

PROTECTIVE CLOTHING

7.11



ENABLING OBJECTIVES

- DESCRIBE the selection criteria for personal protective clothing and equipment
- DESCRIBE the cause, effects and prevention of occupational dermatitis.



REFERENCES :

(a) NSTM, CH 074, VOL 3, GAS FREE ENGINEERING

(b) NTTP 3-20.31, SURFACE SHIP SURVIVABILITY

(c) NSTM, CH 077, PERSONNEL PROTECTION EQUIPMENT

(d) OPNAVINST 5100.19 (series), NAVOSH MANUAL

(e) 29 CFR 1900 (SERIES)



SELECTING PROTECTIVE CLOTHING/EQUIPMENT

- TURN TO

*APPENDIX H,
NSTM 074 VOL. 3*



OCCUPATIONAL DERMATITIS



◆ *What is it?*

- Inflammation of the skin
- Results from exposure to irritants in the work environment
- May be slight reddening of the skin with mild itching
- Rash
- Small eruptions with intense itching

◆ *What causes it?*



CAUSES OF SKIN PROBLEMS

- **CHEMICAL**

- Most frequent cause of dermatitis
- Acts as primary skin irritant
- Differs in two respects:
 - Reaction Time
 - Mode of Action
 - Mists, vapors, diluted or full strength

- **MECHANICAL**

- Friction
- Pressure

- **Results in abrasions, wounds, bruises**

- **Introduces foreign bodies into skin**
 - Examples: Falling on Non-Skid, Air Nozzle

- **BIOLOGICAL AGENTS**

- Bacteria, viruses, fungi, and insects
- Complicates dermatitis
 - Examples: Bee stings, Athlete's foot
- Not all skin reacts in the same way or to the same degree to causes

FACTORS INFLUENCING SKIN REACTION

◆ TYPE OF SKIN

- ◆ Pigmentation
- ◆ Dryness
- ◆ Hairiness

◆ SEX OF THE PERSON

- ◆ Women have more sensitive, less oily skin than men

◆ AGE

- ◆ Affects younger personnel more



FACTORS INFLUENCING SKIN REACTION



◆ TEMPERATURE EXTREMES

- ◆ More prevalent in warm weather
- ◆ Risk of direct contact is greater due to less clothing worn
- ◆ Excessive perspiration - skin is more vulnerable
- ◆ Low winter temps cause dry, chapped skin causing cracks



FACTORS INFLUENCING SKIN REACTION



◆ EXCESSIVE OILINESS/DRYNESS

- ◆ Naturally oil skins are less likely to incur dermatitis when working with fat solvents
- ◆ More susceptible to substances that remove oil
- ◆ Dry skin cracks easily, especially around alkalis and solvents
- ◆ Cracked skin makes skin subject to infections

◆ LACK OF CLEANLINESS

◆ ALLERGIES



**EASIER
TO
PREVENT
THAN
TO CURE**



PREVENTION

- Chain of command support
- Hazardous awareness training
- Personal cleanliness
- Eliminate contact
- Identify hazards
- Good housekeeping
- Instruction
- Barrier creams



NSTM 074, VOL 3

- Person working with irritants, caustics, or toxic materials shall wear
 - Protective Coveralls
 - Gloves
 - Boots



AS THE GFE, ENSURE PERSONNEL ARE PROPERLY PROTECTED

- **COVERALLS, GLOVES, AND BOOTS MAY NOT BE ENOUGH!!!!**

REMEMBER -

SIGHT

HEARING

PHYSICAL PROTECTION



EYE AND FACE PROTECTION



- Face shields
 - Can accommodate respiratory protection devices
- Safety Goggles/Glasses
 - Chemical
 - Plastic Perforated
 - Welding/Chipping
 - Tinted
 - Wire



HAND PROTECTION



HAND PROTECTION



- Natural-Latex
 - Resistant against acids, caustics, abrasion from sand blasting, grinding
 - General Purpose Use
- Butyl Rubber
 - Resistant to Toxic chemicals, gases, water vapor, oxidation, and ozone attack
- Neoprene Rubber
 - Oils, greases, petroleum, tear resistant



HAND PROTECTION



- Milled Nitrile
 - Use where sense of touch is a must
 - Stand up to mechanical abuse
- Natural Rubber
 - Good pliability over large temperature range
 - Long term resistance to chemicals & acids
- Vinyl Coated
 - Chemical & abrasion resistant
 - Use for handling oils, acids, caustics, most solvents



HEAD PROTECTION



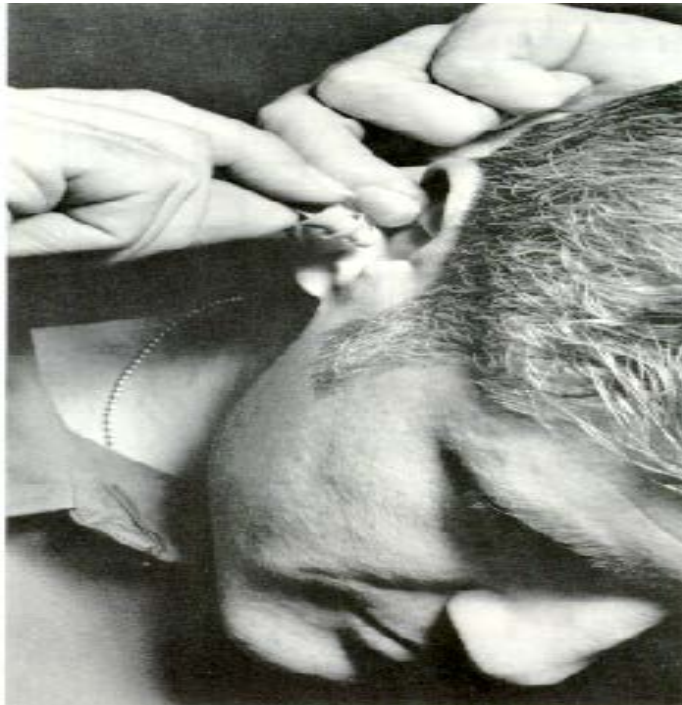
- Helmets/Hardhats protect crewmembers from:
 - Falling and flying debris
 - Impact with low overheads



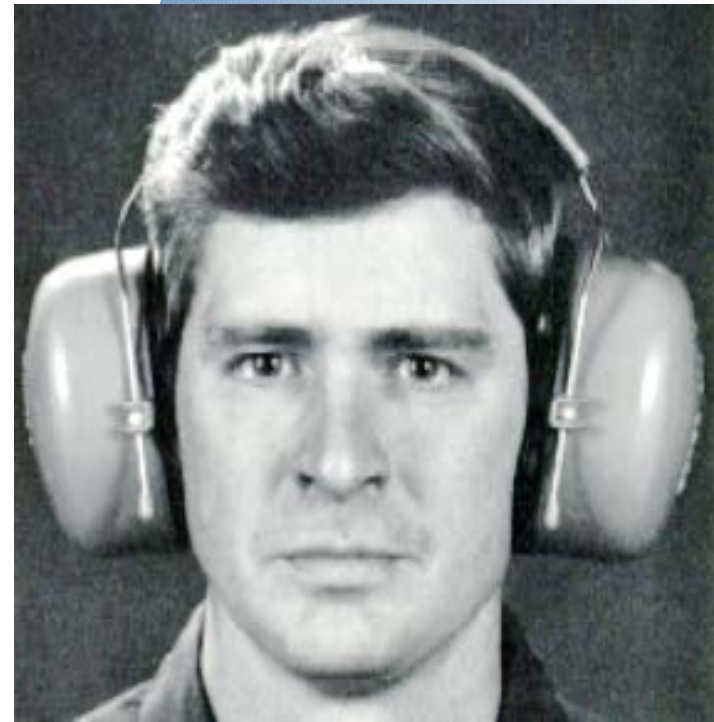
HEARING PROTECTION

All hands shall comply with hazardous noise labels

Wear assigned hearing protective devices



Insert Earplug

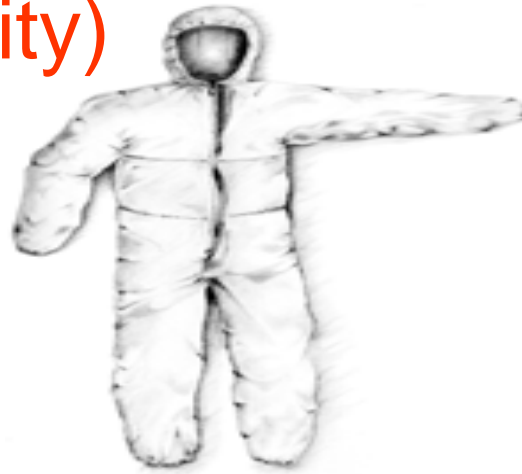


Circumaural Muffs

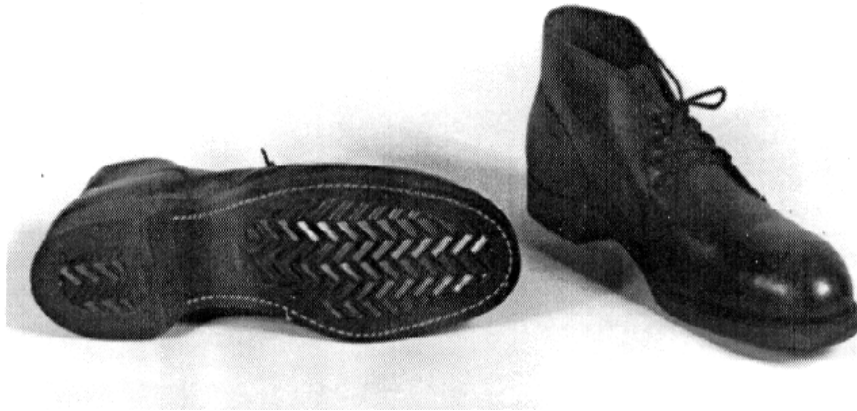


BODY PROTECTION/COVERALLS

- Should provide comfort of movement
- Selection and way it protects wearer vary from vendor to vendor
- Should not be plastic for GFE evolutions (Causes static electricity)



SAFETY SHOES AND BOOTS



Chukka

- Water resistant leather
- Heels and soles have treads
 - Non-marking
 - Non-sparking
 - Water/Fuel resistant
- Steel toe



MISCELLANEOUS PROTECTION



- Chemlites
- Flashlight
- Harness/lifelines
- Communications
- **Personal Alert Safety System "PASS"**
- **PRE-Alert signal 7-10 sec prior to alarm**

PASS uses 2
"AA" batteries



ANY QUESTIONS?



SUMMARY



- We described the selection criteria for personal protective clothing and equipment
- We described the cause, effects and prevention of occupational dermatitis.



THE END

