

Machinery Vibration Incorporated provides Engineering Services to a broad range of industries. We supply Practical Engineering Solutions to improve performance and boost production.

Machinery Vibration Inc. (MVI) is a small group of engineering specialists focused on troubleshooting rotating machinery, fluid delivery systems, and mechanical component failures.

A valuable off-shoot of this troubleshooting work is MVI's **on-site short courses** that incorporate MVI's highly successful troubleshooting methods, experience and numerous case studies.



Based in Cleveland, Ohio, the core of MVI's technical staff includes **Dr. Maurice L. Adams, Jr.** and **Dr. Michael L. Adams.**

Contact MVI via email at: mla5@mvibe.com

For more information on our other services and courses, please visit our website at:

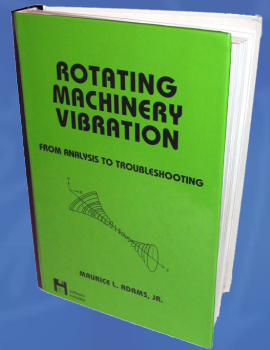
www.mvibe.com

SHORT COURSE

Rotating Machinery Vibration

Rotating Machinery Vibration is MVI's flagship short course, and the course is based on Dr. Maurice L. Adams Jr.'s book, **Rotating Machinery Vibration, from Analysis to Troubleshooting**, 2001 Marcel Dekker.

This course has been given frequently in recent years at power plants and university continuing education seminars both in the U.S. and in Europe.



COURSE CONTENT

Day 1 :

Rotor Vibration Primer

- Review of basic vibration phenomena
- Rotor vibration phenomena (lateral & torsional)
- Modeling and analysis methods

PC Interactive Analysis*

- Overall set-up of rotor & bearing/seal model code input
- Calculation of rotor unbalance vibrations vs. rotor speed
- Calculation of eigen-values and instability vibration thresholds

**PC Code and documentation supplied*

Day 2 :

Monitoring & Diagnostic Methods

- Rotating machinery vibration measurements
- Use of signal analyses
- Problem severity and diagnosis guides
- New methods under development

Troubleshooting Case Studies

- Steam whirl
- Large critical-speed vibration
- Self-excited vibration
- Critical-speed vibration boiler feed water pump
- Oil-whip & steam-whirl combined
- ABB exciter retrofit on a large Westinghouse T/G
- PWR nuclear main feed water pump

Day 3 :

Troubleshooting Strategies & Methods

- Acquisition, processing and analysis of machinery vibration measured signals
- Using measured vibration signals to calibrate PC Rotor Dynamics Model

Rotor Balancing With MVI Demonstration Test Rig

- Basics of rotor balancing
- Use of FLEXBAL PC balancing code (supplied)
- Demonstration of balancing shots using MVI's portable rotor rig and instrumentation
- Apply PC-interactive rotor modeling code to predict critical speeds of portable rotor rig

