



**IFIA**



## **FIRE SPRINKLER DEMONSTRATION TRAILER**

*Recommendations for utilizing the fire sprinkler demonstration trailer in your fire department, business or association:*

### **INDEX:**

- A) Picking up and towing the Trailer.**
- B) Conducting a live burn demonstration.**
- C) Recommendations for the Public Education presentation.**

The trailer is stored at Fire Sprinkler Fitters Local #281 training hall at 11900 S. Laramie, Alsip, IL (just north of Alsip Fire Department Station #2). Their phone number is 708.597.1800.

### **A) Instructions for towing the IFIA Fire Sprinkler Trailer:**

FROM THE ILLINOIS VEHICLE CODE:

(625 ILCS 5/Ch. 12 Art. III heading) ARTICLE III. BRAKES  
(625 ILCS 5/12-301) (from Ch. 95 1/2 , par. 12-301)

Sec. 12-301. Brakes

4. Except as provided in paragraph 4.1, every trailer or semi-trailer of a gross weight of over 3,000 pounds, when operated upon a highway must be equipped with brakes adequate to control the movement of, to stop and to hold such vehicle, and designed so as to be operable by the driver of the towing vehicle from its cab. Such brakes must be so designed and connected that in case of an accidental breakaway of a towed vehicle over 5,000 pounds, the brakes are automatically applied.

4.1 Every boat trailer of a gross weight of over 3,000 pounds, when operated upon a highway, must be equipped with brakes adequate to control the movement of, to stop, and to hold that boat trailer. The brakes must be designed to ensure that, in case of an accidental breakaway of a towed boat trailer over 5,000 pounds, the brakes are automatically applied.

5. Every motor vehicle, trailer, pole trailer or semi-trailer, sold in this state or operated upon the highways shall be equipped with service brakes upon all wheels of every such vehicle, except any motor-driven cycle, and except that any trailer, pole trailer or semi-trailer 3,000 pounds gross weight or less need to be equipped with brakes, and except that any trailer or semi-trailer with gross weight over 3,000 pounds but under 5,001 pounds need be equipped with brakes on only one wheel on each side of the vehicle. Any motor vehicle and truck tractor having 3 or more axles and manufactured prior to July 25, 1980 need not have brakes on the front wheels, except when such vehicles are equipped with at least 2 steerable axles, the wheels of one such axle need not be equipped with brakes. However, a vehicle that is more than 30 years of age and which is driven on the highways only in going to and returning from an antique auto show or for servicing or for a demonstration need be equipped with 2 wheel brakes only.

## TOWING

- The towing vehicle must have a Class III hitch, and a 2 5/16" ball.
  - The safety sway bars must be attached.
  - Hitch must be secure with rod & nuts.
  - Trailer brake light connector has a hexagon shaped adapter and must be connected before towing vehicle (test all lights before moving).
  - Retract trailer jack stand and connect safety chains before towing.
  - Remove the wood blocks under the wheels. (Wood blocks provided for jack stand are to remain with vehicle at all times.)
  - When towing, all access panels and doors should be closed and locked. Steps should be in the retracted position and all four leveling jacks should be brought to the upright position.
  - Electrical 110V adapter must be stored on the inside of trailer through the port hole.
- \* Trailer weight is 7,000 lbs.



**\*\*Ensure that the water tank is empty!** (Open main drain before turning the main trailer hand crank screw, and before towing.)

### **B) Fire Sprinkler Trailer Valve Position Description**

(Make sure the fire sprinkler valves are in the following positions)

- PRIMING VALVE: Normally closed. (Black)
- PUMP TEST VALVE: Normally closed. (Also acts as a drain.) (Yellow)
- TANK MAIN DRAIN: Normally closed. Use to drain tank and lines when burns are complete PRIOR to transport. (Red)
- MAIN CONTROL VALVE: Normally open. To remain in open position for all burns. Close valve when changing sprinkler head. (Blue)
- EMERGENCY DELUGE CONTROL VALVE: Normally closed. Controls deluge head in burn room. Use to test if water is in system and in emergency. (Black)
- PUMP TEST: Normally closed; unless testing. (Yellow)



### **Instructions for Conducting Fire Sprinkler Burn Demonstrations:**

#### **REMOVE GENERATOR FROM THE TRAILER.**

1. Connect trailer extension cord and adapters to an electrical source (wall outlet, generator, etc.). Remove cord from

wall and route through the hole in front of trailer (left side of tank) to the electrical source. Check main electric panel to verify that there is power to the trailer. Switch on all of the breakers. Operate all wall switches for lights and fans.



2. Check the smoke detector and 9V battery with the test button.



3. At this point, turn all valves on the riser to the closed position. Fill the water tank with a garden hose, direct fill pipe, booster line, or fire hose through the top, twist open cap (approx. 150+ gal.). If relying on the reserve tank, do not conduct burns with less than ¼ tank of water. (The sprinkler head can utilize approximately 15 gallons per minute while operating.)



*Option: Fire Department Connection*

If the pump is not operating or you do not wish to use the pump, the FDC (Fire Department Connection) can be utilized. Connect to a hydrant using 1 ½” or 1 ¾”

hose or to a pumper using idle pressure only. Flush the hydrant prior to connecting the fire hose to remove sediment and debris.



4. Using a piece of 100% cotton material (or unbleached muslin) size for use as a simulated curtain. Hang fabric over the bar so that it rests partially into the supplied metal garbage can. Then secure with clips.



5. Overfill the garbage can with newspaper loosely crumpled into rounded spheres.

6. Install a 155 degree residential quick response fire sprinkler head in the burn room; be sure to wrap the threads with

Teflon tape and only use the supplied **sprinkler wrench** to tighten. Other types of wrenches may damage the head.  
**NO TORQUE PRESSURE NECESSARY. NO CONCEALED HEADS**

7. Bleed air from pump by opening the priming valve/black handle on the side of the pump. Close the valve after air is expelled and only water is coming out through the drain tube.

8. Open PUMP TEST/MAIN DRAIN (normally closed) to verify the pump is primed and working properly prior to lighting any fires in the trailer.

9. Have an operator stand by the electrical controls and fire pump controls.

i. This person is to operate the emergency deluge valve if there is insufficient heat generated to activate the sprinkler head or in the remote chance that the head does not operate.

ii. If using the storage tank, turn the pump on at this point. This person will also operate the smoke removal fans immediately after the fire sprinkler activates.



10. Light the fire with a match, candle, or cigarette lighter. Protect your hand with a fire rated glove.

11. Immediately after the sprinkler head activates turn on the ventilation fans in the burn room.

12. Open the windows if necessary in conjunction with the exhaust fans to assist in ventilation.

13. Shut off the water supply to the sprinkler head when the visible fire is out. If using the storage tank, turn off the pump.

**If another burn is desired, begin again at Step #2.**

When completed with all of your live burns and prior to towing:

- Drain the tank utilizing the tank main drain.
- Return electrical cords into the trailer. Store the generator. Shut off all circuit breakers.
- Use the shovel and squeegee to clean the trailer so that it is ready for the next fire department.
- Report any problems or deficiencies to the Illinois Fire Inspectors Association (IFIA) at 847-756-4750 and/or to NIFSAB at (708) 403-4468.

Materials available:

- Cloth (100% cotton or 100% unbleached muslin)
- Sprinkler Heads (135° - 155° residential quick response only!)
- Sprinklerman Coloring Books for children
- Flashover Charts/Residential Brochures for adults

- “How a Sprinkler Operates” hard card
- “Your New Home Should Have...” flyer

### **C) Recommendations for the Public Education presentation:**

Equipment Available:

- Spare residential sprinkler heads
- Spare battery operated smoke detector
- A large font digital clock

### **Bullet Point Messages**

- “Residential quick response fire sprinklers operate 4 times faster than standard sprinklers of the same temperature rating preventing flashover.”
- “82% of the fire deaths occur in a residential occupancy.”
- “Only the sprinkler closest to the heat of the fire will activate.”
- “Water spray from a residential quick response sprinkler head sprays water high on the wall to cool hot fire gases.”

## **SPRINKLER DEMO TALKING POINTS**

### **Fire Facts**

- In 2006, there were 412,500 reported home fires in the United States, resulting in 2,580 deaths, 12,925 injuries and \$6.9 billion in direct property damage.
- In the U.S., a home structure fire is reported every 76 seconds and someone dies from a home fire every 162 minutes.
- Nationally, in one- and two-family homes, the two most frequent causes of fires are cooking (30%) and heating equipment (22%).
- More than half of all home fire deaths in the U.S. resulted from fires were reported between the hours of 11:00 pm and 7:00 am. But only one-fifth (20%) of home fires occur between those hours.
- According to NFPA, “more than a quarter (28%) of fatal home fire victims had a disability, an age-related limitation, or were impaired prior to the fire.”
- According to NFPA, “two of every five fatal fire victims never wake up before being injured.” Many people think the smoke from a fire will wake them up, but they are more likely to have a harder time waking because of the toxic smoke.”
- A home fire becomes deadly in just three minutes.

## **Smoke Alarm Facts**

- A U.S. telephone survey found that 96% of the households surveyed had at least one working smoke alarm.
- NFPA's 2007 U.S. Experience with Smoke Alarms report: "Sixty-five percent of home fire deaths occurred in homes without working smoke alarms..." 43% occurred in homes where no smoke alarms were present at all.
- 65% (or two-thirds) of reported home fire deaths result from fires in homes with no working smoke alarms.
- Working smoke alarms cut the risk of dying in a home fire in half.
- In homes with smoke alarms, 20% had none that worked.
- When smoke alarms fail, it is most often because of missing, disconnected, or dead batteries.

## **Sprinkler Facts**

- If you have a home fire and you have sprinklers installed, they will save your life.
- Sprinklers prevent flashover -- the point where everything in the room ignites. No one can survive flashover.
- Sprinklers have been saving lives for well over 100 years.
- Having working smoke alarms cuts your risk of dying in half. Having both smoke alarms and fire sprinklers cuts your risk by 82%, compared to having neither.
- Sprinklers are linked by a network of piping, usually behind your walls and ceilings.
- Sprinklers work independently. The high heat of flames causes a sprinkler to open and allow water to flow over the fire. Smoke cannot set off a sprinkler. An operating smoke alarm cannot set off a sprinkler. Only the high temperature of the fire can make them work.
- The sprinkler closest to the fire will activate. In home fires, usually only one sprinkler is needed to control or even put out the fire.
- Sprinklers work so fast, they only need to use a fraction of the water that fire hoses have to use in fires where there were no sprinklers.

## **WE NOW HAVE:**

(\_\_\_\_\_) HOME PROTECTED BY SPRINKLERS

(\_\_\_\_\_) TOWNHOMES PROTECTED BY SPRINKLERS

(\_\_\_\_\_) CONDOMINIUM UNITS PROTECTED BY SPRINKLERS

*Good Luck! Please send photos to the Illinois Fire Inspectors Association and NIFSAB!*