SOUTH PORTLAND FIRE DEPARTMENT
STANDARD OPERATING GUIDELINES

Policy #:	5.317	**Effective Date:**	2/3/2022
Title:	Staffing & Procedures for Live Fire Training	**# of pages:**	6
Category:	Training	**Classification:**	Red

1. PURPOSE: To establish a minimum level of staffing and operational procedures for conducting any live fire training in the City of South Portland, Maine.

2. POLICY:

Staffing Requirements;

1 Incident Command / Lead Instructor
1 Safety Officer
1 (per team) Fire Instructor(s)
1 Interior Safety Officer
1 Igniter
2 Pump operators (main and backup)
2 EMS Providers
3 RIT

Note: These positions are not normally filled with students unless they are experienced firefighters (i.e. not rookie school)

Responsibilities of Staff Positions

Incident Command / Lead Instructor

1. Oversees fire training evolutions
2. Maintains constant situational awareness of all obvious hazards and depends upon safety staff and other firefighters to make any other hazardous conditions known
3. Ensures accountability for all personnel all the time
4. Monitors building integrity prior to each fire set
5. Requests authorization of the Safety Officer prior to ordering ignition of fires
6. Orders evacuation signal in the event of a MAYDAY situation
7. Monitors condition of all staff
8. Assures that all lines are charged, bled and operational before evolution

Safety Officer

1. Responsible for maintaining a safe training environment
2. Evaluates conditions of training building and working personnel before giving permission to Command to order ignition
3. Works within the command structure, but may report minor problems directly to firefighters
4. Empowered to take or order any action to resolve unsafe acts he/she feels necessary and then notify the Command as soon as possible

5. Is responsible for maintaining the Tactron accountability system (or to delegate responsibility) throughout the training event

Fire Instructors / Leaders

1. Commands the crew while they perform their assigned task (attack, backup, search and rescue, etc.)
2. Ensures the attack line is sufficient diameter and length to reach and control the fire
3. Ensures the attack line is charged, bled and flowed before beginning each evolution
4. Ensures all students PPE/SCBA/Tools are assembled and ready (worn correctly)
5. Assess interior conditions and provide the IC with timely situation and status reports
6. Notifies Command when entering the structure, when fire is knocked down, all clear in the burn room
7. Oversees the crew performing overhaul
8. Leads the crew out of the burn building with the attack line and ensures all crew has safely exited the building
9. Maintains accountability of the crew at all times
10. Maintains safe but effect training for the crew

Interior Safety Officer

1. Operates inside the training building in and around the fire rooms
2. Responsible for maintaining a safe training environment
3. Evaluates conditions of training building and working personnel before giving permission to Safety Officer to order ignition
4. Works within the command structure, but may report minor problems directly to firefighters
5. Empowered to take or order any action to resolve unsafe acts he/she feels necessary and then notify the Command as soon as possible
6. Supervises the igniter and works as a team to provide safe fires
7. Directly observes ignition of fires

Igniter

1. Responsible for building fire sets
2. Shall **always have a designated hose line** assigned for his/her use (in addition to any student and backup lines)
3. Operates under protection of the backup crew and/or Interior Safety Officer.
4. Ignites fires only after being ordered to do so by Command
5. Notifies Command after fire has been lit
6. Promptly exits fire room or building as needed
7. Monitors fire progress and notifies command when to bring in crews, at the same time may use protection line to keep fire in check and in room of origin until attack crew arrives

Water Supply/Pump Operators

1. Ensure adequate water supply for all fire and exposures.
2. Ensures all Pump apparatus are ready and operation with all line charged, bled and flowed to required GPM need per Fire flow calculation

3. Ensure attack line and back up lines are off separate water supplies
4. Ensure the readiness of all pump apparatus and operator at beginning of each evolution

EMS

1. There shall be a designated EMS unit assigned to the training site at all times that live fire training is ongoing
2. The EMS providers must be licensed to at least the basic level, preferable ALS and
3. The EMS providers may be rotated among the other positions but there will be 2 providers available at all times to transport any injured participants without reducing other required staffed positions.
4. The EMS providers will also assist in setting up and monitoring the Rehab area and watching participants for signs of heat illness.
5. Depending on the location of the ambulance stretcher, jump kit, oxygen and lifepak may need to be staged in Rehab

RIT

1. There will always be 3 members assigned to RIT at all times that live fire training is ongoing
2. Members of the RIT must be trained in RIT operations
3. RIT team members may rotate into other positions but there will always be 3 members
4. RIT should follow department SOG on RIT operations (setting up tarp/equipment, familiar with Fireground operations and locations of firefighters, not involved with other Fireground operations)

Pre Burn Preparation

1. When conducting any live fire training the IC, Safety Officer or Lead Instructor will perform and fill out a pre-burn checklist prior to the start of any burn training
2. There shall be a minimum of eleven (11) Firefighter's to fill these staff positions; IC, Safety Officer, Interior Safety, Igniter, RIT (3), pump operators/ water supply (2), and EMS (2)
3. There shall be additional Firefighters to be the instructors for each additional team function that will be used during each fire evolution; i.e. search, vent.
4. All staff and students shall be "tagged" into the Tactron accountability system prior to any burns commencing

Training Site Pre Burn Preparation

1. Location of Command
2. Position of all apparatus
3. Position of all fire streams
4. Position of all exposures lines and appliances
5. Position of Rehab and Rescue
6. Conduct a pre burn tour for all personnel
7. Charge all lines and test flows of each

8. Attack engine and back up engine shall be supplied by separate, independent water supplies
9. Position ladders around building to two means of egress on each floor, if possible each side
10. Test evacuation signal and procedure for all personnel
11. The IC will complete a PAR check and status check to make sure all crews are ready by radio prior to each burn

General Fire Attack Procedures

1. All attack and back-up lines will be properly manned by adequately protected personnel operating under the direct supervision of the IC
2. Each attack line will be backed up by a line equal to or greater in size, supplied by an adequate water source, independent of the attack line source
3. Only after receiving permission from the safety and command will the igniter light the fire
4. The use of Gasoline, low flash point fuels, volatile combustibles, and tires is prohibited by NFPA 1403
5. Any incipient or free burning fires shall be adequately ventilated so that no one enters during advanced stage of combustion
6. Only one fire shall be allowed to propagate at a time. For larger structures use NFF and TWS based on NFPA 1231 (1993)

Calculating Minimum Total Water Supply for Live fire Suppression Training

1 and 2 family dwellings, not exceeding two stories		500 gpm for 2hrs
Distance between buildings	31ft – 100ft	750 gpm for 2 hrs
Distance between buildings	11ft –30ft	1000 gpm for 2hrs
Distance between buildings	10- Or less	1,500 gpm for 2 hrs

For Larger buildings use the TWS based on the NFPA 1231 (1993) standard on water supply.

Classification of Occupancy Hazard

The Occupancy Classification numbers run 3 through 7, each corresponding to a specific level of hazard, with the lowest class numbers being the most hazardous. The class number is used in the calculation.

Occupancy Class 3 is used for sever hazard occupancies where quantity and combustibility of contents are high

Examples: air craft hangers; cereal or flour mills; distillery; die casting; explosives and pyrotechnics; manufacturing and storage; feed and gristmill; flammable liquid spraying; flow coating/dipping; linseed oil mills; manufactured homes/modular building assembly; metal extruding; plastic processing; plywood and particle board manufacturing; printing using flammable inks; rubber reclaiming; sawmills; solvents extracting; straw or hay in bales; textile picking; upholstering with plastic foams

Occupancy Class 4 is used for high hazard occupancies where quantity and combustibility of contents are high

Examples: barns and stables; rubber products manufacturing and storage; feed stores; building materials supply storage; department stores; exhibition halls; auditoriums and theaters; freight terminals; mercantile; paper and pulp mills; paper processing plants; piers and wharves; repair garages; warehouses, such as those used for furniture, general storage, paint, and woodworking industries

Occupancy Class 5 is used for moderate hazard occupancies where quantity and combustibility of contents are moderate

Examples: Amusement occupancies; clothing manufacturing plants; cold storage warehouses; confectionery production warehouses, farm storage building, such as corn cribs, dairy barns, equipment sheds, and hatcheries; laundries; leather goods; machine shops, metalworking shops; nurseries; manufacturing plants; libraries; lithography shops; pharmaceutical manufacturing plants; printing and publishing plants; restaurants; rope and twine manufacturing plants; sugar refineries; tanneries; textile manufacturing plants; tobacco barns; unoccupied buildings

Occupancy Class 6 is used for low hazard occupancies where quantity and combustibility of contents are moderate

Examples: armories; automobile parking garages; bakeries or beauty shops; Beverage manufacturing plants/breweries; boiler houses; brick, tile and clay product manufacturing plants; canneries; cement plants; churches and similar religious structures; dairy products manufacturing and processing plants; doctors' offices; electronics plants; foundries; fur processing plants; horse stables; mortuaries; municipal buildings; post offices; slaughterhouses; telephone exchanges; tobacco manufacturing plants; watch and jewelry manufacturing plants; wineries

Occupancy Class 7 is used for light hazard occupancies where quantity and combustibility of contents are low

Examples: apartments; colleges and universities; clubs, dormitories, dwellings, fire stations; fraternity or sorority houses; hospitals; hotels and motels; libraries (without large storage areas); museums; nursing and convalescent homes; offices; police stations; prisons; schools; theaters; without stages.

Guild to Classification of Types of Building Construction:

- Type I (Fire-Resistive) class # 0.5
- Type II (Noncombustible) class # 0.75
- Type III (Ordinary) class # 1.0
- Type IV (Heavy Timber) class # 0.75

- Type V (Wood Frame) class # 1.50

Calculating TWS

Minimum Total volume of structure
Water = Occupancy Class Hazard # Construction Class # X 1.5 Supply

Determining the rate of delivery

TWS in gallons	Delivery Rate at the fire ground
Up to 2,500	250gpm
2,500 – 10,000	500gpm
10,000 – 20,000	750gpm
20,000 or more	1,000 gpm

Example:

Building 30H x 50L x 60W is a heavy timber church.

MWS= 16,875gal = (Total Vol) 30 x 50 x 60
(Occ Haz Class) 6 X (Const Class) 0.75 X 1.5

Minimum water supply needed is 17,000 gallons. Delivery rate is 750gpm for 2 hours.

Structure with no exposures shall have a minimum 2,000 gallon water supply.

Concluding Operations

1. The fire building will be fully overhauled prior to pick up of hose lines
2. Complete a final PAR check and return participants tags as they "tag out"
3. There should be a post operation analysis to discuss lessons learned and allow questions about practices observed
4. Return all apparatus and equipment back in-service
5. Upon completion of the burn, the first floor level will be secured to discourage persons from entry. Keep out signs or fire line tape will be used to warn persons to stay out

3. REFERENCES:
   - None

By Order Of:

James P. Wilson
Fire Chief