

## Fire Extinguishers – a Necessary Component in Balanced Fire Protection

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## Extinguisher Advantages

- Simple to operate
- Fast deployment
- Portable
- In most cases, readily available
- Serves for “unplanned events”
- Effective
- Provides a safe tool for “fight” reaction

## Simple Operation

- P.A.S.S. – Pull Aim Squeeze, Sweep
- Online training is available though [www.fireextinguisher.com](http://www.fireextinguisher.com) and other sources
- Extinguisher designs changed in the 1980's based upon live fire testing with novice operators to prove more effective – even with no training

## Fast Deployment

- Simple PASS system allows extinguisher to be operated within seconds
- Changes since the 1980's use pictograms for fast recognition of operating instructions

Operating Instructions Label:  
Before UL 299



Operating Instructions Label:  
After UL 299



## Portable

- Easily carried to the incident and fire source

## Readily Available

- Most Codes and Standards place extinguishers for quick accessibility
- Depending upon hazard – 75, 50, 30 feet or “immediate vicinity”

## Serves for Unplanned Events

- While passive and automatic systems can be designed for the structure and occupancy, no design can account for every situation

## NFIRS Stats - Schools

- Incendiary/Suspicious fires were the cause of:
- 36.9% of Kindergarten/Elementary School Fires
- 48.3% of Middle, Junior or High School Fires
- Extinguishers can provide protection for materials or processes that are being brought into a structure, which were not previously planned

## NFIRS Stats - Schools

- 78% of all school fires occur during the school week
- 55% of all school fires occur during school hours
- Life safety issues and evacuation concerns are present given the time that most fires are occurring

## Effective

- NFIRS stats from 1991 – 1995 prove the effectiveness of fire extinguishers based on percentage of fires extinguished, average dollar loss per fire and number of deaths/injuries per 100 fires
- NFIRS Stats after 1995 no longer tracked the “method of extinguishment”.

## Portable Fire Extinguishers

### The Facts:

📄 **94 percent** of the time a portable fire extinguisher is used, it puts out the fire -- typically within the initial 2 minutes

📄 When fires are extinguished in the early stages:

- Loss of life is minimal. **93 percent** of all fire-related deaths occur once the fire has progressed beyond the early stages.
- Direct property damage is minimal. **95 percent** of all direct property damage occurs once the fire has progressed beyond the early stages.\*

\*Source of data: NFIRS

## Extinguisher Disadvantages

- Short discharge time
- Limited agent
- Maintenance
- Unreported fires

## Short Discharge Time

- Discharge times were increased under UL711 in 1980's
- Times can vary according to extinguisher size and rating from 8 sec. to 30 sec.

## Limited Agent

- 2.5 lbs to 30 lbs. available in a hand portable extinguisher

## Maintenance

- As with any other emergency device, extinguishers must be maintained properly in order to work as designed
- While operation of an extinguisher is simple, proper installation and maintenance requires training and knowledge

## Unreported Fires

- Fire incident training consists of "Call 911, evacuate – closing doors, use an extinguisher if it is safe and a clear path to exit is available"
- "Fight or Flight" reactions along with "tunnel vision" can lead to alarms not being turned in, regardless of training

## Chain of Survival

■ A portable fire extinguisher is a critical component of a balanced fire protection plan or chain of survival.



## “Evacuation is the only safe answer”

- Evacuation should be performed in any fire situation
- Nearly all fire extinguisher training classes teach the need for evacuation
- Statistically, evacuation is a function of human behavior, which cannot be legislated or controlled by statute or code
- Primal “fight or flight” responses take over

## “Evacuation is the only safe answer”

- Studies conducted in evacuations reveal that we do not perform this function well
- Earlier NFIRS statistics point to fire extinguishers and “make-shift means” as the leading “means of extinguishment” in nearly all occupancy classifications
- Fire Extinguishers have often been employed to gain a means to evacuate

## Our F.D. response time is fast enough

- “Response time” must be clearly and honestly defined
- How is the response time of a paid department compared with a volunteer department
- Over 70% of U.S. F. D.'s are volunteer

## Our F.D. response time is fast enough

- Most departments have an excellent response record, however –
- How will the response time be affected by a flood, blizzard, tornado, road construction, traffic
- How will it be affected by simultaneous industrial fire, chemical spill/leak, train derailment, terror attack/threat

## Use of an extinguisher will only delay an alarm

- All correct fire extinguisher training includes emphasis on turning in an alarm, regardless of the outcome of using an extinguisher
- While extinguishers have been proven to be successful in extinguishing fires in their initial stages, they have also been proven to be successful in controlling fires while the F.D. responds.

## “The Sprinklers will handle the problem”

- Sprinkler systems are an important, proven component of a balanced fire protection plan
- Sprinklers systems are often designed at the time of building construction to handle hazards represented by the original, intended use of the occupancy
- They cannot be designed for every possible situation over the lifetime of the building

## Conclusion

- Fire Extinguishers solve many problems:
  - Are simple devices to operate
  - Give safe alternatives to makeshift means during primal response situations
  - Are versatile enough to handle unforeseen problems and scenarios
  - Can control a fire while the F.D. responds
  - May be the only tool available during disasters
  - Proven success rate in keeping injuries, death and property loss at a minimum

## Conclusion

- First line of defense in a balanced fire protection plan