

**PHOENIX REGIONAL
STANDARD OPERATING PROCEDURES**

ON-SITE FLASHOVER CHAMBER FIRES
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PURPOSE

The purpose of this procedure is to establish standard guidelines for conducting on-site training fires in the Training Academy (TA) flashover chamber, while complying with NFPA Standard 1403. All other Phoenix Fire procedures will apply to training fires where applicable.

GENERAL USAGE

Any Fire Department member or outside agency wishing to use the flashover chamber must first obtain permission from a Training Academy chief officer.

The time and date of the training drill must be scheduled with the ESI staff. Drills involving Recruit Training and Departmental Training always have first priority.

An officer representing the TA staff must be on-site for any live fire drills involving the flashover chamber. A fee may be charged to outside services/agencies.

The flashover chamber has been designed specifically for the purpose of repeated live fire training evolution's and include safeguards that only become unacceptably hazardous through misuse and neglect.

COMMAND

One officer on the scene shall be designated as "Command" and will assume the Command functions.

A Command Post shall be established and positioned to afford maximum visibility of the structure, operating companies and fire conditions.

COMMUNICATIONS

Command is responsible for establishing radio communications with each company officer or training officer involved in the drill. Channel assignment must be coordinated with Dispatch and Deployment and all companies involved. Companies operating at the training fire will continuously monitor the assigned radio channel. All radios will be checked for proper functioning and correct channel prior to initiating training fire operations.

SECTORS

To eliminate confusion, and provide adequate scene control, all personnel operating within the fireground perimeter shall operate under the direction of a sector officer. The fireground perimeter shall be defined as the hazardous area surrounding the burn structure and shall be determined by Command following guidelines stated in Fireground Safety.

The following sectors shall be established on all flashover chamber fires.

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| Interior | Company or training officer directing interior suppression activities |
| Rescue (RIC) | Provide a staffed, charged back-up line for <u>each fire attack team</u> , in position to assist in fire extinguishment and rescue of interior personnel. This sector will be manned by experienced firefighting personnel (not recruit fire fighters), and each Rapid Intervention Crew (RIC) shall consist of a minimum of two firefighters. The Safety Officer shall be in charge of each RIC unit. There shall be one RIC Crew team for each fire attack team. |
| Safety | The Safety officer or a safety representative will be in attendance at all flashover chamber training fires and will assume safety sector responsibilities. The safety sector will monitor personnel and fire conditions, and work with Command to ensure all safety procedures are complied with, and that risk to personnel is minimized. |
| Other Sectors | Other sectors may be established as necessary to control training/fire control - operations and to minimize risk to fire fighters. |

SAFETY

The Safety Officer shall have full authority to intervene and control or stop any aspect of the operations when in his/her judgment, a potential or real risk to personnel exists. He/she will not be assigned other duties that would distract from his/her safety responsibilities.

Safety Officer shall conduct a protective clothing inspection for each member prior to entering the chamber.

Additional safety officers may be assigned to the training fire if the conditions dictate. Responsibilities of the Safety Officer(s) will include but not be limited to the prevention of unsafe acts and elimination of unsafe conditions.

Company officers acting as instructors will be responsible for the direct supervision of assigned students and their safety and welfare, including the prevention of unsafe acts and the elimination of unsafe conditions.

The number of personnel involved in training fires inside the flashover chamber shall be limited to ten (10) personnel. To reduce risk, and assist with scene management, training fire participants shall be formed into individual teams consisting of no more than eight (8) members and supervised by two (2) qualified flashover chamber instructors.

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Exposing recruit fire fighters to live fire conditions presents special safety considerations.

All fire fighters involved in flashover chamber training fires shall have received training to meet the performance objectives of:

- Protective Breathing Apparatus
- Fire Hose, Nozzles and Appliances
- Fire Streams
- Ventilation
- Rescue
- Safety
- Fire Behavior

One officer on the scene shall be designated as an accountability officer and will assume the accountability functions.

To enhance accountability and to improve tracking of fire fighters in the Hot Zone, the "PASSPORT" system shall be used, Personnel Accountability Report or "PAR" shall be used at the following accountability benchmarks:

- Upon entry
- Any report of fire fighter in distress
- Upon exiting the structure
- Sudden hazardous event
- At the discretion of command

Passports will remain with the designated Accountability Officer near the "point of entry" to the flashover chamber. Upon entry, crews will turn in their PASSPORT. Upon exit, the crew must retrieve their PASSPORT. The accountability status board will contain only the PASSPORTS of those teams in the flashover chamber.

No personnel shall be permitted to act as a victim(s) during training fires.

To reinforce safety procedures, a protective clothing and equipment inspection shall be conducted on all fire fighters before and after the flashover training. The inspection shall ensure that all clothing and equipment is serviceable and worn in a manner to provide the maximum personal protection.

REQUIRED FIRE EQUIPMENT AND COMPANIES

Two separate sources of water supply shall be established (one Engine and one Tender minimum). The water supply shall be test flowed by the forward pumper to insure adequate water supply of a minimum of 500 gallons per minute.

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All fire suppression hoselines shall be supplied by one pumper. The RIC unit backup hoselines shall be supplied by a pumper. All hoselines will be flow tested to confirm a minimum of 95 gpm, prior to igniting the fire.

All members shall have a full SCBA bottle prior to entering the flashover chamber. ALS capabilities shall be maintained on-scene during training fires.

FLASHOVER CHAMBER PREPARATION

All doors and smoke vents necessary for the training drill shall be checked and operated prior to any live fire conditions to ensure correct operation.

The flashover chamber shall be left in a safe condition upon completion of live fire training. Debris hindering the access or egress of fire fighters shall be removed before continuing further operations.

After each flashover exercise, all fire debris shall be removed with care and completely extinguished.

STARTING THE FIRE

The use of flammable or combustible liquids as defined in NFPA 30, shall be prohibited for use in live fire training evolutions. Only Class A materials shall be used in live fire training. A charged and manned hose line shall be in position to provide additional protection. The instructor will load the container with boards of fibrous material. He will make sure the wall and ceiling boards are placed as close together as possible and ensure the ceiling boards are pressed against the ceiling to prevent combustible gas pockets. A considerable amount of combustible gas is lost if there is a fire between the boards and the ceiling. (The combustible gas is what produces and demonstrates the flashover).

The initial fire shall be of class A material and shall be placed in the center of the fire room. Make sure the roof hatch is working and that the door and the side hatch are easy to open. The ignition process will be conducted under the direct supervision of the Safety Officer.

Command shall assign an experienced fire fighter to become "FIRESTARTER". It is the responsibility of the FIRESTARTER to initially ignite the fire. FIRESTARTER shall also regulate the fuel load for each evolution to maintain a tenable atmosphere inside the flashover chamber.

The ignition of the fire shall be coordinated through Command so the flashover chamber does not become overheated before observation teams make entry.

PRE-PLANNING

A pre-fire tour of the flashover chamber is required.

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PRE-ENTRY BRIEFING

The instructor in charge shall develop a briefing to include these important points:

- History and Development of Flashover Chamber
- Purpose of exercise
- Observe character of the combustible gases
- Observe neutral zone
- Observe air supply
- Observe differences of pressure
- Observe extinguishing effect

All personnel involved in the drill shall be instructed on each element of the plan prior to igniting the initial fire and shall receive a walk-through briefing of the chamber prior to each training fire. An evacuation plan and signal shall be reviewed and agreed upon.

NOTIFICATION OF TRAINING FIRE ACTIVITIES

Prior to conducting flashover chamber training fires, the following notifications must be made.

- Dispatch & Deployment to obtain incident number
- Online form notification to Maricopa County Air Quality Control

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ON-SITE BURN OPERATIONS CHECKLIST

- Adequate fire apparatus on site
- ALS capabilities on-scene
- Pumper and Tender flow tested for 500 gpm water supply
- Fire load; conservative; not excessive
- Ignition location determined
- Safe ignition fuel utilized
- FIRESTARTER in full protective clothing/SCBA
- Protection line in place for FIRESTARTER; manned and charged
- Training Chief Officer on-scene
- Safety officer (or representative) on-scene
- Command and sectors established
- Command location identified and announced
- All radios checked for proper functioning/channel/assigned unit and member
- Sectors established:
 - Interior
 - Rescue (RIC)
 - Safety
 - Other
- Accountability Officer established
- Suppression line in place, flow tested for a minimum of 95 gpm each
- RIC lines in place, flow tested for a minimum of 95 gpm each
- RIC manned by minimum of two fire fighters
- One RIC unit in place (with hoseline) for each observation team
- Suppression lines from one pumper, RIC lines from a separate pumper or tender
- Flashover chamber participants and RIC units in full protective clothing, PASS and SCBA checked for proper functioning
- Flashover chamber instructors in charge of each observation team and RIC unit
- Operating plan established and understood by all
- Walk through briefing conducted for all crews
- Rescue plan established and understood by all
- PASSPORTS and status boards near point of entry
- Protective clothing and SCBA's shall be decontaminated