

EXPERIENCE

BRG MACHINERY CONSULTING, LLC, Charlottesville, VA

Consultant, October 2008 - Present

Provides technical expertise in many areas of turbomachinery such as fluid film bearings, experimental analysis, and heat transfer. Also, supports clients in turbomachinery flow and performance aspects, especially those involving compressors and pumps. Provides technical training courses in fluid film bearings, jet propulsion, turbomachinery, instrumentation, fluid mechanics, heat transfer, and thermodynamics.

UNIVERSITY OF VIRGINIA, Charlottesville, Virginia

Department of Mechanical and Aerospace Engineering

Professor Emeritus, 2005—

Chairman, 1993-2000

Professor, 1987-2005

Associate Professor, 1981-1987

Assistant Professor, 1976-1981

Rotating Machinery and Controls Industrial Research Program

Participating Faculty Member, 1980-2005

Director, 1983-1986

Conducted industry funded (ROMAC plus other companies) applied experimental research in rotordynamics, the static and dynamic characteristics of fluid film bearings, internal flows in turbomachines, including pumps, using laser velocimetry, flow visualization and free convection heat transfer. Taught courses at the undergraduate and graduate levels in turbomachinery, fluid mechanics, heat transfer, thermodynamics, conventional instrumentation, and applied optical instrumentation, including development of instructional laboratories.

PURDUE UNIVERSITY, West Lafayette, Indiana

School of Mechanical Engineering

Research Assistant, 1971-1975

Built test rigs for transonic and supersonic nozzle flows. Measured flow characteristics with laser velocimetry

Teaching Assistant, 1973-1975

Built apparatuses for and taught undergraduate automatic controls laboratory

PRATT & WHITNEY AIRCRAFT, West Palm Beach, Florida

Analytical Design Compressor Engineer, 1970-1971

On design team (analytical and testing) for F-100 turbofan engine compressor & fan

PREVIOUS CONSULTING EXPERIENCE – INDEPENDENT PRACTICE

Consulted for over 30 companies (compressor and pump manufacturers & users, power companies, petrochemical industries, automobile manufacturers, and other) on rotor dynamics, dynamics of fluid film bearings, internal flows in turbomachines, and heat transfer, 1973-2008.

EDUCATION

PURDUE UNIVERSITY, West Lafayette, Indiana

Doctor of Philosophy, (Mechanical Engineering), 1975

Dissertation: *The Application of a Laser Doppler Velocimeter (LDV) in Interpreting Turbulent Structure*

Master of Science (Mechanical Engineering), 1973

Thesis: *An Experimental and Analytical Investigation of Internal Transonic Flow*
Bachelor of Science (Mechanical Engineering), 1970

PROFESSIONAL REGISTRATION

Virginia Professional Engineer, Registration No. 12199.
Hawaii Professional Mechanical Engineer, Registration No. 13085.

PROFESSIONAL SOCIETIES AND ACTIVITIES

Fellow, American Society of Mechanical Engineers

Member and Chair of numerous committees and organizer for various conference sessions, mostly IGTI

Member, Society of Tribologists and Lubrication Engineers (until 2007)

Member and Chair of various committees and organizer for various conference sessions & short courses

Member, American Institute of Aeronautics and Astronautics (until 1990)

REFEREED JOURNAL ARTICLES

Over 110 journal publications (ASME, STLE, etc) in fluid film bearings, internal flows in turbomachines, rotor dynamics, instrumentation, and free convection heat transfer. A complete list is available upon request.

TEXTBOOK

Flack, R. D., Fundamentals of Jet Propulsion with Applications. Cambridge University Press, 637 pages, 2005.
Includes eighteen user friendly turbomachinery/gas turbine software programs and Instructors Solutions Manual.

CONFERENCE PUBLICATIONS AND PRESENTATIONS

Over 80 conference publications in fluid film bearings, internal flows in turbomachines, rotor dynamics, instrumentation, and free convection heat transfer. A complete list is available upon request.

Recipient, ASME Lewis F. Moody Award “for the best paper dealing with a topic useful in mechanical engineering practice”, 2003. One awarded annually.

INVITED LECTURES

Over 40 lectures in fluid film bearings, internal flows in turbomachines, rotor dynamics, and instrumentation presented at corporations and universities world-wide.