

## *Bio – John McKently, Ole Kils*

**John McKently** is the School Director for CMC Rescue School, specializing in Rope Rescue, Confined Space Rescue and other unique rescue disciplines. John McKently has been with the Los Angeles County Sheriff's, Montrose Search and Rescue Team since 1974, and has experienced over 2100 callouts during that time. The Team is also a member of the Mountain Rescue Association (MRA). John has taught SAR Management for California Governor's Office of Emergency Services OES since 1988. He served on the Board of Directors of the National Association for Search and Rescue (NASAR) and was the Treasurer of that Association for four years. Active in the development of Search and Rescue standards since its inception in 1989, John is a past Chairman of ASTM Committee F-32 on Search and Rescue. John is also certified instructor for US Mine Safety and Health Administration (MSHA) and California State Fire Training. John is a longtime supporter of ITRS.

**Ole Kils** is the lead engineer for new product development at CMC Rescue and is a level III rope rescue technician. Prior to joining CMC, Ole worked as structural analyst and design engineer for wind power and ocean energy companies, specializing in blade design, certification, testing and repair. This work included fatigue testing of composite materials at Montana State University and development of non-destructive blade inspection methods with Sandia National Laboratories. His work up-tower on wind turbines sparked his interest in confined-space, rope access and rescue and Ole holds a patent for a novel wind turbine blade lowering apparatus that uses a system of pulleys rather than a very large crane. Ole's other rope related interest is sailing, he worked as a boat builder for an Americas Cup campaign, delivered a racing yacht across the Pacific Ocean, and continues to actively compete in several offshore races each year. Ole holds a B.A. in mechanical engineering from Rutgers University and has performed graduate work at the University of California at Santa Barbara.

## *Abstract – Bending Fatigue of Escape Cord*

Over the last decade the prevalence of aramid fiber cordage and webbing used in Fire Escape (FR applications) has increased. The Fire Resistant (FR) properties of the fibers used are favorable in elevated temperature environments, and product certification criteria reflect this design requirement. NFPA 1983, the Standard on Life Safety Rope and Equipment for Emergency services defines Fire Escape Rope as “Rope dedicated solely for the purpose of supporting people during emergency self-rescue (self-escape) from an immediately hazardous environment involving fire or fire products...” The intent of this definition is such that Fire Escape ropes and systems are designed and tested for one time emergency use only. However, in reality, many escape systems are subject to annual or even more frequent training evolutions. Fire Escape ropes and systems used for training are returned to service provided they pass basic visual and functional inspections with little thought or research into the residual strength of the cord after a number of uses.