UL… in 2018

Summer of 2014, and the fire service was buzzing about the latest roll out from ISFSI and ***their*** interpretation of the latest UL NIST structure fire studies. A strong emphasis on the benefits of an exterior stream and the subsequent downgrading of traditional interior attack was gaining momentum. You may recall the divisive tone from the modernists and the dinosaur camps. Full discloser here, you can put me in the latter. For some of us dino's it wasn't just the one slicer fits all message but it was the "who" that was presenting the new gospel. That seems harsh I know but street cred (experience) matters. Some were self-describing as experienced fire service leaders but other than an association with training burns, most in the ISFSI roll out crew lacked a history of battling fires from an unscripted plan (sans P. Van Dorp). I realize that not everyone works in an urban/busy fire environment. I don't either. With my engine going to less than 40 fires a year, I can't lay any claim to a position of authority, but I will offer my observations anyways. You are reading this right? Using people from busy departments brings in street experience and a bit of cynicism which is important to keep these things from turning into an echo chamber. That seems to be what UL NIST did in this most recent round of testing. I applaud everyone involved with these projects as their personal time and reputations where spent.

The rhetoric was heated and I am sure some personal and professional relationships changed as each camp was looking for their own confirmation via the instruments and a scientific approach. Now that we are all seemingly back in our comfort zones, this latest launch of testing data seems to have gotten a softer response. So, let me go out on a limb here and opine a bit. Hover your mouse over the highlighted words to click the links I am referencing, so you can see where I am coming from.

In reflection of my 2015 article that was published by Fire Nuggets, I am pleased with this long overdue part 2. Though there will always be more variables to analyze, I think this 3 part series of testing in conjunction to the earlier vertical ventilation study proves, nearly all of the experienced based philosophies that us dino's know to be true. The concepts I was forwarding in that 2015 article was to clarify that firefighting is done differently for good reasons. Regionally, the circumstances dictate different approaches. The haste to move everyone to either side is foolish. What is not foolish, is to study and understand where experience has proven positive results. A deep dive into the daily operations of your nearest urban fire department may be a good starting point for a younger or light duty fire department.

With the latest information from UL published, I see another Fire Service Essentials book update in the future!! As ***I interpret*** the 3 recent parts that have been published, here are some practices that have proven themselves in the streets and now in a lab.

1. When faced with a residential building fire only showing smoke, the most efficient practice is to launch an interior attack.
2. Water up into smoke is useful to map the room. Nozzle teams should use the reach of the stream to cool the walls and ceiling surfaces thus rapidly cooling the off gassing interior surfaces.
3. The practical patterns of stream delivery are to start at a very steep angle and evolve into an “O”, “T”, “Z”, or “n” pattern. Water runs from the ceiling out to the walls.
4. Rollover must be met with an overwhelming water. Longer flow times are better than short bursts.
5. While not all fires are the same, there are many similarities. The variables are the circumstances surrounding the extinguishing crew, training, equipment, and experience.
6. Air entrainment studies confirm earlier testing and investigation. Thank you Jerry Knapp.
7. Air tracks are directly affected by a flowing nozzle. You push air with your water.
8. Steam and gas burns were linked to proximity to the fire area, the flow path, and the elevation within the building. If you are above the fire or in its path, you or trapped civilians may burn.
9. Flowing while moving did show an advantage in gaining and maintaining better air quality and lowering temperatures. The flow/shutdown/move/flow tactic is still the most likely method of attack, and the thermal measurements within the approach hallways proved that this works well as long as there is no delay in moving in on the fire.
10. Realistic flow rates were used and proved valuable in qualifying why we should take more water than we expect to use. Its gallons per minute, not total gallons used. Rate of application matters, and the total amount of water needed for each of these tests was less than 500 gallons.

The amount of effort given in this publication to study steam and energy transfer is a great resource. Read that carefully. The moister content of smoke is much, much greater than I had thought was possible. The 1 thing I had hoped for was a more careful measurement of the moister in the air during suppression efforts, and at more than the 1 foot level from the floor. Perhaps the limiting factor was the technology of the instruments? Either way, this is great information and supports the idea of cutting off the smoke *and* fire from occupants and using a coordinated attack.

The air entrainment study was a welcomed read as well. If you have not read Jerry Knapp’s older studies and tests from 2003, then this write up may have been news to you. In fact, the reference section of the air entrainment document tells the story. This is another testament that the modern fire science is qualifying what we have already had available to us.

The water mapping study was interesting but not all that surprising. When you have been on a company that had switched from high pressure automatic nozzles to low pressure nozzles, you

know firsthand that you are using less water overall. The rate of application is always better in the real world with high volume /low pressure nozzles because we as a service pump to comfort. Water adhesion is documented where streams directed at the ceiling cling to the surface and run out to the walls. The water then runs down the walls cooling the surfaces and thus reducing the off gassing. "Wall-ceiling-wall!" – Jeff Shupe If I had a dollar for every time I heard that as a new cadet/recruit!

The ongoing conversation has indirectly or directly pushed the testing and analysis of interior firefighting in a direction so as to prove or disprove what each side believed to be true. The main difference was between the traditionalist using decades of experience versus the modernists approach with recent (though incomplete) data and sterile examples. It seemed clear that the initial exterior application of water was the tactic of choice by those paid to roll out the data to the fire service. This is a result of those tests having a narrow focus on that tactic and that detail to me, seemed to be the problem with our collective understanding. It didn't help that the initial verbiage and intent of the ISFSI was clearly pushing this tactic as "SLICE is a fire attack mode tactic used to reduce temperatures inside of a building prior to the entry by firefighters for extinguishment or rescue." The urban dinosaurs reply with "we have always done this when needed". It is the ***when needed part*** that is variable and department dependent. Some dino's cited the previous book smart non-sense of "trying to attack from the un burned side" not too long ago. And thought that hard from the yard mantra would pass like the rest of the fads.

As the last 2 years went by, the tone on both sides relaxed. The dinosaurs could recognize where an understaffed department with limited experience would be happy to adopt this tactic, as it is seemingly a "safer operation" for arriving firefighters. In addition, the YouTube channels and fire behavior websites where produced with folks from non-urban departments. Those without the decades of building fires under their belts, pointed to the instrument data and the argument of "we don't have 30 firefighters at a house fire". Though, all you need is 3 dedicated and trained firefighters to get any attack hose line in place!

Regardless, all 50 state fire school curriculums adopted the "transitional attack" without having all of the interior stream data to weigh against it. The money ball was rolling, and the essentials book writers had another reason to roll out a new edition. Fire schools everywhere were rushing to adopt this tactic at the basic level and the dumbing down of the fire academy was on. For safety reasons of course. Young cadets did not have the advantage of their own experiences or their 1st due staffing levels, in relation to using an acronym. At nausea we all refer to this now as "another tool in the tool box". But I would suggest that most un tested fire department's tool boxes only have hammers in them, or pre-connected lines as it were. Fire chiefs who were looking out for their liability interests, adopted the ISFSI KOOL-AID without regard to the legitimate debate. When any movement gets to the political momentum like slicers did, the discussion and debate is done.

To further this issue in the wrong direction many states including Ohio, adopted the IFSAC or PRO BOARD curriculums which replaces area norms with unrealistic minimum standards. Go ahead and click the link and check out those qualification minimums… These private for profit curriculum development companies sell their wares so any card carrier can be employable by multiple states. And many have had their curriculums codified so as to be state law! This one size fits all, or as I like to call it "Common core for the fire service" glosses over many regionally specific needs and eliminates the time allowed for instructors to pass on experienced based information to the cadets. The argument for a science proven tactic or "hitting hard for the yard" was and is, firmly in place for the young and impressionable cadets. Personally, I just couldn't be a part of this agenda, and left what was a very enjoyable and fulfilling position as an academy instructor. At this point I am confident that my previous fire school has found a way to teach around these mandates, but the fact remains that if a cadet does the state minimum, they get a fire card that looks just like mine, but a tuition bill from the community college that's quite a bit more.

So now what? I suggest training in as a realistic environment as possible, and keeping true to the regional/area specific needs. Whether it be in stand pipes or silos. Basements or mid rises. Garden apartments or Mc mansions. Type 3 ordinary or tilt ups. Giant type 2 distribution centers or sprawling mass assembly buildings. Taking this information from UL/NIST and applying it to your department's unique level of staffing, equipment and operations should be considered purposefully. Additionally, you may or may not know that the DHS grants that make these things possible are only approved with a teaching component. That is where the interpretation of the raw information is made. And that is where the information may be applied differently to different fire departments. In Chicago "Hard from the yard" means deck-gunning multi-story tenements because the stand pipe is out of service, but in Hanover fire district Virginia, it doesn't. So you must decide how this information fits your area. The principles of firefighting remain consistent. The way your organization practices these is the difference. Before you go and drink anyone else's kool-aid, be sure yours isn't all that bad.

Lastly, the ripple effect and some push back has reenergized the fire service in both looking at what has worked in the past, and the future technologies that can help us do our jobs more efficiently. In that regard, the evolution of fire service training is also happening. More and more regional fire conferences are taking root. Small towns, suburban cities and metro areas are developing groups of firefighters interested in the practice of the principles. Staying away from PowerPoint classes with certificates, these smaller venues are about breaking a sweat and doing the job. And for that I am grateful. The de centralization of fire training is a good thing. No more is the influence of the "gate keepers" of the industry so complete. If you look around there is a reasonably priced 2 day conference somewhere closer than Indianapolis. The big show has its place but the regional training is as legitimate as it can get. I hope I set off a brush fire in your head with this. If you agree with some or none of it, I just hope you know why that is from personal experience, rather than someone else's.