

***TM 3-4240-346-10**
TM 09204A/09205A-10/1

OPERATOR'S MANUAL
FOR
CHEMICAL-BIOLOGICAL MASK: FIELD, M40A1
(4240-01-370-3821 - SMALL)
(4240-01-370-3822 - MEDIUM)
(4240-01-370-3823 - LARGE)
CHEMICAL-BIOLOGICAL MASK: COMBAT VEHICLE, M42A2
(4240-01-413-4100 - SMALL)
(4240-01-413-4101 - MEDIUM)
(4240-01-413-4102- LARGE)

This TM supersedes TM 3-4240-343-10, March 1996
and the M40A1 part of TM 3-4240-339-10, 1 Feb 1994.
SEE BACK COVER FOR WARNING, DISTRIBUTION STATEMENT, AND DESTRUCTION NOTICE

HEADQUARTERS DEPARTMENT OF THE ARMY
AND, HEADQUARTERS, MARINE CORPS
1 AUGUST 1998

PCN 182 092040 00

WARNING

WARNINGS point out dangerous steps in the procedure in this manual. Your safety depends on following the instructions included in all WARNINGS. Several general WARNINGS are included below:

- It is important to conduct proper PMCS and keep your mask clean. An improperly maintained and dirty mask may compromise its ability to provide you with maximum protection.
- The mask is not fully effective in small spaces when the oxygen content of the air is too low. The Chemical-Biological (CB) mask has been tested and verified to protect against military CB agents, toxins and radiological fallout particles. It does not act as a breathing device.
- Avoid extreme, abrupt motion which could break the seal between your facepiece and your face.
- The waterproof bag is to be used for waterborne operations only.
- Contact lenses (soft or hard) may not be worn in CB Protective Masks. Inadequate oxygen supply to the corneal surface, exposure to dust, dirt, and smoke/gas may cause serious vision loss or eye damage. Soldiers requiring vision correction are provided optical inserts for their protective masks.

WARNING (Cont)

HEALTH/ENVIRONMENTAL HAZARD. There are two Mask Filter Canisters, the C2 and the C2A1.

- The C2 canister contains Chromium VI and damaged or unusable canisters are considered Hazardous Waste. (Chromium VI is a known carcinogen if inhaled or swallowed.)
- The C2A1 canister is chromium-free but must continue to be disposed of in accordance with State and Local Environmental Laws.
- DO NOT throw away damaged or unusable canisters as ordinary trash.
- DO turn in damaged or unusable canisters to your hazardous waste management office or Defense Reutilization and Marketing Office (DRMO).

FIRST AID - For first aid refer to FM 21-11.

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TECHNICAL MANUAL
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(4240-01-413-4102 - LARGE)**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to: Technical Director, US Army Edgewood Research, Development and Engineering Center, ATTN: SCBRD-ENL-V, Aberdeen Proving Ground, MD 21010-5423. A reply will be furnished to you.

Marine Corps users - submit NAVMC FORM 10772 directly to Commander, Marine Corps Logistics Base (Code 850), 814 Radford Blvd., Albany, GA 31704-5000. In addition, a copy of the NAVMC 10772 or naval message should be sent to MARCORSYSCOM (CodeCSLENBC), 2033 Barnett Ave., Suite 315, Quantico, VA 22134.

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HOW TO USE THIS MANUAL

The safest, easiest, and best way to use these CB Masks (M40A1/M42A2) is to follow the instructions in this manual. Knowing what's in this manual and how to use it will save you time and work, and will help you save your life when fighting in a Nuclear, Biological Chemical (NBC) environment.

ORGANIZATION

Page ii has a table of contents to provide easy access to the manual. Pages are numbered consecutively within each chapter; each page number is prefixed with a chapter number or appendix letter. For example, page 5 of Chapter 2 is numbered 2-5 and page 3 of appendix B is numbered B-3.

This manual is divided into three chapters and four appendices. Chapter 1 contains general information as well as equipment description. Chapter 2 provides operating instructions for the M40A1 and the M42A2 mask. These operating instructions include: a description of the parts of the masks and additionally authorized items; Preventive Maintenance Checks and Services (PMCS); and operation of the masks under usual and unusual conditions. Chapter 3 provides maintenance instructions showing step-by-step procedures for maintenance of the masks and additionally authorized items. Appendix C lists these additionally authorized items and appendix D identifies supplies used in maintaining these masks.

ORGANIZATION (Cont)

Each section in this manual is further divided into three parts. The first addresses procedures which are the same regardless of which mask you are using. The second part addresses those tasks which are peculiar to the M40A1 and the third addresses those peculiar to the M42A2. Therefore, depending on which mask you are using, you must follow the instructions in the **COMMON** part and the part which is peculiar to your mask.

For instance, if you have the M40A1 mask, you must do the Before PMCS checks in the part listed under **COMMON** and those checks listed under **M40A1 PECULIAR**. Those tasks listed under **M42A2 PECULIAR** are not required.

Those tasks which are considered to be **COMMON** and apply to either mask are illustrated using the M42A2. However, the differences between the M40A1 and the M42A2 do not impact on the task, and, in most cases, you will not be able to tell from the illustration which mask is being illustrated.

PROCEDURES ON HOW TO FIND SPECIFIC INFORMATION.

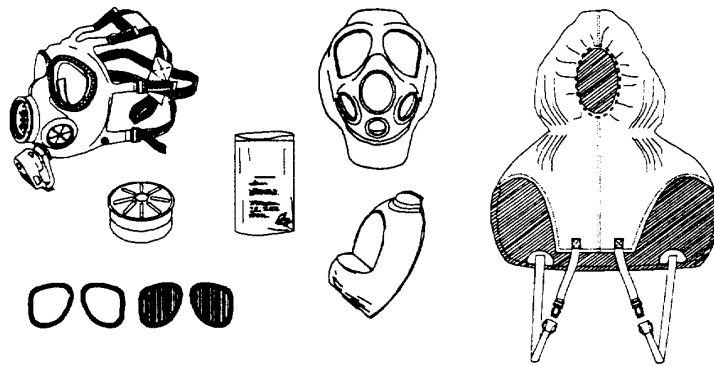
If you're going to do preventive checks you can turn directly to Chapter 2, Section II (PMCS) on page 2-21. The PMCS table provides procedures for checks and services to be performed before (page 2-25), during (page 2-32), and after (page 2-34) using the mask.

If you are performing a task under usual conditions, go to the table of contents and find the first page of that section. There is a secondary table of contents on the first page of that section. It will tell you the page in Chapter 2 where your task begins. For example, if you wish to don your mask, proceed to Chapter 2, Section III (page 2-73). On this page you will find a table of contents which will tell you on which page the task begins. Turn to the page and follow the instructions to put on and use your mask under usual conditions.

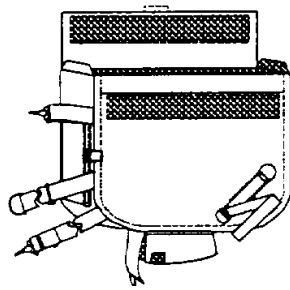
HOW TO USE A MAINTENANCE PROCEDURE

If you're using the manual to perform maintenance, go to the table of contents and find the first page of that section. There is a secondary table of contents on the first page of that section. It will tell you the page in Chapter 3 where your task begins. For example, if you wish to Remove your Outserts, proceed to Chapter 3, Section III (page 3-2). On this page you will find a table of contents which will tell you on which page the task begins. Turn to the page and follow the instructions to remove the outserts on your mask under usual conditions.

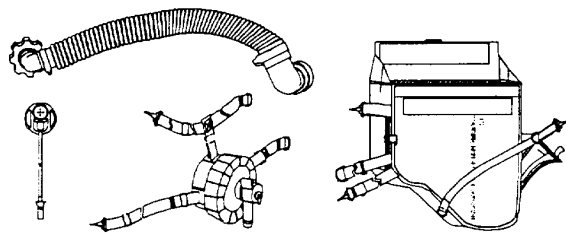
MASK CB **COMMON** M40A1 AND M42A2 COMPONENTS



MASK CB FIELD, **M40A1 PECULIAR COMPONENTS**



MASK CB COMBAT-VEHICLE, **M42A2 PECULIAR COMPONENTS**



CHAPTER 1 INTRODUCTION

SECTION I. GENERAL INFORMATION

1-1. Scope

- a. Type of Manual. Operators Manual.
- b. Model Number and Equipment Name. Chemical-biological mask: Field M40A1 and Chemical-biological mask: Combat Vehicle M42A2.
- c. Purpose of Equipment. Protects your face, eyes, and lungs from field concentrations of CB agents, toxins and radioactive fallout particles.
- d. Special Limitations on Equipment. Does not protect against ammonia or carbon monoxide gases. Does not protect you in closed spaces where there is not enough oxygen in the air.

1-2. Maintenance Forms and Records

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS) as contained in maintenance management updates.

Marine Corps forms and procedures used for equipment maintenance are prescribed in TM 4700-15/1_.

1-3. Reporting Equipment Improvement Recommendations (EIR's)

Send us an EIR to let us know why you don't like the design or performance of your mask. You, the user, are the only one who can tell us what you don't like about your equipment. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Director, U.S. Army Armament and Chemical Acquisition and Logistics Activity, ATTN: AMSTA-AR-QAW-A, Rock Island, IL 61299-6000. We'll send you a reply.

Marine Corps users shall submit a Standard Form 368 (SF 368) in accordance with MCO 4855.10 directly to: Commander, Marine Corps Logistics Base (Code 856), 814 Radford Blvd., Albany GA 31704-5000. We will send you a reply.

1-4. Corrosion Prevention and Control

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this item be reported so that the problem can be corrected and improvements can be made to prevent the problem in future items.

While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

If a problem is identified, it can be reported using the Standard Form 368, Quality Deficiency Report. Use of key words such as "corrosion", "rust", "cracking", or "deterioration" will assure that the information is identified as a CPC problem. The form should be mailed to Director, U.S. Army Armament and Chemical Acquisition and Logistics Activity, ATTN: AMSTA-AR-QAW-A, Rock Island, IL 61299-6000.

Marine Corps Units report CPC problems using SF 368 and procedures prescribed in TM 4700-15/1.

1-4

Section II. EQUIPMENT DESCRIPTION

1-5. Equipment Characteristics, Capabilities, and Features

a. Characteristics.

COMMON

- Lightweight
- Transported and stored in carrier.
- Facepiece of silicone rubber with intumed sealing surface, for improved seal.
- Universal second skin for additional protection from liquid agents.
- Quick doff hood for easy donning/doffing operations, which facilitates decontamination operations.
- Includes both clear and neutral gray outserts.
- Filter canister quickly and easily replaced. It may be switched from left to right by unit NBC NCO.
- Filter canister has interoperability with North Atlantic Treaty Organization (NATO).

1-5. Equipment Characteristics, Capabilities, and Features (Cont)

M40A1 PECULIAR

- Field Mask Carrier

M42A2 PECULIAR

- External detachable microphone.
- Canister Carrier.
- Hose Assembly.
- Combat Vehicle Mask Carrier.

b. Capabilities.

COMMON

- A properly fitted and maintained mask, when worn with the proper filter canister installed, will protect face, eyes, and lungs from field concentrations of CB agents, toxins, and radioactive fallout particles.

M40A1 PECULIAR

- The canister may be switched to either side of the facepiece by the NBC NCO.

M42A2 PECULIAR

- The facepiece can be coupled directly to the vehicle Gas Particulate Filter Unit (GPFU) system through the armor quick disconnect (AQD) and hose assembly.
- The hose assembly may be switched to either side of the facepiece, by the NBC NCO, to permit easier connection to the GPFU system.
- The mask can be coupled to the combat vehicle communication system with the detachable microphone through the combat vehicle helmet.

c. Features. Major features of the mask are the silicone rubber which provides a seal against CB agents, a canister which filters particulate matter and agents from the air, side and front voicemitters which transmit the user's voice outside the facepiece, an outlet valve, a drink tube which allows the soldier to drink while wearing the mask, and quick doff hood that facilitates easy donning/doffing operations of the mask and aids in decontamination operations.

1-6. Equipment Data

- Tabulated Data.

M40A1

Weight (with carrier) M40A1 mask 3.8 lbs. (1.73 kg)

Dimensions (with carrier) 9 x 11 x 4.5 in. (22.9 x 27.9 x 11.4 cm)

M42A2

Weight (with carrier) M42A2 mask 5.2 lbs. (2.36 kg)

Dimensions (with carrier) 10 x 11 x 5 in. (25.4 x 27.9 x 12.7 cm)

CHAPTER 2 OPERATING INSTRUCTIONS

Section I. DESCRIPTION AND USE OF OPERATORS CONTROLS AND INDICATORS

2-1. General

Make sure you are familiar with the location and operation of all mask parts and additionally authorized items before attempting to use the mask.

2-2. Description of Mask COMMON

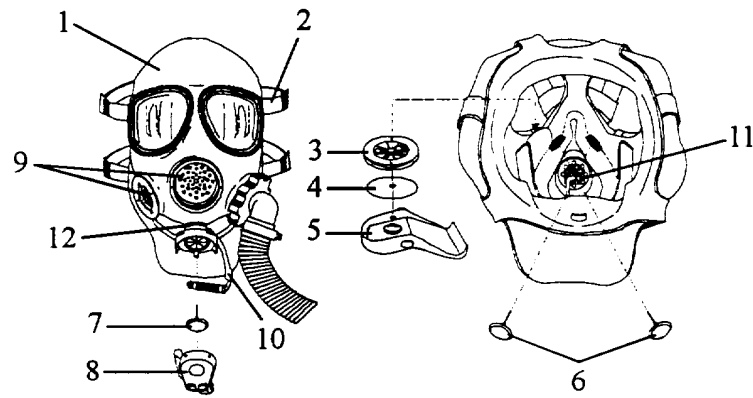
a. Mask Assembly.

2-2. Description of Mask (Cont)

COMMON (Cont)

- FACEPIECE (1) fits closely against your face to form a seal. It is made of silicone rubber
- HEAD HARNESS (2) consists of a headpad, forehead straps, temple straps, cheek straps, and donning tab. Secures mask assembly to your face.
- INLET VALVE BODY (3) AND INLET VALVE DISK (4) allows filtered air to enter the mask assembly and prevents moist exhaled air from entering the filter canister. It is a "one-way" valve which allows air flow in one direction only.
- AIRFLOW DEFLECTOR (5) directs inhaled air over eyelenses to prevent fogging.
- NOSECUP VALVE DISKS (6) allow filtered air to enter nosecup and prevents moist exhaled air from fogging eyelenses in cold weather.
- OUTLET VALVE DISK (7) releases exhaled air and prevents unfiltered air from entering the mask assembly.
- OUTLET VALVE COVER (8) protects the outlet valve from damage.
- FRONT AND SIDE VOICEMITTERS (9) transmit your voice outside of the mask assembly.
- EXTERNAL DRINK TUBE (10) has a quick disconnect coupling which connects the mask assembly to the MI canteen cap to allow the operator to drink.

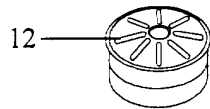
- INTERNAL DRINK TUBE (11) allows the operator to drink while wearing the mask assembly.
- DURABILITY ENHANCEMENT BAND (12) placed around the outlet valve housing to ensure seal is maintained.



2-2 Description of Mask (Cont)

COMMON (Cont)

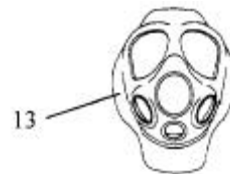
b. Filter Canister.



- FILTER CANISTER (12) filters out CB agents and other particles from contaminated air.

c. Universal Second Skin. The UNIVERSAL SECOND SKIN (13) is made of butyl rubber and covers the mask assembly. It provides additional protection against liquid agents. (Rubber catches & ridges are no longer needed because the universal second skin is now larger.)

- Interfaces with Parka overgarments.
- Extends beyond the mask assembly.
- Interfaces with Quick Doff Hood.



d. Second Skin. The SECOND SKIN (14) is made of butyl rubber and covers the mask assembly. It provides additional protection against liquid agents.

- RUBBER CATCHES (15) are used to retain the quick doff hood on the mask assembly. They are located at the top and bottom of the second skin.
- The RIDGE (16) is also used to retain the quick doff hood.



e. Universal Second Skin. (USMC only) The UNIVERSAL SECOND SKIN (USMC only) (17) is made of butyl rubber and covers the mask assembly. It provides additional protection against liquid agents. (Rubber catches & ridges are no longer needed because the second skin is now larger.)

- Interfaces with Parka overgarments.
- Extends beyond the mask assembly.
- Interfaces with QDH.



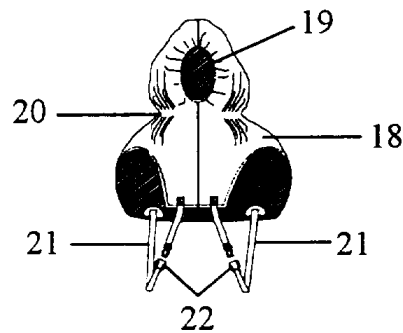
2-2 Description of Mask (Cont)

COMMON (Cont)

f. Quick Doff Hood.

NOTE

One-piece hood and quick doff hood with all second skins are interchangeable. The difference between the hoods is that the one-piece hood cannot be removed during decon operations. Procedures are provided for whichever hood you are issued. (For illustration of the one-piece hood, see paragraph 2-8n.)

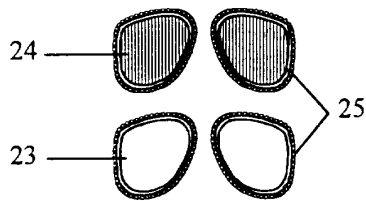


- QUICK DOFF HOOD (18) is made of rubber-coated fabric which protects that part of the neck and head not covered by the mask assembly from CB agents, toxins and radioactive fallout particles.
- ELASTIC AROUND OPENING (19) retains the quick doff hood to all second skins. It enables easy removal of the quick doff hood during decon operations.
- ELASTIC AROUND NECK (20) draws the quick doff hood close to the neck to protect against CB agents.
- UNDERARM STRAPS (21) retain the quick doff hood on the shoulders. PLASTIC FASTENERS (22) are used to connect the straps.

2-2 Description of Mask (Cont)

COMMON (Cont)

g. Outserts.



- CLEAR PLASTIC OUTSERTS (23) protect mask eyelenses from scratches and other damage.
- NEUTRAL GRAY OUTSERTS (24) reduce sun glare and protect mask eyelenses from scratches and other damage.
- Both outserts prevent eyelenses from fogging in cold weather.
- RUBBER RINGS (25) fit over the mask assembly eyelens rings to secure the outserts to the mask assembly.

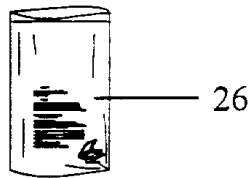
h. M1 Waterproof Bag.

WARNING

Waterproof bag to be used for waterborne operations only.

CAUTION

Remove mask assembly from waterproof bag as soon as protection of mask is no longer required.



- M1 WATERPROOF BAG (26) keeps mask dry when required during excessively long periods of heavy rain, river crossings, beach landings and during similar operations.
- Stowed in pocket of carrier.
- Includes rubber bands for sealing.

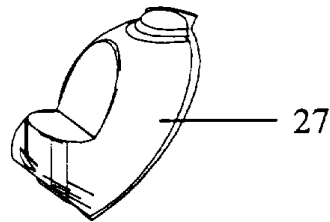
2-2 Description of Mask (Cont)

COMMON (Cont)

i. Faceform.

NOTE

DO NOT discard the faceform. It is to be retained and used whenever storing the mask assembly for more than 30 days.



- The FACEFORM (27) holds the mask assembly in proper shape when stored longer than 30 days.

M40A1 PECULIAR

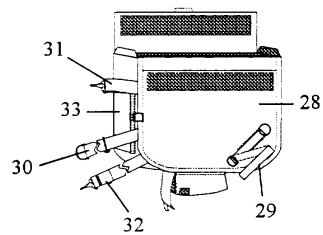
- Field Carrier.

NOTE

DO NOT make any markings on the mask carrier. The ID pocket will be used for required unit information.

- The FIELD CARRIER (28) provides for storage and carrying of the mask and additionally authorized items. It includes:

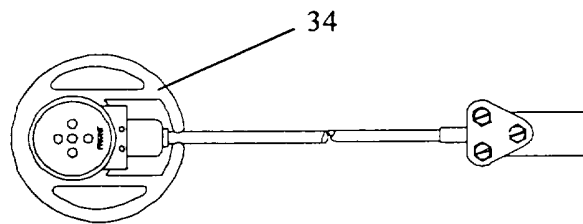
- SHOULDER STRAP (29),
- WAIST STRAP (30),
- SHORT STRAP (31),
- SHORT ADJUSTABLE STRAP (32),
- ID POCKET (33).



2-2 Description of Mask (Cont)

M42A2 PECULIAR

a. Detachable Microphone.

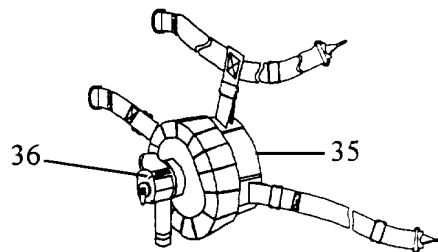


- DETACHABLE MICROPHONE (34) connects into front voicemitter of the protective mask, its cord plugs into the CVC helmet and enables radiocommunication in the combat vehicle.

b. Canister Carrier.

NOTE

User's may have the original (green) canister carrier which interfaces with the C2/C2A1 filter canisters only. The improved (black) canister carrier can also hold a variety of NATO filter canisters.

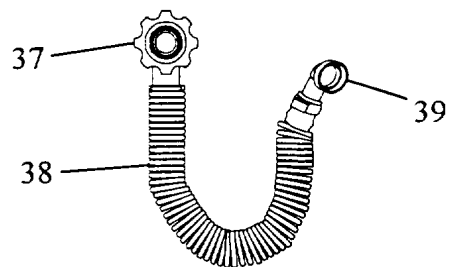


- CANISTER CARRIER (35) permits the user to carry the filter canister outside of the mask carrier.
- ARMOR QUICK DISCONNECT (AQD) (36) couples the filter canister to the GPFU.

2-2 Description of Mask (Cont)

M42A2 PECULIAR

c. Hose Assembly.



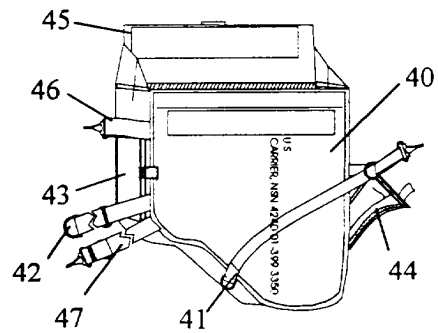
- STAR KNOB (37) permits easy attachment of the hose assembly to the mask assembly. It may be switched from left to right by unit NBC NCO.
- HOSE ASSEMBLY (38) can be removed from the mask assembly.
- CANISTER CONNECTOR (39) permits attachment of the filter canister to the hose assembly.

d. Combat Vehicle Carrier.

NOTE

DO NOT make any markings on the mask carrier. The ID pocket will be used for required unit information.

- The COMBAT VEHICLE CARRIER (40) provides for storage and carrying of the mask and additionally authorized items. It includes:
 - SHOULDER STRAP (41),
 - WAIST STRAP (42),
 - ID POCKET (43),
 - AQD POCKET (44) to cover the armor quick disconnect
 - QUICK-OPENING FLAP (45), with hook and pile fastener, provides for ready access to contents.
 - SHORT STRAP (46),
 - SHORT ADJUSTABLE STRAP (47).



2-3. Description Additionally Authorized Items (App C)

a. Optical Inserts.

WARNING

DO NOT wear contact lenses with your mask assembly.

NOTE

There are two types of optical inserts which may be issued if you require corrective lenses. Each is illustrated. The wire optical inserts have small screws that may become loose. If they do, ask NBC NCO in your unit to tighten them.



- OPTICAL INSERTS: Plastic (1), Wire (2) are available by medical prescription for personnel who must wear glasses (AR 40-63).

b. Canteen with M1 Canteen Cap.

- CANTEEN includes the M1 CANTEEN CAP which is a special cap with hole that allows external drink tube to be connected to the canteen.

c. M8 Chemical Agent Detector Paper.

- M8 CHEMICAL AGENT DETECTOR PAPER consists of a book of perforated sheets of chemically treated, dye-impregnated paper. A color comparison bar-chart is printed inside the front cover.
- Chemicals in paper cause specific color changes when paper contacts liquid nerve or blister agents.
- Instructions for use are on the cover of the book containing the detector paper.

d. M295 Decontaminating Packet, Individual Equipment.

- M295 DECONTAMINATING PACKET is used primarily for individual equipment.
- Instructions for use are printed on the container and packets.
- Instructions for use are on the cover of the book containing the detector paper.

2-3 Description Additionally Authorized Items (App C) (Cont)

e. M291 Decontaminating Kit.

- M291 DECONTAMINATING KIT is used primarily for skin.
- Instructions for use are printed on the container and packets.
- Refer to TM 3-4230-229-10.

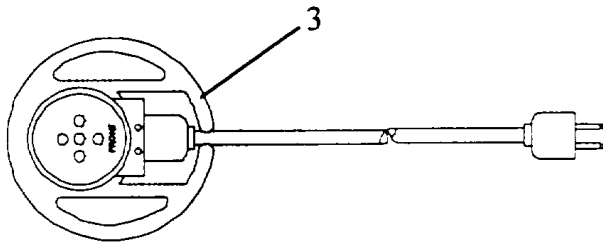
f. M7 Audio Frequency Amplifier.

- The M7 AUDIO FREQUENCY AMPLIFIER is used in high noise areas and/or dismounted conditions to amplify your voice.

g. M1 Laser Ballistic Outserts.

- The M1 Laser Ballistic Outserts provide two wavelengths of laser protection and protection from low-speed fragments.

h. Detachable Microphone, Aircrew



- AIRCREW DETACHABLE MICROPHONE (3) connects into front voicemitter of the protective mask, its cord plugs into the aircraft internal communication system and enables radio communication.

Section II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

2-4. Introduction to PMCS table.

a. General. The Operator PMCS table has been provided so you can keep your equipment in good operating condition. The PMCS table is arranged to provide procedures for checks and services to be performed before, during, and after operation of the mask. A thorough initial inspection to include sizing, fitting, fit testing, and after use inspection is critical to ensure it is providing you with maximum protection. If you have not used your mask for a lengthy period of time, specific checks are required in addition to the before checks to assure that your mask is ready to be used. Shortcomings which DO NOT limit the equipment operational capability (form, fit, or function) are not noted in this TM. These minor discrepancies should be attended to and maintained to prevent them from becoming deficiencies. The following paragraphs provide information on how to use the PMCS tables. Report any malfunctions or failures on the proper DA Form 2404, or refer to DA PAM 738-750.

2-4. Introduction to PMCS table. (Cont)

b. Inspections. The most detailed inspection and PMCS of your mask is accomplished after each time you use it and when you first receive it. The BEFORE, DURING and AFTER PMCS checks are designed to assure that the mask is ready for use without causing you to spend a lot of time on your mask before beginning a mission. Therefore, it is vital, for your safety, that you perform all of the checks in the interval listed. BEFORE PMCS assure that all the parts of your mask are present and verify the most important components of the mask are operational. The DURING PMCS procedures check those items which are most readily checked while operating the mask. The AFTER PMCS procedures provide a detailed check of the mask to assure that any items which are not performing properly are repaired prior to any additional use. In the event that you have not used your mask for a lengthy period of time, perform all BEFORE, DURING, and AFTER PMCS prior to using the mask. This will allow you to correct any problems which may have occurred during storage.

c. WARNINGS and CAUTIONS. *WARNINGS* and *CAUTIONS* appear before the applicable procedures. You must observe all WARNINGS and CAUTIONS to prevent serious injury to yourself or others and to prevent damage to your equipment.

2-5. PMCS Procedures

The following paragraphs describe the information presented in each column of the PMCS table.

- a. Item Number Column. Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indication at fault. Item numbers also appear in the order that you must do checks and services for the intervals listed. Record any faults that you discover before, during, or after operation. You DO NOT need to record faults that you fix.
- b. Interval Column. This column tells you when you must do the procedure in the procedure column. Do your BEFORE PMCS just before you operate the mask or deploy. Do your DURING PMCS while you are using the mask. Do your AFTER PMCS right after use or before you store it.
- c. Item to Check/Service Column. This column identifies the item to be checked or serviced.
- d. Procedure Column. This column gives the procedure you must do to check or service the item listed in the Item to Check/Service column. This will tell you if the equipment is ready or available for the intended mission or for operation. You must do the procedure at the time stated in the interval column.

2-5. PMCS Procedures (Cont)

e. Not Fully Mission Capable If: Column. Information in this column only tells you what deficiencies will keep your mask from being capable of operating safely. DO NOT use your mask if a check and service shows a fault listed in this column. Shortcomings or minor discrepancies which DO NOT limit operational capability or safety of use may require corrective actions and continued surveillance, but does not "deadline" the mask.

f. Other Table Entries. Be sure to observe all special information and notes that appear in your table.

NOTE

Within each section of the PMCS table, tasks are divided into those which are common to both the M40A1 and M42A2, as well as, those peculiar to only the M40A1 or M42A2. Perform all tasks which are common and peculiar to your mask.

	Page
Before PMCS.....	2-25
During PMCS.....	2-32
After PMCS	2-34

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p><u>WARNING</u> If you have not used your mask for 30 days or more, perform all PMCS prior to using your mask.</p> <p>CAUTION One set of outserts must be installed on the mask at all times to protect the eye lenses from being scratched. DO NOT use a high pressure hose to clean mask, it may damage components.</p>	
		<p>COMMON BEFORE PMCS CHECKS</p> <p>Outlet Valve Disk and Outlet Valve Cover</p>	<p><u>WARNING</u> DO NOT use the mask assembly if outlet valve disk or outlet valve cover is missing or damaged. The mask assembly will leak.</p>	

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON BEFORE PMCS CHECKS (Cont)				
1	Before	Outlet Valve Disk and Outlet Valve Cover (Cont)	<p style="text-align: center;"><u>WARNING</u></p> <p>DO NOT use tissue paper or a paper towel to remove dirt or moisture from outlet valve cover, outlet valve disk, or outlet valve seat Paper may break up and lodge in outlet valve area causing leakage.</p> <p>a. Grasp tab at bottom of outlet valve cover (1) and lift bottom portion of outlet valve cover. Look at outlet valve disk (2) for nicks, tears, or rips. Check to see if outlet valve disk is dirty. Wipe off moisture from outlet valve disk with a clean cheesecloth (Item 3, app D). Smooth outlet valve disk so it lies flat on outlet valve seat.</p>	Outlet valve disk is missing, sticking, nicked, torn, ripped, dirty and cannot be cleaned or will not seat properly.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

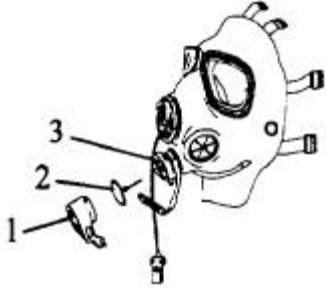
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p>b. Check outlet valve seat (3) for dirt (clean as required), nicks, or cracks.</p> <p>e. Check outlet valve cover for cuts, tears, or holes. Look at inside of outlet valve cover for dirt or moisture. Wipe off any dirt or moisture with a soft, clean dry cheesecloth (item 3, app D).</p> 	<p>Outlet valve seat is dirty and can't be cleaned; nicked or cracked.</p> <p>Outlet valve cover is cut, torn, has holes, or will not seat firmly over outlet valve.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON BEFORE PMCS CHECKS (Cont)				
2	Before	Facepiece and Components	a. Check to see that the following components are present: External Drink Tube (1) Second Skin (2) Quick Doff Hood (3) One set of Outserts (4) Internal Drink Tube (5) Optical Inserts (6) (If Required) M1 Waterproof Bag (7)	Any components are missing.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

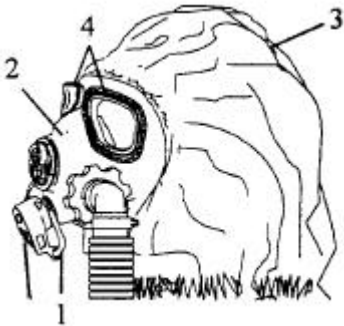
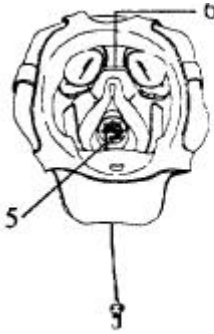

Item No.	Interval	Location Item to Check/Service	Procedure	Not fully Mission Capable
			  <p style="text-align: center;">NOTE If you have a M42A2 mask, do the M42A2 PECULIAR PMCS CHECKS before you do step 3.</p>	

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON BEFORE PMCS CHECKS (Cont)				
3	Before	Mask Assembly	Check your mask assembly for proper function (para 2-9).	Mask Assembly does not function.
M42A2 PECULIAR BEFORE PMCS CHECKS				
1	Before	Facepiece and Components	a. Check to see that the following components are present: Detachable Microphone (1) Attached Filter Canister Carrier (2) Hose Assembly (3)	Any components are missing.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

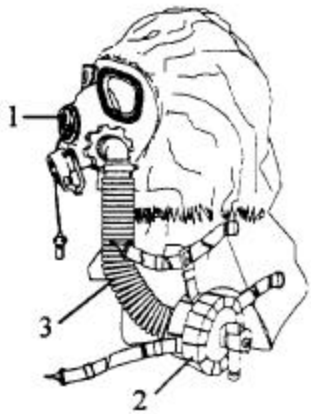
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			 <p>The diagram shows a side profile of a helmet with various attachments. Callout 1 points to a small circular component on the left side of the helmet. Callout 2 points to a larger, cylindrical component at the bottom of the helmet. Callout 3 points to a flexible, corrugated hose-like structure extending from the bottom of the helmet.</p>	

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON DURING PMCS CHECKS				
1	During	Front and Side Voicemitters	a. Check to see that the front and side voicemitters are functioning properly.	Unable to communicate through the front and side voicemitters.
2	During	External and Internal Drink Tubes	a. Check to see that you are able to drink while wearing the mask. (para 2-12)	Unable to drink while wearing the mask.
3	During	Eyelenses, and Outserts	a. Check to see that you can see well through the eyelenses and outserts.	Unable to see well through the eyelenses and outserts.
4	During	Optical Inserts (If Required)	a. Check to see that you can see well through the optical inserts.	Cannot see well through the optical inserts.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
M42A2 PECULIAR DURING PMCS CHECKS				
1	During	Detachable Microphone	a. Check detachable microphone for proper operation by connecting to the CVC helmet and activating vehicle communications system.	Unable to communicate through the detachable microphone.
2	During	Hose Assembly	a. Check to see that you are able to connect to the vehicle gas particulate filter system.	Unable to connect to the vehicle gas particulate filter system.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
1	After	Filter Canister	<p>NOTE Clean your mask before performing the after PMCS (para 3-12, M40A1; para 3-17, M42A2).</p> <p>a. Remove filter canister (1) (M40A1 - para 3-11; M42A2 - para 3-14). Check filter canister, especially around seams, for cracks, dents or holes. Check air intake (2) to make sure it is not clogged with dirt.</p> <p>b. Check for damaged threads (3) and contact surface (4) on filter canister.</p> <p>c. Shake filter canister and listen for signs of loose absorbent particles.</p>	<p>Canister is cracked or dented over 1/4" deep, damaged on a seam, or has holes. Air intake is clogged with dirt.</p> <p>Threads on filter canister are damaged.</p> <p>Loose particles rattle or dust falls out when filter canister is shaken.</p>
			<p>COMMON AFTER PMCS CHECKS</p>	

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

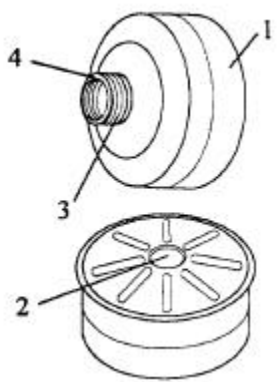
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			 <p>The diagram shows an exploded view of a wheel assembly. Callout 1 points to the outer tire. Callout 2 points to the inner rim with spokes. Callout 3 points to the hub area where the tire meets the rim. Callout 4 points to a bolt or nut on the hub.</p>	

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)


Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
2	After	Eyelenses, Eyerings, and Outserts	<p style="text-align: center;">CAUTION</p> <p>Care must be taken not to scratch the eyelenses and outserts when handling the mask assembly.</p> <p>a. Remove outserts from mask assembly (para 3-2) Check eyelenses (1) for cracks, cuts, scratches, or stains that affect vision.</p> <div style="text-align: center;">  </div>	Eyelenses are cracked, cut, scratched or stained enough to affect vision.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

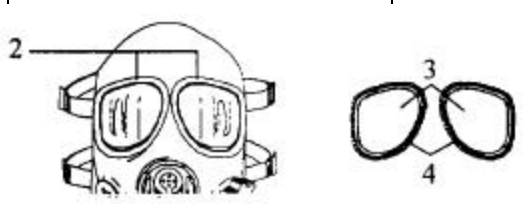
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p>b. Check eyerings (2) for distortion.</p> 	<p>Eyering are bent enough to affect seal.</p>
			<p>c. Check all outsert lenses (3) for cracks, chips, or discoloration that affects soldier's vision. Check rubber rings (4) for tears, looseness brittle spots, soft or sticky spots, or cracked rims.</p>	<p>Outserts are broken, distorted or discolored enough to affect vision. Rubber rings are torn, cracked, loose, or sticky.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

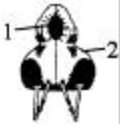
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
3	After	Quick Doff Hood	<p>a. Check whether elastic opening (1) is attached to the second skin securely.</p> <p>b. Examine quick doff hood (2) for cuts, holes or tears.</p>  <p>c. Check for sticky or gummy areas, peeled or worn coatings and broken or missing straps or hardware.</p>	<p>Quick Doff Hood is not securely attached.</p> <p>Quick Doff Hood has more than two pin head size holes in any one panel.</p> <p>Hood has cuts, holes, or tears.</p> <p>Quick Doff Hood sticky or gummy areas, peeled or worn coatings and if straps are broken or hardware is missing.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

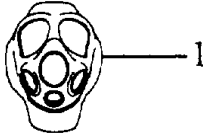
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
4	After	Second Skin	<p>a. Remove the hose assembly (para 3-16) (M42A2) or filter canister (para 3-11) (M40A1) and remove the universal second skin (para 3-4)</p> <p>b. Visually inspect surfaces of universal second skin (1) for dirt, mud, and greasy or oily substances.</p> <p>c. Check universal second skin for holes, tears, and splits. Look closely at edges of universal second skin. Check for soft or sticky spots. Check remainder of universal second skin for stiff areas that crumble when rubbed between fingers and cracks which expand when rubber is stretched.</p> 	<p>Universal second skin has holes, tears, or splits.</p> <p>Universal second skin has soft or sticky spots that allow air to enter mask assembly.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
5	After	Mask Assembly	<p>a Visually inspect inside surfaces of mask assembly (1) for dirt, mud, and greasy or oily substances.</p> <p>b. Check mask assembly for holes, tears, and splits by holding in front of a light source. Look closely at edges of mask assembly. Check for soft or sticky spots. Check remainder of mask assembly for stiff areas that crumble when rubbed between fingers and cracks which expand when rubber is stretched.</p>	<p>Facepiece is dirty enough to affect mask assembly seal or proper function.</p> <p>Rubber is sticky or has holes, tears, or splits or soft or sticky spots which allow air to enter mask assembly.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

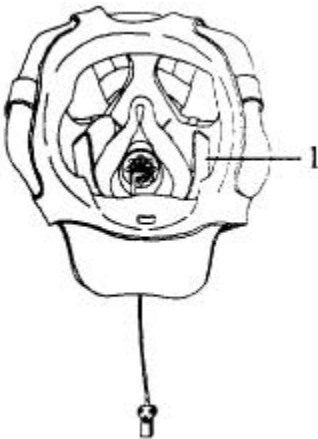
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
				

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

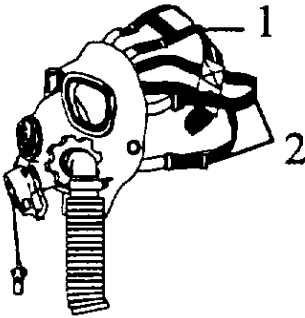
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
6	After	Head Harness	<p>a. Check head harness (1) for loss of elasticity.</p>  <p>b. Check for dirt. Check straps (2) for cuts, tears, missing tabs, or deterioration such as mildewing or fraying.</p>	<p>Head Harness will not hold mask assembly firmly against face.</p> <p>Head harness is cut, torn, frayed, has missing tabs, or has deteriorated</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

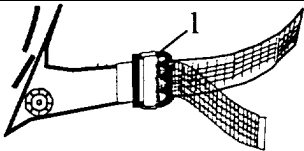
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
7	After	Buckles	 <p>NOTE All exposed bare metal buckle surfaces should be covered with finish (black lacquer).</p> <ol style="list-style-type: none"> Make sure finish on buckles (1) is not chipped or scratched exposing bare metal. Check for missing or broken buckles. Look at buckles for damage or corrosion. Pull on head harness straps and make sure buckles hold straps tight. 	<p>Buckles are missing or broken</p> <p>Will not hold strap.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
8	After	Outlet Valve Disk and Outlet Valve Cover	<p style="text-align: center;"><u>WARNING</u></p> <p>DO NOT use the mask assembly if outlet valve disk or outlet valve cover is missing or damaged The mask assembly will leak.</p> <p style="text-align: center;"><u>WARNING</u></p> <p>DO NOT use tissue paper or a paper towel to remove dirt or moisture from outlet valve cover, outlet valve disk, or outlet valve seat Paper may break up and lodge in outlet valve area causing leakage.</p>	

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

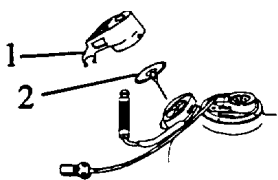
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			 <p>a. Grasp tab at bottom of outlet valve cover (1) and lift bottom portion of outlet valve cover. Wipe off moisture from outlet valve disk (2) with a clean cheesecloth (Item 3, app D).</p> <p>b. Look at outlet valve disk for nicks, tears or rips. Check to see if outlet valve disk is dirty (clean as required).</p>	<p>Outlet valve disk is missing, sticking, nicked, torn, ripped, dirty and cannot be cleaned or will not seat properly.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

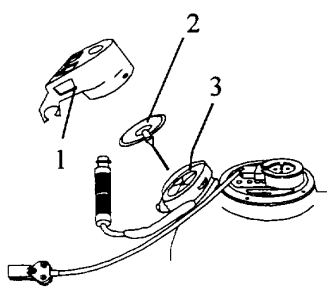
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
				

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p>c. Smooth outlet valve disk (2) so it lies flat on outlet valve seat (3).</p> <p>d. Check outlet valve seat for dirt (clean as required), nicks, or cracks.</p> <p>e. Check outlet valve cover (1) for cuts, tears, or holes. Look at inside of outlet valve cover for dirt or moisture. Wipe off any dirt or moisture with a soft, clean dry cheesecloth (item 3, app D).</p>	<p>Outlet valve seat is dirty and cannot be cleaned; nicked or cracked.</p> <p>Outlet valve cover is cut, torn, has holes, or will not seat firmly over outlet valve.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
9	After	Internal and External Drink Tubes	<p>a. Check that internal drink tube (1), external drink tube (2), and quick disconnect coupling (3) are present. Look for cracks or cuts on internal/external drink tubes.</p> <p>b. Check the external drink tube and quick disconnect coupling for leaks, dirt or damaged areas.</p> <p>c. Check quick disconnect coupling and external drink tube for tight connections.</p>	<p>Internal drink tube, external drink tube or quick disconnect coupling is missing, or has cuts or cracks.</p> <p>External drink tube or quick disconnect coupling leaks, is dirty or damaged.</p> <p>Internal or external drink tube is loose.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

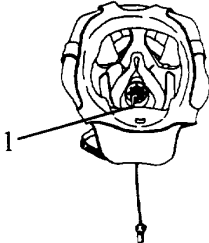
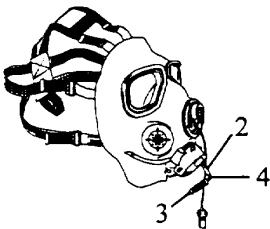
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p>d. Check the AQD elbow (4) for a bend that affects drinking system or does not allow the AQD to be stowed.</p> <p>e. Check the drinking system for proper function (para 2-12).</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>	<p>Drinking system restricted or AQD cannot be stowed.</p> <p>Drinking system leaks.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
10	After	Airflow Deflector	<p>a. Check that airflow deflector (1) is securely mounted inside mask assembly (2), and that both buttons (3) on the airflow deflector are in the mounting holes (4) of the mask assembly and are not broken.</p> <p>b. Check mounting holes in mask assembly for cuts or tears.</p>	<p>Airflow deflector is not mounted properly in mask assembly. Flanges are broken or will not mount in mask assembly.</p> <p>Mounting holes in mask assembly are cut or torn.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

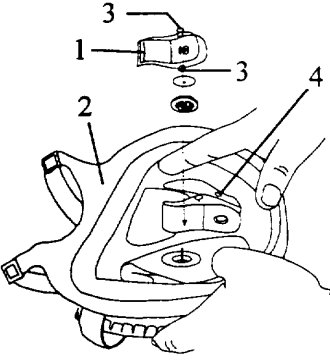
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
				

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
11	After	Inlet Valve	<p style="text-align: center;"><u>WARNING</u></p> <p>DO NOT use mask assembly if valve body or inlet valve disk are missing. The mask assembly will leak.</p> <p style="text-align: center;">NOTE</p> <p>DO NOT remove the inlet valve from the mask assembly.</p> <p>If you have an M42A2, unscrew star knob.</p> <p>a. Check that inlet valve disk (1) and valve body (2) are present. Wipe off moisture from inlet valve disk with a clean cheesecloth (Item 3, app D).</p>	Inlet valve disk or valve body is missing.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

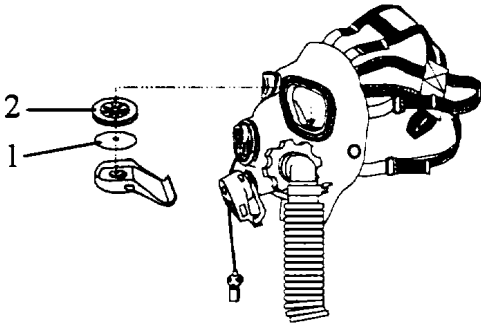
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p>b. Look at inlet valve disk (1) and valve body (2) for nicks, tears, or rips. Check to see if inlet valve disk is dirty (clean as required). Blow on inlet valve disk to make sure it is not stuck to valve body.</p> 	<p>Inlet valve disk or body is sticking, nicked, ripped, torn, dirty and cannot be cleaned or will not seat properly (disk) or does not provide a sealing surface (body).</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
12	After	Nosecup Assembly	<p>a. Check that nosecup (1) is not pulled away from back of front voicemitter housing.</p> <p>b. Check that nosecup and nosecup valve seats (2) are free of dirt and not damaged. Check nosecup for cracks, cuts, or holes.</p> <p>c. Check that nosecup valve disks (3) are present. Rotate nosecup valve disks to be sure they are not stuck; check that nosecup valve disks are not curled or torn.</p>	<p>Nosecup is pulled away from front voicemitter housing.</p> <p>Nosecup is dirty, cracked, cut or has holes in it. Nosecup valve seats are dirty or damaged.</p> <p>Nosecup valve disks are missing, curled, torn, or stuck to nosecup valve seat.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

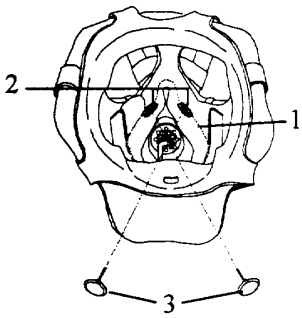
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p>d. Check that nosecup valve disks (3) are seated on inside of nosecup.</p> 	<p>Nosecup valve disks are seated on outside of nosecup.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
13	After	Front and Side Voicemitter	<p>a. Check retaining ring (1) on front voicemitter (2) for corrosion, cracks, or nicks. Try to tighten retaining ring by turning clockwise using thumb and three fingers. If loose, report to your NBC NCO.</p> <p>b. Check retaining ring on side voicemitter (3) for corrosion, cracks or nicks. Try to tighten retaining ring by turning clockwise using thumb and three fingers. If loose, report to your NBC NCO.</p> <p>c. Check front voicemitter and side voicemitter for dents, cracks, or punctures. Make sure that the four beads in the center of each voicemitter are facing out.</p>	<p>Retaining ring is cracked or loose.</p> <p>Retaining ring is cracked or loose.</p> <p>Front and/or side voicemitter is cracked, punctured or installed backward.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

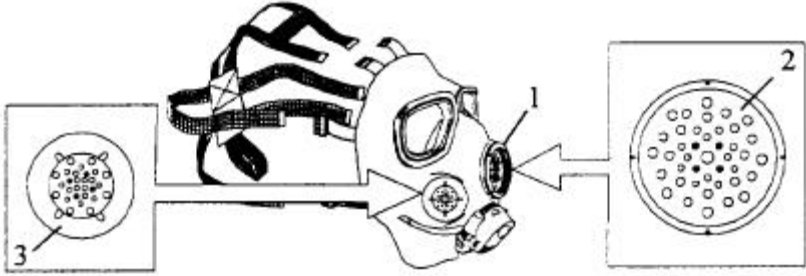
Item No.	Interval	Location Item to Check/Service	Procedure	Not fully Mission Capable
				

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
14	After	Carrier	<p>a. Empty carrier (1) and check inside for dirt, torn straps, or missing hardware Make sure that required unit information is in the ID pocket (2)</p> <p>b. Check for mildew, solvents, or abrasive materials which might harm mask assembly. Check seams for broken stitches.</p> <p>c. Check hook and pile fasteners (3) for dirt. If dirty, clean with a stiff bristle brush (item 2, App D). Make sure hook and pile fasteners are secure on flap.</p>	<p>Carrier straps are torn or hardware is missing.</p> <p>Mildew, solvents, or abrasive materials are present. Seams are broken or stitching is loose.</p> <p>Hook and pile fasteners are loose or clogged with dirt.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

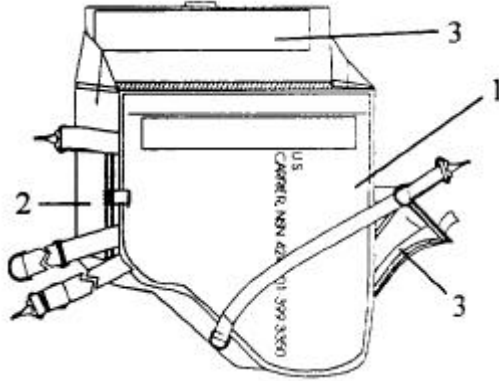
Item No.	Interval	Location Item to Check/Service	Procedure	Not fully Mission Capable
				

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
COMMON AFTER PMCS CHECKS (Cont)				
15	After	Waterproof Bag	<p>a. Check waterproof bag (1) for cracks, tears, holes, and/or brittleness.</p> <p>b. Check that rubber bands (2) are in bag and are not sticky, broken, or brittle.</p>	<p>Waterproof bag is tom, has holes, or is brittle.</p> <p>Rubber bands are missing or are sticky, broken, or brittle.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
16	After	Mask Assembly	<p>NOTE If you have an M42A2 mask, do the M42A2 PECULIAR PMCS CHECKS before you do step 16.</p> <p>Make sure that you reinstall the following items prior to performing step 16:</p> <p>Outlet valve cover (para 3-3), outserts (para 3-2), and filter canister (140A1 - para 3-11 or M42A2 - para 3-14).</p> <p>a. Check mask assembly for proper function. (para 2-9). Stow M40A1 mask (para 2-16) or M42A2 mask (para 2-17) after completion of test for proper function (para 2-9).</p>	Proper seal cannot be obtained.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
M42A2 PECULIAR AFTER PMCS CHECKS				
1	After	Hose Assembly	<p style="text-align: center;"><u>WARNING</u></p> <p>It is important to properly clean your mask. A dirty mask will compromise its ability to provide maximum protection.</p> <p>a. Check hose assembly (1) for splits, cracks, or breaks.</p> <p>b. Pull gently on hose to make sure that the star knob (2) will not pull loose from hose assembly.</p> <p>c. Remove filter canister (para 3-14). Check that the gasket (3) is present. Check threads on filter canister connector hose fitting (4) for damage or dirt. Gently pull on filter canister connector hose fitting to make sure it will not pull free from the hose.</p>	<p>Hose is cracked or broken.</p> <p>Star knob pulls loose from hose assembly.</p> <p>Gasket is missing. Canister connector hose fitting threads are damaged or dirty. Canister connector hose fitting pulls free from hose.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

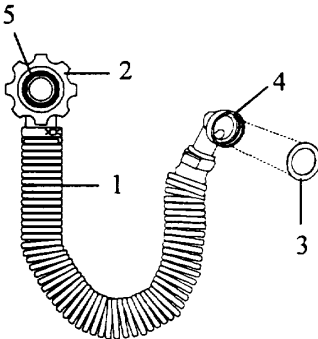
Item No.	Interval	Location Item to Check/Service	Procedure	Not fully Mission Capable
			<p>d. Unscrew star knob from mask assembly. Check threads (5) on the star knob for damage or dirt.</p> 	Thread on star knob is damaged or dirty.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

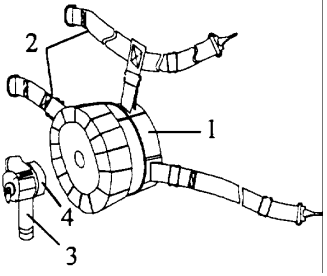
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
M42A2 PECULIAR AFTER PMCS CHECKS (Cont)				
2	After	Canister Carrier	<p>a. Check canister carrier (1) for cracks, breaks, or other damages.</p>  <p>The diagram shows a cylindrical canister carrier (1) with a central opening. It is connected to a handle assembly (2) at the top and a mounting bracket (3) at the bottom. A small component (4) is attached to the side of the carrier. The carrier has a ribbed texture.</p>	Canister carrier is cracked, broken, or damaged.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

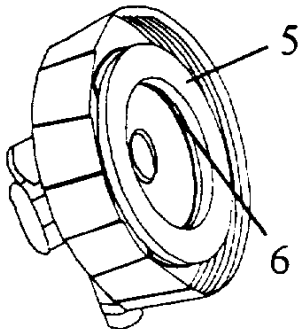
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
2	After	Canister Carrier (Cont)	<p>b. Check for frayed or cut straps (2).</p> <p>c. Check that AQD (3) is locked on and seal (4) is present. (para 3-14)</p> <p>d. Check that gasket (5) is present and not separated from the plastic slip ring (6).</p> 	<p>Armor quick disconnect or seal is missing.</p> <p>Gasket is missing cracked, or chipped.</p>

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

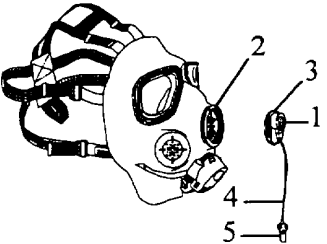
Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
M42A2 PECULIAR AFTER PMCS CHECKS (Cont)				
3	After	Detachable Microphone	<p>a. Check to see that detachable microphone (1) is attached to the mask assembly securely and fully seated against front voicemitter (2).</p> 	Detachable Microphone is not fully seated.

Table 2-1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

Item No.	Interval	Location	Procedure	Not fully Mission Capable
		Item to Check/Service		
			<p>b. Check plastic retainer (3) for any damage</p> <p>c. Check cord (4) for breaks, cuts or abrasions and damage to female connector (5).</p> <p>d. Check front voicemitter (2) and detachable microphone (1) for dirt and mud</p> <p style="text-align: center;">NOTE Return to COMMON PMCS AFTER CHECKS, item 16.</p>	<p>Plastic retainer lost its tension or is broken. Cord and/or connector is damaged.</p> <p>Front voicemitter housing and/or detachable microphone is dirty enough to affect voice transmission.</p>

2-67 (2-68 blank)

2-6. Filter Canister Replacement Criteria

WARNING

HEALTH/ENVIRONMENTAL HAZARD; There are two Mask Filter Canisters, the C2 and the C2A1.

The C2 filter canister contains Chromium VI and damaged or unusable filter canisters are considered Hazardous Waste. (Chromium VI is a known carcinogen if inhaled or swallowed.)

The C2A1 filter canister is chromium-free but must continue to be disposed of in accordance with State and Local Environmental Laws.

DO NOT throw away damaged or unusable filter canisters as ordinary trash.

2-6. Filter Canister Replacement Criteria (Cont)

WARNING

DO turn in damaged or unusable filter canisters to your hazardous waste management office or Defense Reutilization and Marketing Office (DRMO).

NOTE

Dents, less than 1/4 inch deep, not on the edge of a seal will not impair performance of the filter canister.

- See FM 3-4, NBC Protection, for proper filter canister replacement criteria.

Section III. OPERATION UNDER USUAL CONDITIONS

2-7. General

- a. This section contains operator's instructions to put on and use the mask and additional authorized items under normal conditions. For operation under unusual conditions see para 2-19.
- b. For usual conditions, mask assembly shall be worn with second skin and hood attached.
- c. The following index will aid you in locating the proper procedure within this section:

INDEX

COMMON TASKS	Page
2-8. Donning Your Mask.....	2-73
2-9. Checking Your Mask Assembly for Proper Function	2-84
2-10. Connecting and Using the Drinking System.....	2-90
2-11. Disconnecting the Drinking System.....	2-96
2-12. Checking Drinking System for Proper Function.....	2-98
2-13. Removing Your Mask	2-100
2-14. Wearing Your Carrier (Three Ways).....	2-102
2-15. Cleaning of the Optical Inserts.....	2-105
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Section III. OPERATION UNDER USUAL CONDITIONS (Cont)

2-7. General (Cont)

INDEX (Cont)

	Page
M40A1 PECULIAR TASKS	
2-16. Stowing Your Mask and Additionally Authorized Items (M40A1).....	2-108
M42A2 PECULIAR TASKS	
2-17. Stowing Your Mask and Additionally Authorized Items (M42A2).....	2-118
2-18. Wearing the Filter Canister Carrier Without the Mask Carrier	2-130

COMMON TASKS

2-8. Donning Your Mask

WARNING

Stop breathing and close your eyes. Perform the steps for putting on your mask quickly. You must put the mask assembly on before you take another breath.

DO NOT wear contact lenses. Contact lenses will over correct vision while wearing optical inserts.

DO NOT change filter canister in a contaminated area.

CAUTION

DS2 may damage the voicemitter of the mask assembly. When exposed to DS2, remove filter canister and rinse your mask assembly in clean water. DO NOT wet the filter canister. Care must be taken not to scratch the outserts or eyelenses when handling the mask assembly.

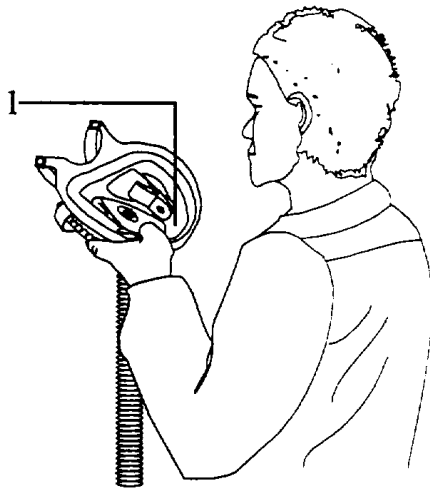
COMMON TASKS (Cont)

2-8. Donning Your Mask - (Cont)

- a. Stop breathing and close your eyes.
- b. Remove your helmet. Put helmet between your legs (above the knees) or hold your rifle between your legs and put helmet on the muzzle. If you drop your helmet, keep on masking; you can pick up your helmet later.
- c. Take off your glasses, if you are wearing them.
- d. Open mask carrier with one hand.
- e. With other hand, grasp mask assembly and remove it from carrier.

NOTE

Once you place your chin in the chin pocket, you will no longer be able to see because of the Quick Doff Hood draping over the eyelenses. Steps f through i. must be done by touch.



*HOOD NOT
SHOWN
FOR CLARITY*

- f. Put your chin in chin pocket (1) and press mask assembly snugly against your face.

WARNING

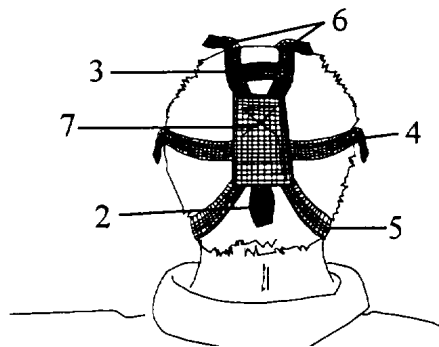
To prevent loss of air supply, DO NOT kink your hose.

COMMON TASKS (Cont)

2-8. Donning Your Mask - (Cont)

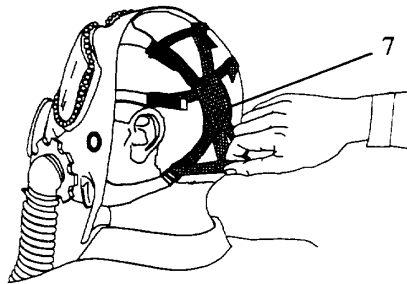
NOTE

Temple and forehead straps have already been adjusted during fitting.



- g. Grasp tab (2) and pull head harness (3) over your head. Be sure your ears are between the temple straps (4) and cheek straps (5). Make sure the head harness is pulled far enough over so that the forehead straps (6) are tight.

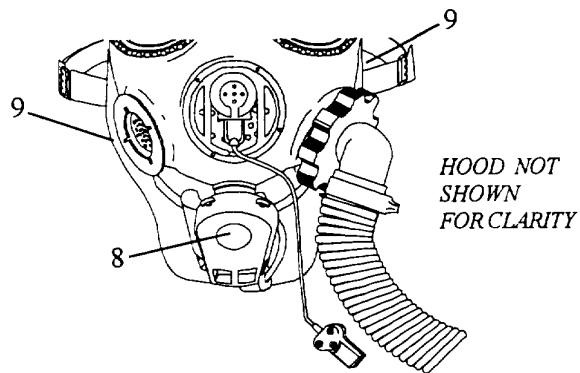
2-76



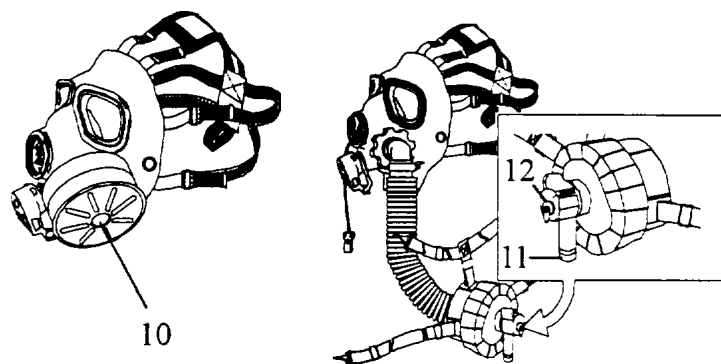
- h. While holding headpad (7) centered on the back of the head with one hand, use the other hand to tighten cheek straps one at a time, insuring straps lay flat against your head

COMMON TASKS (Cont)

2-8. Donning Your Mask - (Cont)



- i. Seal the outlet valve by pushing in on the center of the outlet valve cover (8) with one hand. Blow out hard to assure that any contaminated air is forced out around the edges of the mask assembly (9).



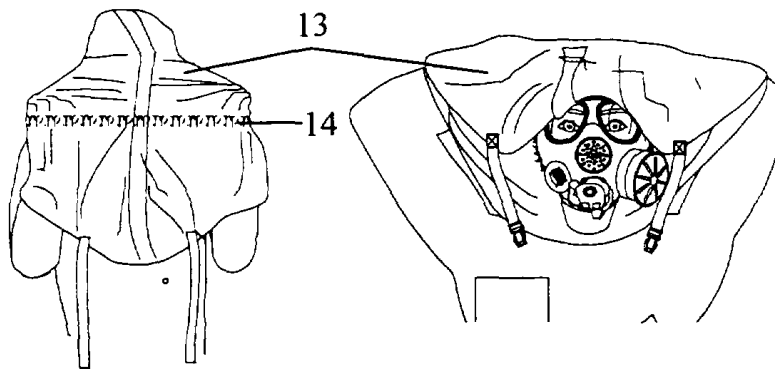
- j. With palm of hand, cover inlet port of filter canister (10) (M40A1) or cover inlet port (11) of armor quick disconnect (12) (M42A2) and breathe in. Mask assembly should collapse against your face, and remain so while you hold your breath. If it does, mask assembly is airtight. If the mask assembly does not collapse, check for hair, clothing, or other matter between mask assembly and your face. If mask assembly still does not collapse, notify your NBC NCO.
- k. Resume breathing.

COMMON TASKS (Cont)

2-8. Donning Your Mask - (Cont)

CAUTION

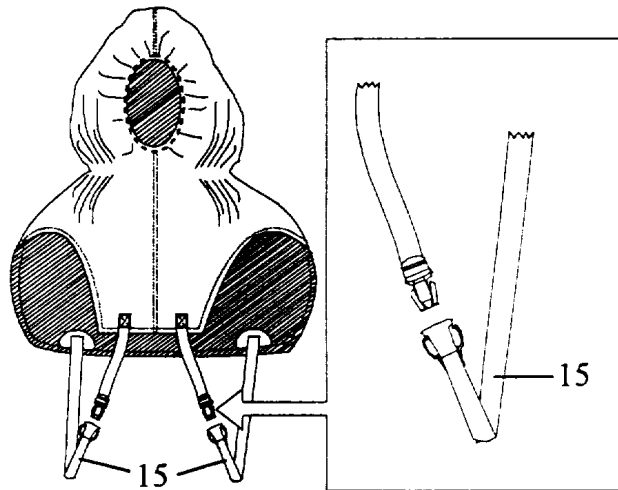
Be careful when pulling on hood. The hood could snag on the buckles of the head harness and tear.



- I. With both hands inside the quick doff hood (13), expand the elastic gathering (14) around the neck of the quick doff hood, stretch and carefully pull hood over your head so that the hood covers the head, neck, and shoulders.

NOTE

After you have adjusted the underarm straps on your hood, **DO NOT** loosen them.



- m. Fasten and adjust the underarm straps (15).

COMMON TASKS (Cont)

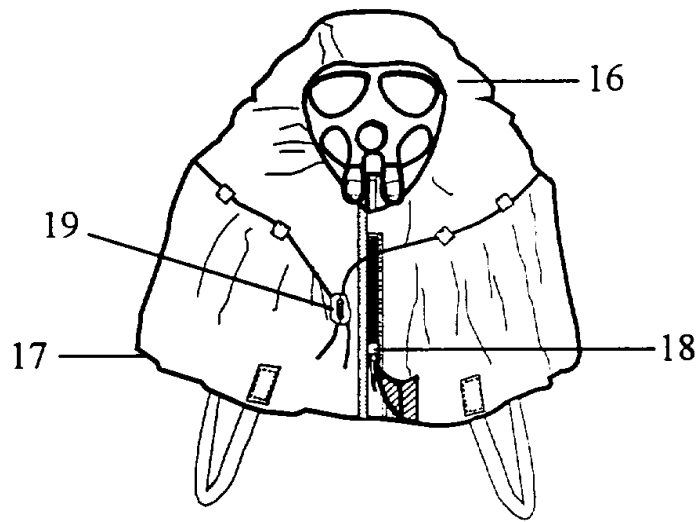
2-8. Donning Your Mask - (Cont)

- n. With one-piece hood (16) (USMC only), grasp back edge of hood skirt (17) and carefully pull hood over your head so that hood covers the head, neck, and shoulders. Pull slider (18) downward, zip front closed and tighten cord (19).

WARNING

When putting on your helmet, be sure not to break the seal between your mask assembly and the side of your face. Toxic agents could leak into your mask assembly.

- o. Put on helmet.
- p. Close carrier.
- q. Continue your mission.



COMMON TASKS (Cont)

2-9. Checking Your Mask Assembly for Proper Function

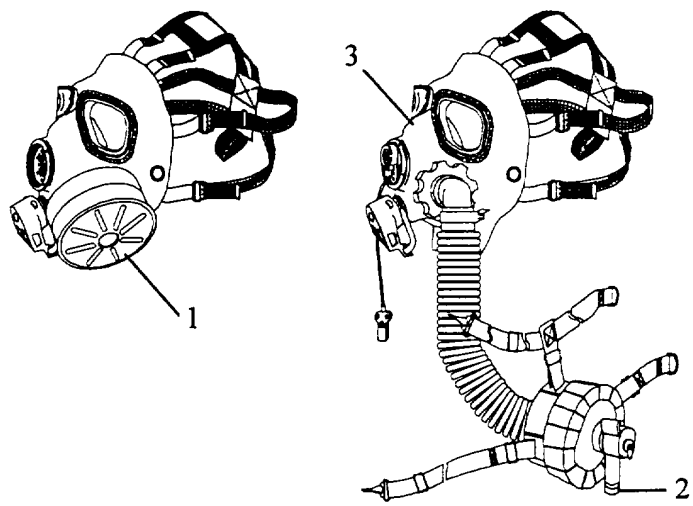
WARNING

You must check your mask assembly for leaks when fitted and each time mask assembly is put on. A leaky mask assembly will not protect you from toxic agents.

NOTE

Helmet should be removed before checking mask assembly for leaks, and should be donned when check is completed.

- a. Don your mask. (para 2-8)
- b. Press palm of your hand over inlet port (1) of filter canister (M40A1) or AQD opening (2) (M42A2).
- c. Breathe in lightly and hold your breath for a few seconds. Mask assembly (3) should collapse against your face, and remain so while you hold your breath. If it does, mask assembly is airtight and will protect you against toxic agents.



COMMON TASKS (Cont)

2-9. Checking Your Mask Assembly for Proper Function - (Cont)

NOTE

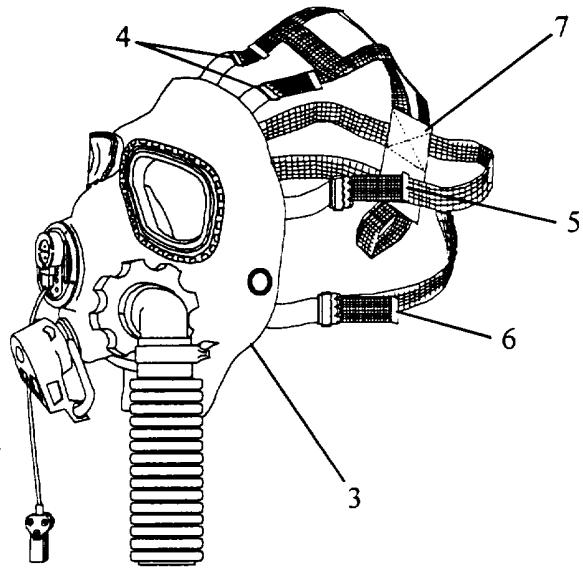
Leaks around the edge of your mask assembly are usually caused by bad fit. You may find a leak by feeling incoming air on your face, or you may feel a bulge at the edge of your mask assembly with your finger.

- d. Check for leaks at edge of mask assembly (3) by feeling for incoming air on your face.
- e. Check for bulge by running finger around edge of your mask assembly.

NOTE

After each corrective action, retest using steps b, c, d and e.

- f. Get rid of leaks by making minor adjustment to straps:
 - To stop leaks at forehead, adjust forehead straps (4).
 - To stop leaks at temple, adjust temple straps (5).
 - To stop leaks at cheek, adjust cheek straps (6) and be sure headpad (7) is centered at the back of your head.
 - To stop leaks at the throat or under the chin, lift mask assembly higher on face, seating chin firmly. Adjusting forehead straps and cheek straps may also help.



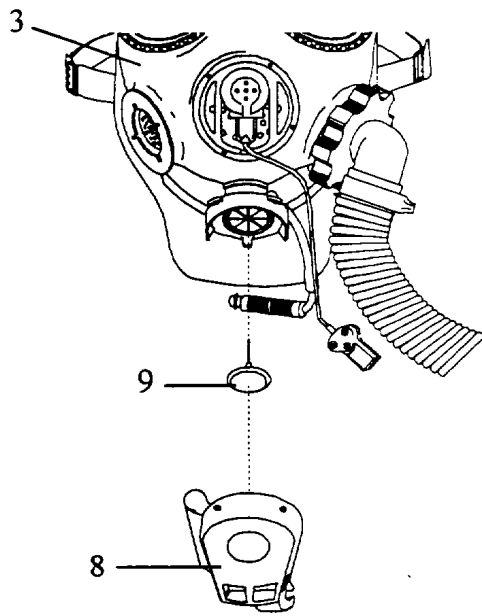
COMMON TASKS (Cont)

2-9. Checking Your Mask Assembly for Proper Function - (Cont)

- g. An air leak may be caused by an outlet valve disk that is faulty or held open by dirt. Do the following steps:
 - If breathing does not remove dirt, remove mask assembly (3), pull up outlet valve cover (8), lift up outlet valve disk (9), and wipe underside of outlet valve disk with a dry, lint-free cheesecloth (item 3, app D).
 - If outlet valve disk is sticking, massage lightly with one finger.
- h. Check to see if filter canister is properly installed (M40A1 - para 3-11 - M42A2 - para 3-14).

NOTE

If you have a bad seal and cannot stop leak, notify NBC NCO to repair or replace mask.



COMMON TASKS (Cont)

2-10. Connecting and Using the Drinking System

WARNING

DO NOT connect the drink tube to your canteen until all mating surfaces have been checked and are free of contamination. Chemical agents could be swallowed, resulting in sickness or death.

Fill your plastic water canteen before entering contaminated area, or, if in a contaminated area, fill canteen inside a protective shelter.

NOTE

To use the drink tube, your canteen must be equipped with an M1 canteen cap.

WARNING

Care should be taken not to break the mask assembly seal while pressing in on the outlet valve body.

NOTE

Water may leak into mask assembly if mouth is taken off internal drink tube while canteen is in the raised (drinking) position.

COMMON TASKS (Cont)

2-10. Connecting and Using the Drinking System - (Cont)

- a. Press in on top of outlet valve cover (1) until internal drink tube (2) can be grasped between your teeth.
- b. Steady mask assembly (3) and pull quick disconnect coupling (4) out of outlet valve cover.
- c. Flip open cover (5) on M1 canteen cap (6).

CAUTION

DO NOT push on the quick disconnect elbow. Damage may result. Hold quick disconnect coupling on rough gripping surface.

- d. Push quick disconnect coupling into M1 canteen cap so that pin (7) enters quick disconnect coupling.

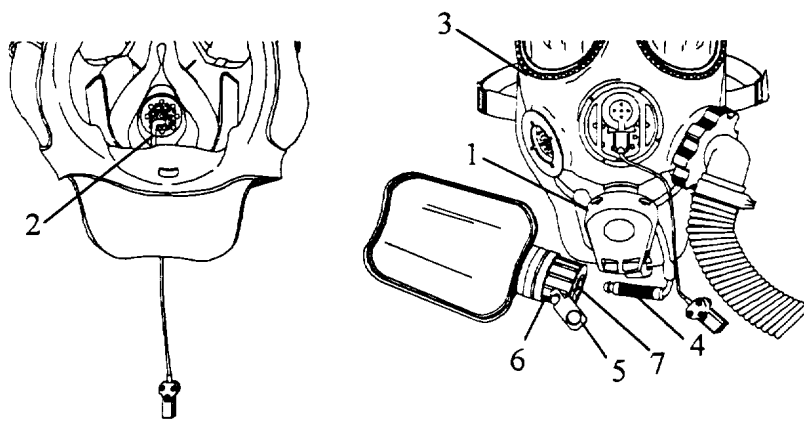
WARNING

If resistance is not felt, your drinking system is leaking. DO NOT drink. Replace canteen. If resistance is still not felt, notify NBC NCO to replace mask.

- e. Blow to create positive pressure. You should feel some resistance.

NOTE

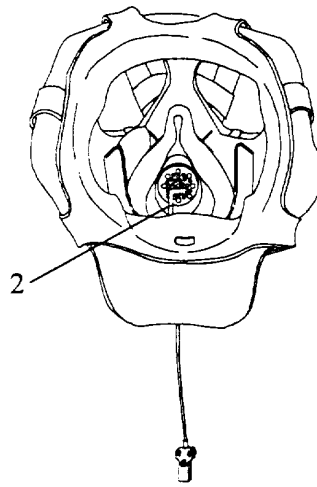
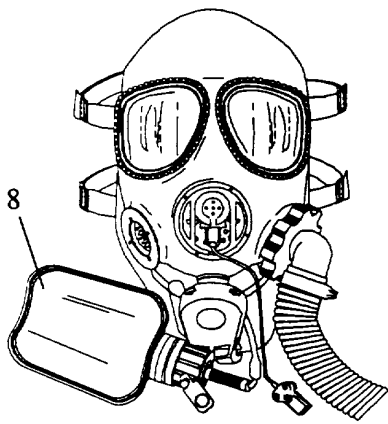
DO NOT tilt head back while drinking.



COMMON TASKS (Cont)

2-10. Connecting and Using the Drinking System - (Cont)

- f. If system does not leak, raise and invert canteen (8) and drink water from canteen.
- g. After several swallows, stop drinking and lower canteen. Blow into internal drink tube (2) to prevent canteen from collapsing. Repeat drinking procedure as required.
- h. Disconnect drinking system. (para 2-11).



COMMON TASKS (Cont)

2-11. Disconnecting the Drinking System

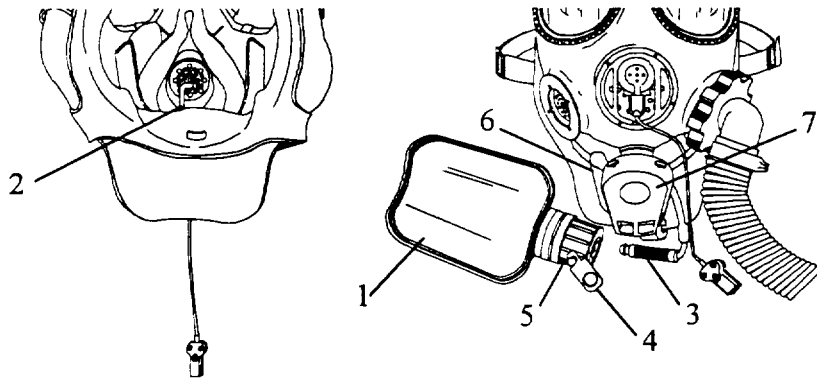
WARNING

To prevent possible leakage around mask assembly, DO NOT pull on external drink tube when removing canteen.

NOTE

When not in use, keep M1 canteen cap opening covered with provided flip down cover.

- a. Turn canteen (1) upright.
- b. Clear water from external drink tube by blowing into internal drink tube (2).
- c. Firmly grasp quick disconnect coupling (3) and pull canteen down and away to disconnect coupling.
- d. Blow to create positive pressure. You should feel some resistance.
- e. Release internal drink tube from mouth.
- f. Flip down cover (4) on M1 canteen cap (5) before stowing.
- g. Push quick disconnect coupling back into retainer (6) on outlet valve cover (7).



COMMON TASKS (Cont)

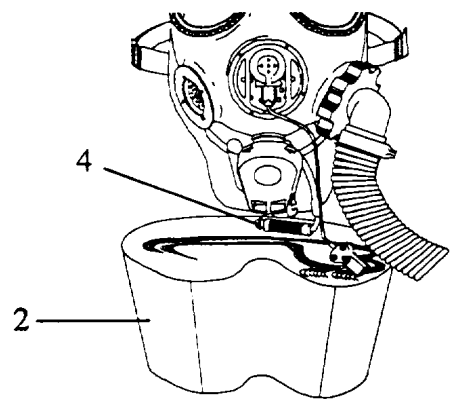
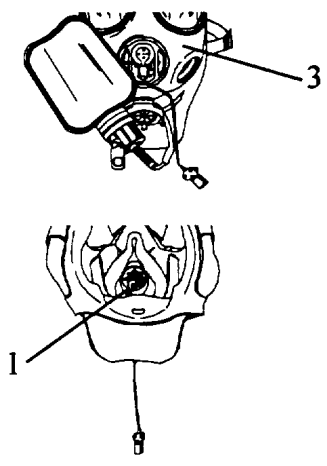
2-12. Checking Drinking System for Proper Function.

- a. Connect drinking system. (para 2-10).
- b. Grasp internal drink tube (1) between your lips.

WARNING

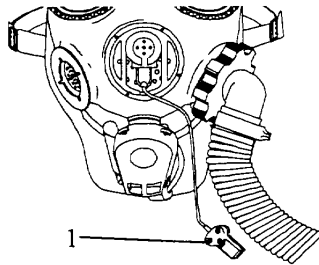
If resistance is not felt, drinking system is leaking. Notify NBC NCO to repair or replace mask.

- c. Blow into internal drink tube (1). If resistance is not felt, drinking system is leaking. Notify NBC NCO to repair or replace mask.
- d. A more positive test may be done on the external drink tube quick disconnect by the following procedure:
 - (1) Fill cup (2) full of water.
 - (2) Place mask assembly (3) on face.
 - (3) Dip quick disconnect (4) in cup filled with water.
 - (4) Blow into internal drink tube.
 - (5) Watch for bubbles in water. If no bubbles, quick disconnect is operational. If bubbles are detected, the quick disconnect is not operational. Notify NBC NCO to repair or replace mask.



COMMON TASKS (Cont)

2-13. Removing Your Mask

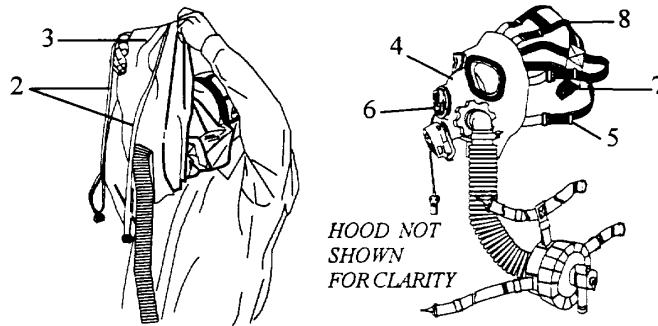


- a. Disconnect detachable microphone cable connection (1) from CVC helmet and remove helmet (M42A2 only).
- b. Unfasten underarm straps (2) on the hood.

CAUTION

Be very careful when removing quick doff hood. The quick doff hood could snag on the buckles of the head harness and tear.

2-100

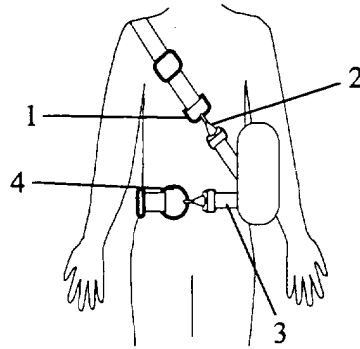


- c. Using both hands, grasp the elastic gathering around neck (3) at the back of the quick doff hood, and raise it above your head and pull to front of mask assembly (4).
- d. Loosen cheek straps (5).
- e. Place one hand on the front voicemitter (6) to hold mask assembly on face and with other hand grasp head harness tab (7) and pull the head harness (8) over the front of the mask assembly and remove mask assembly.
- h. Replace helmet.

COMMON TASKS (Cont)

2-14. Wearing Your Carrier (Three Ways)

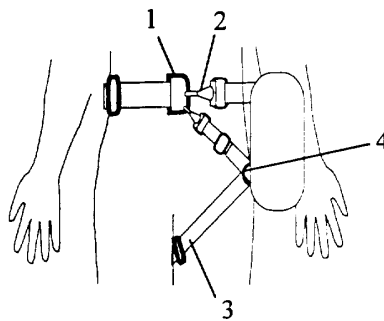
a. The shoulder carry method is as follows:



1. Attach shoulder strap D-ring (1) to hook (2) on mask carrier and adjust.
2. Hook waist strap (3) to round ring (4) and adjust.

2-102

b. The leg carry method is as follows:

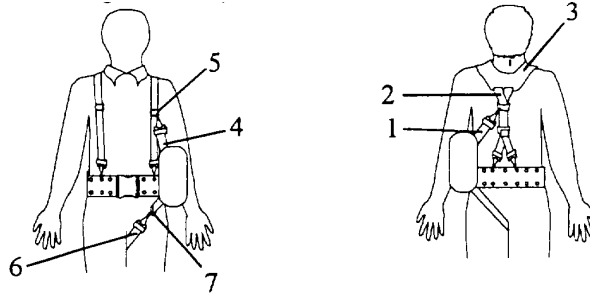


1. Put shoulder strap D-ring (1) around waist and attach to hook (2) on mask carrier and adjust.
2. Bring waist strap (3) from back and around inside of leg.
3. Pass waist strap through round ring (4) and hook to D-ring (1). Adjust.

COMMON TASKS (Cont)

2-14. Wearing Your Carrier (Three Ways) (Cont)

c. The load bearing harness carry method is as follows:



1. Attach short adjustable strap hook (1) to the eyelet of the back buckle (2) of the load bearing harness (3).
2. Attach short strap hook (4) to the eyelet of the left front buckle (5) of the load bearing harness.
3. Bring waist strap hook (6) from back and around inside of leg and attach to round ring (7).

2-15. Cleaning of the Optical Inserts

a. Optical Inserts (Wire).



1. Place mask (1) on a nonabrasive surface eyelenses down.

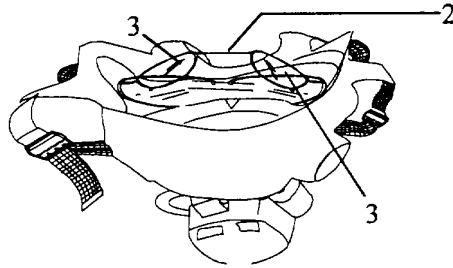
COMMON TASKS (Cont)

2-15. Cleaning of the Optical Inserts (Cont)

a. Optical Inserts (Wire) (Cont)

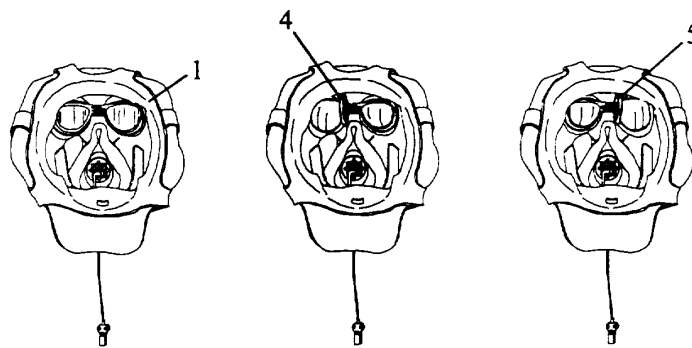
NOTE

Pull gently on optical lenses or the entire optical insert will be pulled from the mask.



2. Grasp wire nosepiece (2) and slowly pull optical lenses (3) away from mask until there is room available to wipe both sides of the lenses.
3. Clean the optical lenses with a cheesecloth (item 3, app D).
4. Push gently on wire nosepiece until the optical lenses snap back into place.

b. Optical Inserts (Plastic)



1. Place mask (1) on a nonabrasive surface eyelenses down.
2. Fold up one optical lens (4).
3. Clean the optical lens with a cheesecloth (item 3, app D).
4. Fold down the clean optical lens and fold up the other optical lens (5).
5. Clean the optical lens with a cheesecloth (item 3, app D).
6. Fold down the optical lens.

M40A1 PECULIAR TASKS

2-16. Stowing Your M40A1 Mask and Additionally Authorized Items

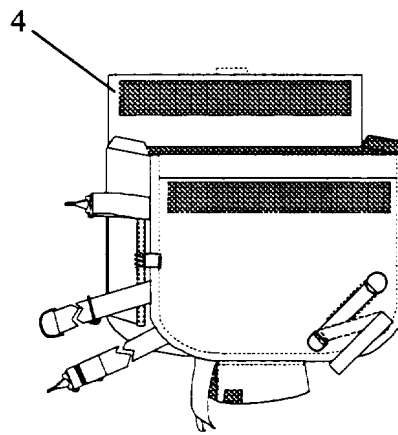
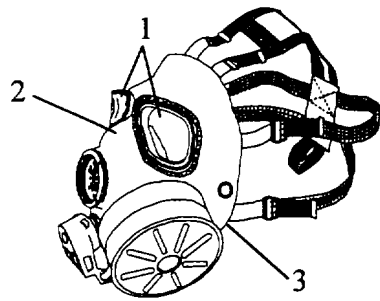
WARNING

Any solid matter (even grass) under valve disks will cause fogged eyelenses, discomfort, and leakage.

CAUTION

Abrasives such as sand and grit will scratch eyelenses. Be sure that outserts are installed on the mask assembly in the mask carrier.

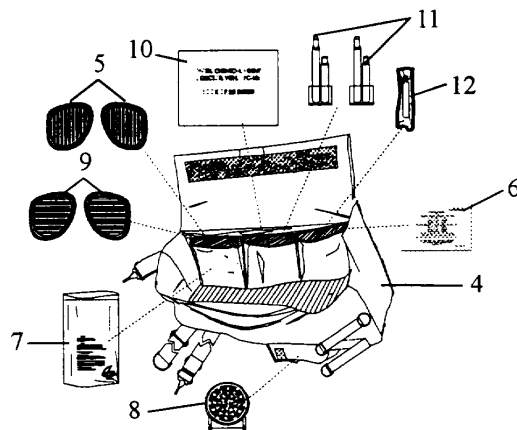
- a. Check that clear outserts (1) are installed on mask assembly (2) (para 3-2b).
- b. Check that the universal second skin (3) is on the mask assembly (para 3-4b).
- c. Check that your mask assembly is dry and free of oil and solvents before stowing (para 3-12).
- d. Check that interior of mask carrier (4) is free of dirt and trash or other unauthorized items.



2-16. Stowing Your M40A1 Mask and Additionally Authorized Items (Cont)

CAUTION

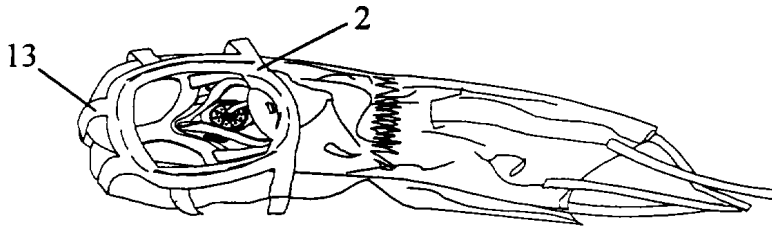
To avoid damage to the mask assembly, put only authorized items in your mask carrier.



CAUTION

DO NOT stow outserts with rubber ring rolled over the front of the outsert.

- e. Stow neutral gray outserts (5) in the left pocket. Stow the operator's manual (6) in the right pocket of the mask carrier (4). Stow the waterproof bag (7) in the left pocket. Stow the M7 audio frequency amplifier (8) in the outside bottom pocket and the ballistic outserts (9) in the left pocket. If issued, stow the M8 detector paper (10) and two Nerve Agent Antidote Kits (NAAK Mark I) (11) in the middle pocket; stow one Convulsive Antidote for Nerve Agent (CANA) (12) in the right pocket.

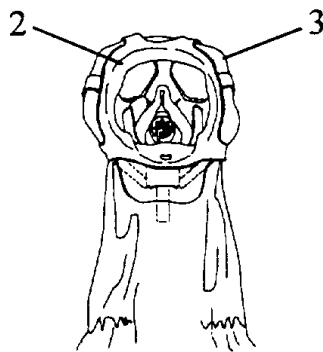


- f. Pull head harness (13) over front of mask assembly (2).

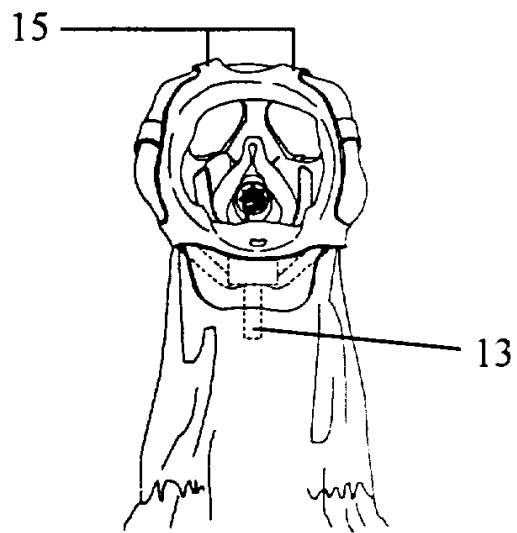
2-16. Stowing Your M40A1 Mask and Additionally Authorized Items (Cont)

CAUTION

Make sure the inside surface of the mask assembly is smooth and there is no distortion. Stowage of the mask without smoothing inner surfaces may result in creases in the mask which will leak.

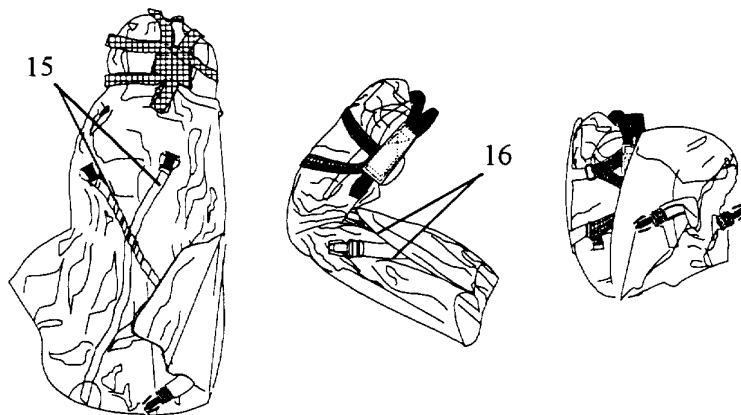


- g. Smooth the universal second skin (3) over the front of the mask assembly (2).



- h. Pull the forehead straps (15) tight over the universal skin and pull the head harness down (13) as far as possible by pulling on the harness tab (14).

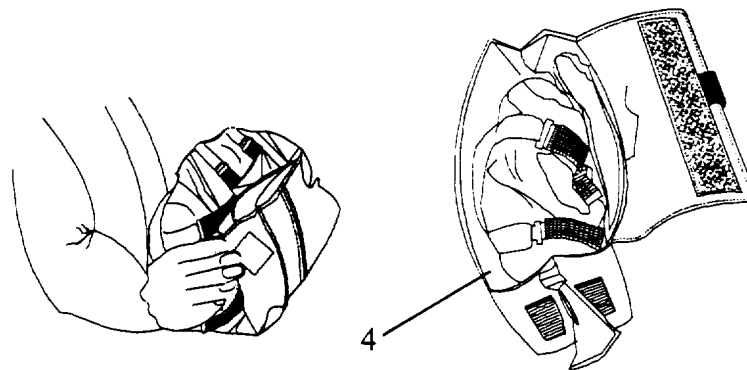
2-16. Stowing Your M40A1 Mask and Additionally Authorized Items (Cont)



- i. Hold front of mask assembly in a horizontal position and smooth the hood over it.
- j. Store the ends of the underarm straps (15) in a "V".
- k. Fold the two edges of the hood (16) over the underarm straps to create a "V".
- l. Fold the "V" up to cover the eyelenses. Do not let the hood cover the chin opening.

CAUTION

To avoid damage to the mask assembly, DO NOT fold mask assembly when placing it in the mask carrier.

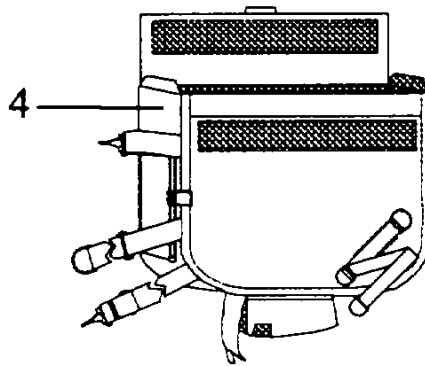


m. Hold the mask assembly up and put it in the mask carrier (4) with the lenses facing away from your body.

2-16. Stowing Your M40A1 Mask and Additionally Authorized Items (Cont)

CAUTION

It is important to completely close the velcro on the mask carrier cover. Failure to do this will result in collection of debris and damage to the mask.



n. Close the mask carrier (4). Seal the entire velcro surface.

NOTE

Whenever possible, store your mask assembly in closed mask carrier in a cool, dry place.

If stowed for more than 30 days, install faceform to prevent permanent set.

It is preferable to hang the mask carrier by the shoulder strap or the hook on the short strap.

M42A2 PECULIAR TASKS

2-17. Stowing Your M42A2 Mask and Additionally Authorized Items

WARNING

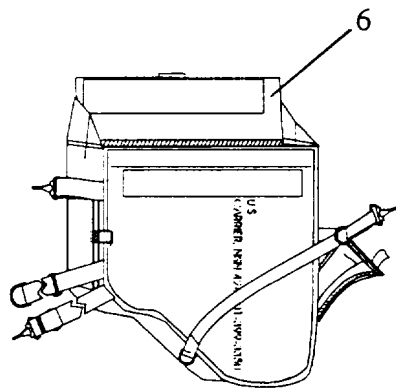
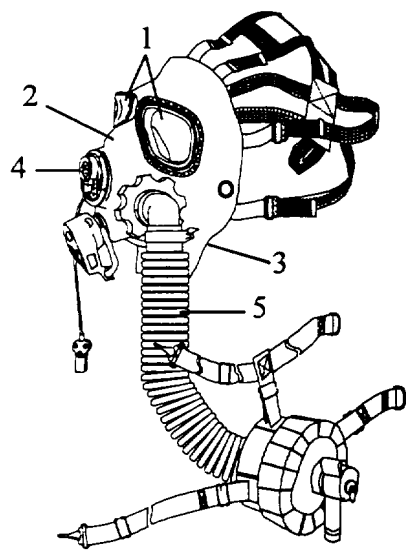
Any solid matter (even grass) under valve disks will cause fogged eyelenses, discomfort, and leakage.

CAUTION

Abrasives such as sand and grit will scratch eyelenses. Be sure that outserts are installed on the mask assembly in the mask carrier.

- a. Check that clear outserts (1) are installed on mask assembly (2) (para 3-2b).
- b. Check that the universal second skin (3) is on the mask assembly (para 3-4b).
- c. Check that the detachable microphone (4) is on the mask assembly (para 3-13b).
- d. Check that the hose assembly (5) is properly secured to the mask assembly (para 3-16b).
- e. Check that your mask assembly is dry and clean before stowing.
- f. Check that interior of mask carrier (6) is free of dirt and trash or other unauthorized items.

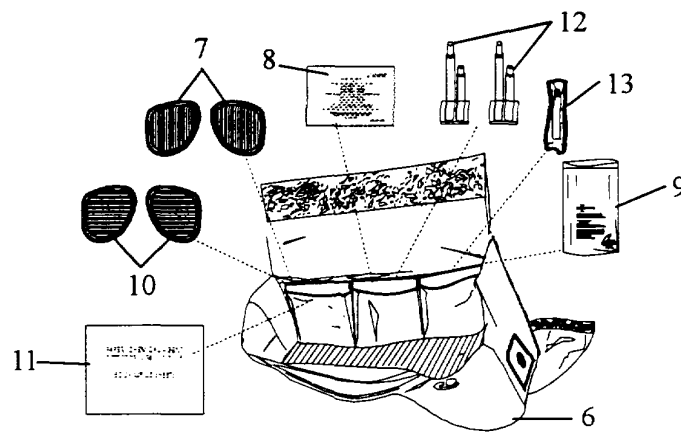
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2-17. Stowing Your Mask and Additionally Authorized Items (M42A2) (Cont)

CAUTION

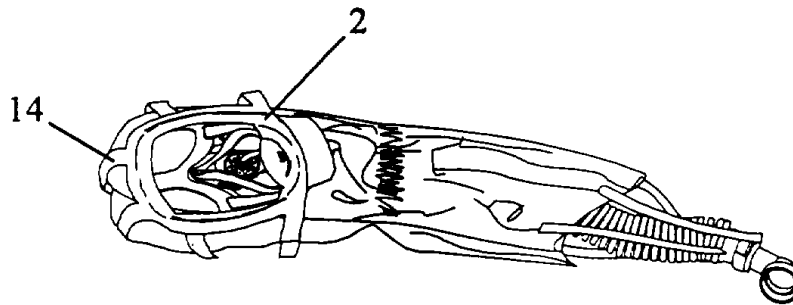
To avoid damage to the mask assembly, put only authorized items in your mask carrier.



CAUTION

DO NOT stow outserts with rubber ring rolled over the front of the outsert.

- g. Stow neutral gray outserts (7) in the left pocket. Stow the operator's manual (8) in the center pocket of the mask carrier (6). Stow the waterproof bag (9) in the right pocket. Stow the ballistic outserts (10) in the left pocket. If issued, stow the M8 detector paper (11) and two Nerve Agent Antidote Kits (NAAK Mark I) (12) in the middle pocket; stow one Convulsive Antidote for Nerve Agent (CANA) (13) in the right pocket.

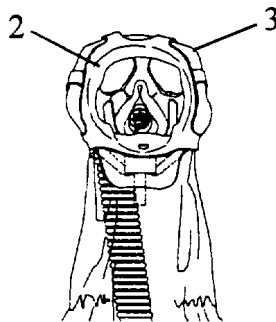


- h. Pull head harness (14) over front of mask assembly (2).

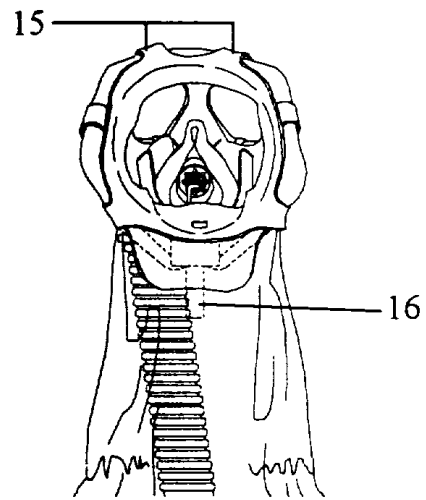
2-17. Stowing Your M42A2 Mask and Additionally Authorized Items (Cont)

CAUTION

Make sure the inside surface of the mask assembly is smooth and there is no distortion. Stowage of the mask without smoothing inner surfaces may result in creases in the mask which will leak.

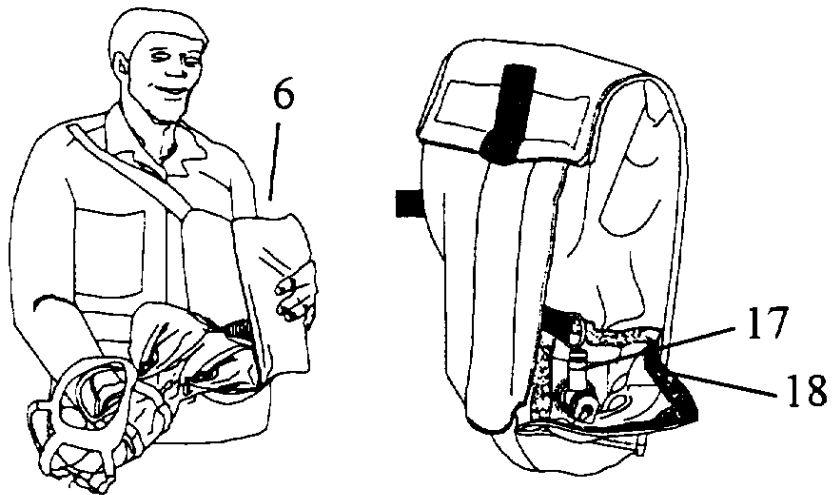


- i. Smooth the universal second skin (3) over the front of the mask assembly (2).

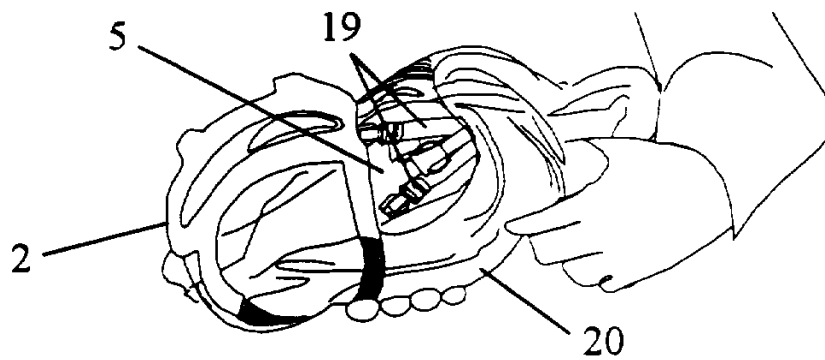


- j. Pull the forehead straps (15) tight over the universal skin and pull the head harness down (14) as far as possible by pulling on the harness tab (16).

2-17. Stowing Your M42A2 Mask and Additionally Authorized Items (Cont)

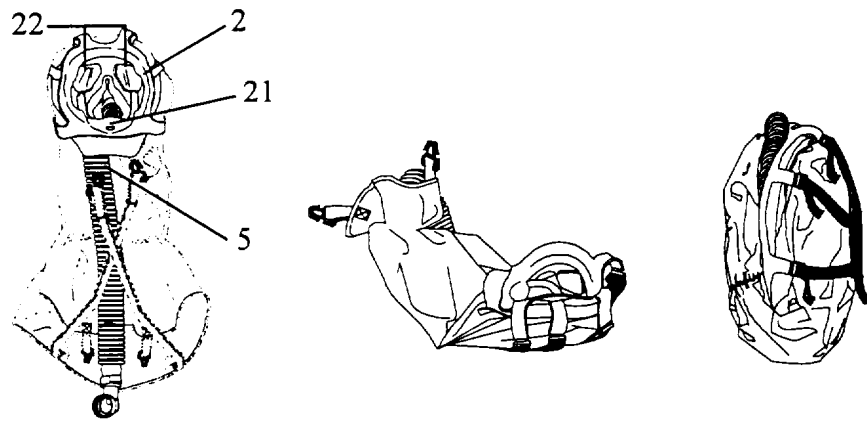


- k. Install hose filter canister and canister carrier into mask carrier (6) with armor quick disconnect coupling (17) completely through the side opening (18) in the mask carrier.



- l. Hold front of mask assembly (2) in a horizontal position and smooth the hood (20) over it.
- m. Store the ends of the underarm straps (19) in a "V".
- n. Wrap the two edges of the hood over the underarm straps and around the hose (5).

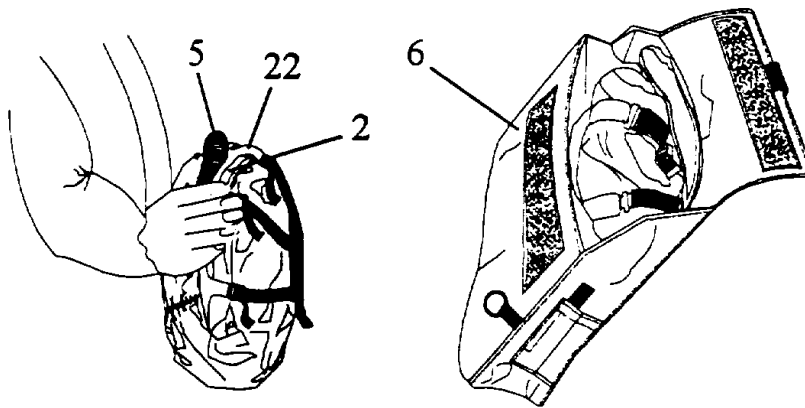
2-17. Stowing Your M42A2 Mask and Additionally Authorized Items (Cont)



- o. Grasp the hose (5) through the hood and align the hose to point down toward the chin (21).
- p. Fold the hose into the inside of the mask assembly (2).

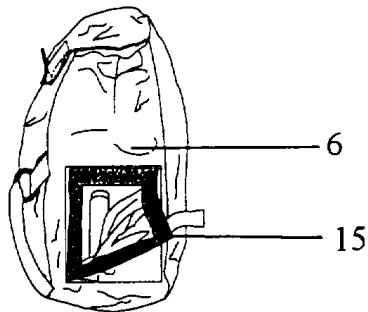
CAUTION

To avoid damage to the mask assembly, DO NOT fold mask assembly when placing it in the mask carrier.



- q. Grasp the hose (5) and mask (2) at the eyelenses (22).
- r. Insert the mask assembly into the mask carrier (6) with eyelenses facing away from body.

2-17. Stowing Your M42A2 Mask and Additionally Authorized Items (Cont)



CAUTION

It is important to completely close the velcro on the mask carrier cover. Failure to do this will result in collection of debris and damage to the mask.

- s. Close the mask carrier (6). Seal the entire velcro surface.
- t. Close outside armor quick disconnect pocket (18).

NOTE

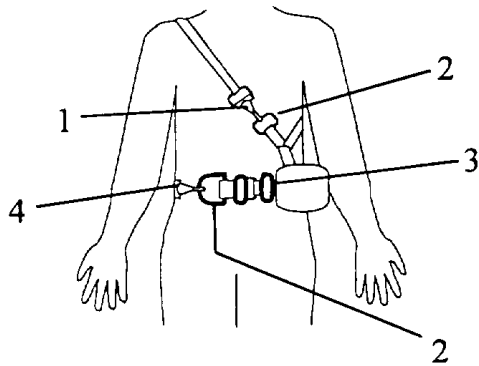
Whenever possible, store your mask assembly in closed mask carrier in a cool, dry place.

If stowed for more than 30 days, install faceform to prevent permanent set.

It is preferable to hang the mask carrier by the shoulder strap or the hook on the short strap.

M42A2 PECULIAR TASKS (Cont)

2-18. Wearing the Filter Canister Carrier Without the Mask Carrier.



- a. Remove the filter canister carrier from the mask carrier.
- b. Snap the shoulder strap hook (1) into the D-ring (2) and place the shoulder strap over the head and on the right shoulder and adjust the strap.
- c. Place the waist strap (3) around your waist and snap the hook (4) into the D-ring (2) and adjust.

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Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2-19. Operation In Unusual Weather

This section applies to both the M40A1 and the M42A2 masks.

CAUTION

Keep filter canister dry. Excessive moisture could clog filter canister or saturate absorbent material and make it useless.

NOTE

Always use mask assembly with outserts installed when operating in cold climate to help prevent fogging.

a. General Instructions You Must Follow In Cold Weather.

1. During periods between repeated uses, take mask out of carrier and shake or flex mask to remove ice and snow.

CAUTION

DO NOT warm up the mask near a heater or open flame. The plastic and rubber parts of mask could be damaged.

2. Warm mask when you can.
3. Dry mask with cheesecloth (item 3, app D), in a warm indoor area.

2-19. Operation In Unusual Weather (Cont)

4. Carefully dry outlet (1) and noseclip valves (2).
5. Before entering a warm area from subzero temperatures, remove frost and snow from mask.

b. Putting on Your Mask in Cold Weather.

Perform the normal procedure for donning your mask (para 2-8), but keep in mind the following points in cold weather.

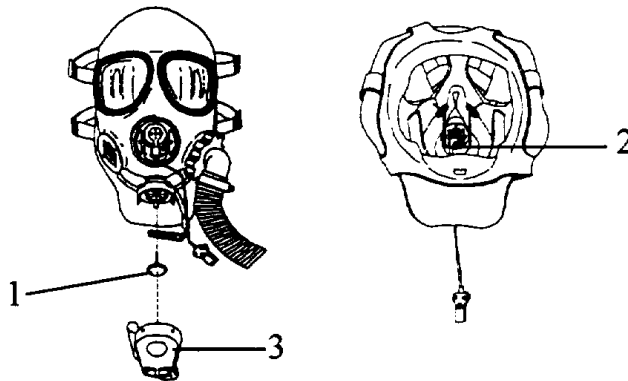
1. Remove helmet, mittens, and gloves and make other adjustments to your garments as necessary to put on your mask properly.

WARNING

In cold weather DO NOT clear mask by exhaling a large volume of air. Moist air will frost eyelenses and impair vision.

2. Exhale slowly and lightly. If you feel resistance when exhaling, the outlet valve may be sticking.

3. If outlet valve disk (1) sticks to outlet valve seat, do the following:
Lift bottom of outlet valve cover (3).
Massage outlet valve disk with one finger, only when you exhale, until outlet valve disk functions properly.
Reseat bottom of outlet valve cover.



4. Check your mask assembly for proper function (para 2-9).
5. Resume normal breathing.
6. Put on your gloves, mittens, and helmet as necessary.

b. Removing Your Mask in Cold Weather.

WARNING

If you become overheated in extremely cold weather, do not remove your mask outdoors until your face and head have cooled and any sweat has dried. Frostbite may result if mask is removed while your face is still wet.

1. Remove helmet, mittens, and gloves and make other adjustments to your garments as necessary to remove your mask properly.
2. Remove your mask and shake frost and snow from the mask.
3. Stow your mask. (M40A1 - para 2-16; M42A2 - para 2-17)
4. Put on your gloves, mittens, and helmet as necessary.

**CHAPTER 3
MAINTENANCE INSTRUCTIONS**

Section I. LUBRICATION INSTRUCTIONS

No lubrication is required for either the M40A1 or the M42A2 mask.

Section II. TROUBLESHOOTING

Perform PMCS procedures (table 2-1).

Section III. MAINTENANCE PROCEDURES

3-1. General

- a. This section contains step-by-step procedures for maintaining the M40A1 and the M42A2 masks.
- b. The section is divided into those tasks which are common to the M40A1 and the M42A2, those tasks which are peculiar to the M40A1, and those tasks which are peculiar to the M42A2. Common tasks are illustrated with the M42A2.
- c. You, the operator, are authorized to inspect and service the mask and additionally authorized items. It is your responsibility to notify your NBC NCO or officer of all defects and of maintenance requirements not authorized in this manual.

Section III. MAINTENANCE PROCEDURES (CONT)

3-1. General (Cont)

d. The following index will aid you in locating the proper procedure within this section:

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Common Tasks	Page
3-2. Removing and Installing the Outserts.....	3-4
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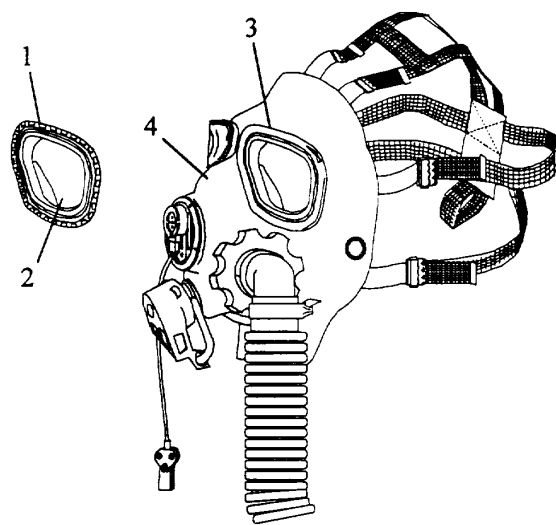
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3-15. Removing and Installing the Armor Quick Disconnect.....	3-48
3-16. Removing and Installing the Hose Assembly	3-50
3-17. Mask Servicing (M42A2).....	3-52

COMMON

3-2. Removing and Installing the Outserts

- a. Removal.
 - 1. Roll rubber ring (1) of outsert (2) from behind eyering (3).
 - 2. Lift outsert from mask assembly (4).
 - 3. Repeat steps 1 and 2 to remove the other outsert.

- b. Installation.
 - 1. Roll rubber ring forward all around edge of outsert.
 - 2. Lay outsert over eyering and turn rubber ring down all around eyering.
 - 3. Repeat steps 1 and 2 to install the other outsert.



COMMON (Cont)

3-3. Removing and Installing the Outlet Valve Cover

a Removal.

1. Remove external drink tube (1) from tab (2) on outlet valve cover (3).
2. Remove quick disconnect coupling (4) from the outlet valve cover retainer (5).

CAUTION

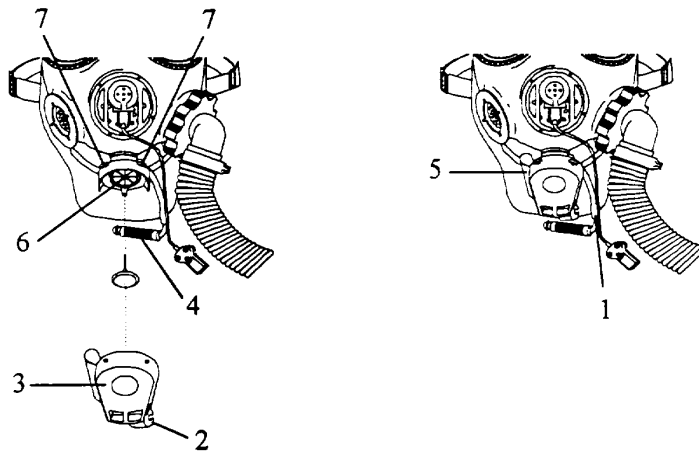
To prevent tearing outlet valve cover during removal, be careful pulling outlet cover over flanges on outlet valve body.

3. Grasp tab at bottom of outlet valve cover and lift bottom portion of outlet valve cover from outlet valve body (6).
4. Pull sides of outlet valve cover away from groove around outlet valve until bottom of outlet valve cover is detached.
5. Disconnect outlet valve cover from flanges (7) on top of outlet valve body.

b. Installation.

1. Install outlet valve cover on flanges on top of outlet valve body.
2. Using tab on bottom of outlet valve cover, pull outlet valve cover over face of outlet valve body. Make sure outlet valve cover snaps in place around outlet valve body.

3. Install quick disconnect coupling securely in outlet valve cover retainer.
4. Fasten external drink tube to tab.

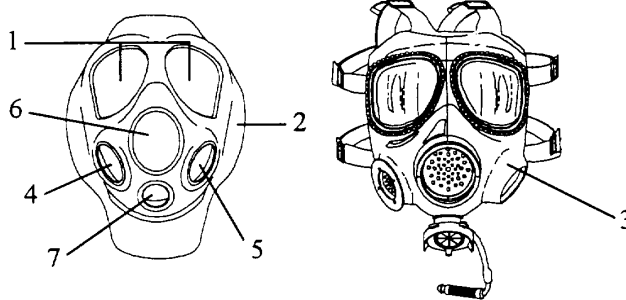


COMMON (Cont)

3-4. Removing and Installing the Universal Second Skin

a. Removal.

1. Remove filter canister (para 3-11a) (M40A1 only).
2. Remove hose assembly (para 3-16a) (M42A2 only).
3. Remove detachable microphone (para 3-13a) (M42A2 only).
4. Remove outserts (para 3-2a)
5. Remove outlet valve cover (para 3-3a)



CAUTION

Use caution when stretching universal second skin openings.

6. Stretch eyelens opening (1) of universal second skin (2), and pull universal second skin from mask assembly (3).
7. Stretch side voicemitter opening (4) of universal second skin, and pull universal second skin from mask assembly.
8. Stretch the other side voicemitter opening (5) of universal second skin, and pull universal second skin from mask assembly.
9. Stretch front voicemitter opening (6) of the universal second skin, and pull the universal second skin from the mask assembly.

CAUTION

Be careful not to tear outlet valve housing opening of universal second skin when pulling over flanges on outlet valve.

10. Stretch outlet valve body opening (7) of the universal second skin, and pull the rest of the universal second skin from the mask assembly.

COMMON (Cont)

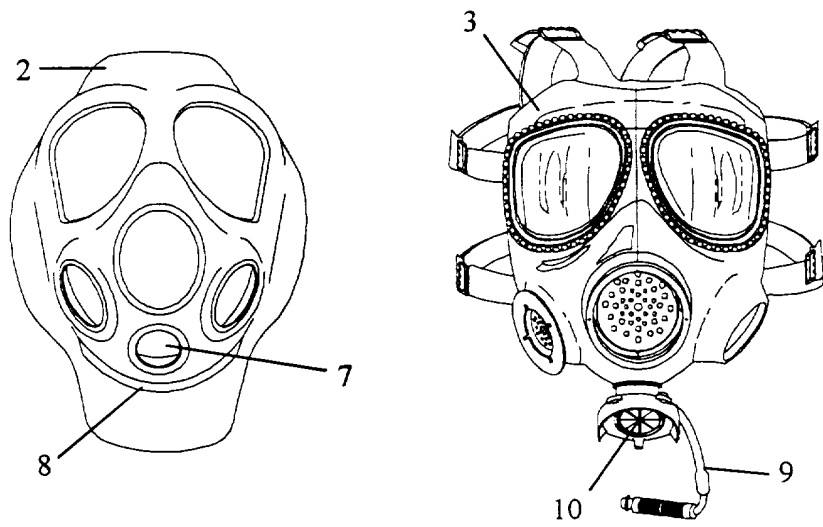
3-4. Removing and Installing the Universal Second Skin (Cont)

- b. Installation.
 - 1. Orient the universal second skin (2) with ridge (8) facing outward.
 - 2. Feed the external drink tube (9) through the outlet valve body opening (7) on the universal second skin.

CAUTION

Avoid overstretching holes in the universal second skin. To prevent tearing the outlet valve cover opening of the universal second skin, be careful pulling over flanges on outlet valve.

- 3. Stretch outlet valve body opening of the universal second skin, and position it over outlet valve body (10) of mask assembly (3).



COMMON (Cont)

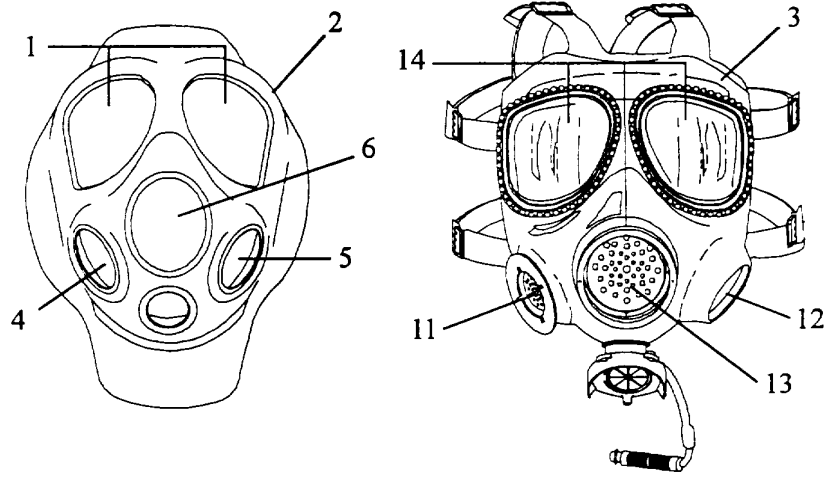
3-4. Removing and Installing the Universal Second Skin (Cont)

b. Installation (Cont).

NOTE

There are two side openings on the universal second skin. One fits over the side voicemitter. The other fits over the side port where the filter canister, M40A1, or the hose, M42A2, is attached.

4. Stretch side voicemitter opening (4) of the universal second skin (2), position it over the side voicemitter (1) of mask assembly (3).
5. Stretch the other side voicemitter opening (5) of the universal second skin, position it over the side port (12) of mask assembly.
6. Stretch front voicemitter opening (6) of the universal second skin, and position it over the front voicemitter (13) of mask assembly.
7. Stretch eyelens openings (1) of the universal second skin, and position it over the eyelenses (14) of mask assembly.
8. Install outlet valve cover (para 3-3b), and outserts (para 3-2b).
9. Install filter canister (para 3-11b) (M40A1 only).
10. Install hose assembly (para 3-16b), and detachable microphone (para 3-13b) (M42A2 only)

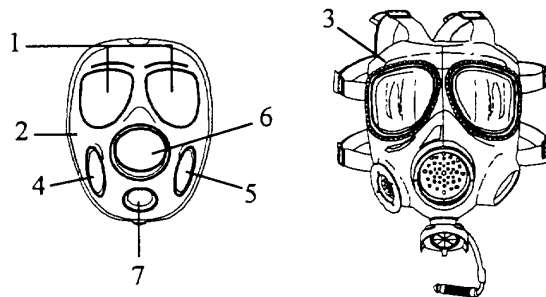


COMMON (Cont)

3-5. Removing and Installing the Second Skin

a. Removal.

1. Remove filter canister (para 3-11a) (M40A1 only).
2. Remove hose assembly (para 3-16a) (M42A2 only).
3. Remove detachable microphone (para 3-13a) (M42A2 only).
4. Remove outserts (para 3-2a)
5. Remove outlet valve cover (para 3-3a)



CAUTION

Use caution when stretching second skin openings.

6. Stretch eyelens opening (1) of second skin (2), and pull second skin from mask assembly (3).
7. Stretch side voicemitter opening (4) of second skin, and pull second skin from mask assembly.
8. Stretch the other side voicemitter opening (5) of second skin, and pull second skin from mask assembly.
9. Stretch front voicemitter opening (6) of the second skin, and pull the second skin from the mask assembly.

CAUTION

Be careful not to tear outlet valve housing opening of second skin when pulling over flanges on outlet valve.

10. Stretch outlet valve body opening (7) of the second skin, and pull the rest of the second skin from the mask assembly.

COMMON (Cont)

3-5. Removing and Installing the Second Skin (Cont)

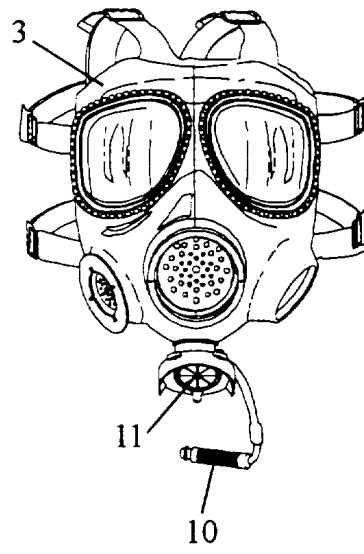
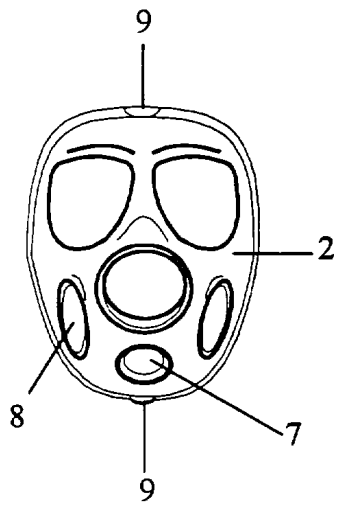
b. Installation.

1. Orient the second skin (2) with ridge (8) and rubber catches (9) facing outward.
2. Feed the external drink tube (10) through the outlet valve body opening (7) on the second skin.

CAUTION

Avoid overstretching holes in the second skin. To prevent tearing the outlet valve cover opening of the second skin, be careful pulling over flanges on outlet valve.

3. Stretch outlet valve body opening of the second skin, and position it over outlet valve body (11) of mask assembly (3).



COMMON (Cont)

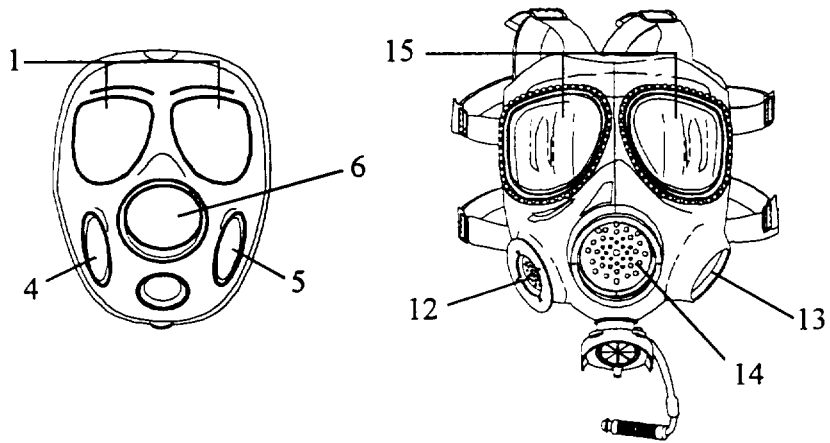
3-5. Removing and Installing the Second Skin (Cont)

b. Installation (Cont).

NOTE

There are two side openings on the second skin. One fits over the side voicemitter. The other fits over the side port where the filter canister, M40A1, or the hose, M42A2, is attached.

4. Stretch side voicemitter opening (4) of the second skin, position it over the side voicemitter (12) of mask assembly.
5. Stretch the other side voicemitter opening (5) of the second skin, position it over the side port (13) of mask assembly.
6. Stretch front voicemitter opening (6) of the second skin, and position it over the front voicemitter (14) of mask assembly.
7. Stretch eyelens openings (1) of the second skin, and position it over the eyelenses (15) of mask assembly.
8. Install outlet valve cover (para 3-3b), and outserts (para 3-2b).
9. Install filter canister (para 3-11b) (M40A1 only).
10. Install hose assembly (para 3-16b), and detachable microphone (para 3-13b) (M42A2 only).

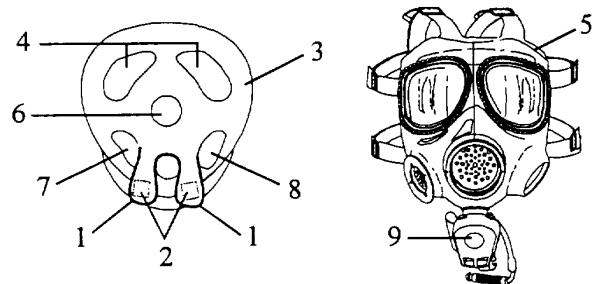


COMMON (Cont)

3-6. Removing and Installing the Universal Second Skin (USMC only)

a. Removal.

1. Remove filter canister (para 3-11a) (M40A1 only).
2. Remove hose assembly (para 3-16a) (M42A2 only).
3. Remove detachable microphone (para 3-13a) (M42A2 only).
4. Remove outserts (para 3-2a)
5. Unfasten flaps (1) with hook and pile fasteners (2) from lower portion of universal second skin (USMC only) (3).



CAUTION

Use caution when stretching universal second skin (USMC only) openings.

6. Stretch eyelens opening (4) of universal second skin (USMC only) (3), and pull universal second skin (USMC only) from mask assembly (5).
7. Stretch front voicemitter opening (6) of universal second skin (USMC only), and pull universal second skin (USMC only) from mask assembly.
8. Stretch side voicemitter openings (7) of the universal second skin (USMC only), and pull the universal second skin (USMC only) from the mask assembly.
9. Stretch the other side voicemitter openings (8) of the universal second skin (USMC only), and pull the universal second skin (USMC only) from the mask assembly.

CAUTION

Be careful not to tear outlet valve housing opening of universal second skin (USMC only) when pulling over flanges on outlet valve.

10. Carefully remove the universal second skin (USMC only) from the mask assembly without removing the outlet valve cover (9).

COMMON (Cont)

3-6. Removing and Installing the Universal Second Skin (USMC only) (Cont)

- b. Installation.
 - 1. Orient the universal second skin (USMC only) (3) with the hook and pile fasteners (2) of the flaps (1) facing outward.

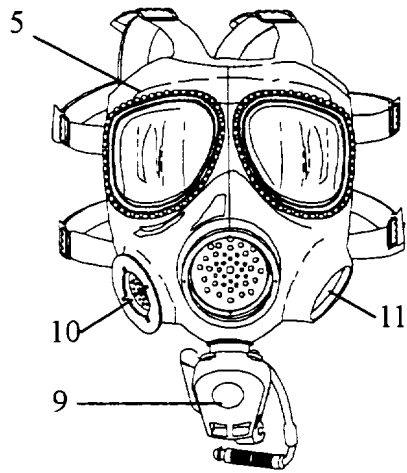
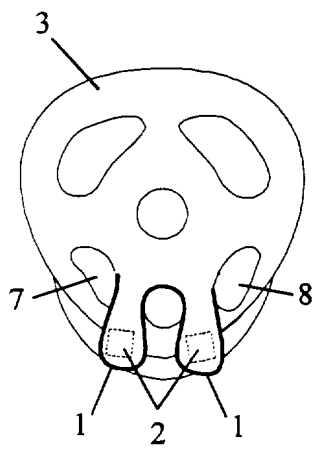
CAUTION

Avoid overstretching holes in the universal second skin (USMC only).

NOTE

There are two side openings on the universal second skin (USMC only). One fits over the side voicemitter. The other side opening on the universal second skin (USMC only) fits over the sideport, where the filter canister, M40A1 or hose, M42A2 is attached.

- 2. Install the universal second skin (USMC only) over outlet valve cover (9) of mask assembly (5).
- 3. Stretch side voicemitter opening (7) of the universal second skin (USMC only), and position it over the side voicemitter (10) of the mask assembly.
- 4. Stretch the other side voicemitter opening (8) of the universal second skin (USMC only), and position it over the sideport (11) of the mask assembly.

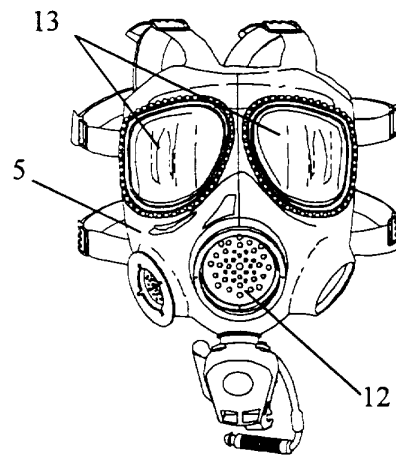
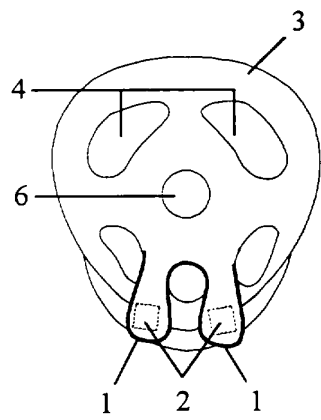


COMMON (Cont)

3-6. Removing and Installing the Universal Second Skin (USMC only) (Cont)

b. Installation. (Cont)

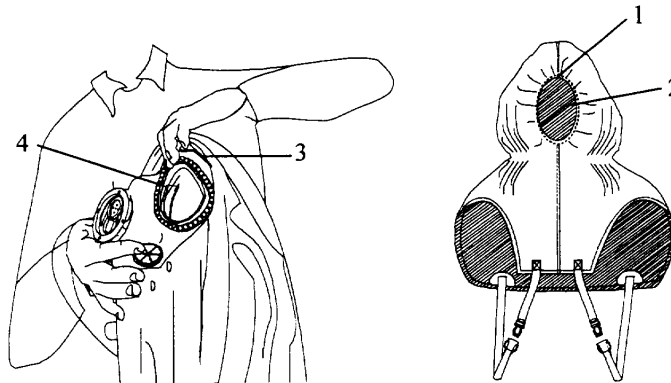
5. Stretch front voicemitter opening (6) of the universal second skin (USMC only) (3), and position it over the front voicemitter (12) of the mask assembly (5).
6. Stretch eyelens openings (4) of the universal second skin (USMC only), and position them over the eyelenses (13) of the mask assembly.
7. Fasten flaps (1) with hook and pile fasteners (2) to lower portion of universal second skin (USMC only).
8. Install outserts (para 3-2b).
9. Install detachable microphone (para 3-13b) (M42A2 only).
10. Install hose assembly (para 3-16b) (M42A2 only).
11. Install filter canister (para 3-11b) (M40A1 only).



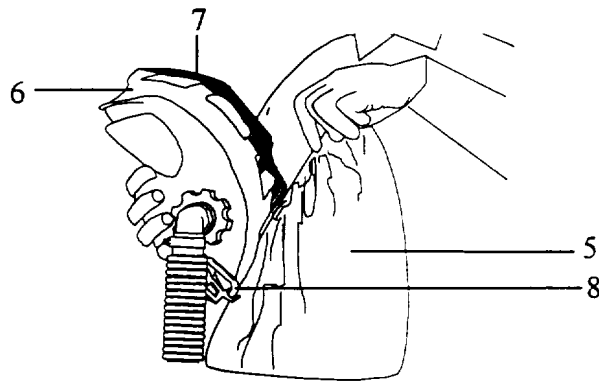
COMMON (Cont)

3-7. Removing and Installing the Quick Doff Hood (QDH)

a. Removal.



1. Grasp elastic seam at 12 o' clock position (1) of QDH opening (2) and detach from the top (3) of the universal second skin (4).



2. Pull QDH (5) to the rear of mask assembly (6) over the head harness (7).

NOTE

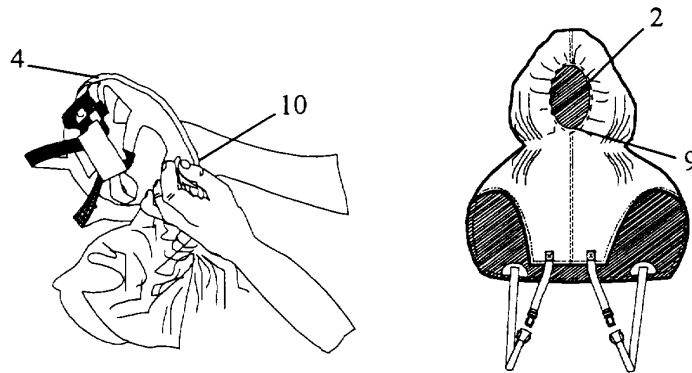
Make sure that while detaching the QDH from the lower part of the universal second skin that the outlet valve cover remains in place.

3. Detach QDH from the bottom (8) of the universal second skin.

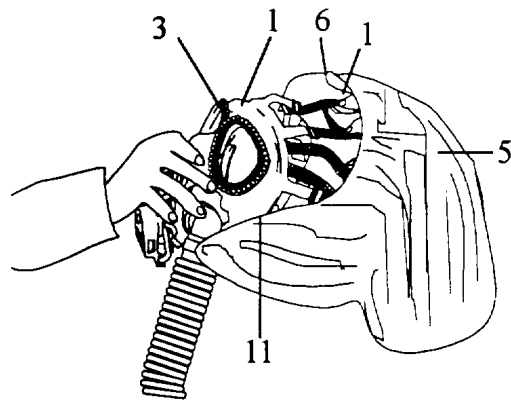
COMMON (Cont)

3-7. Removing and Installing the Quick Doff Hood (QDH) (Cont)

b. Installation



1. Attach elastic seam at six o'clock position (9) of QDH opening (2) to bottom (10) of universal second skin (4).



2. With one hand inside the QDH (5), stretch elastic of QDH opening (2) over mask assembly (6) and attach the elastic seam at the twelve o'clock position (1) of QDH opening to top part (3) of universal second skin.
3. Align edges of QDH opening with edges (11) of universal second skin.

COMMON (Cont)

3-8. Removing and Installing the One-Piece Hood

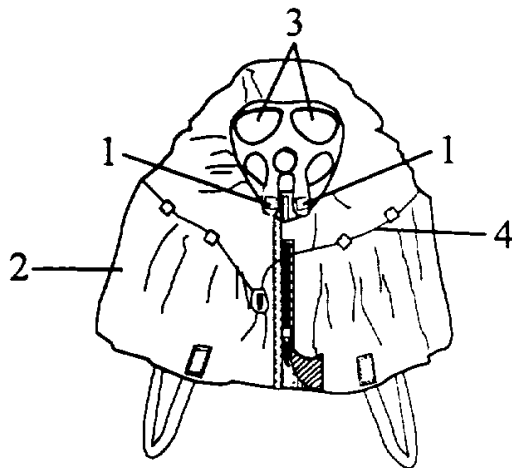
a. Removal

CAUTION

Be careful in removing one-piece hood. The one-piece hood could snag on the buckles of head harness or detachable microphone and could be damaged.

Be careful in removing one-piece hood. The detachable microphone cable and connection on the mask assembly could be damaged.

1. Remove canister (para 3-11a) (M40A1 only).
2. Remove the hose assembly (para 3-16a) (M42A2 only).
3. Remove detachable microphone (para 3-13a) (M42A2 only).
4. Remove the outserts (para 3-2a).
5. Unfasten the hook and pile fasteners (1) on the one-piece hood (2).
6. Starting with either eyelens, stretch the eyelens openings (3) and remove from eyelenses.
7. Stretch one-piece hood and pull away from side voicemitter.
8. Gently remove one-piece hood from front voicemitter on mask assembly.
9. Carefully remove mask assembly from inside of one-piece hood.



b. Installation.

1. Unfold and unzip one-piece hood and lay it flat. Loosen cord (4).
2. Insert mask assembly inside one-piece hood and align eyelenses of mask assembly with eyelens opening in one-piece hood.
3. Unfasten hook and pile fasteners (1) on one-piece hood (2).

COMMON (Cont)

3-8. Removing and Installing the One-Piece Hood (Cont)

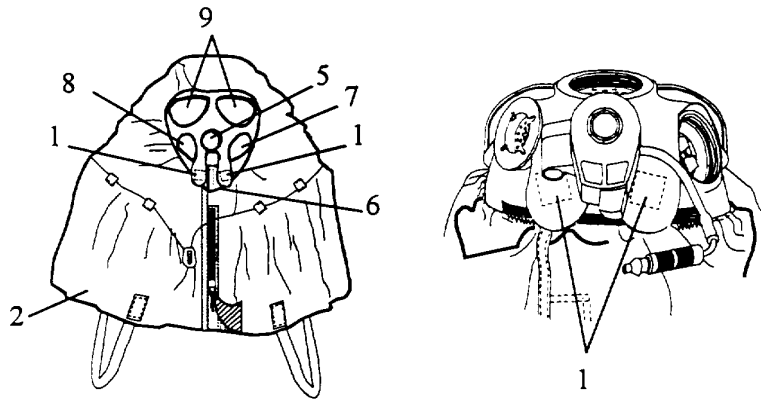
4. Aline front voicemitter on mask assembly with front voicemitter opening (5) on one-piece hood (2).

CAUTION

Avoid overstretching holes in the one-piece hood. Hood fabric could tear.

5. Stretch bottom of opening in one-piece hood (6) under outlet valve cover on mask assembly.
6. Aline sideport on mask assembly with sideport opening (7) on one-piece hood, and aline side voicemitter with side voicemitter opening (8) on one-piece hood.
7. Stretch openings in one-piece hood over sideport and side voicemitter on mask assembly.
8. Stretch eyelens openings (9) and front voicemitter openings in one-piece hood over eyelenses and front voicemitter on mask assembly by pulling one-piece hood fabric along sewn seams, and bending mask assembly at eyelenses.
9. Fasten hook and pile fasteners (1), making sure that outlet valve cover opening in one-piece hood is stretched over upper part of outlet valve cover.
10. Install outserts (para 3-2b).
11. Install hose assembly (para 3-16b) (M42A2 only).

12. Install canister (para 3-11b) (M40A1 only).
13. Install detachable microphone (para 3-13b) (M42A2 only).



COMMON (Cont)

3-9. Removing and Installing the Faceform

a. Removal

1. Loosen the straps (1) of the head harness (2).
2. Remove the faceform (3) from the mask assembly (4).

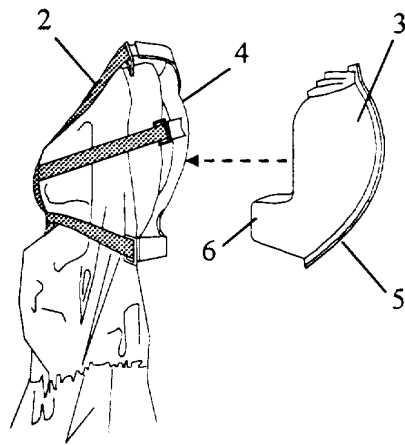
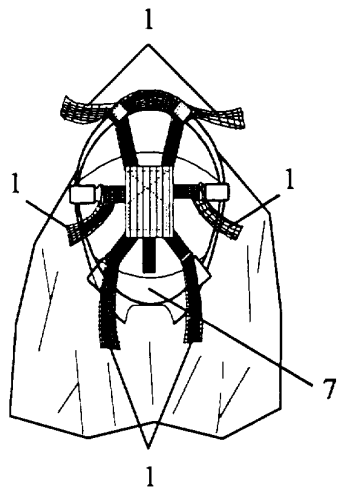
b. Installation.

1. Orient the faceform with the flat side (5) away from the mask assembly and the small extension (6) in line with the chin cup (7).

CAUTION

Do not overtighten the straps of the head harness or the faceform will cut into the silicon straps.

2. Place the faceform into the mask assembly and tighten the straps of the head harness until the faceform is held in place.



COMMON (Cont)

3-10. Mask Carrier Servicing

WARNING

DO NOT allow dirt or foreign material to remain in carrier. Dirt or foreign material in carrier may get into valves, causing them to leak.

CAUTION

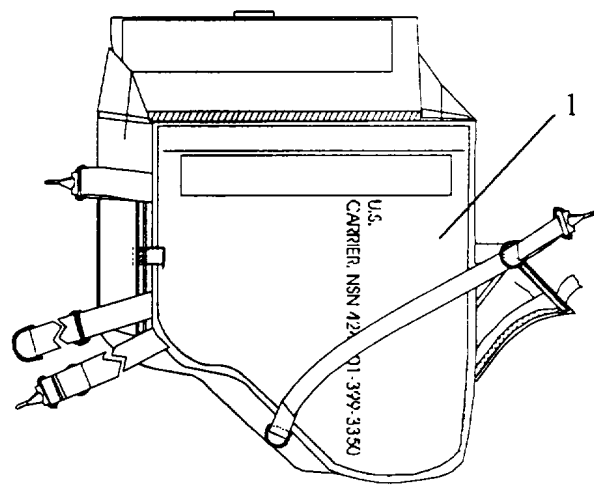
Abrasive material in carrier will scratch lens.

1. Remove contents from carrier (1).
2. Shake carrier upside down to remove dirt and foreign matter.
3. Soak brush (item 2, app D) in cool water.
4. Shake brush to remove excess water.
5. Clean carrier with brush.

CAUTION

Ensure carrier is entirely dry before stowing components.

6. Dry all surfaces of the mask carrier with a clean cheesecloth (item 3, app D). Allow mask carrier to air dry before stowing the mask components.



M40A1 PECULIAR

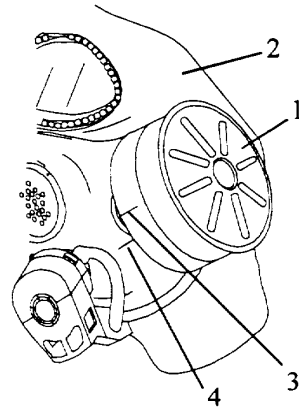
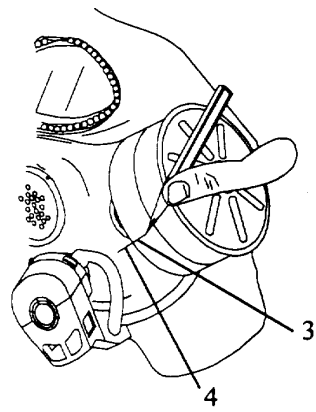
3-11. Removing and Installing the Filter Canister (M40A1)

a. Removal.

- Remove the filter canister (1) by unscrewing counterclockwise from the mask assembly (2).

b. Installation.

1. Insure that the filter canister mating surfaces are clean.
2. Position filter canister and screw in filter canister by screwing clockwise into sideport of mask assembly until it makes contact with the mask assembly.
3. Place a mark (3) on the filter canister and a mark on the second skin (4).
4. Tighten the filter canister an additional 1/4 to 1/2 inch to assure that leakage will not occur.
5. There should now be a gap of 1/4 to 1/2 inch between the two marks you made in step 3.



3-12. Mask Servicing (M40A1)

a. Cleaning.

NOTE

When you clean your mask assembly, use only potable water. See your NBC NCO for supplies or assistance if needed,

You will need the following items to clean your mask assembly:

Alcohol (item 4, app D)

Pail (item 5, app D)

Lens Brush (item 1, app D)

Soap (item 6, app D)

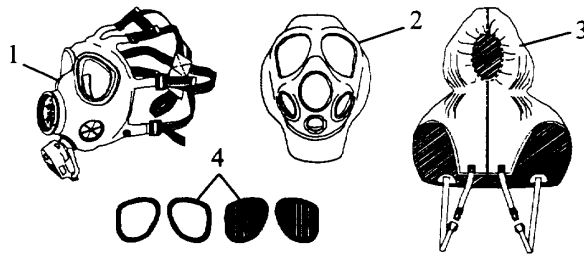
Cheesecloth (item 3, app D)

1. Remove filter canister (para 3-11 a), outserts (para 3-2a), and quick doff hood (para 3-7a).

CAUTION

Keep filter canister dry. Excessive moisture could clog filter canister or saturate absorbent material and make it useless.

2. Set filter canister aside, away from cleaning operations.
3. Remove outlet valve cover (para 3-3a)
4. Remove universal second skin (para 3-4a).



5. If necessary, remove greasy or oily substances from your mask assembly (1), universal second skin (2), quick doff hood (3), and outserts (4), inside and out with alcohol (item 4, app D) and clean cheesecloth (item 3, app D).

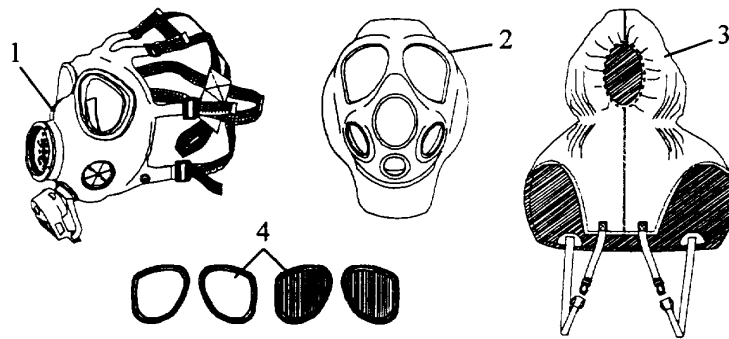
3-12. Mask Servicing (M40A1) - (Cont)

7. Clean your facepiece (1), universal second skin (2), quick doff hood (3), and outserts (4) inside and out, using clean cheesecloth (item 3, app D), soap (item 6, app D), and a pail (item 5, app D). Dip the cheesecloth in warm, soapy water and wring cheesecloth almost dry. A soft brush (item 1, app D) may also be used.
8. Rinse by wiping with a clean cheesecloth (item 3, app D) that has been dipped in warm, clear water and wrung almost dry.

CAUTION

Ensure all components are dry before stowing.

9. Dry facepiece, universal second skin, quick doff hood, and outserts with cheesecloth (item 3, app D) or allow to air dry.
11. Install universal second skin (para 3-4b).
12. Install outlet valve cover (para 3-3b).
13. Install quick doff hood (para 3-7b), outserts (para 3-2b), and filter canister (para 3-11b).



b. Decontaminating.

CAUTION

DS2 may damage the voicemitters of the mask assembly. When exposed to DS2, rinse voicemitters with clean water.

1. Use the M295 according to instructions in TM 3-4230-235-10.
2. Refer to Unit SOP for complete decontamination procedures.

M42A2 PECULIAR

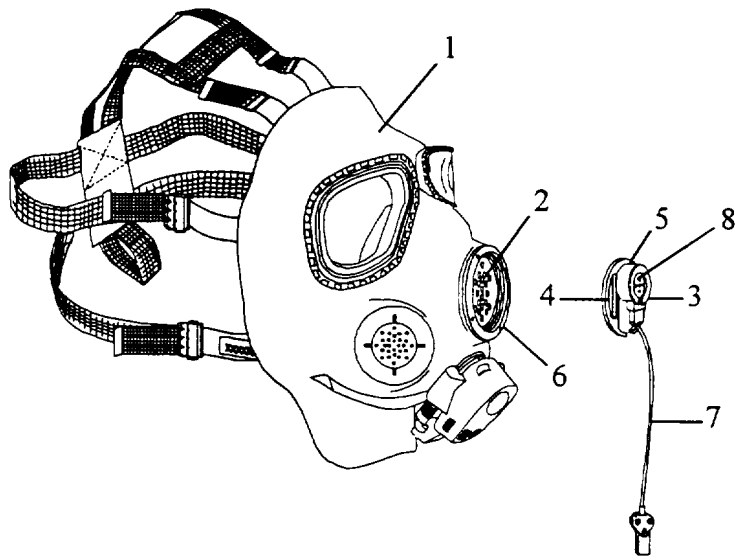
3-13. Removing and Installing the Detachable Microphone

a. Removal.

1. Hold the facepiece (1) in your hand with the front voicemitter (2) facing you.
2. Place index finger on either side of the detachable microphone at the three o'clock position (3) or nine o'clock position (4). Apply a sideward force until extracted

b. Installation

1. Hold facepiece in your hand with the front voicemitter facing you.
2. Hold detachable microphone clip (5) in your other hand with the ring opening facing down, and the flat surface facing toward the facepiece.
3. Insert the clip into the voicemitter housing (6) open end first with the cord (7) facing the six o'clock position.
4. Snap the clip into place, by pushing on the microphone casing (8), making sure it is flush against the front voicemitter.



M42A2 PECULIAR (Cont)

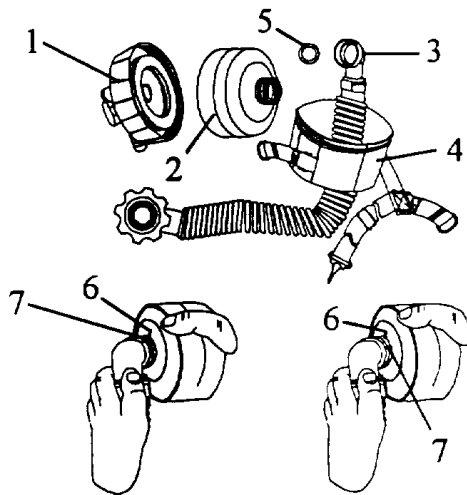
3-14. Removing and Installing the Filter Canister

- a. Removal.
 1. Remove the canister carrier cover (1) by unscrewing counterclockwise.
 2. Remove the filter canister (2) by unscrewing counterclockwise from the hose connector (3) and removing from the canister carrier (4).
- b. Installation.
 1. Insure that the hose assembly mating surfaces are clean.

WARNING

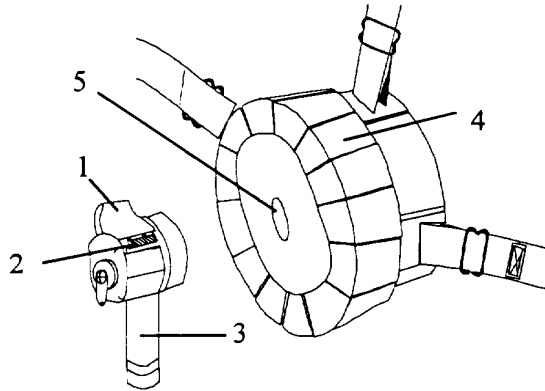
Make sure the gasket is present in the hose fitting before connecting the filter canister to the hose. A missing gasket will affect the seal and will allow the wearer to inhale contaminated air.
 2. Insure that the gasket (5) is mounted in the hose connector.
 3. Feed hose end connector through canister carrier.
 4. Install filter canister on the hose connector and tighten filter canister (clockwise) until the mating surfaces touch.
 5. Make a mark (6) on the filter canister and a second mark (7) on the hose connector that line up with each other.

6. Tighten the filter canister another 1/4 to 1/2 inch to assure leakage will not occur. There should now be a gap of 1/4 to 1/2 inch between the two marks you made in step 5.
7. Screw canister carrier cover (1) on canister carrier (4) hand tight clockwise.

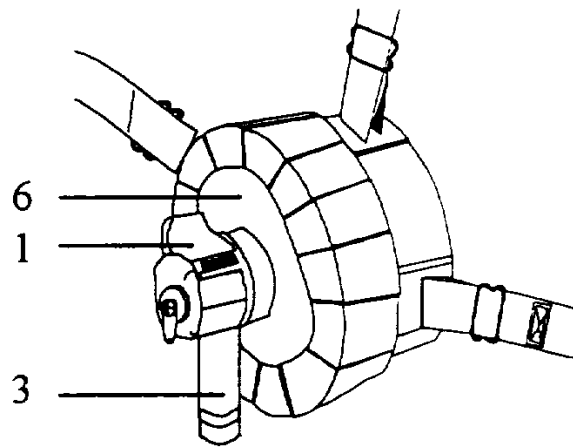


M42A2 PECULIAR (Cont)

3-15. Removing and Installing the Armor Quick Disconnect (AQD)



- a. Removal.
 1. Turn the lever (1) counterclockwise to uncover red mark (2) indicating unlocked position.
 2. Pull out the AQD (3) from the canister carrier cover (4).



b. Installation.

1. Position AQD (3) to the canister carrier inlet opening (5).
2. Make sure that AQD is unlocked. If red mark is shown on the side of AQD, it is unlocked.
3. Snap AQD to the canister carrier cover (6).
4. Turn lever (1) clockwise to lock in place.

M42A2 PECULIAR (Cont)

3-16. Removing and Installing the Hose Assembly

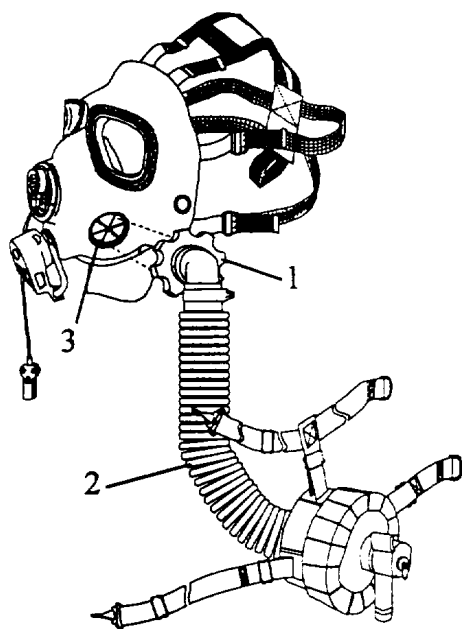
- a. Removal.
 - 1. Unscrew star knob (1) to remove the hose assembly (2) from the side port (3).
 - 2. Remove filter canister. (para 3-14a)

- b. Installation.
 - 1. Screw star knob clockwise into the side port to attach the hose assembly.

WARNING

Star knob must be tight or movement of the hose may cause it to loosen and leak.

- 2. Tighten star knob until mask distorts.
- 3. Install filter canister (para 3-14b).



3-17. Mask Servicing (M42A2)

- a. Cleaning.

NOTE

When you clean your mask assembly, use only potable water. See your NBC NCO for supplies or assistance if needed.

You will need the following items to clean your mask assembly:

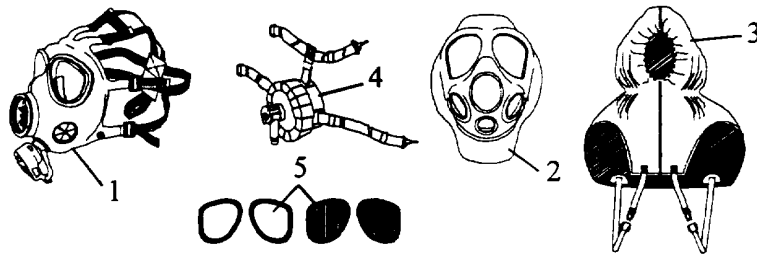
Alcohol (item 4, app D)	Pail (item 5, app D)
Lens Brush (item 1, app D)	Soap (item 6, app D)
Cheesecloth (item 3, app D)	

1. Remove hose assembly (para 3-16a), filter canister (para 3-14a), outserts (para 3-2a), detachable microphone (para 3-13a) and quick doff hood (para 3-7a).

CAUTION

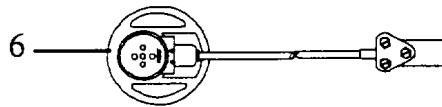
Keep filter canister dry. Excessive moisture could clog filter canister or saturate absorbent material and make it useless.

2. Set filter canister aside, away from cleaning operations.
3. Remove outlet valve cover (para 3-3a)
4. Remove universal second skin (para 3-4a).



5. If necessary, remove greasy or oily substances from your facepiece (1), universal second skin (2), quick doff hood (3), canister carrier (4) and outserts (5), inside and out with alcohol (item 4, app D) and clean cheesecloth (item 3, app D).

3-17. Mask Servicing (M42A2) - (Cont)

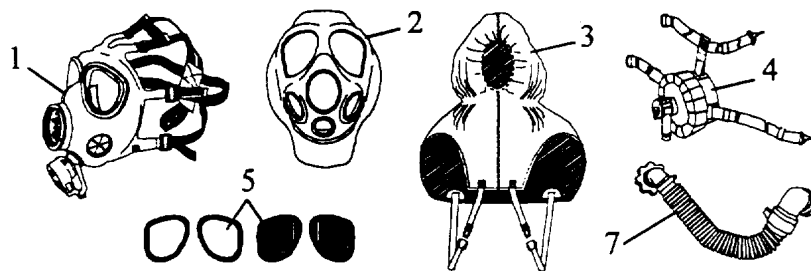


6. Detachable microphone (6) should be cleaned by brushing (item 1, app D) or blowing off exterior surfaces and in extreme cases may be rinsed with clean water.
7. Clean your facepiece (1), universal second skin (2), quick doff hood (3), canister carrier (4) and outserts (5) inside and out, using clean cheesecloth (item 3, app D), soap (item 6, app D), and a pail (item 5, app D). Dip the cheesecloth in warm, soapy water and wring cheesecloth almost dry. A soft brush (item 1, app D) may also be used.
8. Rinse by wiping with a clean cheesecloth (item 3, app D) that has been dipped in warm, clear water and wrung almost dry.

CAUTION

Ensure all components are dry before stowing.

9. Dry facepiece, universal second skin, quick doff hood, canister carrier and outserts with cheesecloth (item 3, app D) or allow to air dry.



10. Clean outside surface of hose (7), using clean cheesecloth (item 3, app D), soap (item 6, app D), and a pail (item 5, app D). A soft brush (item 1, app D) may also be used. Clean rinse and dry following the procedures in steps 6, 7, and 8.
11. Install universal second skin (para 3-4b).
12. Install outlet valve cover (para 3-3b).
13. Install quick doff hood (para 3-7b), detachable microphone (para 3-13b), outserts (para 3-2b), filter canister (para 3-14b), and hose assembly (para 3-16b).

3-16. Mask Servicing (M42A2) - (Cont)

- b. Decontaminating.
 - 1. Use the M295 according to instructions in TM 3-4230-235-10.
 - 2. Refer to Unit SOP for complete decontamination procedures.

APPENDIX A

A-1. SCOPE

This appendix lists all forms, field manuals, technical manuals, and miscellaneous publications referenced in this manual.

A-2. FORMS

Equipment Inspection and Maintenance Worksheet	DA Form 2404
Product Quality Deficiency Report	SF 368
Recommended Changes to Publications and Blank Forms.....	DA Form 2028
Recommended Changes to Publications/ Logistics-Maintenance Data Coding.....	NAVMC Form 10772

A-3. FIELD MANUALS

First Aid for Soldiers.....	FM 21-11
NBC Protection FM 3-4	FM 3-4

A-4. TECHNICAL MANUALS

Decontamination Kit, Individual Equipment, M295.....	TM 3-4230-235-10
Decontamination Kit, M291	TM 3-4230-229-10
Decontamination Kit, M291	TM 3-4230-229-20&P

APPENDIX A (CONT)

A-5. MISCELLANEOUS PUBLICATIONS

Expendable/Durable Items
(Except Medical, Class V, Repair Parts, and Heraldic Items) CTA 50-970
Ophthalmic Services AR 40-63
The Army Maintenance Management System
(TAMMS)..... DA PAM 738-750

APPENDIX B
COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LIST

Section I. INTRODUCTION

B-1. SCOPE

The components of end item and basic issue items for the M40A1 and the M42A2 mask are identical. This appendix lists these items to help you inventory items required for safe and efficient operation.

B-2. GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item (COEI). This listing is for informational purposes only, and not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

B-2. GENERAL (Cont)

b. Section II. Basic Issue Items (BII). These are the minimum essential items required to place either the M40A1 or the M42A2 mask in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged, BII must be with the M40A1 or the M42A2 mask during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

B-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

- a. Column (1) - Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.
- b. Column (2) - National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.
- c. Column (3) - Description. Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the Commercial and Government Entity Code (CAGEC) (in parentheses) followed by the part number.

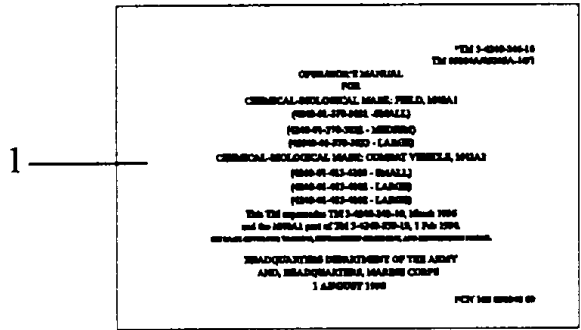
d. Column (4) - Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr).

e. Column (5) - Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM

There are no components of end item required.

Section III. BASIC ISSUE ITEMS LIST



(1) Illus. Number	(2) National Stock Number	(3) Description CAGEC and Part Number	(4) Usable On Code	(5) U/M	(6) Qty. Rqr.
1		Operator's Manual Mask, Chemical-Biological: Field M40; Combat Vehicle M42 and M42A1 TM 3-4240-347-10/TM 09204A/09205A-10		EA	1

APPENDIX C
ADDITIONAL AUTHORIZATION LIST

Section I. INTRODUCTION

C-1 SCOPE

The additional authorization list is identical for the M40A1 and the M42A2 masks. This appendix lists additional items which you are authorized for the support of either mask.

C-2 GENERAL

This list identifies items that DO NOT have to accompany the either the M40A1 or the M42A2 mask and that DO NOT have to be turned in with it. These items are authorized to you by CTA, MTOE, TDA, or JTA

C-3. EXPLANATION OF LISTING

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item name under the type document (i.e., CTA, MTOE, TDA, or JTA) which authorizes the item(s) to you.

Section II ADDITIONAL AUTHORIZATION LIST

(1) National Stock Number	(2) Description CAGEC and Part Number	(3) U/M	(4) Qty Auth.
5996-01-381-9012	<u>CTA AUTHORIZED ITEMS</u> AMPLIFIER, AUDIO FREQUENCY: M7 (81361) 5-1-2720-1	EA	1
8465-01-115-0026	CANTEEN, WATER, WITH M1 CANTEEN CAP (81349) MIL-C-43103	EA	1
6850-01-357-8456	DECONTAMINATING KIT, INDIVIDUAL EQUIPMENT, M295 (81361) 5-77-3201	EA	1
4230-01-101-3984	DECONTAMINATION KIT, SKIN, M291 (81361) D5-77-2366	EA	1
4240-01-442-4810	DETACHABLE MICROPHONE, AIRCREW (81361) 5-1-3354		1
4240-01-434-1503	M1 LASER BALLISTIC OUTSERTS (81361) 5-1-2721	PR	1
6665-00-050-8529	PAPER, CHEMICAL AGENT DETECTOR, M8 (81361) D5-67-266	EA	1
***	INSERTS, OPTICAL*	PR	1

* Available by prescription of a medical officer or optometrist (AR 40-63)

APPENDIX D
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

D-1. SCOPE

The expendable/durable supplies and materials list is identical for the M40A1 and the M42A2 masks. This appendix lists expendable/durable supplies and materials you will need to operate and maintain either mask. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

D-2. EXPLANATION OF COLUMNS

- a. Column (1)-Item Number. This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cheesecloth (item 3, app D)").
- b. Column (2)-Level. This column identifies the lowest level of maintenance that requires the listed item.
- c. Column (3)National Stock Number. This is the National stock number assigned to the item which you can use to requisition it.
- d. Column (4)-Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the CAGEC in parentheses followed by the part number.
- e. Column (5)-Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two character alphabetical abbreviation (e.g., ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) Item Number	(2) Level	(1) National Stock Number	(4) Description	(5) U/M
1	C	7920-00-205-0565	BRUSH DUSTING, LENS: (81348) H-B-1654	EA
2	C	7920-00-061-0037	BRUSH, SCRLB: NYLON BRISTLE (81348) H-B-1490-6-PI	EA
3	C	8305-00-222-2423	CLOTH, CHEESECLOTH: (81348) CCC-C-440	YD
4	C	6505-00-655-8366	ISOPROPYL RUBBING ALCOHOL: plastic bottle (56287) PUREPAC	PT

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST- (Cont)

(1) Item Number	(2) Level	(1) National Stock Number	(4) Description	(5) U/M
5	C	7240-01-094-4305	PAIL, UTILITY: Plastic, snap-on lid, 5-gal. (58536) A-A-332	EA
6	C	8520-00-2280598	SOAP, TOILET: nonmedicated, liquid, 1-gal. (3.78-1) can, type 1 (81348) P-S-624	EA

By Order of the Secretary of the Army:

Official:



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Secretary of the Army
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M. K. HAYDEN

Colonel USMC

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