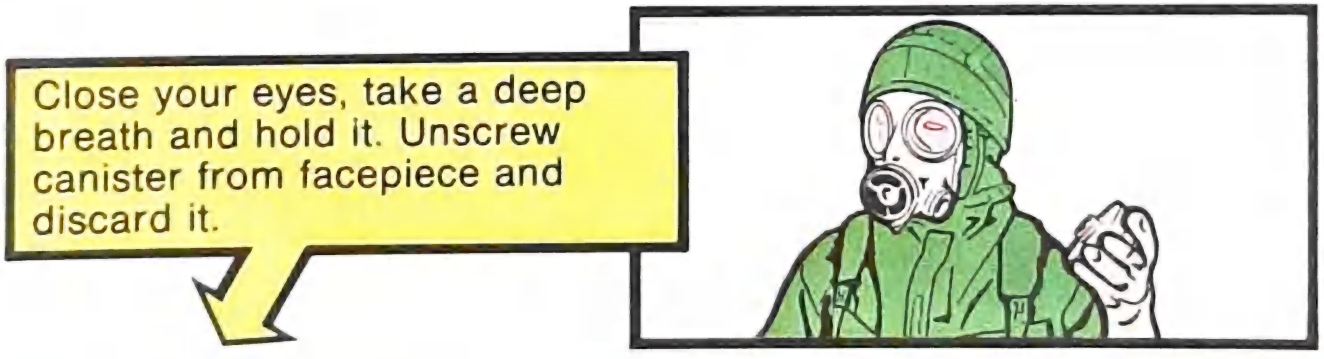
d. If the canister is badly damaged or rattles when shaken.

There may be other occasions when you will be ordered to change your canister,

eg: After 3 weeks in a chemical environment, 6 chemical attacks or 4 months wear.

Drill for Changing Canister

Remove seal from spare canister and put canister on a clean surface where you can pick it up with your eyes shut.



Changing Your Respirator Canister

Screw on new canister, blow out hard.

Breath normally, decontaminate gloves, outside of facepiece and new canister. Report the change to your commander.

Render old canister useless by hammering the thread.

Practice

a. Learn the 4 occasions when only you will know the need to change your canister.

b. Practise the canister changing drill, using 2 training canisters.

Identifying NBC Warnings and Alarms

You have to be able to:

a. Identify NATO signs which warn of NBC contamination.

b. Recognise and know the meaning of both alarms and warnings.

Study Notes

Standard NATO signs are used to mark ground, vehicles and stores, facing outward from the contamination. The signs are tri-angular and coloured as shown in these examples. When details of the contamination are known these are to be written on the front of the sign as follows:

a. Radiological (Nuclear):

(1) Dose rate.

(2) Date/time of reading.

(3) Date/time of detonation which produced the contamination.

b. Biological and Chemical:

(1) Type of Agent.

(2) Date/time contamination detected.

As soon as a NBC hazard is identified a local alarm is to be given. On land this will take the form of one or more of the following:

a. Calls of "Gas, Gas, Gas" or "Fallout, Fallout, Fallout".

b. A succession of signals on vehicle or other horns (one second on, one second off) or the beating of metal objects to make a loud noise.

c. Interrupted warbling of a siren.

d. Audio-visual pyrotechnic producing a whistling sound and yellow, red, yellow lights.

e. Donning of respirators with appropriate signals.

f. Display of a BLACK sign, preferably tri-angular in shape.

Identifying NBC Warnings and Alarms

All clear will be made known by:

a. Vocal "Gas clear", "Fallout clear".

b. Steady siren, sustained blast on horn, whistle or other wind instrument when clear from both NBC and air attack.

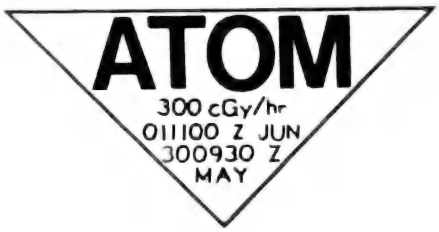
c. Radio broadcasts.

d. Removal of Black signs.

Practice

a. Draw NBC Warning signs and write on them examples of the information you would expect to find.

b. Learn to recognise the different alarms and their meaning.



The Chemical Safety Rule

You have to know:

When to take action to protect yourself from chemical attack. To know this you must know:

a. The Chemical Safety Rule.

b. The reaction of liquid chemical agent on one colour detector paper.

Study Notes

When an enemy uses chemical agent he will try to achieve surprise. He is likely to mix chemical with high explosive munitions, or use methods of delivery which you are unlikely to see or hear.

When chemical attack is expected you will be told to follow the Chemical Safety Rule. In this case you must not wait for an order to mask but must do so automatically when circumstances arise which may mean you are being subjected to a chemical attack. Survival will depend on your speed of reaction.

THE RULE IS AS FOLLOWS:

If you:

a. Experience - a bombardment of any kind.

b. Sight - hostile or unknown low flying aircraft.

c. See - Suspicious:

(1) Mist.

(2) Smoke.

(3) Droplets.

(4) Splashes.

d. Smell - Anything unusual.

e. Notice - Symptoms in yourself or others such as:

(1) Dimness of vision.

(2) Irritation of eyes.

(3) Sudden headache.

(4) Tightness in the chest.

(5) Running nose.

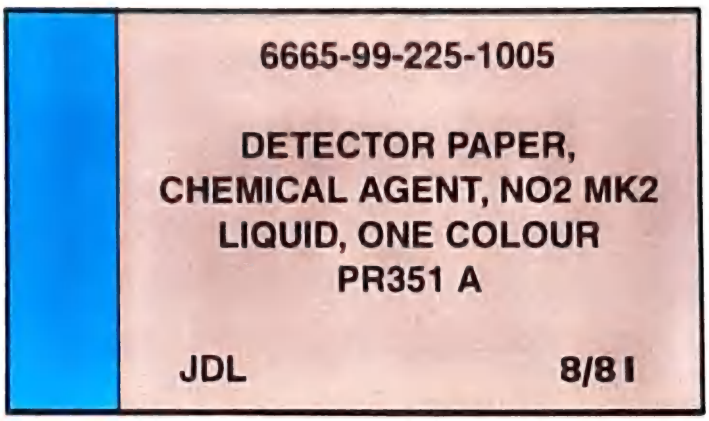
(6) Excessive salivation.

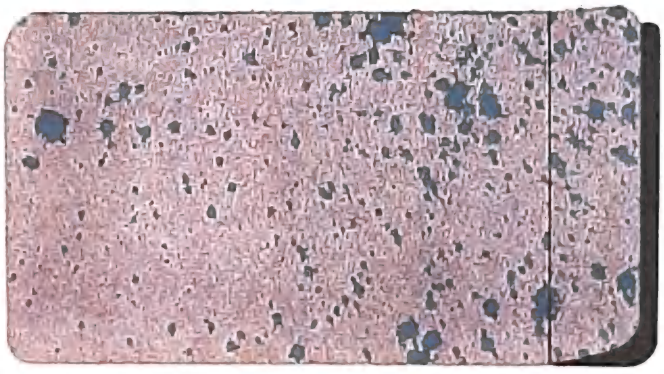
f. Hear - An alarm.

The Chemical Safety Rule

You must assume it is a chemical attack and carry out the Chemical Immediate Action Drill (see Task 6).

Another indication of chemical attack is if the grey detector paper issued with your IPE and worn on your suit and equipment displays navy blue spots. This will happen when liquid chemical agent lands on it. This is why it must be placed where such liquid drops are likely to fall.





Liquid Chemical Agent on One Colour Detector Paper

Practice

a. Learn the Chemical Safety Rule. Write it out several times.

b. Remember that one colour detector paper is turned blue by any liquid chemical agent.

Use of DKP 1 and DKP 2

You have to be able to:

Use the DKP 1 and DKP 2 to decontaminate your:

a. Hands, face, ears, neck and hair.

b. Respirator.

c. Helmet.

d. Overboots.

e. Personal weapon, radio etc.

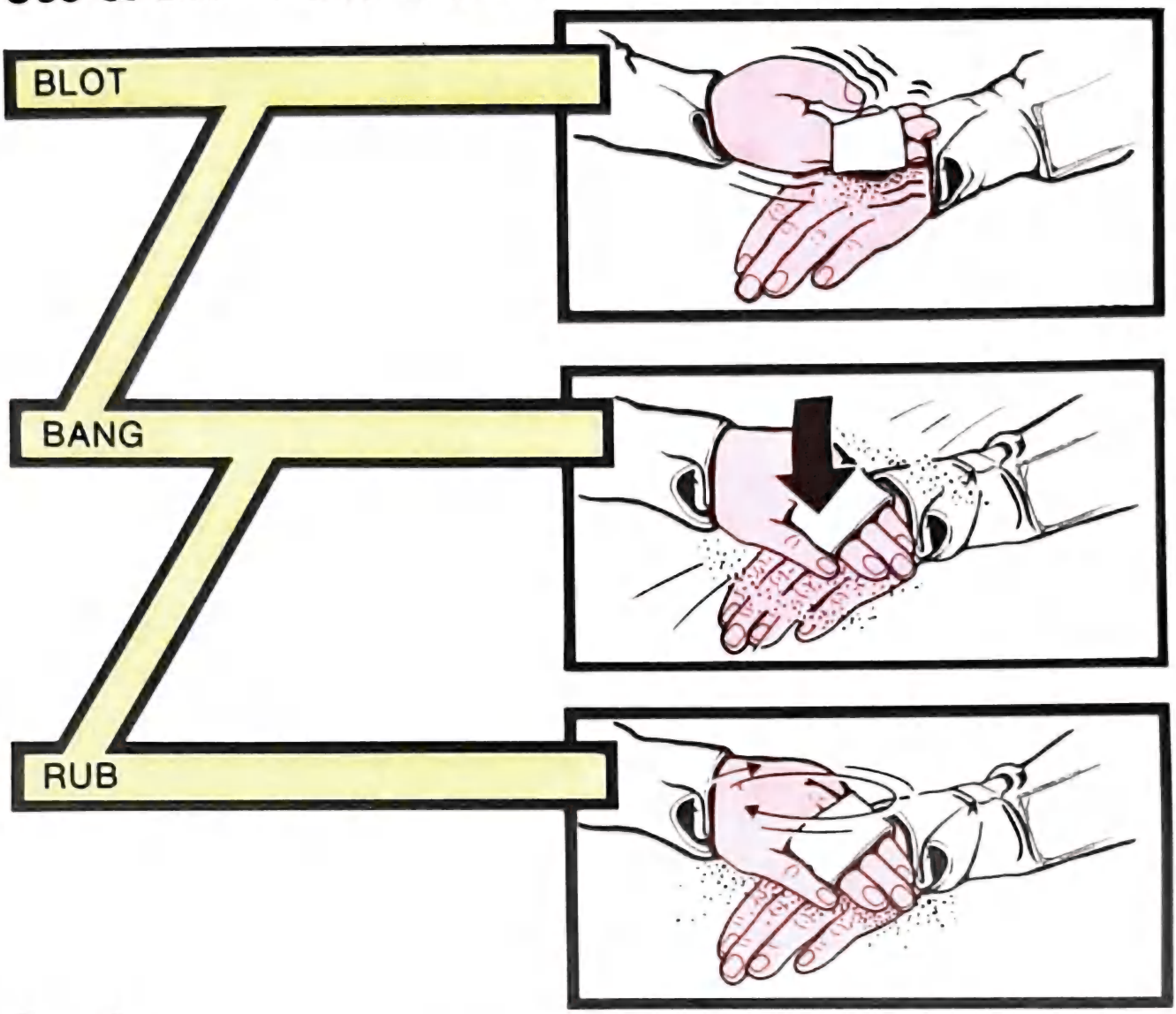
Study Notes

Both the Chemical Immediate Action and the Chemical Immediate Decontamination drill involve the use of the DKP 1 and DKP 2. You are issued with a wallet containing 4 DKP 1 pads. The DKP 1 is a cloth pad filled with Fuller's earth, a powder which will absorb liquid chemical agent and retain it. The best way of using the pad is to hold it by inserting 3 or 4 fingers through the centre of the pad and rapidly blotting the top of the pad over the suspected contamination. Then turn the pad over and bang it on the surface to release Fuller's earth powder and follow this by rubbing the pad over the whole surface to spread the powder. The order is - BLOT - BANG - RUB. The DKP 1 is most suitable for decontaminating your gloves, hands, face and respirator. It is not safe to retain a used pad, so when finished break it open and use it on your overboots.

You are also issued with a DKP 2, a plastic puffer bottle containing Fuller's earth. This is used to blow Fuller's earth into places which are inaccessible to the DKP 1 pad. The DKP 2 is suitable for decontaminating your overboots and personal equipment. Powder from the DKP 2 is rubbed in using a DKP 1 pad on your gloved hand. Note: Thickened agent needs to be scraped off before using DKP.

Decontamination with DKP 2

Use of DKP 1 and DKP 2



Practice:

a. Obtain a spare DKP 1 and DKP 2.

b. With the DKP 1 practise decontaminating:

(1) Your hands. Take care not to transfer contamination from one hand to the other.

(2) Your gloved hands. Again take care to avoid transfer of contamination.

(3) Your face, ears, neck and head.

(4) The inside and outside of your respirator.

c. With DKP 2 and DKP 1 practise decontaminating:

(1) The inside of your helmet and chin strap.

(2) Your overboots.

The Chemical Immediate Action Drill

You have to be able to:
Complete the Chemical Immediate Action (IA) drill correctly and be masked within 9 seconds.

Study Notes
Learn the sequence of the IA drill and practise it until you do it as an automatic reaction to an alarm. You must be able to mask within 9 seconds.

The IA drill is as follows:

Stop breathing, close your eyes, turn back to wind, lean forward. Remove helmet, hood, and spectacles if worn.

Put on your respirator as in TASK 1. Blow out hard, shouting 'GAS, GAS, GAS,' breathe normally, open eyes.

Decontaminate hands
Put on gloves.

Check the adjustment of all clothing and equipment.

The Chemical Immediate Action Drill

Check detector papers. Look for any sign of liquid agent.

When you can complete the IA drill correctly and without thinking, you must then practise it while in your normal operational position, lying prone, in a slit trench and in a vehicle as may be necessary in war. The drill must be carried out IMMEDIATELY an attack is suspected.

Practice

a. Learn the sequence of the IA drill.

b. Practise the drill standing up wearing IPE.

c. Practise the drill in your normal operational position and in other positions. Get someone to check your drill and the adjustment of your equipment, and time you.

The Chemical Immediate Decontamination Drill

You have to be able to:

a. Know when to carry out the chemical immediate decontamination (ID) drill.

b. Be able to carry out the correct drill when:

(1) You are contaminated before completing the IA drill.

(2) You are contaminated while wearing full IPE.

Study Notes

If you are attacked with liquid chemical agent when not in full IPE you may get droplets on your hands, face, and the inside of your respirator as you put it on. All liquid agent must be removed before it penetrates your skin or you breathe in the vapour it gives off. There is no point in decontaminating until you can get under cover or liquid agent has stopped falling.

Full ID Drill

Take cover, or wait for liquid to stop falling, expose fresh detector papers until one remains unspotted.

Decontaminate your gloves and Respirator Speech Module.

Remove helmet, place between knees, push back hood.

The Chemical Immediate Decontamination Drill

Hold your breath.
Remove your respirator.
(Do this as often as necessary to complete drill).
Blow out hard each time the respirator is replaced.

If agent has entered your eyes flush them with water (only if within 5 mins of attack with Blister agent)

Decontaminate face,

ears, neck, hair

then inside of respirator
(clean eyepieces later)

Outside of respirator

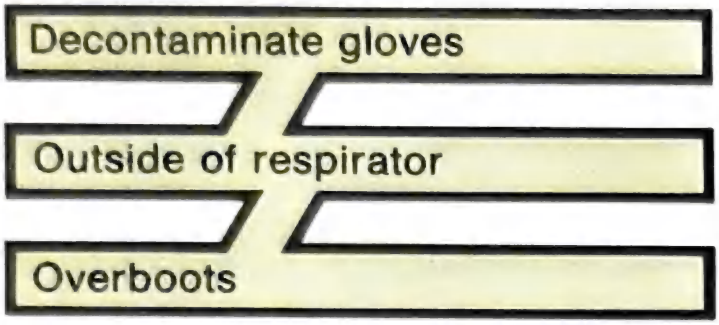
Helmet

Overboots

The Chemical Immediate Decontamination Drill

Modified ID Drill

If you are already in full IPE when you become contaminated you need only carry out a modified drill. This is necessary because after a time some agents will penetrate rubber, and decontamination will also remove the danger of transfer. As before get under cover or make sure no further liquid agent is falling before you start.



The Chemical ID drill is more quickly done in pairs but you must be able to do it on your own.

Practice

a. Learn when to carry out the full and modified ID drills.

b. Practise both drills. Have someone check you.

Recognising the Symptoms of Nerve Agent Poisoning

You have to be able to:

Recognise the symptoms of nerve agent poisoning in yourself or others. This is necessary if you are to counter such poisoning by using the Combopen self-injection device. However, using it when you haven't been exposed to nerve agent will make you ill.

Study Notes

Nerve agent may be met in the form of a vapour which you can neither see nor smell, or as drops of oily liquid which will also give off vapour. The first you know that you have been exposed to nerve agent may be the onset of the symptoms listed below. We have put them under 3 headings but the order in which these symptoms appear will vary with their route of entry into your body: through the eyes, nose, mouth or skin.

Early Symptoms

Pin pointing of pupils and dimness of vision.

Running nose, increased saliva.

Tightness of chest, difficulty in breathing.

Later Symptoms

Headache, increasing saliva, drooling at mouth.

Dizziness and general weakness.

Excessive sweating.

Danger Symptoms.

Nausea and vomiting.

Involuntary urination and defecation.

Muscles twitching and jerking.

Stoppage of breathing.

Practice

Write down these symptoms and learn them.

Pre-treatment and self-aid for Nerve Agent Poisoning

You have to know:

a. When to take Nerve Agent Pre-treatment Set (NAPS) tablets.
b. When to use your Combopen.
c. The symptoms of Atropine poisoning.

You have to be able to:

follow the correct drills for:

a. Taking NAPS.
b. Injecting yourself with the Combopen.

Study Notes

When there is a danger of nerve agent being used, you will be ordered to start a pre-treatment course of NAPS to increase your body's resistance. NAPS are issued in packs of 21 tablets. One tablet is to be taken every 8 hours. The interval is important so you must be able to continue taking them even when there is a vapour hazard, but taking more frequently is dangerous. If you are poisoned by nerve agent you must immediately use your combopen to inject yourself with drugs to counter the nerve agent, thereafter take NAPS only on medical instruction. However, if you should in error inject yourself when no nerve agent is in your body the Atropine in the injection may itself be harmful. You must, therefore, know not only the symptoms of nerve agent poisoning but also those of Atropine poisoning. These are:

a. Rapid pulse rate - over 100.
b. A very dry mouth and throat.
c. Hot dry skin.
d. Enlarged pupils (opposite to nerve agent poisoning).

Taking NAPS in a Vapour Hazard

Ensure that no liquid agent is falling or take cover before following this drill.

Decontaminate your respirator and pocket/haversack containing NAPS.

Loosen neck fastening.

Take out NAPS.

Remove NAPS from the outer cover.

Press one tablet with thumb from clear side through aluminium foil into gloved hand.

Replace NAPS in cover and back in pocket / haversack.

Take a few deep breaths and hold last one.

Pre-treatment and self-aid for Nerve Agent Poisoning

Close eyes, grasp respirator PSM and pull the facepiece away from face and upward just far enough to give access to your mouth.

Place the tablet in your mouth and put it under your tongue.

Replace respirator, blow out hard and continue normal breathing, open eyes.

Swallow the tablet.

Adjust hood, fasten neck and pocket.

Immediate Self-Aid

You will be issued with up to 3 Combopens but you must not use more than one every 15 minutes. If the symptoms of nerve agent poisoning persist after using the last Combopen further treatment will be given by the medical services.

The drill, which is only to be carried out when you know you have been exposed to nerve agent from the symptoms you display, is as below. This drill has priority over everything but masking.

Remove the plastic cover from the Combopen by tearing at the tabs formed by the V at the safety cap end.

Pull the grey safety cap off the Combopen.

Place the black 'snout' of the Combopen against the outer thigh muscle midway between knee and hip, making sure that it is clear of anything in the trouser pocket, and press hard until the injector functions. Count to 10 slowly then withdraw. Record time combopen administered.

Replace old combopen in the haversack, bending the needle on any hard surface to make it fit.

Practice

a. Learn when to take NAPS.

b. Practise the drill for taking NAPS in a vapour hazard.

c. Practise the immediate self-aid drill, a training version of the Combopen is available.

d. Learn the symptoms of Atropine poisoning.

Task 10

Drinking with the S10 Respirator

You have to be able to:
Follow the correct procedure for drinking safely while wearing a S10 respirator in a vapour hazard.

Study Notes
While you can survive for some time without food you need to drink more frequently, particularly when working in full IPE. The S10 is designed to permit you to do this safely even when in a vapour hazard area, but you must follow the correct sequence:

Drinking Drill

Remove the water bottle, make sure it contains water by shaking it, put it on an uncontaminated surface.

If liquid present decontaminate gloves and drinking cup.

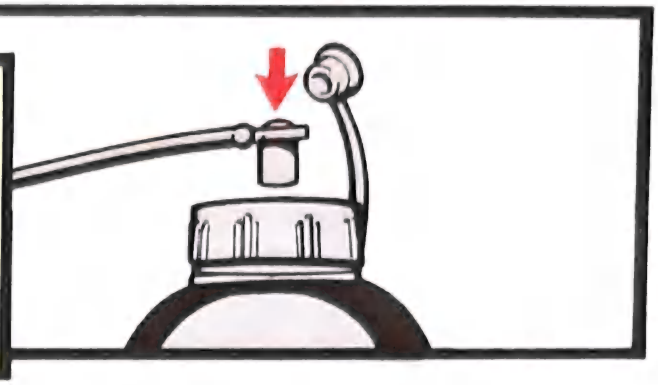
Remove drinking cup from bottle.

If liquid present decontaminate bottle cap, stopper, and Drinking Coupler Male (DCM) and drinking tube.

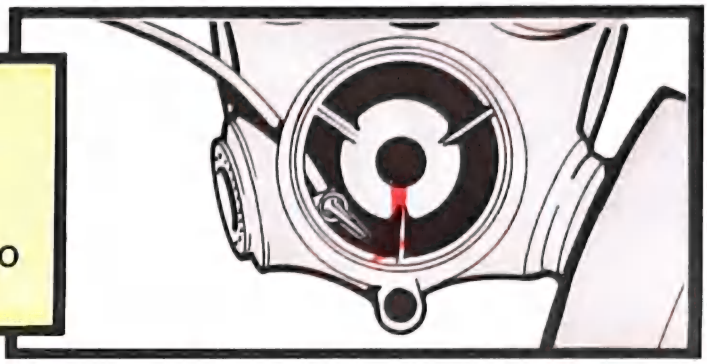
Remove stopper from bottle cap. Withdraw DCM from its holding.

If liquid present decontaminate the mating surfaces on DCM and bottle cap.

Tap the DCM against the bottle cap to remove any Fuller's earth then insert DCM into the cap WITH ENOUGH PRESSURE TO OPEN THE VALVES. Twist the DCM a quarter turn to help locate it correctly.



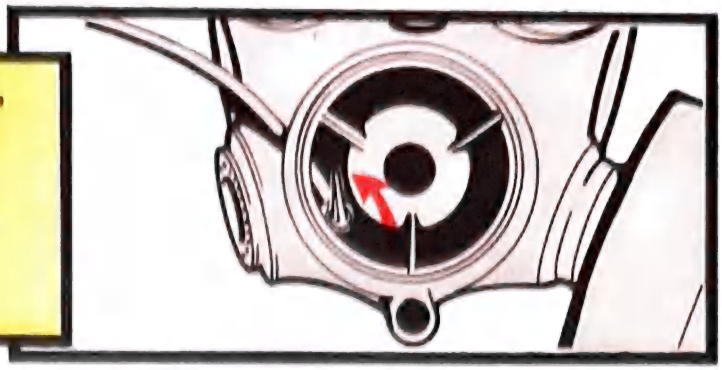
Turn the lever on the shut-off valve spindle FULLY ANTI-CLOCKWISE (relative to wearer) both to position mouthpiece in the mouth and to open shut-off valve.



Turn the water bottle upside down and blow gently through the mouthpiece to create an overpressure.

Drinking with the S10 Respirator

Drink the water you need, then, continuing to hold the water bottle, turn the lever FULLY CLOCKWISE to close the shut-off valve and remove the mouthpiece from your mouth.



Turn the water bottle the right way up and remove DCM from cap. Place the bottle on a clean surface.

Decontaminate the DCM and its housing in the respirator. Wrap the drinking tube around the PSM and place in its housing.

Decontaminate the bottle cap, stopper and drinking cup. Replace the stopper and drinking cup and return bottle to its carrier.

WARNING.
Only water may be taken through the drinking device or it will become blocked. In case of a blockage it will be necessary to drink following the drill for emergency eating (see TASK 17) first decontaminating the mouth of the water bottle.

Practice
Practise the procedure for drinking while in a vapour hazard area.

The Nuclear Immediate Action Drill

You have to be able to:
Recognise a nuclear explosion and carry out the immediate action (IA) drill.

Study Notes
The main differences between a nuclear and any other explosion are its scale and the fact it gives out radiation. You cannot sense radiations so you must recognise such an explosion by its other characteristics. These will be: a blindingly bright flash, followed by a wave of intense heat and a devastating blast wave. To survive, as soon as you sense the flash, you must:

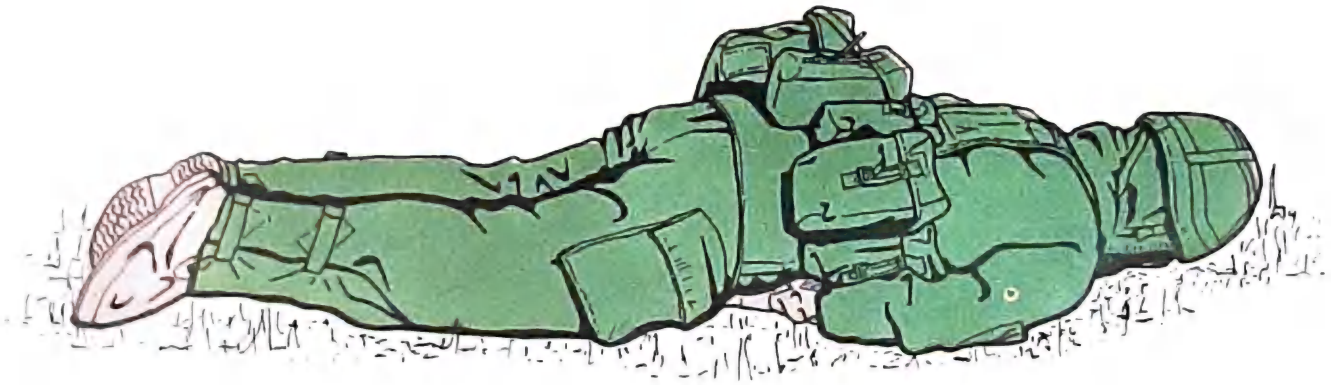
a. Shut your eyes.

b. Drop to the ground face downward.

c. Place your hands under your body.

Note: in a ship place one arm over and one under your head to reduce whip and shock injury.

d. Remain flat until the heat and 2 blast waves have passed you.



Practice
Learn the characteristics and practise the immediate action drill, reacting to a flash of light.

Personal Nuclear Decontamination

You have to be able to:

a. Know the form radioactive contamination takes.
b. Know the effect that radiation will have on your body.
c. Be able to remove it from your person.

Study Notes

When a nuclear weapon bursts close to the Earth's surface, large quantities of dirt or water are drawn up with the hot air rising from the explosion. It becomes radioactive as it rises. Heavy debris will fall back close to the point of explosion but lighter particles are carried down wind to spread across the Earth's surface as a carpet of 'fallout'. All radiation is dangerous to the body. Some of that within fallout causes burns if it lands on exposed skin and is a serious hazard if inhaled, swallowed or enters open wounds. Particularly dangerous is gamma radiation which causes 'radiation sickness' which takes the form of nausea, vomiting, loss of appetite, general malaise and, with a high dose, eventually death. Radioactive fallout can be recognised only by special instruments called dosimeters and dose-rate meters. You cannot destroy radiation but can protect yourself by removing fallout from your body and personal equipment as soon as possible by brushing, wiping, dusting or shaking. This should be done in an area where it will not be a hazard to you or others later on.

Practice

a. Learn the form fallout will take and the effects radiation can have on your body.
b. Practise decontaminating yourself while wearing full IPE.

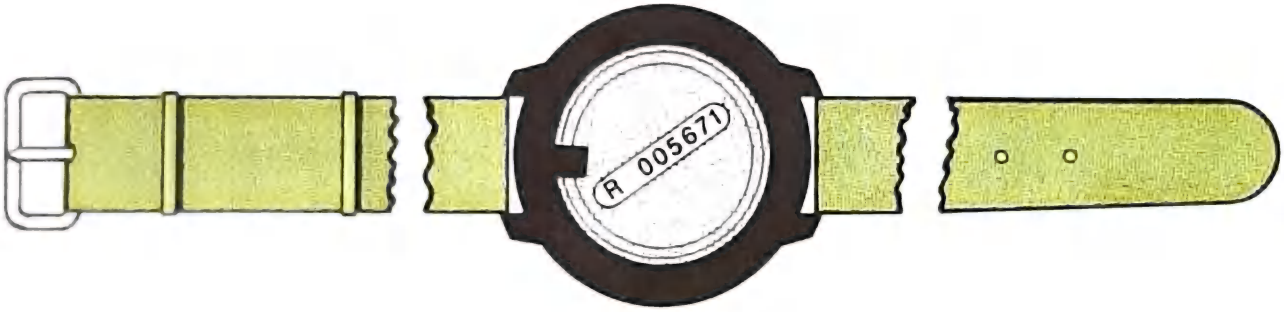
Wearing the Personal Dosimeter

You have to be able to:

Wear your personal dosimeter correctly; the Army and RM on the wrist over IPE cuff, under outer glove, RN round the neck.

Study Notes

On mobilization you will be issued with your personal dosimeter. This instrument measures the amount of radiation to which you have been exposed. You cannot read it yourself, this has to be done by a special dosimeter reader which measures the total absorbed dose at the time of reading. The dosimeter is not zeroed after each reading so you must always wear your own dosimeter. Each dosimeter has a serial number on the underside; make a note of yours so you can ensure you always get that one back.



Practice

Study the picture so you will be able to:

a. Wear it correctly.

b. Know where to find the serial number.

Carrying out Individual Tasks in IPE

You have to be able to:

a. Fire your personal weapon while wearing full IPE.

b. Carry out your operational role while wearing full IPE.

Study Notes

No special techniques are needed to fire a personal weapon while wearing full IPE, but what is needed is plenty of practice, particularly while wearing your respirator and wearing NBC gloves.

You must also be able to carry out your own operational task while wearing full IPE. It is not possible to give specific advice here on all the various operational roles individuals perform in the 3 Services but some general points to be watched are:

a. Some duties cannot be performed with the canister on the left of the respirator. If that applies to you then get your unit NBC NCO to change the Canister Mount with the Secondary Speech Transmitter on the right hand side.

b. Petrol and oil lubricants (POL) will seriously damage the protection your NBC suit provides. Care must be taken when refuelling etc to avoid spillage onto your suit. Wear a POL protection suit when available.

c. Mounting and dismounting from vehicles or equipments can cause gaps in your IPE coverage. After such movements check that your IPE is correctly adjusted.

d. If you cannot wear your respirator haversack at your operational position then make sure that you stow it in a place and way that you can mask without delay and can reach your Combopen.

e. NBC gloves are easily torn. You can protect these by wearing ordinary gloves over them but remember they will have to be destroyed should they become contaminated by a chemical agent as you cannot decontaminate them.

Practice

These points should be practised whenever possible when on the range or on exercise so that you learn to become proficient in your normal operational role while wearing full IPE.

Administering First Aid to Chemical Casualties

You have to be able to:

a. Put the correct NBC IPE on yourself and the casualty.

b. Decide which group of agents has caused the casualty.

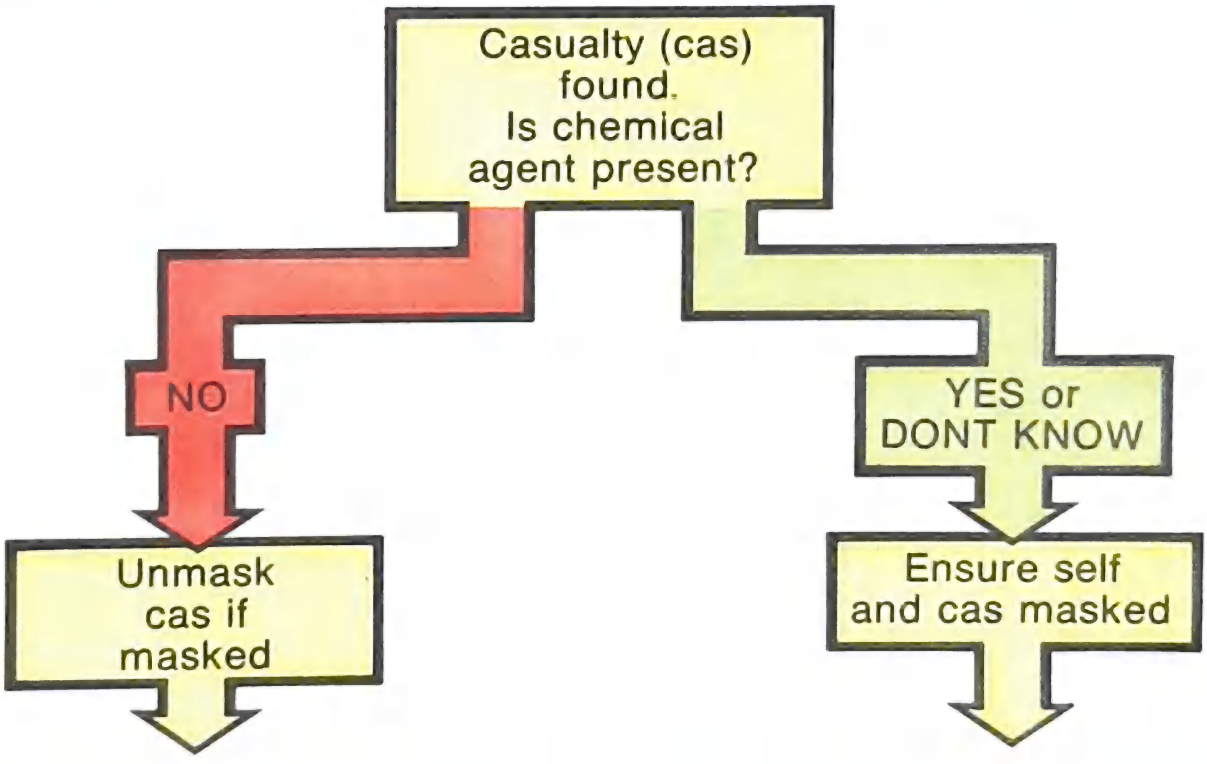
c. Apply the correct first aid for that group of agents.

Study Notes

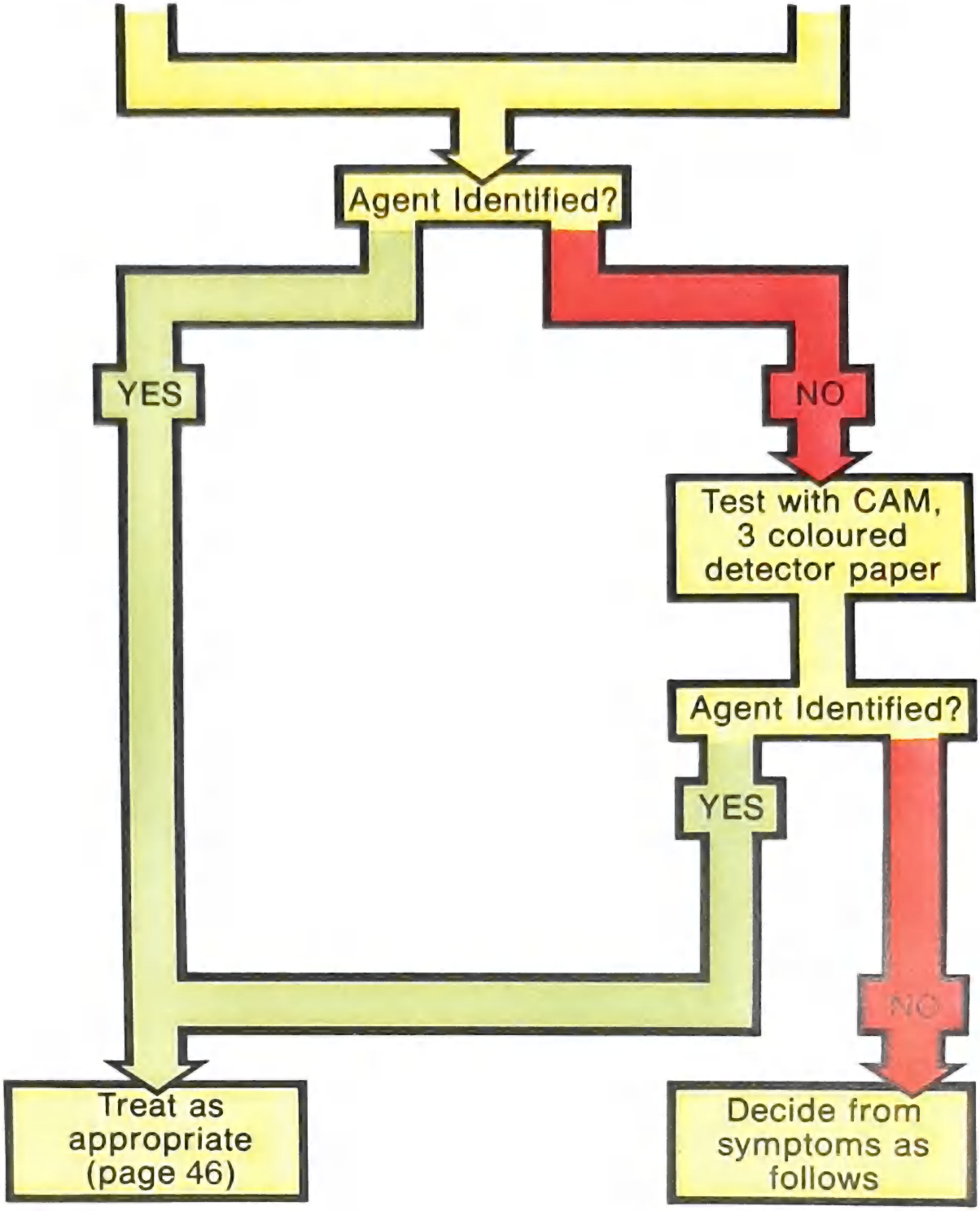
Quick, appropriate first aid will improve a chemical casualty's chances of survival.

First you must protect yourself and the casualty from further agent by masking unless you are quite sure that the vapour has dispersed. Then you must deduce from which group of agents the casualty is suffering: nerve, choking, blood, blister or mental incapacitant. Each group requires different treatment. If your position has just suffered a chemical attack you should be able to deduce the agent from information given by 3 colour detector paper (nerve or blister), NAIAD (nerve or blood), CAM (nerve or blister), RVD (nerve or blister). In this case start treatment without delay.

Checks Before Treating a Chemical Casualty



Administering First Aid to Chemical Casualties



Deciding from Symptoms which Agent is Poisoning the Casualty

If you are not sure which group of agents has caused the casualty, start by looking into his eyes to see if his pupils are:

A. Pinpointed.

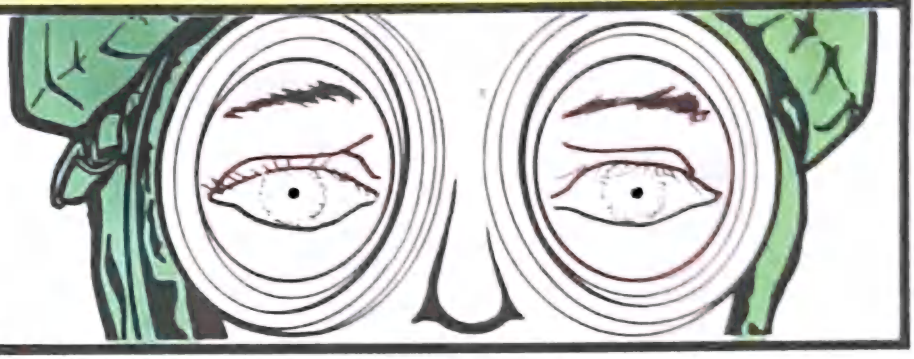
B. Dilated.

C. Normal.

Then follow the appropriate procedure given below:

Pupils Pinpointed

A



Look for:

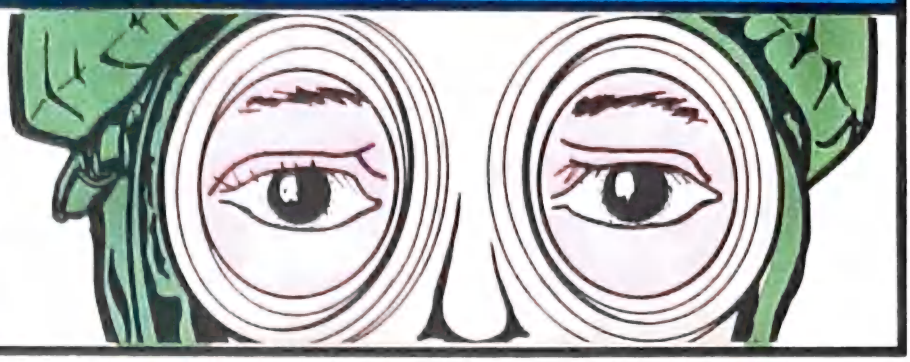
(1) Running nose.
(2) Saliva or drooling at the mouth.
(3) Difficulty in breathing (wheezing).
(4) Excessive sweating.
(5) Vomiting.
(6) Muscular twitching.

If several of these are present treat for nerve agent (page 46 and TASK 8). If not, assume an unknown agent and evacuate to medical aid.

Administering First Aid to Chemical Casualties

Pupils Dilated

B



Has casualty used any of his combopens?

YES

NO

Rapid pulse, dry hot skin, dry mouth?

NO

Rapid pulse, dry skin, confused unsteadiness?

YES

Treat for Atropine poisoning (page 50)

NO

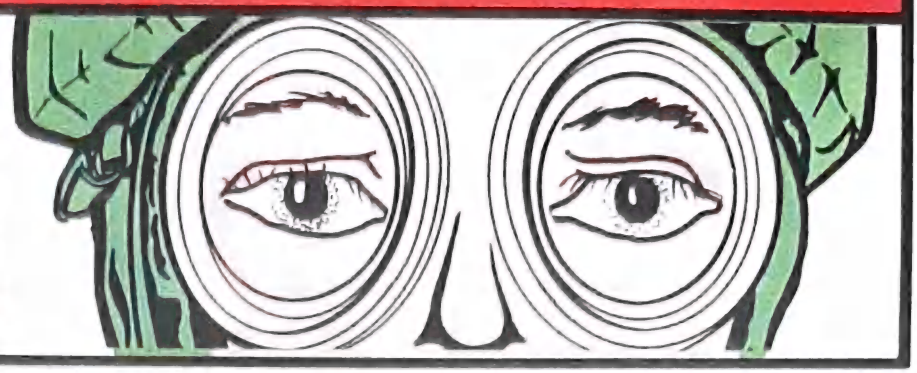
Unknown agent, evacuate to medical aid

YES

Treat for mental incapacitant (page 50)

Pupils Normal

C



Irritated, streaming eyes?

NO

YES

Gasping and/or unconscious?

NO

Severe coughing?

YES

NO

YES

Treat for Blood agent (page 48)

Hoarseness, red eyes and skin, eyelids closed in pain?

Treat for choking agent (page 47)

NO

YES

Treat as for CS (fresh air and observe)

Treat for Blister agent (page 49)

Administering First Aid to Chemical Casualties

Once you decide which agent group has poisoned the casualty you can give the correct first aid treatment for that group. This guide tells you what to do. The enemy may, however, use a mixture of agents or new agents which you would be unable to recognise from symptoms. In this case evacuate to medical aid as quickly as possible.

First Aid for Nerve Agent

Make sure you and the casualty are in correct IPE.

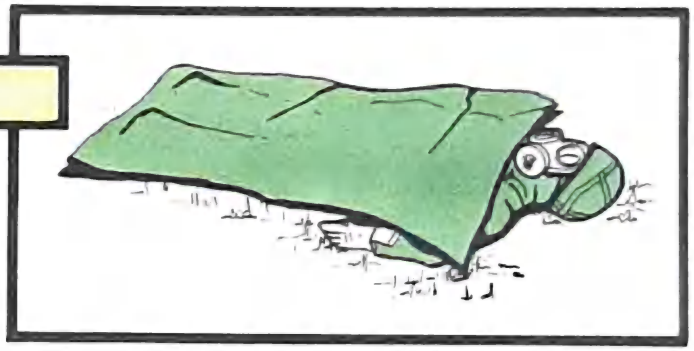
Inject casualty with his own combopen as in Task 9. Put used combopen back in casualty's haversack.

Evacuate to medical aid.

First Aid for Choking Agent

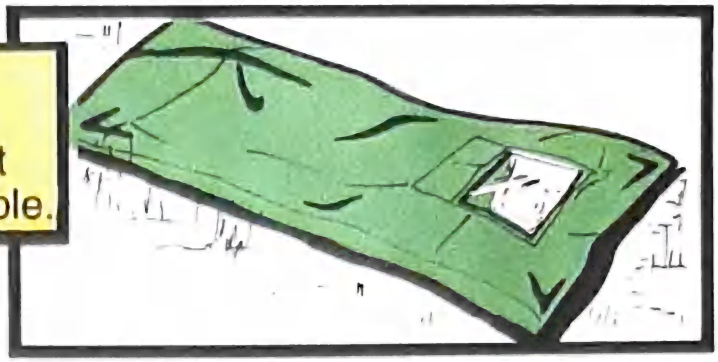
Make sure you and casualty are in correct IPE.

Keep him warm.



Administering First Aid to Chemical Casualties

Put in casualty bag and remove respirator if casualty is not contaminated. Keep casualty out of wind and under cover if possible.

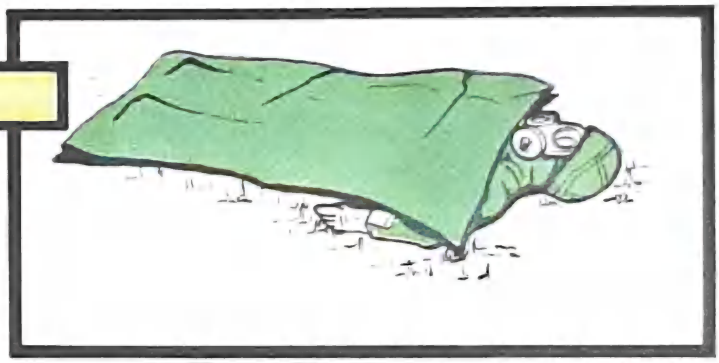


Evacuate on stretcher to medical aid regardless of severity of symptoms.

First Aid for Blood Agent

Make sure you and casualty are in correct IPE.

Keep him warm.



Evacuate to medical aid.

First Aid for Blister Agent

Make sure you and casualty are in correct IPE. Remember, Blister agent will remain both a contact and vapour hazard for a long time.

If the casualty has had agent in the eyes during the last 5 minutes flush them with plenty of water, if more than 5 minutes have passed leave them for medical treatment. Replace respirator.

Decontaminate suspect areas with DKP1 and try to swab off Fuller's earth powder with water. Check in particular for reddened skin around hairline, behind ears and on hands.

Dress any blisters with casualty's shell dressing after first decontaminating the skin. Cover with chemical proof material. On no account break the blisters.

Administering First Aid to Chemical Casualties

Evacuate to medical aid.

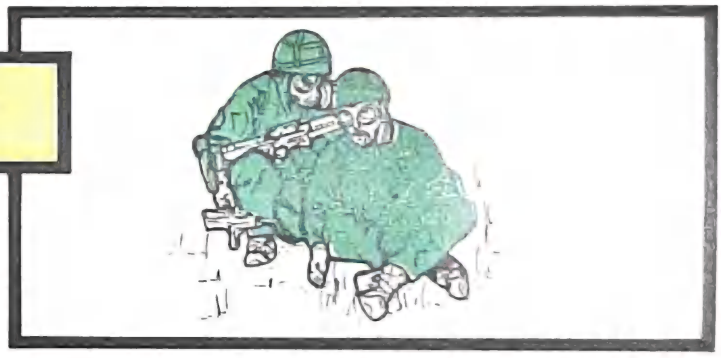
First Aid for Mental Incapacitants (and Atropine poisoning)

Make sure you and casualty are in correct IPE.

Remove casualty's weapon, ammo and bayonet.

Try to get him to drink.

Observe, restrain if necessary, reassure.



Evacuate to medical aid.

Practice

a. Copy out the first aid for each group of agents until you know them without looking.

b. Practise on exercises.

Decontaminating Personal and Unit Weapons

You have to be able to:

Decontaminate:

a. Your personal weapon.

b. Any unit weapon on which you work.

Study Notes

If your personal weapon becomes contaminated with chemical agent you will have to decontaminate it as soon as possible to avoid repeatedly recontaminating yourself. You must pay particular attention to those parts which you frequently handle, using DKP1 and DKP2 as described in Task 5. This will be effective against unthickened liquid agent which looks and behaves like motor oil. Thickened agent, which is more like strings of clear Bostick glue, will not be absorbed easily by Fuller's earth powder. To remove thickened agent first use a scraper, then swab with a solvent (such as petrol, diesel or kerosene) and finally use the DKP1 or DKP2 in the normal way. Fuller's earth must be kept out of working parts.

If the unit weapon you serve becomes contaminated, this must also be decontaminated in a similar manner as soon as operations permit. Start with the parts most frequently touched and then go on to seek out with detector paper (and CAM if available) free liquid agent anywhere on the weapon. In particular check joints, cracks and around screw heads. This will reduce both the contact and vapour challenges to your IPE. Remember that the scraper and the solvent will be contaminated after use.

Practice:

You can use motor oil to safely simulate chemical agent. On exercises, sprinkle some spots on your weapon and practise decontaminating it as soon as you have completed the immediate action (IA) and decontamination (ID) drills. Note, the weapon must be thoroughly cleaned after this practice.

Emergency Procedures for Eating, Urinating, Defecating

You have to be able to:

Carry out the emergency procedures for eating, urinating and defecating while in a chemical environment.

Study Notes

Some chemical agent will persist for hours or days. If you cannot move to a clean area or use collective protection you will have to continue to wear full IPE. Sooner or later you will have to break the protective seal of your IPE to eat, urinate, or defecate. Because this will expose you to chemical agent it is dangerous and these are therefore termed emergency procedures to be carried out only on orders from your commander. You need to be under cover or have confirmed that liquid agent is not falling.

Food should be stored under cover against liquid agent and only food in tins or wrapping which is resistant to chemical vapour should be eaten.

Eating Procedure

If liquid present decontaminate gloves, respirator PSM, eating utensil, food container.

Unfasten jacket neck. Take hold of food wrapper.

Steady your breathing and hold.

Close eyes and lift respirator by PSM away from face and upward to expose mouth.

Bite a small quantity and put under your tongue.

Replace respirator and blow out.

Swallow the food.

Repeat as necessary, secure neck fastening.

Emergency Procedures for Eating, Urinating, Defecating

Urinating and defecating are to be undertaken only in areas set aside for the purpose and which are, if possible, free from liquid contamination. Women follow the procedure for defecation for all bodily functions.

Urinating Procedure (Males)

Release equipment and jacket velcro fasteners.

If liquid present decontaminate gloves and jacket pocket.

Raise jacket hem above trouser waistband and secure in position by applying waistband velcro to pocket velcros.

Untie braces. Avoid pulling clear of loops.

Release trouser waistband velcro fasteners.

If liquid present decontaminate gloves and remove outers and inners. Place in pocket.

Push pouch forward for access to inner trousers. Undo trousers and urinate.

Adjust inner clothing.

If liquid present decontaminate hands, put on gloves.

Adjust NBC IPE.

Emergency Procedures for Eating, Urinating, Defecating

Defecation Procedure

Remove equipment, hang up or place on uncontaminated surface.

Release jacket waist velcro fasteners.

If liquid present decontaminate gloves and jacket pocket.

Raise jacket hem above trouser waistband and secure in position by applying waistband velcro to pocket velcros.

Untie braces, pull clear of loops, tie ends together.

Release trouser waist velcro fasteners.

Pull down IPE trousers to knees.

If liquid present decontaminate gloves, remove outers and inners

Store gloves in jacket pocket.

Take out toilet paper.

Task 17

Emergency Procedures for Eating, Urinating, Defecating

Adjust inner clothing so it will not touch outside of IPE.

Crouch, reach behind and pull braces to one side.

Defecate

Stand up

Adjust inner clothing, refasten braces through loops.

If liquid present decontaminate hands, put on gloves.

Adjust IPE, secure velcro

Note (1) Toilet paper, ST/tampons must be kept readily available but protected from contamination, eg shirt pocket.

(2) Obtain variations for use in arctic from your NBC NCO.

Practice

Practise the procedures for eating, urinating and defecating in IPE.

Unmasking

You have to be able to:

a. Know the general procedure for unmasking.

b. Be able to carry out the Sniff Test.

Study Notes

While it reduces efficiency to operate while wearing a respirator unnecessarily, unmasking too soon is as fatal as masking too late. The procedure will be controlled by your local commander and must be strictly followed:

Test for Liquid

Five minutes after a chemical attack your local commander will order a check of exposed surfaces with detector paper. If there are no signs of liquid agent he will test for vapour.

Test for Vapour

Your local commander will:

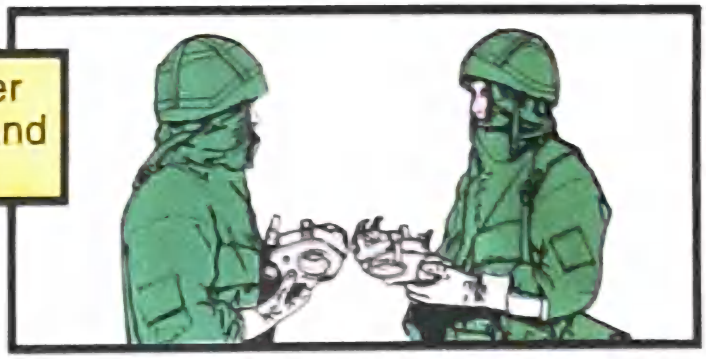
Test for vapour using RVD and/ or CAM. If there are no indications of vapour he will report to the next higher commander and will order 2 men to carry out the Sniff Test in view, upwind.

Unmasking

2 Men Sniff Test

The 2 men carry out sniff test as outlined below but remain masked.

If they report all clear he will order 2 men to unmask for 5 minutes and then remask.



When all detachments report no sign of vapour , the higher commander will order "Gas clear".

Individual Sniff Test

When the order "Gas Clear" is received all must then do a sniff test as outlined below. If at any time you suspect vapour, re-mask and shout "Gas, Gas, Gas".

Decontaminate gloves if they could be contaminated.

Stand back to wind, loosen hood, take a breath and hold it.

Insert 2 fingers of each hand between cheek and facepiece.

With eyes open, sniff gently over 10 seconds. Check any irritation of eyes, nose, throat or suspicious smells.

Blow out hard, observe others for symptoms.

If there are no symptoms, unmask and:

(1) Remain alert for symptoms.

(2) Replace hood and helmet.

(3) Stow respirator and gloves.

Practice

a. Memorise the procedure.

b. Practise the Sniff Test.

Changing Contaminated Clothing

You have to be able to:

Change NBC clothing which has become contaminated.

Study Notes

Your NBC clothing is designed to give you complete protection against vapour and will give protection against liquid contamination for some time; the Mk 4 suit for up to 24 hours although if contaminated with thickened blister it should be changed as soon as the situation allows; overboots for 24 hours; Mk 1gloves for 3 hours (10 hours if decontaminated within 15 minutes) and Mk 2 gloves for 24 hours. You will be vunerable as you change so wait until ordered to do so. If at all possible you should change under cover in a vapour free area. If this is not possible you will have to make your own liquid free area using a polythene sheet or your dicarded jacket. We have shown this as the most difficult case. It is much easier with 2 people, each helping each other in turn. Respirators must be kept in place throughout and heads held up to avoid any danger of contaminating inner clothing.

Undressing with Mk 4 NBC Suit

Jacket

Remove equipment and hang up or place on uncontaminated surface.

Decontaminate gloves and respirator, particularly under the chin.

Undo all velcro fasteners on jacket.

Unzip jacket, fold back hood.

Remove jacket, turning it inside out.

Place jacket on ground inside up, avoid standing on it.

Trousers

Decontaminate gloves, undo all velcro fasteners on trousers.

Undo braces, place ends in pocket.

Changing Contaminated Clothing

Roll trousers down below the knee.

Sit down on inside of jacket.

Ease trousers over heels and remove turning them inside out.

Overboots

Decontaminate gloves, slit Mk 4 laces/ Mk5 undo elastic, remove overboots.

Gloves

Stand on jacket while HELPER decontaminates own gloves and then removes your outer gloves without outside of outer gloves touching inner gloves. Remove your own inner gloves.

Dressing with Mk 4 NBC Suit

Gloves

Remain standing on jacket while HELPER decontaminates own gloves and outer wrapping of inner gloves package.

HELPER opens package and offers inner gloves.

Put on inner gloves.

HELPER decontaminates own gloves and outer wrapping of outer gloves.

HELPER opens package and offers outer gloves.

Changing Contaminated Clothing

Put on outer gloves.

Trousers

HELPER decontaminates own gloves and outer package of trousers.

HELPER opens package and offers inner package.

Open package, punch out trousers.

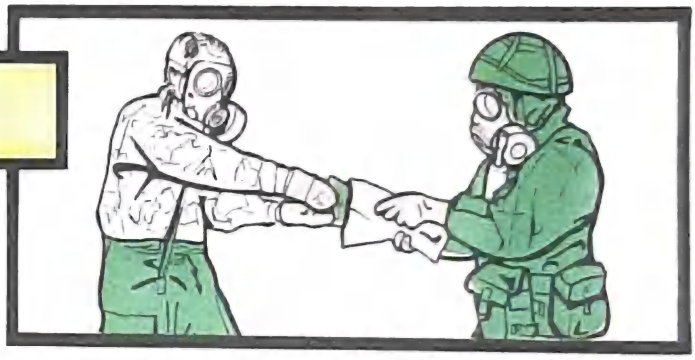
Put braces in pocket.

Put on trousers, secure waist velcro. Cross braces, pull through loops and tie in bow.

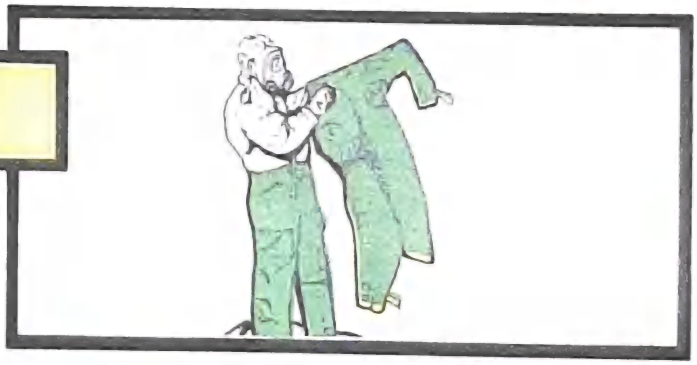
Jacket

HELPER decontaminates own gloves and outer package of jacket.

HELPER opens package and offers inner package.



Open package and punch out jacket.



Changing Contaminated Clothing

Put on jacket. Do up zip to 4 inches from top.

Pull on hood with both hands. Ensure elastic edge fits over ridge of S10.

Raise chin. With one hand pull down jacket and with other zip to top. Do up velcro at neck, waist and wrists.

Pull outer gloves over cuffs.

Overboots

HELPER decontaminates own gloves and outer package of overboots.

HELPER opens package and offers overboots.

Put on overboots sitting on inside of old jacket. Pull trousers over top and do up velcro.

Practice

Put on full IPE. Practise drill with a friend, one helping first and then the other. You may have to use a spare suit as the new one as packed suits will seldom be available for training.

Reducing the Effects of a Nuclear Explosion

You have to know:
What precautions taken before and after a nuclear explosion will minimize the effects.

Study Notes
The major effects of a nuclear explosion are described in Tasks 11 and 12. The best cover will be specially prepared hardened shelters such as on airfields but there are precautions which those who are not in such shelters can take to reduce effects.

Pre - attack

a. Build narrow trenches with straight sides, deep as possible with at least 18 inches of overhead cover to protect against heat, blast and immediate radiation.

b. Remain under cover whenever possible.

c. Keep your weapon and equipment protected in your shelter trench.

Post - attack

Carry out IA drill (Task 11). Any shielding will be better than none.

Switch on and monitor radiac instruments.

If there is a significant dust hazard, wear full IPE, brush off radioactive fallout as soon as you have the opportunity.

Stay under cover whenever possible.

Keep any food and water covered.

Keep any cuts and abrasions covered.

When moving around outside try to avoid raising a dust or touching objects unnecessarily.

Practice
Learn what precautions you must take to improve your chances of survival both before and after a nuclear attack.

Caring for and Maintaining the Respirator

You have to be able to:

Look after your respirator in such a way that it will function properly when you need it.

Study Notes

Your respirator is the most important piece of your NBC IPE. You will not survive a chemical attack if it does not work properly. It is an individual issue so look after it in your own interests. In particular:

a. Don't let others wear it.

b. Always stow it correctly in the haversack (Task 1).

c. Don't cram extra items into the haversack (Task 1).

d. Don't fiddle with its fittings.

e. Don't store close to radiators or hot pipes.

f. Don't put heavy objects on top of it.

g. Don't hang it up by head harness.

h. Keep water out of the canister.

i. Don't drink anything but water through the drinking device.

j. Take it out of the haversack once a week for a short time to avoid distortion of the facepiece. Do not fold the harness back onto the facepiece as this leads to stretch.

k. Report any damage to your NBC NCO at once.

As soon as possible after use:

l. Wipe the inside of the facepiece dry with a disinfecting cloth.

m. Clean the eyepieces with a moist, lint free cloth.

n. Wash out the drinking device if it has been used.

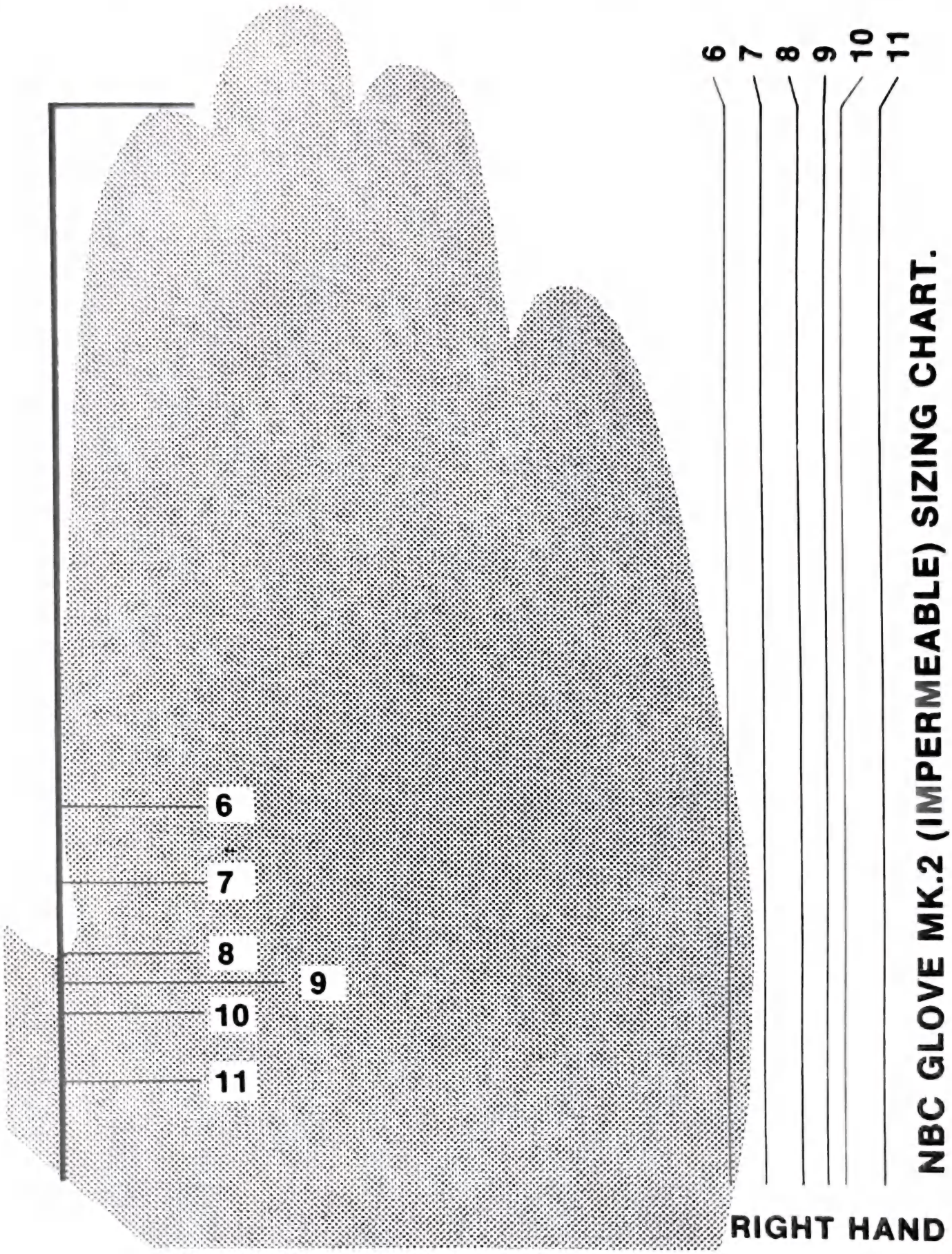
o. Report any damage at once.

If fullers earth accumulates on the facepiece, remove the canister and dunk the facepiece in warm slightly soapy water. Rinse in clean water, drain, shake, leave to dry naturally.

Practice

Note and follow the above instructions.

Hand Measuring Chart



How to use NBC Glove MK 2 Sizing Chart

1. Place your right hand over the outline on the page. Ensure your first finger is on the lines indicated.
2. Read off the glove sizes at thumb crotch and width. Your size of glove is the larger of the two. (In the example it would be size 8).

Suit Protective No1 Mk 4

Olive Drab:

160/92	(extra small)	CG/8415-99-130-7748
170/100	(small)	CG/8415-99-130-7749
180/100	(medium)	CG/8415-99-130-7750
190/108	(large)	CG/8415-99-130-7751
200/116	(extra large)	CG/8415-99-130-7671
Special Fitting		CG/8415-99-130-7752

DPM:

160/92	CG/8415-99-130-6921
170/100	CG/8415-99-130-9622
180/100	CG/8415-99-130-6923
190/108	CG/8415-99-130-6924
200/116	CG/8415-99-130-6940
Special Fitting	CG/8415-99-130-6925

Overboot NBC Mk 5

(Ridged Sole)

Extra small	CG/8430-99-869-0394
Small	CG/8430-99-869-0395
Medium	CG/8430-99-869-0396
Large	CG/8430-99-869-0397
Extra Large	CG/8430-99-869-0398
Extra Extra Large	CG/8430-99-869-0399

(Mukluk - RN)

Extra small	CG/8430-99-869-0538
Small	CG/8430-99-869-0539
Medium	CG/8430-99-869-0540
Large	CG/8430-99-869-0541
Extra Large	CG/8430-99-869-0542
Extra Extra Large	CG/8430-99-869-0543

Gloves Protective NBC Mk 2

Size 8	CG/8415-99-130-9431
Size 9	CG/8415-99-130-9432
Size 10	CG/8415-99-130-9433
Size 11	CG/8415-99-130-9434

Gloves Inner Cotton Interlock 5 Finger Sheath White

Size 8-8½	CG/8415-99-975-7914
Size 9-9½	CG/8415-99-975-7915
Size 10	CG/8415-99-975-7916

Respirator S10

Facepiece Assembly L2A1 (Plano Lens):

Size 1	A2/4240-99-130-7418
Size 2	A2/4240-99-130-7419
Size 3	A2/4240-99-130-7420
Size 4	A2/4240-99-130-7421

Facepiece Assembly L3A1 (Corrective Lens):

Size 1	A2/4240-99-130-7422
Size 2	A2/4240-99-130-7423
Size 3	A2/4240-99-130-7424
Size 4	A2/4240-99-130-7425

Canister S10

L10A1	A2/4240-99-130-7483
L12A1	A2/4240-99-132-0941

Cap Water Canteen Respirator S10

L9A1	A2/4240-99-130-7484

Valves and Airguide Clip

Inlet	A2/4240-99-740-4001
Outlet	A2/4240-99-740-4002
Clip - Airguide Button (Pkt 50)	A2/4240-99-993-8750

Kit Decontamination Personal (DKP)

No 1 Mk 1	A2/4230-99-960-8415
No 2 Mk 1	A2/4240-99-961-4239

Detector Paper

No2 Mk 2 Liquid one colour	A2/6665-99-225-1005

Cloth

Disinfecting facepiece	A2/4240-99-120-8527

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