Your
Seattle
Fire Department

MEMORANDUM

DATE: April 20, 2015

TO: Deputy 1 Chief – A, B, C, D

FROM: Assistant Chief Jay Hagen, Operations JDH

SUBJECT: ***TRANSITIONAL ATTACK* – PRACTICES**

Chief Officers' recently completed a round of Officers Meetings to discuss the term "*Transitional attack*". The goals of these meetings included:

- Introduce and discuss the tactical term "*Transitional attack*".
- Watch and discuss a video that explained how to implement this tactic.
- Explore scenarios demonstrating when this tactic would be effective.

The following memo introduces the Seattle Fire Department Policy and Operating Guideline (POG) for *Transitional attack*.

This information will be incorporated into the POG in the next round of POG changes. This tactic can be utilized immediately upon receipt of this memo.

Definition and Application

The Seattle Fire Department will use the National Fire Protection Administration (NFPA) definition of the term "*Transitional attack*":

> *A transitional attack is an offensive fire attack initiated by an exterior handline operation, into the fire compartment, to initiate cooling while transitioning into interior direct fire attack in coordination with ventilation operations.*

Per POG 5011-18 the Initial Radio Report includes:

> "Declaration of strategy - Offensive attack is assumed, but defensive strategy must be declared."

We will now add "*Transitional attack*" as a tactic to support an offensive strategy. When the first arriving Officer/Acting Officer transmits their Initial Report and includes the term "*Transitional attack*" later arriving units should expect, and be prepared to support, an offensive interior attack.

Example*: "Engine 5 at 1500 5 Avenue North with heavy fire showing from the second floor of sides Alpha and Bravo of a two-story, 30' x 40', wood-frame single family dwelling. We are on a hydrant and will establish 5 Avenue Command. E5 is initiating a transitional attack*

with a 2½" handline from the Alpha side of the building. We will update when we go interior."

5 Avenue Command will provide a progress report when the hose teams go interior. Critical Note: This tactic is limited to first arriving units. Essentially, a *transitional attack* is verbalized in your initial report when you are applying water from the exterior as the first action in support of an offensive interior attack. This limits any confusion as to your intention. Using the term *transitional attack* infers an offensive strategy.

Background

Underwriters Laboratories (UL) and the National Institute of Standards and Technology (NIST) completed research relative to *transitional attack*. UL conducted experiments in two houses built specifically for testing. Other experiments were conducted by UL, NIST, and the Fire Department of New York (FDNY) in abandoned two-story townhouses. The tests looked at modern fire conditions and the effectiveness of firefighting tactics in room-and-contents fires. One recommendation from these tests was that water should be applied to the fire as quickly as possible whether from the interior or the exterior. In the UL tests done at the constructed houses, a 1¾" combination nozzle was used from an exterior opening (window or door). A straight stream was directed up to and deflected off the ceiling into the fire. The results of these tests and experiments have had a major impact on *transitional attack* because the tests provided scientific data on a number of relevant points:

- Water applied from the exterior did not push the fire into other areas.
- This water stream should not block the flow path of fire from the exterior opening so that the steam can escape out through the same opening.
- Applying water into the fire area is a fast and effective way to knock down the fire and improve interior conditions for firefighters and occupant survival. An interior attack would follow after the exterior line has been shut down, which would lead to a faster and more effective extinguishment.

Members of the department are encouraged to review research and training materials available at these links:

https://www.youtube.com/watch?v=v2JcNonr4us

Decision Making

The research demonstrates that the application of water reduces the temperature and production of smoke while improving the overall tenability within the fire building. Rapid water application will substantially increase firefighter safety through decreased smoke production, fire volume and room temperatures. **However, the primary motivation for the rapid application of water is to improve the opportunity for trapped civilians to survive**.

Research demonstrates that fire growth is primarily determined by the availability of oxygen. Virtually any fire in the modern fire environment has an abundance of fuel available.

IF THE FIRE IS CONTAINED WITHIN THE STRUCTURE the best approach is to limit ventilation until after the interior application of water is achieved. A *"Transitional Attack"* is not recommended.

IF THE FIRE IS COMING OUT OF THE STRUCTURE the first arriving Officer should determine the fastest way to apply water to the seat of the fire and a *"Transitional Attack"* may be warranted. Time to water application is critical in choosing which tactics to employ. Even short delays in water application can result in large temperature increases, and decreased civilian survivability, within the fire building.

Single Family Residential including High Density Townhomes

If immediate access to the fire compartment is available from the front of the building, a "*Transitional attack*" is recommended. Water should be applied as quickly as possible through the opening using a smooth bore or straight stream directed to the ceiling and spread around the room as effectively as possible. Apply water in a straight stream through the lower third of an opening but at an angle that will hit the ceiling. This angle allows for an exit through this same opening for the expanding steam. Foam should be used whenever possible.

If the fire compartment is not immediately accessible from the front of the building, officers should weigh their tactical options against the time needed to get water to the seat of the fire;

- If quickest access to the fire is through the primary access door, go interior.
- If direct access for a "*Transitional attack*" is easily available, go transitional.

Other Opportunities:

- It is possible to have each tailboard member extend a line, one for the initial exterior attack and one to the primary access door and achieve rapid application of water to the fire compartment from the exterior with almost no delay in getting through the front door.
- Applying water from the exterior as part of a "*Transitional attack*" may be accomplished while the officer is conducting the 360 with no delay of the primary interior line getting into the structure.

Apartment Buildings

Apartment fires always include the probability of trapped civilians in the fire apartment and adjacent units. Smoke spread and increased temperatures are the primary risk to civilians. Rapid application of water decreases smoke production, smoke spread and interior temperatures. Due to the size and distance necessary to gain access to the involved fire compartment, it often takes minutes after the arrival of the first SFD unit to make the necessary stretch for an initial interior attack. When considering how and when to apply the tactic of "*Transitional attack*" in the apartment fire setting, officers should operate from the position of determining what tactic will be able to apply water to the seat of the fire fastest.

The primary motivation for the rapid application of water is that it improves the odds that trapped civilians will survive.

As with single family dwelling fires, the primary driver of fire growth in apartments is whether the fire has access to oxygen. On arrival, determine if the fire is still within the structure; meaning there are no ventilation openings (open windows or doors) providing oxygen to the fire. If the fire is contained in the structure, the best approach is to limit ventilation until interior application of water is achieved. In these situations, the use of a "*Transitional attack*" is not recommended.

When the fire is out of the structure or 'showing' at an apartment fire, the first arriving officer should consider apparatus placement and the opportunity to use the reach and penetration of either the 2 ½" smooth bore or 2 ½" straight stream (to apply water immediately while the crew makes the stretch through the building to the fire apartment). When this tactic is used, the engine crew making the inside stretch should notify the Incident Commander (IC) when they are in a position to make the interior attack so that the IC can suspend outside application of water (when a 2 ½" is used from the exterior a hydrant supply is required before an interior attack is made). When a "*Transitional attack*" of this type is announced by the initial IC, it will re-enforce the requirement that the second arriving engine's primary responsibility is ensure the stability of the water supply. The benchmark 'Water Supply Established' will communicate to the fireground that the supply has been completed.

Training

Chief Officers will continue to provide training on the use of the "*Transitional attack*" through the bi-monthly Officer Meetings. Scenarios and discussion will continue in order to achieve a thorough understanding of, and support for, the use of the "*Transitional attack*" in the Seattle Fire Department. The Seattle Fire Department has always been on the leading edge to provide our citizens the most professional, effective, and compassionate service. Recognizing the continuing evolution of research based in the scientific method, we will continue to advance our skills whenever evidence demonstrates a need to change.

JDH:tmc

Attachment

cc: Deputy Chief Gill, Battalion 3
Deputy Chief Jose, Training
A/Deputy Chief Wall, Deputy 2
Battalion 22 Chief – A, B, C, D
Battalion 4 Chief – A, B, C, D
Battalion 5 Chief – A, B, C, D
Battalion 6 Chief – A, B, C, D
Battalion 7 Chief – A, B, C, D
Safety – A, B, C, D
Tricia Connolley, Operations

Transitional Attack Scenario's

Transitional attack should refer to an operation that starts exterior and changes to interior. Using this interpretation of transitional attack, let's look at when we should use it.

INCIDENT 1

You arrive on scene as the first-in engine company. Conditions are as shown in photo 1. The size-up indicates that the fire started on the first floor of the wood-frame building on the left. It vented out of a window on the Delta side and spread to the Delta 1 exposure. Both buildings are balloon-frame construction, single family dwellings. Since the fire occurred at night, both buildings need to be searched quickly. The best thing for the first-in engine company to do is to control the spread of fire and soften the interior environments of the fire buildings so that search can be completed. There are at least four (4) fire areas based on the photo:

- The ground floor in the original fire building.
- The exterior walls of both fire buildings.
- The attic of the original fire building.
- The attic of the Delta 1 exposure.

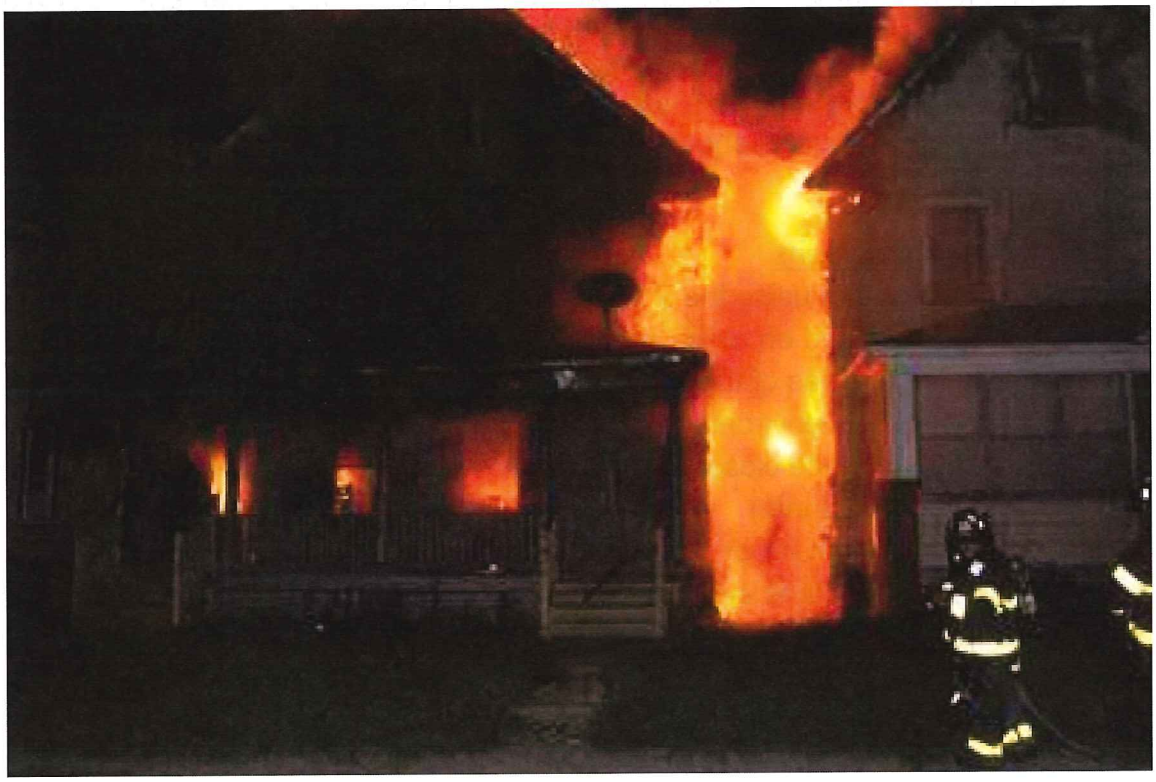

Photo 1

Plan

- Immediately apply water to stop the spreading exterior fire and knock down the interior fire. The use of a transitional fire attack in this case will help control fire spread in the fire building and the Delta 1 exposure building. Due to the heavy fire conditions, a 2 ½" combination or smooth bore nozzle will effectively provide the flow and reach necessary to knockdown the fire. Use Foam if available.

- After the exterior fire has been darkened down, direct the nozzle into the front openings of the original fire building that are still burning. Keep the stream low into the opening and up towards the ceiling to reach deep into the fire area to maintain the ventilation benefits.

- One firefighter can deploy and operate the 2 ½" line remaining outside the IDLH environment. Use of the SCBA is required. A second firefighter can assist with a supply or stretch a 1 ¾" line for interior operations depending on the situation, hydrant location, and delay to the second arriving engine.

- The officer should complete the 360 while these actions are underway and request additional resources.

- Shut the exterior water stream down as soon as the fire is darkened down and, once a supply is established, transition to interior operations using the 1¾" handlines first to the original fire building, next to the delta exposure, providing search and backup lines as companies become available. At least 4 lines will be stretched at this fire supporting the earlier request for additional resources.

Further considerations

- The advantage of using the 2 1/2 ' combination or smooth bore nozzle for the initial fire attack is based on reach and flow. The reach allows a single firefighter to apply water to large areas of the exterior and the interior of the buildings while operating outside the IDLH environment. (If the 1 ¾" line were deployed, a firefighter would be tempted to advance closer to the structure to gain penetration increasing the risk while operating alone.)
- A defensive attack is not acceptable in this situation. The time of day makes it highly probable that civilians are alive and at risk in both houses. An effective transitional attack will decrease the temperature and smoke volume in both houses. Quick and effective water application will increase the survivability for trapped civilians.

NCIDENT 2

Photos 2 and 3 show the arrival conditions on sides Alpha and Charlie of a single-family residential house fire.

Photo 2 – Side Alpha

Photo 3 – Side Charlie

On arrival, the fire is spreading quickly into the large, open attic space from an exterior fire on the Charlie side deck. This is a single-family, wood-frame building using platform frame construction. The fire quickly spreads vertically up an exterior wall covered by vinyl siding to the soffit and into the attic space. From the rear, the deck and the exterior wall are involved in fire and are threatening to enter the first and second floors. The fire raced up the rear exterior wall and flames are showing from the attic. Smoke is showing from the front ridge vent. Since the fire is at night, it is probable that civilians are at risk. The engine

company needs to quickly control at least three fire areas so that searches can begin and the fire can be extinguished:

- the exterior deck;
- the exterior wall on side Charlie; and
- the attic space.

Plan

Use a transitional attack in support of an offensive strategy. Fire is spreading rapidly, and multiple fire areas need to be addressed immediately. The attic of this building will quickly become heavily involved because of the modern wood-frame construction and lightweight wood building components used.

- Use a transitional attack.
  - Position the first engine to allow aerial access to the fire building whenever possible.
  - The officer should complete a 360 while the crew begins operating.
  - One firefighter should stretch a 2 ½" line to the Bravo/Charlie side of the structure and apply water to the deck, working up the side of the house, and finish by getting water into the attic as effectively as possible. Direct water up into the underside of the burning open soffit along the entire length of the burning area. You may have to move the stream along the entire length of the soffit to include parts still covered if the fire has run all along the attic. This firefighter should remain outside the IDLH environment. SCBA use is required.
  - The second tailboard firefighter can assist with a supply or stretch a 1 ¾" line to the alpha side door depending on hydrant location and the delay to arrival of the second engine.

Further considerations

- Use of the 2 ½" line for the exterior operation provides reach and penetration allowing the single firefighter operating the line to remain outside the IDLH environment and have a positive impact on the fire. (If a 1 ¾" line were used, this firefighter would need to operate closer to the fire area unnecessarily increasing risk.)
- Going directly to an interior attack will place the first engine company's firefighters at unnecessary risk. Because the exterior fire has spread across all floors of the structure, it is predictable that it will spread inside the structure on all floors. Based on the how the fire looks from the alpha side on arrival, it is likely that the first line would be stretched to an upper floor. This could easily result in the first engine, Team B, being cut off from their egress while operating above an uncontrolled fire.

- One of the key considerations at this incident is the fire in the attic space that is spreading quickly throughout the entire open area. Plenty of fire and oxygen is drawn in from vented soffits, contributing to rapid fire growth exposing the wood trusses. Expect a thin line of flames at first to vent out of the top peak; as the fire grows, it will push down into the second floor and sometimes out of the soffits.

Final Thoughts

The previous two incidents are examples of when using a "transitional attack" in support of an offensive strategy will likely be more effective than a direct interior attack. Applying quick water, in an effective way, increases the opportunity for trapped civilians to survive while decreasing firefighter risk. When a fire has access to oxygen it will increase in size very quickly. In contrast, there are significant advantages to immediately addressing the spread of fire from the exterior. An exterior attack will knock down fire and stop its spread so that interior operations can safely and effectively begin as soon as possible. This does not imply that a transitional attack should be used any time fire is venting out of a window or door but it should be considered.