



Virtual reality has changed from an interesting computer toy to an amazing tool for firefighter action training.

WHY YOUR FIRE DEPARTMENT DESERVES A TRAINING SIMULATOR: SAVING LIVES OF LIFESAVERS

By **Rick Dickinson**

Virtual Reality - VR - and its applications have been affecting our everyday lives at an increasing pace. While some of us may be skeptical about its ever-growing appeal to the masses, think about what virtual reality simulators are able to do for high-risk professions such as firefighting. You've probably guessed it; workforce VR simulators are made with a noble mission in mind –to increase preparedness, reduce costs, and ultimately save lives.

As firefighters, we know the challenges and frustrations every fire chief gets to face on daily basis. Whether you run a small hall with a handful of calls a year or you have

a full team of career firefighters in a big city, planning a live fire exercise to train your current batch of level one's is often nothing short of Herculean efforts. You pick a good day and begin tackling the mountain of prep work: what to burn and where, readying the site, filling out paperwork. After that, you arrange your instructors and safety coordinators, RIT teams, ensuring students meet the prerequisites, and deal with a host of other tangibles to comply with NFPA 1403.

Then on the day of your exercise, one of your instructors gets called away for business. Another one is out with family issues. Two of your trainees are home sick, and

your safety coordinator is still laid up from an unrelated fall a few weeks back. Deciding to push forward with a bare minimum, you attempt to find solace in the fact that the weather has held out; your mood finally collapses that very same evening when several members of your community express their discontent with you for having “unnecessarily polluted the environment!”

In spite of all the obstacles, such scenarios work out well enough if your team gets to learn and practice and—most importantly—no one gets hurt. However, in a profession such as firefighting where more than one in 10 fatalities occur during training¹, it not only makes sense but is of the utmost importance to embrace new low-risk training methods. This is where training simulators come in as a bridge between the classroom and the training grounds, and they are promising to become increasingly prevalent in the years to come.

In case you’re new to the idea of having a VR simulator in your department, here is the lowdown on what makes

such a tool so useful and valuable.

1) It is safer than live training - and it saves you money.

Training simulators typically take far less resources than live training, with the benefit of running far fewer risks. The skills your team gets, however, are real-life, practical and translate directly on to the training ground (and then on to the hot zone)!

Furthermore, one single injury can cost tens of thousands of dollars in medical expenses and lost wages. Suppose the accident was deemed to be caused by a lack of proper training for the work being done. Who do you suppose is on the hook? Ultimately the employer could be considered liable and how they would pay depends on the local law. Whether it’s covered by workplace insurance or settled in a courtroom, the damages could easily run well beyond the cost of having done the proper training in the first place. But no matter your jurisdiction, the price of a training simulator is negligible compared to the cost of losing a valued emergency responder from your community.

2) It is an affordable investment for a tool you can use 24/7 all year long.

Granted, compelling and realistic training simulators used to cost hundreds of thousands or even millions of dollars to buy and maintain. But in 2018, thanks to tremendous advancements in consumer grade technology, there are many affordable and compelling options. In fact, some Virtual Reality Firefighter Training Simulators cost about the same as a full set of PPE with a modern SCBA!

That’s right, modern simulators are priced in the same ballpark as what it takes to run two to three live burns –yet simulators remain with your department 365 days a year, allowing your firefighters to train over and over again, all the while maximizing the effectiveness of your department’s regularly scheduled training.

3) It is very easy to use and maintain.

Modern VR training units are portable, easy to set-up and are no more difficult to use than home computers

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or popular video game consoles. Running a simulator doesn't require a big team so even small groups can run complicated and involved exercises at their own convenience. Better yet, no equipment needs to be cleaned, and there isn't a huge mess that needs to be tidied up.

So the next time you have a big upcoming event, everyone from your team can easily prepare beforehand. This way, trainees are more familiar with the critical points of their tasks and won't be overwhelmed by the flames and smoke when the time comes. Plus, your instructors will be more up-to-snuff with everything from the big picture right down to the smallest details because they freshened their skills inside your department's own firefighter training simulator. This means that everyone on your team is better prepared to function safely as they can focus more on the task at hand.

4) **It is extremely realistic and effective, keeping your team's skills fresh.**

Virtual Reality takes simulators to a whole new level, immersing you into a training world where you can walk around using your own feet and interact with your own hands. This level of immersion and sense of presence has profound impacts on memory formation, making the skills you learn valuable in real world applications.

In fact, recent studies have shown that, compared with more conventional methods, learning in Virtual Reality can lower the learning curve, decrease errors in performance, and in some cases double the retention rate of information learned. As with most things in life, if you don't use it you lose it, and the same is true for firefighting skills; VR simulators can keep even your most experienced team members fresh and up to date on a range of skills.

Finally, on top of having an always-ready training tool, consider these addition perks of having a training simulator in your department:

- You can attract and retain a younger demographic. Let your new recruits know that you value staying on top of modern solutions when it comes to training.
- Tap into your broader community. Simulators are great attractions at your open houses, and can also be taken to schools and community events to increase your presence. Plus you can even use the simulator to train basic firefighting techniques to members outside your department, like with public works employees, teachers, and custodians.
- Simulators offer a consistent environment. By paralleling skills from the NFPA handbook, key concepts and critical points are reinforced into trainees. And with individualized tracking and usage reports, instructors can easily monitor their team's progress over time.

As training simulators see widespread adoption into firefighting and other emergency services, they are on the way of becoming a staple training supplement for every firefighter—a powerful tool in our arsenal to keep us safe and prepared for whatever may come our way.

Sources:

1. U.S. Firefighter Deaths Related to Training, 2001 - 2010, Rita Fahy, NFPA
2. Proving the Effectiveness of Virtual Reality Simulation for Training in Laparoscopic Surgery, Aggarwal et al, November 2007
3. Training for Retention in Virtual Reality and Computer-Based Platforms, W. Todd Maddox, 2017

About the Author

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