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50 Ways Firefighters Live

Safe firefighting procedures are passed along from veteran firefighter to rookie firefighter by setting an example at fires, and by conversation and explanation in the firehouse. Safe firefighting techniques are universal. They are the same regardless of where you fight fires. Building construction and firefighting procedures may vary, but safety and safe operating procedures on the fire ground are universal. The following are 60 firefighting survival tips for some of the most dangerous firefighting operations. These techniques are known and sometimes taken for granted by veteran firefighters but are unknown to young recruits. All firefighters should understand and practice these 60 firefighting survival tips.

1. When stretching a hose line to an upper floor of a building, do not pass a floor on fire unless a charged hoseline is in position on that floor.
2. Notify your officer when going above a fire to search for victims or vertical extension of flame or smoke.
3. When climbing or descending a stairway between the fire floor and the floor above, stay close to and face the wall. Heat, smoke, and flame rise vertically up the stairwell.
4. If you enter a smoke- and heat-filled room, hallway, or apartment above a fire and suspect flashover conditions behind you, locate a second exit, a window leading to a fire escape or portable ladder, before initiating the search.
5. Crouch down and keep one leg outstretched in front of you when advancing an attack hoseline in a smoke-filled fire room. Proceed slowly, supporting your body weight with your rear leg. Your outstretched leg will feel any hole or opening in the floor deck in your path of advance.
6. To prevent getting driven off a fire floor by rollover-the sudden flashes of flame mixed with smoke (ignition of combustible gases at ceiling level) while waiting for the hoseline to be charged, crouch down outside of the burning room or apartment, close the door to the burning area. When the line is charged, open the door and immediately attack the fire.
7. During a fire in a one-story strip store, vent the roof skylight over the fire before advancing the hoseline to prevent injury from back draft explosion, or flashover.
8. When it is not possible to vent the rear or roof of a burning store quickly and signs of back draft or explosion are evident from the front of the store, vent the front plate-glass windows

and doors, stand to one side, let the superheated combustible gases ignite temporarily, and then advance the hoseline for fire attack.

9. Self-contained breathing apparatus must be worn before entering a cellar of a burning building, even if there is only a light haze of smoke. Carbon monoxide, a deadly, gaseous by-product of combustion, is colorless, odorless, explosive, and quickly builds up in unventilated below grade areas.

10. Notify your officer and wear self-contained breathing apparatus before entering a cellar to shut off utilities. If there is confirmation of the shutoff within a reasonable amount of time or there is not radio contact, the officer must make an immediate effort to locate the firefighter and assure his safety.

11. Do not let the presence of an operating sprinkler give you a false sense of security. Wear your SCBA before entering a cellar. Carbon monoxide gas can be present even when a sprinkler is discharging and controlling a smoldering fire.

12. At any collapse, stretch a hoseline and charge it to protect possible victims and rescuers from sudden explosion and flash fire.

13. Shut off all utilities-gas, electric, and water-immediately upon arrival at a building collapse. Do not wait for the utility company.

14. Heavy mechanical equipment, such as cranes and bulldozers, should not be used to remove collapsed portions of a building while hand digging is being done nearby.

15. Parts of a structure that are in danger of collapsing during a rescue operation should be shored up, remove with a crane but never pulled down by firefighters below.

16. When climbing a fire escape during a fire, always maintain a hold with one hand on a part of the fire escape itself to prevent serious fall injury should a stair tread suddenly give way.

17. Before climbing a gooseneck ladder leading from a top-floor fire escape landing to the roof, vigorously pull the ladder away from the building to test its stability. The gooseneck ladder could pull away from the building if the metal fire escape or the wooden or masonry structure to which it is attached is corroded.

18. When taking up from a fire, the fire escape drop ladder is returned to and secured at its normal raised position. Firefighters should never attempt to descend to the street from the fire escape balcony by climbing down the drop ladder in raised position and then dropping down to the sidewalk. Pendulum hooks holding fire escape drop ladders have suddenly broken from their connections and firefighters on them have been seriously injured. A firefighter should use a portable ladder or enter an apartment served by the balcony in order to descend to the street level.

19. Stand away from the weights when lowering a counterbalance weighted ladder. They may collapse from the impact of the ladder striking the side-walk.

20. When forcible entry is required for an inward-swinging door behind which there is intense heat and fire, the inward swing must be controlled. A firefighter or officer should hold the doorknob closed with a gloved hand or short piece of rope while other firefighters force the lock open.

21. A firefighter performing forcible entry on a door to an apartment on fire is extremely vulnerable to injury from backdraft or smoke explosion once the door is opened and air flows into the fire area. The firefighter is in error if he believes he can avoid a blast by observing warning signs or by reacting in a split second. Explosions happen too fast. The only real protection a firefighter has against explosion is his protective equipment-gloves, mask face-piece, helmet, hood, turnout coat, pants, and boots-properly worn and in good condition.

22. Generally, when a firefighter must use an axe for entry it should be moved forward forcefully in a punching action. The power behind the axe movement comes from the firefighter's shoulder and the weight of the axe, not the swing. If it is necessary to swing an axe during a forcible entry operation, first check for nearby firefighters and overhead obstructions.

23. A firefighter entering a room from a ladder should first place any tools inside the window on the floor before entering. Then, with both hands free, he should grab onto a portion of the window and test its stability. If it does not move, the firefighter maintains his grip on the window while moving through it from the ladder.

24. When necessary, a firefighter climbing an aerial ladder should use a ladder belt to secure himself to the rungs. A leg lock is not be used as a substitute for a ladder belt because it will not help if a victim jumps out a window and down the ladder.

25. Firefighters should never be up on an aerial ladder while it is being raised, rotated, or extended. The ladder must be in position before climbing; that means making sure that the ladder locks are set, too.

26. The priorities for removing a victim from a burning building are, from highest to lowest: smoke proof tower, interior enclosed stairway, safe fire escape, aerial platform, aerial ladder.

27. When climbing into a window of a burned-out or vacant building, drop your tools inside the window before entering and listen to them strike the floor. If you don't hear the tool strike the floor, either the window opens into an elevator shaft way or the floor is burned away.

28. Whenever there is a danger of wall collapse, an officer in command must establish a collapse danger zone. A collapse danger zone should be equal to the height of the unstable wall. All firefighters should be withdrawn away from the burning building to a distance at least equal to the height of the wall.

29. The officer establishing the collapse danger zone must take into account not only how far outward the wall may collapse but also the horizontal span of possible wall collapse.

30. A collapse danger zone for an aerial stream will vary from that established for ground stream operations. An aerial stream operated from a tower ladder or aerial ladder should be positioned away from an unstable wall at a distance equal to the height of the wall above the nozzle tip.

31. Establishing a collapse zone for tall structures could require firefighters to be positioned beyond the reach of hose streams. In this case a "flanking" position is called for: The master streams must be placed in front of the adjoining buildings or at corner-safe areas of the fire ground. The master stream range and effectiveness will be reduced but the life safety of the firefighters will be ensured even if the unstable wall falls outward.

32. There are four so called "safe areas" in which to park vehicles and operate master streams at when there is a danger of a church roof collapse. These four corner-safe areas give firefighters the greatest probability of survival if the walls start collapsing. If all of the walls collapsed outward simultaneously (however unlikely), only these four areas would be safe

from falling debris. Warning, if the corners of the building appear unstable stay out of that corner area.

33. After a fire has been extinguished and before overhauling begins, three safety actions should be ordered by the officer in command: Fresh air should be pumped into the hot, smoke-filled area by fans or the ventilation system; portable lights should be set up to improve visibility; and a safety survey of the structure and contents should be under-taken, checking especially for collapse hazards, hazardous materials The utilities gas and electricity should be shut off before opening up walls and ceiling during overhauling.

34. Firefighters ordered to shut off utility control valves for gas or electric power must consider the possibility of carbon monoxide and smoke accumulation in the cellar, particularly when a fire of long duration has been extinguished in a first floor store directly above the cellar and the cellar is completely below grade and without windows. Self-contained breathing apparatus must be worn in the cellar.

35. The firefighter's best protection against injury and death by a fall during overhauling is a properly charged flash-light. No firefighter should respond to a fire without a personal light.

36. The most potentially, dangerous area of local floor collapse inside a burned out residence building is the bathroom. The weight of a firefighter is enough to trigger the collapse of a fire-damaged bathroom floor.

37. If flames are discovered still burning at a gas meter or broken pipe after a fire has been knocked down, do not extinguish the flame. Let the fire burn, protect the exposures with a hose stream, and alert command that the gas has to be shut off at the cellar or street control valve.

38. Full protective clothing-including mask face piece must be in place before a firefighter approaches a 20-pound propane cylinder to shut off the control valve when a small flame is burning at an outlet. There is a danger of the relief valve suddenly activating, creating a fireball that could engulf the firefighter.

39. To protect a propane cylinder from exposure to a nearby fire, direct the hose stream to the top portion of the tank. This top portion of the tank contains vapor; it is in this vapor space that most propane cylinders BLEVE due to heat from an exposure fire.

40. When a propane cylinder is discovered burning around the cylinder valve, employ the following tactics: Cool the vapor space. After the area is cooled with water for 10 minutes and the flames appear stabilized in size and intensity, approach the valve in full protective equipment and mask and shut off the gas by the control valve if possible. If the flow of burning gas can't be shut off, allow the propane cylinder to burn itself out and use the hose stream to protect the exposure.

41. The firefighter shutting off the flow of burning gas at the propane cylinder outlet should be protected by a wide-pattern, low-velocity stream; position the fog stream between the control valve and the burning outlet. The fire-fighter's hand should be behind the fog curtain when turning the control valve. The flaming outlet should be in front of the fog curtain.

42. If you are in doubt about how to control a fire involving a propane cylinder, move all civilians and firefighters to a safe distance beyond the explosion danger zone get behind a barrier, and let it burn.

43. When walking on a peaked roof, straddle or stay near the ridge rafter. If you slip or lose your balance you can grab on to the roof peak; the ridge of the roof is your one true handhold. Chimneys, T.V. antennas, and soil pipes are not designed to support a falling firefighter and may break.

44. To maintain footing when walking on a peaked-roof surface, bend your legs at the knees and walk flat-footed. This is called the "roofers walk." It will reduce your chances of sliding down a peaked roof.

45. When there is a danger of peaked-roof deck burn-through or collapse due to an attic fire, place a roof ladder on the sloping side of the roof from which you're operating and walk on the rungs of the ladder. The ladder should be supported by the roof ridge and the bearing walls of the house.

46. Roof operations should be conducted from an aerial ladder or aerial platform when peaked-roof beams are in danger of collapse due to fire destruction of the attic. The firefighters should be independently supported.

47. Firefighters should not walk on a peaked roof with a slope greater than a 30-degree angle from the horizontal. There should be a roof ladder in place.

48. To reduce your chances of being severely injured by flashover during a search, practice a safe, organized search method. Most firefighters killed by flash-over are disoriented and lost in smoke. When searching a small room, maintain contact with a wall and move in a clockwise or counterclockwise direction. In a large or complex area, use a search rope as a guide. Study the room lay-outs of buildings in your community. This will help you to search and not become disoriented.

49. With the increasing use of lexan windows, sliding scissor gates, and bars on windows, firefighters searching for the location of the blaze or for victims should always return to the entrance door. If a firefighter passes the fire and carries a victim to a fire escape window, they could both be trapped. Crime, or the fear of it, moves many residents to lock up the second exit.

50. Firefighters should know the warning signs of flashover. When smoke and superheated gases force you to crouch down below half the height of the room, there's danger of flashover. Rollover is also a sign of possible flashover. Roll over is when flashes of flame, mixed with smoke, are seen at the upper part of a burning room or at the top of a door or window flowing out of the opening. When you suspect flashover, withdraw to safety.

51. Firefighters should know why the flashover phenomenon has become more common in recent times: 1. Because of the use of smoke detectors, firefighters are arriving at the scene earlier in the growth process of the fire, frequently before flashover. 2. The synthetic furnishings of a typical home are petrochemical derivatives that accelerate flashover by

liberating greater amounts of heat and flammable gases.³ Improved quality of protective gear and equipment has allowed firefighters to enter farther into superheated atmospheres prior to flashover. Tight building syndrome -thermal windows and energy-efficient heat barriers behind walls and ceilings of rooms keep more heat in the confined space of the room.

52. When operating around the perimeter of a burning building, an outside venting firefighter must take precautions to avoid injury from falling objects. When you hear glass breaking, don't look up. Size up the venting assignment from a distance. Choose the window you want to vent, move in close, vent it, and back away from the structure.

53. To determine the proper angle for placing a ground ladder, stand erect at the base of the ladder with your boots against the ladder beams and your out-stretched arms grasping the rungs at shoulder level. If you can do this, the ladder is at the proper climbing angle.

54. When you cannot open a window manually to vent smoke from a building and must break the glass, stand to one side (if possible, the windward side), use a six-or eight-foot pike pole for safe reach, strike the glass with the pike pole at the top area of the window, and work downward. If there is a possibility that firefighters are searching inside the room, first tap the window and only break a small portion of the glass-this will serve as a warning. Then remove the entire window with the tool. Keep helmet eye shields down for protection, wear gloves to protect your hands, and don't stand in front of the window.

55. After flashover occurs inside a superheated, smoke-filled room, there is a point of no return beyond which a firefighter cannot escape back to safety. The point of no return, or maximum distance a firefighter can crawl inside a superheated room and be sure you can still get back out alive and not badly burned after flashover, is five feet. If you are five feet inside a room that has flashed over (walking 2 ½ feet per second) it takes you 2 seconds to get out. During this time you are engulfed in 1000 to 1200 degrees F. heat. If you are 10 feet inside and flashover occurs you are exposed to 1000-1200 degrees F. for 4our seconds. 15 feet you are exposed for 6 seconds and badly burned even with protective clothing. Think about it!

56. When moving through brush during a fire, the firefighter should raise a tool or arm in front of his face as he moves forward to avoid injury by shrubbery, pointed needles, sharp leaves, or abrasive vines. Firefighters walking behind the lead firefighter should space themselves several feet apart to avoid whipping branches or leaves.

57. You should never enter cattails or brush that is over your head and reduces your vision. If the wind changes, you are in danger of being engulfed by fire in the brush.

58. When the wind frequently changes direction during a brushfire operation, the safest area from which to attack the fire is the blackened, burned-out area.

59. A survey revealed that firefighters are most often killed and injured at small brushfires in isolated portions of larger fires. They are not killed by large timberland forest fires.

Firefighters are burned to death trying to outrun brush fires, or they are engulfed in flames when a brushfire suddenly flares up around them. Firefighters should attack a brushfire from the flanks-the sides of the fire area between the head, the edge along which the fire is advancing, and the rear.

60. The three most common injuries to firefighters during brush firefighting are eye injuries, falls, and heat exhaustion. Eye shields must be worn. Firefighters should walk on roads or well-traveled paths when possible.

Questions for newsletter:

1. which one of the following is an incorrect answer?

A. When stretching a hose line to an upper floor of a building, do not pass a floor on fire unless a charged hoseline is in position on that floor.

B. Notify your officer when going above a fire to search for victims or vertical extension of flame or smoke.

C. When climbing or descending a stairway between the fire floor and the floor above, stay close to and face the stairwell. Heat, smoke, and flame rise vertically up the stairwell.

D. If you enter a smoke- and heat-filled room, hallway, or apartment above a fire and suspect flashover conditions behind you, locate a second exit, a window leading to a fire escape or portable ladder, before initiating the search.

Answer_____

2. Which one of the following is an incorrect answer?

- A. At any collapse, stretch a hoseline and charge it to protect possible victims and rescuers from sudden explosion and flash fire.
- B. Shut off all utilities-gas, electric, and water-immediately upon arrival at a building collapse. Do not wait for the utility company.
- C. Heavy mechanical equipment, such as cranes and bulldozers, should be used to remove collapsed portions of a building while hand digging is being done nearby.
- D. Parts of a structure that are in danger of collapsing during a rescue operation should be shored up, remove with a crane but never pulled down by firefighters below.

Answer _____

3. Which one of the following is the correct answer?

- A. The firefighter's best protection against injury and death by a fall during overhauling is a properly charged flash-light.
- B. The most potentially, dangerous area of local floor collapse inside a burned out residence building is the bathroom. The weight of a firefighter is enough to trigger the collapse of a fire-damaged bathroom floor.
- C. If flames are discovered still burning at a gas meter or broken pipe after a fire has been knocked down, extinguish the flame.
- D. Full protective clothing-including mask face piece must be in place before a firefighter approaches a 20-pound propane cylinder to shut off the control valve when a small flame is burning at an outlet. There is a danger of the relief valve suddenly activating, creating a fireball that could engulf the firefighter.

Answer _____

4. **True or False?** When the wind frequently changes direction during a brushfire operation, the safest area from which to attack the fire is outside the blackened, burned-out area.

Answer _____

5. **Arrange the priorities for removing a victim from a burning building, from best to least desired:** A. fire escape, B. smoke proof tower, C. aerial platform, D. aerial ladder, E. interior enclosed stairway.

1. best _____ 2. next best _____ 3. next best _____ 4. next best _____ 5. least best _____

Answers: 1.C; 2.C; 3. C; 4. False; 5.B-E-A-C-E