Bath Township Fire Department			Standard Operating Guideline	
Section Operations	**Referral No.** O-46	**Subject:** Residential Basement Fire Operations	**Date Issued** 05/2014	**Date Revised**

Purpose:

- To provide guidelines for use of fire attack in basement fires and identify tactical considerations for basement fire operations during structural firefighting along with other useful techniques.

Scope:

- This Standard Operating Guideline shall apply to all personnel.

Responsibilities:

- Officer
  - Ensure that personnel performing fire attack are properly trained.
  - The personnel performing fire attack will do so in a safe manner and will wear proper protective clothing.
- Personnel
  - All personnel have the responsibility of wearing proper safety equipment and performing fire attack in a safe manner.

General:

- **Safety is always our first priority**
- A Full Response shall be initiated for all structure fire calls.
- All personnel will respond to the fire station and continue to the scene per Bath Twp Fire Apparatus Response Sequence.

Guidelines:

- Respond T-3.
- Obtain any information that dispatch received from the caller.
- If possible, T-3 should stage so L-1 can access and ladder the building.
- On arrival, transmit a BIRT and establish command.
- OIC should complete a 360 with a TIC and determine, if possible, exact location of fire, assess how well ventilated the fire area is and how well ventilated it was prior to arrival, what type of basement is involved (walk-out, walk-up or look-out) and what type of construction.
- Once the OIC completes a 360 and develops an Incident Action Plan that plan should be communicated to the attack crew.

- Additional information gained during 360 and type of attack to be initiated (defensive or offensive) should be communicated to all on scene personnel via radio.
- If a well involved basement fire is suspected, OIC should direct crews to darken down the fire by an external means (basement windows or doors) prior to transitioning to the interior.
- Crews should not operate directly above the involved fire until it is darkened down and floor joist have been inspected from below.
  - ✓ Inspect dimensional lumber for joist rupture or complete burn thru.
  - ✓ Inspect engineered wooden I-joist for web burn-thru and separation from subflooring.
  - ✓ Inspect metal plate-connected wood trusses for connection failure.
  - ✓ Inspect light-gauge steel C-joist for deformation and subfloor connection failure.
- Charged hose lines should be available when opening up void spaces to determine if the fire has communicated to the wood structure.

Tactical Considerations:

- Initiating an interior attack on a basement fire by means of the interior stairway at a well-developed basement fire can place firefighters in an extremely dangerous and untenable position. They will be in the direct flow path of superheated gasses that are exiting the doorway they opened behind them when they entered the building. Furthermore, they will likely be operating on a floor system that is at or near collapse.
- Coordinating ventilation is extremely important. Venting the basement via a window or below-grade door creates a flow path up the stairs and out through the door of entry, almost doubling the speed at which the hot gases travel. The increased ventilation inevitably leads to significantly higher gas temperatures capable of rapidly causing serious injury or death to even a fully protected firefighter. When a well involved but ventilation limited basement fire suddenly receives a sufficient supply of oxygen, it can grow to flashover conditions in well under 90 seconds.
- Delay or severely limit ventilation until you are certain that you have already, or can immediately, put an adequate flow of water on the seat of the fire to achieve knock down.
- Thermal imagers may help indicate fire in the basement, but they are not reliable tools to assess the structural integrity of the floor assembly when directed at the floor from above. Flooring-system components and floor-covering material are composed of materials that limit heat transmission through and therefore mask the fire conditions underneath of or within the floor system.

- Floor sag, which is a late indicator of a significantly weakened floor assembly, may be very difficult to determine while moving through a structure.
- Sounding the floor for stability is not solely reliable for weakened floor assembly.
- Collapse can occur quickly and, in some cases, with little or no warning.

Summary:

- There are times when the OIC may choose to operate crews on top of a basement fire to carry out their life-safety mission; however, this decision must be made understanding the potential for catastrophic consequences. Alternative tactics, such as suppression initiated from a basement window or doorway, need to be considered in order to control or darken down the fire before committing crews above.