DEPARTMENT OF THE NAVY
COMMANDER
NAVAL EDUCATION AND TRAINING COMMAND
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PENSACOLA, FLORIDA 32508-5220

NETCINST 1500.16B
N00X
08 May 2023

NETC INSTRUCTION 1500.16B

From: Commander, Naval Education and Training Command

Subj: FIREFIGHTING TRAINING SAFETY PROGRAM

Ref: (a) NETCINST 1500.13D
(b) NAVAIR 00-80R-14-1
(c) Naval Ships Technical Manual, Chapter 555
(d) Navy Tactics Techniques and Procedures 3-20.31
(e) OPNAV M-5102.1 of 27 September 2021
(f) NAVMED P-5010-3
(g) National Fire Protection Association 1403
(h) Unified Facilities Criteria 4-179-01
(i) OPNAV M-5100.23 of 7 September 2022
(j) NAVMED P-117
(k) National Fire Protection Association 1582
(l) Naval Ships Technical Manual, Chapter 077
(m) National Fire Protection Association 58
(n) National Fire Protection Association 704
(o) National Fire Protection Association 72

Encl: (1) Surface and Shipboard Aviation Firefighting
(2) Submarine Firefighting
(3) Mobile Aircraft Firefighting Training Device
(4) Propane Storage and Distribution System

1. Purpose. To promulgate policy to minimize the probability of mishaps and injuries to students and instructors while conducting firefighting training. This instruction supplements high-risk training safety program policy provided in reference (a). References (b) through (o) are also applicable.

2. Cancellation. NETCINST 1500.16A.

3. Background. Reference (a) establishes Naval Education and Training Command (NETC) policy for the High and Moderate-Risk Training Safety program. Reference (b) establishes information and procedures for use by aircraft rescue and firefighting personnel. Reference (c) provides guidance for firefighting equipment and procedures on surface ships and submarines. Reference (d) provides doctrine and procedures dealing with

surface ship survivability. Reference (e) establishes safety, investigation and reporting policy for all Navy and Marine Corps activities, commands, personnel, and contractors. Reference (f) provides guidance for prevention and treatment of heat and cold stress injuries. Reference (g) provides the process for conducting live fire training evolutions. Reference (h) establishes design criteria for Navy firefighting school facilities. Reference (i) establishes policy guidance for the management of the Department of the Navy (DON) Safety and Occupational Health program. Reference (j) provides guidance for performing, recording, and interpreting the results of physical examinations. Reference (k) establishes standards and requirements for a comprehensive occupational medical program for fire departments. Reference (l) provides guidance for the use and care of personnel protection equipment. Reference (m) establishes standards for the storage, handling, transportation, and use of liquefied petroleum gas. Reference (n) establishes the standard system for the identification of the hazards of materials for emergency response. Reference (o) establishes the application, installation, location, performance, inspection, testing, and maintenance of fire alarm systems.

4. Applicability. This instruction is applicable to:

a. Training activities within the NETC domain that conduct formal Navy firefighting training, including mobile training teams (MTT).

b. Contracted firefighting training facilities utilizing NETC approved curriculum.

c. Fleet activities conducting live firefighting training utilizing NETC approved curriculum.

5. Roles and Responsibilities. The roles and responsibilities outlined in this instruction, as well as reference (a), provide the policy and guidance to assist in conducting safe firefighting training.

a. NETC

(1) Issue policy and provide technical guidance and support to subordinate commands who conduct firefighting training.

(2) Pursue a firefighting training program that minimizes the probability of mishaps and related injuries to students and staff during formal training.

(3) Schedule and lead on-site high risk training safety evaluations (HRTSE) of all firefighting training per reference (a), at least once every 36 months. A firefighting training evaluation will also be conducted:

(a) When a learning center (LC) or learning site (LS) desires to teach an additional firefighting course that they are not currently approved to teach.

(b) When any structure or device used to conduct live firefighting training has been substantially modified.

(c) When a LS wishes to use a firefighter trainer that has not previously been evaluated.

(4) A firefighting training evaluation consists of the following:

(a) Observation of firefighting training, procedures, and operations.

(b) Review and assessment of instructor screening and qualification program, safety programs, training evolution standard operating procedures (SOP), special evolution SOPs (e.g., daily startup and securing, fuel delivery, etc.), emergency shut-off procedures, emergency action plans, preventive maintenance system, fuel records, and student qualification and medical screening procedures.

(c) Inspection of personal protective equipment, emergency equipment and systems, and communication systems (both primary and secondary).

(d) Inspection of technical training platforms to ensure a continued safe training environment for staff and students.

Note: Formal technical training platform condition assessments are no longer required now that structural evaluations of all Submarine Learning

Center (SLC) and Surface Warfare Schools Command (SWSC) live firefighting trainer complex structures have been conducted.

(e) Observation of an emergency action plan drill.

Note: LSs are advised to allow a minimum of 4 weeks from new device acceptance until the interim evaluation in order to allow instructor completion of a new course unique instructor training and familiarization with trainer operations for all live firefighting evolutions.

b. LCs (Includes Naval Service Training Command (NSTC))

(1) Where facility limitations prevent training per approved scenarios, the LC will provide the affected LS with written authority to deviate, with notification provided to NETC N00X.

(2) Ensure firefighting equipment and tactics are consistent with Navy doctrine provided in references (b) through (d), as applicable.

(3) Advise NETC N00X of all changes or modifications to facilities or firefighter trainers prior to conduct of work.

(4) Ensure that any statement of work for contractor operations and maintenance services (COMS) contract and any contracted firefighting training sites includes the requirement that COMS contractors or contracted training sites must use the firefighter trainer startup and securing procedures and preventive maintenance procedures provided by Naval Air Warfare Center Training Systems Division (NAWCTSD) or LC, as applicable.

c. LSs

(1) Ensure written procedures are developed for processes associated with the firefighting trainer located at the LS and per enclosures (1) through (3), as applicable.

(2) Firefighting equipment and tactics:

(a) Ensure all firefighter training adheres to the curriculum issued by the LC, unless there is written authority to deviate.

(b) If a LS is unable to comply with the curriculum, permission to deviate must be requested via the course curriculum model manager (CCMM), as appropriate, and approved by the applicable LC.

(3) Advise the applicable LC of all changes or modifications to facilities or firefighter trainers prior to conduct of work.

(4) Student qualifications:

(a) Prerequisites. Establish procedures to ensure catalog of Navy training courses prerequisites are met by students prior to commencement of firefighting training.

(b) Authorized Students. Students attending NETC firefighting training courses must be a member of the Department of Defense (DoD) (including U.S. Naval Academy Midshipman and Federal firefighters), U. S. Coast Guard, National Oceanographic and Atmospheric Administration, or an International Military Student unless approved by NETC Safety. Naval Reserve Officer Training Command (NROTC) students may attend only if under official Navy orders.

(c) Unauthorized Students. Naval Sea Cadets and Navy Junior Reserve Officer Training Command (NJROTC) students are not authorized to attend live firefighting training.

(d) Individuals who are not members of the organizations listed above (e.g., non-DoD civilians, NROTC, etc.) may, under certain circumstances, be allowed to attend specific high-risk courses. However, prior written approval is required by NSTC, Center for Naval Aviation Technical Training, SLC, or SWSC for courses under their cognizance (courses for which they are the CCMM), and NETC N00X for all other courses. All such requests must be submitted via the applicable LC or NSTC. All individuals approved must meet the same requirements for attendance as outlined in this instruction. In no case, may NJROTC students or Naval Sea Cadets attend a high-risk course. Applicable LC or NSTC will provide NETC N00X a copy of all

correspondence related to authorizations to attend their high-risk courses. LCs or NSTC are not authorized to delegate this authority to subordinate activities.

(e) Very important persons, media, historians, film crews, and other interested parties often request to observe portions of high-risk courses. These requests must be in writing and routed to NETC Public Affairs (N00P) for staffing. If approved, NETC N00X may provide additional controls beyond those found in this instruction. A "Hold Harmless Agreement" must be signed prior to attending NETC high-risk courses.

(5) Must comply with requirements contained in enclosure (4) for those portions of the propane storage and distribution system that are under their control.

6. Records Management

a. Records created as a result of this instruction, regardless of format or media, must be maintained and dispositioned per the records disposition schedules located on the DON Assistant for Administration, Directives and Records Management Division portal page at https://portal.secnav.navy.mil/orgs/DUSNM/DONAA/DRM/Records-and-Information-Management/Approved%20Record%20Schedules/Forms/AllItems.aspx.

b. For questions concerning the management of records related to this instruction or the records disposition schedules, please contact the local records manager.

7. Review and Effective Date. Per Office of the Chief of Naval Operations (OPNAV) Instruction (OPNAVINST) 5215.17A, NETC will review this instruction annually around the anniversary of its issuance date to ensure applicability, currency, and consistency with Federal, DoD, Secretary of the Navy, and Navy policy and statutory authority using OPNAV 5215/40 (Review of Instruction). This instruction will be in effect for 10 years, unless revised or cancelled in the interim, and will be reissued by the 10-year anniversary date if it is still required, unless it meets one of the exceptions in OPNAVINST 5215.17A, paragraph 9. Otherwise, if the instruction is no longer required, it will

be processed for cancellation as soon as the need for cancellation is known following the guidance in OPNAV Manual 5215.1 of May 2016.

P. A. GARVIN

Releasability and distribution:
This instruction is cleared for public release and is available electronically on the NETC public web site (www.netc.navy.mil) or by e-mail at netc-directives@us.navy.mil.

SURFACE AND SHIPBOARD AVIATION FIREFIGHTING

1. As identified in paragraph 5c(1) of the basic instruction, written procedures will be developed for the following processes. The LS does not need to develop duplicate written procedures if the COMS contractor has written daily operational readiness test and shut down procedures provided by NAWCTSD or the LC.

a. Initial Equipment Setup, Startup, and Readiness Checks

(1) Water supply alignment.

(2) Emergency extinguishing system checks.

(3) Placement and check of emergency equipment.

(4) Electrical system check.

(5) Drainage alignment check.

(6) Emergency alarm check.

(7) Ventilation system alignment.

(8) Fuel supply alignment.

(9) Communications checks.

(a) A backup communications system will be in place that is capable of notifying or directly communicating with the base fire department (or other emergency response personnel) in the event the primary communications system fails.

(b) Backup communication systems will be tested prior to the start of the training day.

b. Each Fire Scenario. A separate written procedure is not required if the following are contained within the curricula:

(1) Initial preparations.

(2) Protective equipment worn by instructors and students is effective, donned properly, and is appropriate for the scenario.

(3) Number of instructors and safety observers; their positions and duties.

(4) Ventilation, if mechanical.

(5) Fueling system activation and securing.

(6) Ignition system activation and securing.

(7) Instructor rotation procedures.

(8) Securing procedures after final fire.

Note: Prior to conducting a “flashover” simulation, the internal instructor will confirm that all personnel are in a crouched position away from the flashover point.

c. Facility and Equipment Shutdown and Securing

(1) The following items are secured when the trainers are returned to the "Instrument Power/24-Hour Mode":

(a) Ignition system alignment and securing.

(b) Fuel system alignment and securing.

(c) Ventilation system alignment and securing.

(d) Electrical power.

(2) Ensure the following are shutdown and secured:

(a) Water system alignment and securing.

(b) Storage of extinguishers, hoses, etc.

(c) Cooling of structures.

(d) Wash-down and drainage.

(e) Fuel systems.

d. Refueling Procedures

(1) Safety precautions.

(2) Procedures (including approval authority).

(3) Emergency procedures (including propane leaks).

(4) Notification of emergency services.

2. Startup Safety Requirements

a. Visually inspect trainers for damage prior to live fire training evolutions. All damage will be documented per reference (g), as applicable.

b. All doors, windows, roof scuttles, automatic ventilators, mechanical equipment, lighting, and standpipes necessary for the live fire training evolution will be checked and operated prior to any live fire training evolution to ensure they operate correctly per reference (g).

c. All safety devices, such as thermometers, oxygen and toxic and combustible gas monitors, evacuation alarms, heat stress monitoring equipment, and emergency shutdown switches will be checked prior to any live fire training evolutions per reference (g).

d. Propane firefighter trainers will be run each day prior to exposing students to live flames in order to ensure the correct operation of devices such as the gas valves, flame safeguard units, agent sensors, combustion fans, and ventilation fans per reference (g).

e. Ensure all doors used for emergency exits are adequately marked and should have panic hardware, if applicable, per reference (h).

3. Emergency Action Plan (EAP)

a. The following information will be included in the EAP, in addition to that required by reference (a):

(1) Emergency communications and signals.

(a) The communications system between fire field instructors and supervisors will ensure any emergency can be signaled and understood. Emergency signals and procedures will be specified in the EAP.

(b) Each fire school will have a means of broadcasting an emergency signal (bell, horn, whistle, public address system) over the entire fire field. These emergency signals and procedures will be part of student indoctrination.

(2) Emergency field securing procedures.

(3) Notification of emergency services.

(4) Mustering procedures (students and instructors).

b. All firefighter trainers will have portable extinguishers available for emergency use in the propane burn areas associated with each trainer based on guidance provided by the host activity fire inspectors.

c. Ensure a hospital corpsman, emergency medical technician, or medical support personnel, as defined in reference (a), as well as emergency oxygen, are available on scene during all firefighting training. They cannot simultaneously be assigned to instruct firefighting training evolutions.

4. Preventive Maintenance System (PMS). PMS and spot check program will be implemented for, but not be limited to, technical training equipment, personal protective equipment (PPE), and training platforms.

a. PMS will be performed using the current maintenance requirement cards (MRC), PMS guidance provided to COMS contractor by NAWCTSD, LC, or the equipment operations and maintenance support manuals if no other guidance is available.

b. The requirement for conducting routine maintenance by either staff or contract personnel will be clearly delineated and will only be performed by qualified personnel. Maintenance

conducted by contract personnel will be delineated in the statement of work.

c. PMS of firefighter ensemble will follow procedures and periodicities provided by SWSC (and not National Fire Prevention Association (NFPA) 1851). However, Navy firefighter's protective gear will be retired no later than 10 years from the date of manufacture. In all cases, the radiant reflective outer shell of the garment element will be replaced no more than 5 years from the date of manufacture.

d. Gauge Calibration. Contractor maintenance personnel and firefighting LS personnel will establish a gauge calibration program for all critical system gauges, except for systems controlled by Naval Facilities Engineering Command (e.g., gauges on propane and carbon dioxide storage tanks). These include, but are not limited to, propane fuel lines, tanks, self-contained breathing apparatus (SCBA) fill station compressors, and carbon dioxide fire extinguisher refill compressors. The operations and maintenance support manuals for these systems should identify primary gauges and calibration periodicity. Calibration will only be performed by qualified personnel.

5. SCBA

a. SCBA air cylinders will be refilled only from systems designed and approved for refilling. Written procedures for filling will be clearly posted in the immediate vicinity of the refilling system.

b. Air compressors used to fill SCBA air cylinders will be tested on a quarterly basis and meet minimum grade "D" requirements per reference (i). Records of these tests will be maintained for 5 years per reference (i).

c. Documentation of the latest air quality test will be clearly posted in the vicinity of the air compressor.

d. In addition to quarterly air quality monitoring to ensure grade "D" breathing air, activities will equip compressor systems with either high temperature or continuous carbon monoxide monitors and alarm systems or both, to monitor carbon monoxide levels. If only high temperature alarms are used, the activity will monitor the air supply at intervals sufficient to

prevent carbon monoxide in the breathing air from exceeding 10 parts per million, per reference (i).

e. Activities will equip all new and upgraded air compressor systems with continuous carbon monoxide monitors and alarm systems. Calibrate monitor and alarm systems on compressors used for supplying breathing air according to the manufacturer's instructions. Calibration will only be performed by properly trained personnel.

f. SCBA air compressor air intakes must be located away from vehicular and other engine exhaust in fresh outdoor atmospheres, such as above roof level and away from ventilation exhausts.

6. Student Screening. Student screening requirements are listed in reference (a).

7. General Surface and Shipboard Aviation Firefighting Instructor Qualifications

a. Potential surface and shipboard aviation firefighting training instructors must comply with screening, training, and qualification procedures outlined in reference (a) and additional requirements per this instruction.

b. Instructors are not required to qualify more than once on material common to two or more courses or qualification programs. Except as determined to be necessary by the LC commanding officer (CO) or designated representative, candidates are not required to repeat any step in which they have previously qualified and in which they are currently proficient.

c. Firefighting instructors required to wear an SCBA will be medically cleared, trained, and fit-tested per references (i) and (j). For those instructors with "no shave chits," facial hair that comes between the sealing surface of the facepiece and the face, or any condition that interferes with the face-to-facepiece seal is not allowed.

8. Positions Requiring Qualification

a. Personnel filling the below listed positions will complete the following requirements, all applicable requirements

identified in reference (a), and be designated in writing by the CO or designated representative.

(1) Instructor Operating Station Console Operator (IOSCO). Authorized to operate computer console for 19F propane firefighter trainers. This individual does not need to be a qualified high-risk instructor.

(a) Describe and conduct the operating procedures for fire selection, fire scenario data entry, fire control monitoring, and communications.

(b) Describe and conduct the post operational procedure.

(c) Perform the duties of IOSCO under instruction twice for all firefighter courses taught at the school.

(d) Pass a testing process established by the appropriate LC, if required.

(2) Instructor. Authorized to instruct (and supervise) students in firefighting and fire demonstrations for a particular fire evolution or course. Instructors report to their respective structure chief.

(a) Complete firefighting instructor medical and psychological screening per reference (j), as well as instructor requirements detailed in reference (a).

(b) Complete respirator physical, training, and fit testing, as applicable.

(c) Demonstrate a working knowledge of Navy manuals associated with aviation and shipboard firefighting as applicable.

(d) Demonstrate knowledge of all firefighting equipment used at the fire school, including its proper use and maintenance, as applicable.

(e) Observe fire field evolutions for a minimum of one entire convening of the course.

(f) Act as an instructor for two different laboratory evolutions under the supervision of a qualified instructor.

(g) Act as lead instructor for one class under the supervision of a qualified instructor.

(h) Pass a testing process established by the appropriate LC, if required.

Note: Paragraphs 8a(2)(a) through 8a(2)(h) are to be added to the course unique instructor training.

(3) Structure Chief. Authorized to prepare, conduct, and supervise training sessions in a specified structure or mockup on the fire field and is responsible for securing the structure at the end of the training day. The structure chief reports to the field safety chief.

(a) Taught as an instructor at the structure or mock-up a minimum of five classes. For MTTs, the NETC safety representative may reduce this requirement to one class if the activity owning the firefighter trainer will have a qualified structure chief on scene during live fire training evolutions.

(b) Demonstrate knowledge of the structure's fuel and ignition systems.

(c) Demonstrate knowledge of all safety procedures for each fire scenario, and the general emergency procedures.

(d) Discuss the duties of a structure chief for each fire scenario taught at the structure or mock-up with a qualified structure chief.

(e) Perform the duties of a structure chief for one course convening at the structure or mock-up under the supervision of a qualified field safety chief.

(f) Pass a testing process established by the applicable LC, if required.

(4) Field Safety Chief. Is authorized to exercise overall control of all fire field operations. A field safety

chief must be on the field to conduct any live firefighting training evolution. The field safety chief's duties can be combined with the structure chief's duties if only one evolution is occurring on the fire field.

(a) Qualified as an instructor for each fire field evolution taught at the fire field.

(b) Supervised a minimum of two full classes as structure chief at each structure and mock-up on the fire school. For MTTs, the NETC safety representative may reduce this requirement to one class if the activity owning the firefighter trainer will have a qualified field safety chief on scene during live fire training evolutions.

(c) Demonstrate detailed knowledge of fueling and ignition systems and procedures, as well as all safety systems.

(d) Demonstrate detailed knowledge of daily startup, shutdown, and fire field emergency procedures. At activities where the trainer is maintained under a COMS contract, the individual must demonstrate familiarity with startup and shutdown procedures and detailed knowledge of field emergency procedures.

(e) Perform the duties twice of field safety chief under the supervision of a qualified field safety chief.

(f) Pass a testing process established by the applicable LC, if required.

b. Fire Field Support Personnel. Any fire field support personnel will complete a locally developed written qualifications (i.e., job qualification requirements) and training requirements. Completion will be documented before an individual performs these tasks unsupervised.

c. In the event that a course convenes with a frequency that delays achieving qualification, the LC CO or designated representative may authorize actual or simulated practice scenarios to allow for proficiency, training, and qualifications. As a last resort, the CO or designated representative may reduce the required repetitions of attending, instructing, or performing the duties of instructor, structure

chief, or field safety chief prior to qualification. Such reduction must be done in writing, include a justification, and be included in the instructor's training jacket.

9. General PPE

a. Students participating in firefighting training will be instructed on how to don and properly wear required PPE.

b. Prior to participation in live firefighting training, all students will be inspected to ensure the PPE is properly donned and in suitable condition.

c. The minimum PPE for instructors and students participating in surface ship firefighting courses is listed below.

(1) Instructor Firefighting Gear

(a) Navy damage control and firefighter helmet or other commercial helmet meeting NFPA 1971 (interior fires only).

(b) Firefighter’s hood (MIL-H-81500A) or equivalent, commercial grade Nomex meeting NFPA 1971.

(c) Navy fire protective gear or commercially available turnout pants and coat meeting NFPA 1971 (interior fires only).

Note: LC COs may authorize the use of Nomex, fire retardant or fire resistant variant (FRV) coveralls based on concerns for heat stress, but LSs must have a risk assessment on file.

(d) Navy or commercially available firefighter’s gloves meeting NFPA 1971.

(e) Steel-toed leather or Navy firefighter’s boots.

(f) SCBA meeting NFPA 1981 (interior fires only).

(2) Student Firefighting Gear

(a) Navy damage control and firefighter helmet (interior fires only).

(b) Firefighter's hood (MIL-H-81500A) or commercial grade Nomex meeting NFPA 1971.

(c) Navy fire protective gear.

Note: LC COs may authorize the use of Nomex, fire retardant or FRV coveralls based on concerns for heat stress, but LSs must have a risk assessment on file.

(d) Navy or commercially available firefighter's gloves.

(e) Steel-toed leather or Navy firefighter's boots.

(f) SCBA (interior fires only).

Note: Recruits will be in battle dress (top button fastened, long sleeve shirt buttoned, steel-toed boots), flash hood (MIL-H-81500A), Navy issue firefighter helmet (MIL-M-1987G), and cotton gloves.

d. The minimum PPE for instructors and students participating in shipboard aviation firefighting courses is listed below.

(1) Instructor Firefighting Gear

(a) Navy firefighter's hood (MIL-H-81500A) or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Nomex, fire retardant, or FRV coveralls.

(c) Navy or commercially available firefighter's gloves meeting NFPA 1971.

(d) Steel-toed leather or Navy firefighter's boots.

(2) Student Firefighting Gear

(a) Flight deck cranial helmet, to include goggles, hearing protection, and reflective markings. The use of hearing protection in conjunction with the cranial helmet may be waived by the LS if training is not conducted in a high noise area. The noise level must be determined by an industrial hygienist noise level evaluation.

(b) Navy firefighter's hood (MIL-H-81500A) or equivalent commercial grade Nomex meeting NFPA 1971.

(c) Fire retardant or FRV coveralls.

Note: Navy working uniform will not be worn during firefighting training.

(d) Navy firefighter's gloves.

(e) Steel-toed leather or Navy firefighter's boots.

e. The minimum PPE for instructors and students participating in aircraft firefighting and rescue course (shore based) is listed below:

(1) Instructor Firefighting Gear

(a) Navy firefighter's hood (MIL-H-81500A) or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Aviator gloves (Nomex).

(c) Gloves, proximity firefighting.

(d) Trousers, proximity firefighting.

(e) Coat, proximity firefighting.

(f) Helmet, proximity firefighting with shroud and cover.

(g) Navy firefighter's boots.

(h) SCBA meeting NFPA 1981.

(2) Student Firefighting Gear

(a) Navy firefighter's hood or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Aviator gloves (Nomex).

(c) Gloves, proximity firefighting.

(d) Trousers, proximity firefighting.

(e) Coat, proximity firefighting.

(f) Helmet, proximity firefighting with shroud and cover.

(g) Navy firefighter's boots.

(h) SCBA meeting NFPA 1981.

10. Additional requirements for fossil fuel trainers. Fossil fuel firefighting trainers must comply with the requirements listed below.

a. Fuel will be either JP5 or JP8. Unburned (reclaimed) fuel recovered from the fire ground may be used, but off-site reclaimed fuel may not be used without prior approval of NETC safety.

b. Fuel pumping systems will have proper controls, including explosion proof wiring for accelerant systems.

c. Fuel application systems, where feasible, will be remotely controlled, pressurized spray with electric arc ignition. Spray nozzles will be shielded to allow the fuel to vaporize and burn and will be obstructed from the firefighter's attack.

d. Limited quantities (less than five gallons) of accelerant may be used under strict controls. Accelerants are to be transported and applied only from approved safety cans or carts equipped with spring-loaded caps or valves and flame arrestor in spouts.

e. No more than 60 gallons of fuel may be stored in a flammable storage locker.

SUBMARINE FIREFIGHTING

1. As identified in paragraph 5c(1) of the basic instruction, written procedures will be developed for the following processes. The LS does not need to develop duplicate written procedures if the COMS contractor has written daily operational readiness test and shut down procedures provided by NAWCTSD or the LC.

a. Initial Equipment Setup and Startup and Readiness Checks

(1) Water supply alignment.

(2) Emergency extinguishing system checks.

(3) Placement and check of emergency equipment.

(4) Electrical system check.

(5) Drainage alignment check.

(6) Emergency alarm check.

(7) Ventilation system alignment.

(8) Fuel supply alignment.

(9) Communications checks.

(a) A backup communications system will be in place that is capable of notifying or directly communicating with the base fire department (or other emergency response personnel) in the event the primary communications system fails.

(b) Backup communication systems will be tested prior to the start of the training day.

b. Each Fire Scenario. A separate written procedure is not required if the following are contained within the curricula:

(1) Initial preparations.

(2) Protective equipment worn by instructors and students is effective, donned properly, and is appropriate for the scenario.

(3) Number of instructors and safety observers; their positions and duties.

(4) Ventilation, if mechanical.

(5) Fueling system activation and securing.

(6) Ignition system activation and securing.

(7) Instructor rotation procedures.

(8) Securing procedures after final fire.

Note: Prior to conducting a “flashover” simulation, the internal instructor will confirm that all personnel are in a crouched position away from the flashover point.

c. Facility and Equipment Shutdown and Securing

(1) The following items are secured when the trainers are returned to the "Instrument Power/24-Hour Mode":

(a) Ignition system alignment and securing.

(b) Fuel system alignment and securing.

(c) Ventilation system alignment and securing.

(d) Electrical power.

(2) Ensure the following are shutdown and secured:

(a) Water system alignment and securing.

(b) Storage of extinguishers, hoses, etc.

(c) Cooling of structures.

(d) Wash-down and drainage.

d. Refueling Procedures

(1) Safety precautions.

(2) Procedures (including approval authority).

(3) Emergency procedures (including propane leaks).

(4) Notification of emergency services.

2. Startup Safety Requirements

a. Visually inspect trainers for damage prior to live fire training evolutions. All damage will be documented per reference (g), as applicable.

b. All doors, roof scuttles, automatic ventilators, mechanical equipment, lighting, and standpipes necessary for the live fire training evolution will be checked and operated prior to any live fire training evolution to ensure they operate correctly per reference (g).

c. All safety devices, such as thermometers, oxygen and toxic and combustible gas monitors, evacuation alarms, heat stress monitoring equipment and emergency shutdown switches, will be checked prior to any live fire training evolutions per reference (g).

d. Propane firefighter trainers will be run each day prior to exposing students to live flames in order to ensure the correct operation of devices such as the gas valves, flame safeguard units, agent sensors, combustion fans, and ventilation fans per reference (g).

e. Ensure that all doors used for emergency exits are adequately marked and should have panic hardware, if applicable, per reference (h).

3. EAP

a. The following information will be included in the EAP, in addition to that required by reference (a):

(1) Emergency communications and signals.

(a) The communications system between fire field instructors and supervisors will ensure any emergency can be signaled and understood. Emergency signals and procedures will be specified in EAP.

(b) Each fire school will have a means of broadcasting an emergency signal (bell, horn, whistle, public address system) over the entire fire field. These emergency signals and procedures will be part of student indoctrination.

(2) Emergency field securing procedures.

(3) Notification of emergency services.

(4) Mustering procedures (students and instructors).

b. All firefighter trainers will have portable extinguishers available for emergency use in the propane burn areas associated with each trainer based on guidance provided by the host activity fire inspectors.

c. Ensure a hospital corpsman, emergency medical technician, or medical support personnel as defined in reference (a), as well as emergency oxygen, are available on scene during all firefighting training. They cannot simultaneously be assigned to instruct firefighting training evolutions.

4. PMS. PMS and spot check program will be implemented for, but not be limited to, technical training equipment, PPE, and training platforms.

a. PMS will be performed using the current MRCs, PMS guidance provided to COMS contractor by NAWCTSD, LC, or the equipment operations and maintenance support manuals if no other guidance is available.

b. The requirement for conducting routine maintenance by either staff or contract personnel will be clearly delineated and will only be performed by qualified personnel. Maintenance conducted by contract personnel will be delineated in the statement of work.

c. PMS of firefighter ensemble will follow procedures and periodicities provided in Navy MRCs (and not National Fire

Prevention Association (NFPA) 1851). However, Navy firefighter's protective gear will be retired no later than 10 years from the date of manufacture. In all cases, the radiant reflective outer shell of the garment element will be replaced no more than 5 years from the date of manufacture.

d. Gauge Calibration. Contractor maintenance personnel and firefighting LS personnel will establish a gauge calibration program for all critical system gauges, except for systems controlled by Naval Facilities Engineering Command (e.g., gauges on propane and carbon dioxide storage tanks). These include, but are not limited to, propane fuel lines, tanks, SCBA fill station compressors, and carbon dioxide fire extinguisher refill compressors. The operations and maintenance support manuals for these systems should identify primary gauges and calibration periodicity. Calibration will only be performed by qualified personnel.

5. SCBA and Air Supplied Respirators

a. SCBA air cylinders will be refilled only from systems designed and approved for refilling. Written procedures for filling will be clearly posted in the immediate vicinity of the refilling system.

b. Air Compressors used to fill SCBA air cylinders and provide breathing air for air supplied respirators will be tested on a quarterly basis and meet minimum grade "D" requirements per reference (i). Records of these tests will be maintained for 5 years per reference (i).

c. Documentation of the latest air quality test will be clearly posted in the vicinity of the breathing air compressor.

d. In addition to quarterly air quality monitoring to ensure Grade "D" breathing air, activities will equip compressor systems with either-high temperature or continuous carbon monoxide monitors and alarm systems or both, to monitor carbon monoxide levels. If only high temperature alarms are used, the activity will monitor the air supply at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 parts per million, per reference (i).

e. Activities will equip all new and upgraded air compressor systems with continuous carbon monoxide monitors and alarm systems. Calibrate monitor and alarm systems on compressors used for supplying breathing air according to the manufacturer's instructions. Calibration will only be performed by properly trained personnel.

f. SCBA air compressor air intakes must be located away from vehicular and other engine exhaust in fresh outdoor atmosphere, such as above roof level and away from ventilation exhausts.

6. Student Screening. Student screening procedures are listed in reference (a).

7. General Submarine Firefighting Instructor Qualifications

a. Potential firefighting training instructors must comply with screening, training, and qualification procedures outlined in reference (a), and additional requirements per this instruction.

b. Instructors are not required to qualify more than once on material common to two or more courses or qualification programs. Except as determined to be necessary by the LS CO or designated representative, candidates are not required to repeat any step in which they have previously qualified and in which they are currently proficient.

c. Firefighting instructors required to wear a SCBA will be medically cleared, trained, and fit-tested per references (i) and (j). Facial hair that comes between the sealing surface of the facepiece and the face or any condition that interfered with the face-to-facepiece seal is not allowed.

8. Positions Requiring Qualification

a. Personnel filling the below listed positions will complete the following requirements, all applicable requirements identified in reference (a), and be designated in writing by the CO.

(1) Instructor Operating Station (IOS). Authorized to operate computer console for 21C12, T-2000, and Next Generation

series propane firefighter trainers. This individual does not need to be a qualified high-risk instructor.

(a) Describe and conduct the operating procedures for fire selection, fire scenario data entry, fire control monitoring, and communications.

(b) Describe and conduct the post operational procedure.

(c) Perform the duties of IOS under instruction twice for all firefighter courses taught at the school.

(d) Pass a testing process established by the appropriate LC, if required.

(2) Staging Instructor. Authorized to instruct (and supervise) students in firefighting and fire demonstrations for a particular fire evolution or course. Staging instructors report to their respective lead instructor. This individual does not need to be a qualified high-risk instructor.

(a) Complete approved instructor training.

(b) Complete cardiopulmonary resuscitation and automated external defibrillator training.

(c) Complete respirator physical, training, and fit testing, as applicable.

(d) Complete course indoctrination.

(e) Review the instructor guide for each course offered at the school.

(f) Complete submarine firefighting trainer systems qualification card.

(g) Complete the team dimensional training instructor qualification card.

(h) Demonstrate to a safety chief, a working knowledge of Navy manuals associated with submarine firefighting as applicable.

(i) Demonstrate to a safety chief, knowledge of all firefighting equipment used at the fire school, including its proper use and maintenance, as applicable.

(j) Observe trainer evolutions for a minimum of one entire convening of the course.

(k) Demonstrate to a staging instructor, lead instructor, and safety chief, knowledge of the duties of a staging instructor during an oral interview.

(3) Lab Instructor. Authorized to instruct (and supervise) students in firefighting and fire demonstrations for a particular live fire evolution or course. Instructors report to their respective lead instructor.

(a) Complete firefighting instructor medical screening per reference (j), as well as instructor requirements detailed in reference (a).

(b) Complete respirator physical, training, and fit testing, as applicable.

(c) Review the instructor guide for each firefighting course offered at the school.

(d) Demonstrate working knowledge of Navy manuals associated with submarine firefighting as applicable.

(e) Demonstrate knowledge of all firefighting equipment used at the LS's firefighting trainer, including its proper use and maintenance, as applicable.

(f) Personalize the instructor's guide of the course for which qualification is sought.

(g) Observe trainer evolutions for a minimum of one entire convening of the course.

(h) Demonstrate knowledge of the duties of a lab instructor during an oral interview with a lead instructor.

Note: Paragraphs 8a(2)(a) through 8a(2)(h) are to be added to the Course Unique Instructor Training.

(4) Lead Instructor. Authorized to prepare, conduct, and supervise training sessions in a specified structure or mockup on the trainer and is responsible to ensure the structure is properly secured at the end of the training day. The lead instructor reports to the safety chief.

(a) Taught as an instructor at the structure or mock-up a minimum of five classes.

(b) Demonstrate knowledge of the structure's fuel and ignition systems.

(c) Demonstrate knowledge of all safety procedures for each fire scenario, and the general emergency procedures.

(d) Discuss the duties of a lead instructor for each fire scenario taught with a qualified lead instructor.

(e) Perform the duties of a lead instructor for two course convening's under the supervision of a qualified lead instructor.

(f) For the T-2000 series trainers, demonstrate knowledge of operating the pendant control that is used in various scenarios.

(g) Pass a testing process established by the appropriate LC.

(5) Safety Chief. Is authorized to exercise overall control of all fire field operations. A safety chief must be in the trainer to conduct any live firefighting training evolution.

(a) Qualified in all instructor positions for each course evolution taught at the trainer.

(b) Performed the duties as lead instructor a minimum of two full classes at the trainer.

(c) Demonstrate detailed knowledge of fueling and ignition systems and procedures, as well as all safety systems.

(d) Demonstrate detailed knowledge of daily startup, shutdown, and emergency procedures. At activities where the trainer is maintained under a COMS contract, the individual must demonstrate familiarity with startup and shutdown procedures and detailed knowledge of emergency procedures.

(e) Perform the duties twice of safety chief under the supervision of a qualified safety chief.

(f) Pass a testing process established by the appropriate LC.

b. Review Boards. Each LC will determine the requirement for establishing policy for review boards. Review boards can be used to periodically evaluate an individual's retention of knowledge required of specific positions on the fire field if a LC establishes this requirement

c. Fire Trainer Support Personnel. All fire trainer support personnel will meet all locally developed written qualifications (i.e., job qualification requirements) and training requirements. Completion will be documented before an individual performs these tasks unsupervised.

d. In the event that a course convenes with a frequency that delays achieving qualification, the LS CO or designated representative may authorize actual or simulated practice scenarios to allow for proficiency, training, and qualifications. As a last resort, the LS CO or designated representative may reduce the required repetitions of attending, instructing, or performing the duties of instructor, lead instructor, or field safety chief prior to qualification. Such reduction must be done in writing, provide justification for the reduced requirement, and be included in the instructor's training jacket.

9. General PPE

a. Students participating in submarine firefighting training will be instructed on how to don and properly wear required PPE.

b. Prior to participation in live firefighting training, all students will be inspected to ensure the PPE is properly donned and in suitable condition.

c. The minimum PPE for instructors and students participating in submarine firefighting courses is listed below:

(1) Instructor Firefighting Gear

(a) Firefighter's hood or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Navy fire protective gear or commercially available turnout pants and coat meeting NFPA 1971.

Note: LS COs may authorize Nomex, fire retardant, or FRV coveralls based on heat stress concerns, but LSs must have a risk assessment on file.

(c) Navy or commercially available firefighter gloves meeting NFPA 1971.

(d) Steel-toed leather or Navy firefighter's boots.

(e) SCBA meeting NFPA 1981, as required.

(2) Student Firefighting Gear

(a) Firefighter's hood or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Nomex, fire retardant, or FRV coveralls.

(c) Navy fire protective gear (as required by training scenario).

(d) Navy or commercially available Firefighter's gloves appropriate to the training scenario.

(e) Steel-toed leather or Navy firefighter's boots.

(f) Emergency air breathing apparatus mask, or SCBA meeting NFPA 1981, as required by scenario.

MOBILE AIRCRAFT FIREFIGHTING TRAINING DEVICE

1. As identified in paragraph 5c(1) of the basic instruction, written procedures will be developed for the following processes. The LS does not need to develop duplicate written procedures if the COMS contractor has written daily operational readiness test and shut down procedures provided by NAWCTSD or the LC.

a. Initial Equipment Setup and Startup and Readiness Checks

(1) Water supply alignment.

(2) Emergency extinguishing system checks.

(3) Placement and check of emergency equipment.

(4) Electrical system check.

(5) Drainage alignment check.

(6) Emergency alarm check.

(7) Ventilation system alignment.

(8) Fuel supply alignment.

(9) Communications checks.

(a) A backup communications system will be in place that is capable of notifying or directly communicating with the base fire department (or other emergency response personnel) in the event the primary communications system fails.

(b) Backup communication systems will be tested prior to the start of the training day.

b. Each Fire Scenario. A separate written procedure is not required if the following are contained within the curricula:

(1) Initial preparations.

(2) Protective equipment worn by instructors and students is effective, donned properly, and is appropriate for the scenario.

(3) Number of instructors and safety observers; their positions and duties.

(4) Fueling system activation and securing.

(5) Ignition system activation and securing.

(6) Instructor rotation procedures.

(7) Securing procedures after final fire.

Note: Prior to conducting a "flashover" simulation, the internal instructor will confirm that all personnel are in a crouched position away from the flashover point.

c. Facility and Equipment Shutdown and Securing

(1) Ignition system alignment and securing.

(2) Fuel system alignment and securing.

(3) Ventilation system alignment and securing.

(4) Electrical power.

(5) Water system alignment and securing.

(6) Storage of extinguishers, hoses, etc.

(7) Cooling of structures.

(8) Wash-down and drainage.

d. Refueling Procedures

(1) Safety precautions.

(2) Procedures (including approval authority).

(3) Emergency procedures (including propane leaks).

(4) Notification of emergency services.

2. Startup Safety Requirements

a. Visually inspect trainers for damage prior to live fire training evolutions. All damage will be documented per reference (g), as applicable.

b. All doors, windows, roof scuttles, automatic ventilators, mechanical equipment, lighting, and standpipes necessary for the live fire training evolution will be checked and operated prior to any live fire training evolution to ensure they operate correctly per operation equipment manual (OEM).

c. All safety devices, such as thermometers, oxygen and toxic and combustible gas monitors, evacuation alarms, heat stress monitoring equipment and emergency shutdown switches, will be checked prior to any live fire training evolutions per OEM.

d. Propane firefighter trainers will be run each day prior to exposing students to live flames in order to ensure the correct operation of devices such as the gas valves, flame safeguard units, agent sensors, combustion fans, and ventilation fans per OEM.

e. Ensure the Mobile Aircraft Firefighting Training Device (MAFTD) is positioned a minimum distance of 100 feet away from the nearest drain; unless the drain is engineered to capture, clean, and recycle the run off. MAFTDs must be positioned a minimum of 300 feet from overhead power lines.

f. Ensure the immediate area around the MAFTD is free of all combustible materials, safety hazards, and environmental concerns. Ensure water run-off travels for 100 feet over land surface or remains standing for 20 minutes prior to being diverted into a sewer or confined space.

g. Ensure the MAFTD has been properly set-up and structurally supported. Ensure wind conditions are taken into consideration for the safety of the students and prevention of

damage to the MAFTD (Acceptable winds are within 15 degrees of the nose).

h. Ensure all walking and working surfaces are free from hazards. Additionally, the field safety chief or the high-risk training safety officer will verify all personnel are clear of the area prior to starting up the trainer and emergency doors and hatches on the MAFTD are unlocked and emergency exit paths are clear of obstructions.

i. Prior to conducting pre-operational checks, ensure that all fire suppression and emergency medical service requirements are met in accordance with standard operating procedures. Ensure portable fire extinguishers are placed around the training area for rapid use in the event of an emergency.

j. Prior to conducting training, ensure a pre-operational checklist is completed and documented. Additionally, ensure all alarms and sensors have been tested for reliability and that this test is documented.

k. The minimum required personnel for operation of the MAFTD are one station control console operator and one dead man switch operator.

l. Ensure all flexible hoses are marked with the working pressure, the manufacturer's name or trademark, and with "LP GAS" or "PROPANE." These markings come printed on the flexible hose straight from the manufacturer and may be very small and hard to detect. Hoses not properly tested and marked are considered unsuitable for use.

m. Ensure hose teams are manned per curriculum requirements for internal and external firefighting scenarios.

3. EAP

a. The following information will be included in the EAP, in addition to that required by reference (a):

(1) Emergency communications and signals.

(a) The communications system between fire field instructors and supervisors will ensure any emergency can be

signaled and understood. Emergency signals and procedures will be specified in the EAP.

(b) Each fire school will have a means of broadcasting an emergency signal (bell, horn, whistle, public address system) over the entire fire field. These emergency signals and procedures will be part of student indoctrination.

(2) Emergency field securing procedures.

(3) Notification of emergency services.

(4) Mustering procedures (students and instructors)

b. All firefighter trainers will have portable extinguishers available for emergency use in the propane burn areas associated with each trainer based on guidance provided by the host activity fire inspectors.

4. PMS. PMS and spot check program will be implemented for, but not be limited to, technical training equipment, PPE, and training platforms.

a. PMS will be performed using the current MRCs, PMS guidance provided to COMS contractor by NAWCTSD, LC, or the equipment operations and maintenance manuals if no other guidance is available.

b. The requirement for conducting routine maintenance by either staff or contract personnel will be clearly delineated and will only be performed by qualified personnel. Maintenance conducted by contract personnel will be delineated in the statement of work.

c. PMS of firefighter ensemble will follow procedures and periodicities provided in Navy MRCs, and not National Fire Prevention Association (NFPA) 1851. However, Navy firefighter's protective gear will be retired no later than 10 years from the date of manufacture. In all cases, the radiant reflective outer shell of the garment element will be replaced no more than 5 years from the date of manufacture.

d. Gauge Calibration. Contractor maintenance personnel and firefighting LS personnel will establish a gauge calibration

program for all critical system gauges, except for systems controlled by Naval Facilities Engineering Command (e.g., gauges on propane and carbon dioxide storage tanks). These include, but are not limited to, water pump gauges, propane fuel lines, tanks, SCBA fill station compressors, and carbon dioxide fire bottle refill compressors. The operations and maintenance support manuals for these systems should identify primary gauges and calibration periodicity. Calibration will only be performed by qualified personnel.

5. SCBA

a. SCBA air cylinders will be refilled only from systems designed and approved for refilling. Written procedures for filling will be clearly posted in the immediate vicinity of the refilling system.

b. Air compressors used to fill SCBA air cylinders will be tested on a quarterly basis and meet minimum grade "D" requirements per reference (i). Records of these tests will be maintained for 5 years per reference (i).

c. Documentation of the latest air quality test will be clearly posted in the vicinity of the breathing air compressor.

d. In addition to quarterly air quality monitoring to ensure grade “D” breathing air, activities will equip compressor systems with either-high temperature or continuous carbon monoxide monitors and alarm systems or both, to monitor carbon monoxide levels. If only high temperature alarms are used, the activity will monitor the air supply at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding ten parts per million, per reference (i).

e. Activities will equip all new and upgraded air compressor systems with continuous carbon monoxide monitors and alarm systems. Calibrate monitor and alarm systems on compressors used for supplying breathing air according to the manufacturer’s instructions. Calibration will only be performed by properly trained personnel.

f. SCBA air compressor air intakes must be located away from vehicular and other engine exhaust in fresh outdoor

atmospheres, such as above roof level and away from ventilation exhausts.

6. Student Screening. Student screening requirements are listed in reference (a).

7. General MAFTD Firefighting Instructor Qualifications

a. Potential firefighting training instructors must comply with screening, training, and qualification procedures outlined in reference (a) and additional requirements per this instruction.

b. Instructors are not required to qualify more than once on material common to two or more courses or qualification programs. Except as determined to be necessary by the LS CO or designated representative, candidates are not required to repeat any step in which they have previously qualified and in which they are currently proficient.

c. Firefighting instructors required to wear a SCBA will be medically cleared, trained, and fit-tested per references (i) and (j). Facial hair that comes between the sealing surface of the facepiece and the face or any condition that interferes with the face-to-facepiece seal is not allowed.

8. Positions Requiring Qualification

a. Personnel filling the below listed positions will complete the following requirements, all applicable requirements identified in reference (a), and be designated in writing by the CO.

(1) IOSCO. Authorized to operate computer console for MAFTD propane firefighter trainers. This individual does not need to be a qualified high-risk instructor.

(a) Describe and conduct the operating procedures for fire selection, fire scenario data entry, fire control monitoring, and communications.

(b) Describe and conduct the post operational procedure.

(c) Perform the duties of IOSCO under instruction twice for all firefighter courses taught at the school.

(d) Pass a testing process established by the appropriate LC, if required.

(2) Instructor. Authorized to instruct (and supervise) students in firefighting and fire demonstrations for a particular fire evolution or course. Instructors report to their respective structure chief.

(a) Complete firefighting instructor medical screening per reference (j), as well as instructor requirements detailed in reference (a).

(b) Complete respirator physical, training, and fit testing, as applicable.

(c) Demonstrate knowledge of Navy manuals associated with aviation and shipboard firefighting as applicable.

(d) Demonstrate knowledge of all firefighting equipment used at the fire school, including its proper use and maintenance, as applicable.

(e) Observe fire field evolutions for a minimum of one entire convening of the course.

(f) Demonstrate knowledge of the duties of an instructor during an oral interview with a structure chief.

(g) Act as an instructor for two classes while serving at different positions for the course under the observation of a qualified instructor. Candidates are required to demonstrate their complete familiarity and proficiency with the lesson plan for the course. This does not, however, require that each candidate practice teach every word of every lesson and class under supervision. At a minimum, two different firefighting laboratory evolutions should be taught under supervision to satisfy this requirement. It is recognized that the performance and aptitude of instructor candidates will vary and that some candidates may demonstrate to the CO their readiness for qualification in less time than others.

(h) Act as lead instructor for one class under the supervision of a qualified instructor.

(i) Pass a testing process established by the appropriate LC, if required.

Note: Paragraphs 8a(2)(a) through 8a(2)(i) are to be added to the course unique instructor training.

(3) Field Safety Chief. (For Naval Air Technical Training Center (NATTC) when more than one MAFTD is being operated simultaneously). Is authorized to exercise overall control of all fire field operations. A field safety chief must be on the field to conduct any live firefighting training evolution. The field safety chief's duties can be combined with the structure chief's duties if only one evolution is occurring on the fire field.

(a) Qualified as an instructor for each fire field evolution taught at the fire field.

(b) Supervised a minimum of two full classes as structure chief at each structure and mock-up on the fire school.

(c) Demonstrate detailed knowledge of fueling and ignition systems and procedures, as well as all safety systems.

(d) Demonstrate detailed knowledge of daily startup, shutdown, and fire field emergency procedures. At activities where the trainer is maintained under a COMS contract, the individual must demonstrate familiarity with startup and shutdown procedures and detailed knowledge of field emergency procedures.

(e) Perform the duties twice of field safety chief under the supervision of a qualified field safety chief.

(f) Pass a testing process established by the appropriate LC, if required.

(4) Structure Chief. Authorized to prepare, conduct, and supervise training sessions in a specified structure or mockup on the fire field and is responsible for securing the

structure at the end of the training day. The structure chief reports to the field safety chief.

(a) Taught as an instructor at the structure or mock-up a minimum of five classes.

(b) Demonstrate knowledge of the structure's fuel and ignition systems.

(c) Demonstrate knowledge of all safety procedures for each fire scenario, and the general emergency procedures.

(d) Discuss the duties of a structure chief for each fire scenario taught at the structure or mock-up with a certified structure chief.

(e) Perform the duties of a structure chief for one course convening at the structure or mock-up under the supervision of a certified field safety chief.

(f) Pass a testing process established by the appropriate LC, if required.

(5) Control Tower Operator (For NATTC only). Reports directly to the field safety chief and ensures all pre and post operational checks are completed and documented. Maintains the site and equipment status board, as well as all log books, reporting the condition of readiness to the field safety chief. Responsible for maintaining and operating the ready deck status lights, video camera, and public address systems for the live fire training sites. Interfaces with the Naval Air Station Pensacola weather center regarding weather forecast and warnings. In addition, is responsible for maintaining all heat stress monitors per manufacturer’s instruction. Announces emergency shut down procedures during any safety or emergency related procedures on any training site. Ensures communications are maintained with all applicable instructors involved in live fire training evolutions. Monitors wind anemometer for wind direction and speed to ensure favorable winds at all times during live firefighting and other high risk evolutions.

(a) Describe and conduct a check of the system components and component parts.

(b) Demonstrate a working knowledge of the tower's communications systems to include all correct fire channels, point-of-contacts, and phone numbers.

(c) Demonstrate working knowledge of the flight deck communications system.

(d) Demonstrate proper operation of the video monitoring system.

(e) Demonstrate the proper setup and monitoring of heat stress equipment.

(f) Pass a testing process established by the appropriate LC, if required.

(6) Dead Man Switch Operator. Man and operate the remote hand held "pickle switch" and flash-over button per MAFTD operations manual throughout the live firefighting evolution. Maintain direct communications with control panel operator via the MAFTD headset system. Verbally verify with the control panel operator each fire to be ignited during live firefighting evolutions. Immediately releases "pickle switch" in the event of an emergency. Commences emergency shut down procedures for securing propane, if warranted. Notify field safety chief when all fires are out and turns MAFTD over to civilian contractors for post operational procedures. Will assist the field safety chief during activation of the EAP, safeguarding the scene, to include training aids and communication to the tower operator.

(a) Qualified as an instructor for each firefighting evolution taught at the fire field.

(b) Demonstrate knowledge of operating the dead man switch.

(c) Demonstrate a complete understanding of required safety procedures and emergency shutdown criteria for MAFTD operations.

(d) Demonstrate an in-depth knowledge of all hand signals, gestures, and verbal commands used during MAFTD operations.

(e) Pass a testing process established by the appropriate LC, if required.

b. Review Boards. Each LC will determine the requirement for establishing policy for review boards. Review boards can be used to periodically evaluate an individual's retention of knowledge required of specific positions on the fire field if a LC establishes this requirement.

c. Fire Field Support Personnel. Any fire field support personnel will meet all locally developed written qualifications (i.e., job qualification requirements) and training requirements. Completion will be documented before an individual performs these tasks unsupervised.

d. In the event that a course convenes with a frequency that delays achieving qualification, the LS CO may authorize actual or simulated practice scenarios to allow for proficiency, training, and qualifications. As a last resort, the LS CO may reduce the required repetitions of attending, instructing, or performing the duties of instructor, structure chief, or field safety chief prior to qualification. Such reduction must be done in writing, provide justification for the reduced requirement, and be included in the instructor's training jacket.

9. General PPE

a. Students participating in firefighting training will instructed on how to don and properly wear required PPE.

b. Prior to participation in live firefighting training, all students will be inspected to ensure the PPE is properly donned and in suitable condition.

c. The minimum PPE for instructors and students participating in shipboard aviation firefighting courses is listed below.

(1) Instructor Firefighting Gear

(a) Navy firefighter's hood or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Nomex, fire retardant, or FRV coveralls.

(c) Navy or commercially available firefighter's gloves meeting NFPA 1971.

(d) Steel-toed leather boots or Navy firefighter's boots.

(2) Student Firefighting Gear

(a) Flight deck cranial helmet, to include goggles, hearing protection, and reflective markings. The use of hearing protection in conjunction with the cranial helmet may be waived by the LS if training is not conducted in a high noise area. The noise level must be determined by an industrial hygienist noise level evaluation.

(b) Navy firefighter's hood or equivalent commercial grade Nomex meeting NFPA 1971.

(c) Nomex, fire retardant, or FRV coveralls.

Note: Navy working uniform will not be worn during firefighting training.

(d) Navy firefighter's gloves.

(e) Steel-toed leather boots or Navy firefighter's boots.

d. The minimum PPE for instructors and students participating in aircraft firefighting and rescue course (shore based) is listed below.

(1) Instructor Firefighting

(a) Navy firefighter's hood or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Aviator gloves (Nomex).

(c) Gloves, proximity firefighting.

(d) Trousers, proximity firefighting.

(e) Coat, proximity firefighting.

(f) Helmet, proximity firefighting with shroud and cover.

(g) Navy firefighter’s boots.

(h) SCBA meeting NFPA 1981.

(2) Student Firefighting Gear

(a) Navy firefighter’s hood or equivalent commercial grade Nomex meeting NFPA 1971.

(b) Aviator gloves (Nomex).

(c) Gloves, proximity firefighting.

(d) Trousers, proximity firefighting.

(e) Coat, proximity firefighting.

(f) Helmet, proximity firefighting with shroud and cover.

(g) Navy firefighter’s boots.

(h) SCBA meeting NFPA 1981.

PROPANE STORAGE AND DISTRIBUTION SYSTEM

1. Fuels. Firefighter trainers will be supplied with commercial grade propane. No other fuels may be substituted, except for Sasebo and Yokosuka, who use fossil fuel trainers.

2. Valves

a. Will be labeled to indicate what they control.

b. Emergency shut-off valves (ESV) must be tested annually per reference (m).

c. The thermal link portion of the ESV must be free of paint per reference (m).

d. All American Society of Mechanical Engineers (ASME) containers will have at least one pressure relief valve designed to relieve vapor.

e. Each pressure relief valve will be plainly and permanently marked with the following:

(1) Pressure in pounds per square inch gauge (PSIG) at which the valve is set to start to leak.

(2) Rated relieving capacity in standard cubic feet per minute.

(3) Manufacturer’s name and catalog number.

3. All Piping Systems

a. Will be labeled to identify the content and direction of flow.

b. Will be free from corrosion and not exhibit any signs of deterioration or leaks.

c. Must be adequately supported.

d. Must be protected against physical damage by vehicles.

4. Propane Distribution Facility

a. Will be in compliance with reference (m).

b. Fire protection will be provided for propane storage containers with an aggregate water capacity of more than 4,000 gallons subject to exposure from a single fire. The mode of protection will be determined through an inspection by host installation fire department fire inspector(s).

c. Activities must have documentation of unfired pressure vessel certification(s).

d. The propane distribution facility will have protection against tampering. This includes all propane storage containers, distribution lines, and fueling points.

e. The area around the propane distribution facility and inside the propane container enclosure will be free of combustible material, including grass and weeds.

f. The portion of the propane container that comes in contact with saddles or foundations (including masonry) must be protected against corrosion by coating the affected area or by some other means (e.g., felt, weather stripping).

g. Stationary ASME containers will have a stainless steel nameplate attached to the container, and will contain the following information:

(1) Service for which the container is designed.

(2) Name and address of container supplier or trade name of container.

(3) Water capacity of container in pounds or U.S. gallons.

(4) Maximum allowable working pressure (MAWP) in PSI.

(5) Wording that reads: "This container will not contain a product that has a vapor pressure in excess of ___ PSIG at 100 degrees Fahrenheit.

(6) Outside surface area in square feet.

(7) Year of manufacture.

(8) Shell thickness and head thickness.

(9) Overall length, outside diameter, and head design.

(10) Manufacturer’s unique serial number.

(11) ASME code symbol.

(12) Minimum design metal temperature in degrees Fahrenheit at MAWP in PSI.

(13) Type of construction “W”.

(14) Degree of radiography “RT.”

h. Valves, regulators, gauges, and other container appurtenances will be protected against physical damage.

5. Propane Leaks and Sensors. Activities will have a 24-hour propane tank farm sensor system and will test those alarms at least annually. The "Instrument Power/24-Hour Mode" propane sensing alarms will also be tested at least annually and maintained in accordance with reference (o). All test results will be documented and available for review by inspection teams when requested.

6. Signage

a. “NO SMOKING” signs are to be posted facing in all directions around the fuel tank enclosure per reference (m).

b. Propane storage containers will be properly labeled per reference (n) diamond labeling system.

7. LS will maintain copies of all inspections and testing conducted on propane storage containers, valves, and gauges.