



DEPARTMENT OF THE NAVY

COMMANDING OFFICER
NAVAL AIR STATION
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LEMOORE, CALIFORNIA 93248-5001

NASLEMINST 11320.1G

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NAVAL AIR STATION LEMOORE INSTRUCTION 11320.1G

From: Commanding Officer, Naval Air Station, Lemoore

Subj: ESTABLISHMENT OF FIRE PREVENTION REGULATIONS

Ref: (a) OSHA 29 CFR 1910
(b) Uniform Building Code (UBC)
(c) NFPA National Fire Codes
(d) DOD 4270.1M
(e) MIL-HDBK 1008B
(f) MIL-HDBK 1190
(g) OPNAVINST 1700.9C
(h) OPNAVINST 5100.23D
(i) OPNAVINST 11320.23E
(j) NAVAIR 00-80R-14
(k) NAVAIR 06-5-502
(l) NAVFACINST 11320.22
(m) MIL-HDBK 1192
(n) NAVFAC DM-32.2
(o) NAVFAC MO-117
(p) NAVFAC P-1021
(q) NAVSEA OP-5, Volume 1
(r) NAVSEA S6470-AA-SAF-010
(s) NASLEMINST 5100.13D
(t) DOD 6055.6
(u) OPNAVINST 3120.32B
(v) NASLEMINST 4750.1J

Encl: (1) NAS Lemoore Fire Prevention Regulations

1. Purpose. To provide necessary guidance to ensure the protection of life and property aboard NAS Lemoore against destruction by fire. These regulations are based on fire prevention standards outlined in references (a) through (u).

2. Cancellation. NASLEMINST 11320.1F

3. Scope. The regulations contained in enclosure (1) are applicable to:

a. All persons attached to or employed at Naval Air Station Lemoore.

21 JUL 1998

b. Commanding Officers, Officers-in-Charge, all tenant activities and squadrons based on the Naval Air Station Lemoore.

c. Occupants of public quarters of the Naval Air Station Lemoore.

d. Contractors operating within the jurisdiction of the Naval Air Station Lemoore.

e. Land leases on government-owned land.

4. Action. When violations of these fire prevention regulations are brought to the attention of persons responsible for their enforcement, corrective action shall be taken immediately.

5. Directive responsibility. The Fire Prevention Branch is responsible for keeping this instruction current.



L. D. CHILDRESS

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21 JUL 1998

TABLE OF CONTENTS

CHAPTER I - INTRODUCTION I-1

- 1. Policy I-1
- 2. Application I-1
- 3. Responsibility I-2

CHAPTER II - REPORTING FIRES AND EMERGENCIES II-1

- 1. Responsibility of Personnel Observing an Emergency II-1
- 2. False Report of Emergencies II-2
- 3. Unlawful Interference with Fire Alarm Apparatus II-2

CHAPTER III - SECURITY REQUIREMENTS AND CONSIDERATIONS III-1

- 1. Access by Fire Division Personnel to Emergency Scene III-1
- 2. Sentries, Patrols, Guards and Fire Watches III-1

CHAPTER IV - FIRE BILLS AND FIRE EVACUATION PLANS IV-1

- 1. Building Fire Bills IV-1
- 2. Evacuation Plans IV-2
- 3. Fire Watches IV-3

CHAPTER V - INSPECTION SERVICES V-1

- 1. Building, Structures and Areas V-1
- 2. Fire Prevention Inspections V-1

CHAPTER VI - FIRE PROTECTION EQUIPMENT VI-1

- 1. Responsibilities for Fire Protection Equipment VI-1
- 2. Portable Fire Extinguishers VI-2
- 3. Fixed Fire Protection Equipment VI-3
- 4. Fire Hydrants and Fire Pumps VI-5
- 5. Family Housing Detectors VI-5
- 6. Fire Extinguishers on Government Vehicles VI-5
- 7. Tampering with Equipment VI-6

CHAPTER VII - CLUBS AND RECREATIONAL FACILITIES VII-1

- 1. Self-Inspection VII-1
- 2. Fire Division Inspection VII-2
- 3. Occupant Load Limit VII-2
- 4. Special Events and Programs VII-2
- 5. Stage VII-3

21 JUL 1998

CHAPTER VIII - DESIGNATED AND NON-DESIGNATED
SMOKING AREAS VIII-1

- 1. Scope VIII-1

CHAPTER IX - GENERAL FIRE PREVENTION REGULATIONS IX-1

- 1. Creating and Maintaining a Fire Hazard IX-1
- 2. Housekeeping IX-1
- 3. Sleep Watches IX-4
- 4. Spacing Of Buildings and Structures IX-4
- 5. Building Construction/Alterations IX-5
- 6. Attics, Lofts and Concealed Spaces IX-5
- 7. Fire Doors/Fire Walls IX-6
- 8. Exhaust, Supply, Heating, Ventilation and Air
Conditioning Systems IX-7
- 9. Securing Buildings at the end of the Day IX-7
- 10. Vacant Buildings IX-8
- 11. Access Aisles, Fire Lanes, Fire Gates and Fire
Breaks IX-9
- 12. Decorations IX-9
- 13. Materials Handling Equipment IX-1
- 14. Internal Combustion Engines IX-10
- 15. Storage and Parking of Vehicles IX-1
- 16. Storm Drains, Sewers and Water Areas IX-11
- 17. Pesticides and Herbicides IX-12
- 18. Brush and Grass IX-12
- 19. Excavation IX-12
- 20. Fire and Open Flames IX-12
- 21. Fireworks, Pyrotechnics and Explosives IX-14
- 22. Fire Protection and Prevention Color Code IX-14

CHAPTER X - SPECIAL FIRE PREVENTION MEASURES X-1

- 1. Exits and Means of Egress X-1
- 2. Electrical Guidelines X-1
- 3. Flammable/Combustible Liquids X-4
- 4. Heating Systems X-10
- 5. Interior Finish and Insulation X-14
- 6. Automatic Data Processing Facilities X-15
- 7. Warehouse and Storage Spaces X-16
- 8. Hangars X-18
- 9. Welding and Cutting X-20
- 10. Battery Charging X-24
- 11. Hazardous Chemicals and Gases X-26
- 12. Oxygen Systems X-26
- 13. Compressed Gases and Cylinders X-29

21 JUL 1998

14.	Liquefied Petroleum Gases	X-31
15.	Painting Operations	X-31
16.	Dipping and Coating Operations	X-34
17.	Purging and Inserting Operations	X-34
18.	Fueling and De-fueling Operations	X-36
19.	Application of Tar, Asphalt and Similar Materials	X-41
20.	Cleaning and Refinishing Floors, Desks, etc	X-42
21.	Shipping and Transferring Hazardous Materials	X-43
22.	Vehicle Carrying Ordnance	X-44
23.	Radioactive Materials	X-46

21 JUL 1998

CHAPTER I

INTRODUCTION

1. Policy

a. Commanding Officers and Officers-in-Charge of naval shore activities are responsible for fire protection of their respective activities. The fire prevention regulations contained herein are in general use throughout the Navy, and shall be adopted, as applicable, by all shore activities. Local conditions and operations, however, may justify modifications or additions to these regulations. Navy district fire officers (fire marshals and fire protection engineers) who inspect and report on shore activities following current OPNAV and NAVFAC instructions are available to assist the Commanding Officer and the activity Fire Chief in the preparation of fire prevention regulations required to cover conditions on the activity not set forth herein.

b. In the preparation of fire prevention regulations not contained herein, full consideration shall be given to current Department of Defense instructions and manuals, Fire Protection Engineering Manual, other current Navy Department instructions and manuals, Occupational Safety and Health Act (OSHA) Regulations and the National Fire Codes published by the National Fire Protection Association.

2. Application. Appropriate fire prevention regulations shall be written and promulgated as an activity instruction. Fire chiefs, fire prevention inspectors, civilian supervisors, and department heads are directed to study and become thoroughly familiar with the activity fire prevention regulations and, as applicable, ensure proper dissemination of and rigid compliance with the regulations. Activity fire prevention regulations are not intended for placard posting; however, on the recommendation of the Fire Chief or district fire officers, brief excerpts from the activity fire prevention regulations may be conspicuously posted in hazardous locations and other areas where they apply and are deemed appropriate. The mere posting of such signs will in no way relieve the department and supervisory heads of their responsibility for the enforcement of the compliance with the activities fire prevention regulations.

3. Responsibility

a. Fire protection and prevention are inherent responsibilities of all Commanding Officers and Officers-in-

21 JUL 1998

Charge of tenant activities, department supervisors, all military and civilian employees, on-station residents and visiting personnel. However, the Commanding Officer of Naval Air Station Lemoore is responsible for providing a fire fighting organization for promulgating fire prevention regulations and for ensuring adherence thereto.

b. The Commanding Officer charges the Operations Officer with the responsibility of carrying out the fire regulations. The fire fighting organization is the Fire Division whose head, the Fire Chief, reports directly to the Operations Officer.

c. The Operations Officer shall ensure that the Fire Chief, through his Assistant Chiefs and Chief Fire Inspector, carries out the following functions: (All supervisory heads shall cooperate with the Fire Chief in these endeavors.)

(1) Directly supervises the internal administration and operation of the Fire Division, which consists of a Structural Fire Fighting Branch, an Aircraft Crash/Rescue Branch and a Fire Prevention Branch.

(2) Ensures the operational readiness of all fire emergency equipment and Fire Division personnel to respond to fire/rescue emergencies as needed.

(3) Ensures Fire Division personnel are trained in fire protection and prevention procedures.

(4) Develops and carries out a continuing, comprehensive and exacting fire prevention program.

(5) Ensures fire prevention inspections of all buildings, structures, outside areas and operations are conducted on a regularly scheduled basis.

(6) Ensures that all fixed fire protection systems, fire alarm systems, alarm boxes, fire hydrants and water distribution systems are inspected, tested and maintained on a regularly scheduled basis.

(7) Ensures a fire hazard reporting and abatement procedure is developed in conjunction with the fire prevention inspections.

(8) Ensures portable fire extinguishers are inspected, tested, maintained, recharged and distributed within their area of responsibility.

21 JUL 1998

(9) Ensures fire prevention training is conducted for all military personnel, civilian employees and military dependents.

(10) Ensures fire drills are performed in all buildings on a periodic basis according to appropriate directives.

(11) Ensures all newly assigned military and civilian personnel receive fire prevention indoctrination.

(12) Implements a training program for an auxiliary fire fighting force.

(13) Requests assistance and deploys Navy fire forces in conjunction with established mutual aid agreements with local communities.

(14) Attends pre-construction conferences and ensures off-Station contractors adhere to the Station's fire prevention regulations.

(15) Reviews new construction and building modification plans and proposals.

(16) Issues permits for and supervision of transient operations involving fire hazards and ascertains that qualified personnel are posted with the necessary fire extinguishing equipment at the scene of the operation. The supplying of personnel for certain fire watches and the actual work of maintenance or testing of equipment except fire extinguishers are properly performed by various other departments that are not under the authority of the Fire Chief. While the adequate coverage of these features from an operating standpoint and on a continuous basis is the primary concern of the Fire Chief, it is not intended that the personnel who handle the work be transferred to the Fire Division.

(17) Ensures that the closing procedures for the clubs and the recreational facilities related to fire safety are rigidly followed.

(18) Develops and administers Fire Division Standard Operating Procedures (SOP's).

(19) Ensures/assists NAS department heads and tenant commands in developing fire bills and fire evacuation plans for their respective buildings and areas.

21 JUL 1998

(20) Observes National Fire Prevention Week as proclaimed annually by the President.

(21) Inspects classified areas and develops prefire plans of the buildings.

(22) Ensures records and reports are kept according to higher directives on fires, emergencies, inspections, training and testing and maintenance of fire extinguishing equipment.

(23) Assists as required in the initial fire investigation of all fires and reports to appropriate authority all fire losses and personnel injury on this Base.

(24) Submits the annual Fire Division budget.

(25) Maintains liaison with the surrounding community fire departments.

(26) Continually reviews fire fighting and fire prevention requirements following current directives and changing conditions.

(27) Acts as consultant on fire protection matters for unique situations.

(28) Prepares and publishes adequate fire prevention regulations for family housing.

(29) Participates as one of the on-scene commanders in the Station's Disaster Preparedness Program.

(30) Advises department and supervisory heads of conditions which are not in conformance with Station regulations or recognized fire prevention practices and assists in correcting such conditions where possible.

21 JUL 1998

CHAPTER II

1. Responsibility of Personnel Observing an Emergency. Any person observing an emergency identified above is responsible for taking the following action:

a. Evacuation. Ensure personnel immediately threatened by the incident evacuate the area to a safe distance upwind of the site. This procedure may include:

(1) Verbally passing the word to evacuate, or

(2) Activating a manual fire alarm pull box in a building having an impending emergency. This act will normally cause building evacuation alarms to sound.

b. Notify the Fire Division. The Fire Division shall be notified of the emergency immediately. The Fire Division can be notified by:

(1) Telephone. Dial the station emergency telephone number 9-1-1 (Family Housing) or 9-9-1-1 (remaining Station buildings) and be prepared to provide the dispatcher with:

(a) Location of Emergency. Provide the dispatcher with the building number, room number and floor. In the case of residential housing, provide the dispatcher with the residential mailing address.

(b) Nature of Emergency. Describe what is occurring that creates the emergency situation described in paragraph 1, above. An example might be "I have a grease fire in my kitchen stove."

(c) Victims. If you know or suspect a victim is trapped in the emergency, report this to the dispatcher.

(d) DO NOT HANG UP the phone until so directed by the dispatcher. If your personal safety is threatened by the impending emergency, notify the dispatcher immediately, relocate to a safe phone, and call 9-1-1 or 9-9-1-1 again.

(2) Activate the Nearest Fire Alarm Pull Box. Carefully read the instructions on the Fire Alarm Pull Box and perform each step. In most instances, this act will notify the Fire Division but will also cause building evacuation to occur.

21 JUL 1998

(3) Standby for Fire Division Arrival. Persons notifying the Fire Division of an emergency are responsible for remaining at the scene until the fire fighting crew arrive.

2. False Report of Emergencies. The State of California Penal Code, Section 148.3, states that any individual who reports or causes any report to be made, to any city and/or county or state department, district, commission or board, that an emergency exists, knowing that such a report is false, is guilty of a misdemeanor and upon conviction thereof, shall be punished by imprisonment in the county jail, not exceeding one year or by a fine, not exceeding \$1,000.00 or both. Any person with direct knowledge of individual(s) violating this code is responsible for reporting that knowledge to higher authority.

3. Unlawful Interference with Fire Alarm Apparatus. The California State Penal Code, Section 148.4, states that any person who willfully and maliciously tampers with, damages or breaks any public fire alarm apparatus, wire or signal or willfully and maliciously sends, gives, transmits or sounds any false alarm of fire, by means of any public fire alarm system or signal or by any other means or methods, is guilty of a misdemeanor and upon conviction thereof, shall be punished by imprisonment in the county jail, not exceeding one year or by a fine, not exceeding \$1,000.00 or both. Any person with direct knowledge of individual(s) violating this code is responsible for reporting that knowledge to higher authority.

a. Fire Drills. Commanding Officers, Officers-in-Charge and managers are encouraged to practice fire drills to ensure all personnel can effectively and safely evacuate buildings or spaces in the event of an emergency. Such training is authorized at any time deemed necessary providing:

(1) Fire alarm systems are not activated.

(2) Fire extinguishing systems are not discharged.

(3) Personnel evacuating do not secure building/area utilities (gas or electricity).

(4) Emergency reporting telephone call (9-1-1 or 9-9-1-1) is not activated.

(5) Only those individuals under the supervisory control of the authorizing official shall participate in the training.

21 JUL 1998

(6) Exceptions must have prior approval from the Chief Fire Inspector.

b. Fire Drills (Supervised by Fire Division). During fire drills being conducted by the Fire Division, fire alarm systems may be activated provided the Fire Prevention Inspector or Fire Officer approves the activation.

21 JUL 1998

CHAPTER III

SECURITY REQUIREMENTS AND CONSIDERATIONS

1. Access by Fire Division Personnel to Emergency Scene. In a fire-related emergency, life safety is paramount and security considerations become secondary. Persons designated fire fighting responsibilities within the provisions of this instruction shall be granted immediate access to classified spaces in the event fire or a similar emergency occurs where lives are in danger as determined by the Commander of the facility involved and or the Fire Department Incident Commander. If an element of doubt exists regarding the seriousness of the emergency and/or threat to life, full access shall be granted to all fire fighting and rescue personnel.

2. Sentries, Patrols, Guards and Fire Watches. The following instructions and guidance shall be given all sentries, patrols, guards and fire watches prior to their assignments: weekends, holidays and evenings, the Assistant Fire Chief is authorized to make interim decisions necessary to accomplish the mission. The Fire Chief shall be responsible for final decisions.

21 JUL 1998

CHAPTER IV

FIRE BILLS AND FIRE EVACUATION PLANS

1. Building Fire Bills. The department or command having cognizance of the building is responsible for developing and posting in a conspicuous location a building fire bill for all major buildings occupied by their personnel. The bill will establish procedures and plans for emergency evacuation, notifying the Fire Division, extinguishing of incipient fires, security of classified materials and periodic training of occupants in the use of first aid fire fighting appliances. The format for fire bills shall comply with the guidance of paragraph 600a of reference (t), "Elements of a Unit Fire Bill." The following information is presented for the purpose of assisting organizations in writing or updating special fire bills at NAS Lemoore. Usually in the form of an instruction, the following provisions are considered essential in a fire bill.

a. Purpose. This paragraph shall state the purpose of the directive, including when appropriate, the general applicability and the nature of the action required. State the building or area the fire bill will cover.

b. Objective. Briefly state the primary objective of the instruction. For example: "To ensure that personnel are safely evacuated from the fire area."

c. Procedures. List in detail all procedures to be followed in case of fire. For example:

(1) Report or cause of the fire to be reported to the Fire Division by:

(a) Pulling the nearest fire alarm or auxiliary box. Stay at the box or go to the street, whichever is the safest, to direct Fire Division personnel to the scene of the fire.

(b) Calling on the telephone and giving the building number and location and stating the nature of the fire. Answer any questions the dispatcher may have. Meet and direct the Fire Division personnel upon their arrival.

(2) Pass the word of a fire by voice or alarm (bell, triangle, etc.) to alert all personnel in the building/area and to assure prompt evacuation.

21 JUL 1998

(3) Extinguish the fire if possible, but do not take unnecessary risks. DO NOT DELAY transmitting any alarm of fire! Upon sounding of a fire alarm, man the nearest fire fighting equipment and attempt to extinguish the fire only if the fire is in its incipient stage and if you are not endangering yourself or anyone else in the process. Otherwise, evacuate the building/area with all other personnel via the nearest exit point as quickly and as safely as possible. Assemble where designated, (state location in your fire bill), clear of the fire to assist as directed or until termination of the emergency. (Provisions may be included for the notification of key personnel after normal working hours.)

d. General Information. Fire bills should also contain:

(1) Fire Prevention Regulations Pertinent to Assigned Buildings or Areas; refer to this instruction. Although regular fire prevention inspections are conducted by the Fire Division, each department or command organization should establish a continuous program of fire prevention to include such routine matters as the maintenance of good housekeeping; proper use, storage and handling of flammable liquids, grounding of aircraft; inspection of electrical equipment; enforcement of smoking regulations; inspection of heating equipment and other heat-producing devices or sources of ignition; maintenance of stored materials in such a manner so as not to create additional hazards; blocking fire lanes, fire doors or windows; etc.

2. Evacuation Plans

a. Each building shall have an evacuation plan containing information supplemental to those detailed in the buildings such as the aircraft hangars, hospital production shops, etc. There shall be a master evacuation plan located at a centrally traveled area, usually at the front entrance and sectional evacuation plans posted at the different sections of the building.

b. The department or command having cognizance of the building shall be responsible for developing and drawing up the evacuation plan. The plan shall be submitted to the Fire Prevention Branch for review and approval.

c. The evacuation plan shall include the following:

(1) Floor plan of the building showing the evacuation routes and exit doors to use in the event of a fire or emergency.

21 JUL 1998

(2) The location of the fire extinguishers and fire alarm boxes.

3. Fire Watches. Heads of departments, activities and commanding officers of fleet units based at the Station shall establish and maintain such fire watches as are necessary to ensure adequate security for areas and spaces assigned their departments and units. They shall provide an adequate and continuous fire watch at night, when required, to cover all areas and spaces under their cognizance.

21 JUL 1998

CHAPTER V

INSPECTION SERVICES

1. Building, Structures and Areas

a. Qualified Fire Division personnel will conduct regularly scheduled fire inspections of buildings, structures and areas to detect and eliminate fire/life safety hazards. These inspections will follow the guidelines set forth in references (c) and (p).

b. The Fire Prevention Bureau will maintain an active file of all fire prevention inspections and all related fire prevention activities.

2. Fire Prevention Inspections

a. The Fire Prevention Bureau will be notified at Ext. 3828 prior to the start of any of the following operations or items:

(1) Welding, cutting or burning. (Welding outside of approved welding shops/areas.)

(2) Bringing any type trailer, building or structure aboard NAS Lemoore.

(3) Hauling explosives on the Station.

(4) Performing modification, rehabilitation, construction or major repair to buildings or structures on NAS Lemoore.

(5) Repairing or replacing fixed fire protection extinguishment systems, first aid fire fighting extinguishers or related fire protection devices.

(6) Any preconstruction conference or contract awards. A Fire Division Officer shall attend preconstruction conferences and instruct contractors from off-station of the need to adhere to the Station Fire Prevention regulations.

b. The Fire Prevention Branch is responsible to the Fire Chief for inspections of the above. Other related duties in the field of inspections include but are not limited to:

(1) Building inspections.

(2) First aid fire fighting extinguisher quick inspections.

NASLEMINST 11320.1G

21 JUL 1998

- (3) Hazardous operations inspections.
- (4) Explosive vehicle inspections.
- (5) Ordnance areas inspections.

21 JUL 1908

CHAPTER VI

FIRE PROTECTION EQUIPMENT

1. Responsible for Fire Protection Equipment

a. MIL-HDBK DM-1008B, "Fire Protection Engineering," NAVAIR 00-80R-14, "Aircraft Fire Fighting and Rescue Manual," NAVFAC MO-117, "Maintenance of Fire Protection Systems," NFPA Standard No. 10, "Portable Fire Extinguishers," NFPA Standard No. 13, "Installation of Sprinkler Systems" and other pertinent NFPA Standards shall be used as guides for the installation, modification, inspection, maintenance and testing of portable fire extinguishers and fixed fire extinguishing systems.

b. Qualified Fire Division Personnel Shall

(1) Ensure that all first aid fire fighting equipment is properly distributed, maintained and recharged.

(2) Inspect and test ordinary wet and dry automatic sprinkler systems, standpipe hose systems, fire hydrants and fire alarm systems.

c. Personnel in charge of departments, divisions, branches and attached activities are responsible to do the following:

(1) Contact the Fire Division for instructions and recommendations prior to the purchase of any fixed or portable fire extinguishing system.

(2) Ensure that any person having discharged a fire extinguisher or having found indication that a fire extinguisher has been used, report the fact immediately to the Fire Division. The BPO at each barracks and hangar personnel will be responsible for bringing any portable fire extinguishers to the Fire Division for recharging.

(3) Ensure that fire fighting equipment is not used or moved from its assigned location for any purpose except fire fighting, fire drills or maintenance of equipment. This prohibition embraces all fire fighting equipment and accessories such as fire extinguishers, fire hoses, spare sprinkler heads, spanner wrenches, water buckets, etc.

(4) The Fire Chief or his representative, the Public Works Officer or his representative and the building supervisor

21 JUL 1998

shall be notified immediately of any impairment of fire protection involving water systems, hydrants, fire pumps, sprinkler systems, CO2 systems, Halon systems, foam or dry chemical systems and similar equipment. Restoration of such equipment to service shall be given priority and such restoration shall be reported promptly to the Fire Chief and the Public Works Officer. Similarly, defective or leaky water mains, standpipes and sprinkler systems shall be reported immediately to the Fire Division and the Public Works Officer.

(5) Loss of fire fighting equipment shall be reported immediately to the Fire Division. The department requiring the equipment shall be responsible for the replacement of the same. The Fire Division will provide assistance in determining need for and type of replacement item.

(6) Ensure that the fire lanes and access aisles, inside and outside of buildings, leading to fire alarm boxes, hose racks, extinguishers, sprinkler control valves, fire department pumping connections, fire doors, electric gas, water and steam control valves in major buildings or similar equipment and facilities, are marked and maintained at all times. No vehicle, aircraft, equipment or other material shall be parked or stored in such a manner as to obstruct these items.

2. Portable Fire Extinguishers

a. Carbon tetrachloride type fire extinguishers are prohibited at this Station.

b. Fire extinguishers will not be provided for individual homes in the family housing area.

c. Fire extinguishers for the aircraft on the flight line will be placed and inspected by the using activity/squadron per NAVAIR 00-80R-14, paragraph 3.3.4.1. Extinguishers with defects shall be reported to the Fire Division for corrective action by calling extension 1705.

d. Accurate records of inspection, recharging and repairs shall be maintained at the Fire Division. NAVFAC Form 11320/2 (3-75), "Fire Extinguisher Inspection Record," shall be fastened to each extinguisher and shall be used to record each official inspection except for fire extinguishers located on aircraft parking areas, ramps or where tags blowing off will create a FOD hazard.

21 JUL 1998

3. Fixed Fire Protection Equipment

a. Existing systems that are not required by criteria shall be kept in service. Performance of these systems shall not be impeded by improper storage, painting of heads, new partitions, installation of drop ceilings, etc. The fact that a system is not required by criteria does not in itself justify its removal, shut down or impairment.

b. Operation of Control Valves

(1) Sprinkler control valves shall be sealed in the open position. If sprinkler heads are fused because of fire, the valve shall not be closed until such action is directed by the Fire Division officer-in-charge at the fire. To provide for the immediate opening of the control valve in the event of a re-flash, a fire fighter should be stationed at the main valve until the fire fighting operations are concluded.

(2) When a system, especially a sprinkler system, is actuated whatever the cause, the system shall not be shut off until the Fire Division arrives, unless the operation is visually evident to be accidental. In the latter case, the control valve should be closed and the system drain valve opened to minimize water damage. The replacement of sprinkler heads and restoration of service should be effected immediately upon extinguishment of fire or determination of accidental operation.

(3) The Fire Division and the Public Works Officer or his representative, shall be notified prior to the closing of any sprinkler control valve for alteration or repairs and also when it is reopened. Necessary work on sprinkler systems shall be conducted on an emergency basis in order to limit impairment of protection to the absolute minimum period of time. When it is essential that fire protection be impaired overnight, emergency measures shall be effected to maintain the maximum possible degree of protection during the entire period of impairment.

c. Piping

(1) System piping will be used for no other purpose than for what it was designed.

(2) No material of any sort shall be hung from the piping.

21 JUL 1998

(3) A clearance of 18 inches shall be maintained between sprinkler heads and the top of stored materials piled under 15 feet in height.

(4) A 36-inch clearance shall be maintained between sprinkler heads and storage of hazardous materials regardless of the heights of piles. Hazardous materials are defined as materials which, either by themselves or in coordination with their packaging, are highly susceptible to ignition and will contribute to the rapid spread of fire. Examples include flammable liquids with a flash point below 100 degrees Fahrenheit such as acetone, alcohol, benzene, ether, gasoline and naphtha; flammable solids (materials subject to spontaneous ignition when exposed to air, moisture, friction or moderate warmth); oxidizing materials such as chlorates, nitrates and peroxides; corrosive liquids such as acids; and those materials, which because of their characteristics under fire conditions, are abnormally difficult to extinguish such as rubber tires, crude rubber and cordage fibers.

d. In buildings that are sprinkled, the new construction or remodeling of office spaces, rooms and storage areas shall be such that the water spray from sprinkler heads to floor material will not be blocked - 18 inch clearance.

e. Testing and Maintenance

(1) Wet and dry pipe systems and fire hydrants shall be maintained on an annual basis by authorized and qualified Public Works and Fire Division personnel.

(2) Deluge and other special types of fixed systems, because of their complicated and specialized features, shall be tested and maintained annually by technically qualified persons.

(3) Whenever tests and maintenance are performed, they shall be witnessed by a fire inspector.

(4) Documented certification of these tests will be maintained in a Fire Division file for at least three years.

f. Miscellaneous Requirements

(1) An 18-inch clearance shall be maintained to and around the sprinkler riser and piping.

(2) A 36-inch clearance shall be maintained around all sprinkler supply valves.

21 JUL 1998

(3) Sprinkler system heads shall not be painted or obstructed in any way.

(4) Fire alarm boxes, annunciation panels, Fire Department connections and other similar fire alarm system components shall not be obstructed in any manner.

4. Fire Hydrants and Fire Pumps

a. The Fire Division, in coordination with Public Works, will ensure that all fire hydrants are annually inspected, flushed and maintained in good condition.

b. The hydrants shall be clearly visible and free of all obstructions. No vehicles or other objects shall be left standing within 15 feet of any hydrant.

c. The use of fire hydrants is prohibited except as authorized by the Fire Chief and the Public Works Officer.

d. The Fire Division will be notified immediately whenever a fire hydrant or water main is placed out of service or put back in service.

e. Fire hydrants shall be painted following NAVFAC P-309, "Color for Naval Shore Facilities," which requires yellow barrels and tops for fresh water and yellow barrels with red tops for salt water. Each hydrant shall be numbered to correspond to the number on the Station water distribution map with the number and feed main size stenciled on the hydrant.

f. The fire pumps shall be tested annually and a water flow test performed on the water distribution system.

5. Family Housing Detectors. Qualified Fire Division personnel shall annually inspect and test smoke detectors in family housing. The battery will be replaced as needed and/or the unit itself will be replaced if it malfunctions. The Family Housing Office shall provide the replacements for the batteries and smoke detectors.

6. Fire Extinguishers on Government Vehicles. Assigned vehicle operators shall inspect portable fire extinguishers mounted on their vehicles. The inspection shall be to ensure that the tamper seal and pin are in place, the gauge is in the operating range and that there is no visible damage. Defective fire

NASLEMINST 11320.1G

21 JUL 1998

extinguishers shall be brought to the Fire Station for repair or replacement.

7. Tampering with Equipment. No person shall tamper with portable or installed fire protection equipment or create conditions which adversely affect the operation or efficiency of such equipment.

21 JUL 1999

CHAPTER VII

CLUBS AND RECREATIONAL FACILITIES

1. Self-Inspection

a. Managers must give primary consideration to conditions that may endanger the safety of persons in their facility. Inspections of the facility by its manager or a qualified representative, are necessary regardless of the frequency or character of the Fire Division inspection. Using the checklist, OPNAV 11320/3 (9-71), "Fire Hazard Check-off List," managers shall ensure that the following have been accomplished each evening prior to securing:

(1) Exits shall be secured at the end of the work day. During normal hours of operation, exits shall not be blocked, locked, obstructed, chained shut, shall swing outward and shall be designed so the door can be opened, even in the dark, by any person.

(2) Windows shall be secured at the end of the work day. Open windows permit drafts and help fire spread throughout the interior of the building.

(3) Lights shall be turned off at the end of the work day except those that must be left on for security reasons.

(4) Trash containers shall be emptied of their contents and the contents removed from the building.

(5) Patrons shall be out of the facility. The only person allowed inside the building will be the manager or a responsible person in charge of securing the facility for the night.

(6) Small appliances (coffee makers, toasters, etc.) shall be secured at the receptacle or at the circuit breaker switch.

(7) Air conditioners/heaters shall be secured, except units connected to thermostats.

(8) Space heaters shall be listed by Underwriters' Laboratories, Inc. They shall be equipped with knock-over switches and shall be secured at the end of the work day.

21 JUL 1998

(9) Kitchen ranges, ovens, grills, etc., shall be secured at the end of the work day.

b. The following items shall be attended to as indicated:

(1) Exit lights shall be inspected at the earliest convenience during the day. If exit lights are not functioning properly, they shall be repaired prior to the evening operating hours of the facility.

(2) Managers shall ensure that all first aid fire fighting appliances are in the proper locations and have not been tampered with.

(3) Good housekeeping shall be practiced throughout the facility.

(4) Extension cords shall be replaced by a permanently wired receptacle.

(5) Decorations shall be flame-retardant. All decorations shall be inspected by the Fire Division before they are hung.

c. Just before securing, the manager or his representative shall call the Security Department, telephone 998-4749 and the Officer-of-the-Day, telephone 998-3300, that the facility is now securing. This phone call shall be annotated on the checklist.

2. Fire Division Inspection. Once a month a Fire Division Officer shall make a spot check of the clubs and recreational facilities prior to their securing to ensure the facility's manager is following the nightly securing procedures.

3. Occupant Load Limit

a. The maximum number of personnel permitted in places of assembly, clubs and recreational facilities shall be posted following NFPA Standard No. 101.

b. Occupant load limit signs shall be posted at the main entrance and/or elsewhere as appropriate.

c. The number of people attending each gathering will be limited to the approved load limit.

4. Special Events and Programs. Whenever clubs or recreational facilities have special events or programs in which fire safety

21 JUL 1998

conditions of the facility may be affected, the Fire Division shall be consulted before the event takes place for technical advise to resolve any possible creation of an unsafe fire condition.

5. Stage. Places of public assembly having a stage shall keep such stage clean and clear of obstruction at all times.

21 JUL 1999

CHAPTER VIII

DESIGNATED AND NON-DESIGNATED SMOKING AREAS

1. Scope. The Chief Fire Prevention Inspector shall determine those areas considered safe or unsafe for smoking based on fire safety standards and related instructions. Areas determined fire safe for smoking are subject to review by Occupational Health and Safety (OSH) regarding potential unhealthy conditions which would prohibit smoking. Areas determined unsafe for smoking, whether by Fire Safety Standards and/or Health Standards, shall be posted "No Smoking" and enforced accordingly.

21 JUL 1998

CHAPTER IX

GENERAL FIRE PREVENTION REGULATIONS

1. Creating and Maintaining a Fire Hazard

a. No person shall knowingly permit any fire to spread so as to endanger life/property or use any device which may be a source of ignition unless proper removal of flammable or combustible material surrounding the operation is accomplished or such other reasonable precautions are taken to ensure against the starting and spreading of unwanted fires.

b. Any person, upon discovering evidence of spontaneous heating or other abnormal heating of merchandise, commodity, cargo, shipment or other material of any kind in any building, appliance, apparatus, tank, vehicle or open stack or pile or any person upon discovering or being apprised of any uncontrolled gas leak or hazardous material or combustible or flammable liquid spill, shall immediately notify the Fire Division.

c. No person shall knowingly maintain a fire hazard.

d. No person shall deliberately or through carelessness or negligence, set fire to or cause the burning of material in such a manner as to endanger the safety of any person or property.

2. Housekeeping

a. Good housekeeping and orderly cleanliness are basic factors toward maintaining an adequate fire prevention program on the Station. Such action is accomplished by disposal, limitation or segregation of combustibles to reduce the danger of fire.

b. Work and repair areas, storage spaces and new construction areas shall be maintained in a neat and orderly manner and shall be policed regularly to reduce fire hazards.

c. Shops will remove obstructions and debris which constitute fire hazards, such as, packing materials, litter, sawdust, trash and refuse will be removed as given jobs progress, with a thorough clean-up being accomplished at the end of the day.

d. Benches, floors and equipment will be cleaned of accumulation of oil, grease or paint; all spills of flammable liquids will be cleaned up immediately.

21 JUL 1998

e. In shop areas all collection receptacles, will be emptied at the end of each work day.

f. Sawdust and other dust accumulations will be wiped, brushed or vacuumed from fixtures, structural members and other locations, where it tends to accumulate, as often as necessary to prevent such accumulation from becoming a fire hazard.

g. Swabs, cleaning gear and other materials subject to spontaneous ignition shall be kept outside of buildings or stored in tight metal containers with metal covers; mop racks shall be kept in well-ventilated areas and at least 10 feet from radiators, heating vents or other heating elements.

h. Only approved water solutions or detergents, non-combustible compounds or grease absorbents shall be used for cleaning floors. The use of sawdust or similar combustible materials to soak up combustible or flammable liquids spilled or dropped on any floor is prohibited.

i. Where facilities are not available inside of buildings for the storage of containers of combustible or flammable liquids as required by NFPA Standard No. 30., "Flammable and Combustible Liquids Code," all paints, thinners, solvents, brushes, drop-clothes, rags, etc., must be removed from the building at the close of the work day. If such materials are to be left in the area, they shall be placed in clearly marked metal containers at least 15 feet from buildings and away from combustible materials.

j. Ducts, exhaust fans, filters and similar equipment shall be cleaned as necessary to keep grease and dust accumulation down to a minimum.

k. Open type waste baskets (especially office types) shall be of metal or other non-combustible material.

l. The standard 32 gallon G. I. trash can or equivalent container shall be a non-combustible metal type and shall be provided with metal covers. These covers shall be kept on the containers at all times except when containers are being filled or emptied.

m. Plainly marked, self-closing metal containers shall be used for all used waste, all oil paint, chemical soaked rags and other extra hazardous waste materials. The metal covers shall be

21 JUL 1998

kept closed and never wedged or blocked open. Such containers shall be emptied and contents removed from buildings as required during working hours and prior to securing of buildings after working hours.

n. Metal and metal lined containers with automatic closing covers shall be provided and used for storing supplies of clean rags, waste, packing materials such as excelsior and shredded paper and other combustible materials in current use; the metal containers will not be stored or placed near heating devices or stovepipes.

o. Trash and rubbish containers shall not be located in public corridors or stairways of buildings or placed in locations where ignition of the contents and resulting hot gases or smoke will prevent safe evacuation of the building. Particular attention will be given to enforcing this regulation in BOQ's, BEQ's, lodging facilities or mini-stored buildings.

p. Combustible trash and debris shall not be located near buildings, structures or outdoor storage areas and shall not be permitted to accumulate to a degree that would create a fire exposure hazard to other property.

q. Covered metal receptacles with self-closing lids shall be provided in all restrooms and other areas where paper towels, napkins or disposable paper cups are used.

r. Clothing lockers shall be of metal and maintained in a clean and orderly condition and kept well ventilated. Working clothes kept in lockers shall be aired and cleaned regularly. Materials shall not be stored on top of or under the lockers.

s. Flammable liquids, chemicals, paints, paint-soaked rags and similar materials shall not be kept in clothes lockers.

t. Combustible materials shall not be placed on or near radiators, heaters, steam pipes, lighting equipment or other heating system component.

u. Storage of combustibles is prohibited in equipment rooms, air conditioning rooms, electrical panel rooms, boiler rooms, exit corridors, on or under stairways, in stairway enclosures or in unsprinkled attics.

v. Dryer lint traps (especially those in the barracks) shall be kept clean of lint accumulation.

21 JUL 1998

3. Sleep Watches. No sleep watch or sleeping on duty shall be permitted in any building unless such building is provided with a smoke detector. Furthermore, any activity that utilizes a sleep watch in any building shall notify the Fire Division of such condition.

4. Spacing of Buildings, Structures and Vehicle Vans

a. The required clearances between structures shall be determined by applying the Separation Distances Curves as found in MIL-HDBK DM-1008B to each structure involved. The structure requiring the greater distance is the critical exposing structure and the larger distance is the required clearance. Clearance requirements are applicable only when combined fire areas exceed the Construction Criteria Manual DOD 4270.1-M and the International Conference of Building Officials, Uniform Building Code.

b. Special Requirements:

(1) Family housing separation shall conform to FHA Minimum Property Standards and NAVFAC DM-35, Family Housing.

(2) Mobile homes shall be separated following NFPA Standards No. 501A, Mobile Home Parks.

(3) Relocate prefabricated structures shall be separated following the requirements for permanent buildings.

(4) Electronic equipment vans may require grouping for functional reasons. Vans equipped with automatic extinguishing systems may be grouped together to form total areas of 5,000 square feet. Arrangement of vans should permit direct access to each van for fire fighting purposes. Grouping of unprotected vans should not exceed 2,000 square feet. A minimum separation of 15 feet shall be provided between all van groups.

(5) Warehouses should be separated as required in NAVFAC DM-32, Supply Facilities.

5. Building Construction/Alterations

a. No building, structure or facility will be constructed, repaired, altered or utilized without the approval of the Commanding Officer of NAS Lemoore or his authorized representative. The project shall be reviewed by technically

21 JUL 1998

qualified fire protection personnel prior to the start of the work. The technical qualification of the reviewer shall be commensurate with the complexity of the project. Fixed fire protection systems installed or modified under such projects shall be subjected to an acceptance test conducted under the cognizance of the Naval Facilities Engineering Command Fire Protection Engineer.

b. The Fire Division shall be notified to review new construction and building modification plans and proposals.

c. The Fire Division shall be invited to all pre-construction conferences to provide advice and guidance on related fire safety matters.

d. The Public Works Department or Resident Officer in Charge of Construction shall ensure that all contractors working at NAS Lemoore are familiar with the Station's fire prevention regulations.

e. When the use of a building, structure or facility is changed, the Fire Division must be notified to assure that necessary fire protection adjustments are made in the Fire Division response plans for the new occupant.

f. Pump houses, generator or power buildings, power vaults and substations, furnace rooms and flammable material storage areas will not be utilized for any occupancy other than for which they were designed.

6. Attics, Lofts and Concealed Spaces

a. Attic, lofts and concealed spaces shall be kept clean. Unsprinkled attics, lofts and concealed spaces shall not be used for storage of combustible materials.

b. Scuttle holes and other openings, leading to attic, lofts and concealed spaces shall be fitted with doors equivalent in fire resistance to ceiling construction and normally shall be kept closed. This does not apply to grills provided for the passage of heat into attics protected by wet pipe automatic sprinkler systems. Such openings should be equipped with closing traps held open by fusible links and having a fire resistance equal to that of the ceiling.

c. Hatches, trap doors and openings leading to confined spaces shall not be used for ventilating purposes but shall be kept closed at all times when not in use.

21 JUL 1998

d. Overhead storage may be used for the storage of combustibles only when approved by the Fire Department.

7. Fire Doors/Fire Walls

a. The type, design, location, installation, operation and maintenance of fire doors will comply with Fire Protection Engineering Manual and NFPA Standard No. 80, "Fire Doors and Windows."

b. Fire doors shall be listed by Underwriters' Laboratories, Inc. or approved by Factory Mutual Laboratory.

c. Fire doors, shutters or windows shall not be obstructed or locked in any manner or wedged open. Highly combustible material that may produce a flash fire shall not be stored near an opening in a fire wall.

d. Fire doors and windows shall be closed during non-operating periods.

e. Access aisles to fire doors will be maintained at all times.

f. Damage to fire doors and windows shall be immediately reported to the Fire Division.

g. Fire doors and windows that do not have automatic closing devices shall not be kept in the open position.

h. Openings through fire walls facilitating heating, air conditioning or ventilation ducts not exhausting directly outside of the building shall be protected by approved automatic closing fire dampers.

i. Fire walls shall not be breached for any reason without the approval of the Fire Chief.

8. Exhaust, Supply, Heating, Ventilation and Air Conditioning Systems

a. The design requirement of exhaust, supply heating, ventilation and air conditioning systems shall comply with Fire Protection Engineering Manual and NFPA Standards No. 90A, "Air Conditioning and Ventilating Systems"; 90B, "Warm Air Heating and

21 JUL 1998

Air Conditioning Systems"; 91, "Blower and Exhaust Systems for Dust, Stock and Vapor Removal or Conveying"; and 96, "Commercial Cooking Equipment." The inspection and maintenance requirements for such systems shall be the responsibility of Public Works.

b. Hoods, grease removal devices, fans, filters, ducts and other appurtenances shall be kept free of grease, paint residue, combustible dust, etc.

c. Duct systems and filters shall be constructed of non-combustible material. Filters shall be of the proper classification as listed by Underwriters' Laboratories, Inc.

d. Filter equipped exhaust systems shall not be operated with filters removed.

e. Exhaust systems shall be operated during all periods where combustible or flammable atmospheres may develop.

f. Proper clearance around heating ducts shall be maintained.

g. Exhaust ducts shall be provided convenient access points for cleaning purposes.

9. Securing Buildings at the End of the Day

a. All doors, including fire doors and windows shall be properly secured at the close of the working day unless excepted in writing by the Commanding Officer or his authorized representative.

b. All heating devices not required to be kept in operation during the night shall be secured by the person in charge at the close of working hours.

c. See Chapter X for securing procedures of clubs and recreation facilities.

d. No doors shall be permanently secured without advance approval of the Security Officer and the Fire Chief. All such doors shall be identified by a sign approved by the Fire Division, placed on both sides of the doors. Exit doors shall not be secured in such a manner as to prevent their use as an exit.

21 JUL 1998

e. All buildings that are normally locked shall have a 5X7 inch placard posted on the main entrance door giving the following information:

- (1) Using organization
- (2) Responsible person
- (3) Telephone number where the key can be located

10. Vacant Buildings

a. All combustible trash shall be removed from the buildings; floors shall be swept clean and furniture neatly stacked, preferably in the center of the room.

b. All points of entry shall be locked and preferably securely boarded up.

c. Buildings shall be posted prohibiting entry, except on the order of the Commanding Officer or his authorized representative.

d. In securing unoccupied buildings, electric power to the building shall be disconnected at the main control panel and the service line fuses removed. Gas mains should be valued closed and should be disconnected and capped outside the building when deactivated.

e. The Fire Chief shall be notified when a building is deactivated and an inspection shall be made by the Fire Division prior to and after securing the structure. Any fire hazards found during the inspection will be made known to the Public Works Officer, who shall be responsible for ascertaining that reported discrepancies are corrected.

f. Keys to permanently secured buildings shall be kept in the custody of the Public Works Department.

11. Access Aisles, Fire Lanes, Fire Gates and Fire Breaks

a. Access aisles to standpipe hoses, fire extinguishers, fire escapes, sprinkler system components and electric, gas, water and steam control valves shall be a minimum of 36 inches in width and properly posted.

21 JUL 1998

b. Access aisles within aircraft hangars shall be conspicuously and permanently marked on floors and shall be kept clear at all times.

c. Access aisles shall be maintained around storage piles whether stored inside or outside of a building.

d. Fire lanes shall be maintained and properly posted with signs. They shall be a minimum of 20 feet in width around major buildings and aviation equipment and be at least 10 feet from any structure. Any dead-end road more than 300 feet long shall be provided with a turnaround at the closed end, at least 90 feet in diameter.

e. Fire lanes shall be provided for all buildings which are set back more than 150 feet from public roadways or exceed 30 feet in height and are set back over 50 feet from a public road.

f. Vehicles, equipment, shrubbery or any other item shall not be placed where they may impede or unreasonably delay the utilization of fire hydrants, hoses, alarm boxes and hose connections.

g. Fire gates shall not be blocked or obstructed in any way that will hinder easy access of fire apparatus.

12. Decorations

a. Decorative materials include curtains, draperies, streamers, wall, ceiling and floor coverings for acoustical or other effects and all cloth, papers, cotton, batting and vegetation used for decorative effect; but do not include floor covering, ordinary window shades or wallpaper or other material one fortieth of an inch less in thickness applied directly on and adhering tightly to a non-combustible base.

b. Only non-combustible or approved flame retardant materials shall be used for decorations or window coverings. Vegetation, cotton plastic cloth, textile, expanded foams, excelsior, paper or other combustibles shall not be used as decorations within buildings unless such decorative materials have been made flame retardant by an approved material or process.

c. No furnishings or decorations or other objects will be placed where they will obstruct exits, access to exits or visibility of exits or obstruct access to or visibility of fire alarm boxes or fire fighting equipment.

21 JUL 1998

d. Treated combustible, holiday decorations must be removed within seven days after the holiday. Cut trees, branches and similar foliage and vegetation must be removed within fourteen days after being brought into the building.

e. Activity commanders are encouraged to issue special fire precaution reminders prior to the holidays.

13. Materials Handling Equipment

a. The type and locations where material handling equipment can be used is governed by NFPA Standard No. 505, "Powered Industrial Trucks."

b. Electrical driven forklifts and electrically powered handpallet lift trucks may be left in buildings, provided approval has been received from the Fire Division and they are located 10 feet from combustible materials and the batteries may be connected to automatic shut-off type chargers if of the approved type.

c. Gasoline or liquefied gas (LPG) powered equipment shall be listed by the Underwriters' Laboratories, Inc. This type of equipment shall be stored in detached buildings used only for this purpose, out-of-doors or in areas that are separated from adjacent occupancies by adequate fire cutoffs. When in Public Works garages, LPG tank valves must be secured.

d. Material handling equipment shall be refueled outside in a designated refueling area.

e. Material handling equipment shall be kept clean, reasonably free of lint, excess oil and grease.

14. Internal Combustion Engines

a. Internal combustion engines, either stationary, portable or mobile, operating within grain, hay, grass or brush covered areas shall be equipped with an effective means of arresting and issuance of burning carbon and sparks. Openings in the arresting device shall not exceed one thirty-second of an inch.

b. Internal combustion engines such as lawn mowers, parking lot cleaners, etc. shall not be stored in any building or structure unless approved by the Fire Division.

15. Storage and Parking of Vehicles

21 JUL 1998

a. Vehicles will not be stored or operated inside buildings unless the building was designed, constructed and operated as a vehicle parking or maintenance facility.

b. When it is considered to be in the best interest of the Station to store vehicles inside buildings not specifically designed for such purpose, written permission must be obtained from the Station Commanding Officer.

c. Vehicle refueling shall be conducted outdoors in a designated area only.

d. Vehicles will not be parked or left unattended within 15 feet of any building unless parking spaces have been approved by Traffic Safety and the Fire Department, within 10 feet of any easily ignitable material such as flammable liquids, combustible fibers, etc. or within 15 feet of boxed items or other combustible materials.

e. Gasoline powered scooters, motorcycles and similar equipment shall not be parked in any building except with the specific approval of the Fire Division.

f. Prerequisite to the assignment of mobile home spaces on NAS Lemoore property or the re-occupancy of on-site mobile homes, the owners/occupants shall agree to:

(1) Comply with provisions of the Station Fire Bill.

(2) Furnish, properly install and maintain smoke detectors within the mobile home.

16. Storm Drain, Sewers and Water Areas

a. Flammable and combustible liquids shall not be discharged into or permitted to accumulate in storm drains, storm or sanitary sewers or onto the ground.

b. Flammable or combustible liquids shall not be drained or dumped into or permitted to accumulate in water on or adjacent to the Station or in any waterways such as irrigation canals or wells.

17. Pesticides and Herbicides

a. The Fire Division shall be made fully aware of the types of chemical insecticides and herbicides stored, handled or used

21 JUL 1998

on the Station. Special fire fighting plans will be prepared for buildings where such material is stored and/or used. Item 5, "Fire Protection Engineering Manuals and NFPA Standard No. 430, "Pesticides in Portable Containers," shall be complied with in the storage of pesticides and herbicides.

b. The Fire Division shall be notified prior to any fumigation operations performed on the Station. Such operations shall comply with NFPA Standard No. 57, "Fumigation."

18. Brush and Grass. Controlled burning of ground cover to eliminate grass and weeds shall be performed under the supervision of the Fire Division.

19. Excavation. Extra care shall be taken in excavating around gas mains, oil tanks, gasoline or oil pipe lines, etc. Smoking or open flames of any kind are prohibited in areas where the presence of flammable gases is suspected. In such places the air shall be tested using an approved and properly calibrated flammable gas indicator. If vapors are present, ventilation shall be provided by portable blowers or by other satisfactory methods. Electrical equipment used in such area shall meet the requirements of the Underwriters' Laboratories, Inc., for hazardous locations.

20. Fire and Open Flames

a. Open Flame Devices

(1) The use of open flame lighting devices such as oil lamps, candles, etc., is prohibited except in family housing and by permit for ceremonial purposes and for use in clubs/dining facilities. When these items are used, they shall not be located near any combustibles nor positioned in any way where they could be easily knocked over.

(2) Open flame portable cooking and food-warming devices such as tank gas-fired grills, solid fuel cans and candles shall require permits when used in structures other than family housing.

b. Barbecues

(1) The use of barbecue pits, braziers, grills, etc., are prohibited inside any building, under any structures, on combustible balconies, decks or porches or within five feet of any combustible.

21 JUL 1998

(2) A garden hose should be available to use in case of a fire.

c. Open Fires

(1) Open fires shall not be started at any location on the Station without advance notice to and approval of the Fire Division and the Environmental Management Division.

(2) When welding or cutting is to be done in any location other than in a shop specifically designed for such use or when controlled burning is to be performed, approval of the job and of the precautions taken shall be obtained from the Fire Division before operations are started. In evidence of this approval, the Fire Division shall issue a signed and dated permit indicating approval of the specific job, its duration and the building/area involved.

(3) Incinerators are not allowed on the Air Station.

d. Controlled Burning of Ground Cover

(1) The California Air Resources Board shall determine burn days. All operations shall comply with applicable county, state and federal fire regulations.

(2) The controlled burning shall be performed under the supervision of the Fire Division's fire suppression forces.

(3) Civilian farmers must have a burning permit from Kings County and must show it to the Station's Fire Division upon request.

(4) Authorization to burn may be revoked at any time by the Fire Chief when it is necessary for public safety.

(5) Fires shall not be set when winds exceed 10 miles per hour or when weather conditions are unsafe to burn.

(6) No material shall be added to an existing fire after 1230 or such time as authorized by the Fire Chief. All burning shall be extinguished by 1530.

(7) The burn shall never be left unattended.

21 JUL 1998

(8) When the fire is in the smoldering stage (no flame showing), the fire will be inspected every hour.

21. Fireworks, Pyrotechnics and Explosives

a. The sale, storage or use of fireworks of any description at NAS Lemoore, including family housing, is strictly forbidden, except as authorized in this instruction. Rockets, signaling flares and similar pyrotechnic devices that are officially used by the Navy shall be handled and stored as required by current Navy instructions.

22. Fire Protection and Prevention Color Code

a. The following equipment shall be painted red:

(1) Fire alarm boxes.

(2) Exposed piping for installed fire protection systems, including sprinkler systems of all types, carbon dioxide systems, foam systems, dry chemical systems and standpipe systems.

(3) Post indicator valves and sprinkler control valves.

(4) Fire hose connection pipes, inside or outside of buildings.

(5) Fire extinguisher shells except those which are brass, copper or stainless steel.

(6) Where aesthetically acceptable, areas of walls and columns behind fire extinguishers.

b. The following equipment shall be painted brilliant yellow:

(1) Flammable liquid lockers.

(2) Cans and containers for flammable liquids.

c. Others:

(1) Fire hydrants (fresh water) shall be all yellow.

(2) Halon fire extinguishers for flight line use shall be yellow with a six inch band of reflective white tape on the shell.

21 JUL 1998

CHAPTER X

SPECIAL FIRE PREVENTION MEASURES

1. Exits and Means of Egress

a. Exit facilities shall comply with MIL-HDBK DM-1008B and NFPA Standard No. 101 Life Safety Code.

b. Exit signs

(1) In buildings where artificial lighting is provided for normal use and occupancy, emergency lighting and exit light systems shall be provided following NFPA Standard No. 101.

2. Electrical Guidelines

a. General Requirements

(1) Except as modified herein, all electrical installation shall be per Fire Protection Engineering Manual and NFPA Standard No. 70, The National Electrical Code. They shall be installed by qualified personnel.

b. Wiring

(1) Installation, replacement or alteration of electrical wiring, interior or exterior shall be accomplished only by qualified personnel designated by the responsible maintenance or Public Works Officer.

(2) Flexible cords of any type shall not be used as substitutes for the fixed wiring of a structure; they shall not be used where they run through walls, ceilings, floors, doorways, windows or similar openings, where they are concealed behind walls, ceiling, floors or under rugs or where they are attached to building surfaces.

(3) Electrical wiring shall not be looped, twisted, tied in knots, fastened by nails, hooks or staples, draped over metal rods or other similar supports nor have any item hung from such wiring; the wiring will be securely fastened to walls or ceilings by approved methods.

(4) No live electrical wiring shall be left exposed and unprotected.

(5) Telephone wiring shall not be used for lighting or power circuits.

21 JUL 1998

c. Extension Cords

(1) Extension cords shall be listed by Underwriters' Laboratories, Inc. Extension cords shall be kept dry and free of oil and grease; shall not be used for temporary lighting/appliances longer than 90 days. When the appliance is used longer than 90 days, the extension cords shall be replaced by a hard wired receptacle. If the receptacle is to be used for computers etc., it shall be a line filtered receptacle.

(2) Extension cords may be used if the cord and its connectors are molded/hospital grade and shall not be permitted to be physically damaged.

(3) Only one appliance shall be used with one extension cord at any one time.

(4) Extension cords shall not be used in place of outlets.

(5) Extension cords used for computer/terminal/peripheral equipment shall be line filtered type and shall not be used for other appliances or temporary lighting.

(6) Extension cords shall not be used for heat producing appliances, coffee units, toasters, hot pots, etc.

d. Lighting Fixtures

(1) Combustible or flammable material shall be kept at a safe distance from light bulbs; electric lights shall not be allowed to rest against walls, wooden benches or any combustible material. Paper or other combustible decorations shall not be placed over or near bulbs.

(2) Nothing shall be hung from lighting fixtures.

(3) The installation of fluorescent lights in new construction or replacement of existing units shall be accomplished according to Article 400 of NFPA Standard No. 70. Fluorescent fixtures having exposed ballasts or transformers will not be installed in contact with combustible material unless the fixture is specifically designed for such installation.

(4) No drop lights shall be used in any area where flammable liquids or dangerous chemicals or gases are used or stored unless such lights are specifically designed and constructed for use in such locations.

21 JUL 1998

(5) The unit activity or department shall be responsible for replacing burnt out light bulbs (including exit lights) and fluorescent tubes in their buildings/areas.

e. Circuit Breakers/Fuses

(1) Automatic circuit breakers shall not be taped, fastened or altered to prevent automatic disconnection of electrical power as designed.

(2) Circuit breaker panels shall not be locked; they shall be accessible at all times; no combustible or flammable materials shall be stored within 36 inches of the panel.

(3) Electrical fuses shall not be bypassed or replaced with hazardous substitutes or with fuses having amperage rating.

(4) No device shall be installed which will interfere with the normal operation of the circuit breaker or fuse. When a circuit has been interrupted by a blown fuse or a tripped breaker, the source of disturbance must be located and eliminated by an authorized Public Works electrician before restoring power to the interrupted circuit.

(5) All electrical switches in light and power panels shall be correctly labeled to indicate the circuits and/or devices which they control.

f. Appliances

(1) Electrical appliances and devices shall bear the label or be listed by the Underwriters' Laboratories, Inc.

(2) All heat-producing appliances such as space heaters, coffee pots, hot plates, etc., shall have either a built-in pilot light or be powered from a switch-controller receptacle with pilot light.

(3) Portable electric space heaters shall have built-in thermostats and tip over switches.

(4) The use of toasters, portable space heaters, coffee makers and similar equipment shall not be used without the written permission from the Fire Division.

21 JUL 1998

(5) Hot plates, camp stoves, electric skillets, and ovens are prohibited in private rooms of BEQ's, BOQ's and similar quarters.

g. Grounding

(1) Substantial conductors, having low resistance to ground, shall be used to ground all stationary and portable machines, equipment and other devices in which static charges may be generated in the vicinity of flammable gases or vapors.

(2) Exposed metal around electrical equipment which is normally non-conducting, but which might accidentally become energized, should be grounded whenever any potential hazard exists.

3. Flammable/Combustible Liquids

a. General Requirements

(1) Flammable and combustible liquids shall be stored, handled and used per Fire Protection Engineering Manual and DM-22, "Liquid Fueling and Dispensing Facilities," and NFPA Standard No. 30, "Flammable and Combustible Liquid Code."

(a) Combustible liquid shall mean any liquid having a flash point at or above 100 degrees Fahrenheit.

(2) Flammable/combustible liquids shall not be used in locations where spilled liquids may come into contact with sparks, flames or other heat sources.

(3) All containers of flammable liquids, including drums and barrels, shall be plainly marked to indicate the nature of the contents inside. Small containers, such as gasoline cans not privately owned, shall be painted brilliant yellow and have the word gasoline painted on the outside of the can in one-inch black letters.

(4) Clean and dry sand, fuller's earth, diatomaceous earth, etc. shall be used to absorb spilled flammable liquids, oil and grease. Sawdust or other similar combustible material shall not be used.

(5) Empty flammable/combustible liquid containers shall not be stored or repaired until they have been thoroughly cleansed of hazardous vapors. All such containers shall also be thoroughly cleansed before they are reused for less hazardous

21 JUL 1960

materials. Fuel tanks of small gasoline engines shall also be thoroughly cleansed of hazardous vapors before indoor storage is permitted.

(6) Spark-proof tools and wooden pry bars shall be used while working on flammable liquid pipe connections, fittings, valves, joints, flanges and containers.

(7) Flammable liquids shall not be stored in refrigerators unless they are in well-sealed containers and the refrigerator is an approved laboratory-safe type as described in NFPA Standard No. 56C, "Labs in Health Related Institutions."

b. Cleaning Operations

(1) No flammable liquid with a flash point below 100 degrees Fahrenheit shall be used for a cleaning solvent. Whenever possible, nonflammable or water soluble detergents should be used for cleaning operations.

(2) Flammable solvents with a flash point above 100 degrees Fahrenheit, when used for cleaning by hand, shall be used only in approved cans or trays and for such purposes and in locations approved by the Fire Division.

(3) The use of gasoline as a cleaning solvent is strictly prohibited on the Station.

c. Day-to-day Use Supply

(1) Amounts of day-to-day supply of flammable/combustible liquids permitted inside a building shall be stored in approved flammable liquid storage, metal lockers and located only in areas approved by the Fire Division.

(2) The metal lockers shall be labeled by Underwriters' Laboratories, Inc. or Factory Mutual and shall bear the label FLAMMABLE or such similar designation.

(3) Such storage in approved metal lockers inside a building shall be limited to the quantity necessary to meet the immediate requirements for the job. The metal locker is not to be used in lieu of the flammable/combustible liquid storage places on the outside of the buildings. Prior to the close of the work day, all surplus liquids shall be removed from the building and placed in an outside storage area well clear of the building or any combustible area.

21 JUL 1998

(4) The amount of flammable liquid allowed outside the metal locker while the liquid is being used inside a building is 10 gallons.

(5) Flammable liquids in metal lockers inside a building and in excess of 70 gallons, whether the building is sprinkled or not, must be stored in a holding room specifically designed for such liquids or the liquids must be removed to an outside storage area.

(6) Where approved flammable storage lockers are used, whether inside or outside a building, no more than 120 gallons of Class I, Class II and Class III liquids can be stored; of this total, not more than 25 gallons can be of Class I nor 60 gallons be of Class II liquids. These totals cannot be increased, but they can be decreased at the request of the Fire Division when such amounts create a fire hazard.

(7) All containers in the lockers must be made of metal and the caps kept tightly on the containers.

(8) The amount of extra duplicator fluid stored within a building shall be limited normally to a week's supply if it is stored in tightly capped metal cans in an approved metal locker and does not exceed a quantity considered unsafe by the Fire Division.

d. Storage

(1) The design, construction, installation and use of storage tanks for flammable/combustible liquids shall be as specified in MILHDBK DM-1008B and NFPA Standard No. 30.

(2) All storage tanks shall be listed by Underwriters' Laboratories, Inc. or Factory Mutual Laboratory; they shall be built of metal or other approved non-combustible material.

(3) Storage places for flammable/combustible liquids, including drums and barrels, shall be plainly marked with two-inch lettering to indicate the nature of the storage.

(4) Accessibility to outside storage shall be maintained for fire fighting purposes.

(5) Lift trucks and other material handling equipment used in flammable liquid storage areas must be listed by

21 JUL 1998

Underwriters' Laboratories, Inc. or Factory Mutual Laboratory and must be provided with a flame and spark arrester.

(6) Buildings used for flammable/combustible liquid storage must be specifically designed and constructed for such storage.

(7) Portable above ground tanks used for dispensing flammable liquids shall be properly grounded and bonded according to applicable codes. If there is more than one such tank in the area, there shall be at least a three-foot clearance between the tanks.

(8) All electrical equipment used in the storage area must meet the requirements for hazardous locations as detailed in NFPA Standard No. 70.

(9) External auxiliary fuel tanks (aircraft drop tanks) which have not been purged must be stored as follows:

(a) At least 50 feet from all buildings and/or in an area approved by the Fire Division.

(b) Red tagged with statement on the tag, "This Tank Has Not Been Purged."

(c) Area used for storage clearly marked with signs reading "No Smoking Within 50 Feet."

(d) The storage of external auxiliary fuel tanks in locations and under conditions which do not conform with the above provisions is prohibited unless the procedure outlined in paragraph 3-24 of NAVAIR 00-85A-501 is followed.

e. Drums

(1) Storage of flammable/combustible liquids in drums or barrels shall be subject to the approval of the Fire Division. The class and amount and location of such storage shall conform to Fire Protection Engineering Manual and NFPA Standard No. 30.

f. Dispensing Equipment

(1) Containers used for handling working supplies of flammable/combustible liquids shall be safety cans listed by Underwriters' Laboratories, Inc., Factory Mutual Laboratory or be according to DOD specifications. They shall be maintained in

21 JUL 1998

good condition. Contents of leaking containers shall be transferred to serviceable containers.

(2) Discharge nozzles may be either manually controlled, self-closing type or the automatic closing type with approved built-in, hold-open devices. Nozzles of either type shall be listed by Underwriters' Laboratories, Inc. Where automatic nozzles are used, the precautions enumerated by Fire Protection Engineering Manual shall be observed. Wedges, gasoline tank caps or other makeshift holding devices on gasoline and other flammable liquid-dispensing nozzles are strictly prohibited.

(3) All dispensing of flammable liquids from tank trucks underground tanks shall be done by an approved pumping or water displacement system. Gasoline drums, when used as dispensers, shall be equipped with drum (barrel) pumps of the approved type.

(4) No flammable liquid shall be dispensed into open containers such as buckets or pails. (This does not pertain to collected leaking fuel that may vent from aircraft as long as the collected fuel is disposed of in the proper manner and immediately after the venting ceases.)

(5) When filling a portable container, e.g., safety can, from a drum containing flammable or combustible liquids, the container shall be bonded to the drum. In addition, drums positioned on metal storage racks shall have the respective rack grounded.

(6) Class I or Class II flammable/combustible liquids shall not be drawn from or dispensed into tanks or containers within a building except with the drum in an upright position using approved type barrel pumps and in approved locations, i.e., flammable liquid storage and dispensing rooms.

(7) Gravity discharge of Class I or Class II flammable/combustible liquids from tanks, drums or containers other than safety cans is specifically forbidden within a building.

(8) Dispensing drums for Class I flammable liquids shall be equipped with safety bungs, incorporating a flame arrester of the type approved by Factory Mutual.

(9) Discharge valves for dispensing Class I flammable liquids from drums shall be spring loaded and manually operated. In lieu of spring loaded valves, approved drum pumps can be used.

21 JUL 1000

(b) Portable space heaters must have automatic thermostat controls and a safety tip over switch. All other appliances shall either have a built-in pilot light or be powered from a switch-controlled receptacle with a pilot light.

(c) The appliance shall be located with adequate clearance from combustibles; this is especially true for the space heaters.

(d) The appliance shall have no open coil.

(e) The appliance must not be rated over 1,920 watts and two or more such appliances totaling over 1,920 watts shall not be utilized on the same electrical circuit.

(f) The appliance cord shall not be frayed or spliced or altered in any way.

(g) Extension cords shall not be used with such appliances.

(h) An automatic timer shall not be used to control the power supply of such appliances.

(i) The appliance shall not be operated in storage rooms, closets, lockers or other out-of-sight places.

(j) The appliance shall not be used in the vicinity of flammable vapors or liquids.

(k) All portable space heaters, hot plates, etc. shall be disconnected from electrical outlets when not in use.

(4) The Fire Division may prohibit the use of such appliances in occupancies or situations in which use or operation would present an undue fire hazard.

(5) Portable space heaters using gas or liquid fuel are authorized by permit only at construction sites or as interim emergency heating in unoccupied facilities requiring protection from the cold. Such appliances are prohibited in occupied structures.

5. Interior Finish and Insulation

a. Interior finish is defined as the material of walls, ceilings, wainscoting and other interior surfaces of a building

21 JUL 1998

gravity fuel nozzle to the aircraft. Touch the nozzle to the skin of the aircraft; and connect a grounding cable from the ground to the aircraft.

(d) Fuel bowers shall be grounded at all times unless purged.

4. Heating Systems

a. General Requirements

(1) All heating equipment shall be labeled and/or listed by the American Gas Association, Underwriters' Laboratories, Inc. or Factory Mutual. They shall be located, installed, maintained, operated and approved to ensure maximum safety following MILHDBK DM-1008B and appropriate NFPA Standards.

(2) Only competent Public Works maintenance personnel will overhaul or repair any heating unit.

(3) Any heating equipment that is not working properly shall be secured, and such problem reported to Public Works at once. The unit shall not be turned back on until necessary repairs are accomplished.

(4) Areas in which any heating device is installed shall be provided with the proper ventilation facilities dictated by NFPA Standards.

(5) All heaters shall be turned off or disconnected when not in use or at the close of each working day unless the unit is equipped with an automatic, thermostatic shut-off switch.

(6) The use of open flame type heating devices is prohibited in areas where flammable liquids are used or stored or where flammable vapors are liable to accumulate.

(7) Covered metal containers shall be provided for ashes where solid fuels are used.

b. Oil Heating Systems

(1) Oil burning equipment shall be frequently inspected and periodically overhauled by qualified maintenance personnel. The automatic controls on the oil burning heaters shall not be altered, repaired or adjusted except by authorized maintenance personnel. The vent stacks and flues shall be thoroughly cleaned at least once a year.

21 JUL 1998

(2) The grade of fuel oil in a burner shall be that for which the burner is designed and stipulated by the manufacturer. Crankcase oil or any oil containing gasoline is prohibited.

(3) No oil heater having an integral supply tank shall be filled while the heater is in operation; and only an approved safety can will be used for refueling oil heaters.

(4) Storage or supply for oil burning heaters shall conform to the applicable OSHA and NFPA Standards.

(5) Portable kerosene heaters shall not be used unless approved by the Fire Division and never in rooms used for sleeping purposes.

c. Gas Heating Systems

(1) Gas-fixed heating devices shall be equipped with automatic safety pilots and automatic safety controls as required by MILHDBK DM-1008B.

d. Steam-Heating Devices

(1) No steam-heating unit or pipes shall be used for drying purposes.

(2) At least one inch clear space shall be maintained between all steam pipes and any combustible material.

e. Cooking Stoves, Ranges and Ovens

(1) Operators of cooking equipment must be thoroughly acquainted with operating procedures of the units.

(2) Deep fat fryers must be provided with a primary thermostat to limit the temperature to 425 degrees Fahrenheit and a backup thermostat or thermal cutout to limit the temperature to 450 degrees Fahrenheit.

(3) Thermostats on cooking units must be checked periodically by qualified Public Works personnel. Units with defective thermostats must be secured until repairs are completed.

(4) Deep fat fryers shall not be operated when cooking smoke becomes heavy.

21 JUL 1998

(5) Grills, deep fat fryers, ovens, etc., shall be shut down at least 30 minutes before a building is secured in order to permit such appliances time to cool down.

(6) Exhaust hoods and ducts serving cooking units must be kept free of grease at all times. Removable access panels will be provided in exhaust ducts to permit cleaning.

(7) Fixed fire protection systems shall be installed in the hoods over all ranges, grills, deep fat fryers and broilers when these devices are initially installed or modified.

f. Special Heat Producing Appliances

(1) Heads of departments and commanding officers of fleet activities desiring to operate special heat-producing appliances, (i.e., coffee makers, hot plates and similar devices), shall make out a written request on NASL (309) 11300/19 (3-86), "Special Heat Producing Appliance Authorization," and submit the form to the Fire Prevention Office for fire safety approval and then to Preventive Medicine for health standard approval. Upon endorsement by the Fire Prevention Office representative that all safety requirements are met and by Preventive Medicine that sanitation facilities are adequate, written authorization by said endorsement shall be achieved. The authorization form must then be posted in a conspicuous place where the appliance is being operated. The forms can only be obtained at the Fire Prevention Office, telephone 998-3828.

(2) If a space heater is desired, heads of department and commanding officers of fleet activities shall submit a written request on NASL (309) 11300/19 to Public Works for approval, and then Public Works shall forward the form to the Fire Prevention Office for fire safety approval. Space heaters will be issued by Public Works. Heaters from any source, personally owned heaters, etc., will not be permitted. After approval, the authorization form NASL (309) 11300/19 must be posted in a conspicuous place near the heater. Space heaters will not normally be issued before 1 November and must be turned in by 1 April of the following year.

(3) The heat producing appliance shall comply with the following requirements:

(a) The appliance shall be listed by Underwriters' Laboratories, Inc.

21 JUL 1998

(b) Portable space heaters must have automatic thermostat controls and a safety tip over switch. All other appliances shall either have a built-in pilot light or be powered from a switch-controlled receptacle with a pilot light.

(c) The appliance shall be located with adequate clearance from combustibles; this is especially true for the space heaters.

(d) The appliance shall have no open coil.

(e) The appliance must not be rated over 1,920 watts and two or more such appliances totaling over 1,920 watts shall not be utilized on the same electrical circuit.

(f) The appliance cord shall not be frayed or spliced or altered in any way.

(g) Extension cords shall not be used with such appliances.

(h) An automatic timer shall not be used to control the power supply of such appliances.

(i) The appliance shall not be operated in storage rooms, closets, lockers or other out-of-sight places.

(j) The appliance shall not be used in the vicinity of flammable vapors or liquids.

(k) All portable space heaters, hot plates, etc. shall be disconnected from electrical outlets when not in use.

(4) The Fire Division may prohibit the use of such appliances in occupancies or situations in which use or operation would present an undue fire hazard.

(5) Portable space heaters using gas or liquid fuel are authorized by permit only at construction sites or as interim emergency heating in unoccupied facilities requiring protection from the cold. Such appliances are prohibited in occupied structures.

5. Interior Finish and Insulation

a. Interior finish is defined as the material of walls, ceilings, wainscoting and other interior surfaces of a building

21 JUL 1998

and other interior surfacing materials applied to the walls, movable partitions and ceilings. Exposed insulating and acoustical materials are considered in the category of interior finish.

(1) For new construction, alterations and rehabilitation's, wall and ceiling finishes and movable partitions shall conform to the requirements of NFPA Standard No. 101 except as follows:

(a) Interior finish of all exits, patient rooms and sleeping rooms shall conform to Class A only. Interior finish for all other areas shall be either Class A or Class B.

(b) Use of Class C, D and E materials is not permitted.

(c) Smoke developed ratings by ASTM E-84, "Standard Test Method of Surface Burning Characteristics of Building Materials," shall not exceed 50 for Class A materials and 100 for Class B materials.

(d) Cellular plastic shall not be used as interior finish materials.

(2) In the case of combustible interior finish in existing buildings, alternate measures are as follows:

(a) Cover combustible surfaces with gypsum board or other similar materials.

(b) Protect the building with properly designed automatic sprinkler systems.

(3) Interior finish will be approved by the Fire Division and Public Works prior to the installing of it. It is recommended that the Fire Division be contacted prior to purchasing interior finish to ensure the requirements are met.

(4) Carpet Systems (Carpeting and Underlay Combined).

(a) All carpet must comply with the Department of Commerce Standard for the Surface Flammability of Carpets and Rugs, DOC FF 1-7 (pill test).

(b) Carpet systems for corridors shall meet specific acceptance criteria when tested following Federal Test Method

21 JUL 1998

Standard 372 or Underwriters' Laboratories Chamber Test, UL 992. The flame propagation index of less than 4.0 is acceptable for corridor systems in all facilities. The minimum acceptable criteria, (average critical radiant flux), for corridor carpet systems shall be as follows:

1. For BEQ, BOQ, hospitals and temporary lodging facilities, 0.50 watts per square centimeter.

2. In all other facilities, 0.25 watts per square centimeter.

(c) The Fire Division shall be provided a copy of the testing certificate of all carpets, drapes, curtains, etc., installed.

b. Thermal and acoustical insulation shall have flame-spread rating not higher than 75 and smoke-developed rating not higher than 150 by Standard Test Method for "Surface Burning Characteristics of Building Materials," ASTM E-84 test, unless the material comes under the exceptions in MILHDBK DM-1008B, Chapter 2, Section 6, paragraph 2.

6. Automatic Data Processing Facilities

a. Fire Prevention activities shall follow Publication RP-1 of the United States Fire Administration: "Standard Practice for the Fire Protection of Essential Electronic Equipment Operations;" Chapter 6, "Operating Environment" and Chapter 8, "Emergencies," sections "Emergency Organization" and "Training for Emergencies."

b. Fire protection for automatic data processing facilities will follow Fire Protection Engineering Manual and NFPA Standard No. 75, "Computer Data Processing Equipment."

c. Supplies of combustibles in excess of that needed for the efficient operation of the computers or bulk storage of records shall not be stored in the computer rooms.

7. Warehouse and Storage Spaces

a. General Requirements

(1) Fire Protection Engineering Manual and DM-32, "Supply Facilities," NAVSUP Publications No. 284, "Storage and Materials Handling," 284-1, "Storage and Materials Handling Navy

21 JUL 1998

Supplement," and NFPA Standards No. 231, "General Indoor Storage," and 231A outlines the requirements for warehouses, storage buildings and general storage spaces.

(2) Smoking shall be strictly prohibited in all warehouses, storage sheds, storage areas of buildings, etc., except in such locations as may be approved by the Fire Division. Such locations shall be appropriately posted and shall be provided with an adequate number of suitable receptacles for discarding smoking material.

(3) Overhead storage may be used for the storage of combustibles only when approved by the Fire Division.

(4) Storage in basements, attics or under stairwells shall be permitted only as authorized by the Fire Division.

(5) No storage shall be permitted in boiler rooms, mechanic rooms, electrical panel rooms, locker rooms or sleeping quarters.

(6) Storage in shop and processing areas shall be restricted to normal operational requirements.

(7) Grass and brush shall be kept trimmed within 25 feet of storage buildings and/or areas.

(8) Materials or equipment left on ramps or loading docks overnight shall not block access to any window or door.

b. Clearances

(1) Where automatic sprinkler protection is provided, clearance of at least 18 inches shall be maintained under sprinklers. Clearance of up to 36 inches may be required where the nature of the material stored requires greater clearance or where cases and bales are stored in large, tightly packed piles.

(2) Where automatic sprinkler protection is not provided and reliance is placed on hose streams for fire extinguishment, there shall be a clearance of approximately 36 inches between the top of the piles and the underside of the lowest beams, girders or other ceiling obstruction which might restrict the play of hose streams over the material.

(3) A 36-inch clearance shall be maintained over storage of hazardous materials.

21 JUL 1998

(4) A 36-inch clearance shall be maintained over storage piles higher than 15 feet.

(5) An 18-inch clearance shall be maintained between lighting or heating fixtures and stored goods.

c. Aisles and Walkways

(1) Main aisles not less than eight feet in width shall be maintained at reasonable intervals to provide convenient access to all portions of the storage area.

(2) Cross aisles of not less than 4 feet in width shall be maintained for piles up to 10 feet in height or 5 feet in width where piling exceeds 10 feet in height. Where cross aisles are provided, they shall be located opposite window or door openings in exterior walls as far as practical and shall be kept clear at all times.

(3) Wall aisles at least 24 inches in width shall be maintained in warehouses.

d. Fire Doors

(1) Only those doors through which normal warehouse traffic must pass may be kept open during working hours; these doors must be equipped with automatic closing devices.

(2) Fire doors shall be closed when the building is unoccupied and at all times when they are not needed as a passageway.

(3) Fire doors shall never be blocked in the open position.

(4) Material shall not be stored within 36 inches of fire door openings.

(5) Around the path of travel of fire doors, a 24-inch clearance shall be maintained unless a barricade is provided, in which case, no clearance shall be required.

(6) Care will be exercised that fire doors are not damaged by fork lifts and other material handling equipment or personnel. No changes shall be made to the fire doors without approval of the Fire Division.

21 JUL 1998

e. Outdoor Storage

(1) The location for outside storage shall be approved by the Fire Division.

(2) Sufficient clearance space from combustible structures or other combustible storage shall be maintained. Adequate clearance space between storage piles and highways and railroads shall also be maintained.

(3) Adequate approaches and aisles between storage piles shall be maintained so fire fighting equipment may have proper access; the aisles should be at least 15 feet in width and have as few bends and turns as possible.

(4) The entire storage area shall be kept free from accumulation of unnecessary combustible materials.

8. Hangars

a. Good housekeeping practices shall be observed at all times; this is especially true in the hangar bays, in the work shops adjacent to the bays and the outside areas at the ends of the hangars. Every effort shall be made by all personnel to keep these areas clean and free of any unsafe fire condition.

b. No smoking shall be allowed in the hangar bays or ramps or in any maintenance shop except in those spaces approved and so designated as smoking areas by the Fire Division.

c. The hangar bay drainage curbs shall not be used for the disposal of flammable liquids or waste oil, they shall be kept clean at all times.

d. No heater employing an open flame or glowing element shall be installed in an aircraft storage and servicing area or in sections communicating therewith except as authorized by the Fire Division.

e. Hangar bays shall not be used for storage areas other than for aircraft and aircraft parts unless approval is obtained from the Commanding Officer.

f. Fire doors leading to shop areas from the hangar bays as well as the other fire doors in the hangars shall not be wedged, wired or blocked in the open position; they shall remain closed

21 JUL 1998

unless in actual use. The hangar bay sliding door recesses shall not be used for storage purposes, nor shall they be blocked by vehicles, trash containers or other materials.

g. Exits and access aisles shall be conspicuously and permanently marked on floors and shall be kept clear at all times. Fire lanes shall also be marked and kept clear at all times.

h. All grounding electrodes in hangar floors and ramp areas shall be tested as required by NFPA Standard No. 407, "Aircraft Fuel Servicing," to ensure their grounding capability remains sufficient to handle their intended load. The grounding cups (pad eyes) shall be kept clean. Grounding wires and clamps shall be maintained in good repair. Grounding cables, when not in use, shall be hung on hooks in designated locations on bulkheads or rolled up in their dispensers. Care shall be taken to prevent the clamps on grounding cables from becoming damaged.

i. All aircraft inside the hangars shall be grounded at all times. Aircraft in dead storage with fuel tanks removed or drained and purged need not be grounded.

j. All electrical equipment, sparking contacts and any other possible ignition source shall be at least 18 inches above floor level.

k. No vehicle shall be parked in front of hangar doors or outside the hangar in a position to restrict fire fighting apparatus, operations or the evacuation of aircraft from the hangar in an emergency.

l. No automotive equipment shall enter or be parked inside the hangar except as required for actual loading or unloading of equipment and/or material. Line vehicles shall not enter or remain in hangars except when needed in operations involving aircraft.

m. Aircraft shall be parked in hangars with nose facing outward so that they can be quickly towed out of the area in case of an emergency. The only exception is when maintenance requirements dictate that the aircraft nose must be pointed inward. (Example: engine removal on an FA-18.) For such an operation, approval must be obtained from the Fire Division.

n. Drip pans shall be kept under aircraft in hangars to catch minor hydraulic, oil or fuel leaks. When such pans become

21 JUL 1998

full, they shall be emptied in the bowser provided for such waste material outside the hangar.

o. An approved absorbent material shall be used to clean up hydraulic spills on the hangar bay floors and ramp areas; water shall not be used.

p. No aircraft or drop tank shall be refueled or de-fueled inside a hangar unless written approval is obtained from the Station Commander. Fuel transfer operations shall be done, if at all possible, outdoors and not inside the hangars.

q. No welding or cutting on aircraft shall be performed inside a hangar without the written approval of the Gas-free Engineer and the Fire Division when all precautions as outlined in NFPA Standards No. 410, "Aircraft Maintenance," and NASLEMINST 5100.13.

r. Spray painting of aircraft in the hangar shall be limited to touch up painting only as outlined in NASLEMINST 4750.1J.

9. Welding and Cutting

a. General Requirements

(1) The applicable standards and precautions enumerated in NASLEMINST 5100.13 and in NFPA Standard No. 51, "Welding and Cutting," and 51B, "Welding and Cutting Processes," shall be observed in all welding and cutting operations.

(2) Welding and cutting operations can be performed only with certification from a Gas-Free Engineer or Fire Division.

(3) When welding or cutting is to be done in any location other than a shop specifically designed for such use, approval of the job and of the precautions taken shall be obtained from a Gas-Free Engineer or the Fire Division. As evidence of this approval, the Fire Division or Gas-Free Engineer shall issue a signed and dated permit indicating approval. However, requests for these permits shall be submitted sufficiently in advance to permit determination and accomplishment of any special fire prevention measure that may be required.

(4) All welding and cutting operations shall be under the supervision and control of a competent supervisor, who shall see that all regulations pertaining to welding and cutting operations are complied with.

21 JUL 1998

(5) Operators of welding and cutting equipment shall be properly instructed and qualified to operate such equipment. Instruction shall include precautions against hazards related to the operations.

(6) When combustible or flammable materials are exposed to welding or cutting operations, a fire watch shall be posted in the vicinity with necessary extinguishers or fire hose or comply with the Gas-Free Certificate if issued. Fire watches shall be posted on both sides of a deck, bulkhead, wall or ceiling being worked on when fire hazards exist on both sides. The fire watch shall remain at his station for a reasonable time (at least 30 minutes) after the job is completed to ensure that there are no live sparks or smoldering fires.

(7) When the equipment is left unattended or when work is stopped for more than 15 minutes, acetylene and oxygen valves shall be closed at the cylinders. When an operator is using electric welding equipment, the power supply switch to the equipment shall be opened. The equipment shall be completely disconnected from the source of power when not in use.

(8) When working in a confined space, the Gas-Free Engineer must be contacted. All provisions of the certificate must be adhered to such as during lunch time or overnight, the following special precautions must be taken:

(a) When welding cable or hose is in the path of traffic, it shall be protected from chaffing damage by a protective, wrapped covering, properly secured by lines to prevent undue strain on cable or hose.

(b) No cutting or welding shall be performed within 35 feet of combustible storage or combustible packaging without special safeguards and the approval of the Fire Division.

(c) Welding and cutting operations shall not be performed in or on the outer surfaces of rooms, compartments or tanks or in areas adjacent to rooms, compartments or tanks, nor in closed drums, tanks or other containers which hold or have held flammable materials, liquids or vapors until the fire explosion hazard has been eliminated and certified by Gas-Free Engineering personnel.

(d) When combustible or flammable materials are exposed to welding or cutting operations, a certificate from the Gas-Free Engineer must be obtained.

21 JUL 1998

(e) When welding or cutting is being performed in any confined space, a certificate must be obtained from the Gas-Free Engineer.

(f) An adequate supply of fire extinguishers will be located near the operation, ready for use.

(g) After all welding and cutting operations have been completed, the area will be thoroughly inspected to detect any fire or smoke by the supervisor.

(h) The use of liquid acetylene in welding is prohibited.

b. Cylinder Requirements

(1) All cylinders shall be handled carefully. All cylinders in use shall be secured in the vertical position using non-combustible banding.

(2) Under no circumstances shall acetylene be generated, piped, (except in approved cylinder manifolds), or utilized at pressure in excess of 15 psi gauge pressure. This does not apply to acetylene in cylinders. This pressure limitation is necessary to avoid the possibility of explosive decomposition.

(3) Cylinders shall be kept far enough away from the actual welding or cutting operation so that sparks, hot slag or flame will not reach them, or fire resistant shields shall be provided.

(4) Oxygen cylinders shall be kept free of oil and grease at all times. A high pressure leak from any oxygen cylinder may cause a sufficient amount of rapid oxidation to ignite gasoline, oil, grease, alcohol or organic material, and result in fire or explosion.

(5) Cylinders shall be provided with flash back arresters.

(6) Cylinders should be secured on a wheeled truck when in use so that they can be easily moved if a fire occurs in the immediate vicinity.

(7) Regulators shall be removed and valve protection caps shall be put in place before cylinders are moved or stored away.

21 JUL 1998

(8) Acetylene and oxygen cylinders, except where installed in standard welding rigs, shall be stored at detached, well-ventilated locations and shall be shielded from the sun by non-combustible shelter or canopy. Cylinders shall be lashed in the vertical position; the caps shall be in place; the acetylene cylinders shall be isolated from the oxygen cylinders by a clear distance of at least 20 feet or by an unpierced, gas-tight non-combustible wall. Smoking is prohibited within 50 feet of such areas.

(9) If acetylene cylinders are stored in the horizontal position, the cylinders must be placed in the vertical position for at least two hours before using; otherwise, acetone, in which the acetylene is dissolved, will be drawn out with the gas.

(10) No more than one day's supply of spare cylinders may be stored at the job site. Any more cylinders than that must be stored in a cylinder designated storage area.

c. Aircraft Welding Requirements

(1) Only gas-shielded arc welding shall be performed on aircraft.

(2) Aircraft welding operations shall be done outdoors whenever possible.

(3) The Gas-Free Engineer and Fire Division shall be notified of the operation so that a certificate may be issued.

(4) A Gas-Free Engineer shall be notified, in order to perform a gas-free engineer service.

(5) The welding area shall be roped off or otherwise segregated by a physical barrier to prevent unintended entry into the welding area. The area shall be placarded "Welding Operations in Progress."

(6) Welding shall not be performed on an aircraft while work is in progress on any system or component of the aircraft which contains, or did contain, fuel or other flammable or combustible liquids.

(7) Welding shall not be done on an aircraft while work is in progress on the fuel systems on any other aircraft within 100 feet from the point of welding.

21 JUL 1998

(8) No other work shall be permitted within a 20-foot radius of the point of welding or within a 36-foot radius of any other type of welding operation. All other work may be conducted routinely provided flammable vapors are not present.

(9) All fuel tank vents on the aircraft being worked upon and vents of other aircraft within a 20-foot radius of the welding operation shall be covered prior to the start and during the welding operation.

(10) Fuel tank access plates and any fuel tank openings shall be closed on all aircraft within 100 feet of the welding operation.

(11) All fuel lines, valves, manifolds and other fuel components on the aircraft on which the welding is being done shall be secured.

(12) A tow bar should be attached to the aircraft and a tug made available for emergency towing.

(13) A fire watch shall be assigned during the operation.

10. Battery Charging

a. Only authorized personnel instructed in the hazards and precautions connected with the handling of acids and the charging of batteries shall be employed in a battery shop.

b. Battery charging installations shall be located in areas designated for such operations and shall be used exclusively for that purpose.

c. Battery charging equipment shall be located in separate rooms built or lined with substantial non-combustible materials.

d. The shops shall be adequately ventilated at the highest point to allow removal of hydrogen gas. Air inlet openings must be provided near and below the level of the batteries on charge to assure good air circulation. Where natural ventilation is used, a vent stack is required to aid in producing an upward draft. (Adequately ventilated means when hydrogen gas concentration at a distance greater than six inches above the cells is maintained below 3%.)

21 JUL 1998

e. Open-type lights, light fixtures and exhaust fans shall not be allowed in the vicinity of batteries on charge.

f. Precautions shall be taken to prevent open flames, sparks or electric arcs in battery charging areas. Smoking shall be prohibited in the charging area.

g. Appropriate warning signs shall be posted when battery charging is in progress.

h. When charging batteries, the vent caps should be kept in place on the batteries to avoid electrolyte spray. Care shall be taken to assure that vent caps are functioning. The battery or compartment cover(s) shall be open to dissipate heat.

i. Connections between batteries shall not be disturbed while the charging switch in "ON."

j. The charging rates shall be reduced as cells approach full charge, thus lowering the rate of hydrogen liberated.

k. Battery charges, especially the portable type, shall not be placed in operation in any area where flammable liquid vapors may be present.

l. Aircraft batteries shall not be charged when installed in an aircraft located inside or partially inside a hangar.

11. Hazardous Chemicals and Gases

a. Dangerous chemicals and compressed gases shall not be stored in such a manner that accidental breakage, leakage, rupture of containers or their exposure to fire, heat or water, will not result in the mixing of such materials with other substances which might produce fire, explosion, flammable gases or toxic fumes, or jeopardize the safety of personnel and material.

b. Limitations on floor area and clearance of different types of stored materials are included in the Fire Protection Engineering Manual, NAVSUP 234, and NASLEMINST 5090.4.

c. Some chemicals must be stored in fire resistant structures without sprinkler protection due to their reactivity with water. These include calcium carbide, unslaked lime, sodium and potassium peroxide, chlorine dioxide, metallic calcium,

21 JUL 1998

sodium, potassium and other chemicals that react violently with water. They should be stored in cool protected places and away from direct heat. Spillage of some chemicals may cause fire or liberate dangerous gases. Whenever stored, signs marked "CHEMICALS-DO NOT USE WATER" must be posted. The Fire Chief shall approve such areas of storage prior to its use.

12. Oxygen Systems

a. General Requirements

(1) The procedures for operating, maintaining, repairing, installing, locating, etc. of oxygen systems, whether gaseous or liquid, shall conform to Fire Protection Engineering Manual, NAVFAC DM-24, "Land Operational Facilities," and NFPA Standards No. 50, "Bulk Oxygen Systems at Consumer Sites," and 51, "Welding and Cutting," and the 56 Series.

(2) Only qualified or authorized personnel trained and under the supervision of qualified personnel shall operate oxygen systems.

(3) Oils, refuse, finely powdered metals and other flammable and/or combustible materials shall be kept out of areas where oxygen is stored, handled or used.

(4) Under no circumstances shall any organic material, hydrocarbon or flammable liquid be allowed to come into contact with oxygen cylinders, valves, regulators, gauges, fittings, etc.

(5) Oxygen containers shall be equipped with vents or relief valves which shall discharge to the outside atmosphere. The operation of safety devices shall be periodically inspected and shall be kept free from moisture, ice and other obstruction.

(6) Oxygen transfer equipment shall be washed or purged in trichlorotrifluoroethane to remove grease and oil. Pipe lines and valves shall be purged with oil-free nitrogen before making repairs.

(7) Tools and clothing used with oxygen systems must be kept free of oil and grease.

(8) Oil-lubricated equipment of any kind shall not be permitted to come into contact with oxygen systems.

(9) No open flame, spark-producing equipment or smoking shall be permitted within 50 feet of any oxygen systems.

21 JUL 1998

(10) Oxygen equipment shall not be used to store or transfer any other gas or liquid.

(11) Oxygen shall never be substituted for compressed air or vice versa.

(12) Gaseous oxygen-transfer equipment shall never be used to transfer liquid oxygen or vice versa.

b. Liquid Oxygen

(1) Only hose, pump valves, gauges, connections, evacuating equipment, etc., designed for liquid oxygen shall be permitted in the handling of liquid oxygen.

(2) If a liquid oxygen spill occurs, notify the Fire Division. Let the spill evaporate; do not try to clean up or mop up any of the spilled liquid.

(3) Liquid oxygen recharging shall not be conducted indoors under any circumstances nor within range of any drainage system elements.

(4) Liquid oxygen shall not be permitted to drain or spill on the pavement, especially asphalt pavement. Intentional drainage of liquid oxygen shall be caught in a clean drain can/pan and shall be allowed to evaporate in an open area.

(5) Rubber hose shall not be used for the transfer of liquid oxygen because the hose becomes hard and brittle when exposed to the low temperature.

c. Storage

(1) Oxygen shall be stored only in locations approved by the Fire Division and shall be protected against tampering by unauthorized persons.

(2) Oxygen storage areas shall be outdoors or in a detached non-combustible structure following NFPA Standard No. 50.

(3) Oxygen cylinders stored inside buildings shall be stored in a well-ventilated, well-protected, dry location.

(4) Storage areas shall be reserved for liquid or gaseous oxygen only.

21 JUL 1998

(5) All oxygen storage areas must be clearly marked with "Caution" and "No Smoking" signs.

(6) Oxygen cylinders and tanks shall be stored in the upright position and secured so they cannot be knocked over. Empty cylinders shall have their valves closed; caps shall be in place on the cylinder heads when not in use.

(7) Brush and seed growth shall not be permitted within 100 feet of oxygen storage areas.

(8) Except in an area specifically designated for such parking, no oxygen cart or trailer shall be parked or stored within 15 feet of any building.

(9) Oxygen shall not be stored in aircraft servicing and maintenance areas of hangars or near flammable materials, other readily combustible substances or in the same fire area as other compressed combustible gases.

d. Aircraft Operations

(1) Only authorized personnel familiar with liquid and gaseous oxygen and the associated equipment shall be permitted to service the aircraft and operate equipment.

(2) Liquid oxygen servicing of aircraft shall be accomplished only in an open area, on a concrete surface free of oil and flammable materials and at least 50 feet from vehicles, roadways and sources of ignition.

(3) Liquid oxygen service shall not be conducted while an aircraft is being refueled, de-fueled or while maintenance work is being performed on it.

(4) Oxygen carts shall not approach or be parked within 100 feet of any fuel transfer operation. Oxygen carts shall not approach any aircraft for oxygen-servicing until the refueling vehicle has left the vicinity.

(5) Aircraft electrical system switches shall not be operated, nor shall ground power generators be connected or disconnected during oxygen-servicing operations. The aircraft electrical power shall be off during oxygen-servicing.

(6) Aircraft shall be electrostatically grounded and the oxygen cart or cylinder and/or liquid oxygen converter shall be electrostatically bonded to the aircraft.

21 JUL 1998

(7) Before commencing oxygen recharging of an aircraft, the aircraft filler connection shall be carefully inspected to ensure that it is perfectly clean. All dirt, dust, grease or moisture shall be wiped off with a clean, lint-free cloth. It is essential that this union connection be scrupulously cleaned. The flexible hose from the oxygen cart or cylinder shall be checked to assure that the hose is similarly cleaned. Also, prior to connecting to the aircraft oxygen filler connection, the cylinder valve shall be slightly opened in order to clear the valve and hose of any dust or contamination which cannot be detected by external inspection. It is only necessary to crack the oxygen valve slightly and momentarily to achieve this cleaning, and care should be taken to point the valve away from the body.

(8) No APU or starting units shall be connected to or operating in the vicinity of the aircraft during the oxygen operation.

13. Compressed Gases and Cylinders

a. Compressed gas cylinders shall be used only in approved locations and will be removed to approved storage areas at the close of each day's work unless otherwise authorized by the Fire Division.

b. Cylinders showing evidence of rust, corrosion, dents or other surface defects shall be considered hazardous and shall be bled down to atmospheric pressure. They must be hydrostatically tested prior to subsequent use.

c. The color of compressed gas cylinders shall conform to MIL-STD 104A and MIL-HDBK 1192, "Color for Naval Shore Facilities."

d. The cylinders shall be equipped with a safety relief device as a safeguard against the building-up of hazardous pressures when exposed to heat or from overcharging.

e. Cylinders will not be dropped or exposed to severe impact; they will be isolated from open flames, heat and direct sunlight insofar as practical.

f. The valves of all cylinders shall be closed before they are moved or when not in use. Shut-off will be at the cylinder and not at the regulator or dispensing tip. The regulator shall be removed before the cylinders are moved; the cylinder cap shall be in place when cylinders are in storage or in transport.

21 JUL 1998

g. Gases from the cylinders must be used through pressure-reducing regulators.

h. Oil, grease, dust or readily combustible materials will not be permitted to come into contact with cylinders valves, regulators, gauges or fittings.

i. Compressed gas cylinders which have the markings or labels obscured or which have not been hydrostatically tested (required every five years) shall be returned for testing before recharging.

j. Empty cylinders shall be tagged "EMPTY" and segregated from full cylinders. Empty cylinders shall be treated as if they were full ones.

k. Mixing gas in the cylinders is prohibited.

l. Cylinders with improperly operating valves or defective regulators shall not be used until such repairs are performed by qualified personnel.

m. Spark-resistant tools shall be used on cylinders holding flammable gases.

n. The following general storage for compressed gas cylinders shall be observed.

(1) The Fire Chief shall approve areas for proposed storage.

(2) Non compatible or reactive gases stored within buildings shall be separated by gas-tight partitions; when stored in the open, they shall be protected from the sun by a non-combustible roof, and the cylinders shall be separated by a well-ventilated clear space of at least 20 feet. Combustible gases shall never be stored with oxidizing gases such as oxygen, chlorine, etc. However, inert gases such as helium, nitrogen, carbon dioxide or argon, may be stored with either flammable or oxidizing gases.

(3) All locations or areas used for cylinder storage of flammable gases shall be provided with natural cross ventilation.

(4) Cylinders in storage shall be secured with non-combustible material to prevent movement or falling.

21 JUL 1998

(5) Cylinders containing acetylene, chlorine and sulfur dioxide will be kept in the upright position.

14. Liquefied Petroleum Gases

a. The design, construction, installation, location, recharging and storage of Liquefied Petroleum Gas (LPG) containers shall comply with Fire Protection Engineering Manual and NFPA Standard No. 58, "Storage and Handling of Liquefied Petroleum Gas."

b. In the event of fire involving LPG, every effort should be made to shut off the main source of supply. If the supply cannot be cut off, use every precaution to protect adjacent exposure and permit the fuel to burn until the container is empty.

15. Painting Operations

a. General Requirements

(1) Paints, varnishes, lacquers and thinners shall be kept in approved safety cans or in approved metal containers with tight fitting covers.

(2) The quantity of paint, thinner, etc. taken into a building shall be limited to one day's supply.

(3) Good housekeeping practices shall be emphasized in the painting area to prevent accumulation of trash and debris left over from the painting.

(4) No smoking shall be allowed in the painting operations area.

(5) Adequate ventilation shall be provided before painting operations of any kind are performed.

(6) Rejected paint, scraped residue, empty paint containers and waste masking tape shall not be left in the building, but it will be disposed of daily before the close of the operations.

(7) The withdrawal or transfer of volatile flammable paints, thinners, etc., from bulk containers shall be done only in open and well-ventilated areas.

21 JUL 1998

(8) Flammable paints, thinners and similar materials remaining in cans, tarpaulins and drop cloths and soiled brushes, rollers, etc., when not in use or at the end of the painting operation, shall be removed from the building and stored in approved metal lockers that are detached and at least 15 feet from the building.

b. Spray Painting

(1) Production-type spray painting shall not be conducted within buildings unless standard spray booths and exhaust systems are provided. Spray booths shall be designed, located and installed following NFPA Standard No. 33, "Spray Application Using Flammable and Combustible Materials."

(2) Spray painting of building interiors may be permitted subject to the approval of the Fire Division and observance of the following precautions:

(a) All electrical power shall be secured. This shall be assured by removing fuses or by tripping and placarding circuit breakers.

(b) All open-flame equipment and devices shall be secured.

(c) Smoking shall be strictly prohibited.

(d) Adequate natural ventilation shall be provided. Forced draft ventilation may be used only if fans are operated or have motors listed and labeled by Underwriters' Laboratories, Inc., as suitable Class I Division 1 location and with power supplied from outside the building or fire area.

(3) All spray areas will be kept as free from flammable and combustible materials as is practical. The using activity will remove, daily if necessary, accumulations of combustible paint residue from spray booths, stacks, ventilating fans and painting areas.

(4) All metal parts of spray booths, exhaust ducts and piping systems conveying flammable liquids will be provided with permanent electrical grounds.

(5) The exhaust ventilation system shall be kept in operation at all times while spraying is being conducted and for a period after to ensure all paint vapors have been removed.

21 JUL 1998

(6) Procedures shall be established to ensure replacing overspray collector filters before excessive restriction to airflow occurs. Filters shall not be used when applying a spray material known to be highly susceptible to spontaneous heating and ignition.

(7) Floor coverings in the spray area shall be of non-combustible material.

(8) Space heating appliances, steam pipes or hot surfaces shall not be located in the spray area.

(9) Portable light fixtures used in the spray area shall be designed for Class I Division 1 hazard locations.

(10) Sprinkler heads in spray booths shall be covered with light plastic or paper bags or similar protection material; the covering shall be changed as required.

(11) Spray guns, hoses and attachments shall be the approved type and shall be inspected and maintained in proper order.

(12) Spray painting shall not be done in spaces below ground level unless approved by the Fire Division.

(13) Spray booths, rooms or other enclosures used for spraying operations shall not alternately be used for the purpose of drying by any arrangement which will cause a material increase in the surface temperature of the spray booth, room or enclosure.

(14) Only previously mixed paint, within the tank supplying the spray gun, shall be brought into the building. Only safety approved cans or tanks will be used for cleaning spray guns and paint brushes.

(15) Scrapers, spuds or other such tools used for cleaning paint spray areas should be of non-sparking material.

c. Aircraft Spray Painting. Spray painting of aircraft in hangars will comply with NASLEMINST 4750.1J.

16. Dipping and Coating Operations

a. The location, design, installation, operation and maintenance of dipping and coating tanks shall conform to NFPA Standard No. 34, "Dipping and Coating Processes Using Flammable or Combustible Liquids."

21 JUL 1998

b. The area where the tank is located shall have a ventilation system by NFPA Standard No. 91, "Blower and Exhaust Systems." It shall be in operation at all times during the dipping or coating process.

17. Purging and Inserting Operations

a. Purging and inserting operations of tanks, containers or aircraft shall conform to the requirements NAVSEA S6470-AA-SAF-010.

b. Inserting is the use of an inert gas to reduce the oxygen content of the atmosphere in an enclosed space to a concentration at which combustion cannot take place, while purging is the process of displacing the flammable vapors from an enclosure.

c. Only qualified persons knowledgeable in the hazards of purging or inserting processes shall be allowed to perform the operation. All persons, except those engaged in the operation, shall remain clear of the purging/inserting area.

d. All purging/inserting operations shall be performed, when possible, outdoors in a well-ventilated and safe area approved by the Gas-Free Engineer. If the operation must be performed inside a building, the building shall be an approved structure for that type of operation that is clearly segregated from other operations and indicated as a hazardous area.

e. Tanks, containers and aircraft shall be properly grounded and bonded before purging/inserting operations can begin.

f. No sources of ignition, open flames or other heat sources shall be permitted in the purging/inserting area until the operation is completed and a safe vapor level reading is achieved.

g. Only electrical equipment rated as Class I Division 1 hazardous locations shall be allowed in the purging/inserting area. (NFPA 70)

h. All tanks and containers must be properly vented during the purging/inserting process to ensure no vapors or oxygen will remain trapped in the tanks or containers.

i. No other maintenance activities shall be conducted while the purging/inserting process is in progress.

21 JUL 1998

j. Tanks, containers and aircraft being purged/inserted shall be placarded with the proper signs warning all that purging/inserting is in progress.

k. Compressed Carbon Dioxide shall not be used as an inserting gas. Carbon Dioxide, if used, shall be in the form of dry ice.

l. Prior to performing any work (especially hot work such as welding) on any tank, container or aircraft or entering an enclosed tank or container that has been purged/inverted, the tank, container, aircraft or enclosed area must be certified vapor-free by a qualified Gas-Free Engineer.

m. All pressurized tanks shall be properly depressurized before purging/inserting is begun.

n. Aircraft drop tanks shall be purged/inserted outdoors in a well-ventilated area.

o. An aircraft's electrical system shall be de-energized or its batteries removed before any purging/inserting operation is begun.

p. The proper amount and type of fire extinguishers must be posted in the purging/inserting area.

18. Fueling and De-fueling Operations

a. General Requirements

(1) Fueling and de-fueling operations shall be done only in areas approved by the Fire Division following applicable codes.

(2) Electrical equipment used in fueling/de-fueling areas shall be for Class I Division 1 hazardous locations.

(3) No tank truck, pump, bowser or other equipment which is not in safe operating condition shall be used for any fuel handling operation.

(4) The fuel-handling area shall be cleared of vegetation and other combustible materials.

(5) Fire extinguishers in and around fuel-handling equipment shall be inspected daily by the activity using or

21 JUL 1998

responsible for such equipment, and any apparent or suspected discrepancies shall be reported to the Fire Division.

(6) Only authorized and qualified personnel shall be permitted to operate fueling equipment. They shall have a thorough knowledge of the hazards involved and know the regulations for handling flammable and combustible liquids. Also, they must be familiar with the location and operation of the nearest fire alarm box or telephone, the fire reporting emergency number, the location and operation of available first aid fire fighting equipment and the location of the emergency shut-off devices.

(7) The fueling/de-fueling operations shall never be left unattended.

(8) Personnel engaged in fuel handling operations shall not wear shoes with exposed nails, metal plates or hobnailed.

(9) No smoking or open-flame devices shall be allowed within 100 feet of a fueling/de-fueling operation.

(10) After unreeling the fueling hose and before using it, the hose nozzle must be brought into contact with some metal part of the vehicle remote from the fuel tanks to make sure no differential-in-static charge exists. The metal nozzle shall be kept in continuous contact with the metal fill point during the fueling operation.

(11) The fueling hose shall be kept coiled or on its reel at all times except when used for fueling or de-fueling.

(12) Wedges, locking devices, etc., which restrict instant shut-off in fuel lines during fueling/de-fueling operations, shall be prohibited.

(13) Fuel tanks shall not be filled completely full to allow for expansion due to heat.

(14) Operations of vehicles or other spark-producing equipment will turn off the engine, vehicle lights and radio transmitters before taking on fuel.

(15) Fueling operations or the transfer of Class I flammable liquids shall be prohibited in the vicinity of operating high intensity radar equipment, high frequency radio antenna or antenna down-leads.

21 JUL 1998

(16) Refueling/de-fueling operations shall be discontinued during electrical storms and when a fire alarm sounds or a fire is reported within 1,000 feet of any fueling operation.

(17) Material handling equipment, with the exception of straddle trucks, shall not be refueled with the operator aboard.

(18) No maintenance work shall be performed on a vehicle while it is being refueled.

b. Fuel Tank Trucks

(1) All government owned vehicles handling fuel must be equipped with two fire extinguishers having a rating of at least 20B with one extinguisher mounted on each side. The fire extinguishers shall be inspected monthly by the vehicle operator.

(2) Fuel tank trucks shall neither enter nor be stored in any building not designated for that purpose unless approved by the Fire Division. Tank trucks should be parked in an open area at least 100 feet from buildings and flammable areas. When numerous tank trucks are being stored, they should be in detached groups so that they will not be aggregate cargo capacity exceeding 25,000 gallons in a single group. Groups should be detached at least 50 feet from each other and the slope of the pavement or ground should be such that a serious spill at one group would not flow to or near another group, structure or yard storage area.

(3) Containers, trucks or vehicles transporting flammable liquids or gases shall be left overnight only in locations approved by the Fire Division.

(4) Fuel trucks having leaky or otherwise defective pumping equipment shall not be used and shall be so placarded.

(5) All fuel tank trucks must be plainly marked with the grade of fuel, oil, etc., to be handled.

(6) Flammable liquids will be transported only on approved routes.

(7) Fuel tank trucks shall not be towed or pushed to start the engine except by Public Works mechanics qualified to operate such a vehicle.

21 JUL 1998

(8) Tankers designated for aircraft fueling shall not dispense fuel to line GSA or automotive equipment or vice versa.

(9) The internal valves for fuel tank trucks must be in the closed position at all times except when the unit is dispensing fuel.

c. Provisions for Aircraft

(1) Fueling and de-fueling of aircraft shall not be performed in hangars or other buildings unless written permission is obtained from the Station Commander. The operation shall be performed outdoors in a well-ventilated area approved by the Fire Division.

(2) Refueling or de-fueling of aircraft shall not be conducted within 100 feet of operating airborne radar equipment or within 300 feet of operating ground radar equipment installations.

(3) Plane captains and other personnel designated by operating units shall handle the fueling hose during the actual refueling or de-fueling and shall be responsible for filling to the desired capacity and for the proper securing or filler caps after tanks are filled.

(4) Prior to the commencement of any refueling or de-fueling operation, the tank truck operator and the plane captain shall:

(a) Complete the bonding procedures. (See Chapter XIII, paragraph 3h.)

(b) Determine that all aircraft electrical equipment is off, that dump valves are closed and that no repair work is being performed on the aircraft.

(c) Check to see that there are no ignition sources within 100 feet of the aircraft or the tank truck.

(d) Make sure the fire fighting equipment is readily available.

(5) During refueling and de-fueling operations, the tank truck shall be parked as far from the aircraft as the hose will permit but in no instance shall this distance be less than

21 JUL 1998

25 feet. The tank truck shall be headed out so that it may be quickly driven away in an emergency. The hand brake shall be set and lights and other unnecessary electrical equipment off.

(6) The bonding requirements shall be completed before the aircraft fuel tank filler cap is removed and shall be maintained throughout the fueling operation. After the fueling operation is completed, the filler cap shall be replaced and the bonding connection shall be disconnected in the reverse order of their application.

(7) No work shall be performed on the aircraft during the fueling operation.

(8) Dual fueling (simultaneous fueling by pressure and/or gravity on the same aircraft) is strictly prohibited.

(9) The dragging of refueling/de-fueling hoses from the aircraft is strictly prohibited.

(10) No refueling or de-fueling operation shall be conducted while an internal combustion engine is operating within a distance of 100 feet. The only exceptions are engines necessary for refueling or de-fueling when and if they are equipped with spark and flame arresters and other safety equipment.

(11) No aircraft that is turning up shall be within 100 feet of truck refueling of another aircraft.

(12) Aircraft on route to parking areas shall not taxi through fueling lines or areas.

(13) Aircraft ground power generators or other electrical ground power supplies shall not be connected or disconnected while fuel servicing is being performed on the aircraft.

(14) Aircraft external combustion engine powered units shall not be operated within 25 feet of the aircraft fuel system vents or fuel tank openings at any time.

d. Fuel Leaks and Spills

(1) Personnel engaged in operations involving the storage, handling or use of flammable liquids shall be continuously on the alert for leaks and for improper operation

21 JUL 1998

of any gear used in connection with such operations. They shall take appropriate steps to catch any flammable leaks in a proper container and shall not permit any spillage to drain onto the deck. Spillage that is contained shall be disposed of in a proper manner.

(2) Any spilled fuel or flammable liquid shall be wiped up immediately and rags and waste disposed of in a proper container. If the spill cannot be wiped up by personnel present, do the following:

(a) Notify the Fire Division immediately.

(b) Man fire extinguishers but do not break the seal or pull the pin unless the extinguisher is actually needed.

(c) Keep all unauthorized personnel and vehicles out of the area and warn personnel in the area and passers-by against smoking.

(d) Remain in the area until the spill has been absorbed or otherwise neutralized or told to leave the area by the Fire Division.

(3) If a fuel spill does ignite, the Fire Division shall be notified immediately and personnel in the area shall do what they can do to extinguish the fire but shall in no way take any unnecessary risks in this endeavor.

(4) All leaks or trouble with equipment shall be promptly reported to proper authorities and operations in the area ceased until it is determined safe to resume such operations.

(5) The operation of any vehicle leaking fuel is prohibited until the necessary repairs are effected.

(6) Aircraft, automotive vehicles and other spark producing equipment shall not be operated within 100 feet of a fuel spill until the exposed area has been thoroughly washed down with water and the flammable vapors dissipated.

19. Application of Tar, Asphalt and Similar Materials

a. The construction, use, transit and location of tar kettles shall conform to NFPA Standard No. 1, "Fire Prevention Code."

21 JUL 1998

b. Tar pots shall have properly operating lids. They shall not be operated inside, on the roof, within 25 feet of any building or within 15 feet of any combustible material. The Fire Prevention Bureau shall be contacted at 998-3828 and issue a hazardous operation permit prior to the usage of any tar pot/kettle on the installation.

20. Cleaning and Refinishing Floors, Desks, Etc.

a. Only approved water solutions or detergents, floor sweeping compounds and grease absorbents shall be used for cleaning floors. The use of sawdust or similar combustible materials to soak up combustible or flammable liquids spilled or dropped from machinery or processes on any floor is prohibited.

b. When cleaning floors, the following fire prevention precautions shall be observed:

(1) Where practicable, use only non-combustible cleaning fluids with a flash point above 138 degrees Fahrenheit.

(2) Clean only a small area at one time.

(3) Provide all possible natural ventilation. Where this is not adequate to dissipate vapors, portable mechanical ventilating equipment of approved type shall be used.

(4) Keep all open flames and spark-producing devices away from cleaning operations.

(5) Prohibit smoking in the area where the work is being done.

(6) Restrict the amount of liquid to that necessary for the immediate operation and return unused cleaning fluid to its approved place of storage as soon as cleaning is completed. Open containers shall not be used.

(7) Provide self-closing metal cans for used cleaning rags and remove them from the building upon completion of job and prior to the close of the work day.

(8) Wax mixed with flammable liquid shall not be used.

(9) Fuses should be removed from electrical circuits or breakers opened prior to the start of floor cleaning operations

21 JUL 1998

which involve flammable liquids. The fuse box or breaker shall be tagged to prevent inadvertent energizing.

d. Refinishing operations are more hazardous than cleaning and the following fire prevention precautions shall be observed:

(1) All precautions required for cleaning operations shall be applied to refinishing operations.

(2) All personnel not engaged in this work shall be excluded from the area.

(3) Where practicable, work shall be done by natural light. When natural light is not adequate, the use of explosion proof light is required.

(4) When removal of fuses or the securing of breaker switches is not practical, all electrical appliances of any kind in the vicinity (including water coolers, soft drink dispensers and other automatic stopping and starting appliances) shall be disconnected before finishing material is applied and shall not be reconnected until drying is complete.

(5) Prohibition of open flames and smoking shall be continued for one hour after drying is complete.

(6) Residue from sanding machines shall be placed in metal cans, wetted down and removed promptly from the building.

(7) The Fire Chief shall be notified before operations are started. Any additional precautionary measures required by the Fire Chief shall be complied with.

21. Shipping and Transferring Hazardous Materials

a. All hazardous materials and flammable offered for shipment in interstate or intrastate commerce shall be in containers approved for shipment of such materials and tagged or labeled following the regulations of the Department of Transportation.

b. Class I flammable liquids or flammable gases, except medical supplies or similar material which may require inside storage for security reasons, shall not be stored in transit sheds. All such material, while being processed for or after shipment, shall be placed in a storage area approved in advance by the Fire Chief.

21 JUL 1998

c. The Fire Chief or his authorized representative shall be notified of proposed transfers of bulk gasoline, oil, explosives, liquid oxygen or other hazardous materials. Such transfers shall be subject to the provisions of appropriate Naval activity instructions and orders.

d. Simultaneous transfer of more than one type dangerous material shall not be made except in case of an emergency.

e. All fire prevention precautions shall be complied with.

f. A fire watch approved by the Fire Chief shall be posted and provided with proper fire fighting equipment ready for service. Except for special or unusual conditions, regular fire fighting personnel are not required for fire watch. The Fire Chief shall determine the fire watch requirements.

22. Vehicles Carrying Ordnance

a. The danger of fire is inherent in every motor vehicle loaded with hazardous materials. All drivers of the vehicles carrying dangerous cargoes shall be required to adhere to the following regulations:

(1) Know contents of the load and be aware of its hazards.

(2) Shall have in his possession a written fire fighting instruction appropriate to the specific load he is transporting. The special instruction shall include:

(a) Placards required for the load being carried.

(b) Safe following distances.

(c) Safe operating distance for fire fighters and fire fighting equipment.

(d) Warning instructions.

(e) Safe evacuation distance for others.

(f) General precautions.

b. Drivers shall exert every effort to prevent fires in vehicles transporting hazardous materials. In this regard, the driver shall adhere to all rules and regulations for the

21 JUL 1993

following as published in NFPA Standard No. 495, "Explosive Materials" and NAVSEA OP-5, "Ammunitions and Explosive Ashore."

(1) Convoy distance.

(2) Flame-producing devices.

(3) Refueling: The vehicle shall not be refueled while explosives are in the vehicle except in an emergency, and then only after the engine of the vehicle is stopped, all lights turned off and static grounding devices properly connected.

(4) Safe driving.

(5) No smoking regulations.

(6) Vehicle inspection.

(7) Parking: A vehicle must not be parked within 300 feet of an open flame.

c. Each vehicle loaded with Class A, B or C explosives shall be equipped with a fire extinguisher mounted each side. Trucks with a GVW less than 14,000 lbs. shall have at least two extinguishers having a combined rating of 4-A; 20-B, C, trucks with a GVW of 14,000 lbs. or greater shall have two extinguishers with a combined rating of 4-A; 70-B, C.

d. Fire extinguishers should be inspected daily by the driver to ensure they have not been lost, damaged or tampered with.

e. Should a fire break out on a truck carrying dangerous cargo, the driver shall stop the truck as far from structures, objects or persons as possible.

f. If any part of the truck except its actual cargo catches fire, the driver shall use the hand extinguisher immediately in attempting to extinguish the fire. He shall make every effort to prevent the fire from reaching the cargo of the vehicle. If the cargo does catch fire, the driver shall not attempt to fight the fire unless he is reasonably certain that it is burning only on the outside of the containers and has not reached the actual cargo.

g. If fire reaches the cargo contents of the containers (or if any part of the vehicle cannot be controlled with the equipment at hand), the driver shall take the following actions:

21 JUL 1998

(1) Notify the Military Police and Fire Division by the best means possible and upon arrival, furnish the specific instruction on his DD Form 836, "Special Instructions for Drivers."

(2) Warn the public, by the best means possible, to keep at least one half mile from the vehicle in ALL directions.

h. Vehicles transporting hazardous materials shall not be driven past fires of any kind that are burning on or near the highway until the driver has determined that such passing can be made safely and without stopping.

23. Radioactive Materials

a. The Fire Chief, Assistant Fire Chief and Radiation Safety Officer (ext. 3931/3932) on duty shall be notified immediately of the transportation, storage, handling or use of any radioactive material, including weapons, within the confines of the activity.

b. The department controlling or using the material shall make the above notification and shall furnish the following information:

(1) The general type of radioactive material and the possible emission hazard, if any.

(2) The specific location where the radioactive material will be used or stored.

(3) Specific information on the physical properties and characteristics of the radioactive material which could be of aid in fighting a fire in which the material may be involved.

IT IS MANDATORY THAT THE FIRE DIVISION OBTAIN THE ABOVE INFORMATION FOR THE PROTECTION OF FIRE FIGHTERS AND OTHER PERSONNEL IN THE EVENT OF FIRE OR SIMILAR EMERGENCY INVOLVING RADIOACTIVE MATERIALS.

(4) The Fire Division shall make appropriate prefire planning surveys to evaluate the hazards involved and the best possible plan of action to be followed in the event of an emergency.