

Fire Engineering

CHANGING OUR CENTER of GRAVITY IN STRATEGIES and TACTICS/PART 2

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Cautious Aggressive Dynamic Posture

When arriving on the scene at structural fires it is all too common for first-in companies to quickly assess a given situation and then announce that an interior offensive procedure is being enacted. The true reality is that we should be thinking cautiously as the first arriving members are establishing an aggressive dynamic posture. Many fire service commanders and authors have used the words “marginal mode” when on the fire ground as if this communication is part of the attack strategy. Fire departments that use this nomenclature on firegrounds should consider having this description removed from their operating procedures. This type of communication presents a picture to those involved as being an unclear communication for it leads open to interpretation to many variables and possibilities. If chief officers and firefighters feel that something is marginal or that something could go either way we should probably take the defensive posture first and then reassess. The cautious aggressive posture is something that should exist throughout the entire fire attack. Instead fire departments and their members should concentrate on thorough size-ups and more committed actions that involve either defensive or offensive actions. Many times we say we are committing to interior operations but we should consider that until we actually cross the IDLH plane into zero visibility that we are in more of a transitional posture. Once we move from the transitional posture and our cautious aggressive posture we then in reality finally commit to either defensive or offensive fire attack. We must also remember that many times our success in saving lives and property can combine both the defensive and offensive posture but only as separate entities never having both running simultaneously.

The cautious aggressive posture continually exists on the fire ground especially during interior actions that involve extreme fire dynamics and prolonged zero visibility the latter being most dangerous to interior operations. When zero visibility is present especially within the interior we should think of the importance of reading smoke and its actions such as color, velocity and volume. With this realization in mind the true reality is we are posturing ourselves and our

actions in fuel filled environment. Interior structural firefighting has a geographical landscape that is unique to each individual structure we fight fire in. Because of this orientation and situational awareness are constantly threatened. The loss of sight creates three prominent problems or threats to our members and they are;

- **Loss of orientation.**
- **Unrecognized signs of structural collapse.**
- **Unrecognized fire growth leading to flashover.**

These threats many times exist before we enter a fire structure while also working for extended periods of time with little progress they truly begin to reveal themselves to us when it becomes all too late to escape.

One of the most important tools given to the fire service over the last few years is the Thermal Imaging Camera (TIC). The reliability in the use of these cameras by many on the fire ground have risen to giving the feeling of a false sense of security and an increase in more aggressive behaviors. It is with only in depth and proper training with this technology that we should also realize its limitations. Believe it or not thermal imaging does create many times a reduction in situational awareness due to misread interpretations in what is being looked at along with temperature variances that are too relied on by those using the technology. This along with long absorbed views such as tunnel vision put members into many times compromised and unrecognized positions especially during an interior firefight in limited visibility. Those using the TIC also many times overlook the limitations such as temperatures being revealed on the floor you are on but not below the floor you are over; because members fail to remember that that the camera is providing surface temperature readings not below surface temperatures. The belief that the camera can see through walls and glass is another misconception. These are just some of the factors that mislead us in to more aggressive actions with many times disastrous results.

A marginal mode of attack or the use of this mode should not be tolerated on the fire ground and instead we should consider it as a cautious posture which can be aggressive in either the offensive state or the defensive state. Firefighters involved in firefights especially in the modern lightweight construction arena are and will always be placing themselves in high risk exposure because of the possibilities of becoming lost, trapped or over run by fire. Their mindset then should be in a mode of being cautious during aggressive actions understanding that the fire environment may present the unexpected at every fire realizing that no two fires are ever alike. The interior environment in both compartmentalized and more open structures provide for the possibilities of smoke, rollovers, flashovers, smoke explosions and backdrafts that have the potential to present themselves at any time for any given structure at any given fire. Our

offensive actions over extended periods of time during interior firefighting will have consequences that sooner or later will overtake us if we cannot produce a fast and overwhelming force with determined progress on fire extinguishment and early occupant survival and rescue. The cautious aggressive posture should provide a solid format for a minimal risk management plan for every firefighter on the fire ground. The entities that put this type of risk management presence into the minds of firefighters is the duration of time inside a structure and the visibility created by fire conditions which drive our abilities in fire extinguishment and true occupant survivability in those conditions. When conditions and parameters worsen and our realization that the occupant survivability profile has diminished it is time to readjust and think more about getting out. We should also be able to visualize conditions and diminished possibilities of occupant survival upon arrival before even going in. There are always the options for the aggressive offensive fire attack with quick applications of water on fire showing from the outside giving the possibilities of increasing safety and survival for both civilian and firefighter and then quickly moving in for the aggressive interior attack. Occupant survivability should be thought of as not just exposure to direct flame contact but more importantly to the exposures of the products of combustion. How long a victim can survive a fire is more dependent on his or her affect to their exposure to inhalation of fire gases and smoke. These exposures affect occupants through respiratory track burns while being trapped or overcome within compartmentalized or enclosed areas within a structure. This along with carbon monoxide, cyanide and other gases put the victim survivability profile at a very low threshold against time. It is rare for an occupant of a structure to endure these conditions or a combination of these conditions for longer than possibly ten minutes. This time frame could mean that since the fire's incipient stage to our arrival then becomes the critical factor in our efforts to save lives. Saving lives utilizes the offensive mode and posture of offensive attack which always incorporates life rescue and fire extinguishment. This time also can mean to firefighters arriving that much is lost with little gain with well involved fires that are questionable regarding our aggressive offensive endeavors. This along with the potentials for early collapse because of lightweight structural components compounds the problem with even greater risks.

It shouldn't be misinterpreted that we should give up our proud heritage of aggressive firefighting; it is more important in recognizing that we can still be aggressive and provide for quick aggressive actions by recognizing and creating more proactive actions. We can create and adopt aggressive actions through understanding and providing for the following actions during our cautious aggressive transitional posture by:

- **Recognizing potentials that will put you in low to near zero visibility for long periods of time.**

- **Complete visualization incorporating a 360 size-up.**
- **Creating proper ventilation openings that affect proper fire flow paths.**
- **Hitting certain fire volumes from the exterior providing quick knockdowns decreasing fire and heat release rates.**
- **Interior visibility improving in less than ten minutes for continuation of the aggressive interior firefight.**

The end result of our actions and the postures we take at structural fires will better increase our survival profiles for both civilian and firefighters alike. Realizing our action decisions when we arrive at these incidents with a truer sense of what our risk versus reward capabilities are helps us in providing a more intelligent quick thinking decision making process in such a fast paced dangerous environments justifying our aggressive nature.

The Aggressive Offensive Attack

The aggressive fire attack is what the American fire service and its members are known for worldwide and so it goes that so are our line of duty injuries and deaths. The American firefighter has been trained in the pride and tradition of being aggressive as well as winning at every incident. Because of our aggressive actions in such a fast paced dynamic and unpredictable environment we move many times into harm's way without providing for better risk assessment at these structural fires. Locating fires within structures, searching and advancing lines in low to near zero visibility takes its toll eventually one day and opens every fire department and its members to a day of tragedy in the loss of one of our own.

As stated previously we engage ourselves into committing our strategies and tactics to the interior fire fight willingly and proudly. Improper size-ups, low to near zero visibility and misconceptions on a fire location and size can defeat our efforts unless we again address four main areas in deciding to go offensive.

PRINCIPLES OF THE FIRE DOCTRINE

- **Must Be An Absolute Necessity To Commit Firefighters To Interior Offensive Firefighting.**
- **A Compelling Risk Would Be Present Or Created By Not Acting.**
- **Must Have and Apply An Overwhelming Force To Engage and Prevail.**

- **Must Have An Exit Strategy Within All Areas Of The Fireground For Firefighters.**

Our efforts in going offensive should incorporate sound action plans that will provide us with a win to win outcome. The ability in being able to get to the seat of the fire and provide visibility to our members is paramount in our abilities to save lives and property including bringing our members back to quarters after every fire. Attaining good visibility and relieving high heat conditions should be the strategy when we think of operating and advancing to the interior. First in officers should decide and communicate to all that are coming in that their decision to announce an interior firefight is because they believe with the resources present up against what is being unveiled before their eyes regarding the fires dynamic and the need for civilian rescues lets everyone know that the odds are in everyone's favor. As long as there is little confusion and clear relevant tactics being applied to the fires location, growth and probable extinguishment the offensive aggressive attack is forthright.

When fire companies arrive and put themselves and commit themselves calling for offensive procedures from the outside is when the transitional moments begin before we enter the front door. Things can change and change quickly as we proceed with our aggressive offensive postures and that is sometimes unavoidable but those deciding to go forward should be aware that this possibility is always looming over their heads and that an exit strategy should be part of the plan. When conditions warrant and there is an easier approach to the seat of the fire or a search for a victim because heat conditions and improved visibility are present we will accomplish our goals. These types of conditions are usually more present early on during a structural fire then later after fire and smoke begin to take over the structure more and more. So the obvious mentality that we should adopt when we go out the door to the time we arrive rarely affords us the opportunity for these early conditions to be present. As we proceed to the offensive aggressive attack we begin to open ourselves up to more and more hazards of fuel filled environment that is always advancing just as we are advancing into it. A quick and decisive knockdown is the only way to come out of such aggressive actions. A quick and decisive knockdown also in all probability will save more lives than a delayed attack due to misread or overwhelming conditions.

The offensive aggressive attack truly begins the minute we enter the door to an IDLH environment. Everything before that point is merely an announcement or a communication of our intent to go interior. As long as we remain alert before the final advance past that front door we have the ability to change or alter our first decision such as hitting a fire from the exterior and then still providing for the aggressive campaign to go interior. In short keep a defensive approach in mind until the offensive approach becomes favorable. There are many solid considerations that still allow us to be aggressive and proceed with the offensive interior attack but with a quick transitional posture kept in mind. This all occurs on the outside first

even though we want to go inside or know we can go inside and prevail. All this mentality needs to be set in motion is by conducting a focused 360 of the structure and the situation. The following are considerations revealed from the 360 to hold on to our aggressive stance in taking extreme risks on a given structure fire.

- **Is there visible rescue required**
- **Is there fire present that will affect rescues or diminish occupant survivability?**
- **Is the structure still strong?**
- **Can we provide for ventilation that is both effective for interior firefighting as well as for increased occupant survivability.**
- **Will environmental concerns such as severe weather and wind delay or accelerate fire growth.**
- **Can we provide for a more aggressive exterior attack before we transition to the interior attack for better survival of occupants and firefighters.**

If we observe and act with these actions in mind we will increase the overall survivability of our firefighters as well as those occupants in need in the interior environment. We control fire and increase visibility in providing quick extinguishment and life rescue we should consider these parameters. It is when we don't consider these parameters and enter blindly and aggressively into these environments that we end up on our hands and knees along with facing high heat conditions that make for many times our inability to get to the seat of the fire or even get to occupants in need of rescue. An aggressive offensive attack does not necessarily always have to beat the living daylight out of us to make it a good fire so we can say we slayed the beast but more importantly it should be that we did not ignorantly expose ourselves in losing our lives.

Part of the mindset of the aggressive offensive interior attack should be that when there is heavy fire showing or present on the interior upon arrival that the initial attack be from the exterior with the premise in mind that we will then quickly move to the interior advance tactic. This approach should still be considered an offensive approach since the intent is to ultimately fight the fire on the interior for complete extinguishment. The exterior fast water application is simply a way of indirectly knocking down the volume of fire and reducing the temperatures that create an increase in the rate of heat rise in helping diffuse flashover conditions. It also many times will improve smoke conditions as well. This coupled with coordinated ventilation procedures guarantees a winning combination and the safety of both occupants and firefighters. This essential concept of quick exterior to interior firefighting also helps decrease the risk factors associated with the elements that can occur on the interior such as confusion,

prolonged zero visibility which can lead to the loss of situational awareness and eventual disorientation.

The aggressive offensive posture taken at structural fires is many times anything but aggressive when searching for fire or searching for victims. When we enter a world of diminished senses especially the removal in our ability to see our aggressive campaign becomes slowed and questionable. We may call our strategy or tactic offensive and consider these actions as part of the offensive procedure but we need to fully realize that we should be on the defensive when pursuing these actions on the interior. If an engine company is being slowed by low visibility or high heat conditions or both the possibility that may not find the fire in a timely manner it can well be expected that the fire will eventually come to them with overwhelming force. This concept along with blind searches in near zero visibility reduces and slows the interior aggressive posture of the offensive action. The true relationship of the aggressive offensive fire and rescue posture is correlated with also the fire and its aggressive speed in taking over.

During the chosen aggressive offensive posture is the perception of time while we are working on the interior and our true awareness of it. How much time has gone by is rarely perceived by firefighters when advancing, searching and getting to the seat of the fire which is also dependent on the complexities of the structure and its designs in compartmentalization or layout of its floor plans. When we are on the interior we are completely focusing our thoughts and energies to the interior agenda while conditions worsen which in turn increases our potentials in losing our way and becoming less aware of growing conditions in the environment within the structure. Loss of vision is one of the most prominent causes of firefighter fatalities along with the misconception of time. What usually proceeds or leads to firefighter fatalities are the following conditions when we are conducting our efforts on the interior firefight.

- **Initiating aggressive interior actions without proper size-up.**
- **Interior disorientation**
- **Separated from advancing hose lines.**
- **Discerning egress off of multiple lines.**
- **Separated from company members.**
- **Accelerated diminish air supply.**
- **Falling debris and collapse.**

It is without question that the decisions to apply the aggressive offensive interior posture comes down to firefighters abilities in being able to conduct proper size-ups, recognize when prolonged zero visibility is occurring and learning to apply an exterior to interior application of containment when necessary.