

SHORT COURSE 1
on
BASIC PUMP HYDRAULICS WITH A MINIMUM OF MATHEMATICS



Robert J. (Bob) Hart, Consultant, was previously employed by the DuPont Company (28 years) and retired as a Principal Consultant in the Rotating Machinery Group in the Engineering Department. His primary responsibilities were to define Corporate pumping system philosophy and procedures, provide technical guidance on special pumping applications, chaired the Pump Standards effort, chaired the DuPont Corporate Pump Committee, and provided technical leadership in the major DuPont Pump Supplier Alliance.

Mr. Hart was Chairman of the ANSI B73 Pump Committee for nine years and a former member of the Texas A&M Turbomachinery Laboratory's International Pump Users Symposium Advisory Committee. He was previously employed for 13 years in the Engineering Department of Cooper Bessemer and served four years in the U.S. Navy aboard various ships.



John P. Joseph II is an independent consultant with Rotating Equipment Systems Technical Associates, in Houston, Texas. He was previously with BP Amoco where he provided technical and maintenance support for rotating equipment systems to existing asset organizations in BP Amoco, and to Project Management on new projects. Prior to that, Mr. Joseph was with the Amoco Petroleum Products Refinery, in Texas City, Texas. He supervised the rotating equipment engineers and the rotating equipment specialists for the refinery. Mr. Joseph spent six and one half years as Superintendent of Central Shops and three years in Amoco's Refining and Transportation Engineering Department, in Chicago, Illinois. Previous assignments at the Amoco Texas City refinery also included the Rotating Equipment Consulting Group, the Project Engineering Group, and as a Maintenance Engineer on the Hydrocracking Unit.

Mr. Joseph received his B.S. degree (Mechanical Engineering, 1972) from the University of Texas at El Paso.

SHORT COURSE 2
on
THE RELATIONSHIP OF VIBRATION TO PROBLEMS IN CENTRIFUGAL PUMPS

Paul Boyadjis is with Mechanical Solutions, Inc., in Parsippany, New Jersey.



Richard J. Cronin is a Senior Engineer for Mechanical Solutions, Inc., in Eldersburg, Maryland. He has more than 15 years of experience in the design, development, analysis, and troubleshooting of rotating equipment. While at Ingersoll-Dresser Pump (Flowsolve), he was the lead mechanical design engineer for the development of their line of submersible sewage pumps (MSX) and vertical turbine nonclog pumps (QMN). He received three United States and international patents for work performed on these developments.

Mr. Cronin has a BSME degree from the University of Maryland at College Park, and he is a registered Professional Engineer in the States of Virginia and Maryland.



William D. Marscher is President and Technical Director for Mechanical Solutions, Inc., in Parsippany, New Jersey. He has held senior positions at Dresser Pump, Pratt & Whitney, and Concepts NREC, and founded Mechanical Solutions Inc. in 1996. He has spent his career of 33 years involved in the design, development, and troubleshooting of pumps and all kinds of turbomachinery. His capabilities and experience include finite element analysis, rotordynamic analysis, experimental modal analysis, vibration testing, predictive maintenance, and the mechanical design of fluid systems. His machinery vibration test procedures won the Dresser Creativity Award, and his rotor bearing rub analysis method won the ASLE Hodson Award. He has authored and coauthored chapters for seven handbooks, and is coauthor of the book, *Centrifugal Pumps*, published by Oxford University Press.

Mr. Marscher has BSME and MSME degrees from Cornell University, where he was a NASA Fellow, and an M.S. degree from RPI.

SHORT COURSE 3
on
MECHANICAL SEALS—DESIGN AND THEORY



William A. (Alan) Evans is Manager of Engineering for the Mechanical Seal Division of A.W. Chesterton Company, in Stoneham, Massachusetts. During his 11 years with the company, he has held several positions. He has spent 20+ years in the field of rotating equipment, focusing primarily on pumps and turbomachinery. He gained broad experience as an end-user of rotating equipment during his 14 years as maintenance/reliability engineer in process industries. Mr. Evans' technological background and experience cover a wide range of topics, including tribology, machine design, predictive maintenance, and reliability engineering. He has conducted lectures, seminars, and presentations on improving reliability as it relates to pumps/seals and pumping systems. He has published articles for STLE, of which he is a member.

Mr. Evans received his MBA from Northeastern University and his BSME from Rochester Institute of Technology. He also has an Associates degree in Applied Science from Pennsylvania State University.

SHORT COURSE 4
on
FUNDAMENTALS OF CENTRIFUGAL PUMP AND SYSTEM INTERACTION



Michael Volk is President of Volk & Associates, Inc., in Oakland, California, begun in 1982. He is the author of *Pump Characteristics and Applications* (Marcel Dekker), now in its eighth printing. His consulting activities have included teaching hundreds of pump courses in the U.S. and a dozen other countries; assisting users and consultants with pump system design and specification development; and evaluating, troubleshooting, and testing installed pumps. Since 1997, Mr. Volk has been an owner and partner in Pumpstock, a manufacturers' representative and regional business manager for pump manufacturers in the western states. Previously, he had experience in pump system design with Bechtel Corporation, held various engineering and marketing positions with Goulds Pumps, and started up and managed a Goulds pump repair center.

Mr. Volk has B.S. and M.S. degrees (Mechanical Engineering), and is a registered Professional Engineer in the State of California with over 25 years of practical pump experience.

SHORT COURSE 5
on
MECHANICAL SEALS—APPLICATIONS AND FAILURE ANALYSIS



Michael B. Huebner is a Staff Engineer at Flowserve Corporation, Flow Solutions Division, in Deer Park, Texas. He has more than 20 years experience in the design of mechanical seals, centrifugal and positive displacement pumps, and fluid conditioning equipment. For Flowserve, he has served in design, testing, and application functions in both the U.S. and Europe.

Mr. Huebner is a member of the International Pump Users Symposium Advisory Committee and the API 682 Task Force. He received his B.S. degree (Engineering Technology) from Texas A&M University.

SHORT COURSE 6

on

POSITIVE DISPLACEMENT PUMPS

Jack E. Boteler is with Capital Process Equipment Ltd., LLP, in Houston, Texas.



James R. (Jim) Brennan is Projects Manager for IMO Pump, in Monroe, North Carolina. His responsibilities include worldwide marketing and technical support for pumping applications. He has more than 30 years of service with IMO Industries. Engineering manager for five years, Mr. Brennan has spoken at a number of conferences worldwide and has published more than three dozen technical articles and papers.

Mr. Brennan is a 1973 graduate of Drexel University in Philadelphia and a member of the Society of Petroleum Engineers.

Tate Coghlan is with Monoflo, Inc., in Talmo, Georgia.



Steve A. Larson is a Professional Engineer at Cat Pumps Corporation, in Blaine, Minnesota. He is responsible for designing and troubleshooting complete water systems. He has worked his way up in the engineering department from the R&D test lab to a lead engineering position.

Mr. Larson graduated (Hydraulics and Pneumatics) from Alexandria Technical College. He then joined Cat Pumps and, at the same time, attended the Institute of Technology at the University of Minnesota. He graduated with a B.S. degree with Honors (Mechanical Engineering). Mr. Larson is a registered Professional Engineer in the State of Minnesota and has been with Cat Pumps for 19 years.



Lev Nelik is President of Pumping Machinery, LLC, in Norcross, Georgia. He has more than 25 years of engineering, manufacturing, management, sales, and field experience in the pump industry. He has previously worked with Ingersoll-Rand, Goulds Pump, Liquiflo, and Roper Pump. Dr. Nelik is an International Pump Users Symposium Advisory Committee member, a former Associate Technical Editor of the *Journal of Fluids Engineering*, and as Associate Editor of *Water and Waste Digest*. He is a full member of ASME and APICS certified.

Dr. Nelik is a graduate of Lehigh University with an M.S. degree (Manufacturing Systems) and a Ph.D. degree (Mechanical Engineering). He is a registered Professional Engineer, and he has published over 50 papers, including a book, *Centrifugal and Rotary Pumps: Fundamentals with Applications*, and a chapter on pumps for the *Encyclopedia of Chemical Technology*. He has traveled extensively and consulted worldwide on pumps reliability, design, and pump/system analysis.



John Petersen is Vice President, Technical Customer Service, for Viking Pump, Inc., in Cedar Falls, Iowa. His responsibilities include application, troubleshooting, and technical support for gear, lobe, and gerotor type rotary pumps. Previous responsibilities at Viking include Project Engineer, Chief Design Engineer, Chief Engineer-Research and Development, and Vice President, Engineering.

Mr. Petersen received his B.S. degree from Iowa State University (1970), and has more than 33 years of experience in the pump industry. He has authored a number of articles on the design and application of positive displacement pumps in industry publications and is past Chairman of the Hydraulic Institute Rotary Pump Committee. Mr. Petersen is a registered Professional Engineer in the State of Iowa.



Paul Rose is presently the Director of Sales, Engineering Projects, for Warren Rupp, Inc., out of Mansfield, Ohio. He has been employed at Warren Rupp for the last five years in a variety of positions relating to product design, applications, and sales. He has experience designing and installing waterflood projects for the oil field, and was responsible for significant design improvements in a high-speed mixer design used in the wastewater treatment industry. Mr. Rose has been involved in the application and sales of a variety of pump designs including canned motor, gear, self-priming centrifugal, mag drive, and progressing cavity prior to his present position. He has presented papers relating to the proper application of progressing cavity drilling motors and the potential for air operated double diaphragm pumps in the chemical process industry.

Mr. Rose has an A.S. degree from Temple Junior College and a B.S. degree (Petroleum Engineering) from Texas A&M University.

SHORT COURSE 7

on

COUPLINGS



James W. (Jim) Mahan is currently the New Product Manager at Lovejoy Inc., in Downers Grove, Illinois. He has 35 years of experience in the application and use of fans, blowers, centrifugal compressors, centrifugal pumps, and power transmission couplings. Mr. Mahan managed application engineering departments and service departments for the rotating equipment listed. That equipment was applied in a wide variety of industries to include utility plants, mine concentrators, steel mills, refineries, military and nonmilitary ships, chemical plants, and off-highway construction vehicles. He has worked for Buffalo Forge Company, Ingersoll Rand, Goulds Pumps Inc., and Lovejoy, Inc.

Mr. Mahan received his B.S. degree (Mechanical Engineering, 1960) from Worcester Polytechnic Institute and MBA from Benedictine University (1991). He is a registered Professional Engineer in the State of New York.



Jon R. Mancuso is Director of Engineering with Kop-Flex Inc., Emerson Power Transmission Corporation, in Baltimore, Maryland. He has more than 30 years' experience in the coupling field and is author of many papers on couplings for various publications, societies, and symposia. Mr. Mancuso is also author of a book on couplings, *Coupling and Joints: Design, Selection, & Application*, and editor and author of several chapters in *Mechanical Power Transmission Components Handbook*. He has been involved with many design, research projects relating to couplings, and is coinventor of several patents with couplings and clutches.

Mr. Mancuso graduated from Gannon University with a B.S. degree (Mechanical Engineering), and has an M.S. degree (Engineering Science) from Pennsylvania State University. He is chairing the ASME Committee on Couplings and Clutches. In addition, he is a member of the AGMA Coupling Committee and also serves on the API Committee on Couplings for Special Purpose Applications.

James Paluh is with Ameridrives International, in Erie, Pennsylvania.



Glenn C. Pokrandt is Principal Engineer for The Falk Corporation, Coupling Division, in Auburn, Alabama. He has more than 30 years of experience with couplings. He holds several patents and has written several papers on couplings.

Mr. Pokrandt has a BSME degree from the University of Wisconsin and has a Certificate in Management from Marquette University. He is a registered Professional Engineer in the State of Wisconsin and a member of the AGMA Flexible Coupling Committee. Mr. Pokrandt has served as Vice Chairman and Chairman of the committee.



Christopher P. (Chris) Rackham is Engineering Manager for John Crane Flexibox, in Houston, Texas. He has been with Flexibox, Inc., since receiving a B.S. degree in Engineering from Pennsylvania State University (1979). Prior to his current position, he served as Design Engineer and Applications Engineer. His responsibilities include design specifications, application reviews, quality assurance, and field support for power transmission couplings, mechanical seals, and ancillary equipment.

Mr. Rackham has served on the API Manufacturers Subcommittee on Couplings (671) and consultant to API Manufacturers Subcommittee on Mechanical Seals (610).

SHORT COURSE 8
on
FUNDAMENTALS OF MIXING TECHNOLOGY

Robert A. (Bob) Blakley is a Principal Design Engineer with Lightnin Mixers, in Rochester, New York. He has more than 27 years of experience related to the design of commercial agitators for pharmaceutical, fermentation, wastewater, power, and chemical process service. These range from fractional to over 1000 horsepower and include impeller and shaft design, machine configuration, diverse materials, and the application of FEA to solving problems unique to mixer service. Having held various positions in warranty service, contract engineering, project management, and product development, he also holds several patents related to mixers for composite mixer shafts, impeller, machine, and bearing design.

Mr. Blakely received his B.S. degree (Mechanical Engineering) from the Rochester Institute of Technology.



Bernd (Bernie) Gigas is Principal Research Engineer at Lightnin, in Rochester, New York. Over the past 16 years he has held various positions in Process Engineering, Application Engineering, and Research & Development. His current research focus is on process and mechanical reliability improvements for mixers in high power, high volume gas-liquid-solid applications and process intensification.

Mr. Gigas earned a B.S. degree (Chemical Engineering) from the University of Rochester and has completed graduate work (Mechanical and Chemical Engineering) at Rochester Institute of Technology and the University of Rochester.

SHORT COURSE 9
on
DESIGN OF INDUCTION MOTORS DRIVING HIGH LOAD TORQUE AND INERTIA VALUES



Lodewijk (Ludwig) Fostier is with Framatome ANP in Cedex, France. He is the Product Manager of the division whose mission it is to design a machine dedicated to a typical use including special requirements for the network, the driven machine, and the environment. He has been involved in the design of special electrical machines (asynchronous and synchronous) for several applications in petrochemical plants, classical power plants, and nuclear power plants. He has been employed by Jeumont-Schneider Company since 1982, which was purchased by Framatome in 1993.

Mr. Fostier has a degree (Electromechanics, 1978) from La Faculté Polytechnique de Mons, Belgium. He has worked as assistant to the Laboratory of Electrotechnics of this university for the last four years studying the behavior of induction motors fed by inverters. He also teaches Electrotechnics at two universities: Conservatoire National des Arts et Métiers and Catholic University of Lille.



Dewey W. Stump is employed with Framatome ANP, Inc., in Lynchburg, Virginia. He retired from Duke Power Company where he was a Senior Production Specialist. He was assigned to the McGuire Nuclear Station in the Maintenance Execution Support group.

His duties at Duke included technical oversight, parts specification, and repair for rotating equipment maintenance activities. He was responsible for reactor coolant pumps and motors, multistage pumps, compressors, and general pump and motor maintenance. He was responsible for root-cause analysis, mechanical seal specifications, and failure analysis.

Prior to joining Duke Power Company, Mr. Stump worked as an assistant to the plant Maintenance Manager at a large brewing company. He developed and set up the preventive maintenance program and initiated the company's lubrication and spare parts program. He is a member of the *Pumps & Systems* Magazine User Advisory Team.
