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MARINE CORPS ORDER P5100.8F

From: Commandant of the Marine Corps
To: Distribution List

Subj: MARINE CORPS OCCUPATIONAL SAFETY AND HEALTH PROGRAM MANUAL

Ref: (a) MCO 5100.29
(b) DoDInst 6055.1 (NOTAL)
(c) DoDInst 6055.5 (NOTAL)
(d) SECNAVINST 5100.10G (NOTAL)
(e) SECNAVINST 5212.5C (NOTAL)
(f) Public Law 91-596 (NOTAL)

Report Required: Inspection Results (Report Control Symbol EXEMPT), par. 7005.7

Encl: (1) Locator Sheet

1. Purpose

a. Provide policy, assign responsibility and establish instructions for the administration of the Marine Corps Occupational Safety and Health (OSH) Program.

b. Implement the OSH component of the Marine Corps Safety Program of reference (a).

c. Publish OSH guidance and procedures that implement references (b) through (f).

2. Cancellation. MCO 5100.8E and MCO 5100.25.

3. Background. References (a) through (d) provide policies and responsibilities for implementing the total Marine Corps Safety Program. The Marine Corps OSH Program specifically addresses the maintenance of safe and healthful conditions in the workplace or the occupational environment.

4. Action. All levels of command shall establish and maintain the Marine Corps OSH Program in compliance with the policies, procedures, actions, and guidance established under this Manual.

Commands are not required to publish an implementing order except where specifically directed. Commands with significant OSH responsibilities should publish appropriate supplemental guidance. Reference (e) provides guidance on records disposition and shall be followed by all Marine Corps commands.

5. Summary of Revision. This Manual contains major revisions to the Marine Corps OSH Program procedures and guidance. Many special areas are added which include: occupational health, asbestos, lead, office safety, lockout/tagout, fall protection, etc. Complete review of this Manual is necessary due to the substantial changes and additions.

6. Scope

a. For this Manual, the term Marine Corps personnel applies to all Marine Corps military and civilian personnel, including reserve military and non-appropriated fund civilian personnel. It extends to family members and all civilian personnel while on Marine Corps installations or embarked on Marine Corps aircraft or vessels.

b. For this Manual, the term "commander" refers to commanding generals and commanding officers as applicable. The terms "activity" and "commander", used in this Manual, apply equally to both overseas and CONUS commands. Commanders in overseas areas may modify policies and procedures when dictated by host-nation relationships. A copy of modified policies to this Manual will be forwarded to CMC (SD).

c. Commanders of activities that are tenants of another military service, e.g., a Marine Barracks at a naval base, are authorized to modify procedures to conform to host requirements, provided such modification meets the requirements of this Manual and does not reduce the level of effectiveness of the program.

d. Prior to implementation of this policy, activities must, where applicable, discharge their labor relations obligations. Assistance and guidance may be obtained from CMC (MPO-37).

7. Certification. Reviewed and approved this date.

TERRENCE R. DAKE
Assistant Commandant
of the Marine Corps

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ENCLOSURE (1)

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Entered	Signature of person Incorporating Change

MARINE CORPS OCCUPATIONAL SAFETY AND HEALTH PROGRAM

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MARINE CORPS OCCUPATIONAL SAFETY AND HEALTH PROGRAM

CHAPTER 1

INTRODUCTION

CHAPTER 1

INTRODUCTION

1000. REFERENCES. Throughout this Manual, references are provided at the end of each chapter.

1001. DEFINITION OF TERMS

1. The words "shall," "will," and "must" are directive and require compliance. Words like "may," "can," and "should" are advisory and do not require compliance.

2. Definitions for special terms used in this Manual are provided in the Glossary at Appendix A.

1002. BACKGROUND

1. Marine Corps has conducted safety and health programs for many years. Historically, occupational safety (industrial type safety) has been an element of the overall Marine Corps safety program managed by Marine Corps command functions. Other elements of the safety program include aviation, ground, traffic (motor vehicle), explosives, fire protection, system safety, industrial hygiene, recreational, off-duty, and radiation safety (ionizing, laser, and radiofrequency). The occupational health program element is provided by the Navy Bureau of Medicine and Surgery (BUMED).

2. The occupational safety and health (OSH) program gained special attention after passage of Public Law 91-596 on 31 December 1970. This law is also known as Occupational Safety and Health Act (OSH Act). Although directed at private sector employers, Section 19 of OSH Act required Federal agencies to establish and maintain comprehensive and effective OSH programs consistent with standards promulgated under Section 6 of OSH Act.

3. Other significant Federal laws and regulations also addressing safety include:

a. Title 5, United States Code, Section 7902 "Safety Programs."

b. Executive Order (E.O.) 12196, "Occupational Safety and Health Programs for Federal Employees," 26 February 1980.

c. Occupational Safety and Health Administration (OSHA), Department of Labor, "Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters," October 21, 1980 (29 CFR 1960).

4. Department of Defense (DoD) has issued directives and instructions to implement Federal guidance outlined above. Prominent among these is reference 1-1, which outlines general DoD policy and procedures relative to implementation of OSH Act and associated Executive Order. Reference 1-2 provides more specific guidance relative to implementation of the basic OSH program elements specified in 29 CFR 1960.

5. Under reference 1-1, Assistant Secretary of the Navy (Installations and Environment) (ASN (I&E)) has been appointed as "Designated Safety and Occupational Health Official" for Department of the Navy (DON) with responsibilities outlined in reference 1-3.

1003. MARINE CORPS OCCUPATIONAL SAFETY AND HEALTH (OSH) POLICY. All Marine Corps commands shall provide a safe and healthful workplace for all personnel. These conditions shall be ensured through an aggressive and comprehensive OSH program implemented through the appropriate chain of command. This program shall include the following features:

1. Compliance with applicable standards. Per reference 1-4, standards published by Occupational Safety and Health Administration (OSHA) under 29 U.S.C. 651 apply to non-military-unique operations and work places, for work by Marine Corps military or civilian personnel. Marine Corps will apply OSHA and other non-DoD regulatory safety and health standards to military-unique equipment, systems, operations, or workplaces, in whole or in part, when possible. When not possible or when no regulatory standard exists for such military application, Marine Corps shall develop and publish special military standards, rules, or regulations prescribing OSH measures.

2. Inspections completed of all workplaces at least annually by qualified OSH inspectors. Fleet Marine Forces (FMF) afloat workplace inspections will require Immediate Superior in Command (ISIC) assistance in scheduling and obtaining qualified inspectors.

3. Prompt abatement of identified hazards. To the maximum extent practicable, all hazards shall be eliminated or minimized

through engineering or administrative controls. Where engineering or administrative controls are not feasible, appropriate personal protective equipment shall be provided at government expense. Where hazard abatement resources are limited, priorities shall be assigned to take care of the most serious problems first. Appropriate notices shall be posted to warn Marine Corps personnel of unabated serious hazards and to provide interim protective measures.

4. Procedures established for all military and civilian personnel to report suspected hazards to supervisors or safety and health officials without fear of reprisal. Allegations of reprisal to civilian personnel for such participation shall be filed in accordance with existing grievance procedures. Military personnel shall use the request mast process.

5. Appropriate OSH training provided for safety and health officials, all supervisory personnel, and all other Marine Corps personnel. Applicable OSH requirements shall be integrated into training programs and technical and tactical publications.

6. Procedures established to review the design of facilities and construction projects to ensure safety and health hazards are eliminated or controlled from start to finish.

7. Thorough mishap investigations completed and a comprehensive OSH information management system maintained which provides all OSH data required by higher authority.

8. Comprehensive occupational health surveillance programs, both medical and industrial hygiene, implemented by qualified personnel (Navy medical personnel or personnel with equivalent qualifications), including:

a. Industrial hygiene surveillance programs to identify and monitor potential health hazards in the workplace.

b. Medical surveillance programs to monitor employees who are exposed to potential health hazards.

c. Periodic review of employee placement in medical surveillance programs to ensure necessary evaluations are given and unnecessary evaluations are eliminated.

d. Trend analysis to identify excessive exposures to harmful health hazards in the workplace or groups of employees exhibiting the same medical symptoms.

e. Occupational medicine investigations of selected patient signs and symptoms to identify previously unrecognized sources of exposure in the workplace.

f. Integration of various medical and industrial hygiene specialties into a team approach to promote a progressive occupational health care system.

g. Diagnosis, treatment, and care of acute and chronic occupational illnesses and injuries.

9. Procedures established to recognize superior or deficient OSH performance, consistent with Office of Personnel Management (OPM) and Marine Corps Manpower and Reserve Affairs (M&RA)directives. Performance evaluations shall reflect personal accountability in this respect, consistent with duties of the position, with appropriate recognition of superior performance and, conversely, adverse notation or administrative action, as appropriate, for deficient performance.

10. Procedures established to provide patrons of hobby shops the same level of safety and health protection as expected in other workplaces. Requirements shall include as a minimum:

a. Patrons shall be advised in writing of hazards they may be exposed to.

b. Patrons shall be required to wear appropriate personal protective equipment (PPE).

c. Patrons shall be trained in proper use and care of PPE provided to them.

d. Patrons shall be monitored closely to ensure their familiarity with safety requirements and PPE.

1004. EXPLOSIVES SAFETY. Under reference 1-5 the DoD Explosives Safety Board (DDESB) has statutory obligation to ensure proper storage of munitions, and prevent hazardous conditions arising from storage of munitions that would endanger life and property. DDESB standards are established in reference 1-6 and further promulgated in reference 1-7. Finally, the Marine Corps Explosive Safety Program is implemented in reference 1-8. These documents incorporate the appropriate provisions of OSH standards for operations within Ammunition Supply Points and munitions as a whole. Compliance with these regulations is monitored under reference 1-9.

1005. APPLICABILITY

1. This Manual applies to all worldwide afloat and ashore Marine Corps workplaces, facilities, equipment and material except in those areas where Chief of Naval Operations (CNO) has program responsibilities. Exceptions or specific limitations are made, as required, for conditions governed by other statutory authorities or international agreements overseas.

2. Provisions of this Manual apply to the prevention of ground, occupational and training mishaps. Provisions further include prevention of all other mishaps caused by equipment or personnel failures resulting in any of the following:

a. Injury or occupational illness to military personnel, while on or off duty, including Reserves on active duty, except when in actual contact with an enemy or as a result of direct enemy fire.

b. Injury or occupational illness to civilian personnel employed by Marine Corps (including civilians paid from appropriated and non-appropriated funds) when arising out of or in course of employment. Application of this Manual shall be consistent with the provisions of reference 1-10, other provisions of law providing for collective bargaining agreements and procedures, and any agreements entered into pursuant to such provisions. Matters of official leave for employee representatives involved in activities under this Manual shall be determined per reference 1-10, or applicable collective bargaining agreements.

c. Damage to Marine Corps property or equipment and non-Marine Corps property as a result of Marine Corps operations.

d. Injury to patrons of Marine Corps owned or supervised recreational and entertainment facilities per reference 1-11 (e.g., hobby shops, marinas, bowling centers, firing ranges, theaters).

3. Aviation safety and accident prevention programs are governed by provisions of references 1-12 and 1-13.

4. These provisions apply to Marine Corps government-owned, contractor-operated facilities only if they involve:

a. Safety and health of Marine Corps personnel.

b. Specific OSH matters over which DoD exercises statutory authority under reference 1-2 with respect to contractor's

employees. In all other matters affecting safety and health of contractor's employees, contractor is responsible directly to Federal OSHA or appropriate state OSHA office with Federal OSHA approved plan.

CHAPTER 1

References

1-1	DoD Dir 4715.1	Environmental Security (NOTAL)
1-2	DoD Inst 6055.1	Department of Defense Occupational Safety and Health Program (NOTAL)
1-3	SECNAVINST 5100.10G	Department of the Navy Policy for Safety, Mishap Prevention and Occupational Health Programs (NOTAL)
1-4	MCO 5100.29	Marine Corps Safety Program
1-5	10 USC 172	Miscellaneous Boards (NOTAL)
1-6	DoD 6055.9-STD	DoD Ammunition and Explosives Safety Standards (NOTAL)
1-7	OPNAVINST OP 5 Vol 1	Ammunition and Explosives Ashore: Safety Regulations for Handling, Storing, Production, Renovation and Shipping (NOTAL)
1-8	MCO 8020.10	Ammunition and Explosives Safety Policy, Programs, Requirements, and Procedures for Class V Materials
1-9	NAVSEAINST 8020.14A	Shore Station Explosive Safety Inspections (NOTAL)
1-10	Public Law 95-454, Title VII, 5 U.S.C. Sections 7101-7135 (1978 Supp)	Civil Service Reform Act
1-11	MCO 5100.30	Marine Corps Off-Duty and Recreation Safety Program
1-12	OPNAVINST 3750.6Q	Naval Aviation Safety Program
1-13	MCO 3750.1A	Policy and Guide for Aviation Safety and Standard Program

CHAPTER 2

RESPONSIBILITIES

CHAPTER 2

RESPONSIBILITIES

2000. HEADQUARTERS MARINE CORPS

1. Per reference 2-1, Commandant of the Marine Corps (CMC), in coordination with CNO on matters of mutual concern, shall:

a. Issue appropriate OSH directives and ensure implementation by all commands, activities and personnel.

b. Establish appropriate planning, programming, qualified staff and budgeting requirements for OSH programs.

c. Issue criteria for records maintenance and provide to ASN (I&E) all reports required by DoD and SECNAV directives and instructions regarding safety, occupational health, and Freedom of Information Act (FOIA). These criteria shall ensure:

(1) Reporting and recording procedures are developed to provide meaningful statistics concerning accidents, injuries and occupational illnesses in order to evaluate effectiveness of the programs. Close coordination among safety offices, personnel departments and medical personnel handling workers' compensation cases is essential.

(2) A register is maintained of personnel occupationally exposed to chemical substances and other hazardous physical or biological stresses, as deemed appropriate by Navy Bureau of Medicine and Surgery (BUMED).

(3) Employees, or their designated representatives, have access to workplace records regarding individual exposures.

(4) Medical records are maintained upon termination of employment.

(5) Industrial hygiene workplace monitoring and survey records are kept at least 50 years.

(6) Cross-reference linkages among employment records, medical records and industrial hygiene surveillance data are developed and implemented.

d. Conduct appropriate research and development to preclude occupational exposures from degrading a person's health status or work performance.

e. Ensure a program is developed to provide formal inspections at least annually of all workplaces, including notification provisions to workers of inspection results. More frequent inspections will be conducted, at least semi-annually, in all areas with a high risk of accident, injury, or illness. This program will provide for at least annual occupational health surveillance of both personnel and their working environments. Conduct oversight inspections at least triennial to ensure implementation of the program.

f. Ensure personnel are aware of formal procedures to process written OSH Deficiency Reports.

g. Ensure procedures are developed to provide for prompt investigation of reports by military and civilian personnel and others of unsafe or unhealthful working conditions, and to ensure corrective action is taken where appropriate.

h. Ensure all military and civilian personnel receive thorough and continuing OSH orientation and training consistent with their workplace environments. Particular emphasis shall be directed to the improvement of hazard awareness and reduction of accidental injury and property damage. Up-to-date audiovisual aids should be maintained in film libraries. Records shall be maintained of all OSH training conducted. OSH training programs (chapter 5) shall be developed for the following groups:

(1) Non-supervisory personnel.

(2) First line supervisors.

(3) Commanders and other senior managers.

(4) Collateral duty OSH personnel.

(5) Full-time OSH professionals (including industrial hygienists).

i. Ensure establishment of OSH councils.

j. Ensure cooperation of all commands in support of Field Federal Safety and Health Councils and in coordinating mutually beneficial accident prevention and safety programs with local communities to the maximum extent feasible.

k. Ensure designation of appropriate officials to consult with representatives of labor organizations that hold a bargaining agreement with Marine Corps.

l. Ensure civilian personnel are aware they may file, through their appropriate grievance processes, allegations of reprisals for having filed a complaint of unsafe or unhealthful working conditions. Ensure prompt, impartial investigations of reprisal allegations and appropriate administrative or disciplinary action when reprisal allegations are substantiated.

m. Ensure a comprehensive Marine Corps Weapons and Explosives Safety Program is developed and maintained per reference 2-2. The program will include combat system safety, mandatory use of standard operating procedures for explosives operations, qualification and certification of explosives workers, and certification of equipment used in explosives operations.

n. Ensure contingency plans and organizations are developed for the expeditious evaluation of requests from defense contractors for variations, tolerances and exemptions to any applicable provision of the OSH Act.

2. Assistant Commandant of the Marine Corps (ACMC) is designated the Safety and Occupational Health Official for U.S. Marine Corps.

3. Director, Safety Division (SD) provides direct ACMC support and is focal point for all aspects of the Marine Corps OSH program.

4. Reference 2-3 established safety responsibilities for Headquarters Marine Corps, specific commands, and all activities.

2001. COMMANDER, NAVAL SAFETY CENTER. By agreement with CMC, Commander, Naval Safety Center (COMNAVSAFECEN) provides support to the Marine Corps OSH program to include:

1. Assistance in developing and implementing OSH policy, doctrine, and guidance and maintaining related safety program manuals, operating directives, orders, and bulletins to ensure consistency of policies, procedures and objectives.

2. Collection of mishap reports and analyses of data with special emphasis on cause and statistical trend analysis.

3. Collection, storage, and dissemination of mishap information in accordance with FOIA and Marine Corps orders. Management of the Marine Corps Mishap Data Bases. Liaison with Office of the Judge Advocate General in all matters pertaining to the privileged status of mishap reports and associated documents.

4. Conduct of safety surveys and assist visits and providing on-site technical assistance for mishap investigations at installations and commands. (Safety visits provide an in-depth view of OSH programs for use within command. Assist visits include on the spot help to correct deficiencies noted and provide re-visits for further assistance.)

5. Dissemination of OSH, statistical trend, and hazard awareness information to Marine Corps commanders worldwide through briefings, messages, newsletters, magazines and other media.

6. Sponsorship and coordination of the SECNAV safety awards for Navy and Marine Corps.

7. Provision of safety posters, safety awareness publications, and training guides related to various OSH subjects.

2002. COMMANDER, MARINE CORPS SYSTEMS COMMAND

1. Commander, Marine Corps Systems Command (COMMARCORSYSCOM) implements those elements of the Marine Corps safety program concerning arms, ammunition, and explosives safety. COMMARCORSYSCOM also assures that environment, safety, and health issues are addressed in the acquisition phases.

2. Reference 2-4 requires an environment, safety, and health evaluation on all weapon system programs during the acquisition process. COMMARCORSYSCOM, Sytems Engineering Branch (PSE) incorporates procedures to abate safety and health hazards during systems development and acquisition, and informs the FMF of residual hazards and risks. Issues relating to health hazards that may present a significant risk to personnel who test, operate, maintain, or support weapon systems and equipment are referred to CMC (SD) for evaluation.

2003. INSTALLATION/UNIT COMMANDERS

1. Commanders have overall responsibility for compliance with Marine Corps OSH standards and this Manual. They must implement an all-encompassing command safety program, to include tenants under their purview. They also need to prescribe and enforce additional safety requirements for local conditions.

2. Commanders shall:

a. Conduct an OSH program that implements the policies and requirements of this Manual.

b. Ensure installation or unit safety manager is organizationally placed at command level (i.e., Special Staff) per reference 2-3, and is a qualified safety and health specialist.

c. Ensure a safety office is organized, staffed, and maintained as required by chapter 3.

d. Ensure all personnel are aware of their obligations and personal responsibilities to the Marine Corps OSH program. Establish clear lines of accountability.

e. Establish OSH councils at appropriate command levels per chapter 4.

f. Ensure compliance with the mishap investigation and reporting procedures of reference 2-5.

g. Ensure that all workplaces are inspected at least annually and the necessary deficiency reports are completed per chapter 7.

h. Establish procedures to protect all Marine Corps personnel from coercion, discrimination, or reprisals for participation in the Marine Corps OSH program.

i. Provide Marine Corps personnel and employee representatives access to exposure and medical records.

j. Establish Marine Corps OSH education and training programs per chapter 5.

k. Coordinate occupational health and industrial hygiene field support with the cognizant medical command per chapter 11.

l. Ensure senior management, middle management and first line supervision support the Marine Corps OSH program to the extent of their authority and responsibility by:

(1) Setting example for subordinates.

(2) Promptly reporting and correcting recognized hazards.

(3) Clearly defining and assigning individual OSH responsibilities to subordinates.

(4) Providing appropriate OSH training for workers, participating in OSH committees or meetings, and conducting stand-up OSH meetings where required.

(5) Conducting or participating in work site inspections, including those made by the activity OSH personnel.

(6) Receiving training appropriate to their level of responsibility and authority. Marine Corps OSH orientation training does not need to be repeated with subsequent assignments to other levels of management unless significant OSH related changes have occurred.

(7) Acquiring, maintaining, and requiring the use of approved PPE, approved safety equipment, and other devices necessary to protect employees.

(8) Encouraging a free flow of information and ideas from personnel on methods of improving the safety of their workplace, work practices, and work processes.

(9) Ensuring the performance evaluation of managers and supervisors, consistent with their assigned responsibilities and authority, reflects how well they meet requirements of this Manual.

m. Ensure the implementation of a comprehensive motor vehicle safety program for both government and private motor vehicle operations per reference 2-6.

n. Review all OSH citations and findings from external authorities (e.g., OSHA, Marine Corps Inspector General) and internal sources, as warranted. Ensure the causes of the problems are identified and the corrective actions taken address causes and not merely symptoms.

o. Apply the Operational Risk Management (ORM) process of reference 2-7 and other risk management techniques in planning, operations, and training.

p. Ensure all vending machines having an empty weight that exceeds 700 pounds and canned drink vending machines (regardless of weight) at Marine Corps activities are affixed with a safety label and firmly anchored to the floor or wall with an industry standard stabilizing bracket. The safety label shall be displayed near the coin slot and warn about hazards of tipping or rocking the machine. The type of anchor is a local determination based on the material and construction of the wall or floor.

2004. INSTALLATION/UNIT SAFETY MANAGERS. They will be assigned the following minimum general duties which may be amplified to meet local requirements:

1. Execute administrative details of the Marine Corps Safety Program. These are applicable to:

a. All non-flight related operations and activities under cognizance of installation or unit.

b. All personnel assigned to, stationed at, employed by, or otherwise engaged in normal activities at the installation or unit.

c. Personnel employed by Marine Corps exchanges, clubs, etc., at an installation or unit.

d. All residents, tenants, or visitors of installation or unit.

2. Adapt safety directives, regulations, and suggestions from higher authority for local conditions. Prepare and keep current local safety regulations and standard operating procedures (SOP's).

3. Maintain complete reports of all mishap types and make comprehensive analyses, for mishap prevention purposes, of all mishaps involving Marine Corps personnel, equipment, or activities. Prepare reports of mishaps required by higher authority, investigate mishaps as directed, and recommend corrective measures to eliminate mishap causes.

4. Ensure workplace safety inspections are conducted of the premises, equipment and activities on a periodic basis in accordance with chapter 7. Document safety inspection programs and ensure appropriate follow-up and timely corrective action on unsafe conditions and practices noted.

5. Act in an advisory capacity on safety matters to commander. Provide guidance to staff officers and supervisors. Maintain close liaison with all staff officers to ensure maximum cooperation in connection with matters of mutual concern and work toward completeness and accuracy of reports with a minimum of duplication in the investigation of mishaps.

6. Coordinate and consult with activity officials on safety matters as follows:

a. With medical personnel for matters relating to proper selection and placement of personnel from safety and job analysis standpoints.

b. With security personnel on traffic management and other matters of mutual concern.

c. With supply officer for specifying standards for safety devices and proper labeling of hazardous materials.

d. With facility maintenance or public works officer on matters pertaining to:

(1) Safety plans and specifications for alterations and new construction.

(2) Safety and health deficiencies in existing structures or facilities.

(3) Identification of safety and health deficiencies that are potential candidates for OSH Deficiency Abatement Program (HQMC funded).

e. With training officer to ensure safety standards, rules, and regulations are included in training programs.

f. With industrial hygienist to survey and appraise conditions affecting the health and efficiency of personnel, such as fumes, gases, dust, lighting, ventilation, temperature extremes, noise, and sanitary facilities with a view toward eliminating or minimizing unhealthful conditions. With the Radiation Safety Officer, Laser System Safety Officer, or industrial hygienist as appropriate to evaluate harmful radiation and ensure exposed personnel are protected.

g. With unit special services officer or Morale, Welfare, Recreation (MWR) officer to ensure safety standards, rules, and regulations are included in MWR or special services programs.

7. Program and budget in coordination with facility maintenance or public works officer and comptroller, as appropriate, for correction of safety and health deficiencies. All deficiencies must be documented and an audit trail established.

8. Establish and maintain liaison with local, municipal, state, and federal safety agencies, as appropriate.

9. Organize, provide technical assistance to, and act as recorder of command safety councils.

10. Provide safety representation on activity or unit committees and boards as assigned. Some committees and boards appropriate for safety manager membership are:

a. Beneficial suggestions.

b. Grievance hearings where safety is a factor.

c. Planning boards to advise on appropriate priority for safety.

d. Workers' compensation committees.

11. Review beneficial suggestions pertaining to safety devices and practices and submit recommendations to the awards committee.

12. Study safety problems and conduct job analyses to develop remedial safety measures related to mechanical processes, shop and field operations, and physical conditions. Provide safety comments on designs of equipment, processes and safeguards. Review operating and training instructions and recommend those corrective actions necessary to eliminate or control mishap-producing conditions and hazards.

13. Organize, implement, and supervise a complete motor vehicle safety program for both government and private motor vehicle operation, including technical guidance for training operators and conducting attitude training aimed at mishap prevention.

14. Oversee explosives and range safety programs. Through the explosives safety officer coordinate with range and ordnance officers to ensure appropriate safety standards, rules, and regulations are included in range and ordnance operations.

15. Provide safety education to all supervisors, collateral duty safety managers, and their assistants in subordinate units. Make sure they are aware of their duties and have the necessary references, equipment, and material to discharge these duties.

16. Initiate actions to stimulate interest in safety, such as news releases, posters, and handouts.

17. Keep the commander informed at all times of any safety problems encountered in conducting safety and mishap prevention programs. A narrative report of safety conditions, problems,and recommended corrective action shall be submitted to commander at least quarterly.

2005. CHIEF, NAVY BUREAU OF MEDICINE AND SURGERY (BUMED). BUMED shall provide occupational health policy and support for Marine Corps as described in chapter 11.

CHAPTER 2

References

2-1	SECNAVINST 5100.10G	Department of the Navy Policy for Safety, Mishap Prevention and Occupational Health Programs (NOTAL)
2-2	DoD 6055.9-STD	DoD Ammunition and Explosives Safety Standards (NOTAL)
2-3	MCO 5100.29	Marine Corps Safety Program
2-4	DoD Reg 5000.2-R	Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs (NOTAL)
2-5	MCO P5102.1	Marine Corps Ground Mishap Reporting
2-6	MCO 5100.19D	Marine Corps Traffic Safety Program (DRIVESAFE)
2-7	MCO 3500.39	Operational Risk Management

CHAPTER 3

INSTALLATION AND MILITARY UNIT SAFETY PROGRAM

CHAPTER 3

INSTALLATION AND MILITARY UNIT SAFETY PROGRAM

3000. ADMINISTRATION

1. The commander is responsible for the prevention of mishaps involving personnel, equipment, or property in their charge. These mishaps result in burdensome costs for personnel, equipment, workers' compensation and civil claims against the Marine Corps. They reduce mission readiness and negatively impact public relations.

2. Per reference 3-1, the commander on DoD installations is responsible for the overall health and safety of personnel and equipment aboard the installation. Marine Corps installations will have one safety program which shall include all on-duty and off-duty operations and activities located aboard and apply to all military and civilian personnel assigned to, stationed at, employed by, or otherwise engaged in normal activities at the installation.

3. The safety program of Marine Corps units not located on an installation, but located within the immediate area, shall be integrated and coordinated with that installation safety program.

4. Marine Corps installations shall provide safety support to tenant commands and develop memorandums of understanding or host-tenant agreements with Marine Corps and non-Marine Corps commands per references 3-1 and 3-2. This safety support will not be charged to the tenants unless services required by the tenant are outside the scope of the host's safety standards. Following are types of safety program assistance which installation commanders shall provide for tenant commands on request:

a. Safety Training. Provide an appropriate course of instruction to unit safety managers, their assistants, and supervisory personnel for indoctrination of the safety and health program. Provide on-the-job training courses in safety inspection procedures to unit safety and supervisory personnel. Professional training for specialized safety subjects and new standards (e.g., electrical standards, hazard communication, process safety analysis, and confined space entry) shall be provided to unit safety representatives and supervisors.

b. Safety Inspections. Conduct annual inspections to ensure all workplaces are inspected by qualified OSH inspectors.

c. PPE. Provide advisory assistance to unit safety representatives and supervisors on specifications for procurement and instructions concerning the use of PPE, safety equipment and devices.

d. Safety Education Material. Provide advisory assistance to unit safety representatives on maintaining adequate safety publications and other educational materials.

e. Reports and Investigations. Provide training and assistance to unit safety representatives and supervisors in reporting and investigating mishaps.

5. To maintain better liaison and reduce administrative requirements, tenants may integrate safety staff with the installation's safety office. However, when an FMF unit departs from the installation, the unit must manage its safety program independently or integrate safety with the program of the FMF activity it joins.

6. The commander of each separate installation or unit is responsible for the coordination with other installations, units, or services within a joint command to ensure the maintenance of safe practices and physical standards.

3001. SAFETY ORGANIZATION AND STAFFING. The commander at each installation or unit shall designate a safety manager to carry out the responsibilities in paragraph 2003. This individual shall have direct access to the commander with the Safety Department (Division) established at the command level. The safety manager will be assigned, as a minimum, the specific duties in paragraph 2004. The safety manager shall be provided sufficient additional personnel to assist in the discharge of these responsibilities. The following are the numbers and types of personnel considered adequate to conduct minimally successful safety programs:

1. At installations or units having a total population of 10,000 or more military and civilian personnel, to include tenant commands and resident dependents at these installations:

a. One full-time safety manager, either a civilian qualified for civil service employment as a safety and occupational health manager (GS-0018 series), or company or field grade officer qualified in mishap prevention program administration. Per reference 3-1, the safety manager must be a qualified safety and health specialist and should have minimum 4 years experience in a safety function. Installations under this category require the

safety and occupational health manager to have managerial and technical experience at the GS-13 grade or higher.

b. One full-time technical assistant, either a civilian qualified for civil service employment as a safety and occupational health specialist (GS-0018 series), or a commissioned or noncommissioned officer qualified as a safety and health specialist.

c. Additional trained technical assistants as required. A minimum of one safety and health specialist shall be assigned for each 1,500 "occupationally employed personnel," military and civilian combined.

(1) Where a motor vehicle safety program is required,one of the technical assistants assigned should be qualified in motor vehicle mishap prevention.

(2) Additional technical assistants may be required if other functions are added which have a major impact such as explosives safety, industrial hygiene, environmental safety, or asbestos program manager.

d. Clerical support as justified by work requirements.

e. One qualified part-time safety specialist in each subordinate battalion or small separately administered unit, and in other activities as deemed necessary by commander.

2. At installations or units having a total population of over 2,000 but less than 10,000 military and civilian personnel to include tenant commands and resident dependents at these installations:

a. One full-time safety manager, either a civilian qualified for civil service employment as a safety and occupational health manager (GS-0018 series), or a field grade officer qualified as a safety and health specialist. Installations under this category require the safety and occupational manager to have managerial and technical experience at the GS-12 grade or higher.

b. Technical assistants as required, see paragraph 3001.1.c., above.

c. Clerical support as required.

d. One qualified part-time unit safety specialist in each subordinate battalion or smaller separately administered unit, and in other activities as deemed necessary by commander.

3. At installations or units having a total population of 2,000 or fewer military and civilian personnel to include tenant commands and resident dependents at these installations:

a. At least one qualified part-time safety and health specialist. However, a full-time safety and health specialist shall be appointed where the total occupationally employed personnel exceed 1,500, military and civilian combined.

b. One qualified part-time unit safety specialist in each subordinate battalion or smaller separately administered unit, and in other activities as deemed necessary by the commander.

4. Commander, Marine Forces Atlantic (COMMARFORLANT),Commander, Marine Forces Pacific (COMMARFORPAC) and Commander, Marine Forces Reserve (COMMARFORRES) shall establish a safety office staffed to coordinate the safety and mishap prevention programs within the Fleet Marine Forces. For those activities and units of the Fleet Marine Forces without full-time trained safety personnel, these offices will provide advice to the personnel assigned safety as a collateral duty and provide commanders appropriate status reports on their safety program. In operational units, such as the force, division, support group, wing, regiment, and aircraft group headquarters, a commissioned officer shall be assigned primary duty as safety manager. This safety manager will coordinate the mishap prevention efforts and provide assistance to the unit safety managers of battalion and smaller separate units of the command.

5. Commanders of Marine Corps districts and units of less than 200 personnel shall appoint at least one part-time safety and health specialist.

NOTE: The safety office shall be a special staff function and the safety program shall not be subordinated to other programs and functions. Direct responsibility for safety must remain at the highest level of supervision, and the advisory status of safety manager directly to commander must be maintained.

3002. PROGRAMMING AND BUDGET

1. Program information will be submitted biennially for a six year period in the categories shown below. For example, a report submitted in FY98 should include fiscal years 2000-2005. The actual date of submission will be provided by separate Program Objective Memorandum (POM) correspondence.

a. Facilities. This category includes Operation and Maintenance, Marine Corps (O&MMC) funded minor construction projects. Details on this project category may be found in reference 3-3. Functional category R2 (HQMC funded)construction projects should be submitted to CMC Facilities Branch (LFF). In reporting this category cite each project, the OSH deficiency, hazard category, risk assessment code, reference standard (e.g., OSHA, ANSI), cost to correct the deficiency, and impact if not funded.

b. Equipment. This category includes that equipment needed to determine a hazardous environment and to protect personnel from hazardous working conditions, e.g., gas and noise detectors, safety shoes, eye and ear protective devices. Cite type and quantity of equipment and associated costs.

c. Training. Included in this category is the projected cost for training CONUS-based civilian safety personnel and both military and civilian safety personnel stationed outside CONUS at military and civilian schools. Also included should be the cost of attendance at conferences and workshops by both military and civilian personnel. HQMC provides funds for the scheduled Ground Safety for Marines courses. Cite desired training and associated costs.

2. Safety manager will maintain a budget adequate enough to implement a comprehensive safety program and carry out the responsibilities contained in paragraph 2004.

a. Safety budget shall be carried on a separate line item and all safety expenditures accounted for in the Standardized Accounting and Budget Reporting System (SABRS) I under the Activity Group/Subactivity Group (AG/SAG) for Mission Support - Safety Programs code BAB1. Cost Account Codes to be used under BAB1 include:

B1A0	Safety Training
B1B0	Safety Material
B1C0	Protective Equipment
B1D0	Safety Administration
1D70	Safety
1E71	Medals Prizes (Medals, Ribbons, Prizes, Navy and Marine Corps - for Safety)

b. The AG/SAG and Cost Account Codes are contained in the SABRS I Data Dictionary.

3. Safety education, promotional materials, publicity materials, and visual aids will be funded and may be ordered directly from

the publisher or other appropriate source by the using activity. Where possible, ordering should be done once each year to obtain quantity orders at a substantial savings. Additional information on specific or unusual needs may be addressed to the CMC (SD).

CHAPTER 3

References

3-1	MCO 5100.29	Marine Corps Safety Program
3-2	DoD Inst 4000.19	Interservice, Interdepartmental, and Interagency Support
3-3	MCO P11000.5F	Real Property Facilities Manual, Volume IV, Facilities Projects Manual

CHAPTER 4

COUNCILS AND COMMITTEES

CHAPTER 4

COUNCILS AND COMMITTEES

4000. DISCUSSION

1. The Federal Advisory Council on Occupational Safety and Health (FACOSH) provides advice and assistance to the Secretary of Labor. This council consists of 15 members representing Federal agencies and labor organizations of Federal employees. At least five members are required to be labor organization representatives. The DoD representative on the FACOSH is the Deputy Under Secretary of Defense for Environmental Security (DUSD (ES)).

2. Field Federal Safety and Health Councils are established in many local areas where 10 or more Federal establishments are located within a 50 mile radius of each other and have a combined total of 300 or more employees. The Marine Corps supports these councils and encourages command participation. Commands are authorized to provide meeting accommodations, speakers, and the use of educational resources as appropriate.

3. The DoD elected not to establish a certified OSH committee at the national level under the provisions of reference 4-1. Instead, the DoD Safety and Occupational Health Committee was established under reference 4-2. DUSD (ES) staff chairs this committee, which includes representatives from all military departments and major defense agencies. The Department of the Navy (DON) is represented by ASN (I&E), CNO Safety and Occupational Health Branch (N454), Deputy Special Advisor to CNO on Safety (N09FB), and CMC (SD).

4. The purpose of local OSH councils and committees is to identify, define and assess OSH issues, problems, and needs and recommend corrective measures. These forums provide an opportunity for the multiple viewpoints and interests of various groups and individuals at an activity to be expressed. From their recommendations, new or revised policies, procedures or practices may be developed to improve the effectiveness of the Marine Corps OSH Program.

5. OSH councils or committees have three basic functions:

a. Provide program assistance to commanders which includes proposing policy and program objectives.

b. Create and maintain an active interest in OSH.

c. Serve as a means of communication regarding OSH.

4001. SAFETY COUNCIL

1. Each installation or unit having a total population of over 500 military and civilian personnel shall have a safety council. Units may elect to participate in the host command's safety council or joint safety council.

2. Each unit having a total population of under 500 military and civilian personnel shall participate in the host command's safety council or have a supervisors safety committee as described in paragraph 4002.

3. Purpose

a. Consider new standards, policies, procedures, recommendations, etc., involving safety and health.

b. Periodically review the mishap experience and analyses of the command.

c. Recommend changes in policies or procedures to minimize unsafe acts and strengthen the command safety program.

d. Develop recommendations on physical or structural alterations designed to eliminate or control hazards.

e. Develop educational and promotional activities that create and maintain an interest in safety and increase the emphasis on mishap prevention.

4. Membership. The safety council shall be chaired by the commander or chief of staff. Members shall be appointed in writing and include military and civilian personnel representing key organizational elements at the activity, as well as safety and health professionals. Minimum membership should include the maintenance, medical, training, personnel, and MWR officials, safety manager, provost marshal, and a representative of civilian employees.

5. Meetings. The safety council shall meet on a regular basis, at least quarterly, or more frequently as directed by the chairperson. Each council will develop its own rules of operation.

6. Meeting Minutes. Safety manager shall assure the preparation, publication and file maintenance of the minutes of

all safety council meetings (three years retention). All correspondence from this safety council shall be confined to DoD channels.

4002. SUPERVISORS' SAFETY COMMITTEE

1. Each Marine Corps installation, subordinate unit, or unit shall have a supervisors' safety committee. Those units having a population under 500 military and civilian personnel are not required to have a supervisors' safety committee if they participate in the host command's safety council.

2. Purpose

a. Consider new standards, policies, procedures, recommendations, SOP's, etc., involving safety and health.

b. Periodically review the mishap experience and analyses of the command mishaps.

c. Recommend changes in policies or procedures to minimize unsafe acts and strengthen the command safety program.

d. Develop recommendations on physical or structural alterations designed to eliminate or control hazards.

e. Develop educational and promotional activities that create and maintain an interest in safety and increase emphasis on mishap prevention.

3. Membership. Committee membership shall consist of military and civilian supervisors as appropriate. Membership shall be open to a civilian employee representative when the supervisors' safety committee contains or represents civilian employees. A supervisor shall be elected annually as chairperson from members. Safety manager shall provide safety membership with consultation and advice.

4. Meetings. Committee shall meet at least quarterly or more frequently if circumstances warrant.

5. Minutes. Recorder of this committee shall be elected from membership. Meeting minutes shall be forwarded to safety council for review and appropriate action. Safety manager shall ensure copies of minutes are maintained for three years.

4003. SHOP SAFETY COMMITTEE

1. Each Marine Corps organization or unit having a population of over 500 military and civilian personnel shall establish appropriate shop safety committees.

2. Purpose. To increase interest in safety at the worker level and decrease the potential for mishaps.

3. Membership. Employees of each work entity (e.g., office, shop crew, section, department) consisting of five or more persons may constitute a shop safety committee. Each such committee will include all members of that particular entity and shall be chaired by supervisor or a journeyman level member.

4. Meetings. One or more committee meetings will be held each month at times and locations scheduled with supervisor. Meetings should be of short duration and have minimal effect on work schedules.

5. Meeting Minutes. No formalized minutes of shop safety committee meetings are required; however, a roster of attendees and topics discussed will be provided to the concerned supervisor for recording in department records. Supervisors will then forward any pertinent safety information to their safety representative, supervisors' safety committee or safety council as appropriate.

CHAPTER 4

References

4-1	Executive Order 12196	Occupational Safety and Health Programs for Federal Employees (NOTAL)
4-2	DoD Inst 6055.1	DoD Occupational Safety and Health Program (NOTAL)

CHAPTER 5

TRAINING

CHAPTER 5

TRAINING

5000. RESPONSIBILITIES

1. Commanders, directors, officers-in-charge, and supervisors shall ensure that all personnel in their organizations or under their supervision receive safety and health training as required by this Manual, OSHA standards, and other applicable directives and standards.

2. Safety managers shall provide Marine Corps leaders with orientation and other learning experiences which will enable them to manage OSH programs of their organizations. Such orientation and training should include, as a minimum, references 5-1 through 5-3 and the installation safety and health program.

5001. TRAINING REQUIREMENTS

1. Job Safety Training. Before beginning work, newly assigned personnel will be given job safety training. This training will normally be provided and documented by the person's work section supervisor. As a minimum, the training will consist of: general safety matters related to the work environment; hazards associated with assigned tasks; applicable safety and health standards; PPE required for each task; an overview of local safety and health program with emphasis on individual rights and responsibilities; prompt reporting to management of unsafe conditions, potential exposure to hazardous materials, or occupational injury or illness; and any additional specialized safety and health training the person is required to attend and a date and time schedule of applicable training sessions.

2. Specialized Safety and Health Training. When newly assigned personnel, or other workers, will be involved in work environments, processes or tasks exposing them to hazardous conditions, they will be given applicable specialized safety and health training. References 5-4 and 5-5 contain many specialized safety and health training requirements. Supervisors are responsible to provide or obtain job unique safety training. Some training may be available from local safety, occupational health, or preventive medicine personnel. Documentation of this training will be maintained by the person's work section supervisor. Some safety and health training programs or areas that may apply are:

Asbestos
Bloodborne Pathogens
Confined Space
Construction
Ergonomics/Back Injury Prevention
Explosives Safety
Fall Protection
General Industry
Hazard Communication Program
Hearing Conservation
Laser
Lead
Lockout/Tagout (Energy Control)
Motor Vehicle
Office Practices
Personal Protective Equipment
Radiation
Respiratory Protection
Sight Conservation
Sports & Recreation

NOTE: This list is not all-inclusive and each item does not apply to every person. Therefore, supervisors must determine the safety training each person will receive based on a job hazard analysis, industrial hygiene survey, or both.

3. Change-In-Work Training. Events creating a change in working environments, processes, or tasks that affect the safe and healthful performance of work require change-in-work training. Some events that may require change-in-work training are: new process, change in equipment, relocation of work stations, updating operating procedures, alteration of control devices, modifications to buildings, or changes in technical manuals. Supervisors of work sections will ensure each person affected by a change in work is trained and maintain documentation of this training.

4. Civilian Employee Representative Training. Employees of the command who are representatives of employee groups, such as labor organizations which are recognized by command, shall be afforded applicable training outlined in the three preceding paragraphs. Training is applicable when it will enable such groups to function appropriately in ensuring safe and healthful working conditions and practices in the workplace and enable them to effectively participate in workplace safety and health inspections. Safety managers will maintain documentation of such training.

5. Supervisor Safety Training. Safety managers shall ensure OSH training is provided to all supervisory personnel. They shall provide documentation to each attendee's organization and maintain file copies of class rosters. Initial training will be a minimum of four hours of instruction composed of safety indoctrination and mishap prevention.

a. Indoctrination shall cover, as a minimum: an overview of supervisors' responsibilities for providing and maintaining safe and healthful working conditions for workers, Marine Corps OSH Program, references 5-1 through 5-3, procedures for reporting and investigating allegations of reprisal, procedures for abating hazards, and other appropriate rules, regulations and precautions.

b. Mishap prevention methods shall cover processes, procedures, and programs used in identifying, eliminating or reducing OSH hazards and, as a minimum, include:

(1) Development and use of job safety and hazard analysis, and other risk management techniques.

(2) Implementing, conducting, and documenting scheduled inspections.

(3) Implementing, documenting, and tracking hazard abatement actions.

(4) Mishap investigation, recording, and reporting procedures.

(5) How to train and motivate subordinates toward assuring safe and healthful work practices.

6. Supervisors' Safety Training Annual Refresher and Update. Safety managers shall ensure supervisors receive annual training that is a refresher and update to their initial supervisors' safety training. They shall maintain documentation of training. Subject matter and duration of training shall be determined by safety manager based on needs of the supervisors receiving training. Training will be directed at supervisors' job tasks with the goal of progressively enhancing supervisors' skills in providing a safe and healthful workplace for those supervised.

7. Collateral Duty Safety and Health Personnel - Unit Safety Representative Training. Safety managers shall provide and document training for collateral duty safety and health personnel. Training shall be designed to develop and enhance the skills needed in their safety duties and keep them updated on

changing OSH standards. These individuals shall attend the 80 hour Ground Safety for Marines course (CIN # A-493-0047) administered by Naval Occupational Safety and Health, and Environmental Training Center, or a training course(s) approved by COMMARFORPAC, COMMARFORLANT, COMMARFORRES, or CG Marine Corps Combat Development Command (MCCDC). These personnel are expected to remain in their safety assignment for at least one year after training is completed.

8. Safety and Occupational Health Specialists/Personnel Training. Safety managers shall ensure personnel filling safety and health positions are fully trained to perform duties or tasks required by the position and to meet changing program needs. Training may be accomplished through formal or informal courses, laboratory experiences, field study, and other learning experiences and must ensure competency to perform the necessary technical monitoring, consulting, testing, designing, and other related program development and implementation practices and procedures. It is recommended that safety and occupational health personnel receive a minimum of eight Continuing Education Units (CEU's) or equivalent per year. Examples of areas to include in training are preparation of reports and other documentation, inspection processes, hazard recognition and abatement, follow-up procedures, equipment and facility design, standards application, analysis of mishap data, and other related tasks. Safety managers shall ensure training is documented in appropriate personnel records and maintain an Individual Development Plan (IDP) of each person's training and qualifications. It is recommended IDP's be developed and implemented using reference 5-6 as guide and format. Reference 5-6 may be ordered under Publication Control Number (PCN) 206007595000.

5002. TRAINING STANDARDS. When safety and health training standards are not available or existing standards are not adequate, training standards shall be developed or updated locally. Training standards may include standard operating procedures, technical directives, operator instruction manuals, etc. These standards will ensure all steps are included to perform the applicable task in a safe and healthful manner. Supervisors will ensure suitability of the standards and maintain them at the applicable work location. Supervisors will coordinate locally developed safety and health standards with the safety manager for initial review and approval, and thereafter at least annually for updates. Safety managers shall oversee local training standards to ensure their adequacy with assistance from the responsible industrial hygienist (when applicable).

5003. COORDINATION AND DOCUMENTATION

1. Safety and health training conducted on Marine Corps installations will be coordinated with safety manager at that installation. Safety managers will coordinate and ensure adequate facilities, equipment, and visual aids are available for OSH training.

2. Documentation of safety and health training is a critical program indicator. Each commander, safety manager, program manager, unit safety representative, collateral duty safety representative, and supervisor shall ensure all safety and health training is properly documented. Safety managers shall develop local safety and health training documentation formats and procedures with assistance from the responsible industrial hygienist (when applicable). These procedures will ensure all safety and health training is documented and that the documentation is readily available within the installation safety office and specific work locations. Specialized training should be documented in personnel files.

CHAPTER 5

References

5-1	OSH Act, Section 19	Federal Agency Safety Programs and Responsibilities
5-2	E.O. 12196	Occupational Safety and Health Programs for Federal Employees (NOTAL)
5-3	29 CFR 1960	Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters
5-4	29 CFR 1910	Occupational Safety and Health Standards for General Industry
5-5	29 CFR 1926	Occupational Safety and Health Standards for Construction
5-6	NAVEDTRA 10076A	Career Development Program for Safety and Occupational Health and Industrial Hygiene Personnel

CHAPTER 6

OCCUPATIONAL SAFETY AND HEALTH (OSH) STANDARDS

CHAPTER 6

OCCUPATIONAL SAFETY AND HEALTH (OSH) STANDARDS

6000. DISCUSSION

1. This chapter provides guidance and direction in development and application of standards within the Marine Corps OSH Program.

2. Federal agencies are required to establish procedures for the development of agency OSH standards. Agencies are required to comply with standards issued under Section 6 of the OSH Act, reference 6-1.

3. DoD and DON have adopted OSHA standards for use throughout the agency. Provisions for alternates to the OSHA standards, supplemental standards, other special standards, and exceptions for military unique equipment, systems, and operations are contained in reference 6-2.

6001. MARINE CORPS OSH STANDARDS

. Marine Corps OSH standards shall consist of the following:

1. Marine Corps orders, including the contents of this Manual and any directives issued by commands having technical cognizance or assigned responsibilities under reference 6-3 and approved by CMC (SD). See figure 6-1 for a listing of other OSH standards and amplifying guidance documents.

2. OSH standards, including temporary standards, promulgated by OSHA pursuant to reference 6-1, with minimal minor adaptation to conform to Marine Corps administrative practices. Marine Corps commands will incorporate the most current editions of national consensus standards referenced in the OSHA standards.

3. Alternate OSHA standards authorized for component use by DUSD(ES) subject to Department of Labor (DOL) approval.

4. Technical standards developed or adopted by voluntary consensus standards bodies and used as standards to carry out policy objectives and operating procedures as required under reference 6-4. These include nationally recognized sources of OSH guidance such as the American Conference of Governmental Industrial Hygienists (ACGIH), American National Standards Institute (ANSI), National Fire Protection Association (NFPA), and Compressed Gas Association, Inc.

5. Special DoD, DON, or Marine Corps developed standards, rules, and regulations cover on-the-job safety and health applicable to military unique equipment, systems, and operations.

6002. APPLICATION. The above OSH standards shall be applied in Marine Corps workplaces, worldwide, with the following qualifications:

1. Military Unique Equipment, Systems and Operations. In these applications, the above standards, except for paragraph 6002.5, do not apply. Instead, Marine Corps orders and command-developed rules and regulations, consisting of specialized standards, specifications, and procedures to minimize hazards and prevent mishaps, will continue to apply. These special rules and regulations shall be revised and strengthened continuously and should include appropriate OSHA and national consensus standards wherever practicable and consistent with military design configuration and the requirement to develop and maintain a combat capability.

2. Special Statutory Authorities. Certain operations are subject to mandatory safety standards or rules which derive from separate, specific statutory authority (e.g., Explosive Safety Standards promulgated under the authority of 10 U.S.C. 172 and Nuclear Safety and Health Standards, issued under the authority of 42 U.S.C.). Application of these special, functional standards does not exempt any workplace from other applicable OSHA standards which address conditions not specifically covered by the special rules, provided there is no substantive conflict. Thus, a workplace in a munitions depot, subject to special explosive safety standards, is also subject to OSHA standards for machine guarding, eye protection, etc. Any publication which sets forth job safety and health requirements for that workplace must take this into account.

3. Status of Forces Agreements. In overseas workplaces where status of forces agreements specify different standards, those standards take precedence, subject to the same limiting rationale described in paragraph 6003.2.

6003. IMPLEMENTATION

1. Marine Corps commands may elect to implement the OSH standards by any combination of the following:

a. Issuance of an instruction(s) which adopts these standards by reference.

b. Publication of component or subordinate command directives, manuals, etc., which include these organization and administrative practices. Such publications may paraphrase, transpose, or otherwise adapt these standards. They may also contain criteria more stringent than those included in an OSHA standard, but shall not decrease or substantially alter the standard except as provided in paragraph 6005.

2. Commanders shall:

a. Ensure all affected personnel understand and comply with criteria contained in OSH standards and enforced by supervision. In cases of noncompliance, management shall consider disciplinary action against the offender and supervisor under reference 6-5 or Uniform Code of Military Justice, as appropriate.

b. Ensure OSH standards are applied in the acquisition process for equipment and material included in goods and services, and during the design and construction of new or upgraded facilities.

c. Ensure all Marine Corps publications, instructions, manuals, specifications, technical orders, etc., which contain OSH provisions, are reviewed and updated as expeditiously as practicable to conform to OSHA standards. In the interim, commands shall issue guidance to resolve conflicts between OSHA standards and current publications.

d. Implement emergency temporary standards (ETS), less administrative requirements, promulgated by OSHA pursuant to reference 6-1 not later than the effective date established by DOL. One copy of such ETS implementing publications will be forwarded to CMC (SD).

3. New OSHA standards will be disseminated for implementation by CMC (SD), CHBUMED, or COMNAVSAFECEN as appropriate.

6004. ALTERNATIVE STANDARDS APPROVAL. If a Marine Corps command determines that a Marine Corps OSH standard should be modified for application to a particular working condition, a proposed alternate standard may be submitted to CMC (SD) for approval. Proposed alternate standard must provide protection equivalent to that afforded by the OSH standard it replaces and should apply substantially command wide. The following procedures apply:

1. Originating Marine Corps command shall forward the proposed alternate standard for review and comment to those civilian

employee organizations having national consultation rights with command concerned.

2. Following receipt of the above comments, or after a 45-day suspense period, originating Marine Corps command shall forward the proposed alternate standard to CMC (SD), through chain of command, requesting approval. The request should include:

a. Summary statement which delineates differences between the applicable Marine Corps OSH standard and proposed alternate standard, with justification.

b. Summary of comments received from civilian employee organizations.

c. Description of the alternate standard.

d. Description of interim protective measures in effect pending decision on the alternate standard.

3. CMC (SD) will review the proposed alternate standard, and upon concurrence, forward it to DUSD (ES) for approval, via ASN (I&E). Marine Corps developed OSH standards do not need to be submitted to DUSD (ES) for approval.

4. Upon approval of the alternate criteria, originating Marine Corps command shall include the alternate standard in implementing instructions prepared under paragraph 6003, with a notation that instructions contain an approved alternate standard.

5. The following are not considered alternate OSH standards, and do not require approval by procedures set forth in paragraph 6004.2:

a. Actions which increase the stringency of Marine Corps safety program criteria (e.g., increase the frequency of prescribed inspections).

b. Actions which implement more current editions of national consensus standards referenced in OSHA standards.

c. Criteria and procedures developed locally and implemented to control hazards for which no Marine Corps OSH standard(s) exists.

d. Interim alternative protective measures adopted while awaiting completion of an abatement project.

6005. USE OF THE TERM STANDARDS. To achieve maximum standardization, and to comply with reference 6-6, use of the term "standards" by a Marine Corps command to describe any implementing instruction defined in paragraph 6003 is discouraged. However, if a commander determines use of this term is required, such component "standards" shall:

1. Be comprehensive in scope to include all OSHA standards criteria which pertain to command.

2. Apply command-wide.

3. Apply internally only to command concerned. They will not be referenced by name in Marine Corps wide military specifications or standards, or otherwise used in procurement of goods or services for use outside the command concerned.

4. Contain a certification that the "standards" are in compliance with paragraph 6001. Such "standards" shall be forwarded to CMC (SD) for review prior to publication.

6006. HOST-TENANT RELATIONSHIPS

1. On DoD installations, the installation commander is responsible for overall health and safety of personnel and equipment aboard installation. Adherence to host installation's OSH standards, as a minimum, is required to promote safety and health at tenant commands aboard Marine Corps installations. Marine Corps tenants of other DoD installations will adhere to the host's OSH standards. Where tenant commands have OSH standards that meet or exceed the host command's requirements, tenant commands will adhere to the more stringent standards.

2. At non-DoD installations or facilities, where personnel of Marine Corps commands and other Federal agencies work or carry out operations at same location, Marine Corps commands shall adhere to the host's OSH standards if feasible. Again, where tenant commands have OSH standards that meet or exceed the host command's requirements, tenant commands will adhere to the more stringent standards. If a conflict between Marine Corps commands and non-DoD hosts cannot be resolved at local level, the issue shall be referred to higher headquarters level.

CHAPTER 6

References

6-1	P.L. 91-596	Occupational Safety and Health Act of 1970, as amended (29 U.S.C. 651 et seq. (1976)),(OSH Act)
6-2	DoD Inst 6055.1	DoD Occupational Safety and Health Program (NOTAL)
6-3	MCO 5100.29	Marine Corps Safety Program
6-4	P.L. 104-113	National Technology Transfer and Advancement Act of 1995, (15 U.S.C. 370)
6-5	Civilian Personnel Instruction (752)	Department of Navy Adverse Actions (NOTAL)
6-6	E.O. 12196	Occupational Safety and Health Programs for Federal Employees

OTHER MARINE CORPS OSH STANDARDS AND AMPLIFYING GUIDANCE

Document	Subject
MCO 5100.29	Marine Corps Safety Program
MCO P5102.1	Marine Corps Ground Mishap Reporting
OPNAVINST 5100.23D, Chapter 8	Occupational Health
MCO 5104.1	Marine Corps Laser Hazards Control Program
MCO 5104.2	Marine Corps Radiofrequency Electromagnetic Field Personnel Protection Program
MCO 5100.19D	Marine Corps Traffic Safety Program (DRIVESAFE)
MCO 6200.1D	Heat Casualties
MCO 6260.1D	Marine Corps Hearing Conservation Program
MCO P11000.11B	Marine Corps Fire Protection and Emergency Services Program

Figure 6-1. -- Other Marine Corps OSH Standards and Amplifying Guidance.

CHAPTER 7

WORKPLACE SAFETY INSPECTIONS AND CORRECTIVE ACTION

FIGURE

CHAPTER 7

WORKPLACE SAFETY INSPECTIONS AND CORRECTIVE ACTION

7000. DISCUSSION. OSH inspections help ensure safe and healthful workplaces for all Marine Corps personnel. Under the inspection program, safety and health deficiencies are identified and corrective actions developed to protect personnel and meet Federal requirements. Inspection program consists of workplace inspections, major subordinate command evaluations, and HQMC evaluations. Inspections will be accomplished by qualified safety and health personnel.

7001. BACKGROUND. Ideally, an effective OSH program will eliminate hazards before they contribute to a mishap. To accomplish this, the identification of hazardous conditions and unsafe acts before a mishap occurs is essential. Workplace safety inspections are the most effective way of identifying problem areas before they result in mishaps. A properly managed inspection or survey program conducted by knowledgeable personnel can yield several benefits:

1. Detection of specific hazardous conditions and unsafe acts requiring attention before they result in mishaps.

2. Identifying the need for specific safeguards and precautions for personnel and equipment.

3. Promoting the safety and occupational health program to working-level personnel.

4. Encouraging individuals to inspect their own work areas and increasing their level of hazard awareness by focusing attention on their areas of responsibility.

5. Bringing safety management personnel in closer contact with other management personnel, supervisors and working-level personnel to strengthen working relationships and establish a common purpose.

7002. INSPECTION FREQUENCY

1. All workplaces on the installation including tenant commands shall be inspected at least annually by installation OSH personnel. Where a tenant command has a full-time safety and occupational health manager, the installation safety manager may

accept the tenant's safety inspection as meeting this requirement under procedures of their formal agreement.

2. For workplaces where there is an increased risk of accident, injury, or illness due to the nature of the work being performed, inspections shall be conducted more frequently. High hazard areas shall be identified by installation safety office and inspected at least semi-annually.

NOTE: Safety inspection at the tenant commands shall be at least a building inspection. Program inspection shall be conducted by the tenant safety manager unless otherwise agreed to through a Memorandum of Understanding or Interservice Support Agreement with the installation safety office.

7003. RESPONSIBILITIES

1. Safety Manager. Installation or unit safety manager is responsible for conducting the formal workplace inspections. The safety manager will also conduct inspections as a result of requests by persons in authority or reports by employees of unsafe or unhealthful working conditions, and under the requirements of references 7-1, 7-2, and this Manual. Accordingly, the safety manager shall conduct or direct the following:

a. Formal workplace safety inspections, preparation of NAVMC 11400, OSH Deficiency Notices (See figure 7-1), and assignment of Risk Assessment Codes (RAC) with reference to standards or directives violated.

b. Posting of NAVMC 11400, OSH Deficiency Notices, for RAC 1, 2 or 3 violations in accordance with RAC Matrix per paragraph 7006.

c. Assistance to the supervisor of the workplace inspected and the Facilities Department (FD), as necessary, in the development of abatement plans.

d. Maintaining a log of OSH deficiencies noted during inspections to facilitate follow up per paragraph 7009.

e. Review and endorsement, as appropriate, of all work requests initiated by a supervisor of a workplace concerning OSH deficiencies prior to submission to FD.

f. Appraising the OSH policy council or supervisor safety council of all outstanding OSH deficiencies having RAC of 1, 2, or 3, that cannot be abated within 30 days.

2. Workplace Supervisors. Workplace supervisors are responsible for assuring day-to-day workplace safety inspections. Additionally, supervisors shall:

a. Accompany the inspection party to encourage exchange of information, provide access, answer questions, and develop immediate record of deficiencies identified.

b. Provide for or ensure abatement of all identified workplace OSH deficiencies.

c. Within 30 workdays of notification of workplace OSH deficiencies, complete Section B of NAVMC 11400, OSH Deficiency Notice, figure 7-1, and return a copy to the installation safety manager. For hazards which cannot be abated within 30 workdays, the supervisor of the workplace inspected must develop, in cooperation as necessary with FD, an abatement plan. The abatement plan status shall be updated every 30 workdays annotating Section B of NAVMC 11400, OSH Deficiency Notice.

d. Initiate interim control measures at work areas awaiting permanent abatement.

7004. INSPECTION PROCEDURES

1. Inspections shall be conducted in a manner to preclude unreasonable disruption of operation of the workplace and should be consistent with established operational concepts of command. Inspections may be conducted with or without prior notice. No-notice inspections shall be conducted when, in the judgment of safety and health personnel, they will provide a more meaningful assessment of actual operating conditions and practices, or at the request of unit department heads or tenant commanders. This effort is particularly important when evaluating operations in which the safety and occupational health of individuals depend heavily on work practices or use of personal protective equipment. No-notice inspections should be used when evaluating reports by personnel of unsafe or unhealthful working conditions.

2. A representative of the official in charge of the workplace, other individuals authorized by that official, and a representative of civilian employees (i.e., union representative) under that official's supervision shall be afforded an opportunity to accompany inspectors during the inspection to

facilitate exchange of information concerning existing or potential unsafe or unhealthful conditions. Inspectors are authorized to deny the right of accompaniment to any person whose participation interferes with a fair and orderly inspection.

3. Inspectors may discuss with personnel those matters affecting their safety and occupational health, and offer them the opportunity to identify unsafe and/or unhealthful working conditions.

4. Inspectors shall comply with all appropriate safety and occupational health rules applicable to the workplace being inspected.

5. At conclusion of inspection the inspector will confer with official in charge of the workplace or that official's representative, and employee representative, and informally advise them of any apparent safety and health deficiencies identified during the inspection. During this conference, official in charge of the workplace and the employee representative shall be afforded an opportunity to bring to the attention of the inspector any pertinent information regarding workplace conditions.

6. Imminent danger situations discovered during an inspection shall be brought to the immediate attention of the affected personnel supervisors, including commander, for necessary action.

7. Inspector shall provide a written inspection report to official in charge of the workplace with copy to employee representative and local safety representative. Report must describe the procedures followed during inspection, findings which form the basis for issuance of any NAVMC 11400, OSH Deficiency Notice, and recommendations for correction. A NAVMC 11400, OSH Deficiency Notice shall be issued within 15 days of the inspection. A deficiency notice copy will be provided to appropriate supervisor, employee representative who participated in the inspection or closing conference, and local safety representative. This report is exempt from reports control.

8. Inspectors shall maintain copies of OSH inspections for five years after the end of calendar year to which they relate.

7005. POSTING DEFICIENCY NOTICES. In all cases where military or civilian personnel are exposed to unsafe or unhealthful working conditions which are critical, serious or moderate (i.e., RAC 1, 2, or 3), a NAVMC 11400, OSH Deficiency Notice, advising exposed personnel of the unsafe and/or unhealthful working

condition, shall be posted by the supervisor of the workplace in the immediate vicinity of the hazardous condition. The notice shall remain posted until the hazardous condition has been abated or for 30 working days, whichever is later. Upon notification of abatement, the safety inspector shall authorize removal of the notice and appropriate documentation of the hazard abatement.

7006. INTERIM CONTROLS. It is recognized immediate abatement of deficiencies in work areas may not always be possible, and some temporary deviation of safety standards may be required. Therefore, it is necessary appropriate interim controls be established by the supervisor and safety inspector as soon as a deficiency is noted. Such controls shall be outlined and followed on the NAVMC 11400, OSH Deficiency Notice. Interim control measures to be in effect for more than 60 days shall be approved by the installation safety manager or unit safety officer.

7007. CORRECTIVE ACTIONS. When corrective actions cannot be accomplished within 30 days due to circumstances beyond the control of the supervisor of the workplace, he or she shall request assistance from appropriate authority. Records of action taken to effect compliance (i.e., work requests for assistance), shall be annotated in Section B of the NAVMC 11400, OSH Deficiency Notice until such corrective measures are implemented.

7008. HAZARD ABATEMENT LOG

1. Safety managers shall establish a hazard abatement log for follow-up of required corrective action to ensure timely and effective controls are implemented.

2. The log shall include date, building inspected, description of deficiency, RAC and follow up date. This log can be kept manually or in a computerized version.

7009. RISK ASSESSMENT CODES (RAC). Each hazard identified that cannot be corrected immediately shall be assigned a RAC by the safety manager or representative. Figure 7-2 provides guidance for determining RAC's.

CHAPTER 7

References

7-1	29 CFR 1960	Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters
7-2	29 CFR 1910	Occupational Safety and Health Standards for General Industry

NAVMC 11400 REV. 7-98 **OSH DEFICIENCY NOTICE**		
SECTION A - DEFICIENCY INFORMATION	I D NO	
Organization	Location	
Description of Hazard		
Suggested Corrective Action		
Standard Violated	RAC	
OSH Official	Date	
SECTION B - ABATEMENT STATUS (COMPLETE ALL APPLICABLE PARTS)		
• INTERIM CONTROLS		
• ABATEMENT PROJECT INITIATED		
Project Description	Action Taken (Included Work Orders/Purchase Request numbers and date as appropriate)	
	Cost Estimate	Completion Date (Est)
• DEFICIENCY CORRECTED		
Corrections Made	Date	
	Cost	
	Labor	Materia
Signature		
SECTION C - COMMENTS		

Figure 7-1. -- NAVMC 11400 OSH Deficiency Notice.

RISK ASSESSMENT CODES

Risk Assessment Matrix. The risk assessment code (RAC) defined by a matrix represents the degree of risk associated with a hazard considering the elements of hazard severity and mishap probability. The RAC is derived as follows:

1. Hazard Severity. An assessment of the worst potential consequence, defined by degree of occupational injury, illness or property damage which is likely to occur as a result of the deficiency. Hazard severity categories shall be assigned by Roman Numerals according to the following criteria:

a. Category I. May cause death, permanent total disability, or loss of a facility/asset.

b. Category II. May cause permanent partial disability, temporary total disability in excess of 90 days (severe injury or severe occupational illness), or major property damage.

c. Category III. May cause minor injury, minor occupational illness, or minor property damage.

d. Category IV. Presents minimal threat to personnel safety or health, or property, but is still in violation of a standard.

2. MISHAP PROBABILITY. The probability that a hazard will result in a mishap or loss, based on an assessment of such factors as location, exposure (cycles or hours of operation), affected populations, experience, or previously established statistical information. Mishap probability shall be assigned an English alphabet symbol according to the following criteria:

a. Subcategory A. Likely to occur immediately or within a short period of time.

b. Subcategory B. Probably will occur in time.

c. Subcategory C. May occur in time.

d. Subcategory D. Unlikely to occur.

4. Risk Assessment Code. Using the matrix shown below, the RAC is expressed as a single Arabic number that is used to help determine hazard abatement priorities.

Figure 7-2. -- Risk Assessment Codes.

	Mishap Probability			
Hazard Severity	A	B	C	D
I	1	1	2	3
II	1	2	3	4
III	2	3	4	5
IV	3	4	5	5

RAC Definition

1-Critical
2-Serious
3-Moderate
4-Minor
5-Negligible

Figure 7-2. -- Risk Assessment Codes -- Continued.

CHAPTER 8

FEDERAL AND STATE OCCUPATIONAL SAFETY AND HEALTH INSPECTIONS AND INVESTIGATIONS AT CONTRACTOR WORKPLACES ON MARINE CORPS INSTALLATIONS

CHAPTER 8

FEDERAL AND STATE OCCUPATIONAL SAFETY AND HEALTH INSPECTIONS AND INVESTIGATIONS AT CONTRACTOR WORKPLACES ON MARINE CORPS INSTALLATIONS

8000. OSHA INSPECTIONS. This chapter establishes guidance for Federal and State OSH inspections and investigations at contractor workplaces on Marine Corps installations.

8001. OSH ACT. OSH Act (reference 8-1) provides for the development, promulgation, and enforcement of OSH standards. The The law applies to employment within the United States, its territorial waters, territories, or possessions. DoD contractors operating from DoD or privately owned facilities, located on or off DoD installations, are "employers" as defined in OSH Act and are subject to enforcement authority by Federal and State safety and health officials as set forth below.

1. Federal and State OSHA officials must be granted access to DoD contractor workplaces on DoD installations without delay and at reasonable times, in accordance with Section 8(a) of OSH Act, except as otherwise provided in this Manual.

2. Subject to terms of any variance, tolerance, or exemption granted by Secretary of Labor pursuant to OSH Act, a state may exercise jurisdiction over OSH matters involving a DoD contractor workplace, provided the state OSH plan has been approved by the Secretary of Labor. DoD contractors will be responsible for determining the status of applicable state OSH plans.

3. Authorized OSH officials from states without OSHA approved plans may, subject to the exceptions provided elsewhere in this chapter, exercise jurisdiction over OSH matters involving a DoD contractor workplace only when there are no relevant OSHA standards applicable to the work in progress.

4. Federal OSH officials may perform OSH inspections in DoD contractor workplaces situated in areas where the United States holds exclusive Federal jurisdiction.

5. Regardless of whether or not a state has a Secretary of Labor approved plan, state OSH officials have no authority in DoD contractor workplaces situated in areas where the United States holds exclusive Federal jurisdiction.

6. Section 4(b)(l) of OSH Act does not authorize Secretary of Labor to assert authority over working conditions for which another Federal agency exercises statutory authority. Secretary of Labor's authority, does not extend to working conditions specifically covered by:

a. Any state nuclear safety or health standard or regulation.

b. Any explosives safety or health standard or regulation.

8002. STANDARDS. OSH standards, promulgated under provisions of OSH Act, are enforceable by Federal or state OSHA officials as follows:

1. Federal OSHA officials will enforce only Federal standards in DoD contractor workplaces.

2. State OSH officials operating under a federally-approved plan may enforce state standards.

8003. DOD CONTRACTOR RESPONSIBILITIES

1. DoD contractors have the responsibility of responding to any citations issued by Federal or State OSH officials for violations of applicable Federal or State OSHA standards.

2. Full information regarding citations and notices issued to DoD contractors for violations of Federal or State OSHA standards involving DoD furnished equipment, facilities, or other property, shall be referred to the responsible Administrative Contracting Office (ACO) for appropriate action and provided to CMC (SD).

3. DoD contractor workplaces may be inspected for accidents or complaints by Federal or state OSHA officials subject to the exceptions noted in paragraph 8002.

4. DoD contractors shall not be provided with advance notice of OSH inspections by Federal or state OSHA officials except:

a. In cases of apparent imminent danger to any DoD or contractor employees.

b. When requested by Federal or state OSHA officials.

NOTE: Any person who violates the foregoing may be subject to a fine of not more than $1,000 or imprisonment for not more than six months, or both.

5. Before conducting an inspection of a DoD contractor workplace situated on a Marine Corps installation, Federal and state OSHA officials shall present appropriate identifying credentials and state the purpose of the visit to the installation commander and ACO, as appropriate.

6. When Federal or state OSHA officials require entry to a closed area, and they cannot effectively be prevented from access to classified material by such means as covering the material, the following procedures shall apply:

a. Contractor shall immediately notify the OSHA official and DoD activity exercising security supervision over the contractor's workplace of need for a personnel security clearance to enter the closed area.

b. In case of Federal OSHA officials, the DoD security activity, after verifying need for a personnel security clearance, shall contact the appropriate cognizant security office and require verification of the Federal OSHA official's security clearance. If the OSHA official's name is not on the access list, the cognizant security officer shall contact the OSHA regional or area office and request an appropriately cleared OSHA official.

c. In case of state OSHA officials, the DoD security activity, after verifying need for a personnel security clearance, shall coordinate with the state OSHA official and request that the cognizant security office contact the nearest OSHA regional or area office for a cleared Federal OSHA official.

7. Federal and state OSHA officials shall be accompanied on their inspections and investigations by installation safety manager's representatives and ACO (as appropriate). They may also be accompanied by DoD contractor's representatives when requisite security clearances are verified.

8. No photos shall be taken by Federal or state OSHA officials on any Marine Corps installation. Photos requested by these officials shall be taken only by authorized personnel and shall not be delivered to the requesting official until all film, negatives and photos, have been fully screened and classified by higher authority, as appropriate. Requests for documented data, sketches of military installations and equipment, reports or

design information such as noise levels, profiles, etc., shall be forwarded to appropriate screening official for similar action. This process shall normally be completed by screening official within a period of 15 working days from receipt of the material.

9. The DoD contractor is responsible for resolving issues related to citations or requests for delays, variances, tolerances or exemptions of applicable OSH standards.

10. Federal and state OSHA officials shall be provided with copies of records and reports pertinent to specific DoD contractor accident investigations upon request unless release is prohibited by the Privacy Act or exempted under the Freedom of Information Act.

11. OSH inspections and investigations of DoD contractor workplaces by Federal or state OSHA officials shall be conducted during regular working hours, except when other times are mutually agreed upon by the concerned officials.

12. DoD installation commanders shall, as a courtesy, advise the applicable state OSHA official in writing of contractor workplaces located within areas of exclusive Federal jurisdiction.

13. Commanders shall report through their chain of command to CMC (SD) any situation where compliance with procedures in this chapter could impair national defense mission or adversely affect national security.

CHAPTER 8

References

8-1	OSH Act	Occupational Safety and Health Act of 1970

CHAPTER 9

REPORTS AND APPEALS OF UNSAFE OR UNHEALTHFUL WORKING CONDITIONS

CHAPTER 9

REPORTS AND APPEALS OF UNSAFE OR UNHEALTHFUL WORKING CONDITIONS

9000. DISCUSSION

1. Early detection of unsafe or unhealthful working conditions and prompt correction of these and related hazards, are major elements in the OSH program. Correction at the lowest possible level is an essential element of mishap prevention. All military and civilian personnel shall participate fully in the installation or unit OSH program by reporting either orally or in writing any unsafe or unhealthful working condition. It is essential to inform installation or unit safety personnel of the existence or potential for unsafe or unhealthful working conditions.

2. This chapter provides guidelines and procedures to report unsafe or unhealthful working conditions to management for correction, establish a process for management response to these identified conditions, and establish an appeal process for individuals who disagree with initial assessment.

9001. BACKGROUND. Reference 9-1 encourages all military and civilian personnel to participate in OSH program activities. Reference 9-2 requires that workplace hazard reporting and appeal procedures be developed for employees, including safeguards to ensure personnel are not subject to any restraints or fear of reprisals that prevent full participation in the OSH programs.

9002. HAZARD REPORTS

1. Any military or civilian personnel, or employee representative, observing unsafe or unhealthful work practices, conditions or violations of established OSH standards, shall advise workplace supervisor of the condition noted, either orally or in writing. Initial oral reports are required for imminent danger situations. Reprisals against personnel for submitting hazard reports are prohibited.

2. The workplace supervisor shall investigate and initiate appropriate corrective action upon the receipt of an oral or written report of unsafe or unhealthful work practice or condition. When an unsafe or unhealthful work practice or condition cannot be corrected at the supervisory level,

supervisor shall notify the installation or unit safety manager within five working days.

3. Any person desiring anonymity may submit a NAVMC 11401 "Unsafe or Unhealththful Working Conditions" form (figure 9-1) to the installation safety manager. Blank copies of this form and procedures shall be posted in or near all Marine Corps workplaces (e.g., official bulletin boards, time clocks).

4. If anonymity is requested, the installation or unit safety manager shall delete the originator's name and any individual named in the report, and advise cognizant supervisor that a hazardous condition has been reported.

5. The safety office shall record each report on a log maintained within the installation or unit safety office. A sequentially numbered case file shall be assigned for purposes of maintaining an accurate record of the report. The log shall include the following: date, time, code, reference, file number, location of condition, brief description of the condition, classification (i.e., imminent danger, serious, or other) and date and nature of action taken. See figure 9-2 for log page example.

6. The safety office shall investigate all hazard reports brought to its attention. Alleged imminent danger situations shall be investigated within 24 hours, potentially serious conditions within three working days, and other safety and health conditions within 20 working days. If the report involves a health hazard, the safety office shall refer the hazard report to the local medical facility within one day for investigation.

7. After receipt of a report of unsafe or unhealthful working condition, a safety office written response will be provided to originator either verifying the reported condition and providing corrective actions or state review concluded no hazard exists. Response shall be provided within 15 working days after receipt. If suspense cannot be met for any reason, an interim reply will be made.

8. Completed response shall encourage, but not require, the originator to informally contact the safety office if he or she desires additional information or is not satisfied with the response. The response shall indicate formal appeals can be made and provide appeal process reference.

9003. HAZARD REPORT APPEALS

1. If originator of report is dissatisfied with the final determination or corrective action taken, originator should first talk with installation or unit safety manager and attempt resolution. If, after a discussion with safety manager, the originator remains dissatisfied, an appeal to the commander shall be made in writing, setting forth a detailed description of the hazardous condition to include the following:

a. The OSH standard violated (if known).

b. How, and to whom, the original report of the condition was given.

c. What action resulted.

d. An explanation of the dissatisfaction and any recommendation for correction.

2. If first level appeal response does not satisfy originator of the report, additional appeals may be submitted. The appeals process is normally coincident with the originator's chain of command. At each level of the appeal process, originator shall provide complete documentation, including copy of the initial report, information on actions taken by review authority, and reasons why originator is not satisfied with those actions.

3. The final appeal authority within Marine Corps is CMC (SD). If the CMC (SD) response does not satisfy originator, the next level of appeal shall be through Assistant Secretary of Navy (Installations and Environment) (ASN(I&E)). Final level for appeals within DoD is to DUSD(ES). Copies of all level appeals shall be provided by the originator to CMC (SD) and originator's commander. Appeal shall describe, in detail, Marine Corps's disposition of the report (i.e., results of the previous level appeal) and originator's objections to the disposition.

4. As a last resort, if not satisfied with final DoD disposition, originator may contact, in writing, Office of Federal Agency Safety Programs, Department of Labor (OSHA), Washington DC 20210. Appeal must describe in detail the entire processing of the report, furnish copies of all previous level appeals, and describe originator's objections to the final disposition of the unsafe or unhealthful work condition.

5. Sequence of appeals for military personnel is via the chain of command concluding at Office of the Secretary of Defense.

6. Originator of the appeal should receive a response within 20 days. If at any time during the appeal process, originator does not receive a response within 20 working days, appeal may be submitted to the next higher reviewing authority without waiting for a reply. An interim reply shall be made to originator of the report when 20 working day suspense cannot be met. An interim reply may meet the response time criteria; however, an interim reply shall not take the place of a final reply.

7. Any appeal which bypasses these established procedures will be returned to originator.

9004. OSH DEFICIENCY NOTICES. A NAVMC 11400, OSH Deficiency Notice (figure 7-1) of the unsafe or unhealthful working condition shall be posted at the workplace in a highly visible location, in the immediate vicinity of the hazardous condition. This notice shall not be removed until the condition has been corrected.

9005. RETENTION OF REPORTS. Copies of unsafe and unhealthful working condition reports and records of abatement actions taken shall be retained at installation or unit safety office for at least 5 years after final action is completed.

CHAPTER 9

References

9-1	E.O. 12196	Occupational Safety and Health Programs for Federal Employees (NOTAL)
9-2	29 CFR 1960	Basic Program Elements for Federal Employee Occupational Safety and Health Programs and Related Matters

UNSAFE OR UNHEALTHFUL WORKING CONDITION

NAVMC 11401 REV. 7-98.

1. I believe a condition exists which is a safety or health hazard to Marine Corps personnel or property. (check one)

Civilian: ____ Military: _____
Employee Representative: Other:_____

2. Does this hazard immediately threaten life or health?

Yes ____ No ____

3. Building, worksite, or other location where you believe the unsafe or unhealthful condition exists. _____
_____

4. Supervisor (if known) at this location is:_____
and phone number is:_____

5. Briefly describe hazard:_____
_____

6. Number of employees exposed to or threatened by hazard:_____

7. If known, list any safety or health standard which you believe may apply to this condition. _____
_____

8. To your knowledge, has this condition been reported to, discussed with, or brought to the attention of a supervisor?
Yes No

9. If yes, please give the results, including any efforts by management to correct condition._____
_____

10. Name (optional):_____

Phone number (Optional):_____

11. If you are a representative of employees, provide name of your organization._____

Case Number:_____(Filled in by Installation or Unit Safety Office)

Figure 9-1. -- NAVMC 11401, Unsafe or Unhealthful Working Condition.

SAMPLE

LOG OF UNSAFE OR UNHEALTHFUL
WORKING CONDITIONS

DATE/TIME REC'D	FILE #	EXACT LOCATION	DESCRIPTION	CLASS OF HAZARD	DATE /ACTION TAKEN

Figure 9-2. -- Log of Unsafe or Unhealthful Working Conditions.

MARINE CORPS OCCUPATIONAL SAFETY AND HEALTH PROGRAM

CHAPTER 10

PREVENTION AND CONTROL OF WORKPLACE HAZARDS

CHAPTER 10

PREVENTION AND CONTROL OF WORKPLACE HAZARDS

10000. DISCUSSION

1. OSH Act requires Federal employees be provided with a safe and healthful place of employment. Identification of hazardous conditions may be accomplished at the planning and design stage, as a result of workplace inspections, or by worker reports. All recognized OSH hazards shall be eliminated or controlled as quickly as possible subject to prioritization based upon RAC's.

2. The preferred method of hazard abatement shall be through application of engineering controls or substitution of less hazardous processes or materials. The use of administrative controls, possibly in conjunction with PPE, is acceptable only when all other methods are proven nnot to be technically or economically feasible.

3. CMC directed each echelon of command to establish and maintain an effective Operational Risk Management program as described in reference 10-1. This process is an effective approach to hazard identification, risk assessment, and monitoring the effectiveness of controls. RAC's are used as the basis for developing risk decisions and controls.

10001. HAZARD CONTROL PRINCIPLES

. Safety professionals and industrial hygienists are specialists who, through training and experience, develop proficiency in risk assessment and hazard abatement. This includes the recognition, evaluation, and control of workplace hazards. They should be thoroughly familiar with potential hazards created by various materials, equipment, and operations used in facilities. They should also be aware of special designs required by OSH standards to minimize certain workplace hazards. Some of the principles applied to prevent or mitigate workplace hazards are:

1. Engineering Controls

a. Substitution. The risk of injury or illness may be reduced by replacement of an existing (or intended) process, material, or equipment with a similar item having a more limited hazard potential. An example of beneficial process change includes airless painting vice spray painting to reduce noise and atomization levels. Equipment changes might include use of

electric motors rather than internal combustion engines to reduce carbon monoxide exposures. Also, the use of safety cans in place of bottles to store flammable solvents is a method to reduce fire hazards. Examples of material substitution include switching from trichloroethylene to 1,1,1 trichloroethane(methyl chloroform) for solvent degreasing, to reduce risk of injury to the liver and kidneys of exposed workers. Care must be exercised in any substitution to ensure that the substitute is not more hazardous than the item being substituted.

b. Isolation. Hazards are controlled by isolation whenever an appropriate barrier is placed between the hazard and an individual who may be affected by the hazard. This isolation can be in the form of physical barriers, time separation, or distance. Examples include machine guards, electrical insulation, acoustical enclosures for a loud compressor, and remote controlled equipment.

c. Ventilation. Control of potentially hazardous airborne substances by ventilation can be accomplished by one of two methods: The first of these is termed general ventilation or dilution ventilation; the second is called local exhaust ventilation. General ventilation is the dilution of a hazardous concentration by mixing with uncontaminated air. Local exhaust ventilation is the capture of the hazardous concentration at the point of generation. Local exhaust ventilation is generally preferred and can be a more economical method of hazard control. Properly used, however, general ventilation can be very effective for the removal of large volumes of heated air, or for the removal of low concentrations of nontoxic or low toxicity contaminants.

2. Administrative Controls. This method of hazard control depends on effective operating practices that reduce the exposure of individuals to chemical or physical hazards. These practices may take the form of limited access to high hazardous areas, preventive maintenance programs to reduce the potential for leakage of hazardous substances, or adjusted work schedules which limit work in high-hazard areas. Industrial hygienists or safety specialists should be consulted for current standards. The most stringent regulation or consensus standard shall be applied in all instances.

3. Personal Protective Equipment (PPE). This method of hazard control is the least preferred because PPE may reduce a worker's productivity while affording less effective protection against the recognized hazard than previously mentioned methods of control. Nevertheless, there are instances where adequate levels of risk reduction cannot be achieved through other methods, and

PPE must be used, alone or in conjunction with other protective measures. Chapter 13 describes requirements applicable to the use of PPE (e.g., respirators, gloves, safety glasses).

10002. HAZARD CONTROL APPLICATIONS

1. Hazardous conditions in the workplace may be prevented through appropriate risk management when facilities are designed, operating procedures are developed, and equipment is purchased.

2. Design Reviews. OSH aspects shall be considered, designed, and engineered into all facilities which are acquired, constructed, or modified for use by Marine Corps personnel. OSH requirements should also be considered during systems planning, design, development, acquisition, operation and disposal (life cycle). Facility design engineers in many instances are not totally familiar with potential health hazards created by various materials, equipment and operations used in industrial facilities, nor are they aware of the special design considerations required to control these hazards. To ensure that appropriate hazard control techniques are applied, the installation safety, fire prevention, and environmental managers, and the local industrial hygienist shall participate in the review of plans and specifications for all projects. All projects shall be evaluated for lead, asbestos or other hazards requiring specific abatement procedures prior to commencement of the project. The installation safety manager will sign off on all plans at the 35 percent and 100 percent design stages.

3. Standard Operating Procedures (SOP's). SOP's or similar directives that are issued to direct the manner in which work is performed shall include appropriate OSH requirements. All SOP's should be approved by installation or unit safety manager to ensure that all OSH requirements are met. SOP's shall be reviewed and updated at least annually.

4. Purchasing Procedures. Many hazards can be avoided by incorporating appropriate specifications for purchased equipment or material and contracted efforts. Marine Corps organizations responsible for developing specifications for such purchases shall coordinate with installation or unit safety manager to ensure that OSH requirements are considered in these specifications. Similarly, contracted work shall be coordinated with installation or unit safety manager.

5. Interim Hazard Abatement Measures. During the time needed to design and implement permanent hazard control measures, immediate temporary measures may be needed. Where engineering controls are

not immediately applicable for use as interim hazard abatement measures, interim control measures shall be employed. They shall be noted on the OSH Deficiency Notice, abatement logs, and posted hazard notices as described in chapter 7.

6. Permanent Hazard Abatement. Engineering control methods are the preferred method of hazard control, followed by administrative controls and finally PPE. Feasible engineering controls shall be used to reduce hazardous exposure, even when only partial reduction of exposure is possible through engineering methods. Criteria may be applied to determine whether engineering controls are feasible. First, a control is technologically feasible if it is available "off the shelf" or if technology exists which can be adapted to the hazard in question. Second, a control is economically feasible if it can be shown that the cost is justified by the benefit it produces. On the other hand, if the expected reduction of the hazard through implementation of engineering controls will not significantly increase personnel protection, and cost of the control is too great, then the control is not economically feasible.

CHAPTER 10

References

10-1	MCO 3500.27	Operational Risk Management

CHAPTER 11

OCCUPATIONAL HEALTH AND INDUSTRIAL HYGIENE PROGRAMS

CHAPTER 11

OCCUPATIONAL HEALTH AND INDUSTRIAL HYGIENE PROGRAMS

11000. DISCUSSION

1. Primary objective of the OSH program is to ensure a safe and healthful work environment for all Marine Corps personnel. Occupational health element is primarily concerned with long-term (chronic) exposure to toxic chemicals (e.g., lead, asbestos, carbon monoxide), harmful physical agents (e.g. noise, radiation, heat, lasers), and treatment of work related injuries.

2. Occupational health program element is divided into two major specialties, industrial hygiene and occupational medicine. Each of these specialties has a long-term surveillance program.

a. Industrial hygiene involves anticipation, recognition, evaluation, and control of health hazards affecting workers in the occupational environment.

b. Occupational medicine involves the evaluation, and the diagnosis, treatment, and care of acute and chronic occupational illnesses and injuries.

11001. INDUSTRIAL HYGIENE PROGRAM.

Industrial hygiene programs shall be established at Marine Corps activities in accordance with reference 11-1.

1. Workplace Monitoring. Each workplace must be thoroughly evaluated to identify and quantify potential health hazards from toxic substances or harmful physical agents. This requires a baseline survey followed by periodic update surveys in all Marine Corps activities. The baseline is a comprehensive survey of an entire activity against which all subsequent periodic surveys will be compared. Permanent changes in a workplace will require establishment of a new baseline for new or altered operations. Baseline is routinely updated by periodic surveys and through representative sampling programs in the work environment. Analysis and interpretation of the sampling data will assist in the assessment of health hazards, making recommendations for hazard abatement and control measures, and determining requirements for medical surveillance of personnel at risk. The following subparagraphs provide basic requirements for workplace monitoring.

a. Workplace Assessment (Walk-through Survey). A baseline survey shall be conducted by the cognizant Medical Treatment Facility (MTF) industrial hygienist. If the organization has its own industrial hygiene assets, responsibilities for workplace monitoring, inspections, etc., shall be defined in a formal agreement between the organization and MTF. Baseline will include, as a minimum, the following information:

(1) Description of operations and work practices that take place in the workplace (e.g., welding, spray painting), to include a layout sketch incorporating relevant aspects of the tasks. The time course of events taking place within the workplace must be carefully described.

(2) List of hazardous materials (including biological agents) used, handled, stored, or produced in the workplace in terms of quantity per unit time, including a brief description of how the materials are used in the operations.

(3) List of potential harmful physical hazards (e.g., noise, radiation) including a brief description of their sources.

(4) Brief description of existing controls (e.g., ventilation hoods, hearing protection devices), and an evaluation of their use and effectiveness.

(5) Number of personnel assigned to the operation or workplace and specific location.

b. Exposure Assessment. Based on information obtained during the walk-through survey, next step is to assess whether or not there is a potential for employee exposure to toxic chemicals or harmful physical agents. This assessment shall be made by the responsible industrial hygienist and a written record shall be maintained for each workplace where toxic chemicals or harmful physical agents may be found. Copy of this assessment shall be provided to installation or unit safety office so that recommendations can be tracked or incorporated into the hazard abatement log as appropriate. Record will include rationale for any negative determination.

c. Workplace Monitoring Plan. If the exposure assessment indicates workers are exposed to toxic chemicals and/or harmful physical agents, a workplace monitoring plan shall be prepared and implemented. The plan shall be developed jointly by the industrial hygienist, cognizant MTF and installation or unit safety manager.

d. Periodic Evaluation. All Marine Corps workplaces with recognized potential health hazards shall be evaluated at least annually. Baseline survey will identify those workplaces not requiring annual evaluations due to a negative exposure assessment. Baseline may indicate that the periodic evaluation should be performed more frequently as dictated by the nature and degree of hazards present. Supervisors shall notify the cognizant industrial hygienist of any changes in procedures, materials, or equipment that could affect personnel exposures to potential health hazards, and may require a re-evaluation. During the periodic evaluation, a determination shall be made on status of the workplace, and any changes required in the monitoring plan or frequency of periodic follow-ups.

2. Industrial Hygienist Responsibilities

a. Industrial hygienists (IH) or industrial hygiene officer (IHO) assigned to naval medical activities that support Marine Corps commands shall provide comprehensive baseline and periodic workplace evaluations, technical direction of workplace monitoring programs, training and certification of workplace monitors, and special assistance as requested by the activity commander (e.g., selection of PPE, review of engineering designs, member of process hazard analysis team).

b. IHO assigned to Marine Corps activities (i.e., FSSG, MAW) shall establish industrial hygiene programs specific to their command. IHO shall ensure that monitoring and exposure data is provided to the medical department, for entry into personnel medical records.

3. Monitoring Records (Disposition, Retention, and Access). Those records which are pertinent to an individual's exposure shall be incorporated into his/her medical record. Survey, evaluation, and monitoring records shall be retained for a minimum of 50 years by the responsible Naval Medical Command. Access to those records pertinent to their individual exposures shall be provided to Marine Corps personnel and employee representatives in accordance with the provisions and definitions of reference 11-2.

11002. OCCUPATIONAL HEALTH PROGRAM

1. Occupational medicine and medical surveillance programs shall be established at Marine Corps activities in accordance with reference 11-1. References 11-3 and 11-4 provide the medical requirements and guidance for implementing reference 11-1.

2. These programs shall be based on the industrial hygiene recommendations. The installation or unit safety office shall ensure that affected Marine Corps personnel are entered in the medical surveillance program.

11003. CIVILIAN EMPLOYEE MEDICAL RECORDS

1. The cognizant Medical Treatment Facility or contracted health service shall maintain records consisting of forms, correspondence and other files that relate to an employee's medical history, occupational injuries or illnesses, physical examinations, and all other treatment received in a health unit.

2. Upon termination of employment, the medical records of civilian employees who have worked at facilities that have been identified as having hazardous environmental or hazardous occupational working conditions are transferred to the nearest Federal Records Center. They are destroyed 40 years after the date of the last entry. The medical records of those employees, who in the opinion of responsible medical authority, have worked at facilities where no known environmental or occupational health hazards exist are destroyed 6 years after the date of the last entry.

3. Activities shall ensure that all medical records of employees who transfer to other positions within the DoD and other federal agencies, are provided to the gaining activity within 60 days from the day of transfer.

11004. MILITARY MEDICAL RECORDS. Maintenance, retention and disposition of military personnel medical records shall be in accordance with BUMED and SECNAV directives.

11005. ACCESS TO RECORDS. Access to occupational health medical records shall be provided to civilian employees and their representatives on reasonable request in accordance with the provisions and definitions of reference 11-2. Access to medical examination records shall be made available to a physician of the individual's choice after execution of the proper release documents. Access to military medical records shall be provided to military personnel by request. Safety and health program managers (e.g., installation safety manager, industrial hygienist, radiation safety officer) will coordinate with the cognizant Naval Medical Command to verify individuals are on medical surveillance and examinations are up-to-date, as required for their respective programs.

CHAPTER 11

References

11-1	OPNAVINST 5100.23D Chapter 8	NAVOSH Program Manual, Occupational Medicine
11-2	29 CFR 1910.20	Access to Employee Exposure and Medical Records
11-3	NEHC 6260 TM PCMATRIX (software)	Medical Surveillance Procedures Manual and Medical Matrix
11-4	NEHC 6260 TM	Occupational Medicine Field Operations Manual

CHAPTER 12

LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM

CHAPTER 12

LOCKOUT/TAGOUT ENERGY CONTROL PROGRAM

12000. DISCUSSION

1. The lockout/tagout program ensures Marine Corps personnel are protected from injury during any servicing or maintenance done on machinery or equipment, where the unexpected energization, start-up or release of any type of energy (e.g., electricity, steam, hydraulic, pneumatic, gravity) could occur. The machinery or equipment will be rendered safe to work on by being locked or tagged out under requirements of references 12-1 and 12-2 and guidance of reference 12-3.

2. An energy isolating device is considered capable of being locked out in one of two ways. It is capable of being locked out if designed with a hasp, other attachment, or integral part to which, or through which, a lock can be affixed. Also, it is capable of being locked out if it has a locking mechanism built into it. Other energy isolating devices are also considered capable of being locked out if lockout can be achieved without need to dismantle, rebuild, or replace the energy isolating device or permanently alter its energy control capability.

3. This program does not apply to the following:

a. Work on cord and plug connected electric equipment where exposure to hazards of the unexpected energization or start-up of equipment is controlled by unplugging the plug, which is under exclusive control of the person performing the servicing or maintenance.

b. Hot tap operations involving transmission and distribution systems for substances such as gas, steam, water, or petroleum products when performed on pressurized pipe lines, provided the following is demonstrated:

(1) Continuity of service is essential.

(2) Shutdown of system is impractical.

(3) Documented procedures are followed, and special equipment is used which will provide proven effective protection for employees. Industry standards published by the American Petroleum Institute and other trade organizations shall be used to develop these specific work procedures.

c. Installations where electric utilities to include power generation, transmission, and distribution, as well as related equipment for communication or metering, are under control of a private utility company.

d. Exposure to electrical hazards from work on, near, or with conductors or equipment in electric utilization installations defined under reference 12-2.

e. Minor tool changes and adjustments, and other minor servicing activities which: occur during normal production operations; are routine, repetitive, and integral to use of the equipment for production; or use other safeguards that provide effective protection.

f. Operations aboard naval ships which are covered under references 12-4 and 12-5.

12001. BACKGROUND

1. All equipment and machinery shall be locked out or tagged out to protect against accidental, inadvertent start-up, or operation that may cause injury to personnel performing maintenance, service, repair, or modifications to machinery or equipment. Marine Corps personnel operating or attempting to operate any switch, valve, or other energy isolating device which is locked or tagged out may be subject to disciplinary action.

2. Lockout is the preferred method of isolating machines or equipment from energy sources and shall be used whenever possible.

3. When a tagout device is used as an energy isolating device on machine or equipment which is not capable of being locked out, tagout device shall be attached at the same location where the lockout device would be attached, and shall provide an equivalent level of safety.

4. Whenever major replacement, repair, renovation or modification of machines or equipment is performed, and whenever new machines or equipment are installed, contracting or purchasing agents and designing engineers shall ensure energy isolating devices are provided with operating procedures.

5. Affected Worker. An affected worker is defined as a person whose job requires operating or using a machine or equipment on which service or maintenance is being performed under lockout or

tagout, or whose job requires working in an area in which such service or maintenance is being performed.

6. Authorized Worker. An authorized worker is defined as a person who locks out or implements a tagout system procedure on machines or equipment to perform service or maintenance on that machine or equipment. An authorized worker and an affected worker may be the same person when the affected worker's duties also include performing maintenance or service on a machine or equipment which must be locked or tagged out.

12002. RESPONSIBILITIES. Marine Corps personnel who could be exposed to hazardous energy sources shall be instructed in the safety significance of the lockout or tagout procedure. Personnel authorized to perform lockout or tagout shall receive training commensurate with their responsibilities and requirements of references 12-1 and 12-2. Each new or transferred person whose work operations are or may be affected shall be instructed in the purpose and use of lockout/tagout procedures. Lockout/tagout system procedures shall be followed at all times.

1. Commanders shall:

a. Ensure all Marine Corps personnel who could be exposed to hazardous energy sources receive formal training in the purpose and function of the lockout/tagout program.

b. Ensure the lockout/tagout program is evaluated using NAVMC 11402, Lockout/Tagout Program Evaluation, figure 12-1. (A locally produced evaluation may be used if all elements of figure 12-1 are included.)

c. Ensure specific lockout/tagout energy control procedures are developed and maintained for all systems and equipment under their cognizance. NAVMC 11403, Lockout/Tagout Checklist, figure 12-2 shall be used for this purpose.

d. Ensure the lockout/tagout program is implemented and followed within their area of cognizance. Supervisors and individuals will be held accountable for any failure to comply with the lockout/tagout program, and overriding or removing any lockout/tagout device without authorization.

e. Designate in writing a lockout/tagout coordinator(s) who is delegated responsibility and authority for controlling and administering the lockout/tagout program for their area of

cognizance. Send a copy of this letter to the installation or unit safety manager.

2. Installation/Unit Safety Managers shall:

a. Coordinate initial and annual lockout/tagout training.

b. Evaluates the lockout/tagout program using NAVMC 11402, Lockout/Tagout Program Evaluation, figure 12-1. (A locally produced evaluation may be used if all elements of figure 12-1 are included.)

c. Provide technical assistance in drafting specific energy control procedures for each piece of affected equipment.

3. Lockout/Tagout Coordinators shall:

a. Administer the lockout/tagout program within their respective organizations.

b. Enforce lockout/tagout procedure compliance and ensure an ample supply of standardized locks and tags are available. Each organization is responsible for supplying their own lockout/tagout devices.

c. Develop lockout/tagout procedures using NAVMC 11403, Lockout/Tagout Checklist, figure 12-2 for all applicable systems and equipment.

d. Maintain a lockout/tagout log in accordance with this Manual. NAVMC 11404, Lockout/Tagout Log, figure 12-3 shall be used for this purpose. Control the issue of lockout and tagout devices and ensure a particular locking device can be traced to a specific authorized worker.

4. Affected Workers shall comply with all requirements of the lockout/tagout program.

5. Authorized Workers shall:

a. Comply with the lockout/tagout program when performing maintenance, service, repair, or modifications including, but not limited to, mechanical, potential, electrical and thermal energy sources.

b. Inform the lockout/tagout coordinator of any hazardous situations which may be harmful to personnel or equipment pertaining to lockout/tagout procedures.

12003. LOCKOUT/TAGOUT DEVICES

1. Lockout Devices

a. Padlocks shall be utilized as the primary lockout device. Padlocks shall be singularly identifiable (not used for other purposes) and standardized to meet one of the following:

(1) Color.

(2) Shape.

(3) Size.

b. Lockout devices shall be capable of withstanding the environment to which exposed.

c. Lockout devices shall be substantial enough to prevent removal without use of excessive force such as bolt cutters.

d. Lockout identification tags are used in conjunction with the locking device when performing a lockout. An example of a tag is provided in figure 12-4. The tag identifies person applying the lock. It shall be singularly identifiable and capable of withstanding the environment to which exposed without becoming deteriorated or illegible. The tag shall bear the name and shop/code of the authorized worker, authorized worker's telephone number and date of lockout.

2. Tagout devices

a. In situations where equipment must be worked on and cannot be locked out, equipment shall be tagged out. An example of a tag is provided in figure 12-4. A tag is used to prevent energization of equipment under repair or maintenance which could jeopardize the safety of workers or damage equipment. Equipment will not be operated, worked on, or removed when tagged out.

b. The tag and its means of attachment shall be strong enough to prevent inadvertent or accidental removal. Attachment devices shall be non-reusable, attachable by hand (no tools required), self-locking and non-releasable with a minimum unlocking strength of 50 pounds.

12004. WRITTEN LOCKOUT/TAGOUT PROCEDURES

1. Specific written procedures shall establish the minimum requirements for lockout or tagout of energy isolating devices.

NOTE: Specific SOP's for control of hazardous energy sources must be developed at shop level for each piece of equipment or machinery before maintenance or servicing is performed. Machines and equipment shall be evaluated using NAVMC 11403, Lockout/Tagout Checklist, figure 12-2. (A locally produced checklist may be used if all elements of figure 12-2 are included.)

2. Exceptions. Written procedures are not required when all of the following elements exist:

a. The machine or equipment has no potential for stored, residual, or reaccumulation of energy after shutdown.

b. The machine or equipment has a single energy source which can be readily identified and isolated.

c. The isolation and locking out of that energy source will completely deenergize and deactivate machine or equipment.

d. The machine or equipment is isolated from the energy source and locked out during service or maintenance.

e. A single device will achieve a locked out condition.

f. The lockout device is under exclusive control of the authorized worker performing service or maintenance.

g. The service or maintenance does not create hazards for other personnel.

h. In utilizing this exception, no accidents have occurred involving the unexpected activation or reenergization of the machine or equipment during service or maintenance.

12005. PERFORMING LOCKOUT/TAGOUT PROCEDURE

1. Preparation for Lockout/Tagout. The authorized worker shall locate and identify all isolating devices to be certain which switch(es), valve(s), or other energy isolating devices apply to the equipment to be locked or tagged out. More than one hazardous energy source or means of disconnect (electrical, mechanical, or others) may be involved.

2. Lockout or Tagout System Procedure

a. Notify all affected personnel and cognizant supervisor that a lockout or tagout procedure is going to be utilized. The

authorized worker shall know the type and magnitude of energy the machine or equipment utilizes and understand all inherent hazards.

b. If machine or equipment is operating, shut it down by the normal stopping procedure. In addition, ensure that all stored energy is dissipated or properly restrained.

c. Operate the circuit breaker, valve, or other energy isolating device(s) to ensure that the equipment is isolated from its energy source(s).

3. Lockout/Tagout Device Application

a. Locks or tags shall be affixed to each energy isolating device by the authorized worker.

b. Lockout devices shall be affixed in a manner that will hold the energy isolating device in a SAFE or OFF position.

c. Tags, when used, shall be affixed in a manner that will clearly indicate that operation or movement of the energy isolating device from the SAFE or OFF position is prohibited.

d. Tags that cannot be affixed directly to the energy isolating device shall be located close enough to be immediately obvious to anyone attempting to operate the device.

e. All potentially hazardous stores or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe by the authorized worker. If there is a possibility of reaccumulation of stored energy to a hazardous level (e.g., capacitor), verification of isolation shall continue until possibility of reaccumulation no longer exists.

f. Prior to starting work, authorized worker shall verify that isolation and deenergization have been accomplished. After ensuring no personnel are exposed, he/she will activate the normal operating controls to make certain the equipment will not operate. the worker will not activate controls which cannot be returned to the SAFE, NEUTRAL, or OFF position without the application of power to equipment (e.g., dog and clutch assemblies).

CAUTION: Return operating control(s) to the safe or off position after the verification test.

g. Enter all pertinent data into the lockout/tagout log.

12006. TEMPORARY REMOVAL OF LOCKOUT DEVICES. In situations in which lockout devices must be temporarily removed from the energy isolating device the following sequence of action shall be followed:

1. Clear the machine of tools and materials.

2. Ensure all affected workers have been safely positioned or removed from the area.

3. Lockout/tagout devices can then be removed by the authorized worker who applied the device, except as otherwise authorized by paragraph 12011.

4. Energize and proceed with testing, positioning, etc., as required.

5. De-energize all systems and establish lockout/tagout measures in accordance with this Manual before continuing work on machine or equipment.

12007. RESTORING MACHINES OR EQUIPMENT TO NORMAL OPERATION

1. When service or maintenance is completed and machine or equipment is ready for normal production operations, check the area around machines or equipment to ensure no personnel are at risk.

2. After tools are removed from machine or equipment, guards reinstalled, personnel safely repositioned or removed, and operating controls verified to be in safe or off position, remove all lockout/tagout devices and notify affected workers and cognizant supervisor of their removal. Operate energy isolating devices to restore energy to machine or equipment.

3. Complete applicable portions of lockout/tagout log.

4. Ensure a signaling system is in place and effective for warning workers exposed to the unexpected release of energy during maintenance and servicing operations.

12008. MORE THAN ONE WORKER INVOLVED. In the preceding steps, if more than one worker is required to service a piece of equipment, each shall place their own assigned lockout/tagout device on energy isolating device(s). If necessary, an energy isolating device hasp may be used. As each worker finishes their portion of work, that worker will remove their lock from the gang

hasp. Only the last worker to remove their lock or tag may reenergize machine or equipment. Each person applying a lock or tag shall make an entry into lockout/tagout log when applying the device, and clear their device from the log when their portion of work is completed.

12009. REMOVAL OF LOCKOUT/TAGOUT DEVICES BY OTHER THAN AUTHORIZED WORKER. Lockout/tagout devices may be removed by lockout/tagout coordinator if authorized worker who applied it is not available, and:

1. All reasonable efforts were made to contact authorized worker about the need to remove lockout/tagout device.

2. Authorized worker will be informed that the lockout or tagout device has been removed before resuming work at facility.

3. An appropriate entry shall be made in lockout/tagout log to indicate name of person who notifies authorized worker, and the time and date lock or tag was removed.

12010. LOCKOUT/TAGOUT REQUIREMENTS FOR CONTRACTORS AND OTHER DOD PERSONNEL

1. Contractors performing service or maintenance on Marine Corps equipment shall comply with reference 12-1. The Resident Officer in Charge of Construction (ROICC) or other responsible contracting agent shall ensure all outside contractors are informed of elements of this program and obtain information regarding contractor's lockout/tagout program. The contract shall require the contractor to inform cognizant personnel in the affected work site of contractor's lockout/tagout program.

2. Personnel from other DoD activities performing service or maintenance on Marine Corps equipment shall comply with respective activity's lockout/tagout program. These instructions must meet requirements of this Manual and reference 12-1. The cognizant management officials of the outside activity and affected work site shall inform each other of their respective lockout/tagout programs.

3. Commanders will ensure their cognizant personnel understand and comply with restrictions and prohibitions of outside activity's lockout/tagout program.

12011. SHIFT OR PERSONNEL CHANGES. In case of shift or personnel changes, lockout/tagout coordinator shall brief replacement personnel and ensure the orderly transfer of lockout/tagout devices between off-going and on-coming authorized workers. Change of locks or tags shall be done with a face-to-face meeting of off-going and on-coming authorized workers with no gap in protection.

12012. PERIODIC EVALUATION. The installation or unit safety manager shall evaluate effectiveness of the entire program at least annually. Any deviation or inadequacies shall be documented and corrected. NAVMC 11402, Lockout/Tagout Program Evaluation, figure 12-1 shall be used for this evaluation. (A locally produced evaluation may be used if all elements of figure 12-1 are included.)

12013. TRAINING

1. Training shall be provided to all authorized and affected workers, and other personnel as required by reference 12-1. Only lockout/tagout coordinators or authorized workers may perform lockout/tagout procedures.

2. Instructors qualified by the installation or unit safety manager will conduct training and prepare a record certifying that employee training has been accomplished. Training records shall be maintained in accordance with chapter 5. Retraining shall be conducted whenever there is:

a. A change in affected or authorized worker job assignments.

b. A change in job assignment, machine, equipment, or process that presents a new hazard.

c. A change in the energy control procedures.

d. Additional retraining shall be conducted whenever the annual evaluation or other reason indicates there may be inadequacies in personnel knowledge or use of energy control procedures.

12014. ELECTRICAL LOCKOUT/TAGOUT

1. Electrical work requires a lock and tag be used together. However, a tag can be used by itself if the electrical

disconnecting source does not have lockout capabilities per reference 12-2.

2. A qualified person shall test circuit elements and electrical parts of equipment to which personnel will be exposed and verify all circuit elements and parts are de-energized. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of circuit were de-energized. Test equipment shall be checked for proper operation immediately before and after this test.

12015. LOCKOUT/TAGOUT MISHAPS. Supervisors are responsible to fully investigate mishaps, and report causes of such mishaps to the installation or unit safety manager. If mishap involved control of hazardous energy with a single lockout source, a specific procedure will be written and included in the SOP before work is continued. If mishap involved a specific procedure for a piece of equipment, lockout/tagout SOP will be re-evaluated and modified (if necessary) prior to authorizing work to continue.

CHAPTER 12

References

12-1	29 CFR 1910.147	The Control of Hazardous Energy (Lockout/Tagout)
12-2	29 CFR 1910.333	Selection and Use of Work Practices
12-3	ANSI Z244.1-1982	American National Standard, Safety Requirements for Lockout/Tagout of Energy Sources (NOTAL)
12-4	OPNAVINST 5100.19C	Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat PCN
12-5	OPNAVINST 3120.32C	Standard Organization and Regulations of the U.S. Navy (NOTAL)

NAVMC 11402, Rev 7-98. LOCKOUT/TAGOUT PROGRAM EVALUATION

Unit/Department evaluated:_____

Date(s) of evaluation:_____

Evaluation conducted By:_____
(Signature/Printed Name)

1. General policy has been reviewed: YES / NO (circle one)
   Comments on general policy:
   _____
   _____
   _____
   _____

2. Following specific procedures were reviewed (list below):
   _____
   _____
   _____
   _____

3. Following specific procedures were modified (list below):
   _____
   _____
   _____
   _____

4. Following specific procedures were added (list below):
   _____
   _____
   _____
   _____

5. Review of the Occupational Injuries and Illnesses Log and associated mishap reports was conducted: YES /NO
   (circle one)

6. Following injuries resulted from lockout/tagout related mishaps:
   _____
   _____
   _____
   _____

NOTE: Conduct evaluation annually.

Figure 12-1. -- NAVMC 11402, Lockout/Tagout Program Evaluation

NAVMC 11403, Rev 7-98. LOCKOUT/TAGOUT CHECKLIST

Procedure Reference No. _____ Date Approved_____
Equipment Name _____ Equipment No._____
Location _____ Work Center_____
General Description _____

NOTE: Required for all equipment, machinery, or processes that fail to meet exceptions of MCO P5100.8F, Chapter 12, paragraph 12003.

Use this checklist to document procedures for lockout or tagout of energy isolating devices and energy sources identified whenever maintenance or service is performed on machines or equipment. All equipment and machinery shall be stopped,isolated from all potentially hazardous energy sources, and locked or tagged out before personnel perform service or maintenance where unexpected energization, start-up, or release of stored energy could injure personnel or damage equipment.

A. Operator Controls: Determine type of controls available to operator. Identify energy sources and lockout/tagout capacity for equipment.

List types of operator controls: _____
_____

B. Energy Sources: Check or list energy sources on equipment.

Electrical _____ Steam _____ Hydraulic _____
Pneumatic _____ Gas _____ Other _____
Stored Energy Sources _____

Identify Energy Source and Location	Lockable? Yes or No	Type of Device
_____	_____	_____
_____	_____	_____

C. Shutdown Procedure: List in order the steps necessary to shut down and de-energize the equipment._____
_____
_____

NOTIFY ALL AFFECTED WORKERS WHEN IMPLEMENTING THIS PROCEDURE

D. Start Up Procedure: List in order the steps necessary to re-activate or energize the equipment.
_____
_____
_____

NOTIFY ALL AFFECTED EMPLOYEES WHEN IMPLEMENTING THIS PROCEDURE

NOTES:

_____
_____

Figure 12-2. -- NAVMC 11403, Lockout/Tagout Checklist.

NAVMC 11404, Rev 7-98. **LOCKOUT/TAGOUT LOG**

DEVICE TYPE. SER. NO. & SEQ. NO.	EQUIPMENT ID &/OR DESCR. & LOCATION	PURPOSE	POS. TAG'D	DATE & TIME	AUTHORIZED WORKER SHOP/CODE	CLEARANCE AUTHORIZED BY *	REMOVED BY *	DATE & TIME REMOVED

* Signature _____ Shop/Unit_____

The person designated to sign for an action verfies, based on personal observation, and certifies by his/her signature that the action has been completed in accordance with requirements.

Figure 12-3. -- NAVMC 11404, Lockout/Tagout Log.

SAMPLE LOCKOUT/TAGOUT TAG

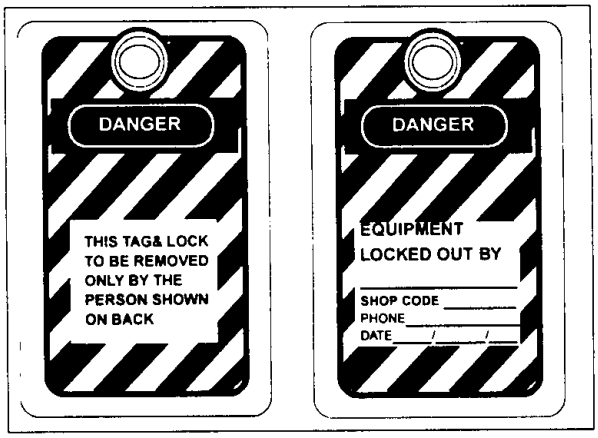

Figure 12-4. -- Sample Logout/Tagout Tag.

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CHAPTER 13

PERSONAL PROTECTIVE EQUIPMENT (PPE)

CHAPTER 13

PERSONAL PROTECTIVE EQUIPMENT (PPE)

13000. DISCUSSION. This chapter establishes requirements for the provision and use of personal protective equipment (PPE), and compliance with DoD and OSHA regulations (reference 13-1).

1. Issue, maintenance, and use of PPE is necessary for protecting Marine Corps personnel and hobby shop patrons when engineering and administrative controls are not available or effective. Appropriate PPE shall be provided and used for emergencies such as hazardous materials spills (including biohazards), hazardous materials cleanup operations, ventilation malfunctions, emergency egress, and damage control activities.

2. Marine Corps installations, commands, units, departments, and non-appropriated fund activities will fund for provision and maintenance of PPE described in this Manual, including prescription safety glasses, for Marine Corps personnel. Expenditure of funds for PPE is economical, since loss of time for the injured, compensation costs claims, and loss of materials and equipment are reduced.

3. Environmental differential pay for civilian employees, where warranted, does not relieve the responsibility to provide appropriate PPE or continue efforts to abate hazardous conditions which justify such pay. Requirement to wear PPE in any particular work area does not, of itself, provide justification for differential pay.

4. Managers will ensure compliance with the prescribed use of PPE and document cases of noncompliance. Managers should consider disciplinary action as a corrective measure against the offender and supervisor, as necessary.

13001. PPE SURVEY

1. Installation/unit safety manager shall conduct a PPE survey per reference 13-2, to determine if hazards are, or are likely to be, present which necessitate use of PPE. Assistance is available from local industrial hygienist. PPE survey shall be a certification of hazard assessment and include at least the following:

    a. Workplace evaluated.

b. Job title or MOS designation of workers.

c. List of specific types of PPE required for jobs (e.g., chemical resistant gloves, welding gloves, chemical splash resistant goggles, respirator) that will protect the affected worker from identified hazards. Respiratory protection requirements are available from industrial hygiene surveys.

d. Name and title of person certifying PPE survey is completed.

e. Dates of PPE survey.

2. Installation or unit safety manager shall ensure copies of the written PPE survey report are provided to workplace supervisor, commander, and local industrial hygienist.

3. Based on the hazard assessment, workplace supervisor shall:

a. Select appropriate PPE for each affected person to use from the list in PPE survey.

b. Advise each affected person of PPE selection decisions and require its use.

c. Select PPE that properly fits each affected person.

13002. POSTING. All areas designated as eye, foot, head, and noise hazardous shall be posted with an appropriate warning sign as determined by installation or unit safety manager.

13003. TRAINING

1. Installation or unit safety office shall provide training to all Marine Corps personnel who are required to use PPE as identified by PPE survey. Training can be performed by supervisor after he or she has completed a train-the-trainer course in PPE.

2. Each worker shall be trained to know at least the following:

a. When PPE is necessary.

b. What PPE is necessary.

c. How to properly put on, take off, adjust and wear PPE.

d. Limitations of PPE.

e. Proper care, maintenance, useful life, and disposal of PPE.

3. All Marine Corps personnel trained shall demonstrate an understanding of the training and ability to use the PPE properly before being allowed to perform work requiring use of PPE.

4. When the supervisor has reason to believe that any previously trained personnel does not have the understanding and skill required by paragraph 3 above, supervisor shall retrain each such person. Circumstances where retraining is required include:

a. Changes in workplace which render previous training obsolete.

b. Changes in types of PPE used render previous training obsolete.

c. Inadequacies in an affected person's knowledge or use of assigned PPE indicate that person has not retained the required understanding or skill.

d. Supervisor shall verify that each affected person has received and understood required training through a written certification that contains the following:

(1) Name of each person trained.

(2) Dates of training.

(3) Identification of subject of certification.

(4) A training syllabus or outline of subjects covered.

(5) A testing mechanism to ascertain retained knowledge.

5. Training records shall be maintained in accordance with chapter 5.

13004. HEAD PROTECTION

1. Head protection equipment is designed to protect workers' head from bumps, cuts, impact, penetration, and electric shock, or any combination thereof.

2. Safety helmets protect against impact, penetration, and electric shock. Types of these helmets are:

a. Full brimmed.

b. Brimless with beak.

c. Class A, Limited voltage resistance

d. Class B, High voltage resistance.

e. Class C, No voltage resistance.

f. Class D, Protective for fire fighters.

3. All safety helmets used shall meet standards of reference 13-3 and be labeled on the inside with manufacturer's name, ANSI designation (Z89.1), and protection Class.

4. Before each use, head protection must be visually inspected for shell or suspension damage. Head protection should be thoroughly washed every 30 days, or more frequently as necessary.

5. Head-hazardous areas are designated where there is reasonable possibility of head injury caused by cuts, bumps, falling or flying objects, and from limited electric shock and burns.

6. Industrial head protection appropriate to exposure shall be worn during the entire work shift by Marine Corps personnel assigned to head-hazardous or hard hat areas. Any other personnel entering head-hazardous areas shall wear appropriate head protection.

13005. HEARING PROTECTION (HEARING CONSERVATION PROGRAM)

1. Hearing protective devices shall be worn by all personnel when they enter or work in an area where the operations generate noise levels of:

a. Greater than 84 dBA (8 hour TWA) sound level.

b. 140 dB peak sound pressure level or greater.

c. A combination of insert type and circumaural hearing protective devices (double protection) shall be worn in all areas where noise levels exceed 104 dBA (8 hour TWA) sound level.

d. All personnel exposed to gunfire in a training situation or to artillery, mortar, or missile firing, under any circumstances, shall wear hearing protective devices.

2. Ensure all personnel that enter or work in designated hazardous noise areas receive training under the requirements of reference 13-4.

3. Hearing Conservation Program management information is contained in reference 13-4.

13006. FOOT PROTECTION

1. All Marine Corps personnel occupationally exposed to foot-hazardous operations or areas shall be furnished appropriate safety footwear at organizational expense. Foot-hazardous operations are those which have a high incidence of, or a potential for, foot or toe injuries. Some of these operations or areas include:

a. Construction.

b. Material handling.

c. Maintenance.

d. Transportation.

e. Aircraft maintenance, fuels, and avionics.

f. Weapons.

g. Supply, warehousing.

h. Vehicle maintenance facilities.

2. Safety footwear with a built-in protection toe box is intended primarily to provide protection for the toes from impact and compression forces. These shoes shall conform to the requirements of reference 13-5. Safety footwear issued for flight line operations shall also meet requirements of NATOPS manual.

3. All safety footwear shall be stamped by the manufacturer as meeting ANSI Z41.1 on the inside of the shoes. Only footwear manufactured and tested to reference 13-5 standards are acceptable.

13007. EYE PROTECTION (SIGHT CONSERVATION PROGRAM)

1. Marine Corps personnel working in eye-hazardous areas or operations identified in PPE survey shall be provided adequate eye protection at government expense. All persons entering an eye-hazardous area or a hazard radius of an eye-hazardous operation, including other workers, supervisors, or visitors, shall also be required to wear eye protection.

2. Objectives of this program are to safeguard personnel from eyestrain or injury due to defective vision and protect them against other eye injuries by providing protective eye wear.

3. Eye-Hazardous Areas. Personnel working or visiting in such areas shall be furnished with and required to wear eye protective equipment. Eye-hazardous areas shall be included on the PPE survey. Whenever new processes or procedures are adopted, or changes are made, an evaluation shall be conducted by the responsible industrial hygienist.

a. Warning signs with "EYE HAZARD WHILE EQUIPMENT OPERATING" shall be displayed prominently at entrances and inside eye hazardous areas. All personnel working in or entering these places shall wear appropriate eye protection.

b. Warning decals or signs with "WEAR GOGGLES WHILE OPERATING THIS MACHINE" shall be placed on equipment involving eye hazardous operations as indicated by PPE Survey.

4. Types of Eye Protection. Type of eye protection used is dependent upon operation and hazard. Type of eye protection shall be identified on the PPE Survey.

a. Plano or prescription safety glasses with side protection are the basic eye protection required for eye hazardous areas or operations.

b. Goggles may be substituted for safety glasses or required for adequate protection. Goggles must be appropriate to the operation (e.g., splash-resistant goggles for working with chemicals (covered ventilation ports), impact-resistant goggles for working with particles (open ventilation)). Splash goggles will also protect against particles.

c. Guidance for laser eye protection (LEP) is provided in reference 13-6.

d. Face shields may be required, in addition to safety glasses or goggles, for operations which generate flying

particles or objects (e.g., concrete chips, wood knots, splinters) or chemical splashes. Face shields do not meet eye protection requirements and cannot be substituted.

e. Welding goggles, hoods, and shields shall have the appropriate filter lens for protection against radiant energy during welding, brazing, and oxygen cutting as listed in reference 13-7.

f. All eye protection shall conform to requirements of reference 13-7. Approved eye protection will have ANSI Z87 stamped on glasses or goggles (e.g., temple piece).

5. Impaired Vision. Any Marine Corps personnel with vision completely or practically missing in one eye, as determined by medical officer, is more at risk for disability resulting from injury to the better eye and therefore warrants more aggressive protection regardless of occupation or MOS. Requirements for work restrictions and use of eye-protective equipment will be determined by the attending occupational medicine physician after appropriate consultation with the individual's optometrist or ophthalmologist.

6. Visual Screening. Medical department is responsible for conducting the following eye screening tests:

a. Newly hired civilian employees shall be tested as a part of the pre-placement physical examination.

b. Visual screening of Marine Corps personnel performing duties not listed above will be accomplished on an individual basis. Installation or unit safety manager, upon consultation with the responsible industrial hygienist, will assist in scheduling an appointment with medical department. Visual screening shall be in compliance with Medical Surveillance Procedures Manual and Medical Matrix (Ed. 5), NEHC 6260 TM 96-1.

7. Referral for Refraction. Marine Corps personnel engaged in eye-hazardous areas, processes, and occupations with visual acuity insufficient to meet requirements of the job shall be referred to medical department for refractive service. Installation or unit safety manager shall take appropriate action to ensure the required corrective eye protection is provided in accordance with this Manual.

8. Maintenance of Eye Protection. Protective eye wear furnished under this program is government property and will be repaired or replaced if damaged in the course of employment.

9. Contact Lens Restrictions. Marine Corps personnel SHALL NOT wear contact lenses when assigned to work involving the handling of caustics, acids, and toxic chemicals or dust. Such materials are difficult to remove, without delay, when they get under the contact lens.

10. Emergency Eyewash Facilities

a. Emergency eyewash facilities shall be provided in all areas where corrosive chemicals are used or stored. All such emergency facilities shall be located where they are easily accessible to those in need, and shall be installed, maintained, flushed, and inspected per manufacturers' recommendations and reference 13-8. Plumbed eyewash stations shall be checked and flushed weekly. Portable eye wash stations shall be drained and flushed quarterly, or per manufacturers directions if an antibacterial agent is used.

b. Plumbed eyewashes are preferred and shall be installed where feasible. Where plumbed units are used they shall be eye and face wash units since chemical splashes to the eyes often also involve the face. Portable eyewashes shall have sufficient volume to meet the flow requirements of reference 13-8 for an eyewash. Personal eyewash equipment (i.e., 1-quart squeeze bottles) shall not be substituted for an eyewash, but may be used to supplement plumbed or portable eyewashes.

11. Sterilization. Arrangements shall be made for the issue, care, sterilization, and reissue of the "common use" eye protectors and coverall goggles.

12. Disposition of Eye Protection. Corrective eye protection prepared from the prescription of one person is not medically appropriate for reissue to another person. For personnel who are retiring, resigning, or otherwise separating from service, their corrective eye protection has served its useful life cycle and need not be collected.

13008. RESPIRATORY PROTECTION (RESPIRATORY PROTECTION PROGRAM)

1. Marine Corps personnel working in areas where they may be exposed to harmful levels of airborne dust, fogs, fumes, mists, gases, smokes, sprays, or vapors shall be provided appropriate respiratory protection, per guidelines of industrial hygienist, at government expense. Objectives of this program are to safeguard the health of Marine Corps personnel from respiratory hazards by use of respirators and provide written guidelines as required by reference 13-9.

2. A Respiratory Protection Program Manager (RPPM) for Marine Corps installations and units shall be designated in writing by the commander and based on recommendations from safety manager. RPPM shall establish a comprehensive respiratory protection program. BUMED occupational health professionals will provide consultation to RPPM on all aspects of respiratory protection program.

3. RPPM shall:

a. Be adequately trained in all aspects of RPPM program development, implementation, and execution per reference 13-9.

b. Complete one of the following courses before appointment:

(1) OSHA Training Institute Course 222 or 222A.

(2) NIOSH Course 593.

(3) Navy RPPM Course.

(4) Respiratory protection course with at least 32 hours of training which covers: minimum program requirements and administration; respirator types, selection, certification, and limitations; respirator cleaning, maintenance, and inspection; fit testing; and medical considerations.

c. Ensure a written standard operating procedure (SOP) is developed and posted in the general work area. SOP's shall include pertinent regulations, consensus standards, and emergency and rescue guidance, as necessary.

d. Approve and authorize in writing all purchases of nonstandard respiratory-protective equipment.

e. Ensure respiratory protection recommended by responsible industrial hygienist is provided to appropriate personnel by their organizations.

f. Request responsible industrial hygienist to conduct a health hazard evaluation of new or modified work operations to ensure appropriate respirators are specified.

g. Ensure central maintenance facilities are established by tenants for respirator storage issue, cleaning, and maintenance.

h. Ensure personnel assigned to the respirator central maintenance facility are adequately trained.

i. Ensure all respirator users and their supervisors receive annual training.

j. Ensure all respirator users receive medical clearance prior to being fit tested.

k. Ensure all users of negative pressure respirators are fit-tested annually or more frequently if required by a specific OSHA or Marine Corps OSH standard. Personnel working with lead, asbestos, arsenic, and acrylonitrile will be fit-tested initially and at least every six months thereafter.

l. Maintain all records pertaining to respirator training and fit testing. Coordinate medical evaluations for user qualification or suitability and worker exposures with medical department.

m. Conduct an annual audit of the Respiratory Protection Program.

4. Supervisors shall:

a. Ensure only trained and medically qualified personnel are assigned to tasks requiring use of respirators.

b. Ensure respirators are used per this Manual and reference 13-9.

5. Supply Department representatives shall only purchase respiratory protective equipment that has been approved and authorized by the RPPM.

6. Respirator users shall:

a. Use respirators in accordance with this Manual and reference 13-9.

b. Report work site problems involving use of respirators to their supervisors.

c. Properly store, maintain, and clean the respirators issued to them (See paragraph 11a).

7. Respirator Selection

a. Respirators shall be selected by the RPPM in accordance with the guidelines of the industrial hygiene survey, this Manual and reference 13-9.

b. Responsible industrial hygienist shall specify type of respirators in the annual industrial hygiene evaluation and upon request by RPPM.

8. Respirator Use

a. Respirators shall be used as issued. No modifications or substitutions to equipment are permitted.

b. Respirators shall be used only by person to whom they are issued. Respirators shall be inspected by user before donning.

c. Respirators with tight-fitting face pieces shall not be worn by individuals with facial hair that interferes with the face piece to face seal -- no beards.

d. The wearing of contact lenses with a respirator shall be authorized on a case-by-case basis by medical department personnel only.

e. A positive and negative pressure fit-check shall be performed each time an air purifying respirator is donned.

f. While using respiratory protection, if odor or taste from the work process is detected, difficulty in breathing is encountered or other sign of leakage is present, user shall leave area without delay. Reentry shall not be permitted until the problem has been solved by replacing cartridges or filters, adjusting respirator fit, or by other means, as necessary.

g. When respirators are temporarily removed during breaks in work operations, removal shall be done away from work area in order to prevent personnel exposure and keep interior of the respirator face piece clean. Respirators shall be protected from contamination prior to redonning.

9. Respirator Inspection

a. All respirators shall be inspected before and after use.

b. Respirators and self-contained breathing apparatus kept for emergency use shall be inspected monthly. Records of inspection dates and findings shall be maintained.

10. Respirator Cleaning and Disinfecting. Respirators shall be cleaned and disinfected after each use. Follow procedures provided by the RPPM, manufacturer, or reference 13-10.

11. Storage of Respirators

a. Clean respirators shall be stored in sealed plastic bags, away from sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Storage area shall be clean and sanitary.

b. Respirators shall be stored in such a way as to prevent crushing which can result in deformation of facepiece.

c. Respirators shall not be stored by hanging from the head straps.

12. Repair and Maintenance

a. Respirator assembly and repair shall be performed by trained and qualified personnel.

b. Repair of respirators shall be accomplished with the appropriate parts designated by respirator manufacturer. Parts from one manufacturer will not be used on another manufacturer's respirators, including filters and cartridges.

c. No attempt shall be made to replace, adjust, or repair respirator components beyond the manufacturer's recommendations.

13. Breathing air for supplied air and SCBA respirators must meet Grade D specifications of reference 13-11.

14. Medical Examinations

a. All respirator users shall be medically evaluated by a physician or physician assistant to ensure they can wear a respirator and do required work without any adverse health effects.

b. These medical examinations shall be conducted per references 13-9 and 13-12.

c. Users of prescription eye wear who must wear a full-face respirator shall be fitted with respirator spectacles recommended by manufacturer and prescribed by an optometrist or opthamologist.

15. Fit Testing

a. All users of negative-pressure respirators shall be fit tested in a test atmosphere to ensure proper respirator fit.

b. All users of negative-pressure, air purifying respirators shall be trained in using positive- and negative-pressure fit testing procedures prior to donning these respirators.

c. Fit testing shall be performed annually after training except for those individuals who work with or may be exposed to arsenic, acrylonitrile, lead, asbestos, or other materials for which a specific OSHA or Marine Corps standard requires semi-annual fit testing.

d. Individuals with interfering facial hair will not be allowed to use Respiratory Protection Equipment except for positive-pressure supplied air hoods where appropriate. Furthermore, these individuals shall be removed or transferred from this position until they can be satisfactorily fit tested and protected.

e. Fit testing shall be performed per requirements of reference 13-9 and this Manual.

16. Training

a. Personnel entered into the respiratory protection program shall be trained on the nature and degree of respiratory hazards, respirator selection, donning and fit testing procedures, care of respirators (storage, cleaning, maintenance), wear of contact lenses, use and limitations of respirators (including signs and indications of respirator failure).

b. Personnel training records shall include entries for respirator training and fit testing as appropriate.

CHAPTER 13

References

13-1	29 CFR 1910, Subpart I	Personal Protective Equipment
13-2	29 CFR 1910.132	General Requirements
13-3	ANSI Z89.1	American National Standard, Industrial Head Protection
13-4	MCO 6260.1D	Marine Corps Hearing Conservation Program
13-5	ANSI Z41.1	American National Standard, Standard Methods for Temperature Measurement
13-6	MCO 5104.1	Marine Corps Laser Hazards Control Program
13-7	ANSI Z-87.1 - 1989	American National Standard, Practice for Occupational and Educational Eye and Face Protection
13-8	ANSI Z358.1 - 1990	American National Standard, Emergency Eyewash and Shower Equipment
13-9	29 CFR 1910.134	Respiratory Protection
13-10	ANSI Z88.2-1992	American National Standard, Practices for Respiratory Protection
13-11	ANSI Z86.1-1989	American National Standard, Commodity Specification for Air
13-12	OPNAVINST 5100.23D, Chapter 8	NAVOSH Program Manual, Occupational Health

CHAPTER 14

CONFINED SPACE ENTRY PROGRAM

CHAPTER 14

CONFINED SPACE ENTRY PROGRAM

14000. DISCUSSION

1. Confined Spaces. Per reference 14-1, Marine Corps must have a confined space entry program (non-maritime). Numerous confined spaces can be found aboard Marine Corps installations or units. Examples of such spaces include storage tanks, pits, boilers, fuel cells, sewers, underground utility vaults, tunnels, and manholes. Hazards encountered in these spaces are often compounded by poor illumination. The following characteristics define a confined space:

a. Not designed for routine human occupancy.

b. Large enough for bodily entry.

c. Has restricted access or exit.

NOTE: A confined space does not have to be a covered enclosure, hence, trenches deeper than four feet are also confined spaces.

2. Permit-Required Confined Space. Confined spaces with one or more of the following characteristics meet OSHA's definition of a permit-required confined space (PRCS) and an entry permit must be issued before personnel may enter:

a. Lack of sufficient oxygen to sustain life (<19.5%).

b. Excessive oxygen which increases the danger of fire or explosion (>23.5%).

c. Contains or has potential to contain a flammable or explosive atmosphere or materials.

d. Contains or has potential to contain a toxic atmosphere or materials.

e. Contains any other recognized serious safety and health hazard such as:

(1) Slippery surfaces.

(2) Deteriorated or unstable ladders.

(3) Machinery and electrical devices that may require an energy isolation (lock-out/tag-out) procedure.

(4) Potential for engulfing an entrant from loose materials (e.g., sand, sawdust).

(5) Potential for entrapment or asphyxiation from inwardly sloping walls or a floor which slopes downward to a smaller cross-section.

3. All confined spaces shall be considered hazardous and entry into or work on the boundaries of such spaces is prohibited until the space has been evaluated by a qualified person per this Manual and reference 14-1 to establish appropriate safety precautions.

14001. PROGRAM MANAGEMENT

1. Commanders of Marine Corps installations or units shall appoint in writing a qualified confined space program manager (CSPM) responsible for implementing a confined space entry program consistent with requirements of this Manual and reference 14-1. Commanders shall not delegate authority to sign certification letters. CSPM shall normally be assigned to installation or unit safety office. However, in the event CSPM is not assigned to installation or unit safety office, then CSPM shall have direct access to commander.

2. Tenant commands shall adhere to the installation confined space entry program. Tenant commands or separate units without a qualified CSPM shall utilize the services of installation CSPM. These services will be described in the installation SOP and may be stipulated in host-tenant agreements.

3. Contractors and other non-DoD agencies shall implement their own confined space entry program that meets all pertinent OSHA standards.

14002. PROGRAM ELEMENTS. Confined space entry program consists of six basic program elements.

1. Identification and Preliminary Testing

a. Confined Space. CSPM, in coordination with appropriate line managers, shall identify all confined spaces on installation or unit and maintain this list.

b. Permit-Required Confined Space. CSPM, with the assistance of an industrial hygienist or qualified safety person as necessary, shall evaluate each confined space to determine whether it meets criteria of a PRCS. All manholes and unvented vaults under control of Marine Corps personnel that meet the criteria of a confined space shall be considered a PRCS. CSPM shall maintain a current inventory of all PRCS's on installation or unit.

2. Prevention of Unauthorized Entry. Supervisors shall brief all assigned workers on the restrictions regarding entry and utilize physical means (e.g., locks, barriers) to secure spaces under their control. In addition, each PRCS shall be posted with a standard caution sign. The sign shall be posted in a conspicuous location near likely entry points. Street manholes are considered a PRCS and require a caution sign (may post signs inside). PRCS caution signs shall contain the following information:

a. Unauthorized entry prohibited.

b. General nature of hazard inside (e.g., potentially hazardous atmosphere).

c. Person to contact if entry is required.

3. Comprehensive Hazard Evaluation. Many factors must be evaluated prior to entry into or work in a confined space. Such an evaluation shall be in accordance with reference 14-1. The evaluations should include at least the following:

a. Initial Atmospheric Testing. At completion of this testing each space is classified as follows:

(1) Class I Space. Contains atmospheres or conditions which are immediately dangerous to life or health (IDLH).

(2) Class II Space. Contains atmospheres or conditions which are dangerous, but not IDLH.

(3) Class III Space. Contains atmospheres or conditions which are contaminated.

(4) Class IV Space. Contains no flammable or toxic agents, has an oxygen content consistent with outside ambient conditions (20-21 percent), and presents little potential for generation of hazardous conditions. An entry permit is not required for this class of space.

b. Periodic and Continuous Atmospheric Testing. Many operations, due to the potential to generate hazardous conditions, require periodic or continuous monitoring as the work progresses to ensure that safe conditions are maintained. The types of testing vary and no single rule can be established for all operations. CSPM shall establish the frequency and type of test for periodic or continuous monitoring. The following types of operations shall be carefully considered for periodic or continuous monitoring:

(1) Hot work with the potential of generating hazardous concentrations of toxic agents.

(2) Hot work in the presence of preservatives, seepage of flammables from seams or rivets, and similar operations.

(3) Applications of preservatives, paint, epoxies and similar operations, which may generate hazardous concentrations of toxic or flammable vapors.

(4) Cleaning operations, sludge removal, and similar operations, which may produce or cause release of hazardous concentrations of toxic or flammable vapors.

(5) Any other similar operations which possess the potential for producing or releasing toxic, flammable, or asphyxiating atmospheres or materials.

NOTE: CSPM shall ensure that appropriate instruments are available to perform atmospheric testing required. These instruments shall be suitable for the task as indicated by certification from National Institute for Occupational Safety and Health (NIOSH), Mine Safety and Health Administration (MSHA), or other nationally recognized testing authority such as Underwriters Laboratory (UL) or Factory Mutual (FM). CSPM shall ensure equipment is properly used, maintained, and calibrated per manufacturer's instructions. Functional or calibration checks shall be made before and after use. These records shall be maintained for one year.

c. Other Hazard Evaluations. In addition to potentially hazardous atmospheres, other confined space hazards, such as the presence of piping, slippery surface, unstable ladders, engulfment potential, and energy sources shall also be evaluated prior to entry into a PRCS.

4. Issuance of Confined Space Entry Permits. If entry into a PRCS is required, the responsible line supervisor shall request a

permit (NAVMC 11405) from CSPM. Request shall include a description of the space, operation to be performed, and a list of proposed entry personnel. Based on results of the comprehensive evaluation discussed above, CSPM (or a qualified assistant working under direction of CSPM) shall grant the permit only if entry or work can be performed safely. Permits shall be valid for a period of time specified by CSPM but not to exceed one work shift or eight hours. Confined space entry permit will be distributed as follows:

a. One copy shall be posted at the primary entrance to space. All other entry points shall be under control of entry supervisor.

b. One copy shall be provided to line supervisor requesting permit.

c. One copy shall be retained by CSPM for one year after its expiration date. If CSPM is not assigned to the installation or unit safety office, one copy shall be provided to that office.

d. If the space is rejected then a reject permit shall also be written. One carbon copy of reject permit should be red or pink with reject imprinted on it for ready visibility of this condition.

5. Training and Qualifications

a. CSPM shall have successfully completed a course that fully qualifies person to perform all the criteria of reference 14-1 and this Manual. Recommended courses include the following:

(1) OSHA 226 Confined Space Entry

(2) NAVOSHENVTRAINCEN SO-240 Confined Space Entry

b. Qualified assistants (ACSPM) shall be certified by CSPM as being trained and competent. Records of training and certification of competency shall be maintained by CSPM for as long as such personnel are involved in the program. All assistants shall be recertified by CSPM annually.

c. The CSPM shall ensure that attendants, when required, are instructed in their duties. Issuance of such instructions shall be noted on permit. Attendants should be provided training in basic first aid and cardiopulmonary resuscitation (CPR).

d. CSPM shall ensure rescue team personnel are aware of potential confined space entry hazards, rescue duties, and

necessary precautions. Training shall comply with reference 14-1. Records of training, rehearsals, and critiques shall be maintained by CSPM for one year.

e. The responsible manager or supervisor shall ensure all authorized entrants are trained on skills necessary for the safe performance of assigned duties including specific hazards likely to be encountered and appropriate safety measures. CSPM shall assist in such training, as necessary. Training shall be in accordance with reference 14-1. Responsible entry supervisor shall certify on permit that proposed entrants are properly trained in their duties under this Manual and reference 14-1.

f. Control of energy sources, electrical and mechanical, shall be noted on confined space permit and shall be locked out or tagged out in accordance with chapter 12.

g. Personnel assigned duties which require them to enter into and work inside confined spaces shall have such duties formally included in their position description and personnel records. They shall also be required to receive a pre-placement physical examination based upon the type of work to be performed and potentially hazardous exposures. Annual physical examination will be given if determined necessary by industrial hygiene evaluations. A termination examination will be given upon termination of employment or reassignment to other duties.

h. Reference 14-2 provides safety precautions on maintenance and repair of aircraft fuel cells which involve entry into or work on confined spaces. The CSPM or ACSPM must also complete the formal training required by reference 14-2 to oversee fuel cell entry.

6. Program Evaluation. Commanders shall ensure that an evaluation of the confined space entry program is completed following any mishap or other incident, or at least annually.

14003. REQUIREMENTS FOR CONFINED SPACE ENTRY AND WORK. Issuance of a permit for confined space entry and work starts with a thorough evaluation, by competent and trained personnel, of potential hazards that may be encountered and establishment of necessary control measures. In addition to hazard evaluation, the following requirements and restrictions also apply:

1. Authorized Entry Personnel. Only personnel authorized by responsible entry supervisor shall be allowed to enter a permit required confined space. Responsible entry supervisor shall ensure personnel are aware of hazards likely to be encountered

and the appropriate safety measures initiated. Responsible entry supervisor shall also ensure personnel are medically fit for such activity. Entry supervisor shall also ensure personnel subject to claustrophobia are not engaged in such activity.

2. Attendants. Attendants are mandatory for all entries into permitted spaces. Attendants shall be equipped with radios or other communications equipment to ensure prompt emergency response. The following requirements also apply to attendants:

a. Attendants shall remain outside of the main opening to space to monitor conditions inside and seek assistance in event of any emergency. This must be strictly adhered to because a high number of fatalities in confined spaces are due to untrained personnel attempting a rescue.

b. Attendants shall be instructed regarding proper notification procedures in event of an emergency and that attendants may only attempt non-entry rescues until trained rescue personnel have arrived. A non-entry rescue means authorized entry personnel can be extracted from the confined space by pulling them out by their fall protective gear. Attendants must remain outside of confined space at all times.

c. Attendants shall not be assigned additional duties.

d. Attendants must be aware of possible hazards during entry, familiar with possible behavioral effects of hazard exposure, continuously maintain a count of authorized entrants, and monitor activities inside and outside space.

e. Attendants shall order evacuation of space immediately if any situation arises which makes it impossible to effectively or safely perform all their required duties. If attendant must leave space for any reason, then authorized entrants must evacuate space.

f. Attendants will warn unauthorized personnel to stay away from the permitted space, advise any unauthorized personnel who have entered a space to leave immediately, and inform authorized entrants and responsible supervisors if unauthorized persons have entered space.

3. Personal Protective Clothing and Equipment. CSPM, in coordination with a safety specialist or industrial hygienist, shall determine the requirements for appropriate PPE based on the type of confined space operations and exposures involved. See chapter 13 for specific requirements. The required PPE shall be listed on entry permit. Responsible supervisor shall ensure that

all confined space entry personnel are trained in the proper use of required PPE.

4. Preparation of Spaces. Appropriate protective measures shall be implemented to ensure:

a. Space is isolated from unwanted forms of energy and accidental releases of potentially hazardous material (HM).

b. Workers inside confined spaces are protected from vehicular or pedestrian traffic, dropped objects, etc.

c. Bystanders are prevented from falling into spaces such as open manholes.

d. Adequate lighting is provided in and around the vicinity of the opening to a confined space, especially at night. Electrical lighting or other electrical equipment in use shall meet requirements of Class I, Division 1 explosion-proof equipment if a flammable atmosphere may be present.

14004. RESTRICTIONS FOR CLASS I AND II SPACES

1. Class I Spaces. Entry into and work in or on Class I spaces shall be not permitted under normal operations and is authorized only under the following circumstances.

a. Entry into Class I spaces is authorized only in cases of rescue efforts, life threatening, or other extreme emergencies. In event of any such emergencies, personnel entering space shall be equipped with:

(1) A NIOSH or MSHA approved pressure-demand self-contained breathing apparatus (SCBA) or airline respirator with escape bottle for entry into IDLH atmospheres.

(2) A harness of a type suitable to permit extraction of person from space.

(3) A life line securely attached to harness.

(4) Other necessary PPE suitable to the conditions and exposure.

NOTE: Emergency rescue personnel, equipped with the above listed equipment and any additional equipment which may be necessary to effect a rescue, shall be stationed immediately outside entry to a Class I space.

Communications shall be established and maintained between person entering space and attendant personnel outside space. Where flammable or explosive vapors, gases, or materials are present, only approved explosion-proof, spark-proof, or intrinsically safe equipment shall be used and all other potential ignition sources shall be prohibited.

b. Cold work may be performed on the external areas of a Class I space from outside the space, provided that the work performed does not generate heat or other ignition sources which may cause ignition of atmospheres within space.

c. Hot work may be performed on the external areas of a Class I space when it does not contain a flammable, explosive, or oxygen enriched atmosphere. A Class I space classification, in this case, would be based on oxygen depletion or the presence of toxic agents and would include spaces which are inerted, pressed up, or a combination thereof. A hot work permit from the fire department must first be obtained.

2. Class II Spaces. A flammable or toxic atmosphere, or deviation of oxygen content may be due to materials and conditions within the space. The cause or source of contamination shall be identified and removed to the maximum degree possible by cleaning, ventilating, or other such treatments prior to entry or work. An attendant shall be stationed immediately outside space entrance. Where operations are conducted within the space, such as spray finishing, welding, cutting or solvent cleaning, the following precautions apply:

a. Where toxic or flammable materials are present, or may be introduced into the space by work procedures, general dilution or local exhaust ventilation, or combination thereof, shall be provided. Air cannot be blown into Class II spaces.

b. Where toxic materials are present, or may be introduced into the space, personnel within the space shall be provided with respiratory protective equipment approved by NIOSH or MSHA for the specific contaminant. See chapter 13 for respiratory protection requirements.

c. Where flammable gases or vapors are present, or may be introduced into the space, approved explosion-proof, spark-proof or intrinsically safe equipment shall be used and all potential ignition sources shall be closely controlled.

14005. SPECIAL PRECAUTIONS

1. Hot Work. Hot Work includes all flame heating, welding, torch cutting, brazing, carbon arc gouging, or any work which produces heat of 400o F or more; or, in the presence of flammable materials or atmospheres, use of ignition sources such as spark or arc producing tools or equipment, static discharges, friction, impact, open flames or embers, and non-explosion-proof lights, fixtures, motors, or equipment.

2. Aircraft Fuel Cell Repair. Safety precautions relative to maintenance and repair of aircraft fuel cells which involve entry into or work on internal or external tanks are provided in reference 14-2.

14006. EMERGENCY RESCUE PROCEDURES. CSPM, in coordination with responsible line managers or supervisors, shall prepare a written emergency plan to cover confined space entries under their control per reference 14-1. Emergency and rescue procedures, to be most effective, must be planned consistent with the nature of operations and conditions within the confined space. When confined space entries concern hazardous waste operations or emergency response operations for release of, or substantial threats of release of, hazardous substances, the written emergency plan shall meet requirements of reference 14-3.

14007. CONTRACTOR OPERATIONS. Where contractors are performing work at Marine Corps installations or units, the following provisions apply:

1. The contractor shall provide a competent person as required in 29 CFR 1910, 29 CFR 1915, or 29 CFR 1926, and as recommended by NIOSH Criteria Document for Confined Spaces, U.S. Army Corps of Engineers Safety and Health Requirements Manual EM385-1-1, or State OSH requirements, as applicable.

2. Laws and regulations make no provision for Marine Corps personnel to issue permits for contractor operations. Performance of such functions may involve assumption of liability by Marine Corps in event of a mishap. Marine Corps personnel shall not certify spaces or issue confined space entry permits for contractor operations or personnel.

3. Where Marine Corps and contractor personnel are to occupy the same space at the same time, installation or unit CSPM and the appropriate contractor representative shall issue separate permits and contractor shall be informed of Marine Corps

findings. However, contractor shall be informed by the contracting officer or ROICC that contractor retains legal obligation for safety of contractor personnel.

NOTE: Marine Corps personnel cannot make an entry or perform hot work based upon a National Fire Protection Association (NFPA), Certified Marine Chemist, or competent person certification written for contractor operations.

4. In all cases involving contractor operations, the contracting officer or ROICC shall inform contractor that confined space entry personnel shall be adequately qualified. In addition, all operations are to be conducted under requirements of reference 14-1, since Marine Corps personnel, equipment, and facilities may also be at risk.

14008. CONFINED SPACE ENTRY PERMIT, NAVMC 11405

1. A special permit is required for entry into permit required confined spaces. Use NAVMC 11405, figure 14-1 for all confined space entry permits. This form is available through Marine Corps Electronic Forms System (MCEFS) and is also available in Navy Supply System.

2. Permit shall be printed in quadruplicate with the last page being red or pink. If space is rejected, REJECT shall be printed across the red or pink page.

3. Permits shall be maintained for one year to include the rejected spaces.

CHAPTER 14

References

14-1	29 CFR 1910.146	Permit-required Confined Spaces
14-2	NAVAIR 01-1A-35	Aircraft Fuel Cells and Internal/External Tanks (NOTAL)
14-3	29 CFR 1910.120	Hazardous Waste Operations and Emergency Response (HAZWOPER)

CONFINED SPACE ENTRY PERMIT

NAVMC 11405, Rev 7-98.

Date:	Expiration Date/Time:
Location:	Description:

PURPOSE OF ENTRY: (Operations to be conducted)

Authorized Entrants:	Authorized Attendants:

ATMOSPHERIC TEST DATA

Test	Pre-entry	Follow-up					
Oxygen Content							
Explosive (%LEL)							
Toxins							
Tested by	Date/Time						

INSTRUMENT	MODEL	SERIAL NO	CAL DATE	COMMENTS (HAZARD OF PERMIT SPACE)

REQUIRED SAFETY PRECAUTIONS

REQUIREMENT	YES	NO	SPECIFICS
Attendant			
Respiratory Protection			
Protective Clothing			
Protective Equipment			
Fire Extinguisher			
Rescue Equipment			
Lockout/Tagout			
Hot work Permit			
Ventilation			
Follow-up Testing			(Equipment to be provided)
Other Controls			
Communication			

Emergency Contact:	Phone:
Comments:	
Entry Supervisor's Signature:	CSPM/ACSPM Signature:

Figure 14-1. -- NAVMC 11405, Confined Space Entry Permit.

CHAPTER 15

LITHIUM BATTERY SAFETY

CHAPTER 15

LITHIUM BATTERY SAFETY

15000. DISCUSSION

1. Types of lithium batteries used by Marine Corps include the following:

a. Lithium-sulfur dioxide (LiSO2) batteries are used extensively for military applications, especially in communications and electronics equipment. These high performance batteries contain highly reactive materials and require proper treatment during operation, handling, storage, transportation, packaging, and disposal. LiSO2 batteries should be considered hazardous at all times and disposed of as hazardous waste unless fully discharged in accordance with references 15-1 and 15-2. Only BA-5567/U is considered as non-hazardous solid waste (NHSW) for disposal purposes.

b. Lithium-thionyl chloride (LiSOCl2) batteries contain liquid thionyl chloride, which forms vapors upon exposure to air. The vapor is highly toxic, so batteries must not be damaged in any way that may cause the battery to rupture. These batteries should be considered hazardous at all times and disposed of as hazardous waste through the local Defense Reutilization and Marketing Office (DRMO) or contract in compliance with state requirements.

c. Lithium-manganese dioxide (LiMnO2) batteries contain an electrolyte solution of lithium perchlorate and an organic solvent. They are primary (non-rechargable) batteries that should be considered hazardous. Disposal of these batteries may be with general refuse unless regulated as hazardous waste under state regulations, which will require disposal through local DRMO or contract.

2. Installations must store, use and dispose of all lithium batteries in a manner which will minimize the danger of fires, explosions, or toxic exposure to personnel, as well as prevent the release of hazardous materials into the environment. Units shall have a central control point for storage, issue, and collection of lithium batteries. Installations and units shall fully comply with all applicable laws, regulations, and this Manual. Figure 15-1 provides additional lithium battery information and guidance documents.

3. Marine Corps point of contact for lithium battery issues is CMC(LPP-2), ATTN: Shelf-Life Management/Hazardous Material Management/Disposal Policy Focal Point.

15001. HAZARDS. Four separate hazards are identified with lithium batteries:

1. Explosion Hazard. Lithium batteries provide greatly increased specific energy and shelf lives when compared to lead acid or Nickel Cadmium (NiCad) batteries. These batteries contain a much higher energy content in pressurized cells. Therefore, under no circumstances should the battery be deliberately opened, crushed, punctured, disassembled, or otherwise mutilated. Rupture of cells could occur. These batteries should not be heated or incinerated as overheating may produce internal pressure at a rate in excess of the venting capacity and could result in a cell or battery exploding. Under no condition should lithium batteries be recharged. Such action could lead to venting, rupturing, and possible fire.

2. Fire Hazard. Lithium is a reactive metal that burns extremely hot when ignited and is difficult to extinguish without proper training and equipment. Water that contacts venting lithium batteries will produce highly flammable hydrogen gas. An approved Class-D fire extinguisher (i.e., National Stock Number (NSN) 4210-01-303-3999 or equivalent, Lith-X extinguishers, or Navy 125(S) extinguishers) or sand is recommended for lithium battery storage areas.

WARNING: Do not use MET-L-X fire extinguishers. MET-L-X fire extinguishers (i.e., NSN 4210-00-580-9191) will not extinguish a lithium fire due to extremely high temperature, and may actually fuel the fire with a violent reaction.

WARNING: Halon fire extinguishers shall not be used to combat fires involving $LiSO_2$ batteries.

3. Toxic Gases. These batteries will release toxic gases if they vent from internal over pressure due to short circuiting or heat. These gases are highly corrosive and may cause grave injury to personnel with even a one second inhalation.

4. Hazardous Waste. Lithium batteries may be considered hazardous waste after they have been used. However, after they are completely discharged, they may be classified as a nonhazardous solid waste. To facilitate this complete discharge, certain lithium batteries are equipped with a Complete Discharge

Device (CDD). To discharge, press the CDD and store the battery in a cool, dry, ventilated facility for five days until discharge is complete.

15002. STORAGE PROCEDURES

1. Lithium batteries shall be stored in approved storage facilities. Other hazardous materials shall be stored separately. Construction and placement of the facility will be approved by the installation/unit safety manager and the environmental compliance department. Criteria for selection shall include:

a. Ease of access for emergency response equipment.

b. Distance from other structures.

c. Inaccessibility to unauthorized personnel.

d. Distance from bodies of water, canals or ditches that could allow heavy metal released from batteries during a fire to enter the bodies of water.

2. Storage facilities should be inspected at least quarterly for serviceability. Lithium batteries shall not be exposed to direct sunlight or water during storage or while discharging. Required repairs on storage facilities shall be requested via work request to the installation Public Works or Facilities Maintenance Department.

3. Lithium batteries become unstable at temperatures greater than 130 degrees F. Indoor thermometers will be placed within each battery storage facility to ensure temperature control. Should temperatures exceed 130 degrees F, the installation/unit safety manager shall be notified.

NOTE: Only batteries will be stored in these facilities. Other flammable, combustible, or hazardous commodities shall not be stored with lithium batteries.

4. Lithium batteries shall not be stored in the same stack as magnesium or lead acid batteries. New lithium batteries will be stored separately from "used" batteries. Batteries will be stored at least two inches from container walls and have at least two inches between stacks to promote air circulation for cooling. Stacks will be no higher than three boxes high. All batteries will be protected from crushing, puncturing, or short-circuiting by storing them in the original or equivalent packaging.

Batteries will be inspected daily for evidence of leakage, excessive heat, or exposure to water.

5. Eating, drinking, and smoking in or around the storage area is prohibited due to risk of contaminating food or drink.

6. If personnel have any reason to believe that a battery is venting (e.g., noxious or irritating odor, hissing sound, smoke or flames), all personnel shall leave the battery locker immediately. Fire department and installation/unit safety manager shall be contacted immediately and no persons other than properly trained and equipped emergency response personnel shall reenter the battery storage facility.

7. Appropriate fire suppression equipment shall be readily accessible. This and any other fire equipment on site will be inspected on a periodic basis established by fire chief.

8. Signs shall be placed on all four sides of storage facility that prohibits open flames, eating, drinking, and smoking. Storage facility will be marked in a manner that warns emergency service personnel of lithium battery contents in event of an emergency.

9. A fire suppression system installed in battery storage facility should not be a sprinkler system since lithium batteries are not compatible with water. Lithium batteries must be protected from any impingement of water from a sprinkler system.

15003. DISCHARGE PROCEDURES

1. Only properly trained personnel shall be permitted to discharge lithium batteries. References 15-1, and 15-2 shall be followed for discharging lithium batteries.

2. Lithium batteries shall only be discharged in a well ventilated area, approved by the installation safety manager, fire chief, environmental manager, and cognizant industrial hygienist. Discharge shall not be conducted in any inhabited areas because of potential for fire or explosions, as well as hazard of venting toxic gases. Discharge shall not be conducted in enclosed areas such as wall lockers, footlockers, or embark boxes, due to heat buildup and potential for fire and explosions.

15004. MISHAP REPORTING. All mishaps involving lithium batteries shall be reported to installation/unit safety manager

immediately (reference 15-3). This includes ruptures, venting, fires, short circuits, smoke, etc.

CHAPTER 15

References

15-1	NAVSEAINST 9310.1B PCN 799 000469 00	Naval Lithium Battery Safety Program
15-2	US Army TB 43-0134 PCN 312 550306 00	Battery Disposition and Disposal
15-3	MCO P5102.1	Marine Corps Ground Mishap Reporting

ADDITIONAL LITHIUM BATTERY INFORMATION AND GUIDANCE DOCUMENTS

Document	Subject
NAVSEA S9310-AQ-SAF-010 USMC PCN 207 100100 00	Technical Manual for Batteries, Navy Lithium Safety Program Responsibilities and Procedures, 20 Jul 88
Supply Bulletin SB 11-6 USMC PCN 311 003525 00	FSC 6135 Primary Battery Supply and Management Data, U.S. Army, 1 Apr 93 (Includes Shelf-Life Management, Inspection Procedures for Extending Shelf-Life of Batteries)
Technical Assistance Gram (TAG) #002-95 Source: U.S. Army Communications-Electronics Command (CECOM) (AMSEL-LC-RE-LA), Ft. Monmouth, NJ DSN 992-8824 (908) 532-8824	Operational Guidelines for Testing, Disposition and Disposal of Lithium batteries, 8 Feb 95
SECNAVINST 4855.5A (Aviation) MCO 4855.10B (Ground)	Product Quality Deficiency Report (PQDR) Program
MCO P5090.2A	Environmental Compliance and Protection Manual
MCO P4450.12	Storage and Handling of Hazardous Material
MCO P4030.19G	Preparation of Hazardous Material For Air Shipment
MCO 4140.5	Marine Corps Shelf-Life Program
Battery Support to the FMF Study, Contract M00027-95-D-0008/D.O. 0001 CG MCCDC(C-453) 3300 Russell Rd, Suite 224 Quantico, VA 22134-5130	Appendix A: Master Battery List, 8 Feb 96

Figure 15-1. -- Additional Lithium Battery Information and Guidance Documents.

DoD 4160.21-M	Defense Material Disposition Manual,Ch. 10, App. 1, Para. 3
http://www.monmouth.army.mil/cecom/lrc/lrc.html	CECOM Logistics Readiness Center (Addresses Shelf-Life Management, Inspection Procedures for Extending Shelf-Life of Batteries)
http://www.monmouth.army.mil/cecom/lrc/lrchq/power.html	CECOM Logistics Readiness Center (Ground Precautionary Messages, Safety of Use Messages)

Figure 15-1. -- Additional Lithium Battery Information and Guidance Documents -- continued.

CHAPTER 16

ASBESTOS SAFETY PROGRAM

CHAPTER 16

ASBESTOS SAFETY PROGRAM

16000. DISCUSSION

1. This chapter establishes an asbestos safety program that implements the requirements of references 16-1, 16-2, and 16-3. It provides precautionary measures, health practices, and training and certification requirements to be used for asbestos removal or encapsulation projects. It also describes compliance programs which include engineering and work practices controls (including administrative controls) to reduce and maintain workers' exposure to asbestos below the permissible exposure limit (PEL).

2. Provisions of this chapter apply to industrial and construction activities performed by all military and civilian personnel aboard Marine Corps installations or units, including contractor operations. These provisions pertain to asbestos operations conducted in or on Marine Corps buildings, grounds, and structures. Chapter 10 outlines prevention and control measures.

3. Marine Corps policy is to eliminate asbestos exposure by substitution with non-asbestos-containing materials or, where this is not feasible, through use of engineering and administrative controls and personal protection equipment.

16001. BACKGROUND. Asbestos is a general term used to describe several mineral silicates which are separable into fibers. Although there are many asbestos minerals, only six are of commercial importance: chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite. Major uses of asbestos are for asbestos cement sidings, floor tiles, fireproofing, high temperature insulation, asbestos cloth, friction materials such as brake linings and clutch facings, various gasket materials, and other miscellaneous products. Materials with more than one percent asbestos are called asbestos containing materials.

1. Hazard. Asbestos exposure is a major health hazard. Inhalation of asbestos fibers can produce severe lung damage in the form of disabling or fatal fibrosis of lungs. Asbestosis means fibrosis of lungs due to inhaled asbestos fibers. Asbestos has also been found to be a causal factor in development of cancer of lung as well as the gastrointestinal tract. It can

take 20-40 years between first exposure to asbestos and the appearance of cancer.

2. Detection. Asbestos fibers cannot be seen without a microscope and have no odor or taste. These fibers are so light that once disturbed, may float in the air for 24 hours or more. These fibers can only be detected by trained personnel using specialized air-sampling techniques and equipment.

3. Exposure. Some examples of tasks which can generate airborne asbestos having potential to exceed permissible exposure limits (PEL) are the fabrication, installation, repair or removal ("rip-out") of asbestos insulation materials, power sawing of asbestos-containing fire retardant building materials, brake relining and repair work, and removal of floor tiles or mastics containing asbestos. Personnel performing these tasks must be protected from exposure to airborne asbestos fibers.

4. Substitution. Although asbestos-free substitute materials are being used, asbestos material may still be encountered in Marine Corps in such applications as gaskets and pipe hanger liners. Brake pads provided by supply system still contain asbestos and in some cases are the only brake pads available for older vehicles.

16002. ASBESTOS OPERATIONS. Asbestos removal or containment operations can be controlled so they are not hazardous to Marine Corps personnel. However, they must be identified to installation/unit safety office and properly monitored and evaluated by an industrial hygienist or qualified safety specialist. Control of asbestos fibers is a mandatory requirement.

16003. PERMISSIBLE EXPOSURE LIMIT

1. Permissible Exposure Limit (PEL). PEL for asbestos is 0.1 fiber per cubic centimeter (f/cc) of air, calculated as an eight hour time-weighted average (TWA) exposure. This is referred to as the PEL-TWA. Fibers are defined as rod shaped particles having a length-to-width ratio of three (or more) to one (3:1), and an overall length greater than five micrometers.

2. Excursion Limit(EL). The EL is 1.0 f/cc as averaged over a sampling period of 30 minutes (as determined by Appendix A of reference 16-1 or by an equivalent method). This is referred to as the PEL-EL. No employees shall be exposed to airborne asbestos fibers in excess of either PEL.

3. Personnel Notification. Any monitored individual shall be notified in writing about results of the monitoring within 15 working days after receipt of exposure data. Any individual found to have been exposed at any time during the course of their employment or assignment to airborne concentrations of asbestos fibers in excess of either PEL, shall be notified in writing of their exposure as soon as practical but not later than five days after receipt of exposure data. Notification shall contain corrective action being taken to reduce employee exposure below the PEL-TWA or PEL-EL.

16004. RESPONSIBILITIES

1. Commanders/Department Heads/Directors shall:

a. Ensure work operations with asbestos or materials containing asbestos are conducted in accordance with this Manual and references 16-1, 16-2, 16-3, and 16-4.

b. Ensure all personnel under their supervision are aware of provisions of this Manual and comply with them at all times.

c. Take prompt action to contain and correct asbestos discrepancies when notified of their existence.

d. Provide Asbestos Hazard Emergency Response Act (AHERA) approved training (training courses are approved by states), for all supervisors and workers involved in asbestos removal operations. Provide a copy of the appropriate AHERA training certificate to the installation Asbestos Program Manager (APM) upon request.

2. Installation/Unit Safety Manager shall:

a. Have oversight for all asbestos related activities aboard installation or unit.

b. Provide advice and guidance to APM.

3. Asbestos Program Manager (APM) will be appointed in writing by commander and shall:

a. Attend AHERA training for supervisors which includes accreditation as an Asbestos Project Designer, Building Inspector, and Management Planner per reference 16-3. Recommended training includes: five day asbestos abatement contractor/supervisor training course, three day asbestos inspector course, two day asbestos management planner course, and

Naval Facilities Engineering Support Center (NFESC) Asbestos Program Manager training, as described in Table 16-1.

b. Have cognizance for all asbestos related activities aboard installation or unit.

c. Provide coordination of installation or unit asbestos control program.

d. Provide asbestos awareness training for personnel who do not ordinarily work with asbestos in performance of their duties.

e. Coordinate AHERA training for personnel directly involved with asbestos removal or containment projects.

f. Verify and annotate NAVMC 11406, figure 16-1 with the dates training received by all personnel performing building-related asbestos work as workers, supervisors, building inspectors, or project designers in buildings owned or operated by Marine Corps. Table 16-1 summarizes training and certification requirements for various asbestos workers, supervisors, inspectors, etc.

g. Review NAVMC 11406, Checklist for Asbestos Removal Operations, figure 16-1, to ensure the form through Part 2 is appropriately completed and Part 3, Step 1 reflects supervisor's signature certifying job ready to start. The APM then certifies NAVMC 11406, Part 3, Step 1.

h. Maintain records of all required training per reference 16-3.

i. Coordinate laboratory asbestos analysis.

j. Record the results of asbestos surveys for all facilities in the installation or unit and hold these records indefinitely.

k. Require environmental monitoring and verify compliance with requirements for asbestos operations.

l. Notify individuals of asbestos exposure.

m. Coordinate an asbestos medical surveillance program in accordance with chapter 11.

n. Provide technical support and guidance for asbestos hazard operations.

o. Ensure all required equipment and tools are provided for asbestos operations.

p. Ensure proper containment is used to protect workers and the general public from asbestos hazards that may be generated. See paragraph 4a below.

q. Ensure work area is visually free of any debris or residual insulation and other types of non-fibrous insulation (e.g., cork, rubber) after the ripout operation is completed. Certify by signature that the area is visually clean, Part 3, Step 2 of NAVMC 11406, figure 16-1.

r. Ensure that a qualified (as defined in Table 16-1) industrial hygienist or authorized workplace monitor determines that space is free of asbestos fibers before removing containment, Part 3, Step 3 of NAVMC 11406.

s. Notifies shop upon receipt of completed Part 3, Step 3 by industrial hygienist/workplace monitor that space is asbestos free, that asbestos containment area can be disestablished. Completes Part 3, Step 4 of NAVMC 11406 with date and time shop notified. All completed NAVMC 11406 checklists are permanently filed by the APM.

t. Require contracting officials to receive health and safety plans from contractors before any work operations begin which may generate asbestos hazards. Evaluate health and safety plans to ensure Marine Corps personnel and property will not be endangered by contractor operations.

4. Industrial Hygienists/Authorized Workplace Monitors. The industrial hygienist or authorized workplace monitor for asbestos operations shall:

a. Conduct review of NAVMC 11406, and certify by signature that Job Ready to Start, Part 3, Step 1. Job may now commence.

b. Ensure during asbestos removal or encapsulation operations that the workplace is monitored for asbestos, and that personnel are monitored and wearing appropriate required PPE.

c. Certify NAVMC 11406, Part 3, Step 3, upon completion of asbestos removal or encapsulation operations when determined that all certification samples are satisfactory. Notify APM that clean certification samples are satisfactory and that the containment area can be disestablished.

5. Supervisors. Supervisors of personnel conducting operations with asbestos or asbestos containing materials shall:

a. In accordance with chapter 10, paragraph 10002, verify that bulk samples have been properly obtained and written clearance to begin work is received from APM, before beginning work on suspected asbestos containing material.

b. Coordinate with APM for planning and scheduling asbestos removal operations.

c. Ensure personnel are trained and qualified respirator users in accordance with chapter 13 and are AHERA trained and accredited.

d. Complete NAVMC 11406, Part 2, and certify Part 3 Step 1 for asbestos removal operations before beginning work, and provide a copy to APM. Work shall commence only upon receipt of completed and certified NAVMC 11406 (certification by APM and industrial hygienist/workplace monitor).

e. Ensure all tools removed from a regulated area are completely sealed in two layers of six mil polyethylene or are completely decontaminated by being thoroughly vacuumed, washed with amended water, and dried.

f. Ensure only High Efficiency Particulate Air filter (HEPA) vacuums are used at asbestos containing material worksites.

g. Ensure all asbestos waste is properly disposed of (confer with the installation or unit environmental compliance department for guidance). Reference 16-4 provides guidance concerning disposal.

h. Ensure that job is certified visually clean after work is complete on NAVMC 11406, Part 3, Step 2 and provide to APM.

i. Disestablish asbestos containment area upon notification by APM that authorization is given to do so.

16005. CONTROL METHODS

1. Work Clearance. Due to the inability to detect and contain asbestos without specialized monitoring and training, Marine Corps organizations or units are prohibited from initiating any maintenance, renovation, demolition, or self-help project without first contacting installation or unit safety office for work clearance.

2. Containment. If suspected asbestos containing material is discovered and it is broken, chipped, or in friable condition (can be crumbled by hand), personnel will evacuate area, seal

room to prevent entry, and immediately contact installation/unit APM.

3. Work Protocol. Installation/unit APM shall prescribe required work practices for all cleanup and containment operations conducted by Marine Corps personnel. At no time may suspected asbestos containing material be dry-swept. Contractors shall be required to submit a health and safety plan detailing procedures they will employ to protect Marine Corps personnel (plan must be reviewed by APM).

16006. REQUIREMENTS

1. Asbestos Controls in Workplace Environment. Basic principles for controlling asbestos hazards in the occupational environment include substitution with less hazardous materials, engineering controls (e.g., isolation, ventilation), administrative controls, and use of PPE. Employee rotation as a means of keeping exposures below the PEL is prohibited. Employees involved in asbestos related activities shall not eat, smoke, chew tobacco or gum, or apply cosmetics in work area.

2. Training

a. Occupationally exposed personnel or those personnel with potential exposure in excess of the PEL-TWA and their supervisors shall receive detailed indoctrination and annual refresher instruction. This training may be conducted by installation/unit APM. Supervisors shall coordinate with APM to schedule training. Shop supervisors are also responsible for scheduling of asbestos training before its expiration date. Training shall include the following:

(1) Health effects and hazards of asbestos.

(2) Association between use of smoking tobacco products and asbestos exposure in producing lung cancer.

(3) Uses of asbestos which could result in an exposure.

(4) Engineering controls and work practices associated with the work assignment.

(5) Purpose, proper use, and limitations of PPE.

(6) Purpose and description of the asbestos medical surveillance program.

(7) Description of emergency and cleanup procedures.

(8) Overall review of this chapter and references.

b. Personnel and their supervisors who work with asbestos containing material and are not exposed above the PEL-TWA shall receive training annually. This category includes personnel who handle, cut or otherwise work on fixed asbestos material. The training will include the above topics and will be conducted by the shop instructors. Shop instructors will be trained by the installation/unit APM and receive annual refresher training.

c. Training records will be forwarded to and maintained by the installation APM and copy furnished to the safety office.

d. Training and certification requirements are summarized in Table 16-1. The four classes of asbestos workers addressed in the table are:

(1) Class I workers: Remove thermal system insulation (TSI) and surfacing Asbestos Containing Material (ACM) or Presumed Asbestos Containing Material (PACM).

(2) Class II workers: Remove ACM which is not TSI or surfacing material.

(3) Class III workers: Repair and maintain ACM including TSI and surfacing ACM and PACM.

(4) Class IV workers: Clean up dust, waste, and debris resulting from Class I, II, and III activities. Class IV workers include maintenance and custodial personnel. They contact but do not disturb ACM and PACM.

3. Warning Signs and Labels

a. Warning signs shall be displayed at each location where airborne asbestos fibers may exceed the PEL-TWA. An example of the warning sign is:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

RESPIRATORS AND PROTECTIVE CLOTHING

ARE REQUIRED IN THIS AREA

b. The signs shall be approved by the installation/unit APM before being displayed.

c. Warning labels shall be affixed to containers of raw materials, mixtures, scrap, waste, debris and other products containing asbestos fibers if, in any foreseeable way, levels of airborne asbestos could be produced which might constitute a threat to health. Warning labels shall be printed in letter of sufficient size and contrast as to be readily visible and legible. These labels shall comply with requirements of reference 16-1 and include the following information:

DANGER

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

CANCER AND LUNG DISEASE HAZARD

4. Medical Examinations. Medical examinations shall be conducted in accordance with chapter 11 and reference 16-1 References 16-5 and 16-6 provide the medical requirements and guidance for implementing reference 16-1.

5. Disposal

a. Only approved sealed impermeable bags (or other closed, impermeable container) marked with the standard asbestos warning label shall be used for the disposal of asbestos waste (e.g., waste generated from an asbestos rip-out operation, scrap material from asbestos gaskets, asbestos contaminated PPE) Impermeable bags marked in this way shall not be used to carry clean PPE or tools, to dispose of general trash or to store asbestos material.

b. Asbestos waste shall be adequately wetted down, placed in a sealed impermeable bag, goose-necked, sealed, double bagged and sealed. Bags shall be sealed with duct tape.

c. Asbestos waste bags shall be deposited in the specially marked white asbestos dumpsters located at the job site.

16007. SPILLED OR UNCONTROLLED ASBESTOS

1. Asbestos Spill.

a. An asbestos spill is the inadvertent or uncontrolled release of asbestos fibers into the atmosphere. For example, personnel removing a piece of equipment may damage and break open pipe insulation on the overhead causing pieces of insulation to fall to the ground and fibers being released into the atmosphere.

b. Any individual that causes or discovers a spill shall:

(1) Secure work and move out of area to a distance of at least 15 feet.

(2) Warn others in the area of the spill and secure space or have it guarded to prevent other personnel from entering area.

(3) Ensure any ventilation or air conditioning affecting the immediate spill area is secured.

(4) Contact the immediate supervisor. If supervisor is not available, contact installation or unit safety office and APM.

2. Uncontrolled Asbestos. Asbestos material which is not properly sealed, stored, or contained, but from which there is no obvious evidence of release of fibrous material into the atmosphere. For example, small tears in asbestos cloth covering on pipe insulation, damaged asbestos gaskets, or broken pieces of vinyl asbestos tile lying loose on deck. Consult with environmental staff for appropriate procedures to follow in the event uncontrolled asbestos is discovered.

CHAPTER 16

References

16-1	29 CFR 1910.1001	Asbestos (General Industry Standards)
16-2	28 CFR 1926.1101	Asbestos (Construction Standards)
16-3	40 CFR 763	Asbestos Hazard Evaluation and Response Act
16-4	40 CFR 61 Subpart M	National Emissions Standards for Hazardous Air Pollutants-Asbestos
16-5	NEHC 6260 TM 91-5	Medical Surveillance Procedures Manual and Medical Matrix current edition and companion software, PCMATRIX
16-6	NEHC TM 90-1	Occupational Medicine Field Manual
16-7	DoD 4160.21-M	Defense Material Disposition Manual, 18 Aug 97, Ch. 10 (Environmentally Regulated and Hazardous Property)

CHECKLIST FOR ASBESTOS REMOVAL OPERATIONS

NAVMC 11406 Rev. 7-98

THIS CHECKLIST PROVIDES CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT REQUIRED DURING THE REMOVAL OPERATIONS OF ASBESTOS/FIBROUS INSULATION. CHECKLIST HELPS ENSURE THAT APPROPRIATE ACTIONS ARE TAKEN FOR THE PREVENTION OF UNHEALTHFUL ASBESTOS/FIBROUS DUST EXPOSURE TO PERSONNEL WHO DIRECTLY OR INDIRECTLY ENGAGE IN THE REMOVAL OPERATION. THIS CHECKLIST IS REQUIRED FOR ALL ASBESTOS REMOVAL OPERATIONS REGARDLESS OF THE SIZE OF THE OPERATION.

ASBESTOS BULK ANALYSIS SERIAL NO:_____

DATE_____ BLDG _____ FLOOR_____ ROOM _____

SHOP _____ JOB DESCRIPTION_____

_____

TYPE OF CONTAINMENT (CIRCLE ONE): GLOVEBAG CONTAINMENT TENT

TYPE OF ACM (CIRCLE ONE):CEILING TILE ASBESTOS INSULATION FLOOR TILE MASTIC FIBROUS INSULATION OTHER_____

EMPLOYEES ASSIGNED: (RANK, FULL NAME, SSN, AND SHOP OR ORGANIZATION, DATE TRAINING REC'D)

1._____ 4._____

2._____ 5._____

3._____ 6._____

PART 1: ESTABLISHMENT OF CONTROLS	REQ	SAT	REMARKS
A. APPLICABLE CONTAINMENT(S) ADEQUATELY SUPPORTED	( )	( )	
B. MAKE-UP AIR FILTER (HEPA)	( )	( )	
C. 6 MIL DROP CLOTH (S)	( )	( )	
D. BOUNDARIES ESTABLISHED	( )	( )	
E. WARNING SIGN(S) POSTED	( )	( )	
F. HVAC VENTILATION SECURED	( )	( )	
G. HEPA FILTER VACUUM CLEANER	( )	( )	
H. NEGATIVE AIR MACHINE	( )	( )	
I. NEGATIVE PRESSURE MANOMETER	( )	( )	
J. WATER SPRAY BOTTLES	( )	( )	
K. ASBESTOS WASTE BAGS	( )	( )	

Figure 16-1. -- NAVMC 11406, Checklist for Asbestos Removal Operations, page 1.

CHECKLIST FOR ASBESTOS REMOVAL OPERATIONS

NAVMC 11406 Rev. 7-98

PART 2: PERSONAL PROTECTIVE EQUIPMENT	REQ	SAT	REMARKS
A. AIRLINE RESPIRATOR	( )	( )	_____
B. POWERED AIR PURIFYING RESPIRATOR	( )	( )	_____
C. HALF MASK RESPIRATOR W/HEPA FILTER	( )	( )	_____
D. HOODED TYVEK DISPOSABLE COVERALLS	( )	( )	_____
E. THIN COTTON UNDER GLOVES	( )	( )	_____
F. APPROVED GLOVES	( )	( )	_____
G. DISPOSABLE BOOTIES	( )	( )	_____
H. APPROVED EYE PROTECTION	( )	( )	_____

PART 3: AUTHORIZATION

Step 1 JOB READY TO START:

SUPERVISOR _____ DATE/TIME _____

APM _____ DATE/TIME _____

IH/AUTHORIZED WORKPLACE MONITOR _____ DATE/TIME _____

Step 2 JOB CERTIFIED VISUALLY CLEAN AFTER WORK IS COMPLETE:

SUPERVISOR _____ DATE/TIME _____

APM _____ DATE/TIME _____

Step 3 CLEAN CERTIFICATION SAMPLES SATISFACTORY AND CONTAINMENT AREA CAN BE DISESTABLISHED:

IH/AUTHORIZED WORKPLACE MONITOR _____ DATE/TIME _____

Step 4 AUTHORIZATION TO DISESTABLISH ASBESTOS CONTAINMENT AREA GIVEN TO SHOP:

APM _____ DATE/TIME SHOP NOTIFIED _____

Figure 16-1. -- NAVMC 11406, Checklist for Asbestos Removal Operations, page 2.

OPERATION	PERSONNEL	CERTIFICATION REQUIRED	INITIAL TRAINING REQUIRED	ANNUAL TRAINING REQUIRED	REGULATION
DESIGN OF PROJECTS WHICH INVOLVE REMOVAL OF ACM OR WORK IN PROXIMITY OF ACM/PACM	ARCHITECTS, ENGINEERS, PLANNERS, ESTIMATORS (P&ES) & APMs	ABATEMENT PROJECT DESIGNER	3 DAY ABATEMENT PROJECT DESIGNER COURSE	YES 1 DAY	40 CFR 763 92
REVIEW OF PROJECTS TO DETERMINE ADEQUACY OF CONTROL	ENGINEERS, IHs, SAFETY PERSONNEL & ASBESTOS PPOGRAM MANAGERs (APM)	ABATEMENT PROJECT DESIGNER	3 DAY ABATEMENT PROJECT DESIGNER COURSE	YES 1 DAY	40 CFR 763.92
PERSON RESPONSIBLE FOR ASBESTOS REMOVAL, ENCAPSULATION, ENCLOSURE AND/OR REPAIR (CLASS I & II ASBESTOS WORK)	ASBESTOS ABATEMENT SUPERVISOR OR COMPETENT PERSON, QUALIFIED PERSON, ROICC PERSONNEL	ASBESTOS ABATEMENT CONTRACTOR OR SUPERVISOR	5 DAY ASBESTOS ABATEMENT CONTRACTOR/ SUPERVISOR TRAINING COURSE	YES 1 DAY	29 CFR 1915 1001(o)(4)(i) 29 CFR 1926.1101(o)(4)(i) 40 CFR 763.92 40 CFR 61 Subpart M
PERSON RESPONSIBLE FOR MAINTENANCE AND HOUSEKEEPING (CLASS III & IV ASBESTOS WORK)	MAINT. & HOUSEKEEPING SUP., COMPETENT, QUALIFIED PERSON	NONE	2 DAY OPERATIONS & MAINTENANCE TRAINING	YES NOT SPECIFIED	29 CFR 1915.1001(o)(4)(ii) 29 CFR 1926.1101 (o)(4)(i) 40 CFR 763.92
BULK SAMPLING FOR LAB ID.	SAFETY, IHs, P&Es, WRKPLACE MONITORS & FACILITY INSPECTORS	ASBESTOS INSPECTOR	3 DAY ASBESTOS INSPECTOR COURSE	YES	29 CFR 1915.1001 (k)(5) 29 CFR 1926.1101 (k)(5) 40 CFR 763.92
DEVELOPMENT OF ASBESTOS MANAGEMENT PLANS & ASBESTOS O&M PLANS	FACILITY INSPECTORS, SAFETY PERSONNEL & IHs	ASBESTOS MANAGEMENT PLANNER	2 DAY ASBESTOS MANAGEMENT PLANNER COURSE (INSPECTOR CERTIFICATION IS A PREREQUISITE)	YES 2 DAY	40 CFR 763.92
LAB ANALYSIS OF BULK AND AIRBORNE SAMPLES	IHs, CLEARANCE SAMPLERS, TRAINED SAFETY PERSONNEL	PROFICIENCY ANALYTICAL TESTING (PAT) ROUNDS	5 DAY NIOSH 582 COURSE (Fiber) AND 5 DAY NIOSH 9002 COURSE (Bulk) OR EQUIVALENT	YES (PAT)	29 CFR 1910.1001 APP A 29 CFR 1915.1001 APP A 29 CFR 1926.1101 APP A
CLASS 1 WORKERS ONLY (REMOVE TSI & SURFACING ACM/PACM)	ABATEMENT WORKERS	ASBESTOS ABATEMENT WORKERS	4 DAY ASBESTOS ABATEMENT WORKER COURSE OR 5 DAY ASBESTOS ABATEMENT CONTRACTOR/SUP. TRAINING COURSE	YES 1 DAY	29 CFR 1915.1001 (k)(9) 29 CFR 1926.1101 (k)(9) 40 CFR 763.92
CLASS II WORKERS ONLY (REMOVE ACM WHICH IS NOT TSI OR SURFACING MATERIAL)	ABATEMENT WORKERS	NONE	8 HR ASBESTOS TRAINING	YES NOT SPECIFIED	29 CFR1915.1001 (k)(9) 29CFR 1926.1101 (k)(9)
CLASS III WORKERS ONLY (REPAIR, MAINTAIN TSI & SURFACING ACM/PACM	MAINTENANCE WORKERS	NONE	16 HR O&M	YES NOT SPECIFIED	29 CFR 1915.1001 (k)(9) 29 CFR 1926.1101 (k)(9)

Table 16-1. -- Asbestos Training and Certification Requirements.

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OPERATION	PERSONNEL	CERTIFI-CATION REQUIRED	INITIAL TRAINING REQUIRED	ANNUAL TRAINING REQUIRED	REGULATION
CLASS IV WORKERS ONLY (WHERE ACM/PACM IS PRESENT)	MAINTENANCE & CUSTODIAL WORKERS	NONE	2 HR ASBESTOS AWARENESS TRAINING	YES 2 HRS	29 CFR 1910.1001 (j)(7) 29 CFR 1915.1001 (k)(9) 29 CFR 1926.1101 (k)(9)
RESPONSIBLE FOR OVERALL ASBESTOS PROGRAM	ACTIVITY APMs	LETTER OF APPOINTMENT FROM COMMANDER	5 DAY ASBESTOS ABATEMENT CONTRACTOR/SUP. TRAINING COURSE, 2 DAY ABATEMENT PROJECT DESIGNER COURSE AND 2 DAY ASBESTOS INSP./ MANAGEMENT PLANNER COURSE, NFESC ASBESTOS PROGRAM MANAGER COURSE(INSPECTOR ACCREDITATION IS A PREREQUISITE)	YES 1 DAY	RECOMMENDED TRAINING
AUTOMOTIVE BRAKE AND CLUTCH	AUTO MECHANICS	NONE	2 HOUR AWARENESS PLUS HANDS-ON TRAINING	NONE	29 CFR 1910.1001 (j)(7) 29 CFR 1915.1001 APP. L
GENERAL INDUSTRIES OPERATIONS ABOVE PEL (NOT OTHERWISE CLASSIFIED)	VARIOUS	NONE	2 HOUR AWARENESS AND OPERATION SPECIFIC	YES NOT SPECIFIED	29 CFR 1910.1001(j)(7)
AIR SAMPLING	ASBESTOS WORKPLACE MONITOR AND CLEARANCE SAMPLERS	NONE	2 DAYS AND ON THE JOB TRAINING	NONE	

Table 16-1. -- Asbestos Training and Certification Requirements--continued.

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CHAPTER 17

LEAD SAFETY PROGRAM

CHAPTER 17

LEAD SAFETY PROGRAM

17000. DISCUSSION

1. This chapter establishes the procedures and requirements for a lead safety program to control personnel exposures to lead hazards. It provides precautionary measures and health practices to be used for lead removal projects. It also describes compliance programs which include engineering and work practices controls (including administrative controls) to reduce and and maintain personnel exposure to lead below the PEL.

2. Provisions of this chapter apply to industrial and construction activities performed by all military and civilian personnel aboard Marine Corps installations or units. These provisions apply to lead operations conducted in or on Marine Corps buildings, grounds, and structures.

3. Marine Corps policy is to prevent lead poisoning and related injuries during the use, handling, removal and melting of materials containing lead at installations or units. Goal is to reduce potential and actual lead exposures to levels as low as reasonably achievable.

17001. BACKGROUND

1. Lead as used in this chapter means metallic lead, all inorganic lead compounds, and organic lead soaps. All organic lead compounds are excluded. The abundance, low melting point, high molecular weight, high density and malleability of lead makes it a useful structural material. When added to resins, grease, or rubber, lead compounds act as antioxidants (inhibits reactions promoted by oxygen or peroxides). Common uses for lead and lead compounds include ballast, radiation shielding, ammunition, paint filler and hardener, rubber antioxidant, an acoustical insulation component, solder for electrical components and pipe joints, high voltage cable shielding, batteries, roof flashing, and weights. While not an absolute indicator, red, forest green, chrome yellow, "school bus" yellow and "OSHA" yellow paints typically contain lead components such as lead oxides and lead chromates. Lead may also be contained in varnish, polyurethane, and water based paints.

2. Significant lead exposures can occur during lead and babbit melting and casting; ballast handling; clean-up of firing ranges; use of indoor firing ranges; spraying, sanding, grinding,

burning, and abrasive blasting of lead containing materials and paint; soldering with torches; high voltage cable repair; abrasive blasting with smelting slag; lead-acid battery reclaiming; machining lead; working on gasoline engine components (which have used leaded gasoline); and wearing or shaking lead contaminated clothing.

3. Lead has long been a recognized health hazard. Lead can damage the nervous system, blood-forming organs, kidneys, and reproductive system. Chronic (long term) lead exposure initially damages the blood-forming and reproductive organs with higher levels of exposure causing peripheral nerve and central nervous system damage. Lead interferes with the formation of hemoglobin in blood and will cause anemia. Lead causes cellular kidney damage which reduces urine output and leads to water retention and kidney failure. Reduced sperm counts and decreased fertility have been found in workers chronically exposed to lead. Lead poisoning in children can be extremely serious because in addition to the above mentioned effects, it may also permanently affect their ability to learn.

4. In recognition of the serious health hazards associated with and numerous sources of potential lead exposure, Marine Corps has established strict controls to limit both occupational and environmental exposures.

17002. RESPONSIBILITIES

1. Commanders, Department Heads, and Directors shall ensure work operations using lead or materials containing lead are conducted in accordance with this Manual and references 17-1 and 17-2.

2. Supervisors of personnel conducting operations with lead or lead containing materials shall:

a. Notify installation/unit safety manager before commencing operations believed to generate any amount of airborne lead. This will ensure all proper PPE is provided and environmental workplace containment and monitoring is conducted.

b. Ensure personnel who enter lead controlled boundaries are trained in accordance with references 17-1 and 17-2, and this Manual, and are knowledgeable in the provisions of this chapter and work to be conducted.

c. Ensure personnel who are assigned duties inside of lead controlled boundaries receive required medical examinations given by the responsible medical treatment facility.

d. Provide technical support and guidance on written aspects of this lead safety program.

e. After consulting with installation/unit safety manager, and industrial hygienist, provide required PPE for personnel involved in lead operations.

f. Notify safety manager and industrial hygienist of any significant change in the process or equipment that may affect personnel exposures to lead.

g. Maintain a list of personnel on the medical surveillance program for lead. This list shall be made available to installation/unit safety manager.

3. Installation/Unit Safety Manager shall:

a. Appoint in writing a Lead Program Manager (LPM) who has received appropriate training (e.g., lead abatement courses offered by one of the NIOSH Education and Research Center (ERC's) Grants schools).

b. Redirect to the responsible industrial hygienist any requests for evaluating operations involving lead.

c. Ensure a PPE survey is completed per chapter 13. Provide required PPE training for personnel involved in lead operations. Personnel must understand they should not breathe, absorb, or ingest lead or lead contaminated materials, and not expose other workcenter personnel or family members to lead carried on clothing and equipment.

d. Notify the responsible industrial hygienist of any personnel entering or working inside of lead controlled boundaries.

e. Ensure workcenter supervisors are informed of proper safety equipment acquisition procedures.

4. The Responsible Navy Medical Treatment Facility Industrial Hygienist shall:

a. Evaluate work operations involving lead and conduct air sampling as required.

b. Develop and recommend lead controlled boundaries based on air sampling data.

c. In coordination with installation/unit safety manager, and workcenter supervisors, recommend required PPE.

d. Advise workcenter supervisors of personnel recommended to be included in the medical surveillance program for lead. These recommendations shall be made available to installation/unit safety manager.

e. Provide technical support and guidance to installation or unit safety manager.

5. Personnel Working with Lead shall:

a. Comply with work control procedures.

b. Properly wear or use the prescribed PPE.

c. Report to supervisor any observed unsafe work conditions.

d. Ensure they have received the proper medical examinations as required.

17003. LEAD EXPOSURE CONTROLS

1. Mechanical vacuum capture shall be the primary means of controlling exposure. Dust should be collected as much as possible by local exhaust ventilation (shrouded tools) at the point of origin and be captured by HEPA filters. Emissions shall not be exhausted into another work space and recirculation of HEPA filtered air from lead operations is not recommended. At no time will a non-HEPA vacuum be used in lead operations.

2. Specific vacuum and ventilation requirements for dust producing operations will be identified by the installation/unit LPM or responsible industrial hygienist on a case-by-case basis.

3. Ventilation systems used to control personnel exposure to lead are required to be evaluated by the installation/unit LPM and industrial hygienist quarterly and within five days of any significant change in either the work process or equipment.

17004. TRAINING

1. For purposes of training, designated lead workers are defined as those individuals who are exposed to airborne lead concentration in excess of the OSHA action level which is 30 micrograms per cubic meter (ug/m3)on a full shift TWA basis (i.e., at least seven hours). Training will be coordinated by installation/unit LPM when need is identified.

2. Initial training and qualification shall be conducted before allowing any designated lead worker to work with or be exposed to lead dust or fumes. Training for designated lead workers shall include:

a. Description of the operation during which exposure is possible with information on specific hazards associated with their work.

b. Information on all protective measures which will be implemented to include engineering controls, clean change rooms, laundry facilities, PPE, etc. Purpose, selection, fit testing, use, and limitations of respirators will be included.

c. Description of the medical surveillance program and the dangerous health effects of lead to their bodies (including their reproductive systems).

d. Review of lead regulations in the pertinent reference 17-1 or 17-2.

e. Their rights under the lead standard in the pertinent reference 17-1 or 17-2.

3. A copy of the lead standard (reference 17-1 or 17-2), its appendices, and any other materials from OSHA pertaining to lead must be made readily available to all personnel working with lead, including those exposed below the action level.

17005. WARNING SIGNS AND CAUTION LABELS. Warning signs shall be posted at each location where airborne lead may exceed the PEL which is 50 ug/m3 as an eight hour TWA. See references 17-1 and 17-2 for information on how to calculate the PEL for workshifts longer than eight hours. These signs may contain a listing of required PPE and shall state as a minimum:

WARNING

LEAD WORK AREA

POISON

NO SMOKING, EATING, OR DRINKING

17006. HOUSEKEEPING. Compressed air shall not be used to clean work surfaces or personnel clothing. Vacuuming with HEPA-filtered vacuum cleaners or washing down with tri-sodium phosphate based cleaners are recommended. Wet sweeping,

shoveling, or brushing shall only be used when other methods have been tried and found to be ineffective or not feasible. At no time will dry-sweeping be employed. Cleaning materials, boundary materials, and waste water shall be treated as lead contaminated hazardous materials.

17007. WORKER NOTIFICATION. Within five working days after receipt of a health hazard evaluation, installation or unit shall notify each worker in writing of his or her exposure. Whenever results indicate a worker was exposed above the PEL without regard to respirator use, statement shall include that fact and a description of corrective action(s) to be taken.

17008. LEAD MEDICAL SURVEILLANCE PROGRAM. This program consists of three basic elements: pre-placement medical evaluation, semi-annual blood lead monitoring, and follow-up medical evaluation. Personnel who are or may be exposed above the action level for more than 30 days per year, based on the industrial hygiene evaluation, shall be included in the lead medical surveillance program. Inclusion in this program is based on potential lead exposure without regard to use of PPE. It is a mandatory requirement prior to conducting a lead exposure operation as per reference 17-1 and 17-2, and chapters 11 and 13.

CHAPTER 17

References

17-1	29 CFR 1910.1025	Lead (General Industry)
17-2	29 CFR 1926.62	Lead (Construction)

CHAPTER 18

HAZARDOUS MATERIALS CONTROL

CHAPTER 18

HAZARDOUS MATERIALS CONTROL

18000. DISCUSSION

1. Per references 18-1 and 18-2, Marine Corps is required to identify and control the storage, use, handling, and disposal of hazardous materials.

2. All Marine Corps personnel shall handle hazardous materials in a manner that safeguards personnel, property, and environment. All pertinent regulations and standards will be adhered to at all times.

3. This chapter applies to all Marine Corps personnel who handle, transport, store, use, or dispose of hazardous materials aboard Marine Corps installations or units. Hazardous ordnance materials are not within the scope of this chapter.

18001. BACKGROUND

1. Necessity to use hazardous and potentially hazardous materials requires effective application of procedures, equipment, and materials to prevent overexposure and provide protection for exposed personnel and property. Materials or waste products should be considered hazardous if container labels or Material Safety Data Sheets (MSDS) include precautions for handling, storage or use (e.g., corrosive, explosive, flammable, oxidizer, poison, danger, do not mix with acids, or meets definition for hazardous material in Appendix A.

2. Prior to working with hazardous materials personnel must receive hazard communication (HAZCOM) training that complies with reference 18-3. References 18-4 and 18-5 provide the DoD HAZCOM training program. These references are available from the local Training and Audiovisual Support Center or installation safety manager.

3. Requirements of this chapter do not apply to:

a. Hazardous materials purchased by military exchange system for subsequent resale; however, sale of that material may be regulated by Consumer Product Safety Commission or other regulatory agency.

b. Acquisition of chemicals and other hazardous materials for use by qualified professionals in laboratories as defined in reference 18-3.

18002. RESPONSIBILITIES

1. Commanders, Department Heads, and Directors shall ensure use or disposal of hazardous materials complies with this Manual and reference 18-2. Installations, tenant commands on DoD installations, and commands conducting training operations onboard DoD installations shall comply with reference 18-6. All other Marine Corps operations shall comply with reference 18-6 as much as possible.

2. Supervisors of personnel conducting operations with hazardous materials shall:

a. Carry out an inspection of each workplace and develop an inventory of all hazardous materials on hand. Inventory shall include both open-purchase and government stock items. It shall also include miscellaneous cleaning materials and chemicals not used in main shop production. Inventory shall be provided to installation/unit safety manager annually or when significant changes occur.

b. Examine all work processes and materials with intent of substituting hazardous materials with less hazardous substances whenever possible.

c. Ensure MSDSs are available to users for all hazardous materials used in workcenter.

d. Ensure all hazardous materials are maintained in an approved, properly labeled container.

e. Ensure all used or outdated hazardous materials are reutilized or disposed of in accordance with references 18-2 and 18-6, Federal, state, and installation or unit requirements.

f. Ensure all personnel working with hazardous materials are trained in accordance with reference 18-3.

18003. HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)

1. DoD established HMIS to acquire, store, and disseminate manufacturer’s data on hazardous materials, whether centrally or locally procured and managed. Defense Logistics Agency (DLA) manages the DoD HMIS and maintains a central database on all

hazardous material purchased for use within DoD. The address and phone number for ordering HMIS discs are: Commanding Officer, Attn: CD-ROM Team Code N911, NCTAMS LANT, 9625 Moffett Ave., Norfolk, VA 23511-2784; tel (757) 445-4842, or E-mail: cdrom@norfolk.navy.mil

2. Navy Environmental Health Center (NAVENVIRHLTHCEN) is DON focal point for MSDS submissions into HMIS. Marine Corps commands shall address MSDS submissions to:

Navy Environmental Health Center
Attn: HMIS Code 341
2510 Walmer Avenue
Norfolk, VA 23513-2617

3. Contracting officers purchasing hazardous materials or consumables through vendors or other federal agencies (e.g., DLA, General Services Administration (GSA)) must require MSDS as a line item deliverable in the contract per FED-STD 313C AND DFARS 252-223-3,and OSHA compliant label for all hazardous materials. Attach to each MSDS a copy of documentation which adequately identifies the product (including NSN/Local Stock Number (LSN), contract number, applicable military or federal specification the product conforms to, and date of purchase or requisition) and point of contact within contracting activity. Contracting officer shall forward the MSDS and manufacturer's compliant hazard warning label to NAVENVIRHLTHCEN.

4. For locally acquired hazardous materials (e.g., blanket purchases, direct buys, or "off-the-shelf" purchases) the command must ensure an MSDS is obtained from vendor. If MSDS is not contained in HMIS, then command will forward copy of MSDS to NAVENVIRHLTHCEN.

5. Copies of all the MSDS's received shall be retained by command to fulfill the worker and community Right-to-Know requirements of references 18-3 and 18-8. MSDS must be available for worker training and reference prior to material being released for use in workplace.

6. Defense General Supply Center (DGSC) consolidates information received from DoD HMIS focal points and provides the data to Naval Computer and Telecommunications Area Master Station Atlantic (NCTAMSLANT). NCTAMSLANT produces HMIS on Compact Disc - Read Only Memory (CD-ROM) discs for distribution to all users. Hazardous Material Control and Management CD-ROM Program Disc contains a complete HMIS database of MSDS's, Ships Hazardous Materials List (SHML), and Hazardous Materials Users Guide (HMUG). Applicable sections of HMIS, SHML, and HMUG may be copied and posted in areas where hazardous materials are used

handled, or stored. This information may also be electronically transferred to other storage media or software systems.

18004. PROCESS SAFETY MANAGEMENT. Commands with highly hazardous chemicals, at or above the specified threshold quantities defined in reference 18-8, shall develop plans documenting systematic analyses of potential hazards for every step in their chemical processes. This shall include safe operating procedures, training requirements on specific safety and health hazards, emergency operations, safe work practices, inspection and maintenance, and mishap investigation and reporting procedures. Commands shall review any contractor's safety records regarding these chemicals before releasing contracts.

18005. VENTILATION. In areas where injurious air contaminants are routinely generated by fixed installations, permanent exhaust or ventilation systems shall be provided. Reference 18-9 will be used for as the standard for industrial ventilation designs where applicable. At temporary work sites or for interim measures, portable ventilation equipment may be used. Contaminants will not be exhausted into areas that could endanger others. If flammable atmospheres are being removed, ventilation equipment selected must be labeled explosion-proof or intrinsically safe by manufacturer. All industrial ventilation systems must be evaluated and approved by the responsible safety manager, industrial hygienist, environmental manager, and fire department.

18006. HEALTH HAZARDS

1. Due to the variety and diversity of hazardous or potentially hazardous substances available for use, an overview of health hazards is presented here in a generalized manner. For specific hazards of a substance and protective measures for use and handling, go to the MSDS, reference 18-10, or other standard recommended by industrial hygienist.

2. Types of Hazards

a. Toxic: Substance that causes damage to any structure or function of the body.

b. Carcinogen: Substance that promotes growth of cancer or tumor in an exposed worker.

c. Mutagen: Substance that causes changes in the genetic structure of cells. A mutation of body cells may manifest itself

as cancer. A mutation of reproductive cells may manifest itself as birth defects or stillbirth in children of affected parents, or sterility of exposed worker.

d. Teratogen: Substance which causes a developing fetus to be deformed yet does not affect mother.

3. Routes of Entry. Four methods by which a hazardous substance may enter a body are:

a. Inhalation: Breathing of gas, fumes, vapors, mist, or dusts. This is most common route of entry.

b. Ingestion: Hazardous substances can be taken internally by swallowing or eating.

c. Absorption through skin, ocular and mucous membranes: Direct skin contact may allow many substances to be absorbed, especially if skin is broken by cuts, abrasions, or scabs.

d. Injection: Accidental injection of a hazardous substance may occur during a puncture wound or from pressurized fluid (e.g., hydraulic fluid pressure line leak, high pressure paint sprayers).

4. Exposure. Exposure is defined as the combination of factors such as: amount, type, and toxicity of a substance, route of entry, and duration of exposure.

a. Acute exposure: A short-term exposure of seconds, minutes, or hours (one work shift duration or less).

b. Chronic exposure: Of long duration or repeated exposure (more than one work shift).

5. Synergistic Effects. Effects of some substances may be magnified by action of other substances, resulting in an effect on the body that is greater than either of the substance's effect individually or added together.

18007. SAFE HANDLING OF LIQUID OXYGEN (LOX). Use, storage, and handling of liquid oxygen must be done in accordance with all applicable instructions. Particular hazards include extreme cold temperature of the material, as well as extreme reactivity when exposed to petroleum products. See references 18-11 and 18-12 for further guidance.

CHAPTER 18

References

18-1	DoDInst 6050.5	DoD Hazard Communication Program
18-2	MCO 5090.2A	Environmental Compliance and Protection Manual
18-3	29 CFR 1910.1200	Hazard Communication
18-4	DoD 6050.5-G-1	Department of Defense Federal Hazard Communication, Training Program - Trainer's Guide
18-5	DoD 6050.5-W	Department of Defense Federal Hazard Communication, Training Program - Student's Workbook
18-6	MCO 4450.12	Storage and Handling of Hazardous Materials
18-7	29 CFR 1910.119	Process Safety Management of Highly Hazardous Materials
18-8	P.L. 99-499, SARA Title III	Emergency Planning and Community Right-To-Know Act
18-9	ACGIH	American Conference of Governmental Industrial Hygienists, Industrial Ventilation, A Manual of Recommended Practice
18-10	29 CFR 1910, Subpart Z	Toxic and Hazardous Substances
18-11	NAVAIR A6-332-AO-GYD-000	Laboratory and Field Guide for Aviation Breathing Oxygen (ABO) Surveillance Program Laboratory Manual and Field Guide
18-12	NAVAIR 06-30-501	Technical Manual for Oxygen-Nitrogen Cryogenics Systems

CHAPTER 19

FALL PROTECTION PROGRAM

CHAPTER 19

FALL PROTECTION PROGRAM

19000. DISCUSSION

1. This chapter establishes a fall protection program that implements requirements of references 19-1 and 19-2.

2. Provisions of this chapter apply to all Marine Corps installations and units. This includes ground and aviation maintenance units. Contractors working aboard Marine Corps installations or units will abide by provisions of references 19-1 and 19-2. Military unique situations (e.g., obstacle course training, rappelling) shall be governed by the appropriate military standard or SOP as approved by commander; requirements of references 19-1 and 19-2 will apply if feasible.

3. Marine Corps policy is to prevent injuries to personnel from fall hazards. All situations that expose Marine Corps personnel aboard any installation or unit to fall hazards of 6 feet (1.8 m) or greater shall be assessed by a competent person with fall protection training to implement proper controls.

4. Requirements related to fall protection for personnel working on stairways and ladders are contained in reference 19-3.

19001. BACKGROUND. Falls are a leading cause of traumatic occupational death among workers according to statistics from Department of Labor. Additionally, an OSHA study of 99 fall-related fatalities suggests that virtually all of those deaths could have been prevented by use of guardrails, body harnesses, safety nets, floor opening covers, or other means which would reduce worker exposure to fall hazards.

19002. RESPONSIBILITIES

1. Commanders shall:

a. Comply with policies and responsibilities of this Manual and references 19-1 and 19-2.

b. Ensure safety managers, officers, and supervisors assess work site hazards, review pertinent regulations, and update organization SOP's regarding fall protection policies.

c. Ensure personnel who are potentially exposed to fall hazards receive appropriate training and fall protection equipment.

2. Installation/Unit Safety Manager shall:

a. Provide fall protection training material and instruction for supervisors and workers as required.

b. Provide recommendations for appropriate fall protection.

c. Stop any work operations that are not in compliance with this Manual.

d. Review all written fall protection SOP's before they are published.

3. Director, Public Works or Facilities Department shall: Evaluate structures and materials for suitable anchor points when fall protection systems are required to safeguard Marine Corps personnel. These evaluations and the resulting recommendations shall be coordinated with installation/unit safety manager.

4. Resident Officer In Charge of Construction shall:

a. Ensure contractors performing work aboard Marine Corps installations or units are aware of provisions of this Manual and references 19-1 and 19-2, and when applicable, require inclusion of a written fall protection program within their health and safety plan.

b. Check contractors for compliance with their written fall protection program and references 19-1 and 19-2, as applicable, and stop work if noncompliance becomes evident.

5. Supervisors shall:

a. Request assistance from the installation/unit safety office when assessing potential fall hazards.

b. Provide personnel with a written fall protection SOP, approved by the installation/unit safety manager detailing steps necessary to control fall hazards.

c. Provide personnel with a stable work platform, scaffold, or ladder.

d. Provide personnel with appropriate fall protection equipment.

e. Require personnel to use fall protection equipment properly.

f. Ensure appropriate barriers are in place or debris nets are used below elevated work surfaces which protect personnel from falling objects.

6. Marine Corps Personnel working where fall hazards can reasonably be expected shall:

a. Comply with requirements of fall protection program.

b. Request supervisory assistance when assessing potential fall hazards.

c. Use fall protection techniques and equipment properly when fall hazards are present.

d. Inspect fall protection equipment before use and properly maintain per manufacturer's recommendations. Remove from service any personal fall protection equipment that has been shock-loaded until inspected by manufacturer or other competent persons.

e. Report unsafe work conditions to supervisors.

19003. PRINCIPLES OF FALL PROTECTION

1. Type of work that may expose Marine Corps personnel to fall hazards is divided into construction and maintenance categories by OSHA, with separate standards covering each type of work.

a. Construction. All new construction, modification or repairs to existing structures, as well as painting or repainting of structures, fall under provisions of reference 19-2.

b. Maintenance. Maintenance and spot painting of structures fall under provisions of reference 19-1.

2. Both standards use a potential fall of six feet or greater as a trigger point for the requirement to implement a fall protection program. Standards also differentiate between low-slope roofs with a pitch less than or equal to 4 inches in 12 inches (vertical to horizontal), and steep-slope roofs, with a pitch greater than 4 in 12. During assessment of a fall hazard and design of a fall protection system, it is important to note low slope roofs require different types of fall protection measures than steep slope roofs. Combinations of fall protection systems may be required to control specific hazards. Additionally, design of a fall protection system may

require coordination of supervisors, safety professionals, and civil or mechanical engineers to maximize worker safety. Some widely used fall protection systems with partial listings of requirements are given below. OSHA regulations must be consulted for complete requirements and exceptions:

a. Guard Rail Systems. May be temporary or fixed, but must be strong enough to withstand 200 pounds static force. Top edge must be 42 inches high (+3 inches) with mid rails, screen, parapet, or mesh positioned so there is no opening greater than 19 inches. System may be rope, wire cable, metal railings, etc. Toe boards (four inches high) or other more effective systems shall be used to protect workers from falling objects such as tools or materials.

b. Safety Net System. Mesh net extending minimum of eight feet from edge, installed as close as possible to working level, and able to withstand a 400 pound weight dropped from the highest exposed working surface.

NOTE: Consult reference 19-1 or 19-2 for minimum net extension distance, which can vary according to potential distance of fall.

c. Personal Fall Arrest System. Composed of a body harness, lanyard with shock absorbing device, self-locking connectors, and horizontal, vertical, or self-retracting lifeline, and anchor point. All system components must be rated at 5000 pounds breaking strength and compatible for use together as a system. Anchorages for lifelines must be independent of any anchorages used for suspended platforms, scaffolding, etc. Personal fall arrest system cannot allow worker free-fall distance to exceed six feet.

NOTE: Marine Corps personnel will not use body belts due to potential to "fall through" the belt if turned upside down.

d. Covers. Covers for holes in floors, roofs, and other walking or working surfaces must be able to withstand twice the total weight of workers, equipment, and materials that may be imposed on the cover at any time. Cover must be fastened to prevent slippage and marked "cover" or "hole" (except manhole covers or steel grates).

e. Warning Line System. Rope, wire, or chain 34-39 inches high, placed inwards at least six feet from the edge, flagged every six feet with high visibility materials, supported by stanchions capable of withstanding a horizontal force of 16 pounds without tipping. Can only be used on a low-slope roof (pitch equal to or less than 4 in 12 inches).

f. Safety Monitoring System. A competent person may be designated as a safety monitor, who acts as a warning system if a worker appears to be unaware of a fall hazard. Monitor must be on same working surface, with no visual obstructions, and close enough to communicate orally with worker. Monitor may not have any other duties. Can only be used on a low-slope roof (pitch equal to or less than 4 in 12 inches).

19004. TRAINING

1. Fall protection training shall be provided to all personnel who may be exposed to fall hazards. Training shall enable each person to recognize hazards of falling, as well as understand procedures used to minimize these hazards.

a. Training shall be conducted by a competent person designated by installation/unit safety manager and shall include:

(1) Nature of fall hazards in work area.

(2) Correct procedures for erecting, disassembling, and inspecting fall protection systems to be used.

(3) Use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and any other protection used.

(4) Role of each individual in safety monitoring system used.

(5) Limitations on use of mechanical equipment during performance of roof work on low-sloped roofs.

(6) Correct procedures for handling and storage of equipment and materials, and erection of overhead protection.

b. Retraining will be conducted when changes to the workplace or fall protection techniques render previous training ineffective, or personnel who have received training cannot demonstrate adequate knowledge of fall protection procedures.

2. Training requirements for personnel using ladders and stairways are provided in reference 19-3. The training program must enable each user to recognize hazards related to ladders and stairways and use proper procedures, including fall protection systems, to minimize these hazards.

CHAPTER 19

References

19-1	29 CFR 1910	Occupational Safety and Health Standards for General Industry
19-2	29 CFR 1926.501-503	Safety Standards for Fall Protection in the Construction Industry
19-3	29 CFR 1926.1050 -1060	Stairways and Ladders

CHAPTER 20

ERGONOMICS PROGRAM

CHAPTER 20

ERGONOMICS PROGRAM

20000. DISCUSSION

1. This chapter establishes procedures and requirements to implement an ergonomics program per reference 20-1.

2. Musculoskeletal disorders affect soft tissues of the neck, shoulder, elbow, hand, wrist, and finger. These include the nerves, tendons, cartilage, ligaments, and muscles. Musculoskeletal harm and reduced human performance capabilities often result from a mismatch between workers and manual tasks required of them. Ergonomics seeks to adapt job and workplace to worker by designing tasks and tools that are within the worker's capabilities and limitations. Finding solutions to these hazards is the most significant workplace safety and health issue of Marine Corps.

3. Goal is to prevent musculoskeletal disorders in Marine Corps personnel. All situations that expose Marine Corps personnel aboard any installation or unit to musculoskeletal system risks shall be assessed by a competent person with ergonomics training in order to implement controls.

20001. BACKGROUND

1. Musculoskeletal disorders represent 62% of all reported illnesses in the private sector as reported by Bureau of Labor Statistics in their 1995 Annual Survey of Occupational Injuries and Illness.

2. During recent years, there has been an increase in reporting of musculoskeletal disorders such as back injuries and carpal tunnel syndrome for Marine Corps personnel. Some of this increase can be attributed to changes in work processes, such as automated office equipment, and associated musculoskeletal risks. Through advanced information technology and training, Marine Corps personnel have an increased awareness of these disorders and more are reported.

20002. RESPONSIBILITIES

1. Commanders, Department Heads, and Directors shall:

a. Ensure personnel exposed to musculoskeletal risks receive appropriate training.

b. Designate an ergonomics coordinator and members for an ergonomics team, with advice from local medical personnel, to administer an ergonomics program.

c. Allocate resources to ensure ergonomic considerations become a fundamental aspect of process improvement.

d. Ensure coordination of medical aspects of the ergonomics program with responsible medical treatment facility.

2. Installation/Unit Safety Manager shall:

a. Provide ergonomics training and education. Assistance is available from local naval medical treatment facility.

b. Serve as a member of ergonomics team or designate a representative from safety office.

c. Oversee safety aspects of the ergonomics effort.

d. Review injury and illness records related to musculoskeletal disorders, develop trend analyses, and report results to ergonomics team and OSH safety council or committee.

e. Incorporate fundamental ergonomic principles into new or existing work stations through facilities engineering designs.

3. Director, Public Works or Facilities Department shall:

a. Integrate ergonomic considerations into all workplace improvements.

b. Implement ergonomics team recommendations to eliminate or reduce musculoskeletal risks.

c. Appoint an advisory or support representative from engineering or maintenance to ergonomics team.

4. Director, Human Resources Office shall:

a. Ensure newly appointed supervisors, managers, and employees receive appropriate ergonomics training.

b. Appoint at least one representative to serve on ergonomics team. This may be the Injury Compensation Program Administrator (ICPA).

c. Use local medical facility recommendations in the assignment of injured workers to light or restricted duty.

d. Provide ergonomics team information on compensation costs associated with musculoskeletal disorders to enable them to perform trend analysis.

5. Director, Logistics Division (Contracting and Purchasing) shall:

a. Ensure all equipment (e.g., furniture, tools, work stations, material handling devices) has been evaluated to meet ergonomic requirements or ergonomics team recommendations, prior to purchase.

b. Ensure integration of ergonomic considerations into purchase of new equipment.

c. Appoint an advisory representative from contracting or purchasing to serve on ergonomics team.

6. Resident Officer In Charge of Construction shall:

a. Integrate ergonomic considerations into facility modifications and construction.

b. Implement ergonomics team recommendations to eliminate or reduce musculoskeletal risks.

c. Appoint an advisory representative to serve on ergonomics team.

7. Ergonomics Coordinator shall:

a. Receive at least 40 hours of formal training in ergonomics (CIN: A-493-0024) and 24 hours in workplace back injury prevention (CIN: S-493-006).

b. Chair ergonomics team and provide an interface with OSH council or committee.

c. Serve as focal point for installation or unit ergonomics program.

d. Ensure upper management support, recognition of contributions, and availability of resources.

e. Develop and implement installation or unit ergonomics plan with assistance of ergonomics team and approval of OSH council or committee.

f. Ensure accurate recordkeeping of ergonomics team reports.

g. Audit status of implementation of the ergonomic plan annually to include workplace processes, awareness, and documentation.

8. Ergonomics Team shall:

a. Assist in developing and implementing installation or unit ergonomics plan. Set program goals and objectives, and develop strategies to address issues.

b. Identify existing and potential musculoskeletal risks.

c. Ensure worksite evaluations are completed. These evaluations may be included in the periodic industrial hygiene surveys.

d. Set priorities for identified musculoskeletal risks for abatement.

e. Implement corrective action plans.

f. Develop methods to evaluate the effectiveness of corrective actions and document results.

g. Evaluate and present new "ergonomic" equipment and maintain a library.

h. Maintain documentation on annual surveys, team meetings, trend analyses, investigations, ergonomic improvements, and associated costs.

9. Supervisors shall:

a. Assist ergonomics coordinator in implementation of the ergonomics plan.

b. Ensure personnel receive ergonomics awareness training as described in paragraph 20003.6.

c. Request assistance from the ergonomics coordinator, ergonomics team, and installation or unit safety office for recognizing, assessing, and monitoring musculoskeletal risk factors.

10. Marine Corps Personnel conducting work where musculoskeletal risks can reasonably be expected shall:

a. Request supervisory assistance when assessing potential musculoskeletal risks.

b. Report unsafe work conditions to supervisors.

c. Provide their knowledge and feedback on any job changes proposed or implemented.

d. Communicate issues of concern and suggestions through ergonomics team.

e. Recognize symptoms and causes of musculoskeletal disorders and report them early.

f. Support workplace innovations and changes that reduce the risk of musculoskeletal disorders.

20003. ERGONOMICS PROGRAM ELEMENTS include the following (further guidance available in reference 20-2):

1. Management Commitment and Employee Involvement. A collaborative partnership between all working levels is essential to prevent musculoskeletal disorders. Command emphasis, management commitment, and demonstrated visible involvement by all personnel provide the organizational resources and motivation necessary to implement a sound ergonomics program. Personnel involvement is key for preventing musculoskeletal disorders by risk identification and developing an effective means for hazard abatement.

2. Workplace Analysis. Purpose of a workplace analysis is to identify existing hazards that may cause musculoskeletal disorders and other injuries. Identification of jobs with musculoskeletal risk factors will assist in determining where detailed job analysis and intervention priorities are needed.

(a) One method of workplace analysis requires a review of mishap logs, compensation claims, personnel complaints and suggestions, safety inspections, and industrial hygiene surveys for musculoskeletal disorders. Analysis should include the body part involved, nature of injury or illness, lost work time (workdays and light or restricted duty days), and medical and compensation case costs. Where mishap and compensation data analysis reveals a prevalence of musculoskeletal disorders, jobs may be prioritized for detailed analysis based on the incidence rate, severity of risk, and depth of engineering support needed. Detailed analysis characterizes the risk factors; recommends and prioritizes corrective action.

(b) Another method of workplace analysis may include questionnaires, personnel interviews, direct observations, and videotaping the work process to provide information for detailed job analysis. Where walk through surveys (safety inspection or industrial hygiene survey) reveal potential for musculoskeletal disorders and mishap and compensation data analysis is inconclusive, a symptoms or body part discomfort survey should be administered to determine if intervention is warranted. This method provides a proactive approach on collecting information prior to actual injury.

3. Hazard Prevention and Control. Goal of hazard prevention and control is to eliminate, reduce or control the presence of musculoskeletal risk factors. Risk factors commonly associated with musculoskeletal disorders include: repetitive motion, force or mechanical stress, awkward or static posture, vibration, and work organizational or stress factors. Effective design or redesign of a task or work station is the preferred method of preventing and controlling exposure. Methods of intervention include engineering controls, administrative controls, and PPE as described in chapter 10 of this Manual. All risks identified shall be assigned a RAC and entered into the hazard abatement log as described in chapter 7.

4. Facility Modification, New Construction or Material Acquisition. Before purchasing any tool or piece of equipment,

building a new facility, or modifying an existing one, ergonomic design criteria shall be considered.

5. Medical Program for ergonomics shall be established to meet requirements of reference 20-3.

6. Training

a. Ergonomics awareness training shall be provided to all Marine Corps personnel. Training shall enable each person to recognize musculoskeletal risks, as well as understand procedures used to minimize these risks.

b. Awareness training shall be conducted under the ergonomics coordinator or safety manager and shall include:

(1) Ergonomics definition and concepts.

(2) Anatomy and physiology of the musculoskeletal system.

(3) How to recognize and report early warning signs and symptoms associated with various musculoskeletal disorders.

(4) How to prevent musculoskeletal disorders by recognizing musculoskeletal risk factors and identifying the basic elements of an effective design.

(5) Understand components of the installation or unit ergonomics program and their role in it.

(6) Wellness or Semper Fit programs.

c. Specific training is targeted to the following personnel:

(1) Managers need to understand ergonomic issues so they will support the program with adequate resources.

(2) Supervisors need to recognize hazardous work situations.

(3) Personnel need to recognize and report stressful work situations to their supervisors and cooperate with intervention measures.

(4) Ergonomics team members need to interpret safety, health, and compensation data to make informed program and management decisions.

(5) Engineers need to recognize hazardous work conditions to be able to assist with equipment and work station design.

d. Document training in accordance with chapter 5. Copy shall be provided to the installation or unit ergonomics coordinator and safety manager.

e. Retraining will be conducted when personnel are assigned to a new job with different risks, or when risks are newly identified in a job.

7. Program Evaluation and Review. Ergonomics coordinator should assess the implementation progress and effectiveness of the installation or unit ergonomic plan annually. This audit will reveal gaps in the program and may identify helpful ideas for further program development.

CHAPTER 20

References

20-1	DUSD(ES) memo, 4 Feb 97	DoD Ergonomics Program Requirements Policy
20-2	NIOSH Pub 97-117	Elements of Ergonomics Programs: A Primer Based on Workplace Evaluations of Musculoskeletal Disorders
20-3	OPNAVINST 5100.23D, Chapter 23	Ergonomics Program

CHAPTER 21

BLOODBORNE PATHOGENS PROGRAM

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BLOODBORNE PATHOGENS PROGRAM

21000. DISCUSSION

1. OSH Act requires safe practices for personnel occupationally exposed to bloodborne pathogens. Pathogens carried in bodily fluids can be a cause of serious illness and death. A bloodborne pathogens program shall be established that implements reference 21-1, and DoD, SECNAV, and BUMED instructions.

2. This chapter applies to all activities in which occupational exposures to potential bloodborne pathogens occur. Overseas activities should consult the host country's practices with regard to protecting foreign national employees.

3. Personnel at risk include health professionals, first aid providers, fire department and crash, fire, rescue personnel, and workers involved in maintenance or housekeeping work that exposes them to blood or other infectious body fluids. First responders and occupationally exposed personnel, as determined by the responsible industrial hygienist, will be included in a medical surveillance program and provided appropriate training.

21001. BACKGROUND. Principal bloodborne pathogens of concern in this chapter are human immunodeficency virus (HIV) and hepatitis B and C viruses (HBV, HCV). Many others exist, but generally are not occupationally transmitted in significant numbers.

21002. EXPOSURE CONTROL PLANS. Some work sites are susceptible to bloodborne pathogens exposures and require a specific written exposure control plan. Commands shall consult local medical treatment facilities when developing exposure control plans for covered personnel that directly support their activities. Common elements of an effective exposure control plan are:

1. Identification of job classification and, in some cases, tasks where exposure to blood and other potentially infectious materials may occur.

2. Schedule of how and when provisions of the standard will be implemented, including schedules and methods for communication of hazards to employees, hepatitis vaccinations, post-exposure evaluation, follow-up, and recordkeeping.

3. Procedures for evaluating the circumstances of an exposure incident.

4. Procedures for implementing engineering and work practice controls, PPE requirements, and housekeeping precautions.

21003. WORK PRACTICE CONTROLS. Ensure work practice controls of reference 21-1 and the following precautions are implemented.

1. Eating, drinking, handling contact lens, or applying cosmetics are prohibited in areas where a reasonable occupational exposure to blood or potentially infectious materials exists.

2. Food or drink shall not be kept in refrigerators or freezers, shelves, cabinets, or on countertops where blood or other potentially infectious materials are present.

3. Containers of body fluids for transport or shipping shall be labeled with a biological hazard label and taped securely prior to being transported or shipped.

4. Equipment which may become contaminated with blood or other infectious materials shall be inspected prior to servicing or shipping, and decontaminated as necessary.

5. Individuals who suspect they were exposed to blood or other infectious materials shall wash the potentially contaminated areas with soap and water as soon as possible after exposure, then wipe area with a disinfecting bleach solution of one part bleach to 10 (1 to 10) parts water.

6. Individuals who suspect they have received mucous membrane exposure shall irrigate membrane for 15 minutes with water or saline solution.

7. Clean-up of body fluids, including vomit and blood, shall be carried out by donning PPE to include gloves and eye protection. Cleaning includes wiping area down, applying disinfecting bleach solution, and disposing of clean-up material in accordance with local medical treatment facility SOP.

8. Workplace shall be maintained in a clean and orderly fashion.

21004. PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. In absence of effective engineering controls, PPE shall be worn by all personnel when there is occupational exposure to blood or other potentially infectious materials. PPE must not

allow blood or other potentially infectious matter to pass through it to workers' clothes, skin, eyes, or open mouth.

2. PPE must be accessible and available in appropriate sizes. PPE also must be kept clean and in good repair.

3. Single use gloves must be replaced as soon as possible after they are contaminated, torn, or punctured, and will not be re-used under any circumstances.

21005. HOUSEKEEPING PRECAUTIONS

1. Housekeeping personnel may be occupationally exposed to potentially infectious material if they clean up after some first aid incidents. Therefore, housekeeping personnel need to follow the written cleaning schedule that outlines the method of decontamination to be used and describes the proper disposal of contaminated needles or other used sharps.

2. Equipment and work areas must be cleaned and decontaminated as soon as feasible after contact with any blood or potentially infectious fluids.

3. Protective coverings must be removed and replaced when overtly contaminated, or at the end of each shift, if there is a possibility of contamination during the shift.

4. Contaminated laundry should be handled as little as possible. Contaminated wet laundry must be placed in leak-proof bags that are colored red or marked with a biohazard label under requirements of reference 21-1. Routine laundry practices are adequate to decontaminate clothing that has been soiled since water heated between 140-160 F0 kills most pathogenic organisms. All personnel who handle contaminated laundry must wear gloves.

21006. EXPOSURE INCIDENT. A specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious material that results from doing one's job or providing first aid as a first responder. All exposures will be reported, and an immediate and confidential medical evaluation shall be provided. Local medical treatment facility is not only responsible for evaluations and counseling, but more importantly for post-exposure management.

21007. ASSISTANCE. Concerns on bloodborne pathogens should be directed to the installation safety office, medical treatment facility, or responsible industrial hygienist. Safety manager

(installation) is responsible to provide training with assistance from medical treatment facility.

CHAPTER 21

References

21-1	29 CFR 1910.1030	Bloodborne Pathogens

CHAPTER 22

OFFICE SAFETY

CHAPTER 22

OFFICE SAFETY

22000. DISCUSSION. This chapter provides general requirements for safety precautions within office (administrative) areas. Although these areas are normally not in a high hazard environment, injuries often occur there and can be serious. Some causes of injuries in offices include:

1. Slipping, tripping, and falling.

2. Improper lifting techniques when handling materials or equipment.

3. Striking against, or being struck by, doors or other objects.

4. Injuries from shredders, electric staplers, paper cutters, or other equipment.

22001. EMERGENCY PLAN. Each office area will have a written emergency action plan which covers the designated actions personnel must take to ensure safety from emergencies such as fire, earthquake, storm, or flood. The plan should be reviewed with personnel any time it is changed. Each new employee shall become familiar with this plan.

1. First aid shall be readily available through a medical care facility or a trained first aid provider with appropriate first aid supplies. If first aid providers are relied on, training must be available for personnel and alternate provisions included in the plan for instances where trained providers are not present.

2. For emergency evacuation, plan shall provide procedures for emergency escape, routes, and accounting for all personnel after evacuation.

3. All personnel should be trained in the following:

    a. Types of potential emergencies.

    b. Evacuation plans.

    c. Alarm systems.

    d. Reporting procedures.

e. Procedures to contact duty or emergency recall personnel.

22002. GENERAL EQUIPMENT

1. File Cabinets. Overbalancing is the primary hazard in the use of file cabinets. The following precautions against overbalancing and other hazards should be taken:

a. Location. Locate file cabinets away from traffic areas such as entrance doors or aisles. The floor structural loading capacity must be adequate for the weight of file cabinets, their contents, and other nearby equipment.

b. Securing to Floor or Wall. Individual upright file cabinets may need to be secured to prevent overbalancing. Where there are two or more, they should be fastened to each other. When steel file cabinets are aligned in rows, back to back, a piece of angle iron fastened to the floor in the front of each row will not only keep the cabinets in line, but will prevent them from falling forward when drawers are open.

c. Alignment. Cabinets should be aligned with others of the same size and style. When cabinets of unequal size are aligned, or cabinets with projecting locking devices are aligned with cabinets without such devices, a worker may be injured by striking a projecting corner or locking lever.

d. Open Drawers. Never leave a file cabinet drawer open when it is not being used. Do not have more than one drawer of a file open at one time, since cabinets easily overbalance. Use the handles for opening and closing file cabinet drawers.

e. Material on Top. Do not place heavy material on top of file cabinets.

f. Sharp Edges. Sharp burrs on metal file cabinet edges cause injury to hands and other parts of the body as well as damage to clothing. Burrs should be removed before cabinets are used.

g. File Realignment. Files must be carefully realigned within drawers to ensure that file cabinets do not become imbalanced (i.e., unloading lower drawers may cause cabinet to be top heavy and tip easily).

2. Desks and Computer Work Stations

a. Creeping. It is advisable to equip desks and other pieces of furniture with rubber feet to prevent "creeping." This

is especially important when desks are close together, since personnel can injure their fingers and hands attempting to realign desks.

b. Computer Keyboards. A computer keyboard on a sliding table should always be stowed when not in use.

c. Sharp Objects. Containers should be provided in which to keep sharp objects when not in use. Paper cutters and razor blades shall have the cutting edge covered when not in use. Safety latch shall always be engaged when paper cutters are not being used.

d. Glass Tops. Do not use plate glass on top of desks. Tops made of non-reflective safety glass or acrylic plastic may be used.

e. Equipment on Desks. Heavy equipment on desks should be fastened down or equipped with rubber feet to prevent sliding off. Paper cutters and other equipment should not protrude from the sides of desks or other furniture.

f. Open Drawers. Desk drawers should never be left open, since personnel may inadvertently strike or stumble over them and suffer serious injury.

3. Chairs

a. Position. All chair feet shall be in contact with floor. Swivel chairs may turn over if occupant leans back too far.

b. Standing on Chairs. Do not stand on chairs, tables, etc., to reach high objects (e.g., to set clocks). A step stool or ladder should be used.

c. Adjustable. Chairs should be adjustable in height to prevent ergonomic problems for various sized personnel.

d. Structural Integrity. Chairs should be checked for structural integrity and defective chairs taken out of service until repaired or disposed. Swivel chairs shall have at least five legs to prevent turning over.

4. Video Display Terminals (VDT's)

a. Use of VDT's for long periods of time may cause personnel to suffer from physical complaints such as eye or muscle fatigue, repetitive motion injuries, stress, or headaches.

b. In general, VDT's shall be adjusted to a height that is 10 degrees below eye level of user to prevent ergonomic problems. For personnel that wear bifocals, trifocals, or progressive lenses, the adjustments will vary to individual.

c. Glare from VDT's may be reduced by auxiliary glare screens.

22003. OFFICE MACHINES

1. Before using office machines, be sure they are properly located and not in danger of falling or tipping over.

2. All electrical equipment should be "certified" where it has been tested and found by a nationally recognized testing laboratory (e.g., Underwriters Laboratory) to meet nationally recognized standards or to be safe for use in a specified manner, or bears a label, tag, or other record of certification by a nationally recognized laboratory.

3. Do not touch any electrical connection with wet hands. Be sure that all electrical equipment is grounded, if applicable.

4. Protection should be provided against moving parts of shredders, bookkeeping machines, tabulating machines, and other types of power driven office equipment.

5. All electrical office machines, fixed and portable, shall be provided with three-wire (grounded) connecting cords where applicable. Ground wires must be connected prior to placing machines in service.

6. Equipment with unserviceable cords shall be tagged out of service and repaired before reuse.

7. Coffee pots shall be located on a noncombustible surface away from traffic areas but never in a storeroom, closet, or other location where they cannot be observed.

8. Do not use extension cords as permanent (fixed) wiring. Relocate equipment to be near electrical outlets if possible, otherwise request a work order to install an electrical outlet.

9. Daily checklist shall be followed to ensure electrical equipment is in good condition, turned off when office not occupied, and properly locked and tagged out when not functioning as designed.

22004. FANS AND HEATERS

1. Each ventilating fan within seven feet of the floor shall be completely covered with a fan guard with openings no larger than 1/2 inch.

2. Electric fans shall be inspected regularly to be sure there are no loose blades or defective guards. Fan must be unplugged while checking blades. Electrical cords and plugs shall be in good condition.

3. Small electric fans should not be placed on boxes, low tables, or any other position where an individual might catch hands or clothing in the revolving blades.

4. Auxiliary heaters should not be used without approval from the facilities office. Only heaters with working tip-over switches shall be allowed.

22005. LADDERS

1. Small ladders used in offices shall be equipped with treads of non-slip material and safety feet.

2. Wooden ladders having broken or split side rails or steps shall be immediately taken out of service.

3. Aluminum or other metal ladders shall not be used when replacing light bulbs, working with electricity, etc.

4. Ladders shall not be painted with any material except clear lacquer, shellac, or varnish, so that defects may be visible.

5. All ladders shall meet the construction, care, and use requirements of 29 CFR Part 1910.

22006. HOUSEKEEPING

1. Keep floors clear. Wipe up spills immediately, and pick up pieces of paper, paper clips, rubber bands, pencils, and other loose objects as soon as they are spotted.

2. Tripping hazards such as cords in travel areas or defective floors, rugs, or floor mats should be removed or repaired immediately. On the spot repairs such as taping over carpet tears should be followed by a work request for carpet repair or replacement.

22007. LIFTING

1. All personnel engaged in the lifting of heavy material of any type shall receive instruction in Back Injury Prevention and the use of lifting tables, carts, or material handling equipment.

2. Proper lifting technique training should include these areas of instruction:

a. Planning the lift.

b. Keeping the load close to the body.

c. Using the legs to lift.

d. Avoiding twisting and turning.

22008. OTHER HAZARDS

1. Ensure work areas meet or exceed minimum safe light levels as described in the American National Standard Practice for Office Lighting (ANSI/IES RPI-1992). Consult local industrial hygienist for assistance.

2. Ensure all means of egress and fire extinguishers are located, marked and maintained in accordance with OSHA and NFPA standards.

3. All personnel should be instructed in the following practices:

a. Never leave knives or scissors on a desk with a point toward the user or hand them to somebody else with the point toward them.

b. Do not leave glass objects on the edge of desks or tables where they can easily be pushed off.

d. Movement of files, boxes, or office furniture may often occur. Personnel should receive training and regular safety briefs on proper lifting techniques.

APPENDIX A

GLOSSARY

1. Abate. To eliminate or control permanently an unsafe or unhealthful working condition into compliance with Marine Corps OSH standards.

2. Administrative Control. Any procedure which limits daily exposures to toxic chemicals or harmful physical agents by controlling the work schedule.

3. Bloodborne Pathogens. Pathogenic microorganisms present in human blood that can cause disease in humans. These include, but are not limited to, the Hepatitis B Virus (HBV) and Human immunodeficency Virus (HIV).

4. Confined Space. Space not designed for routine or continuous occupancy, is large enough and configured to allow worker entry, and is poorly ventilated or has limited or restricted means for entry or exit.

5. Contractor Employee. An employee of a contractor performing work at a contractor workplace under a Marine Corps contract.

6. Contractor Workplace. Any place on a Marine Corps installation, within the United States, its territories, or possessions, where work currently is being, recently has been, or is scheduled to be performed by contractor employees, including a reasonable access route to and from the workplace. Contractor workplace does not include any structure, machine, apparatus, device, equipment, or material therein, which a contractor employee is not required or reasonably expected to have contact with nor include any working condition for which OSHA jurisdiction has been preempted under section 4(b)(1) of OSHA Act.

7. Energized. Connected to an energy source or containing residual or stored energy.

8. Energy Isolating Device. A mechanical device that physically prevents the transmission or release of energy including but not limited to a manually-operated electrical circuit breaker; disconnect switch; manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and no pole can be operated independently; a slide gate; a slip blind; line valve; line block; and any similar device used to block or isolate energy. Item does not include a push button, selector switch, and other control circuit type devices.

9. Energy Source. Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy source.

10. Ergonomics. The field of study that seeks to fit the job to person, rather than fit the person to job. This is achieved by the evaluation and design of workplaces, environment, jobs, tasks, equipment, and processes in relationship to human capabilities and interactions in the workplace.

11. Explosive or Flammable Limits. The range of concentration of a material, expressed in percent in air, that will burn or explode if ignited. Lower explosive limit is the minimum percent by volume of a gas or vapor that, when mixed with air at normal temperature and pressure, will form a flammable mixture.

12. Exposure Incident. A specific eye, mouth, other mucous membrane, non-intact skin, or parietal contact with blood or other potentially infectious material that may result from doing one's job.

13. Hazard. A workplace condition that may result in injury, health impairment, illness, disease, or death to any worker who is exposed to the condition, or damage or loss to property or equipment.

14. Hazardous Chemicals. Hazardous materials used in the workplace that are regulated under 29 CFR 1910.1200.

15. Hazardous Materials. For preparing a Material Safety Data Sheet (MSDS), a material with one or more of the following characteristics:

a. A flash point below 2000F (93.30C) closed cup, subject to spontaneous heating, or subject to polymerization with release of large amounts of energy when handled, stored, and shipped without adequate control.

b. Has a Threshold Limit ValueR equal to or below 1,000 ppm for gases and vapors, below 500 mg/m3 for fumes, and equal to or below 30 million particles per cubic foot (mppcf) or 10 mg/m3 for dusts (equal to or below 2.0 fibers/cc, greater than 5 micrometers long for fibrous materials).

c. A single oral dose which will cause 50 percent fatalities to test animals when administered in doses of less than 500 mg/kg of test animal weight.

d. Is a flammable solid or a strong oxidizing or reducing agent.

e. Causes first degree burns to skin after a short time exposure or is systematically toxic through skin contact.

f. In the course of normal operations, may produce dusts, gases, fumes, vapors, mists, or smokes that have one or more of the above characteristics.

g. Produces sensitizing or irritating effects.

h. Is radioactive.

i. Has special characteristics which in the opinion of the manufacturer could cause harm to personnel if used or stored improperly.

j. Is regulated under 29 CFR 1910, 49 CFR 171-179, or the Environmental Protection Agency (40 CFR).

16. Hot Tap. A procedure used in repair, maintenance and servicing activities which involves welding on a piece of equipment (pipelines, vessels or tanks) under pressure, in order to install connections of apparatuses. It is commonly used to replace or add sections of pipeline without interruption of service for air, gas, steam, and petrochemical distribution systems.

17. Immediately Dangerous to Life or Health (IDLH). Any atmosphere that poses an immediate hazard to life or produces immediate irreversible debilitating effects on health.

18. Lockout. The placement of a lock-out device on an energy isolating device in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lock-out device is removed.

19. Lockout Device. A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and preventing energizing of a machine or equipment.

20. Lockout/Tagout Log. The control document for administering the lockout/tagout procedures. These logs are the records of authorization for each lockout/tagout action on systems or equipment.

21. Lockout/Tagout Coordinator. One or more individuals trained and designated in writing by the Commanding General, Commanding Officer, or Department Head to be in control of administering the lockout/tagout program in their area of cognizance.

22. Occupational Exposure. A reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious material that may result from doing one's job.

23. Parenteral. Piercing of the mucous membranes or skin barrier by a needlestick, human bite, cut, or abrasion.

24. Potential Energy. A function of a height of an object above some datum plane. This datum plane is usually considered to be where that object would come to rest if the restraint holding the object were released. For example where the upper die in a punch press is positioned if the restraining device holding the upper die in place was to be removed the potential energy of the upper die would be converted into KINETIC energy resulting in the upper die being propelled downward, coming to rest on the lower die. This motion can cause a crushing, cutting, lacerating, amputating or fracture injury to an employee's arm, hand or some other part of the body which occupies the space between the dies.

25. Potentially Infectious Materials include the following:

a. The following human body fluids: blood, semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids.

b. Any unfixed tissue or organ (other than intact skin) from a human (living or dead).

c. HIV-containing cell or tissue cultures, organ cultures and HIV-, HBV-, or HCV-containing culture medium or other solutions, and blood, organs, or other tissues from experimental animals infected with HIV, HBV, or HCV.

26. Residual Energy. The presence of springs; under tension or compression or by the presence of liquids or gases under pressure (either above or below atmospheric pressure).

27. Servicing or Maintenance. Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. Activities include lubrication, cleaning, or clearing machines or equipment and making adjustments or tool changes, where the employee may be exposed to "unexpected" start-up of the equipment or release of hazardous energy.

28. Setting Up. Any work performed to prepare a machine or equipment to perform its normal production operation.

29. Tagout. The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

30. Tagout Device. A prominent warning device, such as a tag and a means of attachment which can be securely fastened to an energy isolating device in accordance with an established procedure to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

31. Universal Precautions. An infection control approach whereby all human blood and certain body fluids are treated as if they were known to be infectious for HIV, HBV, HCV or other bloodborne pathogens.

32. Workplace Risk Factors (Ergonomic). Actions in the workplace, workplace conditions, or a combination thereof, that may cause or aggravate a work-related musculoskeletal disorder. Workplace risk factors include, but are not limited to, repetitive, forceful or prolonged exertions, frequent or heavy lifting, pushing, pulling, or carrying heavy objects, a fixed or awkward work posture, contact stress, localized or whole body vibration, cold temperatures, and poor lighting (leading to awkward postures). Workplace risk factors can be intensified by work organization characteristics such as inadequate work-rest cycles, excessive work pace or duration, unaccustomed work, lack of task variability, machine work, and piece rate.

33. Work-Related Musculoskeletal Disorder (Ergonomic). An injury or illness of the muscles, tendons, ligaments, peripheral nerves, joints, cartilage (including intervertebral discs), bones and supporting blood vessels in either the upper or lower extremities, back, or neck, that is associated with musculoskeletal disorder workplace risk factors and are not limited to cumulative trauma disorders, repetitive strain injuries or illnesses, repetitive motion injuries or illnesses, and repetitive stress injuries or illnesses. Refers collectively to signs, persistent symptoms, or clinically-diagnosed work-related musculoskeletal disorders when they are caused or aggravated by exposure to workplace risk factors.