

Mobile Live Fire Training Unit

In 2020, Alaska State Fire Marshal's Bureau of Fire Accreditation, Standards and training was awarded an Assistance to Firefighters Grant for the purchase of a Mobile Live Fire Training Unit (MLFTU) to help fire departments with limited to no access to burn facilities gain experience with live fire training.

The MLFTU is a state-of-the-art training structure used to provide a safe training environment simulating a realistic structure fire.

The simulator is used for training scenarios for firefighters to train on fire attack, size-up, incident command, hose line and nozzle control, and accountability.

Training Features

The MLFTU is a 53-foot trailer that is configured to accommodate above, below and grade level fire scenarios through the use of a hydraulically operated second story. The fire is produced using propane fuel.

In addition, the MLFTU has a roof ventilation prop, a forcible entry prop, and movable walls on the first floor to provide multiple set up configurations.

Training Rooms

The **Ground Level Training Room** includes two fire props – A Multi-prop water bath burn simulator with kitchen mock-up and a Rollover Fire installed above at the ceiling above the multi-prop. The rollover can be activated in bursts to simulate ghosting through the upper layers of smoke and fire gases. Alternatively, it can be activated for longer durations to demonstrate the effect of the fire gases igniting and rolling across the ceiling. This allows trainers to provide trainees with some of the signals of an approaching flashover condition.





The **Second Story Training Room** includes a window with shutters, two (2) entry/exit doors to the front and rear open roof areas and an in-floor water bath burn pan, with living room furniture prop (chair). Students can be staged in front of, or behind the room for a starting point for evolutions, each path with a different approach to the stairwell. The room enables training in second story and basement training evolutions that start on the second floor and enter the burn chamber below.



Smoke Generation

The theatrical smoke generator releases smoke into the main floor burn room and is operable with or without the use of fire simulators. The training unit can be set to operate in Smoke Only mode to permit search and rescue, or firefighter survival drills. Smoke production will be designed to limit the visibility to approximately 1 foot at a height of three feet above the floor level.



Movable Walls – Reconfigurable Rooms

To vary the layout of the burn room, the training unit is equipped with a movable wall system. The system allows flexibility in maze training, the Denver Drill and confined space entry training.

Adjustable Angle Ventilation Prop

The MLFTU includes an 8 ft. X 12 ft., steel frame, steel deck, manually inclined ventilation prop that includes a 4 ft. x 4 ft. opening for ventilation exercises. The prop can be elevated anywhere from 0 degrees up to 26.5 degrees for training on the incline. The handrails can be adjusted to two positions to align for angled or flat-deck training.

Confined Space Rescue Hatch

Confined space entry and rescue training is accomplished by using the ventilation prop in flat position to allow rescuers to be lowered through the hatch, or victims to be brought up through the hatch.

Forcible Entry Door Prop:

The forcible entry door can be placed at the front entry door of the burn chamber to allow students to make entry, and attack fires in one evolution.

Safety Features

The MLFTU comes with several safety features including a ventilation and exhaust system, temperature and gas detection sensors, infrared cameras with closed circuit TV in the control room, safety railings, and a wireless remote pendant.

Ventilation / Exhaust System:

The ventilation and exhaust system monitors the proper operation of all fans, and system sensors, and automatically enters a safe state/purge condition should a failure or alarm occur.

Temperature Sensors

Two temperature sensors are mounted at the 5-foot level of the burn room. Should the average ambient temperature exceed 300°F, the ventilation fans will automatically ramp up to cool the burn room and training operations continue as normal. Should the ambient temperature reach 500°F at the 5-foot level, the system will enter a high-temperature alarm condition initiating an automatic purge cycle, shutting-off propane supply and the smoke generator.

Flammable Gas Detectors

The gas detection system continuously monitors the level of unburned gas in the burn room. Should any gas detector sense a propane concentration of 10% of LEL, the ventilation system will automatically ramp up from 'low' to 'medium' to attempt to clear the burn room atmosphere of the rising LEL levels and training operations continue as normal. Should the propane concentration continue to rise and reach the 25% of LEL, the control system will automatically enter the LEL alarm state, shut off all fires, and engage the ventilation purge cycle.

Safety Railings

Fold down, OSHA compliant safety railings are installed around the roof perimeter.

The roof deck behind the retractable room and between the room and ventilation prop are usable flat areas for training operations. The safety railings on the ventilation prop have multiple positions – retracted, vertical, and inclined for pitched roof operations.

Control Room with Camera Viewing

Infrared cameras are mounted within the burn chamber of the MLFTU; one camera monitors the front area, one monitors the rear simulator area, and the third monitors the interior stairs towards the second-floor simulator. The flat screen color monitor/DVR is mounted on the wall within the control room. The control room operator and others can watch the live footage of the training evolutions and record the events for review and debriefing sessions.

Wireless Remote Pendant

The instructor can control fires in direct view of the students by using the wireless remote pendant in the burn room. The wireless pendant includes its own dead-man switch that when released causes the fires to go out in 3 to 5 seconds. With the remote pendant, the instructor controlling the fires can situate themselves anywhere in the unit that provides them the best visibility.

Contact Info

Departments using the MLFTU are responsible for filling the propane tanks and supplying lumber if using the roof prop. BFAST will deliver, set up the unit and provide operator training, and if necessary MLFTU operators for burns.

Departments and agencies are required to provide their own qualified live fire instructors to conduct training.

If you are interested in using the MLFTU, please contact Mark Brauneis or download the request form from our website:

Phone: 907 885-1421

Email: mark.brauneis@alaska.gov