THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF PUBLIC SAFETY AND SECURITY

Massachusetts Fire Training Council

Subject: Live Fire Training
Effective Date: January 7, 2026

Policy Scope: This policy shall apply to all live fire training evolutions conducted or sponsored by the Massachusetts Firefighting Academy (MFA) using structures, props, or sites owned by the Department of Fire Services (DFS) or using structures or sites owned by another authority having jurisdiction (AHJ) but temporarily under MFA control for the purpose of conducting live fire training evolutions.

Policy Statement: In large part the content of the policy follows NFPA 1403 -*Standards for Live Fire Training Evolutions (2018 Edition)*. Where necessary, this policy reflects local conditions and characteristics, to the extent it departs for NFPA 1403 (*2018 Edition*).

Note: The use of “Live Fire Training Evolutions” and “Live Fire Training” within this policy is synonymous.

Note: “Live Fire Training Evolutions or “Live Fire Training” includes certification examinations involving live fire. (See definitions)

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I References

National Fire Protection Association (NFPA) 1403, 2018 Edition *Standard on Live Fire Training Evolutions.*
National Fire Protection Association (NFPA) 1500, 2018 Edition *Standard on Fire Department Occupational Safety and Health Program.*
National Fire Protection Association (NFPA) 1010,2024 Edition *Standard for Firefighter Professional Qualifications*
National Fire Protection Association (NFPA) 1971, 2018 Edition *Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*
National Fire Protection Association (NFPA) 1981, 2019 Edition *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*
National Fire Protection Association (NFPA) 1852, 2019 Edition *Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA)*
National Fire Protection Association (NFPA) 58 2020 Edition *Liquefied Petroleum Gas Code*
National Fire Protection Association (NFPA) 59, 2021 *Edition Utility LP-Gas Plant Code*
National Institute for Occupational Safety & Health | NIOSH Pocket Guide To Chemical Hazards Publication Number 2005 149 (September 2007)
Massachusetts Fire Training Council *Firefighter Rehabilitation During Training Evolutions* as amended

II Definitions

Acquired Structure: A building or structure, not specifically designed for live fire training, acquired by the authority having jurisdiction from a property owner for the purpose of conducting live fire training evolutions.

Authority Having Jurisdiction (AHJ): An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials an installation, or a procedure.

Certification Examination: A written or practical test to determine competency against a national standard. The operations area of live fire practical examination shall be considered an area in which participants may be exposed to fire, smoke and/or the products of combustion (a subset of Live Fire Training).

Crib/Support: DFS personnel responsible for the prop/building, burn pan loading, apparatus, tools and equipment, etc.

Demonstration: The act of showing a skill. The operations area of the demonstration shall be considered an area in which participants may be exposed to fire, smoke and/or the products of combustion (a subset of Live Fire Training).

Emergency Medical Services Officer (EMS): The EMS Officer shall be credentialed as an EMT-B at a minimum to be assigned subject duties. The Instructor assigned EMS Officer duties is charged with responding to all EMS and rehab needs for the entire training group or individual student as the need arises. Secures EMS equipment (first adi kit, O2 kit, defibrillator and ambu bag). Assures that all equipment is in working order and replaces / reports any missing or broken equipment. Places EMS equipment in appropriate location(s) for that day's training. In the event of a medical emergency, The EMS Officer will administer first aid. Monitors all training evolutions for safe practices and for compliance within Academy safety policies and procedures. The EMS Officer shall be familiar with the current MFA rehab policy and account for implementation of same as needed. One (1) EMS Officer is assigned per eligible training period.

Engineered Water Supply: where the water system has been engineered to provide adequate volume for the evolutions conducted and a backup power source or backup pumps, or both, are in place to ensure an uninterrupted supply in the event of a power failure or malfunction,

Evolution: A set of prescribed actions that result in an effective training activity. The operations area of the

evolution shall be considered an area where participants may be exposed to fire, smoke and/or the products of combustion (a subset of Live Fire Training).

Exercise: A series of evolutions linked together to achieve program or course objectives. The operations area of the evolution shall be considered an area where participants may be exposed to fire, smoke and/or the products of combustion (a subset of Live Fire Training).

Fire Department Personnel: A duly sworn in member of an organized, municipal fire department or fire district.

Fire Brigade Personnel: A member of a non-municipal firefighting force, private organization, agency or corporation whose primary duty may or may not be fire suppression activities.

Flashover Recognition Simulator: Commercially manufactured repetitive live fire training structure (lab) consisting of two commercially engineered sea cargo containers bolted together to form an upper section that serves as a burn room and a lower section that serves as an observation room for the purpose of demonstrating the various stages of fire in a confined area.

Hay: Consists of grasses, legumes, and herbaceous plants. May have pesticides and/or other harmful agents that create carcinogenic by-products, often known as fodder. May have mold spores and other harmful agents if inhaled. DFS/MFA shall not use this fuel for any live fire training.

Incident Commander (IC): An MFA Instructor who is in charge of the live fire training demonstration/ evolution/ exercise.

Instructor: A member of the Massachusetts Firefighting Academy staff holding the rank/pay grade of Fire Instructor I or greater, who is live fire qualified in accordance with this policy, and whose primary responsibility is to provide live fire training instruction.

Lead Instructor (Chief Examiner for a certification exam): An MFA Instructor who is in charge of the live fire training demonstration/evolution/exercise/examination (Referred to as the Instructor-in-charge in NFPA 1403, 4.7.2) holding the rank MFA Fire Instructor I or higher and who is live fire qualified in accordance with this policy. The instructor-in-charge shall be responsible for full compliance with this standard.

Live Fire: Any unconfined open flame or device that can propagate fire to the building, structure, prop, or other combustible materials utilized to demonstrate or train fire suppression theories or techniques.

Live Fire Training: A demonstration, evolution, exercise, or examination involving live fire.

Live Fire Training Structure: A structure specifically designed for conducting repetitive live fire training. Live fire training structures include structures built of conventional building materials, such as concrete, masonry and steel – commonly referred to as a “burn building”, as well as commercially engineered structures built of containers, in which live fire training evolutions are conducted. Live fire training structures also include fire behavior labs such as the DFS **flashover recognition simulator** and the DFS **mobile training unit (MTU).**

Mobile Training Unit (MTU): The mobile training unit (MTU) is a propane fired repetitive live fire training structure (lab) with moveable wall panels and a variety of interior that can: simulate kitchen, bedroom, and living room fires; provide flame rollover experience; and enable students to accomplish multiple scenarios including moving hose lines up and down stairs and through a structure.

Officer of the Day (OD): An MFA Instructor who coordinates and oversees the daily recruit training lectures, demonstrations, evolutions, and exercises.

Operations Area: The area within 50 feet of any portion of the live fire training structure or live fire training prop involved in a live fire training.

Pallet: Wood framework used for handling, storing, or moving materials. Used as the primary fuel in Class A live fire training. DFS/MFA shall use only ***food grade*** pallets that are absent contaminants such as pesticides, paint, hydrocarbon-based products, or other harmful agents.

Participant: Any student, instructor, instructor candidate, instructor aide, safety officer, examiner, visitor, or other person who is within the live fire operations area.

Personal Protective Clothing (PPC): For the purpose of live fire training, PPC shall include NFPA compliant turnout coat, protective trousers, fire-fighting boots, fire-fighting gloves, protective hood, and helmet.

Personal Protective Equipment (PPE): For the purpose of live fire training, PPE shall include full PPC plus an NFPA 1981 compliant open circuit, self-contained breathing apparatus (SCBA) with an integrated personal alert safety system (PASS), and minimum of a 30-minute air cylinder.

Safety Officer: An experienced and properly qualified instructor designated by the Program Coordinator (PC), Assistant Program Coordinator (AC), OD, IC or Lead Instructor to maintain a safe working environment during live fire training.

Inside Safety Officer (ISO): An experienced and properly qualified instructor designated by the, PC, AC, OD, ICor Lead Instructor to maintains an overall safe working environment in the interior of all live burning training structures. Lead Instructor or IC cannot hold this position.

Respiratory Compliance Requirements: Successful completion of a one-time medical questionnaire and evaluation, annual respiratory fit test and annual completion of on-line respiratory protection training course and examination.

Self-Contained Breathing Apparatus (SCBA): An atmosphere-supplying respirator that supplies a reparable air atmosphere to the user from a breathing air source that is independent of the ambient environment and designed to be carried by the user. For the purpose of this policy, an SCBA shall be open circuit – SCBA in which exhalation is vented to the atmosphere and not rebreathed – with an integrated personal alert system (PASS), and with a minimum of a 30-minute air cylinder.

Springfield Burn Building Use Agreement (SPR). The SPR is an agreement between the Massachusetts Department of Fire Services and a City / Town fire department to utilize the Springfield Live Fire facility. The agreement provides the requirements to utilize the facility for both DFS and the community requesting use. A completed and signed SPR is required prior to any usage.

Straw: Agricultural by-product from the dry stalks of cereal plants – primarily wheat. DFS/MFA shall only use straw (and not hay) due to the absence of mold spores, toxins, pesticides, and other carcinogenic by-products.

Student: Any person who is present at the live fire training evolution for the purpose of receiving training or taking a certification examination.

III General

A. Application

1. All live fire training evolutions shall comply with this section and the appropriate section for the type of training being performed.

2. Live fire training provides a means of training firefighters, fire brigade personnel, and private citizens. While this type of training provides high levels of realism, it carries with it most of the hazards and dangers of firefighting at actual emergencies. Live fire training must be planned with care and supervised closely by live fire qualified MFA instructors.

3. Strict safety practices shall be applied to all structures, props, and sites used for live fire training.

B. Student Prerequisites

Prior to being permitted to participate in any live fire training, the student shall have received training to meet the applicable performance objectives for Firefighter I of the most current NFPA standard that has been adopted by the Massachusetts Firefighting Academy.

Note: This requirement shall not preclude students from observing live fire demonstrations from outside the operations area prior to receiving the above listed training.

Note: Student prerequisites do not apply to Northeast Gas Association (NGA), Propane Gas Association of New England (PGANE), and maritime students who are conducting syllabus gas familiarization training as part of an MFA authorized course.

1. For students enrolled in a MFA Career or Call/Volunteer Recruit training program, successful syllabus progression satisfies the requirements in section III.B.1.

2. Prior to being permitted to participate in applicable live fire training, the student shall be compliant with their AHJ's respiratory protection program fit testing policy and their Department official affirming that the participant can obtain, maintain, and manage an SCBA facepiece seal.

3. Call/Volunteer Recruit & Massachusetts Maritime Academy (MMA) students shall provide proof from their department of current fit testing during course registration. If student must borrow a pack from DFS then a fit test will be provided.

4. DFS shall provide fit testing for all Career Recruit students unless there is a specialty mask required by the recruit that DFS can't supply then the recruit shall provide proof from their department of a current fit test.

5. For students seeking admission to basic live fire training courses such as Structural Firefighting Practices (SFFP), Flashover, or the MTU, students shall not be permitted to participate without first presenting written evidence at the time of registration of having successfully completed the prescribed minimum training to the levels specified in paragraphs III.B.1 and III.B.3 and the Live Fire Training Addendum (appendix 5). Acceptable evidence of minimum training requirements shall include one of the following:

a. Certificate of successful completion of the Massachusetts Firefighting Academy Career or Call/Volunteer Recruit Training Program.

b. Firefighter I (minimum) certification (Pro Board, Department of Defense (DOD) or International Fire Service Accreditation Congress (IFSAC) only).

c. A letter signed by the Chief of Department on official Department letterhead repeating the same language and stating completion of the same requirements in Section E of the Massachusetts Firefighting Academy student application form (the same requirements detailed in paragraph IV.B.1 above) with a short statement as to how the training was obtained or what position/experience the student has that satisfies the prerequisites.

d. A letter signed by the Chief of Department on official Department letterhead stating the student is compliant with the AHJ's respiratory protection program fit testing policy and that the student can achieve, maintain, and manage a proper SCBA facepiece seal will fulfill the requirement of paragraph IV.B.3.

Note: MTU registration generally occurs the day of training at the training site. Proper completion of the course roster and signature by the training officer or a Chief Officer on the Live Fire Training Addendum (appendix 6) attesting to completion of all prerequisites in paragraphs III.B.1 and III.B.3 will satisfy the requirement of this paragraph (III.B.6).

6. For students seeking admission to advanced live fire training courses such as Advanced Structural Firefighting Practices (ASFFP) students shall not be permitted to participate without first presenting written evidence at the time of registration of having successfully completed the prescribed minimum training to the levels specified in paragraphs III.B.1 and III.B.3. Acceptable evidence of minimum training requirements shall include one of the following:

a. Certificate of successful completion of the MFA Career or Call/Volunteer Recruit Training Program.

b. Firefighter II (minimum) certification (Pro Board, DOD or IFSAC only).

c. Certificate of successful completion of the MFA Structural Firefighting Practices course.

d. Certificate of successful completion of the Firefighting Academy Career or Call/Volunteer Recruit Training Program not conducted by Massachusetts Fire Academy approved by the coordinator and follow all current NFPA standards.

e. A letter signed by the Chief of Department on official Department letterhead repeating the same language and stating completion of the same requirements in Section E of the Massachusetts Firefighting Academy student application form (the same requirements detailed in paragraph III.B.1)

with a short statement as to how the training was obtained or what live fire position/experience the student has that indicates the required skills for an advanced class and the student is compliant with the AHJ's respiratory protection program fit testing policy and that the student can achieve, maintain, and manage a proper SCBA facepiece seal will fulfill the requirement of paragraph III.B.3.

7. MMA Students only must have received training to meet the performance objectives of the current edition of Navigation Vessel Inspection Circular (NVIC) 09-14 and has been approved through the United States Coast Guard (USCG) and National Maritime Center (NMC) (appendix 7).

C. Safety Officer

1. An Outside Safety Officer shall be designated by the PC, AC, OD, IC or Lead Instructor for each live fire training demonstration/evolution/ exercise. OD/IC/ Lead Instructor must assume the position of Outside Safety Officer if no other SO is assigned. OD, IC, Lead Instructor CAN NOT be an ISO. Any designated SO shall be live fire qualified MFA Instructor.

2. Instructor trainees, auditing instructors, or students shall not serve as the Safety Officer.

3. An ISO shall be assigned by the PC, AC, OD, IC or Lead Instructor to all live fire training evolution that involve more than one room or multiple floors, MTU, Flashover training, or if the lead instructor feel it is necessary.

4. The responsibilities of the safety officer shall include, but not be limited to, the following:

a. Prevention of unsafe acts

b. Elimination of unsafe conditions

c. Making sure CO levels are below 50ppm and before anyone is allowed to be off SCBA. Confirm with OD/IC/Lead that instructors are Live Burn Qualified.

d. Confirm with Crib Support Staff (lead)/AC that support staff are Live Burn Qualified.

e. Fill out Safety Officer Checklist and give it to the OD/IC/or Lead Instructor.

f. BW SRB building only -The roof hatch is in the secured welded closed position and cannot be utilized.

5. The ISO/SO for the Flashover Recognition Simulator and Mobile Training Unit (MTU) shall be qualified as an instructor in the LMS system (has taken the proper TtT course, see section III.E.3 and III.E.4) and designated by the Program Coordinator/ Assistant Program Coordinator. Flashover Simulator and MTU training involves extended exposure to high temperatures and/or products of combustion. The training pushes personnel and equipment to the limit of their endurance. Consequently, the Safety Officer shall ensure that all items on the Safety Officer's Checklist (appendix 2) are completed for each demonstration/evolution.

a. In order to further reduce exposure to excessive thermal stress, The IS position in the Flashover Simulator cannot be occupied by the same instructor in back-to-back evolutions and shall sit out the evolution immediately after working the IS position.

6. The SO shall be strategically placed for each evolution with the experience, means, and authority to prevent/eliminate unsafe acts/conditions or intervene and control any aspect of the operation when, in his

or her judgment, a potential or actual danger, potential for accident, threatening situation, or unsafe condition exists.

7. The SO shall provide for the safety of all persons at the training site including students, instructors, visitors, and spectators.

8. The SO shall not be assigned other duties that interfere with safety responsibilities. However, the Safety Officer may also serve as the Lead Instructor depending on the size of the demonstration/evolution/exercise.

9. The SO shall be knowledgeable in the operation and location of safety features available for the live fire training structure or prop, such as emergency shutoff switches, gas shutoff valves, and evacuation alarms.

10. Additional safety personnel, as deemed necessary by the Safety Officer, shall be strategically located inside or around the structure, prop, or the training ground to react to any unsafe, unplanned, or threatening situation/condition.

11. The ISO shall be equipped with a thermal imaging camera (TIC). When possible, all instructors leading a company of students during interior live fire training should be equipped with a TIC.

12. For live fire training utilizing flammable and combustible liquids, pressurized liquefied or cryogenic flammable gases in outside areas, the Safety Officer shall:

a. Thoroughly inspect the operations area for defects and hazards. This inspection shall include but not be limited to an examination of all fuel storage, piping, supply lines, water supply, live fire devices (including safety controls and shutoffs) and the area in which the evolutions will take place, for any hazardous conditions.

b. Remove or remedy any hazardous condition found during the inspection prior to commencement of the exercise. If a hazardous condition cannot be removed or remedied, live fire training shall not be permitted to proceed in the affected area or on the affected prop.

c. Ensure that all manual safety devices and shutoffs are checked and operating prior to any live fire training.

The SO in coordination with the Lead Instructor shall monitor climatic/environmental conditions referring to the Rehab Policy for weather and weather condition specific concerns and mitigation factors. Wind velocity can contribute to unanticipated fire behavior. Extreme heat can cause heat exhaustion or heat stroke, and extreme cold can cause frostbite, hypothermia, or slippery surfaces. An impending severe storm can bring lightning or high winds. Such situations warrant the careful consideration of limiting activity, waiting for a storm to pass, or postponing the live fire training. Consequently, the training session shall be curtailed, postponed, or canceled, as necessary, to reduce the risk of injury or illness caused by extreme weather.

Note: On live fire training days, Career Recruit physical training (PT) is scheduled as a modified PT session. However, if PT is scheduled prior to live fire training and the high temperature is forecast to be equal to or greater than 80 degrees Fahrenheit, the coordinator, OD, live fire Lead Instructor, and the Safety Officer will confer and consider modifying or cancelling the PT session if necessary to avoid having students who are fatigued and dehydrated participating in live fire training.

13. Prior to live fire extinguisher training, the Safety Officer shall conduct a thorough inspection of the area in which training is to be conducted. This inspection shall include but not be limited to safety of burn location relative to wind direction and exposures, suitability of burn props and pans, the serviceability of the fire extinguishers to be used and the area in which the exercise will take place for any hazardous conditions. The Safety Officer shall remove or remedy any hazardous condition found during the inspection prior to commencement of the training. If a hazardous condition cannot be removed or remedied, the live fire training shall not be permitted to proceed.

14. The Safety Officer in coordination with the Lead Instructor shall ensure adherence to the MFA rehabilitation policy and modify training as necessary to account for extreme climatic conditions.

D. Lead Instructor and Instructors

1. All live fire training shall be under the direction of a designated Lead Instructor/IC who shall ensure a productive and safe learning environment as well as compliance with all applicable policies.

2. The Lead Instructor shall assign the following personnel:

a. One instructor to each functional crew, each of which shall not exceed five students.

b. One instructor to each backup line or additional line.

c. One additional instructor for each additional functional assignment.

3. The Lead Instructor shall provide for rest and rehabilitation of participants operating at the scene, including any necessary medical evaluation and treatment, food and fluid replenishment, and relief from climatic conditions.

4. Instructors should be rotated through duty assignments to avoid thermal saturation and fatigue based on the judgment of the Lead Instructor and Safety Officer in consideration of the instructor's experience and qualifications.

5. To further reduce exposure to excessive thermal stress, Instructors shall occupy the nozzle position only once during a Flashover Simulator training session and shall sit out the evolution immediately after working the nozzle position.

6. Additional instructors shall be designated when factors such as extreme temperatures or large groups are present, and classes of long duration are planned.

7. In order to lower thermal stress and exposure to the products of combustion, all participants in the Flashover Simulator shall use a reclined seated position resting on elbows and the SCBA air cylinder.

8. Prior to the ignition of any fire, the lead instructor or his designated representative shall ensure that students, crib/support personnel, and other instructors wear/utilize all protective clothing and equipment specified in this policy (according to the manufacturer's instructions).

9. Instructors shall monitor and supervise all assigned students during the live fire training evolution. Instructors shall take a personal accountability report (PAR) when entering and exiting the live fire training structure, prop, or area.

10. Awareness of weather conditions, especially wind velocity and direction shall be maintained, including a final check for possible changes in weather conditions immediately before actual ignition.

E. Training Instructors on How to Use Specialty Props- (Flashover, MTU, Bridgewater Search & Rescue Building)

1. Instructors, So, OD, IC, Lead Instructors and Crib Support personnel responsible for conducting live fire training using the Flashover Recognition Simulator, Mobile Training Unit (MTU), other gas-fueled training systems, or with specialty props shall be trained in the complete operation of the system or prop (see section III.E.3 and III.E.4).

2. Instructor training shall be performed by an MFA instructor designated by the PC/AC and qualified to perform this type of training. Qualified Safety Officers and Lead Instructor shall be designated by the PC/AC.

3. The Flashover Recognition Simulator shall only be operated by instructors who have successfully completed the MFA Flashover Recognition Simulator train-the-trainer course provided by vendor or MFA train-the-trainer course. In order to participate in the Flashover Recognition Simulator train-the-trainer course, an instructor shall be live fire qualified, respiratory compliant, and completely knowledgeable in nature of fire, fire behavior, PPE, and Safety Officer procedures. The instructor's flashover training will include all aspects of simulator operations and shall include the actual operation of the unit. No other personnel shall be allowed to operate the Flashover Recognition Simulator for any reason.

4. The Mobile Training Unit (MTU) shall only be operated by instructors/Crib support personnel who have successfully completed the manufacturer's train-the-trainer course. In order to participate in the MTU train-the-trainer course, an instructor shall be live fire qualified and respiratory compliant.

5. Bridgewater Search and Rescue Buildings

1. Thermocouple sensors are to be monitored at all times during live burn evolution when instructors/students are in a burn room.
a. Following the manufacturer's instructions, initialize and sync the thermocouple probes to the laptop and ensure they are transmitting properly. This should be done in the crib prior to deployment.
b. Carefully transport the sensors and laptop to the SRB
c. Gently install the thermocouple sensors into the pre-designated ports. These should ONLY be barely hand tight. **DO NOT USE ANY TOOLS.**
d. Once installed, verify once again, that the sensors are still transmitting.

2. One person should be designated to set-up, monitor, and record data from each burn evolution. That individual should avoid multi-tasking in the other roles so that important safety functions are not overlooked.

3.Temperatures shall not exceed 1000 degrees Fahrenheit within a designated burn room. However, every attempt shall be made to notify Command and Safety when temperatures approach **800**

degrees Fahrenheit in order to start the cooling process through appropriate extinguishment, ventilation, or both.

4. During cessation of operations for any period longer than 30 minutes, the laptop should be closed to pause tracking and opened back up upon return.

5. At the end of the training day, all thermocouples and related equipment should be recovered and carefully transported back to the crib for data collection and shut down.

a. Ensure that all sensors have been shut down and are placed back in protective sleeves>

b. Save the day's report to the appropriate desktop folder using "MMDDYY" naming format. Save an additional copy to the designated USB drive.

c. Power laptop down and secure for the next training day.

6. BW SRB building only -The roof hatch is in the secured closed welded position and cannot be utilized.

F. Fire Control Team (not applicable to the flashover simulator or gas fired systems)

1. A fire control team shall consist of a minimum of two personnel "ignition officer" & "observer" (normally from crib support personnel).

2. One member of the fire control team be designated as the "ignition officer" to ignite, maintain, and control the materials being burned. ISO CAN NOT be used in this position.

3. One member of the fire control team shall be designated as the "observer" to observe the ignition officer ignite and maintain the fire, and to recognize, report, and respond to any adverse conditions. Ignition shall not occur without the observer visually confirming the flame area is clear of students. Students shall not perform this function.

4. Members of the fire control team should rotate duties to prevent overheating and thermal saturation.

5. Support Lead or PC/AC must report to SO/OD/IC/Lead that all Fire Control Team members are live burn compliant before the start of any evolutions.

6. The fire control team shall wear full personal protective equipment, including SCBA.

7. The decision to ignite the training fire shall be made by the Lead Instructor in coordination with the ISO.

8. The fire shall be ignited only by the ignition officer.

9. A charged hose line shall be available when the fire control team is igniting or tending to any fire (except smoke producing smudge fires).

10. Fires shall not be ignited without The IS Safety Officer visually confirming that the flame area is clear of personnel being trained.

11. All fires must be ignited using approved and controlled methods only, such as butane lighters, matches, or other designated fire-starting equipment. Under no circumstances are torches attached to a 1lb deposable tank to be used to ignite any fire in a confined area such as the burn building, flashover prop, or other structure. The use of these types of torches presents an unacceptable hazard**.**

G. Personal Protective Equipment

1. All students, instructors, safety personnel, and anyone else present shall wear all personal protective equipment specified in this policy (according to the manufacturer's instructions) whenever they are inside the operations area during any live fire training evolution.

2. All participants shall have their PPE inspected by the Safety Officer or their designated representative at the beginning of any live fire training course using the most updated MFA PPE inspection form (Appendix 4). In limited situations, a PPE discrepancy may be resolved by using DFS supplied PPE. Any inability to resolve a PPE deficiency will result in the student being dismissed from the course. DFS will supply MMA students with PPE.

3. The safety officer or their designee shall ensure that all participants' PPE has been inspected in accordance with NFPA 1971 and NFPA 1981(appendix 4) prior to entry into a live fire training evolution to verify that the protective clothing and SCBA are being worn correctly and are in serviceable condition.

4. Protective coats, trousers, hoods, footwear, helmets, and gloves require a tag indicating they are manufactured to meet or exceed the requirements of the edition of the applicable NFPA standard in effect at the time of purchase and are no more than 10 years old.

5. SCBA shall be open circuit; positive-pressure; manufactured to meet the requirements of NFPA 1981, *Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Service;* and have an integrated pass device manufactured to meet the requirements of NFPA 1982, *Standard on Personal Alert Safety Systems (PASS)*.

6. Open-circuit SCBA that does not meet the 2002, 2007, 2013 or 2018 editions of NFPA 1981, *Standard on Open-Circuit Self- Contained Breathing Apparatus (SCBA) for Emergency Services*, shall not be used in any MFA live fire training.

7. The SCBA bottle must be the same manufacturer as the unit, be a minimum of 30-minute duration, are within hydro testing date, and not more than 15yrs old.

8. DFS will provide a SCBA for students in the Career Recruit Training Program & MMA Students.

9. The Scott AV-3000HT is the only face-piece compliant with the DFS-supplied SCBAs for the Flashover Simulator. Under no circumstances will non-compliant combinations of face-piece and SCBA be used for Flashover Simulator or live fire training.

10. To avoid excessive thermal insult and retention of latent heat - which can easily lead to face-piece lens

failure - a given face-piece shall be used only once during a Flashover Simulator training session. Students and instructors shall not swap or share face-pieces from evolution to evolution, and instructors shall only use an unused face-piece for each evolution they participate in.

11. All students, instructors, safety personnel, and anyone else participating in any live fire evolution inside the operations area (including but not limited to Live Fire Training Structures, Car fire & Dumpster fire props) shall breathe from an SCBA meeting the requirements of section III.G.5, III.G.6, and III.G.7 whenever they operate under one or more of the following conditions:

a. In an atmosphere that is oxygen deficient or contaminated by the products of combustion, or both.

b. In an atmosphere that is suspected of being oxygen deficient or contaminated by the products of combustion, or both.

c. Any atmosphere that may become oxygen deficient, contaminated, or both.

d. Below ground level that is oxygen deficient, contaminated, or both.

e. Superheated atmospheres associated with the MTU, or interior gas fueled props.

f. Overhaul/clean-up operations in areas that are oxygen deficient, contaminated, or both .

g. See exclusion Q.5

12. No personnel shall be allowed to breathe smoke, toxic vapors or fumes, products of combustion, other contaminated atmospheres, a superheated atmosphere, or be exposed to an oxygen-deficient atmosphere.

13. The SO, ISO, OD, IC or Lead Instructor shall have access to one of the following: a single gas meter for CO, a multi gas meter that has CO. The SO, ISO, OD, IC, or Lead Instructor, or their designee are to use the meter(s) to monitor inside and outside conditions around the live fire training structure and rehab area. If CO level in the REHAB area exceed 25 ppm or another dangerous condition exists, the Rehab area shall be moved.. All personnel working/operating in the live fire training structure shall remain on air until there are detectable levels of CO are at or below 50ppm. Staff should not be building for the next evolution on SCBA, the building should be ventilated and below acceptable limits before staff rebuilds for the next evolution, to assure that there is no suspended particulate matter, or other dangerous condition. Removal of SCBA unnecessarily exposes firefighter to harmful carcinogens. Therefore, all personnel should use SCBA during overhaul and clean-up operations.

14. Enclosed Gas and Flammable Liquid Props. Fire fighters participating in any live fire evolution involving flammable liquids or compressed gases where hose lines are being advanced on the prop shall be in full personal protective clothing.

15. All participants using SCBA shall begin any live fire training demonstration/evolution with a full SCBA cylinder unless syllabus requirements dictate otherwise.

H. Communications

1. A live fire training site radio communications system shall be established to enable coordination among the Lead Instructor (IC), operating sectors (interior and exterior), Safety Officer(s), and external requests for assistance as appropriate and required. In the event standard/syllabus radio procedures cannot be utilized due to equipment limitations/malfunctions, the Lead Instructor will formulate and brief an alternate plan to all participants. If an adequate work-around to communication problems is not possible, the live fire training shall be cancelled.

2. The Lead Instructor, Safety Officer, and EMS Officer (if assigned according to the IAP) shall establish the best means to summon external EMS assistance and brief the participants on which phone number to use if different than 911.

3. A site/building/prop evacuation plan shall be established, including an evacuation signal to be demonstrated to all participants prior to live fire training. Examples of an evacuation signal are a whistle, apparatus air horn, or high–low electronic siren.

4. Participants in live fire training evolutions shall be instructed to report to a predetermined location for a PAR/ roll call if evacuation of the structure, prop, or area is signaled. Instructors shall Immediately report any personnel not accounted for to the Lead Instructor.

5. The Inside SO(s) may use integrated facepiece voice amplifiers during live fire training.

I. Emergency Medical Services (EMS)

1. An EMS Officer will be assigned to all Live Fire Training on or off campus. The EMS officer must have a minimum of EMT. The EMS Officer will be assigned by the Program Coordinator/Assistant Coordinator/or Lead instructor. This capability shall include a minimum of a jump bag, medical oxygen kit, bag valve mask, and automatic external defibrillator (AED).

2. The EMS fficer, OD, IC or Lead Instructor shall ensure that each of the following tasks is accomplished prior to the commencement of any live fire training evolution:

a. Each piece of EMS equipment is checked for completeness and proper operation.

b. A specific location is designated as the EMS aid station and all EMS equipment is set up in that area and ready for use.

c. All students, instructors, crib/support, and visitors are informed of the location of the EMS aid station and the nature of the equipment available.

d. All DFS Campus's shall follow SOG 1 and the DFS Disaster and Emergency Management policy for activating the EMS system for advanced care and transport. For off campus live fire training evolutions, the Lead Instructor shall determine the best method of activating the EMS system for advanced care and transport and ensure all participants are briefed on the procedure (see section III.H.2).

3. A response location/parking area for an ambulance or advanced EMS response vehicle shall be designated or determined after activating the EMS system based on the circumstances in order to facilitate a prompt response in the event of an injury to a participant in the live fire training.

4. Written injury reports shall be completed and submitted on all injuries and on all medical aid rendered for any participant and given to the OD, IC, or Lead Instructor.

J. Water Supply/Hose Lines

1. The Lead Instructor and SO shall determine the rate and duration of water flow necessary for each individual live fire training evolution, including the water necessary for control and extinguishment of the training fire, and the water supply necessary for backup line(s) to protect personnel. Exception for engineered facilities? Unless working within an engineered water supply such as the MFA facility.

2. Each hose line (attack and backup) shall be capable of delivering a minimum of 95gpm. Except for attack line in Flashover which will use 40gpm nozzle (per manufacturers recommendations). A minimum flow rate of 95gpm is necessary in order to provide adequate quantities of water to cover the planned evolution, plus a reserve for unanticipated emergencies. The Lead Instructor and Safety Officer shall calculate, in advance, the exact flow rates and total quantity of water required for fire control and extinguishment for each evolution or follow prepared skill sheets / or lesson plan. The Lead Instructor and Safety Officer shall consider available equipment, manpower, operations area, and elevation changes between the supply pumper and attack pumper. Knowledge of the hose line sizes, types of nozzles, type of fire stream to be utilized, and principles of fire attack and employment tactics aid in determining the exact flow rates that are necessary in developing the IAP.

3. Backup or second attack line(s) shall be provided to ensure protection for personnel on training attack lines.

4. The Lead Instructor shall determine, prior to each specific evolution, how many trainings attack lines and backup lines are necessary.

5. It shall be the responsibility of the Lead Instructor to ensure that a continuous supply of water is always established and that in the event of mechanical failure of a fire apparatus pump, complete loss of water will not result.

6. The primary and backup lines shall not be operating from the same pumping apparatus unless working within an engineered water supply such as the MFA facility.

7. The attack line and backup line pumping apparatus may use separate hydrants, folding tanks, or nurse tenders for their water supply if not using an MFA engineered water supply. The attack and backup pumpers may draft from the same pond or river provided the static source contains sufficient usable water. Pumping apparatus shall have a minimum tank capacity of 500 gallons and pump operators will strive to maintain a full tank. Pump operators shall be prepared to switch to tank water or deliver hydrant pressure in the event of a malfunction with the water supply or apparatus.

8. A single water source shall be sufficient at a training center facility where the water system has been engineered to provide adequate volume for the evolutions conducted and a backup power source or back up pumps, or both, are in place to ensure an uninterrupted supply in the event of a power failure or malfunction. If a single water source is utilized, apparatus for both the attack lines and backup lines will have a minimum of a 3” supply line tying them together for a continuous supply. DFS Facilities shall communicate to the Lead Instructor if a power failure or malfunction should occur.

9. A minimum reserve of additional water in the amount of 50 percent of the fire flow demand, determined in accordance with paragraph 1 above shall be available to handle unforeseen situations. Full water tanks of the apparatus supplying primary and backup lines may satisfy this requirement if of sufficient quantity.

Note: DFS/Facilities prior to live fire training will ensure there is sufficient water is available in the engineered systems storage tanks at the DFS Site that live fire training is scheduled.

10. The requirements of paragraph IV.K.9 above do not apply to the DFS-Stow gas field or MFA approved permanently sited gas-fueled training systems.

11. The Lead Instructor shall

a. Assign one instructor to each interior crew, which shall not exceed five students.
Note: Flammable gas school practical evolutions may use a ratio of one instructor to seven students.

b. If training fires involve more than one floor, provide a back-up or second line for each level of operation.

c. Assign one instructor to each back-up line.

d. Assign sufficient personnel to back-up lines to provide mobility.

12. There shall be room provided around all live fire training structures and props so that there is space for all attack line(s) and backup line(s) to operate freely.

K. Fuel Materials

1. Live fire fuel requirements/restrictions:

a. Class A: Pine excelsior, wooden pallets, straw, and other wood-based products.

- Only ISP soundboard or Masonite are allowed on the walls and ceiling of the Flashover Simulator and only wood pallets in the barrel.
- Hay shall not be used as a Class A fuel. Food grade pallets are the only acceptable pallets for use as Class A fuel.
- Flammable/combustible liquids, pressure-treated wood, hay, tires, rubber, plastic, polyurethane foam, upholstered furniture, carpet and chemically treated or pesticide-treated straw or hay are prohibited.

b. Class B: Flammable or combustible liquids, as defined in NFPA 30, Flammable and Combustible Liquids Code, shall not be used in live fire training evolutions.

Note: Combustible liquid with a flash point above 100°F (38°C) shall be permitted to be used in a live fire training structure or prop that has been specifically engineered to accommodate a defined quantity of the fuel.

c. Class C: **Class C fires shall be simulated.** Energized electrical equipment shall not be used for Class C live fire training.

d. Class D: Fuel for Class D fires shall be combustible metal. Reasonable efforts shall be made to ascertain that all fuels have not been contaminated with harmful chemicals or substances.

2. Unidentified materials, such as debris found in or around the structure or prop that could burn in unanticipated ways, react violently, or create environmental or health hazards, shall not be used.

3. The mobile training unit (MTU) shall only use Propane.

4. Propane lighters, butane lighters, fuses (safety flares), kitchen-type matches, and similar devices are permitted to be used to ignite Class A training fires if the device is removed immediately after ignition of the training fire. Should be stored at least 10 feet from the burn structure.

5. Fuel materials shall be used only in the amounts necessary to create the desired fire size (see Appendix 1). An excessive fuel load can contribute to conditions that create unusually dangerous fire behavior. This can jeopardize structural integrity, egress, and the safety of participants. Excess fuel load can result in a ventilation-controlled fire, which can result in flame over (rollover) or flashover. These fire conditions increase the amount of thermal energy (the heat release rate of the fire) that is being transferred by conduction, convection, and radiation to any fire fighters in the compartment, which can lead to the degradation of protective equipment and injury or death. Venting a ventilation-controlled fire can result in an increase in heat release rate in the fire structure.

6. The fuel load shall be limited to avoid conditions that could cause an uncontrolled flashover or back draft (see Appendix 1).

7. Pre-staging of Class A fuels shall NOT be located on the fire floor, stairways, or in an ingress/egress path.

8. The Lead Instructor and Safety Officer shall assess the environment of the selected fire room(s) for factors that can affect the growth, development, and spread of fire. The arrangement of the initial materials to be ignited, particularly the proximity to walls and ceilings, and the ventilation openings are important factors to be considered when assessing the potential fire growth.

9. Any live fire training evolution shall be stopped immediately when the Lead Instructor or Safety Officer determines through an ongoing assessment that the combustible nature of the live fire training environment represents a potential hazard. Training will be resumed only after actions have been taken to reduce the hazard.

10. The use of flammable gas, such as propane and natural gas, shall be permitted only in live fire training structures such as the MTU specifically designed for their use. Liquefied versions of these gases shall not be permitted inside the live fire training structure.

Note: This paragraph does not apply to LPG and LNG used in the DFS-Stow gas field.

11. All props that use pressure to move fuel to the fire shall be equipped with remote fuel shutoffs outside of the safety perimeter but within sight of the prop and the entire field of attack for the prop. The safety person at the remote shutoff should have the authority to shut off the fuel supply to the prop when, in the safety person’s judgment, the prop has malfunctioned, the fire has gone dangerously out of control, or the extinguishment team is in jeopardy.

a. During the entire time the prop is in use, the remote shutoff shall be continuously attended by safety personnel who are trained in its operation and who have direct communications with the Lead Instructor, Safety Officer, and other instructors.

b. Liquefied petroleum gas props shall be equipped with all safety features as described in NFPA 58, Liquefied Petroleum Gas Code, and NFPA 59, Utility LP-Gas Plant Code.

c. Where the evolution involves the failure of a safety feature, the failed part shall be located downstream from the correctly functioning safety feature.

12. For flammable metal fires, there shall be a sufficient quantity of the proper extinguishing agent available so that all attack crews have the required supply as well as a 150 percent reserve for use by the backup crews.

13. All possible sources of ignition, other than those that are under the direct supervision of the ignition officer, shall be removed from the operations area.

L. Parking/Staging

1. The Lead Instructor shall designate areas for staging, operating, and parking fire apparatus used in the live fire training evolution.

2. If required, the Lead Instructor shall designate an area for parking fire apparatus and vehicles that are not a part of the evolution so as not to interfere with live fire training operations. If any vehicles or apparatus that are not part of the live fire training evolution are in service, or required to respond to an emergency, they shall be located in an area that will facilitate a prompt response and not endanger the participants of the live fire training operation.

3. If necessary, the Lead Instructor shall, in coordination with the host agency as required, designate parking areas for police vehicles, the press, or authorized visitors.

4. Vehicle ingress and egress routes shall be designated, identified, and monitored if required during live fire training evolutions to ensure their availability in the event of an emergency.

M. Visitors and Authorized Spectators

1. Authorized Visitors and Spectators are individuals who are not participating in the Live Fire Training as either Students, Instructors or Crib Support Staff

2. All authorized spectators shall remain outside the operations area perimeter established by the Safety Officer.

3. Control measures shall be briefed and posted, if required, to indicate the operations area perimeter.

4. Visitors who are authorized to be within the operations area perimeter shall be escorted at all times.

N. Pre-burn Plan/Briefing/Incident Action Plan (IAP)

1. Prior to conducting any live fire training, the Program Coordinator or Assistant Program Coordinator shall develop a lesson plan that includes all elements all the live fire training. The Lead Instructor and/or Safety Officer will brief this plan to all participants before the start of any live fire training.

Career Recruit/Call Volunteer Recruit training programs will conduct a pre-burn briefing at the beginning of each class that briefs all participants of protocols for all burns that will be conducted during the duration of their respective training program. If there is a change to protocols or to the burn building being utilized an updated briefing will be conducted to inform all participants of the change.

2. The pre-burn IAP briefing shall include but is not limited to the identification of the Lead Instructor and Safety Officer, briefing of safety procedures, evacuation procedures, procedures to be followed during the evolution/exercise, and procedures to be followed in the event of an emergency.

3. Written learning objectives/lesson plans shall be required for all live fire training evolutions.

4. All facets of each evolution to be conducted shall be discussed.

5. Assignments shall be made for all crews participating in the live fire training evolution.

6. Disclosing the location of any manikins is not required provided the possibility of manikins simulating victims is discussed in the pre-burn IAP briefing.

7. No person(s) shall be placed inside the building, prop, or within the operations area during live fire evolutions to play the role of victim.
Note: This restriction does not apply to RIT Courses where an instructor using proper PPE roleplays a lost firefighter in accordance with syllabus training.

8. Prior to conducting any live fire training, all participants shall have a knowledge of and familiarity with the prop or props being used for the evolution.

9. Prior to conducting any live fire training, all participants shall be required to conduct a walk-through of the live fire training structure in order to have a knowledge of and familiarity with the floor plan/layout and become familiar with emergency exits, evacuation routes, and their markings in order to facilitate any necessary evacuation in an emergency. Recruit and C/V will perform this at the beginning of the program.

10. If at a location other than an established training facility, property adjacent to the live fire training site that could be affected by smoke from the live fire training evolution, such as railroads, airports or heliports, and nursing homes, hospitals, or other similar facilities, shall be identified. A responsible person in charge of these properties shall be informed of the date and time of the evolution

11. For off-site operations, streets or highways in the vicinity of the training site shall be surveyed for potential effects from live fire training evolutions. Safeguards such as street closings, traffic rerouting, signs, and police traffic control shall be taken to eliminate possible hazards to motorists.

O. Fire Extinguisher Evolutions

1. All portable extinguisher live fire training shall be conducted in a suitable outside area, sufficiently distant from exposures.

2. Sufficient back-up extinguishers and operators shall be available for all evolutions involving portable fire extinguishers.

P. Class A Combustible Live Fire Training Structures & Props (Burn Buildings, Flashover Recognition Simulator, Class A Car and Dumpster Props, and other Class A Portable Props)

1. Structures and Facilities

a. Debris hindering the access or egress of participants in live fire training evolutions shall be removed prior to the beginning of the live fire training exercise.

b. Live fire training structures and props shall be left in a safe condition upon completion of live fire training evolutions.

2. Ignition of Props (Class A Car and Dumpster Props, and other Class A Portable Props) with PPE.

a. Ignition of the vehicle fire simulator shall consist of the igniter lighting a small flake of straw in each compartment and backing away from the simulator before the control operator sends propane fuel to the prop. (In the event wind conditions are unfavorable and the igniter cannot stay upwind during ignition SCBA shall be worn.)
b. Class A fires shall always be ignited from upwind. (Class A burn barrel, dumpster prop) If wind conditions are unfavorable and the igniter cannot stay upwind during ignition of the dumpster prop SCBA must be worn.

3. Inspection and Testing

a. Qualified DFS facilities maintenance/engineering personnel shall quarterly inspect DFS owned live fire training structures and props to ensure structural stability. This inspection shall include but not be limited to an examination of the structure to ensure that floors, walls, stairs and other structural components are capable of withstanding the weight of firefighters and accumulated water.

b. Prior to every live fire exercise, the SO shall thoroughly inspect the live fire training structure for obvious defects and hazards in accordance with NFPA 1403 (Appendix 3 -Structural Fire Training Facility Inspection Form). This inspection shall include but not be limited to an examination of floor, wall, and ceiling openings, means of egress, stair treads and rails, shafts, and ice buildup during cold weather operations. The Safety Officer shall make the inspection and evaluate conditions in consideration of the training environment and level of expertise of the students. Hazards that may not appear serious during normal conditions of inspection may have a serious safety impact under live fire conditions. The SO shall remove or remedy any hazardous condition found during the inspection prior to commencement of the exercise. If a hazardous condition cannot be removed or remedied, or where the live fire training structure damage is severe enough to affect the safety of the participants, training shall not be permitted.

c. The SO shall ensure that all doors, windows, window shutters, roof scuttles, automatic ventilators, mechanical equipment, lighting, sprinklers, standpipes and all other equipment necessary for the live fire training evolution, shall be checked and operated, where appropriate, prior to any live fire training evolution to ensure correct operation (see Appendix 3).

d. All safety devices, such as thermal sensors, oxygen and toxic and combustible gas monitors, evacuation alarms, and emergency shutdown switches if present, shall be checked prior to any live fire training to ensure they operate correctly.

e. Damage shall be documented on the form at Appendix 3 and DFS facilities or the AHJ shall be notified.

f. The SO shall remove or remedy any hazardous condition found during the inspection prior to commencement of the exercise. If a hazardous condition cannot be removed or remedied, live fire training shall not be permitted to proceed.

g. The structural integrity of the live fire training structure shall be evaluated and documented annually by DFS Facility Division.

h. If visible structural defects are found, such as cracks, rust, spalls, or warps in structural floors, columns, beams, walls, or metal panels, DFS or the AHJ shall have a follow-up evaluation conducted by a licensed professional engineer with live fire training structure experience and expertise or by another competent professional as determined by Facilities.

i. The structural integrity of the DFS owned live fire training structures shall be evaluated and documented by a licensed professional engineer with live fire training structure experience and expertise or by another competent professional as determined by DFS in accordance with NFPA 1403 Standard on Live Fire Training Evolution at least once every 5 years or more frequently if determined to be required by the evaluator.

j. Once every five years, the removal and reinstallation of a representative area of thermal linings (if any) to allow inspections of the conditions hidden behind the linings per NFPA 1403. The statement of work for the inspection shall specifically require the contractor to clearly state that the inspection fulfills this NFPA 1403 requirement.

k. Any live fire training structure constructed with calcium aluminate refractory structural concrete that the MFA is considering for use in training shall be inspected by a structural engineer with expertise in live fire training structures every 3 years in accordance with NFPA 1403 Standard on Live Fire Training Evolution. The structural inspection shall include removal of concrete core samples from the structure to check for delamination within the concrete.

4. Sequential Live Fire Burn Evolutions

a. The Lead Instructor in conjunction with the SO shall use a pre-developed lesson plan when any multiple sequential live fire evolutions are to be conducted.

b. The DFS burn building fuel load restriction charts at Appendix 1 shall be followed for each burn room and includes the maximum fuel loading that can be used for the first burn and each successive burn.

c. A burn sequence matrix chart shall be developed for the burn rooms in a live fire training structure. The burn sequence matrix chart shall include the maximum fuel loading per evolution and maximum number of sequential live fire evolutions that can be conducted per day in each burn room. The burn sequence for each room shall define the maximum fuel load that can be used for the first burn and each successive burn.

d. The ISO will monitor, evaluate, and determine the maximum number of sequential live fire evolutions that can be safely conducted during a given training period before the room is allowed to cool with consideration of the following:

i. The construction of the burn room will affect how much energy the room will retain with each successive evolution. The temperature, radiant heat, and heat retention in the burn room will increase with each additional evolution. At some point, a burn room may become too hot to safely conduct further training. Outside environmental conditions may also contribute to this situation.

ii. Generally, with a given quantity of fuel, the lower the cubic footage in a room, the higher the temperatures and more rigorous the environment will be.

iii. As the number of openings in a burn room increase, the available ventilation area increases, resulting in typically lower temperatures and less severe environments.

e. The fuel load per evolution and the maximum number of sequential evolutions in each burn room shall not be exceeded under any circumstances.

Q. Gas Field, and Gas Fired Portable Props (Live Fire Training Utilizing Flammable or Combustible Liquids, or Pressurized Liquefied or Cryogenic Flammable Gases in Outside Areas)

1. Props

a. Props used for outside live fire training shall be designed specifically for the evolution to be performed.

b. Exterior props shall be left in a safe condition upon completion of live fire training evolutions.

c. For outside training, care shall be taken to select areas that limit the hazards to both personal safety and the environment.

d. The training site shall be without obstructions that can interfere with firefighting operations.

e. Where live training fires are used outside, the ground cover shall be such that it does not contribute to the fire.

f. Debris hindering the access or egress of participants shall be removed prior to the beginning of live fire training.

g. Ignition of propane fired props shall consist of the igniter placing the torch to the discharge propane port of the prop until a small flame is produced by the control operators strategic release of gas. Once a small flame is produced the igniter shall be fully backed away to a safe area before the prop operator places full gas supply to the prop.

h. Bullex/Lion Burn pans at Bridgewater campus consists of a startup process and use of a remote to ignite the pan. There is no manual torch needed to ignite these pans.

2. Inspection

a. Prior to live fire training, the SO shall thoroughly inspect the operations area for defects and hazards. This inspection shall include but not be limited to an examination of all fuel storage, piping, supply lines, water supply, live fire devices (including safety controls and shutoffs) and the area in which the evolutions will take place, for any hazardous conditions.

b. The SO shall remove or remedy any hazardous condition found during the inspection prior to commencement of the exercise. If a hazardous condition cannot be removed or remedied, the exercise shall not be permitted to proceed.

c. The SO shall ensure that all automatic and manual safety devices and shutoffs are checked and operating prior to any live fire training.

d. Prop structural integrity shall be evaluated and documented annually.

3. Fuel

a. See section III.K.1.b.

b. The use of contaminated fuels is not permitted.

c. Only those fuels suitable for sale on the commercial market as "pure" shall be acceptable.

4. Safety.

a. The SO shall ensure that fuel storage areas are an adequate distance from the actual live fire training location.

b. Following the Gas School Program lesson plan and safety guidelines developed for this program, instructors and students shall not be required to wear SCBA during outside evolutions.

a. Mobile Training Unit (MTU) and other Gas-Fired Live Fire Training Structures

i. Structures and Facilities.

a. This section pertains to all interior spaces where gas-fired live fire training evolutions/exercises occur.

b. The Mobile Training Unit (MTU) is considered a live fire training structure and MTU operations shall adhere to the requirements of this policy and the manufacture's operating manual.

c. Debris hindering the access or egress of fire fighters shall be removed prior to the beginning of the training exercises.

d. Live fire training structures shall be left in a safe condition upon completion of live fire training evolutions.

ii. Inspection and Testing.

a. Live fire training structures shall be inspected visually for damage prior to live fire training evolutions (see Appendix 3).

b. Damage shall be documented on the Live Fire Training Facility Inspection Form at Appendix 3. Any damage shall be reported to DFS Facilities & MFA Director.

c. Where the live fire training structure damage is severe enough to affect the safety of the participants, training shall not be permitted.

d. All safety devices and emergency shutdown switches, plus doors, shutters, vents, and other operable devices, shall be checked prior to any live fire training evolutions to ensure they operate correctly.

e. All safety devices, such as thermal sensors, combustible gas monitors, evacuation alarms, and emergency shutdown switches, shall be checked prior to any live fire training to ensure they operate correctly.

f. The instructors/crib support shall run the training system 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.

g. The structural integrity of the MTU or any other gas-fired live fire training structure shall be evaluated and documented annually by DFS Facilities or the AHJ. If visible structural defects are found, such as cracks, rust, spalls, or warps in structural floors, columns, beams, walls, or metal panels, DFS Facilities or the building owner shall have a follow-up evaluation conducted by a licensed professional engineer with live fire training structure experience and expertise, or by another competent professional as determined by DFS Facilities or the AHJ.

h. The structural integrity of the live fire training structure shall be evaluated and documented by a licensed professional engineer with live fire training structure experience and expertise, or by another competent professional as determined by DFS Facilities or the AHJ, at least once every 10 years, or more frequently if determined to be required by the evaluator.

b. Reports and Records.

1. The Live Fire Training Facility Inspection Form (Appendix 3) shall be used for every MFA live fire training event. The form serves as checklist/reminder and to report any abnormalities or deficiencies during the training event. The form shall be completed by the Lead Instructor (IC) or the Officer of the Day and submitted as part of the training records by the Officer of the Day.

IV – Appendix

Original Policy: January 2, 1994
Revision Date: May 2, 2007 September 14, 2023 June 4, 2025 January 7, 2026

1. Appendix 1-Burn Building Fuel Load

2. Appendix 2-ASFFP Safety Offic

3. Appendix 3-Live Structural Fire Train

4. Appendix 4-PPE Checklist.pdf

5. Appendix 5-Live_Fire_Training

6. Appendix 6-902-MTU_Live_Fire

7. Appendix 7-MMA Live Fire Registratio

Burn Building Fuel Load Restrictions (Straw & Food Service Pallets Only)

Based on years of experience, best practices have been developed to limit the maximum amount of straw to be used per room per evolution. Programs such as Recruit and Advanced/Structural Firefighting Practices are free to determine the amount of straw to be used during the phases/evolutions of burns provided they do not exceed the maximum.

Smudges will be determined as needed by the Interior Safety Officer (IS) with a maximum of one bale per floor.

DFS-Stow:

Basement:

LL1 – 2 bales maximum
LL2 – 2 bales maximum
LL3 – 2 bales maximum

1st Floor:

101 – 1 bale maximum
102 – 1 bale maximum
103 – 1 bale maximum
104 – 2 bales maximum
105 – 1 bale maximum
106 – 1 bale maximum

2nd Floor:

201 – 1 bale maximum
202 – 2 bales maximum
203 – 2 bales maximum
204 – 1 bale maximum
205 – 2 bales maximum

3rd Floor:

4 bales maximum

Burn Manger Only - All Rooms

3 pallets maximum
1 bale maximum

DFS-Bridgewater:

SRB Building:
Burn Manger only-All Rooms:
3 pallets maximum
1 bale maximum

Burn Building:
All fire must be built on a Burn Pad, Burn Manger, or Burn Barrel on pad. No fires are to be built directly on the floor. New pallets must be

1st Floor:
100 – 1 -burn pad, 1 bale, & 2 pallets
101 – 1 -burn pad, 1 bale, & 2 pallets
102 – 2- burn pads with 1 bale, & 2 pallets each
103 – **No burning**
104 - 1 -burn pad, 1 bale, & 2 pallets

2nd Floor:
200 – 1- burn pad, 1 bale & 2 pallets
201 – **No burning**
202 - 1 -burn pad, 1 bale, & 2 pallets
203 – **No burning**
204 – **No Burning**
205 - 1 -burn pad, 1 bale, & 2 pallets
206 - 1 -burn pad, 1 bale, & 2 pallets
Balcony – Burn Barrel on pad, ½ cut pallet

3rd Floor:
300 - 1 -burn pad, 1 bale, & 2 pallets
301 – No Burning
302 - 1 -burn pad, 1 bale, & 2 pallets
303 – No Burning
304 - 1 -burn pad, 1 bale, & 2 pallets
Balcony – 1 burn barrel on pad, ½ cut pallet

**** If a burn manger is going to be used in any burn room then 1 bale & 3 pallet max***

DFS-Springfield:

1st Floor:

100 - 1 bale maximum
101 - 3/4 to 1 bale maximum
102 - 1/4 bale maximum
103 - 1 bale maximum
104 - 1/4 bale maximum
105 - 1/2 bale maximum
107 - 1/2 to 3/4 bale maximum
108 - NO BURNING IN THIS ROOM (Electrical Panel in this space)

2nd Floor:

201 – 3/4 bale maximum
202 – 3/4 bale maximum
203 – 3/4 bale maximum
204 – 1/4 bale maximum
205 – 1/2 bale maximum
207 – 3/4 bale maximum

3rd Floor:

301 - 1 bale maximum

Burn Manger only-All Rooms:

3 pallets maximum
1 bale maximum

Safety Officer Checklist

Pre-Course Site Inspection:

- ❑ Confirm adequate water supply
- ❑ Confirm control of surrounding area (other programs on site)
- ❑ Inspect around burn structure for obvious safety hazards
- ❑ Ensure adequate equipment present
- ❑ Verify appropriate quantity of straw / pallets present
- ❑ Ensure that a means of summoning emergency assistance (normally a portable radio or cell phone) is readily available
- ❑ Inspect building for hazards (inside / out)
- ❑ Ensure doors / windows latch as appropriate.
- ❑ Assure that the rehab tent or other shelter for participants can be located upwind of burn structure and out of the direction of travel for any smoke produced

Participant Inspection:

- ❑ Check PPE and SCBA of personnel conducting evolution
- ❑ Gear check forms completed and all in compliance
- ❑ Have another person check your own PPE and SCBA before beginning evolution
- ❑ Confirm with OD/IC/Lead that all instructors and Crib Support Staff are Live Burn Qualified and have met all components of respiratory compliance.

Interior Operations:

- ❑ Confirm fire locations and crew entrance with support staff
- ❑ Ensure emergency egress plan is communicated with all staff
- ❑ Ensure all personnel remain low within areas of live fire
- ❑ Assist any participants in distress exiting to an area of refuge / safety
- ❑ Monitor all participants and instructors for signs of heat stress
- ❑ Require all personnel to hydrate before and after each evolution
- ❑ Allow time for rehabilitation
- ❑ Interior operations will be monitored utilizing a gas meter to determine that there are no detectable levels of CO are at or below 50ppm before any personnel or students can remove their SCBA.

Date: _____ Signature: _____

Live Structural Fire Training Facility Inspection Form

Facility:	
Date:	
Inspected By:	

Legend: ✓ = OK N = Noteworthy D = Requires Attention

GENERAL

1) ___ Floors, walls, stairs, and other structural components appear capable of withstanding the weight of the contents, participants, and accumulated water.

EXTERIOR

2) ___ General appearance
3) ___ Exterior of structure
4) ___ Windows
5) ___ Doors
6) ___ Railings
7) ___ Stairs

INTERIOR

8) ____ Housekeeping (swept clean, no fuel storage on fire floor)
9) ____ Windows/Shutters/ Roof scuttles
10) ____ Functional doors
11) ____ Auto ventilators/Mechanical equipment/Standpipes/Sprinklers/Lighting (if applicable)
12) ____ High temperature linings (loose/damaged tile, exposed bolts)
13) ____ Burn racks
Fuel inventory/storage (no storage of fuel in the burn buildings)

OTHER

14) _____ _____
15) _____ _____

Documentation of Issues:

Item #	Description

Note: If damage is present in approved burn rooms, utilize the form on the reverse side to specify the details of the damage.

Date: _____ Signature: _____

MASSACHUSETS FIREFIGHTING ACADEMY
PROTECTIVE CLOTHING AND EQUIPMENT INSPECTION CHECKLIST

1. **Individual Component Inspection**
   a. **COAT**
      Fabric is free of rips, tears, and visible defects that could adversely affect the participant's safety.
      Coat consists of outer shell, moisture barrier, and thermal barrier.
      Fastening devices are in place and are operational.
      Coat has been manufactured within the last ten years.
   b. **TROUSERS (PANTS)**
      Fabric is free of rips, tears, and visible defects that could adversely affect the participant's safety.
      Trousers consist of outer shell, moisture barrier, and thermal barrier.
      Fastening devices and suspenders or belt are in place and are operational.
      Trousers have been manufactured within the last ten years.
   c. **HELMET**
      All components are present and operational, including the shell, energy-absorbing system, retention system (chin strap), ear flaps and some form of eye protection.
      Helmet has been manufactured within the last ten years
   d. **PROTECTIVE HOOD**
      Fabric is free of rips, tears, and visible defects that could adversely affect the participant's safety.
      Protective hood has been manufactured within the last ten years.
   e. **GLOVES**
      Fabric is free of rips, tears, and visible defects that could adversely affect the participant's safety.
      Gloves must have wrist protection (Note: rubber-coated gloves are not allowed.)
      Gloves have been manufactured within the last ten years.
   f. **BOOTS**
      Material is free of rips, tears, and visible defects that could adversely affect the participant's safety.
      Proper length (height).
      Boots have been manufactured within the last ten years.
   g. **Notes:**_____
      _____
      _____

2. **Protective Breathing Apparatus Inspection (Complete only if participant brought their own SCBA)**
   a. **SCBA being used complies with the following:**
      The unit can be used in the positive pressure mode.
      The unit is NIOSH/MSHA Approved.
      The bottles are a minimum of 30-minute duration.
      The bottles and SCBA unit are manufactured by the same manufacturer.

      The unit is free of visible defects that could adversely affect the participant's safety.

Date: _____ Instructor/Examiner Print Name: _____

Signature: _____

LIVE FIRE TRAINING

Registration Addendum Form

(must be submitted 14 days prior to start of session)

Activity / Session: _____

Location: _____ **Start Date:** _____

Name: _____

Student ID: _____

Email: _____

I certify that I am 18 years of age or older _____
Student Signature

MASSACHUSETTS TRAINING COUNCIL PROTECTIVE CLOTHING COMPLIANCE FORM

In accordance with the Massachusetts Fire Training Council policy for Live Fire Training Exercises and Evolutions, this section must be completed for each person who registers for any Academy program which includes live fire training.

I hereby attest that the ensemble (ensemble includes helmet, protective hood, coat, trousers, gloves and boots)

to be used by: _____ provided by: ☐ this department ☐ the student
(print student's name)

will at all times throughout the participation of the live fire training, be less than ten (10) years old. In addition, I further attest that this ensemble also complies with the following standards:

- NFPA 1971: Standard on Protective Ensemble for Structural Firefighting and Proximity Fire Fighting
- OSHA 29 CFR 1910.156(e) (2) (iii)

Chief of Department Signature: _____ Date: _____

Student Signature: ____ Date: _____

LIVE FIRE TRAINING REQUIREMENTS

I certify that: _____ has received training to meet the performance objectives of the
(print student's name)
following sections of the most current edition of National Fire Protection Association Standard to the level of Firefighter I.

- Fire Behavior
- Rescue
- Fire Streams
- Safety
- Fire Hose and Nozzles
- Forcible Entry
- Ventilation
- Self Contained Breathing Apparatus
- General

In accordance with Massachusetts Firefighting Academy policy for live fire training exercises and evolutions, this applicant should be permitted to participate in live fire training exercises within structures.

Signature of Chief or Training Officer: _ Date: _____

Email completed form to: Registration.DFS-TM-Academy@mass.gov

Department of Fire Services
Massachusetts Firefighting Academy

MTU LIVE FIRE TRAINING
Registration Addendum Form

Course Title: MOBILE (LIVE FIRE) TRAINING UNIT (902) **Session #:** _____

Location: _____ **Start Date:** _____

Name: _____

Student ID: _____

Email: _____

I certify that I am 18 years of age or older _____
Student Signature

MASSACHUSETTS TRAINING COUNCIL PROTECTIVE CLOTHING COMPLIANCE FORM

In accordance with the Massachusetts Fire Training Council policy for Live Fire Training Exercises and Evolutions, this section must be completed for each person who registers for any Academy program which includes live fire training.

I hereby attest that the ensemble (ensemble includes helmet, protective hood, coat, trousers, gloves and boots)

to be used by: _____ provided by: ☐ this department ☐ the student
(print student's name)

will at all times throughout the participation of the live fire training, be less than ten (10) years old. In addition, I further attest that this ensemble also complies with the following standards:

- NFPA 1971: Standard on Protective Ensemble for Structural Firefighting and Proximity Fire Fighting
- OSHA 29 CFR 1910.156(e) (2) (iii)

Chief of Department Signature: _____ Date: _____

Student Signature: _____ Date: _____

LIVE FIRE TRAINING REQUIREMENTS

I certify that: _____ has received training to meet the performance objectives of the
(print student's name)
following sections of the current edition of National Fire Protection Association Standard 1001 to the level of Firefighter I.

- Fire Behavior
- Forcible Entry
- Rescue
- Ventilation
- Fire Streams
- Self Contained Breathing Apparatus
- Safety
- Fire Hose and Nozzles
- General

In accordance with Massachusetts Firefighting Academy policy for live fire training exercises and evolutions, this applicant should be permitted to participate in live fire training exercises within structures.

Signature of Chief or Training Officer: _____ Date: _____

The Registration Addendum Form must be received prior to the start of the session in order to participate.

Email completed form to: Registration.DFS-TM-Academy@mass.gov

MARITIME LIVE FIRE TRAINING
Registration Addendum Form

Course Title: _____

Location: ___ **Start Date:** _____

Name: _____

LIVE FIRE TRAINING REQUIREMENTS

I certify that: _____ has received training to meet the performance objectives of the
(print student's name)
current edition of NVIC 09-14 and has been approved through the USCG & NMC.

I acknowledge that the PPE ensemble (ensemble includes helmet, protective hood, coat, trousers, gloves and boots) is being provided to _____by the Massachusetts Firefighting Academy.
(print student's name)

In accordance with Massachusetts Firefighting Academy policy for live fire training exercises and evolutions, this applicant should be permitted to participate in live fire training exercises within structures.

Signature of Provost or Director, Mariner credentialing _____

Date: _____

Email completed form to: Registration.DFS-TM-Academy@mass.gov