



# UNITED STATES MARINE CORPS

3D MARINE DIVISION (-) (REIN), FMF  
UNIT 35801  
FPO AP 96602-5801

Divo 6240.1D W/ CH1  
SURG  
22 OCT 1993

## DIVISION ORDER 6240.1D

From: Commanding General  
To: Distribution List

Subj: MAINTENANCE AND DISINFECTION OF WATER STORAGE/RATIONING  
CONTAINERS, HOSES AND NON-POTABLE FIELD WATER SOURCES

Ref: (a) NAVMED P-5010, Manual of Naval Preventive Medicine,  
Ch.5, Water Supply Ashore, Ch.6, Water Supply Afloat  
Ch.9, Preventive Medicine for Ground Forces

Encl: (1) Procedures for Maintenance and Disinfection of Water  
Storage/Rationing Containers, Hoses and Non-Potable  
Field Water Sources  
(2) Chlorine Dosage Calculator  
(3) Approved Water Storage Rationing Containers,  
Disinfectants and Test Kit

1. Purpose. To promulgate the proper maintenance, handling and disinfection procedures for water storage/rationing containers, hoses and non-potable field water sources per the reference.

2. Cancellation. Divo 6240.1C.

3. Background. Potable (drinking) water is easily contaminated unless it is transported, stored and dispensed in a sanitary manner. Using unapproved storage containers, not properly disinfecting the containers and container water filling operations are the most common means by which potable water becomes contaminated. In addition, the proper selection, purification and use of emergency non-potable water sources are of the utmost importance in the prevention of waterborne disease in the field setting.

4. Action. Commanding officers shall adhere to procedures and use the disinfectants and approved equipment identified in enclosures (1) through (3).

P. V. KELLY  
Chief of Staff

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3D MARINE DIVISION (-) (REIN)

UNIT 35801

FPO AP 96602-5801

DivO 6240.1D Ch 1  
SURG

14 SEP 1998

## DIVISION ORDER 6240.1D Ch 1

From: Commanding General  
To: Distribution List

Subj: MAINTENANCE AND DISINFECTION OF WATER STORAGE/RATIONING  
CONTAINERS, HOSES AND NON-POTABLE FIELD WATER SOURCES

1. Purpose. To direct a pen change to the basic Order

2. Action

a. Delete the last sentence of paragraph 3 in enclosure 3 and replace it with "Instructions for use can be obtained from the G-4 Preventive Medicine Unit."

3. Filing Instructions. File this Change transmittal immediately behind the signature page of the basic Order.

  
L. M. SUPKO  
Chief of Staff

DISTRIBUTION: A

22 OCT 1993

PROCEDURES FOR MAINTENANCE AND DISINFECTION OF WATER  
STORAGE/RATIONING CONTAINERS, HOSES AND NON-POTABLE FIELD WATER  
SOURCES

1. Disinfection of Water Storage/Rationing Containers

a. Water Containers: This applies to canteens, water jugs, Lyster bags, bladders, trailers, tankers, water mains, piping systems and other vessels used to hold or convey potable water. Containers must meet the following requirements:

(1) Must be clean, sanitized and clearly labeled "POTABLE WATER."

(2) Interior surfaces must be constructed of smooth, nontoxic, noncorrosive materials and free from rust and chips.

(3) Must have tight-fitting caps or lids which close securely.

4 Gaskets must be easily cleaned

(5) Potable water containers must not be used for any other purpose.

(6) Must be inspected, cleaned and disinfected whenever necessary but not less than monthly.

b. Superchlorination is the disinfection of a container with a concentrated chlorine solution. Water storage/rationing containers shall be superchlorinated before use if they have been empty for more than 48 hours and, in all other circumstances, when it is suspected that the container has been contaminated.

c. Disinfection of containers with a 100 part per million (ppm) free available chlorine (FAC) residual shall be accomplished as follows:

(1) Descale any mineral deposits on the interior of the container with a wire brush.

(2) Thoroughly scrub the interior of the container with a bristled hand brush and hot soapy water.

Thoroughly flush container with potable water

Fill container 1/4 - 1/2 full with potable water.

(5) Add the required amount of disinfectant. Refer to enclosure (2) to determine correct amount.

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(6) Fill the container with potable water and agitate to ensure thorough mixing.

7 Drain one quart of water through each spigot if so equipped.

(8) Allow the container to set for four hours. During this period, hourly tests for FAC residuals are to be conducted. If at any time during this four hour period the FAC falls below 50 ppm, the superchlorination procedure must be repeated.

(9) Drain the container and flush it with potable water.

(10) Refill the container with potable water

(11) Chlorinate the container to achieve the desired free available chlorine residual. Refer to enclosure (2) to determine correct amount. Check the chlorine residual after 30 minutes of contact time with an approved water test kit. The chlorine residual should be 5 ppm FAC for field water supplies. If potable water is obtained from a base supply chlorinated at 0.2 ppm re-chlorinate the water to boost the FAC residual to 5 ppm in accordance with procedures outlined in paragraph 4b(2).

2. Disinfection of Hoses and Associated Couplings and Connections. Hoses used for loading or transferring potable water shall be disinfected by a thorough flushing with potable water and subjecting the interior to contact with a solution containing at least 100 ppm chlorine for at least 2 minutes. The superchlorinated water prepared for container disinfection can be used for this purpose. The hose shall be filled with superchlorinated water, capped and allowed to stand for 2 minutes. Couplings and connections shall also be immersed in a solution of at least 100 ppm FAC prior to being connected. Before making final connections, flush hose to waste for 15-30 seconds with potable water.

3. Storage and Labeling of Containers and Hoses

a. Empty containers shall be stored with lids or caps in place. Containers should be as free of moisture as possible prior to storage.

b. Containers and hoses used for potable water storage and rationing shall be labeled POTABLE WATER ONLY. Individual canteens need not be labelled.

c. Hoses shall be stored, with the ends coupled or closed with screw-type caps, in vermin proof lockers or cabinets.

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4. Selection, purification, and use of emergency non-potable field water sources.

a. During normal training evolutions on Okinawa, only water from an approved source should be used for drinking.

b. In the event that it is absolutely necessary to use a non-potable water source because of an emergency condition, the following procedures will be adhered to:

(1) Select the cleanest and most readily available water source. This is generally surface water (lake, river, stream, and pond). If a medical department representative is present, he shall be consulted in the selection of the water source. The source should be as free as possible of mud, leaves, turbidity, color, taste, or obvious chemical, biological or sewage wastes. Unapproved field water sources are considered contaminated and shall be disinfected.

(2) Chemical disinfection of field water sources requires establishment of a 5 ppm FAC with an approved disinfectant. The amount of chemical to use depends on the amount of water to be chlorinated, its temperature, pH and the chlorine demand of the water. The chlorine demand is the amount of chlorine that reacts with and is consumed by organic matter, bacteria, and other materials in the water. This demand must be met before a free chlorine residual can be established. Disinfect containers with 5 - 1200 gallon capacity as follows:

(a) Clean containers as thoroughly as possible with the source selected. Use a detergent to assist in cleaning if available. Flush container thoroughly.

(b) Allow as much suspended material to settle from the water as possible. This can be accomplished by filling containers with water, allowing the turbidity to settle and then pouring off the clear water into another container.

Fill the container 1/4 - 1/2 full of clear water.

(d) Add the required amount of disinfectant. Refer to enclosure (2) to determine correct amount.

(e) Fill the container and agitate to achieve a thorough mix, using a clean stick or branch if necessary.

Allow container to set for at least 30 minutes.

Check chlorine residual level with the test kit

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If the residual is less than 2 ppm, repeat steps (d) through

3) Disinfect individual canteen water as follows:

(a) Fill the canteen with water, leaving a one inch air space below the neck of the canteen.

1 If using HTH ampoules, fill a canteen cup half full of water, add the needed number of ampoules and stir with a clean stick until the granules are dissolved. Fill the cup of the canteen half full of the solution, add it to the water in the canteen and shake thoroughly to mix.

2 If using iodine tablets, add the required number of iodine tablets; double the number of tablets if the water is cloudy. Place cap on the canteen loosely, wait 5 minutes and then shake well to dissolve tablets. Iodine tablets are subject to deterioration in storage. Inspection prior to use for signs of physical changes must be conducted. Iodine tablets which are completely yellow or brown or those which stick together or crumble easily must not be used. Iodine tablets in good condition should be steel-gray in appearance.

(b) Loosen the cap slightly and invert the canteen, letting the treated water leak onto the threads around the neck of the canteen.

(c) Tighten the cap on the canteen and wait 30 minutes before using the water for any purpose.

(4) Boiling of water can be used when disinfecting compounds are not available. It is a good method for killing disease producing organisms but has several disadvantages:

(a) Fuel is needed

(b) It takes a long time for the water to boil and then to cool.

(c) There is not residual protection against recontamination. Water must be held at a rolling boil for at least 15 minutes to make it safe for drinking.



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APPROVED WATER STORAGE/RATIONING CONTAINERS,  
DISINFECTANTS AND TEST KIT

1. Approved Water Storage/Rationing Containers

- a. Can, Expeditionary, Water 5 gallon  
7240-00-242-3767.
- b. M - 149 Water Tank Trailer.
- c. M - 50 Tanker Truck
- d. Water Sterilizing Bag (Lyster Bag) 36 gallon  
4610-00-268-9890.
- e. Canteen, 2 quarts  
8465-00-889-3744.

2. Approved Disinfectants

- a. Calcium Hypochlorite HTH Technical  
70% 6810-00-242-4770, Unit of issue: Case, Wt: 45 lbs  
Contains approx. 14 3 3/5 lbs plastic containers.
- b. Sodium Hypochlorite Liquid, 5%  
6810-00-598-7316  
Unit of issue: Gallon.
- c. Calcium Hypochlorite HTH Technical Ampoules  
6850-00-270-0225.
- d. Water Purification Tablets, Iodine  
(Halozone) 6810-00-985-7166.  
Unit of issue: Bottle.

3. Approved Water Test Kit

Comparator Set, Color model LP-NS DPD  
Chlorine/Bromine/pH Combination Test Outfit  
NSN 6630-01-067-3827.

Instructions for use can be obtained from the Consolidated  
Preventive Medicine Service, USNH Okinawa.

ENCLOSURE (3)



UNITED STATES MARINE CORPS

3D MARINE DIVISION (-) (REIN)

UNIT 35801

FPO AP 96602-5801

In reply refer to:

5215

ADJ

10 Aug 98

From: Adjutant Chief, 3d Marine Division  
To: Division Surgeon, 3d Marine Division

Subj: REVIEW OF DIVISION ORDER 6240.1D

Ref: (a) MCO P5215.1F

1. In accordance with the reference, the subject directive, originating from your section, requires annual review. This annual review form must be returned to the Division Adjutant, regardless of any changes made to the directives, by 24 August 1998.

M. D. SINGERHOUSE  
MSGT USMC

FIRST ENDORSEMENT

From: Environmental Health Officer, 3d Marine Division  
To: Adjutant Chief, 3d Marine Division

1. Returned. The subject directive has been reviewed and (choose one of the following)

a. The directive is current and requires on further action

X b. The directive requires changes. The changes are attached or will be forwarded by 980820  
Date

c. The directive is no longer required and may be canceled.

(Originator's Signature)



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From: Commanding General  
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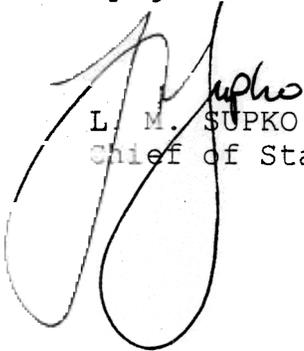
Subj: MAINTENANCE AND DISINFECTION OF WATER STORAGE/RATIONING  
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L. M. SUPKO  
Chief of Staff

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