

Maryland Fire and Rescue Institute

Policy and Procedures Manual



PROCEDURE: Live Structural Fire Training Evolutions

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Maryland Fire and Rescue Institute

Live Structural Fire Training Evolutions

Policy and Procedures

- I. **Purpose:** The purpose of this policy and procedure is to establish requirements to help ensure training in live-fire structures during MFRI classes are conducted in a manner such that the exposure to health and safety hazards to all participants is minimized.
- II. **Policy:** Providing an environment that helps reduce the exposure to health and safety hazards during live structural fire training evolutions is a very high priority at the Maryland Fire and Rescue Institute. This is accomplished by establishing appropriate safety practices, providing safe facilities/equipment, and utilizing adequately prepared students that are supervised by instructors who are knowledgeable, experienced and dedicated. It shall be the responsibility of all personnel assigned a role in live structural fire training to adhere to this policy and procedures.
- III. **Definitions:**
 - A. *Academy Agreement Designee* – The individual representing an agency that has signed an academy agreement with the Maryland Fire and Rescue Institute.
 - B. *Approved Burn Room* – A room within a live-fire training structure specifically designed with sprayed-on linings, high temperature tiles or other methods to withstand a training fire.
 - C. *Approved Evolution* – An evolution or skill identified within MFRI curriculum designed to be conducted in a live structural fire training environment; or has been approved by the Maryland Fire and Rescue Institute. To receive approval, an evolution must be “educationally sound,” meaning it has a well-defined student performance objective that relates to a job performance objective.
 - D. *Gas-fueled Training System Specialist* – An individual, authorized by the authority having jurisdiction, who is qualified to operate the gas-fueled training system.
 - E. *Ignition Officer* – An Instructor authorized to ignite training fires by the authority of the Lead Instructor and under the direct supervision of the Safety Officer. If necessary, an additional Instructor may be assigned to the Ignition Officer to help procure and maintain adequate fuel for use in an approved burn room.
 - F. *Instructor* – An individual currently certified by the Maryland Instructor Certification Review Board who has successfully completed MFRI’s “Conducting Safe Live-fire Training Evolutions” class and is currently authorized by the Institute to provide instruction under the direction of the Lead Instructor.
 - G. *Lead Instructor* – An Instructor authorized to supervise and be responsible for all activities associated with a given class.
 - H. *Live-fire Training Structure* – A structure specifically constructed for conducting live-fire training evolutions on a repetitive basis.
 - I. *Live Structural Fire Training Documentation Packet* – Documentation of the Live Structural Fire Training that includes the following forms: 1) Live Structure Fire Training Facility Inspection; 2) Pre-Burn Preparations Check-list; 3) Post-burn Activities Check-list; and 4) any injury documentation. A cover sheet for the packet is provided on the last page of this document.
 - J. *Operations Area Perimeter* – An area surrounding the live structural fire training facility where active live structural fire training evolutions occur. This area should include a perimeter approximately 75’ from the live structural fire training facility, but does not include the command

vehicle and pumping fire apparatus used during the training. At MFRI facilities, this is defined by the area covered by concrete pavement.

- K. *Safety Officer* – An Instructor who is designated by the authority having jurisdiction to function in this position.
- L. *Structural Firefighter Protective Ensemble* – Multiple elements of protective clothing meeting the design specifications of NFPA 1971 that, when properly donned and worn together, provide protection from many of the risks of emergency operations. These elements shall consist of the following:
 - 1). Structural firefighting helmet
 - 2). Structural firefighting hood
 - 3). Structural firefighting coat
 - 4). Structural firefighting trousers
 - 5). Structural firefighting gloves
 - 6). Structural firefighting footwear
 - 7). Self-contained breathing apparatus (SCBA) meeting the design specifications of NFPA 1981. Sufficient air shall be provided to ensure the student is able to complete the evolution without the low air alarm activating.
 - 8). Personal alert safety system (PASS) device meeting the design specifications of NFPA 1982.
- M. *Students* – Individuals who have met the required prerequisites and are participating in live-fire training exercises for the purpose of receiving training.

IV. Responsibilities

A. Logistical Support Section

- 1). Maintain the Live Structural Fire Training Evolutions Policy and Procedures.
- 2). Maintain the “Conducting Safe Live Fire Training Evolutions” program.
- 3). Periodically review completed copies of the Live-fire Training Evolution Documentation Packet completed at MFRI facilities.
- 4). Conduct inspections of live-fire training structures per the Procedures section of this policy and take action to correct any deficiencies.
- 5). Review damage noted in MFRI-approved burn rooms to determine if live-fire training can continue in the room or if damage is so extensive that training cannot continue until repairs are made.

B. Regional Training Center/Office

- 1). Ensure instructors are familiar with and comply with the requirements of this policy and procedures. Provide oversight as required.
- 2). Conduct inspections of live-fire training structures per the Procedures section of this policy and take action to correct any deficiencies.
- 3). Ensure adequate staffing, including the appointment of a Safety Officer.
- 4). Collect and review copies of the Live-fire Training Documentation Packet completed for MFRI facilities.
- 5). Periodically review completed copies of the Live-fire Training documentation at facilities that signed an academy agreement with the Institute.

C. Academy Agreement Designee

- 1). Ensure instructors are familiar with and comply with the requirements of this policy and procedures during MFRI classes. Provide oversight as required.
- 2). Conduct inspections of live-fire training structures per the Procedures section of this policy and take action to correct any deficiencies.
- 3). Ensure adequate staffing, including the appointment of a Safety Officer.

- 4). Collect, review and make available copies of the Live-fire Training Documentation Packet to the Regional Training Center/Office.
- 5). Review damage noted in Academy-approved burn rooms to determine if live- fire training can continue in the room or if damage is so extensive that training cannot continue until repairs are made.

D. Lead Instructor

- 1). Ensure full compliance with this policy and procedures.
- 2). Plan and coordinate all training activities and monitor them to ensure safe practices.
- 3). Ensure adequate staffing assignments are made for all live structural fire training evolutions. Ensure no other responsibility is assigned to the Safety Officer that interferes with his/her safety responsibility.
- 4). Manage the rotation of instructors such that the number of consecutive interior evolutions performed is limited to help reduce heat stress. This is especially important for the Ignition Officer.
- 5). Oversee the completion of all pre-burn preparations as defined in **Appendix B**.
- 6). Oversee the completion of all post-burn activities as defined in **Appendix C**.
- 7). Oversee the completion of injury reports as may be required.
- 8). Submit the Live-fire Training Documentation Packet to the Regional Training Center/Office or Academy Agreement Designee upon completion of the training.

E. Support Instructor

- 1). Ensure full compliance with this policy and procedures.
- 2). Complete assignments as directed by the Lead Instructor.
- 3). Monitor and supervise all assigned students during live-fire training evolutions.
- 4). Act upon and report all unsafe acts or conditions.

F. Ignition Officer

- 1). Ensure full compliance with this policy and procedures.
- 2). Assemble the fuel load for the training fire.
- 3). Ensure a charged hose line is present when igniting the training fire and does not operate alone.
- 4). Ignite the training fire in the presence of and under the direct supervision of the Safety Officer.
- 5). In conjunction with the Safety Officer, monitor the level of heat and the need for additional fuel for subsequent evolutions.

G. Gas-fueled Training System Specialist

- 1). Maintain proficiency in the complete operation of the gas-fueled training system.
- 2). Ensure the use of flammable gas, such as propane and natural gas, is only permitted in live-fire structures specifically designed for their use.
- 3). Ensure liquefied versions of propane and natural gas are not permitted inside the live-fire training structure.
- 4). Run the 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.
- 5). Ensure ample room is provided around all props such that there is space for all attack lines as well as backup lines to operate freely.
- 6). Ensure fires are not ignited without visually confirming that the flame area is clear of personnel.
- 7). Ensure flammable gas fires are not ignited manually.

H. Safety Officer

- 1). Ensure full compliance with this policy and procedures.

- 2). Provide for the safety of all persons including students, instructors, visitors and spectators through the prevention of unsafe acts and the elimination of unsafe conditions.
- 3). Intervene and control any aspect of an evolution when a potential or actual danger, accident or unsafe condition exists.
- 4). Maintain knowledge in the operation of safety features available within the live- fire training structure.
- 5). Request and assign additional safety personnel as deemed necessary and locate them strategically within the structure to react to any unplanned or threatening situation or condition.
- 6). Inspect all safety systems including housekeeping, attack and back-up lines, fuel, accountability system, hydration, medical supplies, personal protective equipment, monitor safety systems in place during burn activities such as signs of stress, accountability system use, instructor-student ratio, burn duration and others as defined on the Pre-burn Preparations Check List illustrated in **Appendix B**.
- 7). Monitor safety systems during the post-burn activities such as the safe filling of SCBA cylinders, rehabilitation, conduct an inspection of personal protective equipment, and oversee the completion of any injury reports that may be necessary as defined on the Post-burn Activities Check List illustrated in **Appendix C**.

I. Students

- 1). Acquire Student Prerequisites – Prior to being permitted to participate in live- fire training evolutions, students shall meet the following job performance requirements for Firefighter I in NFPA 1001, Standard for Firefighter I Professional Qualifications:
 - (a) Safety
 - (b) Fire behavior
 - (c) Portable extinguishers
 - (d) Personal protective equipment
 - (e) Ladders
 - (f) Fire hose, appliances and streams
 - (g) Overhaul
 - (h) Water supply
 - (i) Ventilation
 - (j) Forcible entry
- 2). Properly utilize personal protective equipment per the Procedures section.
- 3). Follow the direction of the instructor and do not operate outside the scope of his/her instructions.
- 4). Report any perceived unsafe act or condition to your instructor.
- 5). Report any injury to your instructor.

V. Procedures

- A. Approved Evolutions – Only approved evolutions as defined by this Policy and Procedures are authorized for use in Live Structural Fire Training Evolutions.
- B. Approved Burn Rooms – Only approved burn rooms as defined by this Policy and Procedures are authorized for use in Live Structural Fire Training Evolutions.
- C. Live Structural Fire Training Facility Inspections – The visual inspection of live-fire training facilities is an integral component of this policy and procedures to help ensure a safe structure is being utilized.

- 1). Scope of inspection – details are provided on the Live Structural Training Facility Inspection form utilized to document all damage is shown in **Appendix A**. General areas of inspection include the following:
 - (a) Perimeter lighting
 - (b) Exterior (structure, stairs, railings, windows, doors)
 - (c) Interior (housekeeping, damage, functional windows, doors, shutters)
 - (d) Approved burn rooms (loose tile, crazing, cracking, delamination, metal mesh visible)
- 2). Frequency:
 - (a) Quarterly
 - (i) Responsibility – Full-time training staff (MFRI staff for MFRI facilities and Academy staff for Academy facilities).
 - (ii) Documentation – Completed copies of the quarterly inspection are to be maintained at the training facility.
 - (b) Annually
 - (i) Responsibility – Manager of the Logistical Support Section (for MFRI Facilities) and Academy Agreement Designee (for Academy Facilities).
 - (ii) Documentation – Completed copies of the annual inspection are to be maintained by the Manager of Logistical Support Section (for MFRI Facilities) and the Academy Agreement Designed (for Academy Facilities).

D. Personal Protective Equipment

- 1). Protective equipment and clothing – Each student and instructor shall be equipped and utilize a structural firefighter protective ensemble.
- 2). All students and instructors shall wear protective clothing and equipment according to the manufacturer’s instructions whenever they are inside of the operations area perimeter and involved in any evolution or fire suppression operation during the live-fire training evolution. When evolutions are not underway, the minimum level of personal protective equipment shall be helmet (with chin strap secured), gloves and boots.
- 3). The structural firefighter protective ensemble shall be maintained in a manner that reduces safety risks and potential health risks associated with poorly maintained, contaminated or damaged ensemble elements.
- 4). Other clothing – As identified by the dress requirements for the agency having jurisdiction.
- 5). All personnel shall breathe from an SCBA air supply whenever operating inside a live structural burn facility when:
 - (a) A training fire has been ignited; or
 - (b) The structure is not completely clear of visible smoke/contaminants.

E. Order of Operations – The order of operations is a description of the sequential processes utilized when conducting each live-fire training evolution. The specific steps are defined in check lists in **Appendix B** and **Appendix C**. A general description of these operations is outlined below:

- 1). Set up according to the site plan. The site plan details important physical components required for the training evolution. Examples of components include the location of the command post, staging, rapid intervention, rehabilitation, operations area, apparatus, water sources, hose lines, SCBA, fuel load, and other equipment.
- 2). Conduct a briefing of all instructors. It is important to brief instructors before the pre-burn briefing to address any overlooked or unclear issues. Examples of other issues discussed include a review of the student performance objectives, student/instructor ratios, instructor assignments, testing of radios, a review of emergency procedures, etc.
- 3). Conduct a pre-burn briefing and walk-through with students. Here, all facets of each evolution are discussed. During a walk-through, details of the evolutions are discussed; exits

are pointed out as well as the operation of doors/windows, procedures during emergencies, and other important components.

- 4). Assignments are given and personnel report to their positions. Once all lines are flowed and pressure verified, the instructors and students are in place for a Go/Stop sequence.

- 5). The Go/Stop sequence is the last step prior to ignition. The Go/Stop sequence is a verbal confirmation that all participants and procedures are in place. The Lead Instructor announces by radio “All personnel stand by for a Go/Stop roll call.” All positions share in responsibility and can stop the Go/Stop sequence. The order should be as follows:
 - (a) Staging
 - (b) Rehab/Medical
 - (c) Engine/Water Supply
 - (d) Entry Crew
 - (e) RIC/Back-up
 - (f) Safety
 - (g) Subsequent actions:
 - (i) Once the Safety Officer gives the “Go” signal, Lead Instructor announces, “We have a ‘Go’ for ignition.”
 - (ii) Once ignition has occurred, the Ignition Officer announces, “We have ignition.”
 - (iii) Any time operations are shut down, a Go/Stop sequence should take place before continuing.

F. Pre-burn Preparations

- 1). Description – Pre-burn preparations encompass items that must be completed on the day of the class. It will include a more detailed listing of the items required during the Order of Operations explained above.
- 2). Responsibility – The Lead Instructor shall be responsible for completing the Pre-burn preparations.
- 3). Preparations required – The specific preparations required are detailed on the Pre-Burn Preparation Check List as illustrated in **Appendix B**.
- 4). Documentation – The completed Pre-burn Preparations Check List shall be considered part of the Live Structural Fire Training Evolution Documentation Packet.

G. Fuel

- 1). Fuel type – Fuel materials are limited to pallets and/or excelsior and alternative fuels such as propane and natural gas when utilized with specially engineered fire training props intended for use in live structural fire training evolutions. Liquefied versions of propane and natural gas shall not be permitted inside the live-fire training structure. No other fuel materials are permitted.
- 2). Fuel load
 - (a) The maximum fuel load shall be as follows:
 - (i) Fire Observation Session of Firefighter I – One-half (½) bale of excelsior.
 - (ii) All other firefighter sessions – Three pallets and one-quarter (¼) bale of excelsior
 - (iii) Alternative gas fuels such as propane in quantities intended to provide a similar fuel load as described above for Class “A” fuels.
 - (b) The fuel load shall avoid any chance of flashover or backdraft.

- 3). Fuel storage – Fuel for training fires shall be stored in a separate structure and must never be located in hallways, stairwells or exit ways within the live-fire training structure. The amount needed for a single 3-hour class session may be stored in an unused approved burn room within the live-fire training structure provided the door remains closed when not in use. In no case shall this amount exceed nine (9) pallets and three (3) bales of excelsior.
- 4). Fuel arrangement – All fires must be arranged on a single burn rack located at least 18” from walls. When pallets and excelsior are authorized, they should be arranged on a burn rack as illustrated in Figure 1. When excelsior is the only approved fuel, it may be placed on the two-level burn rack.
- 5). Fuel location –The position of the rack shall be re-positioned at the end of the evolutions for the day to limit exposure to any one area.
- 6). Fuel documentation – The amount of fuel utilized for each evolution shall be documented on the Pre-burn Check List as defined in **Appendix B**.
- 7). Burn duration/addition of fuel – Efforts shall be taken to help ensure the quantity of heat experienced in each subsequent evolution is similar. For example, the addition of 3 pallets and ¼ bale of excelsior should not be added for every evolution due to the natural tendency for the burn room to increase in temperature with subsequent evolutions. It is likely that lesser amounts of fuel will be needed to maintain similar levels of heat experienced by students. It is imperative that the Ignition Officer and the Safety Officer monitor the burn duration and assess the need for additional fuel to help establish an effective training fire that does not present a safety concern for students or cause unnecessary harm to the structure.
- 8). Ignition – The decision to ignite a training fire shall be made by the Lead Instructor, in coordination with the Safety Officer, following the Go/Stop sequence. The fire shall be ignited by the Ignition Officer in the presence of and under the direct supervision of the Safety Officer. A charged hose line shall accompany the Ignition Officer when he/she is igniting any fire. The use of any accelerants is strictly prohibited. Gas-fueled training systems shall not be ignited manually (by flare or other similar device). In addition, the Gas-fueled Training System Specialist (or trained instructor) shall visually confirm that the flame area is clear of personnel.
- 9). Termination of activities – The training exercise shall be stopped when the Lead Instructor determines that the combustible nature of the environment represents a potential hazard. Everyone has the responsibility to report potential hazards to the Lead Instructor. Any exercise that is stopped as a result of an assessed hazard shall only continue when actions have been taken to eliminate the hazard and the Go/Stop sequence is completed from the beginning.



Figure 1 – fuel arrangement (pallets)

H. Incident Command

- 1). The Incident Command System shall be utilized to organize and manage Live Structural Fire Training Evolutions.
- 2). Radio designations shall be as follows:
 - (a) Lead Instructor = Command
 - (b) Safety Officer = Safety (if necessary to assign multiple safety officers, designate them per their responsibility, i.e. Interior Safety, Division 2 Safety, etc.)
 - (c) Back-up Line = Back-up
 - (d) RIT = Rapid Intervention
 - (e) Ignition Officer = Ignition
 - (f) Functions = Designated by the Lead Instructor (fire attack, Division 1, etc.)

I. Emergencies During Training

- 1). Emergency evacuation
 - (a) Purpose – The purpose of an emergency evacuation is to provide a mechanism to help effectively evacuate the live-fire training facility in case of an unforeseen emergency.
 - (b) Procedure
 - (i) The Lead Instructor shall announce “Command to all personnel, *Evacuate, Evacuate, Evacuate; Repeat Evacuate, Evacuate, Evacuate.*”
 - (ii) Upon receipt of this transmission, apparatus shall immediately sound their air horns continuously for a period of thirty (30) seconds.
 - (iii) Students and instructors shall be evacuated utilizing the nearest exit.
 - (iv) Accountability of all students and instructors shall be established and reported to the Lead Instructor.
 - (v) Should all students or instructors fail to be accounted for, the RIC shall be activated under the direction of the Lead Instructor.
- 2). Mayday
 - (a) Purpose – The purpose of a Mayday is to initiate actions to rescue one or more individuals in need of immediate assistance. A practice Mayday during a live-fire training evolution is not authorized. Instead, separate stand-alone drills are appropriate.
 - (b) Procedure
 - (i) The instructor shall announce “Mayday, Mayday, Mayday.”
 - (ii) The instructor shall provide details of the Mayday utilizing the acronym, LUNAR
 - (01) **L**: Location
 - (02) **U**: Unit (crew)
 - (03) **N**: Name (if available)
 - (04) **A**: Assignment (Attack, etc.)
 - (05) **R**: Resources needed
 - (iii) Lead Instructor will acknowledge and activate the RIC/Back-up crews as warranted.
 - (iv) Students will be evacuated, utilizing the nearest exit.
 - (v) Fires will be extinguished.
 - (vi) Search will be conducted to ensure all students have exited.
 - (vii) Accountability of all students and instructors will be established and reported to the Lead Instructor.

J. Post-burn Activities

- 1). Description – Post-burn activities encompass items that are done after the completion of all training evolutions for the day. They are intended to help ensure live-fire training structures are left in a safe condition upon completion of live-fire training evolutions.
- 2). Responsibility – The Lead Instructor shall be responsible for overseeing these activities.

- 3). Post-burn activities required – The general activities entail refilling SCBA cylinders, cleaning other equipment and restoring the approved burn room. The specific activities required are detailed on the Post-burn Activities Form illustrated in **Appendix C**.
- 4). Documentation – The completed Post-burn Activities Form shall be considered part of the Live Structural Fire Training Evolution Documentation Packet.

K. Reports and Records – The following records and reports shall be maintained for all live-fire training evolutions. Individuals responsible for the completion of these forms are defined in Section IV.

Responsibilities.

- 1). Live Structural Fire Training Facility Inspection
- 2). Pre-burn Activities Check List
- 3). Post-burn Activities Check List
- 4). Injury forms

VI. **Appendixes** (check lists)

- A. **Appendix A** – Live Structural Fire Training Facility Inspection
- B. **Appendix B** – Pre-burn Preparation Check List
- C. **Appendix C** – Post-burn Activities Check List

References:

1. NFPA 1402, Guide to Building Fire Service Training Centers, 2007 edition
2. NFPA 1403, Standard on Live Fire Training Evolutions, 2007 edition
3. NFPA 1500, Standard on Fire Department Occupational Safety and Health, 2007 edition

Appendix A LIVE STRUCTURAL FIRE TRAINING FACILITY INSPECTION

Live Structural Fire Training Facility Inspections are required to be completed quarterly and annually.

Region:	
Facility:	
Date:	
Inspected by:	

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

GENERAL

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

- 11) ___ Lighting
 12) ___ Stairs/railings
 13) ___ Windows/shutters
 14) ___ Functional doors
 15) ___ Lined ceilings/walls (crazing, cracking, delamination, metal mesh visible) *
 16) ___ High temperature linings (loose/damaged tile, exposed bolts) *
 17) ___ Burn racks
 18) ___ Floors
 19) ___ Fuel inventory/storage
 20) ___ Standpipes/sprinklers

EXTERIOR

- 2) ___ Perimeter lighting
 3) ___ General appearance
 4) ___ Exterior of structure
 5) ___ Windows/shutters
 6) ___ Doors
 7) ___ Stairs//ladders/railings
 8) ___ Roof scuttles

INTERIOR

- 9) ___ Housekeeping (swept clean, no fuel storage on fire floor)
 10) ___ Exit ways clear

OTHER

- 21) ___ Damage of any type
 22) ___ Drainage issues
 23) ___ Other _____

Description 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.

Describe in detail of any damage below and attach photos.

Floor #		Room	
<input type="checkbox"/> Wall <input type="checkbox"/> Ceiling <input type="checkbox"/> Floor		Area involved (sq ft or in)	
Damage description			

Reference for diagram to right:

Walls – note side of building that the wall faces (A,B,C,D) above. Then, the lower left of the wall should be the lower left of the diagram.

Ceiling/floor: note the side of building on each of the four sides of the ceiling on the diagram (see below):

C

B D

A

The lower left of the diagram will be the A/B corner)

Illustrate distance in feet of entire burn room																				
Illustrate distance in feet of the entire burn room	20																			
	19																			
	18																			
	17																			
	16																			
	15																			
	14																			
	13																			
	12																			
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	6																			
	5																			
	4																			
	3																			
	2																			
	1																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Indicate the entire size of the burn room and the exact area that is damaged.																				

Floor #		Room	
<input type="checkbox"/> Wall <input type="checkbox"/> Ceiling <input type="checkbox"/> Floor		Area involved (ft or in)	
Damage description			

Reference for diagram to right:

Walls – note side of building that the wall faces (A,B,C,D) above. Then, the lower left of the wall should be the lower left of the diagram.

Ceiling/floor: note the side of building on each of the four sides of the ceiling on the diagram (see below):

C

B D

A

The lower left of the diagram will be the A/B corner)

Distance in feet of entire burn room																				
Distance in feet of the entire burn room	20																			
	19																			
	18																			
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	3																			
	2																			
	1																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Indicate the entire size of the burn room and the exact area that is damaged.																				

Appendix B PRE-BURN PREPARATION CHECK LIST

(Completed the day of the live-fire training)

Date:		Class Location:	
		Region:	

Log # of Class:		Lead Instructor:	
Temperature (actual):		Heat/cold index:	
Total # of Evolutions:			

Legend: ✓ = Completed X = Requires Attention

Meeting with Instructors

- 1) Priority for safety
- 2) Review student performance objectives
- 3) Students/instructors signed in
- 4) Instructor/student radio <=5:1
- 5) Instructor assignments made (one to each functional group)
 - a) Safety Officer
 - b) Add'l. SO (as needed)
 - c) Ignition Officer
 - d) Attack
 - e) Back up (1/back-up line)
 - f) Additional staff to back up lines for mobility
 - g) Add'l. instructors – when extreme temperatures or large groups present (approved by manager)
 - h) Other _____
 - i) Other _____
- 6) Rotate duties to reduce heat stress on instructors
- 7) Review pre-burn check list with instructors
- 8) Distribute radios (and conduct a radio check) – sufficient and operating properly. Should allow (at min.) for communications between Incident Commander, Interior, Exterior and Safety Officer.

Weather

- 9) Weather forecast – within parameters identified in Institute’s “Outdoor Training Activities During Extreme Weather Conditions”
- 10) Weather conditions before ignition (wind velocity, directions, heat/cold index)
- 11) Training curtailed, postponed or cancelled (due to reduce risk of injury or illnesses caused by extreme weather conditions)

Site

- 12) Establish areas for staging, operating and parking of apparatus
- 13) Space for EMS (easy egress)
- 14) Identify the operations area perimeter
- 15) Spectators restricted to outside the operations area perimeter
- 16) All possible sources of ignition other than those used to start training fire removed from operations area
- 17) Open the appropriate valve to allow run off to enter the sanitary sewer (MFRI HQ only)

General facility

- 18) Floors, walls, stairs other components appear capable of holding weight of contents, participants, water
- 19) Visual inspection of any damage - In instances when damage is present, verify that room is approved for use
- 20) Doors, windows, scuttles, lighting, sprinklers/standpipes functional
- 21) Search structure – to ensure no unauthorized persons, animals or objects are in the structure immediately prior to ignition
- 22) Housekeeping – all possible sources of ignition, other than those under the direct supervision of the person responsible to start the training fire, shall be removed from the operational perimeter
- 23) Remove any debris hindering access or egress of firefighters

Health/Safety

- 24) **Accountability board** – Students are to be shown the location of the accountability board on which their tags are to be placed prior to entry and upon exiting the burn building, and assigned tags
- 25) **Medical supplies** (minimal supplies consisting of oxygen, suction, aid kit and AED; all instructors aware of its location and contingencies for their use)
- 26) **RIT** – designated and equipped (may include supervised students)
- 27) **Ensure students are monitored**
- 28) **Provisions for rest and rehabilitation, including full SCBA bottles**

Personal Protective Equipment

- 29) **Safety officer to inspect all PPE:**
 - a) **Coat/trousers** – physical damage, damaged or missing hardware and closure systems, thermal damage, loss of seam integrity
 - b) **Hoods** – physical damage, thermal damage, loss of face opening adjustment, loss of seam integrity
 - c) **Helmets** – cracks, crazing, dents, thermal damage, physical or thermal damage to earflaps, damaged or missing components of suspension and retention system
 - d) **Gloves** – physical damage, thermal damage
 - e) **All items meet NFPA 1971**
- 30) **Identify appropriate method for SCBA storage prior to distribution**
- 31) **SCBA meets NFPA 1981**
- 32) **PASS devices meet NFPA 1982**
- 33) **All PPE worn according to manufacturers’ recommendations**
- 34) **Reminders about clothing (per AHJ).**

Fuel/burn Preparation

- 35) **Gas-fired facilities**
 - a) **System check**– The system shall be run 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
 - b) **Adequate space** – There shall be ample room around all props such that there is space for all attack lines as well as back-up lines
- 36) **Fuel racks:**
 - a) **Single rack utilized**
 - b) **At least 18” from walls**
 - c) **Remote from last burn conducted**
 - d) **Remote from any damage**
- 37) **Fuel type: (check type used)**
 - a) **Excelsior**
 - b) **Pallets**
- 38) **Fuel load:**
 - a) **One-half (½) bale excelsior** – Observation session of FF I)

- b) **Other classes** (3 pallets, ¼ bale excelsior)
- 39) **Subsequent fuel added only to maintain original fuel load level**
- 40) **Fires are not in any exit paths**
- 41) **Fuel storage** (adjacent burn room)
- 42) **Decision to ignite by Lead Instructor in coordination with Safety**
- 43) **Charged hose line accompanies Ignition Officer when igniting fire; Ignition Officer does not operate alone**
- 44) **Fire ignited by Ignition Officer in presence of and under direction of Safety Officer**

Water Supply

- 45) **Lead Instructor to determine # of attack and back-up lines required per NFPA 1142**
 - a) **# Attack**
 - b) **# Back up**
- 46) **Lines capable of delivering 95 gpm**
- 47) **Water Supply** – Supply and back up may be from the same engine, but the water source must not rely upon an on-board booster tank. Instead, it must be from an alternative source or system engineered to ensure a non-interrupted supply.
- 48) **Lines supplied from different discharges (no wyes)**
- 49) **Minimum rated fire pump (750 gpm and 500 gal tank)**
- 50) **Engine positioned so operator has clear site to burn building**
- 51) **Smooth bore nozzles prohibited**

Pre-burn Briefing

- 52) **Pre-evolution briefing** – All facets of each evolution to be conducted is discussed and assignments made.
- 53) **Walk through** – Conduct a walk through for students pointing out exits, demonstrating how windows and door operate.
- 54) **Establish and demonstrate the building evacuation plan and alarm**
- 55) **No person to play the role of a victim inside the live-fire training structure**

Go/Stop Sequence

	Staging		Attack
	Rehab/Medical		Back up/RIC
	Engines/Water supply		Safety

Contingencies

- 56) **Training exercise to be stopped immediately if the Lead Instructor determines the combustible nature of the environment represents a hazard**

Appendix C POST-BURN ACTIVITIES CHECK LIST

Date of Class:	
Region:	
Location:	
Log # of Class:	
Lead Instructor:	

Legend: ✓ = Completed X = Requires Attention

- 1) ___ SCBA filled, cleaned, properly stowed (only qualified individuals to fill SCBA cylinders).
- 2) ___ Post inspection of PPE (students and instructors) by Safety Officer.
- 3) ___ Excelsior debris placed on burn racks and wire placed in dumpster.
- 4) ___ Debris hindering access or egress of firefighters to be removed.
- 5) ___ Burn rack moved to a new location.
- 6) ___ Damage noted Yes No If damage is noted, appropriate notifications shall be made so that a complete inspection can be conducted. Subsequent evolutions shall not be permitted in approved burn rooms where damage has been noted unless approved by the authority having jurisdiction.
- 7) ___ Floors swept, not washed.
- 8) ___ Equipment cleaned.
- 9) ___ Evolution debriefing.
- 10) ___ 30 minutes after final burn, close valve to direct runoff into storm sewer (College Park only).
- 11) ___ Doors, windows, window shutters, roof scuttles and lights fully operational.
- 12) ___ Live-fire training structure left in a safe condition upon completing the evolutions.
- 13) ___ Post-evolution analysis with students.
- 14) ___ Injury reports completed (as required).

NOTEWORTHY ITEMS:	
Unusual conditions encountered	
Changes or deterioration of the structure	
Equipment damaged	

OTHER NOTES:

Item #	Description		
Completed by (legible)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"></td> <td style="width: 40%;">Date:</td> </tr> </table>		Date:
	Date:		



Live Structural Fire Training Documentation Packet



Date of Class:		Region:	
Location:		Lead Instructor:	
Log # of Class:			

DOCUMENTATION INCLUDED:	
<input type="checkbox"/>	Live Structure Fire Training Facility Inspection
<input type="checkbox"/>	Pre-burn Preparations Check List
<input type="checkbox"/>	Post-burn Activities Check List
<input type="checkbox"/>	Injury Report (if applicable)

DOCUMENTATION REVIEWED:			
Regional Training Coordinator:		Academy Agreement Designee:	
Date:		Date:	