



## Fan Technology for Mining Applications

**Instructors:** Steven G. Kaufman, P.Eng.  
Vern Martin, P.Eng.

**Date:** June 17, 2010, 9:00 am – 5:00pm

### Objectives:

Properly operating fans are critical for the health and safety of workers as well as achieving efficiency and profitability with any underground mining project. This short course provides practical information to aid operators, engineers and maintenance staff with the decisions they may face concerning the selection and operation of their fans. Attendees will work through sample problems as the course addresses the following topic areas:

- Fundamentals of air movement, fan hardware and fan performance curves
- Principles of interaction with other process and system components
- Selection and application principles
- Control strategies
- Energy optimization methods
- Performance upgrades / retrofit techniques
- Performance testing
- Proper maintenance practices, trouble-shooting and remedial measures.



### Steven G. Kaufman

Steve is a senior mechanical engineer working for FLOWCARE Engineering Inc.; a company that specializes in fan and blower technical consulting services. He is a graduate of the University of Waterloo in Mechanical Engineering in 1982.

Prior to FLOWCARE, Steve worked for Sheldons Engineering and Novenco Canada Inc.; companies that were well-known for manufacturing custom designed heavy-duty industrial fans.

Steve's expertise has been concentrated in the following areas:

- Mechanical and aerodynamic design of fans and duct systems.
- Fan technology engineering standards and technical papers.
- Field troubleshooting of fan performance, noise, vibration, control and failure problems.
- Feasibility studies of fan performance, reliability and efficiency upgrades.
- Fan specifications for purchasing equipment.
- Fan technology training.



### Vern Martin

Vern is a senior mechanical engineer and a partner in FLOWCARE Engineering Inc.; a company that specializes in fan and blower technical consulting services. He is a graduate from the University of Waterloo Mechanical Engineering Department in 1978.

Prior to his employment at FLOWCARE, he engineered, tested and conducted field trouble-shooting of fans for Sheldons Engineering; a manufacturer of both commercial and heavy-duty industrial fans. At FLOWCARE, Vern has primarily been involved in energy optimization studies and the trouble-shooting of large fans with performance, noise, vibration, control or failure problems. He has also developed energy reduction strategies and training programs for companies and utilities interested in fan efficiency and performance upgrades and has authored several handbooks on fan, pump and blower technology.