

The Impact of Extreme Fire Behavior on Firefighter Escape Systems

International Technical Rescue Symposium 2016 - Albuquerque, NM

Presenters

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Abstract

Firefighter escape systems are becoming more common throughout the fire service. These systems typically consist of an anchor device (commonly a hook), rope, descent control device and some type of harness. Unlike most rope systems, these are designed to be subjected to fire conditions that would typically challenge the integrity of most rescue gear.

We presume they can handle these fire conditions, but do we have a body of testing to show this? There are standards that test the temperature resistance of the rope, the strength of the escape anchor, and dynamic tests on the descender.

A series of tests were conducted to simulate real-world fire conditions, such as flashover and rollover, to determine if these escape systems would perform as expected.

Questions asked were:

- 1) If there is a weak point, where does it lie?
- 2) Did material composition of the anchor and rope matter?
- 3) Do they perform as we expect them to?

Presenter Bios

Mike Forbes is the owner of RopeCraft, a small company in Moscow, Idaho dedicated to conducting real-world testing of systems involving life-safety rope. Mike also tillers Ladder 4 for the Spokane Fire Department, serves on the technical rescue team, and is the lead rope rescue instructor for the department. Mike has a passion for firefighter escape systems and is active in the nationwide community of firefighters dedicated to forwarding this technology. Mike enjoys adventuring in the big, wild areas of Idaho with his wife and boys, exploring the trails behind his house via human power, and making metal form to his wishes in his shop.

Matt Hunt is the Work Market Manager with Sterling, on the beautiful coast of Maine. He has been involved with Sterling's line of escape products from their inception, and is always interested in what lies beyond the standards. When not dangling from ropes in high places, he spends his time exploring new places and finding new and exciting ways to break things.