

**SHORT COURSE 1**  
**on**  
**TURBOMACHINERY ALIGNMENT OVERVIEW**

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**Tim Kincaid** is President of Tern Technologies, Inc., in Anchorage, Alaska. He and business partner Marty Krueger started Tern Technologies in 1984. Prior to founding Tern, he worked for two years with Dresser Clark Optical Alignment Group in Houston and four years with Velo Turbo Services Optical Alignment Group in Anchorage.  
Mr. Kincaid is a 1973 graduate of Michigan State University.

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**Dale Toenies** is with Tern Technologies, Inc., in Anchorage, Alaska.

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## SHORT COURSE 2

on

### METALLURGY

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**Dr. Klaus Brun** is a Principal Engineer at Southwest Research Institute, Mechanical and Materials Engineering Division, in San Antonio, Texas. His experience includes positions in business development, project management, engineering, and marketing at Solar Turbines, General Electric, and ALSTOM Power. He is the inventor of the *Single Wheel Radial Flow Gas Turbine* and co-inventor of the *Planetary Gear Mounted Auxiliary Power Turbine*. He has authored over 30 papers on turbomachinery, given numerous technical lectures and tutorials, and published a textbook on Gas Turbine Theory. He is the Chair of the ASME-IGTI Oil & Gas Applications Committee, a member of the Gas Turbine Users Symposium Advisory Committee, and a past member of the Electric Power and Coal-Gen Steering Committees.

Dr. Brun received his Ph.D. and M.Sc. degrees (Mechanical and Aerospace Engineering, 1995, 1992) from the University of Virginia, and a B.Sc. degree (Aerospace Engineering, 1990) from the University of Florida.

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**J. Jeffrey Moore** is a Principal Engineer at Southwest Research Institute, in San Antonio, Texas. His professional experience includes engineering and management responsibilities at Dresser-Rand, in Olean, New York, and Solar Turbines Inc., in San Diego, California. His interests include rotordynamics, finite element analysis, and aerodynamics. He has authored more than 10 technical papers in the area of rotordynamics and aerodynamics and has given numerous tutorials and lectures.

Dr. Moore holds B.S., M.S., and Ph.D. degrees (Mechanical Engineering) from Texas A&M University.

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**David Seib** is the Materials and Weld Engineering Supervisor for Dresser-Rand Company, in Olean, New York. He has been with them since 1989. Previously, Mr. Seib was a Senior Materials Engineer at a Naval Aviation Depot. He has had papers published in the Superalloys 2000 and Charles Parsons Turbine Conferences.

Mr. Seib holds a B.S. degree (Materials Engineering, 1984) from North Carolina State University.

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**Harold Simmons** is with Southwest Research Institute, in San Antonio, Texas.

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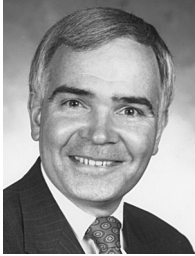
**Phil Terry** is Divisional Metallurgist with Lufkin Industries, in Lufkin, Texas. He is responsible for metallurgy (material selection, heat treatment, welding, failure analysis, etc.) for Lufkin Industries, Power Transmission, Oil Field, and Trailer Divisions in the US and overseas. He has worked in various metallurgical related industries including steel, atomic energy, and oil.

Dr. Terry has a degree in Metallurgy (1968) and a Ph.D. degree (Fracture Mechanics, 1972) from the University of Aston, in England. He is Chairman of AGMA Committee 5C, Metallurgy and Materials, and is US representative to the ISO Gear Metallurgy Committee.

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**SHORT COURSE 3**  
**on**  
**AUXILIARY LUBRICATION AND FLUID SEAL SYSTEMS—**  
**DESIGN, COMPONENT SELECTION, AND PREDICTIVE MAINTENANCE GUIDELINES**

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**William E. (Bill) Forsthoffer** spent six years at the Delaval Turbine Company, as Manager of Compressor Project Engineering, where he designed and tested centrifugal pumps and compressors, gears, steam turbines, and rotary (screw) pumps. Mr. Forsthoffer then joined the Mobil Research and Development Corporation. For five years, he directed the application, selection, design, testing, site precommissioning, and startup of the Yanbu Petrochemical complex in Yanbu, Saudi Arabia. Following that, he returned to MRDC and established a technical service program for Mobil affiliates to provide application, troubleshooting, and training services for rotating equipment. He left Mobil in 1990 to found his own company, Forsthoffer Associates, Inc., to provide training, critical equipment selection, and troubleshooting services to the refining, petrochemical, utility, and gas transmission industries.

Mr. Forsthoffer is a graduate of Bellarmine College with a B.A. degree (Mathematics) and from the University of Detroit with a B.S. degree (Mechanical Engineering).

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**SHORT COURSE 4**  
**on**  
**COMBINED CYCLE GAS TURBINES**

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**Meherwan P. Boyce** is Managing Partner of The Boyce Consultancy, in Houston, Texas. He has 35+ years of experience in the turbomachinery field, with 25 years in the design of compressors and turbines. His 15 years in academia include being Professor of Mechanical Engineering at Texas A&M University, and Founder of the Turbomachinery Laboratories and the Turbomachinery Symposium. Dr. Boyce has authored more than 100 technical publications and several books, including *Gas Turbine Engineering Handbook*, *Cogeneration & Combined Cycle Power Plants*, and *Centrifugal Compressors, A Basic Guide*. He has taught over 100 short courses globally attended by over 3000 students representing 400 companies, and is a Consultant to the aerospace, petrochemical, and utility industries.

Dr. Boyce received a B.S. and M.S. degree (Mechanical Engineering) from the South Dakota School of Mines and Technology and the State University of New York, respectively, and a Ph.D. degree (1969) from the University of Oklahoma.

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**SHORT COURSE 5**  
**on**  
**REVIEW OF API RP 684—**  
**THE API STANDARD PARAGRAPHS COVERING ROTORDYNAMICS AND BALANCING**

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**Royce N. Brown** is Consultant and owner of RNB Engineering, in Houston, Texas. He retired from Dow Chemical in 1995 after 28+ years. His responsibilities there included specifications, instrumentation, controls, and consulting and field assistance for large rotating equipment. He has written 30+ technical papers, including a contribution to the ASM Handbook, *Friction, Lubrication, and Wear Technology*, and a book, *Compressors, Selection and Sizing*. Mr. Brown is a fellow member of ISA and ASME, a member of SME, AIChE, the Vibration Institute, and an associate member of SAE. He is a member of the API Subcommittee on Mechanical Equipment, and Task Force Chairman of API 617 and API 684.

Mr. Brown is a registered Professional Engineer in the States of Texas, Michigan, Louisiana, Wisconsin, and California. He has a B.S. degree (Mechanical Engineering) from the University of Texas, and an M.S. degree (Mechanical Engineering) from the University of Wisconsin.

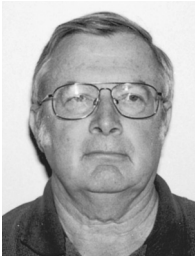
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**C. Hunter Cloud** is President of BRG Machinery Consulting, LLC, in Charlottesville, Virginia. He began his career with Mobil Research and Development Corporation in Princeton, New Jersey, as a Turbomachinery Specialist responsible for application engineering, commissioning, startup, and troubleshooting for production, refining, and chemical facilities worldwide. During his 11 years at Mobil, he worked on numerous projects, including several offshore gas injection platforms in Nigeria, as well as serving as reliability manager at a large U.S. refinery.

Currently, Mr. Cloud also serves as Lab Engineer at the University of Virginia's ROMAC Laboratories, where he is pursuing a doctorate. His research focuses on the measurement of turbomachinery stability characteristics. He is a member of ASME, the Vibration Institute, and the API 684 Rotordynamics Task Force.

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**Caleb F. Davis** is a Mechanical Engineer in the Machinery Group of Kellogg Brown and Root (KBR), in Houston, Texas. He provides engineering support for projects involving rotating machinery and packaged equipment. Primary work includes specification, bid evaluation, supplier coordination, review of supplier data, and witnessing tests of turbomachinery. His responsibilities also include consulting on startup and operating equipment problems.

Mr. Davis received his B.S. degree (Chemical Engineering, 1961) from Cornell University. He is a registered Professional Engineer in the States of Texas and California and a member of AIChE.

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**Pranabesh De Choudhury** has worked for Elliott Company, in Jeannette, Pennsylvania, for more than 32 years. As a Senior Consulting Engineer, his responsibilities included rotorbearing dynamics, bearing design and analysis, torsional dynamics, blade vibration analysis, and troubleshooting field vibration problems. He has recently retired from Elliott Company and has started Pran RDA Consulting Inc.

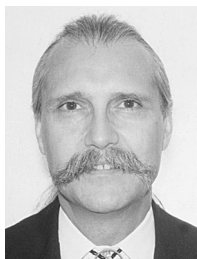
Dr. De Choudhury obtained a BSME degree (1963) from Jadavpur University, an MSME degree from Bucknell University, and a Ph.D. degree (Mechanical Engineering, 1971) from the University of Virginia. He has authored and coauthored over 25 technical papers on various turbomachinery topics and has been awarded several U.S. Patents. He is a registered Professional Engineer in the State of Pennsylvania and is a member of ASME and STLE.

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**Michael J. Drosjack** is a Senior Principal in the Rotating Equipment Engineering Department at Shell Global Solutions (US) Inc., in Houston, Texas. He is responsible for providing technical support for rotating and reciprocating machinery to Shell and Shell affiliated companies, worldwide, as well as commercial customers. Since joining Shell in 1975, he has had assignments on projects involving specification, evaluation, installation, and startup of machinery along with extensive field troubleshooting, particularly in the area of vibration measurement, vibration analysis, and rotordynamics.

Dr. Drosjack received his B.S. degree (Mechanical Engineering, 1970) from Carnegie-Mellon University, and his M.S. (1971) and Ph.D. (1974) degrees (Mechanical Engineering) from The Ohio State University. He is a member of ASME, the Vibration Institute, the Machinery Subcommittee of the Ethylene Products Committee, participates in API task forces, and has been a speaker and panelist for NPRA. He has been a Turbomachinery Symposium Advisory Committee member since 1986.



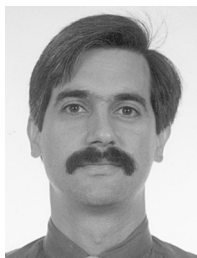
**Timothy J. (Tim) Hattenbach** is a Principal Mechanical Engineer and Compressor Group Leader with Bechtel Corporation in their Houston, Texas office. He has worked for Bechtel for 25 years and has a total of 30 years of experience in the petrochemical industry. His responsibilities include specification, evaluation, witness testing, and field assistance of turbomachinery for petrochemical and pipeline projects.

Mr. Hattenbach has B.S. and M.S. degrees (Mechanical Engineering) from the University of Houston. He is a member of Omicron Delta Kappa, and is the Bechtel representative to the API Subcommittee on Mechanical Equipment. He is the chairman of the API 670 Task Force on Machinery Protection Systems and a Task Force member on the API 684 Rotordynamic Tutorial and API 616 Gas Turbines Standards. Mr. Hattenbach is a registered Professional Engineer in the State of Texas.



**James H. Hudson** is Principal Engineer for GE Oil & Gas, in Oshkosh, Wisconsin. He began his career with Allis Chalmers Corporation in 1965 and served in many capacities. In 1985, A-C Compressor Corporation purchased the Compressor Division from Allis Chalmers, and he became Manager of Engineering.

Mr. Hudson has a BSME from Newark College of Engineering (1965). He has been a Task Force member on the Fourth through Seventh Editions of API 617 Specification for Centrifugal Compressors, API Task Force on Quality Improvement, API Task Force 684 Rotordynamics First Edition, and API 671 for Couplings. He is a member of API 684 Second Edition and Standard Paragraph Task Forces. He was a member of the Texas A&M Advisory Committee during five symposia and has published papers on torsional vibration and lateral vibration. Mr. Hudson is a registered Professional Engineer in the State of Wisconsin and holds four United States patents.



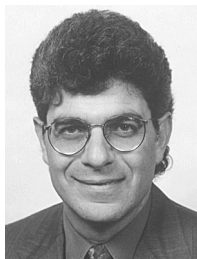
**John A. Kocur, Jr.** is a Machinery Engineer in the Plant Engineering Division at ExxonMobil Research & Engineering, in Fairfax, Virginia. He has worked in the turbomachinery field for 20 years. He provides support to the downstream business within ExxonMobil with expertise on vibrations, rotor/aerodynamics, and health monitoring of rotating equipment. Prior to joining EMRE, he held the position of Manager of Product Engineering and Testing at Siemens Demag Delaval Turbomachinery. There Dr. Kocur directed the development, research, engineering, and testing of compressor and steam turbine product lines.

Dr. Kocur received his BSME (1978), MSME (1982), and Ph.D. (1991) from the University of Virginia and an MBA (1981) from Tulane University. He has authored papers on rotor instability and bearing dynamics, lectured on hydrostatic bearings, has been a committee chairman for NASA Lewis, and is a member of ASME. Dr. Kocur holds a patent on angled supply injection of hydrostatic bearings.



**Edmund A. Memmott** is a Principal Rotordynamics Engineer at Dresser-Rand, in Olean, New York, where he has been employed since 1973. He has been involved with the rotordynamic analysis and design of a wide range of centrifugal compressor and gas turbine applications. Dr. Memmott has published 13 papers on rotordynamics, most of which deal with high-pressure centrifugal compressors. In addition to membership in ASME and the Vibration Institute, he is on the API 684 Task Force that wrote the Second Edition of the "Tutorial on the API Standard Paragraphs Covering Rotordynamics and Balancing."

Dr. Memmott holds an A.B. degree from Hamilton College, Phi Beta Kappa, an A.M. degree from Brown University, and a Ph.D. degree from Syracuse University. He was an Instructor in Mathematics at Hamilton College and the State University of New York at Albany.



**John C. Nicholas** is the owner, Director, and Chief Engineer of Rotating Machinery Technology, Incorporated, a company that repairs and services turbomachinery, and manufactures bearings and seals. He has worked in the turbomachinery industry for 28 years in the rotor and bearing dynamics areas, including five years at Ingersoll-Rand and five years as the Supervisor of the Rotordynamics Group at the Steam Turbine Division of Dresser-Rand.

Dr. Nicholas, a member of ASME, STLE, and the Vibration Institute, has authored over 40 technical papers, concentrating his efforts on tilting pad journal bearing design and application. He received his B.S. degree from the University of Pittsburgh (Mechanical Engineering, 1968) and his Ph.D. degree from the University of Virginia (1977) in rotor and bearing dynamics. Dr. Nicholas holds several patents including one for a spray-bar blocker design for tilting pad journal bearings and another concerning bypass cooling technology for journal and thrust bearings.



**Anthony D. (Tony) Teutsch** is a Machinery Systems Staff Consultant with ChevronTexaco's Energy Technology Company, in Houston, Texas. He is involved in the selection, specification, design review, and testing of special purpose rotating machinery for major capital project work. Mr. Teutsch began his career with Ingersoll Rand Company's Turbo Products Division, in Phillipsburg, New Jersey, as a Marketing Application Engineer. He moved to Houston in 1976 to work in sales before joining Fluor Daniel in 1989 as a Design Engineer, and then, in 1990, with Texaco's Central Engineering Department as a Rotating Machinery Specialist.

Mr. Teutsch has a B.S. degree (Mechanical Engineering, 1972) from Purdue University and an M.S. degree (Management, 1973).

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