

18 Dec 2001

MEMORANDUM

From: Director, Occupational and Environmental Medicine  
To: Mr. David Spelce, CIH, Industrial Hygiene Directorate

Subj: MEDICAL EVALUATIONS FOR ESCAPE ONLY RESPIRATORS

Encl: (1) OSHA Standards Interpretation and Compliance Letter 1910.134 (e)  
(2) Photos from Ocenco M-20.2 Trial, 21 Nov 2001

1. CAPT Lowell Clements, MC, USN, Director of the Occupational Medicine Department at the Naval Shipyard Portsmouth, NH, and Mr. Bob Albert, the Respiratory Protection Program Manager there, have asked NEHC to issue an opinion on two questions regarding medical evaluations for respirator use.

2. The first question was whether 17 nuclear shift test engineers should be included in the Respiratory Protection Program. These engineers would potentially be required to wear a Ska-Pack pressure demand respirator while working in an immediately dangerous to life and health (IDLH) area to shut down critical reactor functions in the event of an emergency. Due to the fact that these personnel would possibly be working (not just escaping from) an IDLH area, they should be included in the Respiratory Protection Program and have an appropriate medical evaluation.

3. The second question asked was whether approximately 700 personnel who carry Emergency Escape Breathing Devices (EEBDs), specifically the Ocenco M-20.2, should be included in the Respiratory Protection Program and would subsequently require medical evaluations. OSHA has issued specific guidance on this issue, which is reported in their list of Standard Interpretation and Compliance Letters (enclosure (1)). This letter states that medical evaluation is not required for employees whose respirator use would be for escape only purposes requiring less than 30 minutes of breathing air. Mr. Jose Hernandez, Certified Industrial Hygienist here, reviewed OSHA guidance including enclosure (1) with Mr. Angelo Costa, the OSHA Compliance Officer here in Norfolk. It is the Occupational and Environmental Medicine (OEM) Directorate consensus opinion that medical evaluations are not needed for active duty Navy and Department of the Navy civilian personnel who wear escape only respirators. However, these personnel must be given adequate initial and periodic refresher training on how to use the EEBD.

4. A third question arose from our Directorate in regards to the operating temperature of the Ocenco M-20.2. Some verbal reports had indicated that servicemembers demonstrating this device on board the USS Shreveport (LPD-12) had found the breathing temperatures too uncomfortable. In order to obtain more information, a number of personnel who have been responsible for training or who have conducted testing using the Ocenco M-20.2 were contacted. Initially Mr. Mike Kaye, Ocenco Research and Development Testing Engineer, who conducted the manned tests of this

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device reported that testing had been done on 200 inexperienced subjects (at 86 degrees Fahrenheit (F) ambient temperature), which showed maximal inhaled air temperatures to be 122 degrees F. (NIOSH allows 135 degrees F for EEBDs). Further conversations with Chief Bob Tadej, Senior Fire Fighting Instructor at Great Lakes Naval Training Center, and Chief Alan Kratunis, Damage Control Chief, revealed no problems with inspired air temperatures using the Ocenco M-20.2.

5. Ms. Cathy Carpenter, In-Service Engineering Agent at Coastal Systems Station, was also contacted. She forwarded to us the Reliability Test Program of the Ocenco M-20.2, which took place in 1997. This report stated that simulation testing of 230 units produced maximal inspired air temperatures of 130 degrees F, which are well within the NIOSH standards. Ms. Carpenter also sent us her trip report concerning her personal experience of wearing M-20.2s during the investigation of the USS Shreveport incident. She reported no sensation of excessive temperatures or any other ill effects even after running up and down two flights of stairs three consecutive times.

6. We appreciate your help in obtaining an Ocenco M-20.2 for personal inspection on 21 Nov 2001. CAPT Thomas, the OEM Director, personally donned and tested the unit with accompanying hood (enclosure (2)). CAPT Thomas tested the M-20.2 indoors and outside in 70 degree F ambient temperature until the oxygen cylinder was depleted. During this time he also jogged approximately 200 yards in an attempt to elevate the operating temperature of the unit. Although the scrubber mechanism became warm to touch, at no time did CAPT Thomas find the inspired air to be too warm to be uncomfortable. The only comment from the Captain was that initially, upon activating the unit, the air was somewhat stale for the first few inspirations.

7. Currently, the OEM Directorate is comfortable with the operating temperature of the Ocenco M-20.2. We do not have any further questions for the manufacturer at this time. We do encourage all shipyards to provide training (good initial and refresher training) to all personnel who carry the Ocenco M-20.2 so they are proficient in opening and donning the device.

  
R.J. THOMAS  
CAPT, MC, USN

# Standards Interpretation and Compliance Letters

## Medical evaluation not required for the use of escape only respirators.

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[OSHA Standard Interpretation and Compliance Letters - Table of Contents](#)

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- **Record Type:** Interpretation
  - **Standard Number:** [1910.134\(e\)](#)
  - **Subject:** Medical evaluation not required for the use of escape only respirators.
  - **Information Date:** 03/08/1999
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March 8, 1999

Ms. Mary Kiester  
System Safety Engineer  
Landsat 7 Program  
LMMS  
230 Mall Boulevard  
Room U2101  
King of Prussia, PA 19406

Dear Ms. Kiester:

This is in response to your letter to the Occupational Safety and Health Administration (OSHA) dated November 16, 1998. We apologize for the long delay in getting this response to you. You requested that we provide you with a clarification of the requirement that a medical evaluation be provided to employees whose only respirator use would be the use of an escape-only respirator, used to escape from a building in the event of an emergency. These employees have been trained in the use of the five minute Emergency Life Support Apparatus (ELSA) escape only respirator.

OSHA's current policy states that the employer does not have to provide a medical evaluation for employees whose only respirator use would be the use of escape-only respirators. The ELSA is a NIOSH-approved escape-only respirator which provides less than 30 minutes of breathing air. Please note that the employer would still be responsible for compliance with all other provisions of the respirator standard, as applicable, such as the written program and training requirements. If the employer were to provide any other self-contained breathing apparatus (SCBA) which provides 30 minutes of breathing air and which would be used to enter potentially IDLH atmospheres, the employer would have to provide a medical evaluation in accordance with 1910.134(e).

We hope this addresses your concerns. Should you have further questions, please feel free to call OSHA's Office of Health Compliance Assistance at (202) 693-2190.

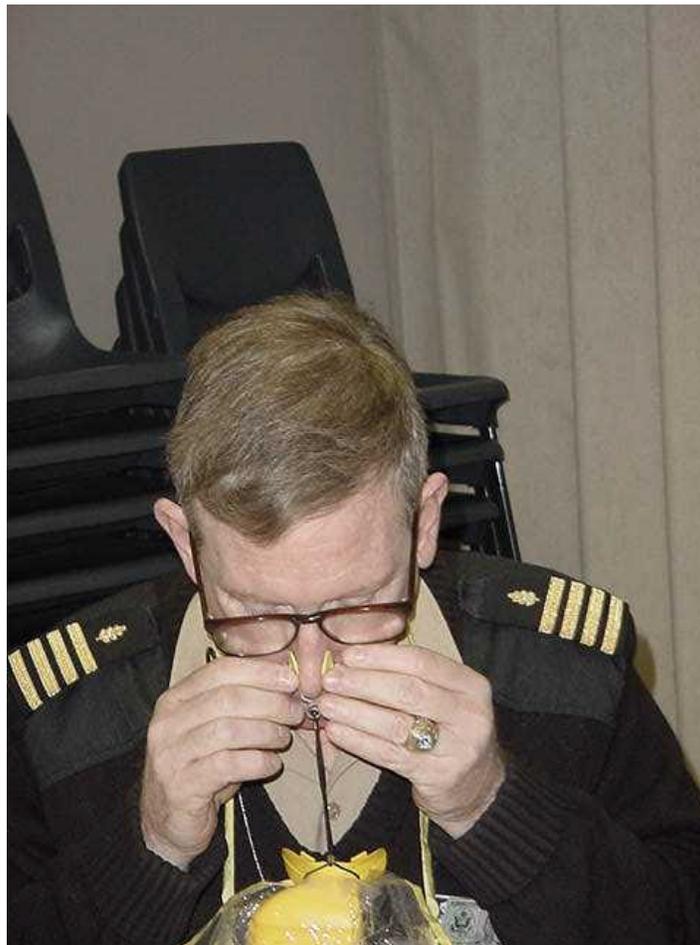
Sincerely,

Richard E. Fairfax  
Director  
Directorate of Compliance Programs

Photos From Ocenco M-20.2 Trial, 21 Nov 2001



Opening the Ocenco M-20.2



Donning the Ocenco M-20.2



First breaths on the Ocenco M-20.2



Exercising with the Ocenco M-20.2



After jogging with the Ocenco M-20.2



Near completion of wear time



Discussion after trial  
(left to right)  
CAPT Thomas, Dave Spelce, CDR Philippi, Dr. Muller