Emergency Escape Breathing Device / Supplementary Emergency Egress Device

Damage Control Training

Topic 1.6

Enabling Objectives

- **1.16 Identify** the personnel and equipment safety precautions which are observed during normal operation of EEBD/SEED and the new OCENCO EEBD in accordance with NSTM 077, NWP 3-20.31, COMNAVSURFPACINST 3541.4B, COMNAVSUFLANTINST 3541.1 and NSTM 555.

1.17 Identify the normal operational tasks to perform inspection procedures, activating procedures and donning procedures and post operational procedures in accordance with NSTM 077, NWP 3-20.31, COMNAVSURFPACINST 3541.4B, COMNAVSUFLANTINST 3541.1 and NSTM 555.

Emergency Escape Breathing Device

- Purpose
  - Self Contained, hooded, emergency breathing device which enables personnel to escape through a smoke filled or toxic atmosphere to the weather deck or flight deck of Navy Surface Ships. The device will also provide breathing protection to trapped personnel awaiting rescue in a smoke filled or toxic atmosphere.
    - **WARNING:** The EEBD is not to be used for fire fighting.
  - Oxygen generator provide 15 minutes of pure breathing gas to user
  - Allows communication with user

- Safety Precautions
  - Personnel
    - Avoid fire or flames and do not smoke for several minutes after removing unit.
    - Avoid gaps around neck seal caused by clothing or hair when donning hood assembly. This prevents the oxygen inside the hood from becoming a hazard to the wearer during escape.
- Equipment
  - Storing close to 70^0 F will maximize shelf life
    - **NOTE**: Shelf life is 15 years
  - Stored in vacuum sealed plastic pouch.
    - Non-skid tear strips or plastic tabs are now being utilized on tear off sides of red plastic tear strips. On EEBD's that still require the application of non-skid, a nine by one inch strip of adhesive backed non-skid deck covering, folded in half ($4^1/_2$ inches on each side) and pressed on each end of the red tear strip, should be added. The long edge of the non-skid strip should be applied along the top edge of the tear strip so as not to cover the tear notch. Non-skid deck covering comes in sheets of 6 by 24 inches, NSN 9G 7720-00-205-8389

- **NOTE**: Emphasize new EEBD's (S-TRON) does not have non-skid tear strip. They are equipped with plastic tear tabs.

- Outfitted throughout the ship (berthing, cht and medical spaces and work spaces, etc.)

- Inspection Procedures
  - IAW PMS procedure
    - NOTE: Stress EEBD should be inspected daily by individuals.
  - Check Tamper Seal
    - NOTE : If seal is broken, open the storage container and inspect the inner vacuum bag for damage . If damaged , replace unit.
  - Check Humidity Indicator
    - NOTE: Stress that indicator should be blue in color. A pink or clear color indicates that the humidity level inside the protective bag is outside acceptable limits, and unit should be replaced. Insure the two black lines are on the indicator card.

- Operation
  - Donning procedures
    - Remove unit from metal box
    - Remove unit from plastic case
    - Remove unit from plastic bag
    - Pull out actuation ring
    - Listen for hissing sound
      - NOTE: Stress Hissing sound enables wearer to ensure unit is operating
    - Bend down and grasp hood opening with thumbs and pull hood over head
    - Pull hood down on fore-head to assure secure fit. Check neck seal.
  - Post Operational Procedures
    - In an uncontaminated environment grasp hood at front lower edge and pull up over head and off.
    - Observe the device until cool and discard in accordance with PMS procedures

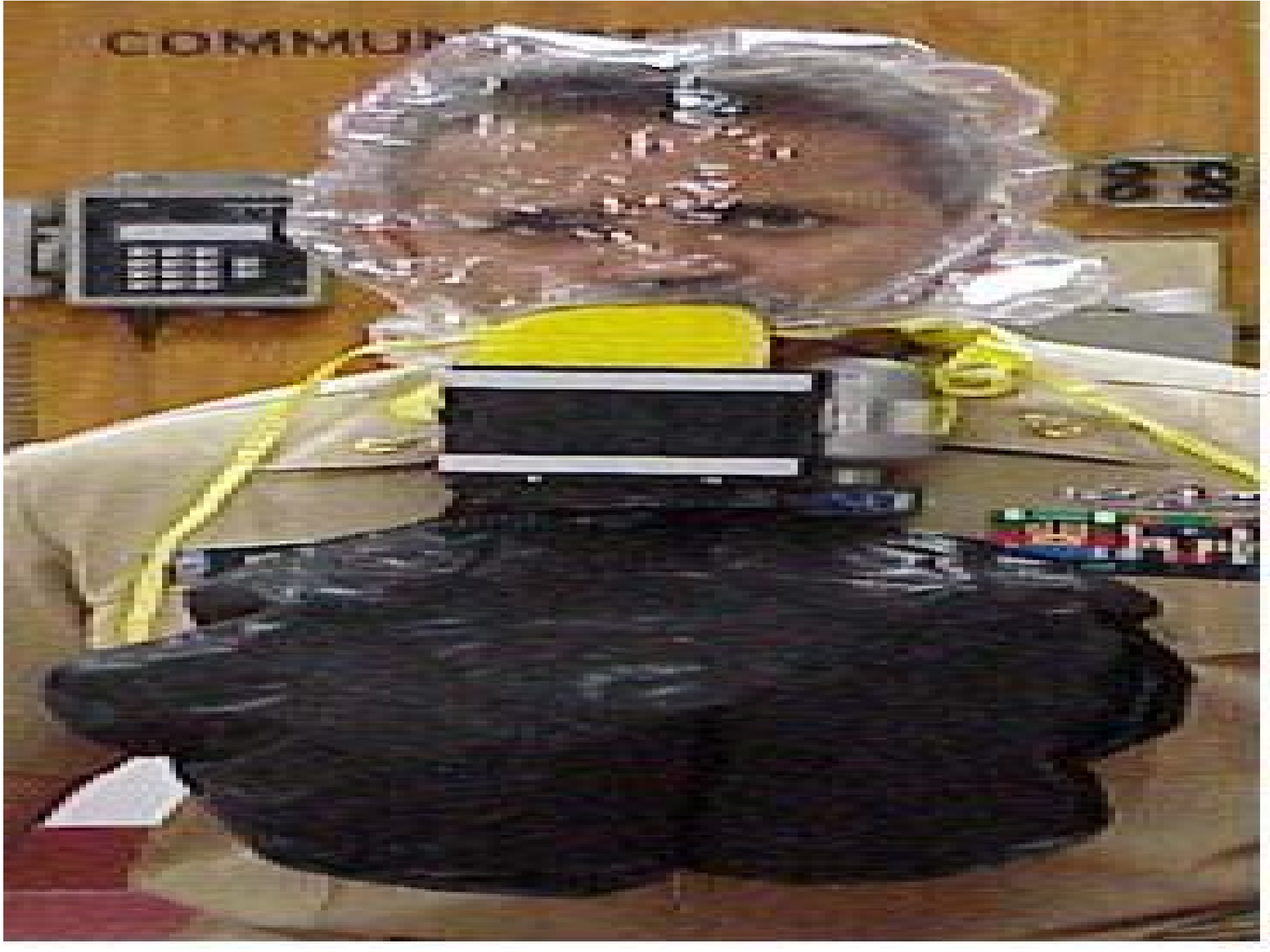
- OCENCO M20.2 Emergency Escape Breathing Device
  - Description
    - Provides respiratory protection for up to 32 minutes, however typical performance duration is 15 to 20 minutes.
    - Belt wearable so light and compact it can be worn comfortably on a belt, in all confined spaces.
    - Quick easy use pulling the unit from the case automatically starts oxygen flow.
    - Full visibility the clear teflon hood protects the user from hazardous environments while allowing a full field of view.
    - Low life cycle cost 15 year NIOSH service self life with an annual shipboard visual inspection.
    - The compressed oxygen and mouthpiece combination allows the unit to be donned in a smoked fill environment.

- Operation Procedure

Pull out the unit

Insert the mouthpiece and nose clip

The attached hood can be donned at anytime during the escape



- Supplementary Emergency Egress Device (SEED)
  - Purpose
    - A self contained portable light weight source of emergency air carried by personnel working or performing duties in all main propulsion or auxiliary machinery spaces on surface ships.
    - The device provides user the extra time needed to find and don an EEBD.
      - WARNING: THE SEED IS A SUPPLEMENT, NOT A REPLACEMENT FOR THE EEBD.
    - The unit provides 1 minute 30 seconds to three minutes of air depending on the user.
      - NOTE: TOP OFF ONCE A YEAR OR WHENEVER AIR PRESSURE FALLS BELOW 2600 PSI. REFILL AT SIMAs, TENDERS AND CERTIFIED DIVING UNITS.
    - Operating pressure 3,000 psi not to fall below 2,600 psi.
  - Equipment Storage
    - When not in use the SEED will be stored in Main Control Station (MCS), Casualty Control Station (CCS), or an enclosed operating station where the temperature does not exceed 140 degrees F in cabinets provided. The ship Engineering Officer will maintain custody of the SEED.

- Inspection
  - NOTE: The following procedures must be accomplished prior to assuming the watch.
  - Insure the mouthpiece and mouthpiece cover are intact
  - Visually inspect unit for leaks and damage
  - Check the opening in the hard cover of the regulator for foreign objects or the punctures in the blue diaphragm
    - WARNING: SEED units are equipped with a purge valve located under the hard cover of the regulator. Never insert objects through the holes in the regulator cover. This could loss of pressure or damage to the blue diaphragm. Although the hard cover prevents accidental purging or venting, care must be taken not to vent the SEED as this may render the unit unavailable as protection for watchstanders and workers.
  - Insure the needle on the pressure indicator is in the operating range (green area)

- Operating Procedures
  - Principle of operation
    - Demand type regulator
    - The SEED's demand regulator permits air flow only during inhalation. This action allows airflow to flow from the unit into the regulator chamber and out the mouthpiece.
    - Exhaled air passes to ambient atmosphere through exhaust ports
      - WARNING: The SEED regulator includes a burst disk which allows a controlled release of air pressure before unsafe pressures are reached. The burst disk would release pressure if the cylinder pressure reaches 3300 psi.
- Operation
  - Reach with your hand for the regulator assembly and grasp securely
  - Remove mouthpiece protective cover, pull unit vertically out of holster.
  - Place mouthpiece in your mouth and start breathing. Locate and don an EEBD and evacuate space.
    - NOTE: If, at any time, life threatening conditions inhibit the watchstander's ability to locate and immediately don an EEBD, watchstanders should utilize should utilized the belt worn SEED.

- Summary
  - Purpose of SEED/EEBD
  - Donning Procedures
  - Safety Precautions