



**UNITED STATES MARINE CORPS**  
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COMBAT CENTER ORDER 11320.1E

From: Commanding General  
To: Distribution List

Subj: COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS

Ref: (a) MARCORSUPMAN Vol V, Chapter 2, Part E, Para. 2400 - 2421  
(b) MCO P11000.11  
(c) NFPA 1  
(d) UFC 3-600-01  
(e) UFC 3-601-02  
(f) Occupational Safety and Health Act of 1970 (NOTAL)  
(g) National Fire Codes (NOTAL)  
(h) NAVMC 1101 (Storage and Material Handling)  
(i) CCO 5090.1D  
(j) Interim Lithium Battery Handbook  
(k) CCO P8000.4E  
(l) NAVAIR 00-80R-14 (NOTAL)  
(m) NAVSEA OP-5, Vol 1 (NOTAL)  
(n) TM-9-1300-206 (NOTAL)  
(o) PWD Supplemental A-E Design Guide  
(p) CCO 1630.8D  
(q) CCO 11014.1C  
(r) UFC 3-600-10N  
(s) NAVMC 3500.12  
(t) <https://intranet.mciwest.usmc.mil/palms/G7/ccfd/default.aspx>

1. Situation. In accordance with the references the Combat Center fire department (CCFD) is to establish and maintain an effective and efficient fire protection and emergency services program that incorporates fire prevention and public fire education; fire protection engineering; all-hazards emergency response; and fire protection systems inspection, testing, and maintenance.

2. Cancellation. CCO P11320.1D, CCO P11320.2C, and CCO P11320.4. In addition to administrative corrections and updates, which will not be listed separately, this revision contains a substantial number of changes that should be reviewed in its entirety.

3. Mission. This Order provides policy to protect Marine Corps personnel and the public from loss of life, injury, and illness due to fires and other emergencies as a result of installation activities, aircraft operations, disasters or terrorist incidents. References (c) through (e) have been adopted by the Marine Corps for use locally. Technical publications, references (f) through (s), are used as guides to effect the fire protection

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and emergency services program. Reference (t) provides detailed measures to prevent or minimize damage to Marine Corps property and the environment and is to be used in conjunction with this Order.

#### 4. Execution

##### a. Commander's Intent and Concept of Operations

(1) Commander's Intent. This Order emphasizes the requirement for all levels of leadership to ensure that Marines, civilians, and contracted personnel in their charge are familiar with and comply with the instructions in the Combat Center fire regulations and instructions manual, reference (t).

(2) Concept of Operations. The Assistant Chief of Staff (AC/S) G-7, in concert with the Commanding General, will establish and provide operating procedures for the fire protection and emergency services program that incorporates fire prevention and public fire education; fire protection engineering; all-hazards emergency response; and fire protection systems inspection, testing, and maintenance in accordance with the references.

##### b. Subordinate Element Missions

###### (1) Assistant Chiefs of Staff, Directors, and Officers In Charge

(a) Appoint, in writing, a single fire warden from within their directorate or division. The designated individual shall have e-mail capability and will be CCFD's primary point of contact on all matters concerning fire protection and prevention. The appointee shall be a responsible person, and should be a commissioned or noncommissioned officer or where applicable, a civilian person of equivalent responsibility and authority. A copy of the written appointment notice shall be forwarded to the fire chief.

(b) Provide an afterhour's point of contact to the fire prevention office for each building, or group of buildings, occupied by personnel. Contact information shall be updated when change necessitates, but not less than annually.

(c) Ensure master key(s) are made for placement in the building's Knox box to be used for emergency access. Notify the fire prevention office for an appointment to have keys placed in the box.

(d) Notify the fire prevention office when any building or groups of buildings are to be activated or deactivated.

(e) Notify the fire chief in writing where billeting of personnel is requested in buildings or spaces not specifically designed for this purpose. A pre-occupancy inspection is required and shall be conducted by CCFD personnel.

(f) Ensure that prior to securing an unoccupied building, a thorough inspection is made to ensure the electrical power and other utilities are turned off, the building has been properly policed, and all fire extinguishers issued by CCFD are returned.

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(g) Ensure that the locations of new structures (whether permanent or temporary) and existing structures are approved by CCFD prior to occupancy.

(h) Report total loss and content value to CCFD at 830-6871 or 830-6475, within 24 hours of any event causing property loss.

(i) The public works department (PWD) will report structural damage loss to CCFD at 830-6871 or 830-6475, within 24 hours of any event causing real property loss.

(2) Assistant Chief of Staff G-7, Fire Department. The fire chief is responsible to the Commanding General, under the cognizance of the AC/S G-7, for the CCFD protection and prevention program. The fire chief is vested with the authority to take immediate action as necessary to protect life, property, and the environment from fire, hazards, or other applicable conditions.

(3) Fire Wardens. Will report to the fire chief, upon being appointed, and provide a list of the buildings for which he or she is responsible. Upon approval, call 830-5239 to sign up for initial training and for guidance from the CCFD prevention office in building 1453.

c. Coordinating Instructions. The Combat Center fire regulations and instructions manual can be accessed at <https://intranet.mciwest.usmc.mil/palms/G7/ccfd/default.aspx> and will contain elements of the following information but are not limited to:

- (1) Administration
- (2) General fire regulations
- (3) Fire protection
- (4) Life safety
- (5) Fire prevention and fire safety
- (6) Electrical safety
- (7) Special processes and material handling
- (8) Ammunition magazine and ammunition
- (9) Exercise support base and expeditionary airfield
- (10) Construction requirements

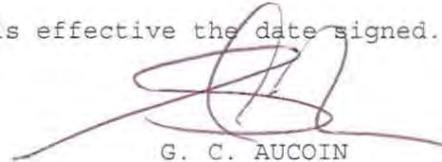
5. Administration and Logistics. Distribution statement A directives issued by the Commanding General are distributed via e-mail upon request and can be viewed at <http://www.29palms.usmc.mil/dirs/manpower/adj/ccotoc.asp>.

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6. Command and Signal

a. Command. This Order is applicable to active-duty, reserve, civilian personnel, contractors, and family members working and living aboard the Combat Center.

b. Signal. This Order is effective the date signed.



G. C. AUCOIN  
Chief of Staff



# **COMBAT CENTER FIRE DEPARTMENT**

**FIRE, RESCUE & EMERGENCY SERVICES**

## **Combat Center Fire Regulations and Instructions Manual**

COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

REFERENCES:

- (a) MARCORSUPMAN Vol V, Chapter 2, Part E, Para. 2400-2421
- (b) MCO P11000.11
- (c) NFPA 1
- (d) UFC 3-600-01
- (e) UFC 3-600-02
- (f) Occupational Safety and Health Act (NOTAL)
- (g) National Fire Codes (NOTAL)
- (h) NAVMC 1101 (Storage and Material Handling)
- (i) CCO 5090.1D
- (j) ILBH (Interim Lithium Battery Handbook)
- (k) CCO P8000.4D
- (l) NAVAIR 00-80R-14 (NOTAL)
- (m) NAVSEA OP-5, Vol 1 (NOTAL)
- (n) TM-9-1300-206 (NOTAL)
- (o) PWD Supplemental A-E Design Guide
- (p) CCO 1630.8D
- (q) CCO 11014.1C
- (r) UFC 3-600-10N
- (s) Utilities Handbook (Marine Corps Engineer School)
- (t) <https://intranet.mciwest.usmc.mil/palms/G7/ccfd/default.aspx>

COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

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## CHAPTER 1

### ADMINISTRATION

1. Mission. The mission of the Combat Center Fire Department (CCFD) is to establish and maintain an effective and efficient fire protection and emergency services program that incorporates fire prevention and public fire education; fire protection engineering; all-hazards emergency response; and fire protection systems inspection, testing and maintenance. CCFD will:

a. Effect and supervise a vigorous program of fire protection and fire prevention through public education, code enforcement, and project plans review for all assets belonging to and managed by the Marine Corps Air Ground Combat Center (MCAGCC).

b. Provide adequate structural and aircraft crash protection to safeguard lives and property against fires.

c. Provide mutual aid to those communities which have a written agreement with the Combat Center.

d. Provide technical advice to the command on all matters pertaining to fire protection.

### 2. Responsibilities

a. Fire Chief. The Fire Chief is responsible to the Commanding General, under the cognizance of the Assistant Chief of Staff G-7, for the CCFD Protection and Prevention Program. The Fire Chief is vested with the authority to take immediate action as necessary to protect life, property and the environment from fire, hazards, or other applicable conditions. Functions of the Fire Chief are to ensure:

(1) Control of all activities and operations of the CCFD, including fire extinguishment, pre-fire planning, fire prevention, and fire investigation.

(2) CCFD personnel are aware of the policies, regulations, and procedures of CCFD and the MCAGCC.

(3) Proper management, discipline, and training of CCFD personnel.

(4) CCFD library is maintained in an up-to-date condition, and that it is made readily available to all CCFD personnel and other interested persons aboard the Combat Center.

b. Organizational Commanders and Section Heads. Assistant Chiefs of Staffs, Directors, and Officers In Charge will become familiar with and comply with Combat Center Order 11320.1E and this Manual. The responsibilities include:

(1) Appoint, in writing, a single Fire Warden from within the unit's S-4 shop. The designated individual shall have e-mail capability and will be CCFD's primary point of contact on all matters concerning fire protection and prevention. The appointee shall be a responsible person, and should be a commissioned or noncommissioned officer or, where applicable, a civilian person of equivalent responsibility and authority. A copy of the written appointment notice shall be forwarded to the Fire Chief.

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(2) Provide an afterhours point of contact to the Fire Prevention Office for each building, or group of buildings, occupied by his or her unit. Contact information shall be updated when change necessitates, but not less than annually.

(3) Ensure master key(s) are made for installation in the building Knox boxes where provided for emergency access to the building(s) the unit occupies. And, notify the Fire Prevention Office for an appointment to have keys placed in the box.

(4) Notify the Fire Prevention Office when any building or groups of buildings are to be activated or deactivated.

(5) Notify the Fire Chief in writing where billeting of personnel is requested in buildings or spaces not specifically designed for this purpose. A pre-occupancy inspection is required and shall be conducted by CCFD personnel.

(6) Ensure that prior to securing an unoccupied building, a thorough inspection has been made to ensure the electrical power and other utilities are turned off, the building has been properly policed, and all fire extinguishers issued by CCFD are returned.

(7) Ensure that the locations of new structures (whether permanent or temporary) and/or existing structures are approved by CCFD prior to occupancy.

(8) Organizational Commanders will report total loss and content value to CCFD at 830-6871/830-6475, within 24 hours of any event causing property loss.

(9) The Public Works department (PWD) will report structural damage loss to CCFD at 830-6871/830-6475, within 24 hours of any event causing real property loss.

c. Fire Wardens. Fire Wardens will be responsible for promoting fire safe conditions within their respective organizations. Specific duties include:

(1) Report to the Fire Chief, upon being appointed, and provide a list of the buildings for which he or she is responsible. Upon approval, call 830-5239 to sign up for initial training and for guidance from the CCFD Prevention Office in building 1453.

(2) Under the cognizance of the CCFD Prevention Office, make monthly inspections of buildings assigned to the unit or section, noting hazardous conditions that could cause loss of life and/or property and take immediate action to correct the hazards.

(3) Compile reports on fire inspections, required personnel training, and conditions within their respective organizations, as may be required by CCFD and the Organizational Commander or Section Head.

(4) Ensure that supplemental fire regulations and/or instructions prepared by the organization are submitted to CCFD for approval prior to posting. Supplemental fire regulations and/or instructions will be posted on official bulletin boards and adjacent to the Combat Center Fire Bill. Fire Bills can be obtained from the Combat Center Fire Administration Office.

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(5) Ensure that a Fire Reporting Instruction Card is placed by all duty phones. Fire Reporting Instruction Cards can be obtained from the CCFD Administration Office.

(6) Ensure that all personnel in their areas of responsibility are given initial training in fire reporting procedures and instructed to immediately call CCFD on all fires, even if extinguished. Replacement extinguishers are available at CCFD Administration Office, building 1453. Call 830-5239 to schedule a replacement.

(7) Inspect all fire suppression and life safety features monthly to ensure that the equipment is in good working order. Inspections shall be documented and a copy forwarded to CCFD. Only the Fire Warden or his designated Fire Security Officer is authorized to initial extinguisher tags. Extinguisher tags are available at CCFD Administration Office, building 1453.

(8) Ensure that all components of egress (doors, panic hardware, and emergency lighting) in buildings occupied by personnel are properly maintained.

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## CHAPTER 2

### GENERAL FIRE REGULATIONS

#### 1. Discovery of a Fire, Emergency Services Initiation

a. Emergency Services. CCFD shall be notified of all situations that pose a threat to life, property, or the environment. **Call 9-1-1** for the following:

- (1) Fire.
- (2) Ambulance.
- (3) Police.
- (4) Hazardous materials spills/releases.

#### b. To Initiate an Emergency Service Response

- (1) Dial 9-1-1 from any hard line phone, or
- (2) Dial (760)830-3333 or (760)830-FIRE (3473) from a cell phone, or
- (3) Push the button inside the door on the nearest fire alarm box - remain at the alarm box until help arrives.
- (4) State the location of the incident (street address, building number, cross street, etc.)
- (5) State the nature of emergency (fire, medical, police, etc.)
- (6) State your name.
- (7) State the number you are calling from.
- (8) Do not hang up until directed to do so by the dispatcher.

#### c. Evacuation Procedures

- (1) Direct all occupants to immediately evacuate to the designated muster point.
- (2) Direct emergency personnel to the location of incident upon arrival.
- (3) Close (do not lock) windows, skylights, and doors.
- (4) Extinguish the fire (if safe to do so).

#### 2. Evacuation Plans and Fire Drills

a. Evacuation plans will be prepared and published by each unit, section, or agency, and will be posted conspicuously on official bulletin boards and at strategic locations throughout all buildings or departments at the activity. The standard sized "Fire Bill" will be used by all Combat Center activities in addition to the fire evacuation plan. In addition to posting the Fire Bill, responsible commanders shall promulgate regulations

## COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

governing the staffing of the fire warden program in accordance with current Marine Corps policy and instructions. Fire regulations should include, but will not be limited to:

(1) General Instructions. The objective of fire regulations, Fire Department organization, location of fire stations, and instructions to occupants of quarters and operators of motor vehicles.

(2) Fire Alarms and Signals. The method of reporting fires, operation of fire alarms boxes, fire signals, and the penalty for false alarms.

(3) Fire Equipment. The locations and instructions for use of available first aid and fire extinguishing equipment.

(4) Fire Prevention. Necessary precautions in handling flammable liquids, electrical equipment, hot plates, rubbish, oily rags, and other hazards inherent to specific operations.

(5) Training. Required familiarization of personnel with regulations and other fire emergency procedures.

b. Evacuation Plans. Each individual location, to include barracks rooms, will have its own fire evacuation plan containing additional instructions to those detailed in paragraph 2a above. Evacuation plans and supplemental instructions will be conspicuously posted and regularly practiced to ensure that all personnel are familiar with the plan and fire hazardous conditions related to the specific operations in a particular building or area. Instructions for individual locations should include:

(1) A floor plan showing evacuation routes and actions required for personnel in the particular shop, department, or building upon alarm of fire.

(2) The location of first aid, fire extinguishing equipment, nearest fire alarm box, special fire reporting equipment, nearest telephone, and personnel muster point.

(3) Special fire prevention measures that may be unique to a particular area.

c. Fire Reporting Cards (29P-11320/3) and Fire Bills. Fire reporting cards shall be posted immediately adjacent to each telephone in the main camp area. Fire Bills shall be posted on official bulletin boards and other conspicuous locations throughout. Forms are available at the Fire Administration Office.

d. Fire Exit Drills. Drills shall be conducted in accordance with the procedures and frequencies outlined in reference (g). All exit drills shall be initiated and monitored by CCFD to ensure efficient and safe use of exit facilities. The hours at which drills are held should vary. During fire exit drills, occupants shall evacuate all spaces and exit the building in an orderly fashion under the control of responsible personnel. Personnel shall muster at a predetermined site according to each building's fire evacuation plan. The responsibility of conducting fire drills is that of the officer in charge or supervisor in charge of each building. The Fire Chief or Fire Prevention Officer should normally be present at fire drills; otherwise, their assigned representative who is considered competent and qualified to exercise leadership should be present.

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### 3. General Regulations

a. Every precaution shall be taken to prevent fires at the Combat Center.

b. Persons found in violation of the following shall be referred to the Provost Marshal or to the Unit's Commanding Officer for punitive action.

(1) No person shall deliberately or maliciously turn in an alarm of fire or other emergency when in fact that person knows that no fire exists.

(2) No person shall render any portable or fixed fire extinguishing system or device or any fire warning system inoperative or inaccessible except as necessary during emergencies, maintenance, drills, or prescribed testing.

(3) Where false alarms are turned in from any building, the building supervisor or management shall investigate and where necessary, provide a fire watch to maintain building security.

(4) No person shall conduct or maintain any fire hazardous operations unless proper and adequate fire prevention measures have been taken. Such operations shall be inspected, approved, and permitted by CCFD.

(5) All fires (even extinguished) shall be reported to CCFD.

(6) All expelled, missing, damaged, or out of service fire extinguishers shall be immediately reported to CCFD. The responsible unit may be required to provide a like replacement or a written statement of fact to CCFD prior to receiving a replacement.

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## CHAPTER 3

### FIRE PROTECTION

#### 1. Fire Alarm Equipment

a. Shrubbbery, trees, or other obstructions shall not obscure fire alarm boxes and associated equipment. Per reference (c) fire alarm control panels and pull stations shall have a 36 inch clearance and remain accessible at all times.

b. CCFD is responsible for ensuring annual testing of manual fire alarm boxes, water flow transmitters, and alarm circuits in accordance with reference (e).

c. Building(s) shall be evacuated or a fire watch shall be required in accordance with reference (g) any time required fire alarm equipment is out of service for more than four consecutive hours.

#### 2. Fire Suppression Systems

a. Fire sprinkler control valves shall be maintained in the open position. If sprinkler heads are activated by fire, the valve shall not be closed until so directed by CCFD Officer In Charge at the fire. Once sprinkler valves are closed the building shall be evacuated, or a constant fire watch maintained until repairs are made and the system is restored.

b. When a suppression system is actuated from any cause, the system shall not be shut off until CCFD arrives, unless the activation is evident to be accidental. In the latter case, if the suppression system is a wet pipe sprinkler system, the control valve should be closed, and the system drain valve should be opened to minimize water damage.

c. No material of any sort shall be hung from suppression system piping or components. Suppression heads shall not be painted or otherwise be coated and piping shall be identified by red paint or two-inch red bands at 20-foot intervals along the length of the piping.

d. Fire Department connections (FDCs) shall be kept free of debris and litter. Where FDCs are found to be compromised by obstruction, the occupant shall be responsible for providing locking Knox FDC caps to prevent recurrences. Authorization forms are available at CCFD Administration Office.

e. General storage piled 15 feet high or less shall have at least 18 inches of clearance below the sprinkler heads. General storage piled higher than 15 feet shall have a 36-inch clearance below the sprinkler heads. Storage of hazardous materials and plastics, regardless of height of piles, shall have hydraulically designed sprinkler systems in accordance with Standard 13 of reference (g).

f. Sprinkler systems shall be tested and serviced by qualified maintenance personnel at frequencies outlined in reference (e). Adequate clearance and access as determined by the Fire Chief will be provided for all sprinkler control valves.

g. Building(s) shall be evacuated or a fire watch shall be required in accordance with reference (g) any time required fire suppression equipment is out of service for more than four consecutive hours.

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### 3. Fire Extinguishers

a. Any person having discharged a fire extinguisher shall report the fact immediately to CCFD and state the purpose for which it was used.

b. Fire extinguishers shall not be removed from their assigned locations except for firefighting.

c. Any person noting a damaged fire extinguisher or any other damaged firefighting equipment shall immediately report it to CCFD, at 830-6475 or 830-6871.

#### d. Responsibility of CCFD

(1) Provide fire extinguishers for the protection of all fixed facilities at the Combat Center, where required.

(2) Designate the type, quantity, and location of all portable fire extinguishers for fixed facilities in accordance with reference (g).

(3) Inspect fire extinguishers at regular intervals, not less than annually or more frequently where necessary, to ensure occupant required monthly inspections are taking place. The inspector will initial and date the extinguisher tag at the time of inspection.

(4) Coordinate inspection, maintenance, and service of fire extinguishers at regular intervals, not more than one year apart, or when specifically indicated by an inspection; extinguishers shall be thoroughly examined and, as necessary, recharged, repaired, or replaced to ensure operability and safety.

(5) Bring to the attention of the Assistant Chief of Staff G-7, any repeated cases of missing and/or expelled fire extinguishers so that corrective action can be taken.

#### e. Responsibility of Commanders and Section Heads

(1) Ensure fire extinguishers are inspected by the Fire Warden or his designated Fire Security Officer at least monthly or at more frequent intervals when circumstances dictate. Ensure extinguishers are in their designated places, that they have not been expelled, actuated, or tampered with and that there is no obvious physical damage, corrosion, or other impairments. Fire Security Officers are charged with initialing extinguisher tags monthly upon successful inspection of extinguishers in his/her charge. Building occupants, other than the authorized Fire Warden or Fire Security Officer, shall not mark on extinguisher tags.

(2) Ensure that building occupants know how to properly use fire extinguishers in their building.

(3) Immediately notify CCFD whenever a fire extinguisher has been reported to them as being missing or expelled.

(4) Report action taken to prevent repeated occurrences of extinguisher loss and/or discharge to the Combat Center Fire Chief.

(5) Purchase and maintain fire extinguishers for their own requirements that are for applications other than fixed facilities or beyond the basic scope of reference (g). (It is strongly recommended that purchasers consult with CCFD prior to the purchase of fire extinguishers.)

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f. Location. Fire extinguishers shall be conspicuously located where they will be readily accessible and immediately available in the event of fire. They shall be located in accordance with reference (g) along normal paths of travel and near exits.

g. Marking of Extinguishers

(1) Extinguishers shall not be obstructed or obscured from view. In large rooms, warehouses, and other areas where visual obstruction cannot be completely avoided, the occupant shall provide a sign located above extinguishers to identify extinguisher location.

(2) Extinguishers shall be labeled with appropriate symbols as to their proper rating and use. Extinguishers not properly labeled shall be reported to CCFD.

h. Mounting of Extinguishers. Extinguishers shall be installed on the hangers or brackets supplied or mounted in cabinets, unless the extinguishers are of the wheeled type. Extinguishers having a gross weight not exceeding 40 pounds shall be installed so that the top of the extinguisher is not more than five feet above the floor. Extinguishers having a gross weight greater than 40 pounds (except wheeled type) shall be installed so that the top of the extinguisher is not more than three feet six inches above the floor.

i. Distribution of Extinguishers

(1) Fire extinguishers shall be distributed per reference (c).

(2) Placement and servicing of fire extinguishers on vehicles are the responsibility of the unit and are required on the following types of vehicles aboard the Combat Center; this is not applicable to tactical units:

(a) Buses - extinguishers to be a dry chemical with a minimum classification of 10:BC.

(b) Ambulances - extinguishers to be a dry chemical with a minimum classification of 10:BC.

(c) Police and patrol vehicles - extinguishers to be a dry chemical with a minimum classification of 10:BC.

(d) Vehicles regularly used to carry explosives, acids, compressed gases, fuel, or other dangerous articles - extinguisher to be a dry chemical with a minimum classification of 20:BC. (An extinguisher with a classification of 40:BC is highly recommended.)

(3) Fire extinguishers shall not be furnished or serviced by CCFD in Combat Center housing.

j. Areas in Vicinity of Dip Tanks and Parts Cleaning Tanks. Areas in vicinity of dip tanks and parts cleaning tanks shall be provided with fire extinguishers. At least one extinguisher, suitable for use on Class B fires as defined by reference (g), shall be provided on the basis of one numerical unit of extinguishing potential per square foot of flammable liquids surface. Where approved, automatic protection shall be provided for flammable liquid hazard.

k. Extinguishers for Specialized Equipment. A carbon dioxide, dry chemical, or equivalent hand fire extinguisher should be kept in the cab of overhead and gantry cranes and in the cab or vicinity of truck cranes.

## COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

### 4. Fire Hydrants and Siamese Pumper Connections

a. No vehicles or other objects shall be left standing, parked, or stored within a 20-foot radius of any fire hydrant or Siamese fire department pumper connection or in any other way that violates reference (q).

b. Shrubbbery, trees, or other obstructions shall not obscure fire hydrants and Siamese fire department pumper connections.

c. Connections shall not be made to fire hydrants, nor shall fire hydrants be operated by other than CCFD or authorized maintenance personnel unless approved by permit from the Fire Chief. Only approved hydrant wrenches shall be used on fire hydrant stems.

d. CCFD personnel shall oversight tests that are conducted on fire hydrants in accordance with reference (g).

5. Sectional Control Valves and Fire Pumps. Sectional control valves and all stationary water supply fire pumps shall be tested by maintenance personnel in accordance with the schedule in reference (g).

### 6. Fire Hoses

a. Fire hoses shall not be used for other than firefighting purposes without the approval of the Fire Chief.

b. No vehicle shall be driven over a fire hose unless authorized to do so by a CCFD Officer.

### 7. Fire Apparatus

a. Unless specifically authorized by the Fire Chief, unauthorized persons are prohibited from riding upon, in, operating, or using any fire apparatus.

b. When responding to an alarm, the fire apparatus shall be under control of the driver at all times and shall be driven at such speeds as may be safe according to road and weather conditions. Fire apparatus drivers shall observe all traffic regulations when returning from an alarm.

### 8. Locking of Doors and Gates

#### a. Knox Box Key Vaults

(1) Knox boxes are required on all buildings equipped with a fire alarm system, detection system, or suppression system and where otherwise required.

(2) Building managers, responsible officers or the MCAGCC locksmith shall provide the required access key(s) for placement in the Knox Box key vaults.

(3) Keys shall be locked into the Knox Box key vault only by authorized CCFD Engine Company personnel and by appointment only.

(4) CCFD personnel shall not accept building keys unless for the purpose of locking them into the Knox Box key vault.

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### b. After Hours Access to Enclosed Areas

(1) Fences, gates, or compounds shall be locked by use of padlocks chain only for firefighter access. Electric gates shall be equipped with a Knox key switch for emergency access; authorization forms to purchase the switch boxes are available at the Fire Prevention Office.

(2) In all cases where security of an area or building has been breached by firefighters in the line of duty, a firefighter will remain at the location to monitor for security until arrival of a guard.

(3) Mechanical and equipment rooms shall be keyed with "MR" series cylinders for after hours and emergency access.

(4) All barracks managers and or duty officers shall maintain access to a master key on site that is available for immediate use in case of emergency.

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## CHAPTER 4

### LIFE SAFETY

#### 1. General

a. Every building or structure, new or old, designed for human occupancy shall be provided with exits sufficient to permit the prompt escape of occupants in case of fire or other emergency. The design of exits and other safeguards in case of fire or other emergencies shall not depend solely on any single safeguard, and backup safeguards shall be provided in case any single safeguard is ineffective due to some human or mechanical failure.

b. Every building or structure shall be so constructed, arranged, equipped, maintained, and operated as to avoid undue danger to the lives and safety of its occupants from fire, smoke, fumes, or resulting panic during the period of time reasonably necessary for escape from the building or structure.

c. Every building or structure shall be provided with exits of kinds, numbers, locations, and capabilities appropriate to the individual building or structure to afford all occupants convenient facilities for escape.

d. In every building or structure, exits shall be so arranged and maintained as to provide free and unobstructed egress from all parts of the building or structure at all times when it is occupied. No lock or fastening device to prevent free access from the inside of any building shall be installed except where supervisory personnel are continually on duty and effective provisions are made to remove occupants in case of fire or other emergency.

e. In every building or structure requiring artificial illumination, adequate and reliable illumination shall be provided for all exit facilities.

f. In every building or structure of such size, arrangement, or occupancy that a fire may not in itself provide adequate warning to occupants, fire alarm notification shall be provided where necessary to warn occupants of the existence of fire so that they may escape.

g. Every building or structure, section, or area of such size, occupancy, and arrangement that the reasonable safety of occupants may be endangered by the blocking of any single means of egress, shall be so arranged as to provide a remote alternate means of egress, eliminating the possibility of both being blocked under emergency conditions.

#### 2. Capacity or Occupant Load

a. The capacity or occupant load permitted in any assembly building, structure, or portion thereof, shall be determined by CCFD personnel in accordance with reference (c); permitted occupant loads shall be posted at or near the main entrance.

b. The capacity or occupant load permitted in a building or portion thereof may be increased above that specified where authorized in writing by the Fire Chief. Requests to increase occupant load shall be submitted, with appropriate diagrams, in writing to the Fire Chief.

c. Personnel shall not be permitted to be seated or to stand in aisles, doorways or exits in places of assembly.

## COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

### 3. Means of Egress

#### a. Interior Finish Materials

(1) Interior finishes for walls and floor coverings used in the means of egress to include stairs, passageways, halls, and exit discharge shall conform to references (d) and (g).

(2) Temporary or mobile structures (trailers) shall meet the same interior finish and fire protection criteria as that which is required for permanent facilities per reference (d).

(3) Camouflaged netting shall be used specifically for field operations and shall not be used indoors or outdoors within 20 feet of exterior exits.

#### b. Exit Marking

(1) Every exit shall be clearly visible, and the route to reach it shall be conspicuously marked with signs in such a manner that every occupant will readily recognize the direction of escape from any point. Every exit sign shall have the word 'EXIT' in plainly legible letters not less than six inches high, with principal strokes of letters not less than three-quarters of an inch wide.

(2) There shall not be any brightly illuminated sign (for other than exit purposes), display, or object in or near the line of vision of such a character as to detract attention from the exit sign.

(3) Any doorway, stairway or passageway not constituting an exit or way to reach an exit, but of such a character as to be possibly mistaken for an exit, shall be so arranged or marked as to minimize its possible confusion with an exit. A sign shall be posted reading "NOT AN EXIT", or the door shall be identified by a sign indicating its actual character such as 'TO BASEMENT', 'STOREROOM', etc.

(4) An internally illuminated exit sign shall be provided in all occupancies where reduction of normal illumination is permitted, as in motion picture theaters, and may be used in any occupancy.

(5) Every required exit and associated components of exit access shall be continuously illuminated to facilitate egress.

(6) Photoluminescent exit signs are permitted in accordance with reference (d) only where provided with a reliable external illumination source (unswitchable dedicated light).

c. Deadend Corridors and Travel Distance to Exits. Exits shall be arranged in accordance with references (c) and (g).

#### d. Emergency and Exit Lighting

(1) Emergency and exit lighting, as required by appropriate occupancy classification, will conform to the standards contained in reference (g).

(2) In places of assembly, emergency lighting should be checked daily by a responsible staff member prior to the use of the facility and periodically by CCFD.

## COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

e. Maintenance of Means of Egress. Means of egress shall be continuously maintained free of all obstructions or impediments to full instant use in case of fire or other emergency. No restrictive hardware, such as hasps and padlocks, throw bolts, cross bars, etc. will be installed on any door along the required route of egress.

f. Emergency Exits and Fire Doors

(1) Exit Doors

(a) Exit doors shall open in the direction of exit travel.

(b) Exit doors shall be arranged to be readily opened from the side from which egress is to be made at all times when the building is occupied.

(2) Panic Hardware

(a) Emergency exit doors requiring panic push bars shall be equipped with proper type panic hardware in good operating condition. On exits where panic hardware is required, only listed panic hardware shall be used.

(b) Required panic hardware shall not be equipped with any locking or dogging device, set screw, or other arrangement that can be used to prevent the release of the latch when pressure is applied to the bar or prevents the free use of the door for exit purposes.

(c) Locks, where provided, shall not require the use of a key for operation from the inside of the building. Any latch or other fastening device on an exit door shall be provided with a knob, handle, panic bar, or other type of releasing device; the accessibility and method of operation of which is obvious, even in darkness.

(d) Any device or alarm installed to restrict the use of an exit shall be so designed and installed that it cannot, even in the case of failure, impede or prevent emergency use of such exit. Locking devices on doors and exits of brigs will conform to the requirements set forth in reference (g).

(3) Fire Doors and Walls

(a) Where fire doors are permitted to be held open they shall be equipped with fusible links or smoke activated closures for automatic closing in the event of fire. Fusible links shall not be painted, coated, or covered.

(b) Fire doors, dampers, or shutters shall not be obstructed or blocked in any manner or intentionally wedged open. Sufficient space shall be maintained to allow personnel fire doors to swing clear. Material will not be stored within 36 inches of fire door openings. Highly combustible material that may produce a flash fire should not be stored near any fire door or other opening in a firewall.

(c) At the close of the workday, personnel shall ensure that fire doors and all other doors and windows are closed and latched to prevent the spread of smoke or fire.

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(d) Care shall be exercised that fire doors and dampers are not damaged. Inoperable doors or dampers shall be reported immediately to CCFD at 830-5239 and to the Maintenance Officer at 830-6271.

(e) Penetrations or damage to firewalls shall be repaired with like material to maintain required fire resistance rating.

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## CHAPTER 5

### FIRE PREVENTION AND FIRE SAFETY

#### 1. Smoking / Open Burning / Fireworks

##### a. Prohibited Smoking Areas. There shall be no smoking:

- (1) While sitting or lying in bed.
- (2) At open-air storage areas.
- (3) Within 50 feet of:
  - (a) Gasoline dispensing operations.
  - (b) Places where tar, asphalt, or plastic coatings are being applied.
  - (c) Aircraft parking area.
  - (d) Flammable liquid and gas handling or storage.
  - (e) Any public facility entrance except at exterior, posted smoking areas.
- (4) Where prevailing conditions or operations has required the posting of "NO SMOKING" signs.
- (5) Where explosives, chemicals, flammable or highly combustible materials are stored or handled.
- (6) Smoking shall not be permitted in any vehicle while the vehicle is parked or passing through storage areas, warehouses, or on or against the ramps of warehouses.
- (7) Within 10 feet of building entrances, exits, or building ventilation intakes.

##### b. Smoking Areas

- (1) Where smoking is permitted, signs shall be posted and suitable "safety" ash and butt receptacles shall be provided.
- (2) Metal receptacles for the disposal of smoking material shall be painted red and marked "BUTTS ONLY" visible from all angles and provided at all locations in which designated smoking areas are authorized.

##### c. Disposal of Smoking Material

- (1) The contents of ash trays and butt receptacles shall be suitably extinguished and emptied into water before being placed in trash receptacles.
- (2) Smoking material, including lighted cigars, cigarettes, and matches shall not be thrown in trash receptacles or on the floor, in brush, out of windows, or from vehicles and must be extinguished before being discarded.

- (3) All matches, cigars, and cigarette butts shall be extinguished and deposited in containers which are located in smoking areas for that

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purpose and shall not be thrown on the floor or disposed of in any other manner. The use of these containers for the disposal of anything other than smoking material is strictly prohibited. Lighted cigarettes, cigars, and other smoking material shall not be thrown from a moving vehicle.

### d. Open Flame, Burning, and Use of Matches

(1) Open flame or fires shall not be allowed except by written permit from CCFD.

(2) Matches, candles or open flame devices shall not be used for illumination purposes.

(3) Enclosed portable outdoor fireplaces require a permit upon initial placement and then annually thereafter. Permitted fireplaces shall be enclosed by screen and the contents of combustion directed through a flue with a spark arrester. Authorization to use the fireplace shall be restricted to the location in which it was permitted, the conditions set forth in the permit and shall not be used on balconies, porches or within 25 feet of any building or combustibles or within 50 feet of any flammable liquids.

(4) Burning of classified documents is prohibited. The Base Security Manager recommends that all units purchase a "Classified Document Shredder" available at the GSA store, building 1102. Contact the Base Security Manager at (760) 830-7952 for additional information.

e. Fireworks. The sale, storage, or use of fireworks of any description on any part of the Combat Center is strictly prohibited. Fireworks or incendiaries, except those requested by authority of the Commanding General, under contract, and subject to government control, shall not be permitted on the Combat Center.

## 2. Fire Prevention

a. Report of Fire Hazards. Fire Wardens and their designated Fire Security Officers shall exercise vigilance in guarding against the creation of fire hazards in all buildings and shall promptly report to the Fire Chief:

(1) Any hazardous conditions which cannot be corrected immediately.

(2) Any change in assignment of occupancy or contents of the building.

(3) The placing of any building in an unoccupied status.

(4) The reopening of any building previously unoccupied.

### b. Rubbish, Trash, and Debris

(1) All buildings, occupancies, and work sites shall be policed for good housekeeping regularly to reduce fire hazards.

(2) Trash and refuse containers will not be located in corridors, stairways, within 10 feet of exits, or placed in any location where ignition of the refuse or trash, and resulting hot gases or smoke, will prevent safe evacuation of a building. Particular attention will be given to enforcing this regulation in guest houses, lodging facilities, bachelor officer quarters, troop billets, and multi-storied family housing quarters.

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(3) Trash containers shall be constructed of metal or non-combustible material and provided with tight fitting covers in good condition. (Small wastebaskets are exempt from the cover requirement.)

(4) Trash shall be removed from buildings daily and placed in dumpsters. No trash shall be burned on the Combat Center.

(5) Dumpster and other trash disposal units shall be spaced a minimum of 15 feet from buildings or storage areas and in such position as not to obstruct traffic or operations. The doors or hatches of such units shall be kept closed except when being used for disposal of trash.

(6) No flaming or glowing substances, hazardous materials, or explosives will be placed in any dumpsters.

(7) Dry weeds, grass, brush, trash, and combustible debris shall not be permitted to accumulate within 50 feet of buildings, along fence lines, property lines, or within open storage areas. Areas shall be policed regularly and such materials removed frequently and disposed of in a safe manner.

### c. Storage of Combustibles

(1) The storage of combustibles under stairways, in attic spaces, in mechanical rooms, and on roofs of buildings is prohibited.

(2) Rags and material contaminated with oil (especially animal or vegetable oils), paints, thinner, wax, furniture polish, and other liquids which can cause spontaneous heating will be kept in safe, self-closing covered metal containers when not in use.

(3) Metal or metal-lined containers with covers shall be provided and used for storing supplies of clean rags, waste, packing materials (such as excelsior and shredded papers), and other combustible materials in current use.

(4) All used waste, oil, paint, chemical-soaked rags, and other combustible materials shall be deposited in plainly marked self-closing metal safety containers. The metal covers shall be kept closed and never wedged or blocked open. The contents shall be removed from the building as required, during working hours.

## 3. Specific Occupancies

### a. Places of Public Assembly

(1) For purpose of this Manual, "places of public assembly" include theaters, meeting halls, recreation rooms, clubs, or any similar places where fifty or more persons may assemble or pass through at any time, and they are not residences.

(2) Per reference (b), public assembly facility managers shall be trained in proper fire prevention responsibilities due to the high loss of life potential.

(3) Prior to the decorating of any place of public assembly, the officer, noncommissioned officer, or civilian in charge shall notify CCFD. All combustible material including curtains, acoustical materials, streamers, cloth, cotton batting, straw, vines, leaves, trees, and moss shall be rendered flameproof. All materials shall be inspected and tested at frequent

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intervals to determine their resistance to flame and the retention of their flame proofing qualities. Exits, exit markers, and stairways shall not be obscured by decorations or obstructed in any manner.

(4) Per reference (b), special events requiring an increase in occupant load or change in building layout shall require CCFD review and approval. Managers of such facilities shall place a request in writing to the Fire Chief and provide a floor map detailing arrangement.

(5) Storage and use of flammable liquids or chemicals is prohibited in all buildings where assemblies, entertainment, or recreational facilities are provided.

(6) Fresh cut and live Christmas trees are prohibited in workspaces and public use buildings in accordance with reference (c). Decorated artificial trees shall be inspected by CCFD.

(7) Exhaust systems and associated ductwork, especially in restaurants and galleys, shall be kept free of grease accumulation. Grease filters in range hoods shall be cleaned frequently using steam or a nonflammable liquid.

### b. General Storage Warehouses

(1) Doors may not be blocked by storage unless authorized by CCFD. Doors that are blocked on one side shall be plainly marked on the opposite side by a sign with letters not less than six inches high reading, 'THIS DOOR BLOCKED'.

(2) When a door is authorized by CCFD to be blocked by storage, the storage inside may be made consistent with other storage in the building. For example, if material is stored within 24 inches of the walls, the material may also be stored within 24 inches of the exterior doors.

(3) Doors that have been caged in by partitions shall be plainly marked on the outside by a sign with letters not less than six inches high reading, 'CAGED.' Doors used as entrances to fire aisles shall not be blocked or caged.

(4) Storage shall be at least 24 inches from the path of travel of fire doors unless a barricade is provided; in such case no clearance will be required.

(5) Clearances between stored materials and walls shall be maintained as follows:

(a) At precast concrete walls (2 hour rating): 18-inch clearance.

(b) Metal, gypsum board walls: 24-inch clearance.

(c) Hazardous materials stored in general purpose storage buildings: 36-inch clearance.

(6) Aisles and clear access (36 inches in all directions and 8 feet from finished floor) shall be maintained for access by firefighters to fire alarm electrical equipment, firefighting equipment, and sprinkler valves.

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### c. Clearance and Storage Limitations

(1) When clearances are found necessary to maintain storage block limitations, such clearance between stacks shall be four feet in width for 2,000 square-foot blocks and six feet for 8,000 square-foot blocks. Where operations require, working aisles may be used as clearance aisles between storage blocks.

(2) Heights of stacks shall be limited to 15 feet. As required by reference (g), clearances shall be maintained as follows:

(a) Below automatic sprinkler deflectors, 18-inch clearance.

(b) When hazardous commodities are involved, 36-inch clearance.

(c) Below joists, rafters, beams, and roof trusses, 18-inch clearance.

(d) Stacks in buildings not equipped with sprinklers, 36-inch clearance.

(3) When the clearance between lower roof truss members or beams is sufficient to permit stacking of supplies above the lower horizontal extremity of such structural members, the lateral clearance between supplies and structural members or other installed devices shall be 18 inches.

(4) Materials, supplies, or equipment shall be stored as described in reference (g). Storage between or adjacent to warehouses or within the required clearance between structures and areas shall not be permitted.

(5) A clear space of three feet shall be maintained between any outside combustible storage and exterior walls of buildings.

(6) All stock in open storage shall be stored as stated in reference (g).

### d. Required Fire Aisles

(1) Plano graphs shall be made for the stowage of materials, equipment or supplies in all warehouses, storage sheds, and open storage areas. Plano graphs shall indicate stock clearance from walls, fire doors, and fire aisles as stated in reference (g). The location of the fire aisles may be changed by the warehousing office provided such changes meet the criteria for fire aisles as shown in this Manual.

(2) All fire aisles shall be accessible from doors or gates so that they may be entered by the firefighting force without moving stored material.

(3) Materials, equipment, tools, pallets, vehicles, or fork-lifts shall not be left in fire aisles at any time.

(4) Fire aisles shall not be used for temporary storage while storage operations are being carried out, but shall be clear at all times.

(5) In buildings with sprinkle systems, storage racks shall be provided with in-rack sprinklers or arranged such that existing sprinklers can reach all areas of the storage placed on the rack.

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### e. Carpentry and Woodworking Shops

(1) Welding, cutting, torch soldering, and other open flame operations are not authorized except by permit issued by CCFD.

(2) Flammable liquids will not be used or stored in these shops unless required separation and ventilation are in accordance with reference (g).

(3) Materials stored within the building shall only be stored in sufficient amounts for work or for in an "in-use" status.

(4) Doors, exits, or passageways shall be blocked only by special permit of the fire chief and in such cases shall be plainly marked on the outside in six-inch letters "DOOR BLOCKED."

(5) Vehicles shall not be driven into or parked inside of the building.

(6) Shops shall be well ventilated to prevent the suspension of dust in the air.

(7) Deposits of dust on rafters and building supports shall be removed frequently by vacuum or other suitable means to prevent dust explosions.

(8) Lumber stacks for supply of carpentry shop operations shall not be stored within 15 feet of shop buildings or within 15 feet of fire hydrants or Fire Department connections.

### f. Quarters

(1) Persons assigned quarters shall be fully responsible for violations of fire safety regulations by their families or guests and shall adhere to all aspects of this Manual and Combat Center Order 11320.1E.

(2) Tenants shall be responsible for maintenance, good police, and shall not allow accumulation of trash, flammable liquids, or materials which may cause fire hazards in or about their quarters.

(3) Explosives, flammable liquids, or fireworks are not permitted in quarters, except as authorized in this Manual.

(4) Personal belongings, fencing, or other articles shall not obstruct stairs, halls, exits, and sidewalks.

(5) Materials of any type shall not be hung on or fastened to any fire suppression systems, sprinkler systems, smoke detectors, CO detectors, or fire extinguishers.

(6) Stoves or appliances operated by the use of gasoline or kerosene are not permitted in buildings.

(7) Lawn mowers may be stored in garages or outside storage rooms. Gasoline for use in these machines may also be stored in garages or detached buildings but should not exceed two gallons and must be in approved safety cans.

(8) The tenant shall immediately correct any hazardous condition found by the Fire Chief or the appointed representative.

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(9) Small children shall not be left alone in quarters or in vehicles. If child care providers are used, parents shall ensure that the child care provider will remove children from the building in the event of a fire or other hazardous condition. If the child care provider is unable to remove children, the individual shall notify emergency responders immediately. Parents shall ensure that the child care provider knows the proper procedure for reporting an emergency.

(10) Tenants shall not attempt to remove clothing, furniture, or other articles from a burning building.

(11) After evacuation of a building during a fire or alarm, tenants shall stand clear of the streets and fire hydrants and be at least 150 feet from the building involved.

(12) Tenants or other persons shall not attempt to assist firefighters unless called upon.

(13) Portable barbecue equipment, either briquette or liquid petroleum gas (LPG) operated, shall not be used indoors or on balconies and shall be at least ten feet from building eaves or shade structures while in operation. Tenant owned portable barbecue equipment is not authorized in or around public quarters such as hotels or barracks.

(14) Combustibles stored in multi-family housing storage rooms should be limited, located, and arranged to prevent children from starting a fire with matches or lighters.

(15) Occupants of public quarters will ensure that any electrical equipment personally owned and used meets the requirements of the UL and be kept in good repair at all times. If there is any question that use of the equipment will overload the circuit to which it is connected for service, PWD Division will be consulted and approval secured prior to use.

(16) Additional fire regulations and instructions applicable to occupants of family quarters are available from the Combat Center Housing Office.

#### 4. Fuel-Fired Heating Systems

##### a. General

(1) Furnace and boiler rooms, heating units, and garages shall be kept free of unnecessary storage.

(2) Heating equipment shall not be allowed to become overheated.

(3) Adequate clearances, as specified by reference (g), shall be maintained between flammable material and steam pipes, furnaces, flues, and appurtenances.

(4) Exposed surfaces, too hot for the bare hand, shall be considered hazardous.

(5) Storage in rooms designed for housing of heating and air conditioning equipment is prohibited.

(6) Steam radiators and piping shall not be used for drying purposes.

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(7) Open flame type heating devices are prohibited in areas when flammable vapors may accumulate, such as gasoline stations, garages, and paint shops.

(8) Kerosene heaters are prohibited indoors.

(9) Carbon monoxide detectors are required in residential occupancies equipped with fuel-fired appliances.

### b. LPG and Natural Gas-Fired Heaters

(1) Gas-fired heaters and stoves shall be installed and maintained in accordance with reference (g).

(2) Portable Heaters. The introduction and use of any liquid fueled portable heater for interior use aboard the Combat Center is prohibited. Temporary use of such heaters may be authorized on a case by case basis in emergency situations, with prior approval of the Fire Chief, and only where no other alternative exists.

## 5. Vehicle Storage and Parking

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

b. When it is considered in the best interest of the Government to store vehicles inside buildings not specifically designed for such purposes, a request will be submitted to the Chief of Staff via the Assistant Chief of Staff G-7, for further action. Requests should be submitted for each location involved, and justification provided with sufficient details of the building structure so that evaluation can be made for proper and adequate protection of Government property.

c. Vehicles will not be parked within 20 feet of combustible buildings, fire hydrants, Fire Department connections, on sidewalks, or within 20 feet of exterior doors or windows (regardless of construction type), or left unattended in fire lanes.

d. Only parallel parking (no nose in parking) shall be allowed in cul-de-sacs and turnaround areas.

### e. Separation of Structures and Vehicle Vans for Fire Protection

(1) Factors determining distance between buildings and/or open storage blocks of material are specified in references (c) and (d). The Combat Center Fire Chief is available for consultation on reference material.

(2) Fire breaks shall be maintained as described by reference (g).

(3) A 40-foot spacing will be required between buildings and any special high-value vehicle van, regardless of construction, unless it is provided with a separation wall that will allow a complete burn-out of one unit without damage to any adjoining unit.

(4) Spacing for trailer courts, relocatable prefabricated structures, and shop vans containing limited value equipment will be as specified in reference (d).

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### 6. Hazardous Operations

#### a. Cleaning Operations

(1) The use of gasoline, naphtha, thinners, or other flammable liquids for cleaning automobile parts, floors, decks, etc., is prohibited. All cleaning operations shall be performed with non-flammable safety solvents.

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

(3) CCFD shall be notified before operations are started and any additional precautions required by the Fire Chief or his representatives will be implemented.

#### b. Battery Charging Shops

(1) Only qualified personnel shall be assigned to battery shops.

(2) Battery shops shall be equipped with eyewash stations and be adequately ventilated to allow removal of hydrogen gas. Air inlet openings at or below the level of the batteries are required regardless of the kind of exhaust. For a small number of batteries a vented hood over the batteries may be satisfactory. Where natural ventilation is used, a vent stack to aid in producing upward draft should be installed.

(3) All electrical wiring and equipment shall be explosion proof in accordance with reference (g).

(4) Smoking, open flame, and spark producing devices shall not be allowed in the vicinity of batteries on charge. Appropriate warning signs shall be posted.

#### c. Spray Applications Using Flammable or Combustible Material

(1) Where practicable, the main electrical switch for the entire building and all pilot lit appliances should be disengaged or secured and work done by natural light. When this is not feasible, all electrical appliances and pilot lit appliances of any kind in the vicinity - water coolers, soft drink machines, water heaters, or other automatic stopping and starting appliances shall be disconnected before material is applied and shall not be connected again until drying is complete.

(2) Open flames shall be prohibited in the vicinity of spray applications and for at least one hour after ventilation and drying is completed.

d. Maintenance On or Near Flammable Area. Non-spark tools shall be used when working on any part of a system or unit designated for storage or handling of flammable liquids. The use of other than nonferrous tools or open flame devices in the vicinity of flammable liquids or vapors is expressly forbidden.

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## CHAPTER 6

### ELECTRICAL SAFETY

#### 1. General

##### a. Wiring

(1) All electrical wiring and equipment shall conform to the requirements of Standards 70, and 70E of reference (g). Changes, attachments to, or alterations of, electrical wiring or electrical appliances shall not be made except by authorized electricians on the order of the PWD Officer.

(2) All defective electrical equipment shall be disconnected, tagged *Out of Service* immediately, and reported to PWD for repair by authorized electricians. Defective or frayed wiring or cords of fixtures, appliances, lighting, or switches shall be removed from service and replaced.

(3) No article other than an approved appliance or equipment will be attached to electrical wiring or conduit. Electric wiring or conduit shall not be used for any purpose other than for which it was intended.

(4) Extension cords will only be used for temporary applications (i.e., portable tools, projectors, or other temporary use where no outlets are located within the immediate area) and shall be the three-pronged grounded type with an Underwriters Laboratories (UL) approval. Where extension cords are used for temporary applications they shall be of appropriate gauge for the electrical load and of the grounded type. They shall be inspected frequently, kept dry and free from oil and grease, maintained in a safe condition and removed after each application.

(5) Every effort shall be made to rearrange the workspace to eliminate the need for extension cord use. In no case shall extension cords be connected to heat-producing appliances, copy machines, refrigerators, appliances with motors, or used in tandem with additional extension cords or power strips. All appliances shall be plugged in directly to outlets.

(6) Surge protecting power strips or surge protecting outlets may be permitted only for the protection of low voltage appliances or where protecting computers and electronic equipment. In no case shall power strips be used on heat producing appliances or appliances with motors (i.e., refrigerators, copy machines, fans, etc.)

(7) The ends of unused wires shall be properly taped or withdrawn from the receptacle or conduit. Disconnected electrical wiring shall be removed immediately upon installation of new wiring.

(8) Electrical outlets located within six feet of all water sources shall be protected by ground fault interrupt.

##### b. Circuits

(1) Electrical circuits shall not be overloaded. When a circuit has been interrupted by a blown fuse or tripped breaker, the source of disturbance shall be located and eliminated by an authorized PWD electrician before restoring power to the interrupted circuit.

(2) Circuit breakers shall not be used as switches, tampered with, taped in the open position or otherwise rigged.

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(3) All breakers in service panels shall be correctly labeled to indicate the circuits and/or devices that they control.

(4) Electricity for the Combat Center and its areas shall be shut off only by approval of the AC/S G-4, Installation and Logistics, or due to fire or other emergencies, by order of the Maintenance Officer or Fire Chief. Except in cases of power failure, CCFD shall be notified of all proposed utility outages.

### 2. Electrical Equipment

a. Electrical equipment used or located in areas where explosive vapors are present shall conform to the requirements of references (f) and (g).

#### b. Spark Dangers

(1) Tools, metal fan blades, door latches, and similar devices used in the vicinity of flammable gases or vapors shall be of nonferrous or non-sparking type. Non-sparking shoes shall be worn where appropriate.

(2) Substantial conductors having a 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. The contact between conductor and ground shall be in accordance with references (f) and (g).

(3) All vending machines using electrical power shall be properly grounded, and motors, compressors, etc. shall be kept free from accumulations of grease and lint.

#### c. Lighting Fixtures

(1) Combustible material, other than listed lampshades, shall have at least 18 inches of clearance from electric light bulbs or electric heaters. Precautions will be taken at all times to prevent combustible lampshades from coming in contact with light bulbs.

(2) Fluorescent light fixtures shall be installed with a minimum of one and one-half inches from combustible ceilings and shall be equipped with thermally protected ballasts. Fluorescent lights will not be used as standing lights.

(3) Light bulbs and fluorescent bulbs shall be provided with guards or covers to prevent accidental contact.

### 3. Special Heat Producing Appliances

a. All special heat-producing appliances, including coffee makers of the urn type, hot plates, portable heaters, and soldering irons shall be listed by UL and shall meet the following requirements.

(1) Shall comply with reference (g); which requires that in all occupancies (except residential) some form of automatic shut off be provided for all electrically-heated appliances intended to be used on or near combustible material. Reference (g) also requires that ample space be provided between the appliance location and any combustible material.

(2) Shall be located on a non-combustible surface or within a non-combustible shield.

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b. The number of special heat producing appliances should be kept to a minimum. Installation shall be only upon approval of CCFD, and shall be inspected regularly by the Fire Warden or his designated Fire Security Officer. Such devices shall not be installed in closets, lockers, or out-of-sight locations. Automatic time devices are not authorized.

c. Deep fat fryers shall be equipped with a primary thermostat to limit temperature to 425 degrees Fahrenheit and a secondary backup thermostat or thermal electric cutout to limit temperature to 450 degrees Fahrenheit. Qualified personnel shall test thermostats periodically.

d. Portable electric heaters are not to be installed in any building without authorization of PWD and not until a fire safety inspection has been made by CCFD. In order for electric portable heaters to be acceptable, they shall meet standards as set forth in reference (g). These requirements are a thermostat for heat control and a tip-over switch for automatic shut off if tipped over. Heaters shall be unplugged when not in use.

4. Temporary Wiring. Temporary wiring shall conform to the requirements of Standards 70 and 70E of reference (g).

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## CHAPTER 7

### SPECIAL PROCESSES AND MATERIAL HANDLING

#### 1. Flammable and Combustible Liquids

a. General. For purposes of this chapter, the words "liquid or liquids" shall mean flammable and/or combustible liquids.

(1) Class I liquids shall include those having flash points below 100 degrees Fahrenheit.

(2) Class II liquids shall include those having flash points at or above 100 degrees Fahrenheit and less than 140 degrees Fahrenheit.

b. Class I liquids shall not be used for cleaning purposes.

c. Class II solvents in volume may be used for "parts" cleaning if done in an approved type room and if in accordance with reference (g), where safety measures and recommended equipment are used.

d. Drawing of Class II liquids from drums will not be permitted unless automatic self-closing spigots are used. Class I liquids shall be drawn by pump only.

e. Class I or II liquids which are soluble with water shall not be stored with liquids of petroleum base.

f. Blankrola, paint, kerosene, solvents, gasoline, alcohol, bowling ball cleaner, and other highly flammable liquids shall be kept in safety containers at all times when in use, or capped in the original container.

g. Class I or II liquids shall not be taken into quarters, warehouses, maintenance shops, places of public assembly, mess halls, cafeterias, recreation buildings, theaters, or tents.

h. In the event of a spill or leak of Class I or II liquids in any quantity deemed dangerous, emergency services notification procedures shall be followed.

i. A lined earth dike will be built up around areas of above ground storage for Class I and II liquids. The height of the dike will be at least 18 inches or higher where necessary to provide complete containment. Minimum containment shall be sufficient to contain 10% of all liquids stored or 110% of the largest container, whichever is greater.

j. Gasoline tanks of portable or stationary engines shall be fueled by use of "safety nozzles" or "safety containers" only.

k. All gasoline-powered vehicles shall be fueled outdoors.

#### 2. Portable Fuel Containers

a. Gasoline shall not be pumped, transferred, moved, stored, poured, or received by any open container, glass container, unapproved plastic container, or while container is located within a vehicle.

b. Containers used for dispensing Class I and II liquids shall be listed for that use by a recognized testing authority. They shall be maintained in good condition. Contents of leaking containers shall be transferred to

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serviceable containers. Fifty-five gallon drums used for Class I and II liquids shall not be transported aboard vehicles without prior approval of CCFD.

c. All portable fuel containers will be properly marked with type of contents such as "GASOLINE", "KEROSENE", or "STOVE OIL #10" in two-inch minimum black letters on a #14 yellow background.

(1) Dispensing equipment shall be checked regularly for leaks at pipe connections, stuffing boxes, and at meters. When leaks are found, an authorized repairman shall repair them, and the equipment shall be kept out of service until the repairs have been made.

(2) All dispensing of Class I and II liquids from tank trucks or from underground tanks shall be done by an approved pumping or water displacement system. This rule applies to containers of over 55 gallons capacity. Gasoline drums, when used as dispensers, shall be equipped with drum (barrel) pumps of approved type.

(3) Faucets on drums shall not be used for gravity feed dispensing of Class I liquids.

(4) Faucets used on drums for dispensing Class II liquids shall be of the approved spring-type that will flow only while held open manually. Such drums shall be equipped with UL approved flame arrestor bung vents. Blocking faucets open is prohibited. Non-combustible drip pans shall be placed under faucets and cleaned regularly.

(5) Nozzles used in connection with gasoline dispensing apparatus shall be of UL approved type and manually controlled with an automatic closing valve.

(6) Operators dispensing liquids shall not leave nozzles or valves unattended when they are in use.

(7) No ratchets or other "hold-open" devices shall be used on nozzles of gasoline dispensing apparatus.

(8) Bungs, caps, or stoppers shall be kept in place on drums, barrels, tanks, or other liquid containers unless the container is in use. This rule also applies to empty containers.

(9) Empty liquid containers shall not be stored or repaired until they have been thoroughly cleaned of hazardous vapors. The fuel tanks of small gasoline engines shall be similarly cleaned before indoor storage.

(10) Gasoline shall not be dispensed into portable fuel containers while container is in or on a vehicle or in the back of an open bed or truck nor shall it be transported within passenger compartments.

### 3. Bulk Fuel Storage

a. Limitations on floor areas and clearances of different types of stored materials are included in references (e) and (g).

b. Flammable and combustible liquids should be stored in special areas of fire-resistive buildings equipped with sprinkler systems and firewalls, as required by published standards. When liquids are stored in flammable storehouse (bulk) buildings, the following precautions shall be taken:

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- (1) Handle containers carefully to avoid breakage.
- (2) Remove and dispose of leaky containers.
- (3) Maintain accessibility for firefighting purposes.
- (4) Ensure proper ventilation for materials that give off flammable vapors.
- (5) Avoid any location where spilled liquids may come in contact with a spark or flame.
- (6) Clean up of any spills or leaks of hazardous materials shall be in accordance with current federal, state, and local directives.
- (7) Use only spark-proof forklifts.
- (8) Do not store liquids near combustible material.
- (9) Post 'NO SMOKING' signs.

c. All liquids, including intrastate shipments, shall be in containers approved for shipment of such materials, which are tagged or labeled in accordance with regulations of the Interstate Commerce Commission.

d. Day-to-day stocks of liquids shall be kept only in places approved by the Fire Chief for such storage. Amounts of stored materials shall be procured only as needed and kept in approved, labeled and closed containers. Any surplus shall be returned to the storage area prior to the close of the workday. Storage places of flammables or explosives shall be plainly marked to indicate such storage.

e. Class I or Class II liquids, as defined in reference (g), shall not be drawn from or dispensed into tanks or containers within a building, except within explosion proof liquid storage and dispensing rooms. Drums shall be in an upright position using approved type barrel pumps in approved locations, i.e., flammable liquid storage and dispensing room. Containers other than approved safety cans from which Class I and II liquids are dispensed shall be equipped with an approved quick closing valve.

f. Gravity discharge within a building of Class I or Class II liquids from tanks, drums, or containers other than safety cans is specifically prohibited.

g. Used liquids shall be collected in steel drums, cans, or other designated receptacles and disposed of appropriately in accordance with current directives.

h. Lockers, buildings, and areas used for storage of flammables will be approved and posted with letter signs on a #14 yellow background reading 'FLAMMABLES' in four-inch minimum letters and "NO SKOKING WITHIN 50 FEET' in two-inch minimum letters. This is to include paint storage. Approved lockers or buildings used for storage of flammables will not be painted red, nor will they be located within 50 feet of any other building or structure.

i. Gasoline, oil, or any other hazardous material shall not be discharged into or permitted to accumulate in storm drains, sewers, or upon any waters aboard or adjacent to the Combat Center.

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4. Operation of Filling Stations. The following rules shall be strictly enforced; copies of these rules shall be conspicuously posted at each gasoline dispensing station.

a. Smoking, open flame, torches, sparks, exposed coil heaters, or other sources of ignition shall not be permitted within 50 feet of gasoline dispensing pumps.

b. No gasoline shall be dispensed to a vehicle while the engine is running.

c. No gasoline shall be dispensed to a vehicle unless it is equipped with a proper cap for the gasoline tank.

d. All personnel will dismount from their vehicle when fueling at military fueling points.

e. In the event gasoline is spilled near a vehicle, the engine shall not be started within 50 feet of the spilled gasoline or until the spill has been thoroughly washed down and dissipated.

f. During fueling operations, the gasoline hose nozzle shall be kept in direct metallic contact with the tank or container to prevent formation of static electricity.

g. Manually operated nozzles with automatic shut-off features may be used on tanks of vehicles driven by internal combustion engines, provided:

(1) The nozzles used are approved and listed by the American Insurance Association without limitations.

(2) The automatic dispensing nozzles are used only when the engine of vehicle being filled is shut off.

(3) Automatic-closing type nozzle with latch-open device is permitted only when all dispensing of Class I liquids is to be done by the service attendant.

h. Class I or II liquids will not be dispensed or transported in other than approved containers. Transportation of Class I or II liquids in "Jerry cans", not attached to a vehicle, will be allowed but will not exceed 20 gallons. The transporting vehicle must be equipped with a portable fire extinguisher rated at a minimum 20:BC and comply with all other requirements for fuel transportation vehicles.

i. Small amounts of gasoline for emergency use may be dispensed at the discretion of the filling station operator but only in approved type safety cans.

j. Personnel engaged in dispensing gasoline must be familiar with:

(1) Telephone number of CCFD.

(2) Proper operation of firefighting equipment provided.

(3) The above regulations.

k. Ignition switches of vehicles being serviced shall be turned to the "OFF" position prior to fueling.

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### 5. Fuel Carrying Vehicles and Refuelers

a. "NO SMOKING" signs shall be posted inside the cabs of all fuel tank trucks.

b. Fuel carrying vehicles, whether empty or full, shall not be parked inside of or within 50 feet of any structure. Every effort shall be made to park trucks 50 feet from one another or from other vehicles.

c. Fuel tank trucks shall be attended by qualified and authorized personnel at all times during loading and unloading operations.

d. Fuel tank trucks shall be properly grounded during all loading and unloading operations. Where applicable, refueling shall be conducted at fuel dispensing points only.

e. Wedges, locking devices, etc., which restrict instant shut-off in fuel lines during loading and unloading operations are prohibited.

f. Fuel trucks having leaky or otherwise defective pumping equipment or other fuel leaks shall not be used and shall be dead lined. Commercial vehicles are included in this category.

g. Tank trucks, trailers, or semi-trailer vehicles used for transporting Class I or II liquids will be posted with red-lettered signs on white background reading 'FLAMMABLE' in three-inch minimum letters and "NO SMOKING WITHIN 50 FEET' in three-inch minimum letters. When not in use, they shall have a clear distance of 50 feet between vehicles and/or buildings.

h. All tank trucks, trailer, or semi-trailer vehicles used for transportation of Class I or II liquids will be equipped with two fire extinguishers rated at a minimum 40:BC.

i. All tanks trucks, trailer or semi-trailer vehicles used for the transportation of Class I or II flammable liquids shall be restricted to travel to and from fuel dumps and/or to dispensing operations. Traveling through or parking in the main camp area is prohibited, except in cases of emergency.

j. Refuelers operating under field conditions shall be lined and bermed to contain accidental releases.

k. Top loading, or otherwise referred to as splash filling, is prohibited unless a proper bonding nozzle assembly is used which extends to and bonds with the bottom of tank being refueled and all parts of fill line bonded.

### 6. Compressed Gases and Liquid Petroleum Gases

a. The storing and handling of liquefied petroleum (LP) gases shall conform to standards set forth in references (f) and (g).

b. Compressed gas cylinders showing evidence of excessive rust, corrosion, dents, or other surface defects shall be considered hazardous and shall be disposed of at the Hazardous Waste Facility.

c. Cylinders of compressed gases, whether in use or in storage, shall be secured in place to prevent them from overturning.

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d. Compressed gas cylinders shall be stored and handled in accordance with reference (g). Cylinders shall comply with color codes and labels as specified by MIL-STB-101B.

e. Non compatible or reactive gases stored within buildings shall be separated by gas-tight partitions. When stored in the open, cylinders of such gases shall be separated by well-ventilated clear space of at least 20 feet and protected from the direct rays of the sun.

### 7. Painting and Spray Applications

a. No mixing of flammable compounds shall take place in any building or area other than those specifically approved for such operations as stated in reference (g).

b. Unopened or previously opened containers of paint or other flammable compounds used in painting or preserving shall be stored in approved paint lockers.

c. Spray painting, except for interior painting of buildings, shall not be conducted within buildings unless standard spray booths and exhaust systems are provided. Spray booths shall be designed, installed, and maintained in accordance with Standard 40 of reference (g) and general requirements of reference (f).

### 8. Radioactive Materials

a. When radioactive material (including weapons) are transported, stored, handled, or used aboard the Combat Center, CCFD will be immediately notified.

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

(1) The general type of radioactive material and 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 aid in fighting a fire in which it may be associated.

c. It is essential that CCFD obtain the above information for the protection of firefighters and other personnel in the event of fire or similar emergency involving radioactive material.

d. CCFD is authorized to make appropriate pre-fire planning surveys to evaluate the hazards involved and prepare the best possible fire protection principles of operation.

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## CHAPTER 8

### AMMUNITION MAGAZINE AND AMMUNITION

#### 1. General

a. CCFD will be notified before new ammunition dumps and magazines are established and when they are abandoned.

b. A chart showing the layout of the area and type of ammunition stored in each structure will be posted in the magazine area office. Particular hazards associated with fire or with the ammunition stored therein, i.e., explosives, intense heat, poisonous gases, etc., should be noted in addition to firefighting equipment best suited to combat the conflagration.

c. Explosives, including ammunition and pyrotechnics, will be kept in magazines except when being transported or being held in readiness for immediate use. When the quantity of ammunition on hand exceeds the magazine storage capacity, necessitating temporary outdoor storage, the Ammunition Officer (OIC, Center Magazine Area) will notify the Combat Center Fire Department.

d. Individual magazines will have combustible vegetation cleared for a minimum distance of 50 feet in all directions.

e. Vehicles loaded with Class V(W) materials shall not be allowed to enter troop inhabited areas, to park in public lots, or to stand overnight, except in authorized holding areas.

f. Field Ammunition Supply Points (FASPs) of Class V(W) material shall meet all requirements in accordance with references (f), (h), (l), and (m).

2. Storage. Ammunition will not be stored in any building aboard the Combat Center except as follows:

a. Ammunition magazines and storehouses designated as such and approved by Bureau of Weapons.

b. Unit commanders are authorized to store small amounts of small arms ammunition for arming guards, chasers, sentries, etc. Such ammunition, when stored, will be kept in a sealed metal container segregated from other stores and in a locked or controlled access storehouse or locker. The container will be marked to identify the contents as ammunition.

c. The officer in charge of rifle and pistol teams, equipped with material authorized by Ordnance Supply Bulletin RTE-1, may temporarily store team ammunition in a locked storeroom or storehouse. Temporary storage shall not exceed that required for meets or practice sessions scheduled for periods when the ammunition magazine area is closed.

d. Personnel residing in public quarters that store small arms ammunition and/or smokeless powder will submit a written report to the Combat Center Fire Chief giving the building number, quantity, and location within the building of such storage.

# COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

## CHAPTER 9

### EXCERSISE SUPPORT BASE AND EXPEDITIONARY AIRFIELD

#### 1. General

a. This section provides a basic source of information to assist Military personnel at all echelons of command in carrying out their responsibilities for implementation of an aggressive and disciplined fire prevention program during Field Training Exercise (FTX) operations aboard the Combat Center. The fire prevention practices and other criteria contained in this section are minimum requirements and are in addition to all other chapters in this Manual.

(1) Qualified unit personnel shall perform routine fire protection inspections of buildings, support functions, tents and all occupied areas.

(2) Where there are potential fire risks and/or whenever fire protection or firefighting equipment is insufficient, fire watches and distribution of fire extinguishers shall be increased to ensure life safety is achieved.

b. Emergency Reporting. All emergencies shall be reported in accordance with chapter 2. Due to local limitations, visiting units are encouraged to program local emergency numbers into cellular phones and voice over internet protocol phones prior to arrival.

(1) Cell phones and voice over internet protocol phones (760) 830-3333 or (760) 830-3334 or (760) 830-FIRE (3473).

(2) All landline phones dial 9-1-1.

(3) Emergency reporting boxes are located throughout camp - green box with a red light. To report any emergency - open door, push button. Wait at the box for emergency personnel to arrive.

#### 2. Fire Protection

##### a. Portable Fire Extinguishers

(1) The using unit is responsible for providing all portable fire extinguishers required within K-spans and tents.

(2) All office spaces, storage spaces, refueling and vehicle maintenance areas, and any other areas where processes create a potential fire, require fire extinguishers.

##### b. Fire Lanes

(1) All roads are considered "Fire Lanes" and must be kept clear and unobstructed. Speed bumps, trenches, etc. shall not be used to control speed.

(2) The area in front of the fire station shall remain clear and unobstructed for emergency response.

##### c. Fire Hydrants

(1) Fire hydrants must remain clear and unobstructed at all times.

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(2) Use of a fire hydrant requires CCFD authorization.

(3) Tracked vehicles prohibited within the main camp due to potential damage of fire mains.

### 3. Life Safety

#### a. Means of Egress

(1) Locking of doors. No door in a required means of egress shall be locked or blocked to prevent egress from the inside.

(2) Camouflaged netting. Use of camouflaged netting is not permitted indoors and shall not be used in a manner that restricts egress. Exterior is permitted where the netting is elevated to at least 20 feet or separated from the building by at least 20 feet.

#### b. Concertina Wire

(1) Concertina wire is limited to temporary installations protecting only high security areas within the Camp. Areas that require routine security perimeters require permanent fencing.

(2) Clear space is required between high security buildings and concertina wire with at least one established emergency point of entry or exit. Emergency entry or exit points must be flagged on either side to delineate opening.

(3) Concertina wire is not permitted around billeting areas.

### 4. Fire Prevention and Fire Safety

#### a. Open Fires and Burning

(1) Open fires are not permitted.

(2) Destruction of classified materials by burning or incineration is not permitted - see chapter 5 paragraph 1d.

(3) Barbeques are required to be charcoal or propane and at least 10 feet from all structures, sunshades, tents, and membrane structures and at least 20 feet from any heating, ventilation or air conditioning unit air intakes.

#### b. Fire Watches

(1) Fire Watches are required in all areas of billeting.

(2) Fire Watches are required in all buildings where required fire protection is out of order for more than 4 hours.

#### c. Smoking

(1) Smoking is prohibited in or around all occupied areas or within 50 feet of any structure.

(2) Designated areas shall be established and maintained with appropriate disposal receptacles provided.

## COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

### 5. Field Wiring

a. General. The exercise force is authorized to establish temporary wiring in accordance with references (g) and (s). Authorized temporary wiring shall be completely removed upon completion of each exercise unless approved by CCFD and only upon acceptance in writing by the next incoming unit. All removed wiring shall be turned into the Range Residual Processing Center in accordance with current directives.

(1) Ground fault protection for personnel shall be provided for all temporary wiring in accordance with reference (g).

(2) Wiring shall not be ran through doors, windows, under temporary flooring, or be crimped, pinched, have sharp changes in direction, be supported or come in contact with concertina or barbed wire, metal stakes, nails, hooks, or any other metal surfaces.

(3) Multi-plug adapters and power strips are PROHIBITED except where protecting electronic equipment. Where power strips are authorized they shall be UL rated and not be attached to extension cords or used in tandem.

(4) Electric wiring or conduit shall not be used for any purpose other than for which it is intended. No items shall be fastened or attached to conduit.

(5) The use of extension cords in place of approved temporary wiring is not authorized.

(6) Electrical wiring shall be supported by insulators where attached to any structure, surface, or where exiting underground installations.

### b. Exterior Wiring

(1) Mobile Electric Power Distribution Systems shall be grounded per manufacturer's instruction and installed in accordance with reference (s).

(2) Gray junction boxes located on the exterior surface of head facilities are available for lighting purposes only. Re-wiring or tampering with junction boxes, breaker boxes, or permanent electrical wiring is prohibited.

(3) Minimum gauge for exterior conductors is #8 AWG wire and shall be rated for exterior or underground duty as applicable. In addition the following applies.

(a) Underground must be continuous, without splices, and buried at least 18 inches deep.

(b) Where overhead at fire lanes and between K-spans shall be at least 18 feet clear height at the cable's lowest point and where overhead between tents and shall be at least 3 feet above the tent peak with a minimum of 10 feet clear height above finished ground.

(c) Where spliced, wire nuts shall be insulated and secured with electrical tape or other approved methods shall be used. Underground splices are not authorized. All approved splices shall be provided with a drip loop and supported with an insulator assembly per reference (s).

## COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

### c. Interior Wiring

(1) #12 gauge nonmetallic-sheathed cable ("Romex" type) wire is the only approved interior wiring. #12 Romex shall not be used for exterior applications.

(2) Interior wiring shall be supported in such a manner that the weight of the fixture is not suspended where connection is made.

(3) A circuit breaker shall be installed at connections between #8 wire and #12 wire.

### d. Lighting

(1) Outlets shall not be on the same branch circuits as lighting.

(2) Lighting fixtures shall be controlled by a switch and, where located less than 8 feet above finished floor, shall be provided with physical protection by means of suitable fixture or lamp holder with a guard.

### e. Outlets

(1) Shall be provided where necessary to prevent the use of extension cords.

(2) Shall be solid mount, insulated, and protected by Ground Fault Interrupt.

### f. Generators

(1) Generators shall be installed and operated not closer than 25 feet from all combustibles and air intakes.

(2) Emergency disconnects shall be provided on all generators. Emergency disconnect shall be clearly marked by placard or sign.

(3) Ground rods shall be installed in accordance with reference (g), driven to a minimum depth of at least 8 feet, and at an angle not to exceed 45 degrees.

(4) Generators shall have either internal fuel spill containment designed into the unit or have a liner and berm that provides at least 110% spill containment for fuel.

## 6. Heating and Climate Controls

a. Heating, air conditioning and climate controls shall be in accordance with chapter 5 and limited to the types described below.

b. Fuel fired heaters. Fuel fired heaters are required to have adequate ventilation and make up air, be used in accordance with UL listing, and be operated per manufacturers recommendation.

(1) Fuel fired heaters shall be permitted in areas open more than 50% under roof and when ducted and installed on the exterior of building and/or tent.

(2) Portable fuel fired heaters are specifically prohibited indoors due to carbon monoxide poisoning hazard.

## COMBAT CENTER FIRE REGULATIONS AND INSTRUCTIONS MANUAL

(3) Heating ducts shall be of rated material and not be routed through doors or in any other way compromise egress. Buildings or other permanent structures shall not be damaged or modified without PWD prior approval in order to accommodate temporary ducting.

### (4) Fuel Containers

(a) Fuel containers for heating equipment shall be separated from the heater and stored in accordance with chapter 7.

(b) Propane or LPG containers shall not be located inside tents or other facilities and be at least 60 inches from the structure exterior.

c. Portable Electric Heaters. Only UL approved portable electric heaters equipped with a tip over switch are permitted.

(1) Portable electric heaters are not authorized in billeting K-spans or any K-span without prior PWD review and approval. Where PWD has authorized the use of portable heaters, documentation of such approval shall be maintained on site.

(2) Where a portable electric heater is authorized it shall be plugged in directly to a hard wired outlet or connected to the power source by an outdoor-rated electric cable sized to handle the electrical load.

## 7. Tents

a. General. All tents located within established group camps shall comply with the requirements of this section as applicable.

b. Structural Design Load Requirements. Tents and membrane structures shall be pre-engineered and designed to withstand wind, rain and other conditions present at Camp Wilson. Tents will be installed and maintained in accordance with the intended design.

c. Flame Propagation Performance. All tent fabric shall be flame resistant in accordance with reference (g) and requires evidence of required flame propagation performance. An affixed label or documentation of tent and specifications will satisfy flame propagation performance. Where necessary a field test may be conducted using test specimens from the original material affixed at the time of manufacture.

### d. Location and Spacing

(1) Tents areas are limited by groups so that no single group of tents has more than 2 rows or exceeds a total of 4800 square feet. At least one side of each tent must be accessible for emergency response.

(2) A minimum of 10 ft between stake lines is required within each grouping of tents with adequate area left unobstructed to allow means of egress from all tents within the group.

(3) Per references (d) and (g) all tents require a clear zone at finished ground level, within and around the perimeter, that cannot be utilized for storage and must be kept free of all vegetation and combustibles. The clear zone may be used as a street or fire lane but not for vehicle parking.

(4) A minimum of 15 feet clear separation is required between tents and permanent structures.

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e. Means of Egress. Tents are required to have a clear, unobstructed means of egress in accordance with reference (g).

8. Field Kitchens. Building 5403 has permanently installed field stoves that have been modified for permanent installation. All other field kitchens, field stoves, and any temporary messing require review and approval.

### 9. Fuel Dispensing and POLS

a. Vehicle fuel dispensing sites. Vehicle fuel dispensing sites shall be established only in authorized areas with operations and maintenance under the guidance and authority of a qualified 1390, Bulk Fuels Officer.

b. Vehicle fuel dispensing operations. Dispensing of fuels shall be under the supervision of a 1391, Bulk Fuels Specialist, and adhere to the following requirements.

(1) Must have the following signs posted at each fuel dispensing site.

(a) WARNING: It is unlawful and dangerous to dispense gasoline into unapproved containers. No smoking. Stop motor. No filling of portable containers in or on a motor vehicle. Place container on ground before filling. Discharge your static electricity before fueling by touching a metal surface away from the nozzle. Do not re-enter your vehicle while gasoline is pumping. If a fire starts, do not remove nozzle - back away immediately. Do not allow individuals under licensed age to use the pump.

(b) No smoking or open flames permitted within 50 feet.

(2) Dispensing sites shall be provided with a minimum 8 foot grounding rod with ground cable attached to the fuel pumps.

(3) All personnel must dismount vehicles during fuel dispensing.

(4) Must have at least one 40 lb fire extinguisher rated at minimum 80 B:C located within a 100 foot travel distance.

(5) Must have a spill containment area large enough to contain 110% of the largest fuel container.

### c. POL Sites

(1) The storage of flammable or combustible liquids for incidental use at each site is limited to the supply necessary for one continuous 24-hour period.

(2) Provide bollards or other physical protection from vehicular traffic.

(3) Must be established at least 50 feet from buildings or other combustibles.

(4) Must be posted no smoking or open flames within 50 feet.

(5) Must have secondary containment.

d. Mobile Refueling Operations. Where mission essential, mobile refueling is authorized.

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### e. Bulk Fuels Storage Area

(1) Bulk storage of fuels shall be established only in pre-determined locations and only under the supervision of a qualified 1390 Bulk Fuels Officer.

(2) The storage area shall be graded in a manner to divert possible spills away from buildings or other exposures.

(3) The storage area shall be kept free of weeds, debris, and other combustible materials not necessary to the storage.

### 10. Aircraft Hangars

a. Headquarters Marine Corps Waiver. Buildings 5734 and 5735 are aircraft hangars located at the Expeditionary Airfield. They were constructed as expeditionary support facilities and have no fixed fire protection. They are occupied and operated by the 3d Marine Aircraft Wing under the authority of Headquarters Marine Corps by special written waiver.

b. Limitations of Use. The following limitations were established as a condition of use and continued occupancy and must be adhered to at all times by visiting units.

(1) No hazardous operations (fuel transfer, welding, cutting, painting, doping, torch soldering) are permitted inside the hangar.

(2) Installed curbing or floor drainage is required between aircraft spaces.

(3) Aircraft must be grounded.

(4) Full compliance with Standard 409 of reference (g) for a group III hangar.

c. Minimum Firefighting Capability. Use of the hangars for limited aircraft maintenance requires one of the following.

(1) An Aircraft Rescue and Firefighting apparatus standby, or

(2) At least one Halon wheeled fire extinguishing unit and a dedicated fire watch within each occupied hangar.

d. Hazardous Materials and Waste Storage. Hazardous materials storage and hazardous waste storage are not permitted within the building or within 50 feet of the building exterior.

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## CHAPTER 10

### CONSTRUCTION

1. General. All construction shall meet all requirements of the most current edition of references (d), (g), and (o) and the requirements set forth in this Manual.

2. Design References. All project designs shall include references to this CCO, and to the most current edition of references (d), (g), (o), and the requirement to comply with the provisions of each.

#### 3. Plans Review

a. All plans for construction whether by project, contract, or self help shall be submitted in writing for review and approved by CCFD prior to the start of work.

b. Self help projects shall be reviewed and approved by the CCFD prior to the start of work. Unapproved construction shall be removed where CCFD determines a fire hazard or code violation exists as a result of such.

c. Plans involving large projects or projects involving fire protection equipment shall be reviewed and approved by a Fire Protection Engineer in accordance with reference (d).

#### 4. Construction Design

##### a. Hydrants

(1) All new hydrants shall be wet barrel with one, four-inch pumper connection and two, two and one-half inch hose connections and installed in accordance with references (d), (g), and (o).

(2) Hydrants shall be located within three to seven feet of curb or paved access road and protected from traffic areas by bollards with pumper connection facing roadway.

(3) Hydrants shall be flow tested by the installer at the time of installation and marked in accordance with the color coding outlined in reference (g).

(4) Roadway in front of hydrants shall be marked with a blue reflective marker set into the asphalt, off center of the roadway midline, nearest the hydrant it marks.

##### b. Extinguishers

(1) All new projects shall include new fire extinguishers provided by the contract in accordance with references (d), (g), and (o) and as appropriate for the application. All applications requiring a class ABC type extinguisher shall be provided with a new Ansul Sentry with current hydrostatic test dates. All extinguishers shall be new and placed in service with current service tags by a qualified fire extinguisher contractor upon turnover to the Government.

(2) Fire extinguisher cabinets shall be of quality construction, recessed, or semi-recessed have no break parts and be non-locking.

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### c. Fire Protection

(1) All projects requiring installed fire protection shall comply with references (d), (g), and (o).

(2) Where projects, remodels, upgrades or other related work affects existing fire protection systems, the system shall undergo a comprehensive CCFD-witnessed test prior to and upon completion of the work. All discrepancies caused by the work shall be corrected by the contractor or person(s) responsible for the work prior to acceptance by the Government.

### d. Fire Sprinkler Systems

(1) All fire sprinkler piping shall be painted red, banded with two-inch wide striping, or identified with continuous labeling along the pipe at intervals not less than each section or every 20 feet.

(2) Where new fire sprinkler systems require Fire Department connections, Knox locking Fire Department caps shall be required. Knox order forms are available from the Fire Prevention Office at 830-5239.

### e. Fire Alarm Systems

(1) All new transmitters shall be dial-up and compatible with the Bosch D6600 receiver located at Fire Dispatch.

(2) All locking fire alarm components shall be keyed CAT15, duct smoke detector test stations shall be keyed CAT45.

### f. Life Safety

(1) Hard wired, single station smoke detectors shall be provided in all sleeping quarters and 24-hour duty posts.

(2) All occupancies shall be designed and constructed with the intent that the facility will be used after daylight hours and provided through out with emergency lighting.

(3) Exit signage shall be of substantial construction, vandal resistant, and where possible recessed into walls to further resist vandalism.

(4) All assembly occupancies shall have the occupant load calculated by the building designer and occupant load shall be posted within the facility on a quality constructed and aesthetically compatible sign in accordance with reference (g).

### g. Building Access

(1) Addressing. All buildings, whether temporary or permanent, shall be identified by address numbers that are clearly visible to emergency response vehicles from all sides of approach. Commercial buildings shall be marked near the top of the building, by a reflective or illuminated address, in contrasting colors, and with individual numbers that are at least 16 inches high and 8 inches wide. Residential address numbers shall be kept clear of obstruction and obvious from the street. Building numbers are assigned through PWD.

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### (2) Gates

(a) Automatic gates, where installed, shall include a Knox switch over-ride to provide after hours operation of the gate during emergencies. Knox switches must be compatible with the base standard; authorization forms are available at the Fire Prevention Office.

(b) Manual access gates shall be secured by chain and lock so that emergency access can be obtained by cutting the chain. Chains cut by the Fire Department in the line of duty will be re-secured with a CCFD lock upon completion of operations to maintain physical security.

(c) Key Vaults. All projects shall include installation of a Knox key vault located near the main entrance to the facility and installed to the manufacturers' specifications. New Knox key vaults must be compatible with the base standard; authorization forms are available at the Fire Prevention Office, call 830-5239.

(d) Elevators. All new projects, three stories or more above or below the level of exit discharge, shall include a service elevator accessible to emergency response personnel in accordance with reference (g). Firefighter access to new elevators shall be keyed HW1002.

h. Sunshades. Sunshades of any material type shall not be installed less than 20 feet from any building without review and approval of PWD and CCFD. All requests for sunshades shall be initiated by means of a work request.

#### i. Temporary Structures

(1) All structures intended to remain in place for more than 45 days require PWD and CCFD review and approval prior to construction. All requests for temporary structures shall be initiated by means of a work request.

(2) All structures remaining in place for 180 days or more during a 365 day period must meet all requirements applicable to permanent construction per reference (d).

j. Photovoltaic Solar Arrays. Photovoltaic solar arrays have the potential to present a serious life safety hazard to firefighters and shall be installed in accordance with the CCFD Photovoltaic Guide.

### 5. Fire Protection Plan

a. A written Fire Protection Plan shall be developed for significant or complex construction projects at the discretion of CCFD. The plan shall be approved by CCFD prior to proceeding beyond foundation work for new buildings or commencement of demolition work in alteration projects. The written plan shall be consistent with the fire safety precautions as specified in this Manual. The general contractor or building owner is responsible for carrying out the provisions of the Fire Protection Plan and communicating it to all subcontractors.

b. The Fire Protection Plan shall include the following:

(1) Procedures for reporting emergencies to CCFD.

(2) Procedures for emergency notification, evacuation, or relocation of all persons in the building under construction and on the site.

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(3) Procedures for hot work operations, management of hazardous materials, removal of combustible debris, and maintenance of emergency access roads.

(4) Floor plans identifying the locations of exits, exit stairs, exit routes, and portable fire extinguishers.

(5) Site plans identifying the designated exterior assembly areas for each evacuation route.

(6) Site plans identifying required fire apparatus access roadways and on-site fire hydrants.

(7) The name and contact phone number of the person(s) responsible for compliance with the Fire Protection Plan.

### 6. Fire Department Access Roadways

a. All construction sites shall be accessible by CCFD apparatus by means of fire lanes or roadways having an all-weather driving surface of not less than 20 feet of unobstructed width. The roads shall have the ability to withstand the live loads of fire apparatus and have a minimum 13 feet, 6 inches of vertical clearance. Dead end parking areas and fire access roads in excess of 150 feet in length shall be provided with approved turnarounds.

b. Fire lanes shall be kept clear and maintained at all times during construction to allow adequate emergency access to the site. Where projects are gated, a chain with a padlock shall be required for after hour's emergency access to construction site.

c. Temporary Access. When approved by the Fire Chief, temporary access roadways may be used until such time that the permanent roadways are installed. As a minimum, the roadway shall consist of a compacted sub base and six inches of road base material (Class 2 aggregate base rock) both compacted to a minimum 95 percent. The perimeter edges of the roadway shall be contained and delineated by curb and gutter or other approved method. The use of geotextile reinforcing fabric underlayment or soils lime-treatment may be required if so determined by the project civil engineer. Provisions for surface drainage shall also be provided where necessary. The integrity of the roadway shall be maintained at all times.

### 7. Fire Hydrants

a. Where underground water mains and hydrants are required for the facilities under construction, they shall be installed, completed, and in service prior to combustible construction materials accumulating on site.

b. Connection to hydrants shall be by a "water thief" device only and shall allow for immediate connection by CCFD and quick shut off to the contractor supply. Operation of the hydrant shall be by hydrant wrench only.

### 8. Telephone Service

a. Provisions shall be provided at the construction site for emergency notification of CCFD via telephone.

b. Emergency Reporting. All emergencies reported from fixed phones aboard the base shall be reported by dialing 9-1-1 and all emergencies reported from cellular phones aboard the base shall be reported by calling either (760) 830-3333, (760) 830-3334 or (760) 830-FIRE(3473).

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c. The street address of the construction site shall be posted adjacent to the telephone, along with the emergency reporting numbers listed above.

9. Premises Identification. The address numbers of the property or project location shall be plainly visible and legible from the street or road fronting the property at the fire apparatus access point or as otherwise approved.

10. Combustible Debris. Wood, cardboard, packing material, form lumber and similar combustible debris shall not be accumulated within buildings. Such debris, rubbish and waste material shall be removed from buildings on a daily basis.

11. Oily Rags. Oily rags and similar material shall be stored in metal or other approved containers equipped with tight-fitting covers.

12. Temporary Heating Equipment. Temporary heaters shall not be left unattended, must be listed for use, and shall be installed, used, and maintained in accordance with the manufacturer's instructions (see additional LPG storage and use requirements below). Heating devices shall be secured properly and kept clear from combustible materials. Refueling operations shall be conducted only in an approved manner. Manufacturer's instructions shall be kept on site and available for review by CCFD upon request.

13. Smoking. Smoking is prohibited anywhere inside or on the roof of new buildings under construction or in the project work area of buildings undergoing alteration. A suitable number of 'NO SMOKING' signs shall be posted to ensure that smoking is controlled.

14. Vehicle Parking. All vehicles shall be parked in accordance with reference (o) and a minimum of 20 feet from new buildings under construction with the following exceptions.

a. Vehicles that are temporarily parked for loading/unloading or other construction related operations. Such vehicles shall not be left unattended.

b. Private vehicles may be parked in approved parking garages of Type I construction.

15. Combustible Material Storage. Combustible construction materials shall be stored a minimum of 20 feet from buildings under construction or undergoing remodel with the following exceptions.

a. Materials that are staged for installation on a floor level.

b. When approved by CCFD, materials may be stored in parking garages of Type I construction if an automatic fire sprinkler system is in service and vertical openings are protected.

16. Fire Protection Systems. Notification shall be made to CCFD at 830-6871 anytime a fire protection system will be temporarily disabled for any reason and a fire watch shall be provided where system(s) are out of service for more than 4 consecutive hours.

a. Fire Sprinkler Systems

(1) Where automatic fire sprinkler systems are required to be installed in new buildings, the system shall be placed in service as soon as possible. Immediately upon the completion of sprinkler pipe installation on

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each floor level, the piping shall be hydrostatically tested and inspected. After inspection and approval from CCFD, each floor level of sprinkler piping shall be connected to the system supply riser and placed into service. For system activation notification, an exterior alarm bell can be installed and connected to the sprinkler water flow device prior to installation of the monitoring system.

(2) For buildings that are undergoing alterations and are equipped with fire sprinkler systems, the sprinkler system(s) shall remain in service at all times except when system modifications are necessary. Fire sprinkler systems undergoing modifications shall be returned to service at the end of each workday unless otherwise approved by CCFD. The general contractor or the designee shall check the sprinkler control valve(s) at the end of each workday to confirm that the system has been restored to service.

b. Standpipes. Where standpipes are required, the standpipes shall be installed when the progress of construction is not more than 35 feet in height above the lowest level of CCFD access. Standpipes shall be provided with Fire Department hose connections and outlets at accessible locations adjacent to usable stairs. The standpipe system shall be extended as construction progresses to within one floor of the highest point of construction having secured decking or flooring. Each floor shall be provided a two and one-half inch valve outlet for CCFD use.

c. Fire Alarm Systems. Fire alarm systems shall be maintained operational at all times during building alterations. When an alteration requires modification to a portion of the fire alarm system, the portion of the system requiring work shall be isolated and the remainder of the system shall be kept in service whenever practical. When it is necessary to shut down an entire fire alarm system, a fire watch or other interim measure mitigation approved by CCFD shall be implemented by the general contractor until the system is returned to full service.

17. Fire Extinguishers. Portable fire extinguishers shall be provided and shall be mounted on a wall or post at each usable stairway and such that the travel distance to any extinguisher does not exceed 75 feet. Mounting height to the top of the extinguisher shall not exceed five feet. Extinguishers shall not have less than a 2-A: 10-B:C rating or as otherwise directed by CCFD. The general contractor shall ensure that an adequate number of individuals are trained in the proper use of portable fire extinguishers.

### 18. Exit Requirements

a. All new buildings under construction shall have at least one unobstructed exit. All exits shall be identified on the Fire Protection Plan.

b. New Multi-story Buildings. For new multi-story buildings, each level above the first story shall be provided with at least two usable exit stairs after the floor decking is installed. The stairways shall be continuous and discharge to grade level. Stairways serving more than two floor levels shall be enclosed (with openings adequately protected) after exterior walls and windows are in place. Exit stairs in new and in existing occupied buildings shall be lighted and maintained clear of debris and construction materials at all times. Exception: For new multi-story buildings, one of the required exit stairs may be obstructed

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on not more than two contiguous floor levels for the purposes of stairway construction (i.e., installation of gypsum board, painting, flooring, etc.)

c. Designated exterior assembly points shall be established for all construction personnel to relocate to upon evacuation. The assembly points shall also be identified in the Fire Protection Plan.

19. Area Separation Walls. When area separation walls are required, the wall construction shall be completed (with all openings protected) immediately after the building is sufficiently weather-protected at the location of the wall(s).

20. Special Operations Requirements. CCFD-issued hot work permits shall be required where any open flame operations are conducted or where tar kettles are in use. Up to 72 hours may be required to schedule an appointment for a hot work permit; call 830-5239 to schedule an appointment. In addition to a CCFD permit, a Center Safety permit is required where open flame operations are to be conducted at magazines or explosive areas. The following procedures and safeguards are required whenever such operations occur.

a. Hot Work. Hot work shall be performed by properly trained, authorized personnel in accordance with references (a) and (g) and includes any work involving operations capable of initiating fires or explosions, including cutting, welding, brazing, soldering, grinding, thermal spraying, thawing pipe, torch applied roofing, tar kettles, or any other similar activity. In addition to a CCFD permit, a Center Safety permit is required where open flame operations are to be conducted at magazines or explosive areas; call 830-6154 or 830-7262 to obtain a Center Safety permit. The use of hot work equipment shall be in accordance with the following guidelines, including a pre-site inspection, fire watch, and post inspection procedures.

(1) Pre-site Inspection. It shall be the responsibility of the site supervisor to ensure all conditions of the hot work permit are satisfied daily prior to hot work operations and maintained throughout the duration of the job. Pre-site inspection shall ensure the following.

(a) The hot work site is clear of combustibles or that combustibles are protected.

(b) Exposed construction is of noncombustible materials or that combustible materials are protected.

(c) Openings are protected.

(d) There are no exposed combustibles on the opposite side of partitions, walls, ceilings, floors, etc.

(e) Fire extinguishers are available, fully charged, and operable.

(f) Fire watches are assigned, equipped, and trained.

(2) Fire Watch. The sole duty of fire watch personnel shall be to watch for the occurrence of fire during and after hot work operations. Individuals designated to fire watch duty shall have fire extinguishing equipment readily available and shall be trained in the use of such equipment. Personnel assigned to fire watch shall be responsible for extinguishing spot fires and communicating an alarm. Hot work conducted in areas with vertical and horizontal fire exposures that cannot be observed by

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a single individual shall have additional personnel assigned to fire watches to ensure that all exposed areas are monitored.

(3) Post-Inspection. The fire watch shall be maintained a minimum of 30 minutes and up to one hour after the conclusion of the work to look out for leftover sparks, slag, or smoldering combustibles.

### b. Asphalt and Tar Kettles

(1) Asphalt kettles shall be inspected and a hot work permit issued by CCFD prior to operation. They shall not be located within 20 feet of any combustible material, combustible building surface, or building opening and shall be identified by the use of traffic cones or barricades. With the exception of thermostatically controlled kettles, an attendant shall be within 100 feet of a kettle and shall have the kettle within sight at all times when the heat source is operating. Required attendant shall be knowledgeable of the operations and hazards of the kettle. Ladders or similar obstacles shall not form a part of the route between the attendant and the kettle. Kettles shall be of an approved type as specified by the National Board of Underwriters and be equipped with tight-fitting covers. The tar or compound in use shall not be heated over specific "use" temperatures. Empty or discarded tar block sacks shall be placed in containers and removed at the end of the day.

(2) A minimum 20-B:C rated portable fire extinguisher shall be located within 30 feet of each asphalt kettle when the heat source is operating. Two approved, minimum 20-B:C rated fire extinguishers shall be provided and maintained within 25 feet of the operating kettle and two additional shall be located on the roof during asphalt coating operations.

c. Excavations. Excavation requires gas free engineering and prior approval from PWD in accordance with reference (p). Excavating around gas mains, oil tanks, gasoline, or oil pipes is prohibited in areas where flammable gaseous conditions are suspected. In such places, the air shall be tested and if gas is present, ventilation shall be provided by portable blowers or other satisfactory methods. Electrical equipment used in such areas shall meet the requirements of reference (g) for explosive atmospheres.

### d. Steam Jennies

(1) Steam Jennies shall not be operated within 25 feet of a building or combustible material.

(2) Steam Jennies shall not be left unattended and shall be equipped with a minimum 20:BC fire extinguisher.

21. Motor Equipment. Motorized equipment including internal-combustion-powered construction equipment shall be used in accordance with the following:

a. Equipment shall be located so that exhausts do not discharge against combustible materials.

b. Exhausts shall be piped to the outside of the building.

c. Equipment shall not be refueled while in operation.

d. Fuel for equipment shall be stored in an approved area outside of the building.

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### 22. Hazardous Materials

#### a. LPG storage and use shall comply with the following:

(1) Propane containers may be used in buildings under construction or undergoing major renovation as a fuel source for temporary heating for curing concrete, drying plaster, and similar applications in accordance with the following:

(a) Heat producing equipment shall be equipped with an approved automatic device (thermocouple) to shut off the flow of gas to the main burner and to the pilot in the event of flame extinguishment or combustion failure and shall be installed with clearance to combustibles in accordance with the manufacturer's installation instructions. Heating elements (other than integral heater-container units) shall be located at least six feet from any LPG container. Blower and radiant type units shall not be directed toward any LP-Gas container within 20 feet. Integral heater-container units specifically designed for the attachment of the heater to the container, or to a supporting standard attached to the container, may be used provided they are designed and installed so as to prevent direct or radiant heat application to the LPG container. Portable heaters with an input of more than 50,000 Btu/hr shall be equipped with either a pilot that must be proved before the main burner can be turned on or an approved electronic ignition system.

(b) Cylinders shall comply with Department of Transportation (DOT) cylinder specifications and shall be secured in an upright position. Regulators shall be approved for use with LPG and fittings shall be designed for at least 250 psig service pressure. Hoses shall be designed for a working pressure of at least 350 psig (unless limited to 5 psig) and shall be a maximum of six feet in length.

(2) In addition to the above, for LPG storage or use in buildings undergoing alteration and that are fully or partially occupied, the following shall also apply:

(a) Specific written approval or a permit must be obtained from CCFD prior to bringing LP-Gas containers on-site.

(b) The maximum water capacity of individual containers shall be five-gallon water capacity and the number of containers in the building shall not exceed the number of workers assigned to using the LPG. Containers having a water capacity greater than two and one-half pounds (one quart) shall not be left unattended.

#### b. Storage, Use, and Dispensing of Flammable and Combustible Liquids

(1) Storage areas for flammable and combustible liquids shall be in accordance with reference (g) and be kept free of weeds and extraneous combustible material. Open flames and smoking are prohibited in flammable or combustible liquid storage areas. Secondary containment or a means of spill control, drainage control, and diking is required for large containers (such as 55 gallon drums) and tanks as approved by CCFD.

(2) Tanks and containers shall be marked with the name of the product and 'FLAMMABLE-KEEP FIRE AND FLAME AWAY'. Tanks (containers in excess of 60 gallons) shall also be labeled 'KEEP 50 FEET FROM BUILDINGS'.

(3) Metal containers for Class I or II liquids shall be in accordance with DOT requirements or shall be of an approved design.

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Discharge devices shall not cause an internal pressure on the container. Individual containers shall not be interconnected and shall be kept closed when not in use.

(4) Plans for the installation/use of any above ground storage tank (containers greater than 60 gallons) shall be submitted to CCFD for review and permit prior to the proposed tank arriving at the site.

### c. Compressed Gases

(1) Gas cylinders shall be marked with the name of the contents, stored upright, secured to prevent falling, and protected against physical damage.

(2) When gas cylinders are not in use, valve protective caps shall be in place and they shall be separated from each other based on their hazard classes. They shall not be placed near elevators, unprotected platform edges, or other areas where they could drop more than two feet nor in areas where they may be damaged by falling objects. Ropes, chains, or slings shall not be used to suspend gas cylinders, unless the cylinder was manufactured with appropriate lifting attachments.

(3) Combustible materials shall be kept a minimum of 10 feet from gas containers.