

## **Presenter Bio:**

**Mike Forbes** is the owner of RopeCraft, a small company in Moscow, Idaho, dedicated to conducting real-world testing of systems involving rope of all kinds. Projects that involve sharp things, active fire, or other hostile environments are what he likes to pursue. Tilling Ladder 4 for the Spokane Fire Department is his chosen career and he serves on the technical rescue team as its lead rope, machine, and US&R instructor. He has a passion for firefighter escape systems and is active in the nationwide community of firefighters dedicated to forwarding this technology. In his spare time, Mike enjoys adventuring in the remote wild areas of Idaho with his wife and boys, working at an active fire lookout (Diablo Mountain in the Selway-Bitterroot Wilderness), exploring the trails behind his house via human power, and making metal form to his wishes in his shop.

## **Abstract:**

The year 2018 was a significant milestone for RopeCraft in that acquisition, creation, and modification of several devices allowed for a wide variety of research to be conducted. There is no single piece of work that stands out as more significant than another, hence this proposal to cover many questions I've had that can now be addressed with a more controlled and scientific approach.

The following research will be presented in a summary format, with details presented with technical data and entertaining visual displays.

- Large Diameter anchors (e.g., bridge abutments, really large trees) and a method for rapidly applying them to urban and rural rescue.
- Have you ever used a cutting torch while on rope and wondered what would happen to your life support if the two met? A quick-look project will show different rope constructions and their relative resistance to this thermal insult.
- Small diameter ropes ( $\approx 8$  mm) and their relative resistance to cutting. An expanded look at previous sharp edge testing with improvements in method, including edge design, horizontal displacement, and velocity.
- A flex fatigue study of in-service, heavily used fire escape ropes from an urban fire department.