

## Major Process Equipment Maintenance And Repair Volume 4 Second Edition Practical Machinery Management For Process Plants

Petrochemical Machinery Insights is a priceless collection of solutions and advice from Heinz Bloch on a broad range of equipment management themes, from wear to warranty issues, organizational problems and oil mist lubrication, and professional growth and pre-purchase of machinery. The author draws on his industry experience to hone in on important problems that do not get addressed in other books, providing actionable details that engineers can use. Mechanical, reliability, and process engineers will find this book the next best thing to having Heinz Bloch on speed dial. Focuses on pieces of hard-won experience from the industry that are rarely included in other books Presents not just a guide to technical problems, but also to crucial themes in management and organization Includes an informal and honest style, making author Heinz Bloch's 40 years of experience accessible to a broad audience of readers Contains a unifying theme that successful asset management requires the separation of application and implementation details

NDE Handbook: Non-Destructive Examination Methods for Condition Monitoring deals with monitoring of equipment, structures, and pipes in mechanical engineering, in the processing industry, in construction, and in electrotechnical fields. The book explains acoustic cross correlation involving leak detection in buried main water pipes or heating pipes by using special instruments to detect the flow noise generated at the point of fracture. The acoustic emission method, based on collection of vibrations or sound waves from the suspected material, can detect changes occurring in the material. Magnetic methods and eddy currents can measure the thickness of the coating on specific materials; dye penetrants can expose cracks or cleavages in surface materials; and emission spectroscopy can identify or sort the chemical composition of steel. The book also describes an endoscope used to visualize the interior of objects and the electrical resistance probe that can measure the loss of material based on changes in the electrical resistance. Other NDE methods that are used by investigators include stress pattern analysis by thermal emission, pulsed video thermography, Moire contour mapping, holographic interferometry, computerized tomography, and positron annihilation. The book will prove valuable for engineers, physicists, technicians, operators involved in material research, risk prevention, or accident control, and for general readers interested in materials quality and specifications.

Includes information on pump baseplate installation and grouting, repair and maintenance of mechanical seals, metal stitching, and managing rotor repairs at outside shops.

Machinery Component Maintenance and Repair, Fourth Edition, Volume three in the Practical Machinery Management for Process Plants series provides the latest research and industry approaches in easy to understand, bite-sized chunks. Extending the life of existing machinery is the name of the game in the process industries, and this classic text is still the best, most practical and comprehensive source for doing just that. This updated edition is completely revised and updated throughout, especially in sections regarding Maintenance Organization and Control for Multi-Plant Corporations, Repair and Maintenance of Rotating Equipment Components, and Protecting Machinery Parts Against Loss of Surface. Describes step-by-step procedures to guide readers through a best practices approach to machinery maintenance Helps readers optimize their maintenance plan to reduce downtime in plants and extend the service life of machinery Provides a wealth of practical technical data and advice on crucial subjects, such as machinery alignment and maintenance programming

Practical Machinery Management for Process Plants: Major process equipment maintenance and repair (2nd ed.)

Aluminum Recycling and Processing for Energy Conservation and Sustainability

Research Priorities for U.S. Manufacturing

Dictionary of Occupational Titles

Lees' Loss Prevention in the Process Industries

Machinery Component Maintenance and Repair

*Recent advancements in information systems and computer technology have led to developments in equipment and robotic technology that have permanently changed the characteristics of manufacturing equipment. Equipment Management in the Post-Maintenance Era: A New Alternative to Total Productive Maintenance (TPM) introduces a new way of thinking to help high-tech organizations manage an increasingly complex equipment base. It also facilitates the fundamental understanding of equipment management those in traditional industries will need to prepare for the emerging microchip era in equipment. Kern Peng shares insights gained through decades of managing equipment performance. Using a systems model to analyze equipment management, he introduces alternatives in equipment management that are currently gaining momentum in high-tech industries. The book highlights the fundamental internal flaw in maintenance organizational setup, presents new approaches to replace maintenance functional setup, and illustrates a time-tested transformation and implementation process to help transition your organization from the maintenance era to the new post-maintenance era. Breaks down the history of equipment into five phases Provides a clear understanding of equipment management fundamentals Introduces alternatives in equipment management beyond the mainstream principles of maintenance management The book examines maintenance management logistics, including planning and budgeting, training and people development, customer services and management, vendor management, and inventory management. Supplying a comprehensive look at the history of equipment management, it analyzes current maintenance practice and details approaches that can significantly improve the effectiveness and efficiency of your equipment management well into the future.*

*For anyone responsible for purchasing, servicing, or operating reciprocating compressors, this book discusses the theory of operation and explains how to install, troubleshoot, overhaul, and repair all types of compressors. This broad comprehensive text offers practical details on how to purchase, service, operate, and maintain compressors used in any of the process industries such as pulp and paper, mining, food processing, pharmaceuticals.*

*Machinery Vibration Analysis and Predictive Maintenance provides a detailed examination of the detection, location and diagnosis of faults in rotating and reciprocating machinery using vibration analysis. The basics and underlying physics of vibration signals are first examined. The acquisition and processing of signals is then reviewed followed by a discussion of machinery fault diagnosis using vibration analysis. Hereafter the important issue of rectifying faults that have been identified using vibration analysis is covered. The book also covers the other techniques of predictive maintenance such as oil and particle analysis, ultrasound and infrared thermography. The latest approaches and equipment used together with the latest*

*techniques in vibration analysis emerging from current research are also highlighted. Understand the basics of vibration measurement Apply vibration analysis for different machinery faults Diagnose machinery-related problems with vibration analysis techniques*

*Process industries have a particularly urgent need for collaborative equipment management systems, but until now have lacked for programs directed toward their specific needs. TPM in Process Industries brings together top consultants from the Japan Institute of Plant Maintenance to modify the original TPM Development Program. In this volume, they demonstrate how to analyze process environments and equipment issues including process loss structure and calculation, autonomous maintenance, equipment and process improvement, and quality maintenance. For all organizations managing large equipment, facing low operator/machine ratios, or implementing extensive improvement, this text is an invaluable resource.*

*Commissioning and Startup - An Essential Asset Management Activity  
Proceedings of ESREL 2018, June 17-21, 2018, Trondheim, Norway*

*Practical Machinery Vibration Analysis and Predictive Maintenance  
Limited Maintenance : Case VII*

*Petrochemical Machinery Insights*

*ESREL 2015*

Learn all the basics about pumps in one place. Clearly written by an ace consultant, this manual for operators and specialists in the petroleum industry gives readers a concise overview of the mechanics of various pumps and reviews the specifications to be considered before a pump is purchased and installed. The straight-forward text explains pump hydraulics without need of involved mathematics and provides expert advice on installing centrifugal pumps in process plants. The book also emphasizes the mechanical aspects of pumps as it delves into misunderstandings and oversights on bearings, seals, impeller trimming, lubricant application, lubricant types, and much more.

This glossary with more than 1,000 terms and definitions provides a common ground for effective communication. It is an essential reference for all reliability professionals, process engineers, plant operators, and repair and maintenance personnel. When unclear communication occurs in the process industry, the problems that result can be expensive - costly downtime and equipment failure. Here's where the Glossary of Reliability and Maintenance Terms can eliminate much of this frustration and cost. Now, you, your staff, vendors, contract employees, and consultants can quickly refer to this glossary's more than 1,000 terms and definitions. This helpful dictionary provides a common ground for effective communication. It is an essential reference for all reliability professionals, process engineers, plant operators, and repair and maintenance personnel.

Rules of Thumb for Maintenance and Reliability Engineers will give the engineer the "have to have" information. It will help instill knowledge on a daily basis, to do his or her job and to maintain and assure reliable equipment to help reduce costs. This book will be an easy reference for engineers and managers needing immediate solutions to everyday problems. Most civil, mechanical, and electrical engineers will face issues relating to maintenance and reliability, at some point in their jobs. This will become their "go to" book. Not an oversized handbook or a theoretical treatise, but a handy collection of graphs, charts, calculations, tables, curves, and explanations, basic "rules of thumb" that any engineer working with equipment will need for basic maintenance and reliability of that equipment. • Access to quick information which will help in day to day and long term engineering solutions in reliability and maintenance • Listing of short articles to help assist engineers in resolving

problems they face • Written by two of the top experts in the country

This second edition of *An Introduction to Predictive Maintenance* helps plant, process, maintenance and reliability managers and engineers to develop and implement a comprehensive maintenance management program, providing proven strategies for regularly monitoring critical process equipment and systems, predicting machine failures, and scheduling maintenance accordingly. Since the publication of the first edition in 1990, there have been many changes in both technology and methodology, including financial implications, the role of a maintenance organization, predictive maintenance techniques, various analyses, and maintenance of the program itself. This revision includes a complete update of the applicable chapters from the first edition as well as six additional chapters outlining the most recent information available. Having already been implemented and maintained successfully in hundreds of manufacturing and process plants worldwide, the practices detailed in this second edition of *An Introduction to Predictive Maintenance* will save plants and corporations, as well as U.S. industry as a whole, billions of dollars by minimizing unexpected equipment failures and its resultant high maintenance cost while increasing productivity. A comprehensive introduction to a system of monitoring critical industrial equipment Optimize the availability of process machinery and greatly reduce the cost of maintenance Provides the means to improve product quality, productivity and profitability of manufacturing and production plants

TPM in Process Industries

An Introduction to Predictive Maintenance

Compressors and Modern Process Applications

Pump User's Handbook

Glossary of Reliability and Maintenance Terms

Pump Wisdom

This book shows how condition monitoring can be applied to detect internal degradation in pumps that appropriate maintenance can be decided upon based on actual condition rather than arbitrary time scales. The book focuses on the main condition monitoring techniques particularly relevant to pumps (vibration analysis, performance analysis). The philosophy of condition monitoring is briefly summarised and field examples show how condition monitoring is applied to detect internal degradation in pumps. \* The first book devoted to condition monitoring and predictive maintenance in pumps. Explains how to minimise energy costs, limit overhauls and reduce maintenance expenditure. \* Includes material not found anywhere else.

Energy and sustainability are critical factors for economic development, and this comprehensive reference provides a detailed overview and fundamental analysis of sustainability issues associated with the aluminum industry. This publication brings together articles on the concepts and application of life-cycle assessments that benchmark aluminum-industry efforts towards sustainable development. Chapters provide energy-use data for primary and secondary aluminum production and processing along with future energy saving opportunities in aluminum processing. Life-cycle assessments provide basic, factual, information on the modeling of material flow in the industry, its production, most importantly energy savings involved with recycling. Coverage includes various scrap sorting technologies and the positive impact of lightweight aluminum in transportation and infrastructure. Safety in the process industries is critical for those who work with chemicals and hazardous substances or processes. The field of loss prevention is, and continues to be, of supreme importance to countless companies, municipalities and governments around the world, and Lees' is a detailed reference to defending against hazards. Recognized as the standard work for chemical and process engineering safety professionals, it provides the most complete collection of information on the theory, practice, design elements, equipment, regulations and laws covering the field of process safety. An entire library of alternative books (and cross-referencing systems) would be needed to replicate or improve upon it, but everything of importance to safety professionals, engineers and managers

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found in this all-encompassing three volume reference instead. The process safety encyclopedia is a trusted worldwide for over 30 years. Now available in print and online, to aid searchability and portability. Over 3,600 print pages cover the full scope of process safety and loss prevention, theory, practice, standards, legislation, case studies and lessons learned in one resource as opposed to multiple sources.

To maintain competitiveness in the emerging global economy, U.S. manufacturing must rise to new standards of product quality, responsiveness to customers, and process flexibility. This volume presents a concise and well-organized analysis of new research directions to achieve these goals. Critical areas receive in-depth analysis of present practices, needed improvement, and research priorities: Advanced engineered materials that offer the prospect of better life-cycle performance and other gains. Equipment reliability and maintenance practices for better returns on capital investment. Rapid product realization techniques to speed delivery to the marketplace. Intelligent manufacturing control for improved reliability and greater precision. Building a workforce with the multidisciplinary skills needed for competitiveness. This sound and accessible analysis will be useful to manufacturing engineers and researchers, business executives, and economic and policy analysts.

Non-Destructive Examination Methods for Condition Monitoring

Radiochemical Separations Plant Study

Process Machinery

Reactor Fuel Processing

Major Process Equipment Maintenance and Repair

Certified Professional Maintenance Manager Review Pack

The authors describe a risk-based approach to commissioning and start-up of process machinery. Techniques are provided to quantify the safety risks and risks associated with machinery failure and estimated impact on start-up schedules. Examples of defining and quantifying the risks, based on the extent of the commissioning effort as a function of criticality of the machinery are offered. Also included are numerous, directly applicable checklists.

Just published in its updated fourth edition, this highly regarded text explains in clear terms how and why the best-of-class pump users are consistently achieving superior run lengths, low maintenance expenditures, and unexcelled safety and reliability. Written by practicing engineers whose working careers were marked by involvement in all facets of pumping technology, operation, assessment, upgrading and cost management, this book endeavors to describe in detail how you, too, can accomplish optimum pump performance and low life cycle cost. A new chapter on breaking the cycle of pump repairs examines the cost of failures and the defined operating range of pumps. The authors also explore mechanical issues, deviations from best available technology, and preventing problems with oil rings and constant level lubricators. Additional topics include bearing housing protector seals, best lube application practices, lubrication and bearing distress, and paying for value.

Safety and Reliability – Safe Societies in a Changing World collects the papers presented at the 28th European Safety and Reliability Conference, ESREL 2018 in Trondheim, Norway, June 17-21, 2018. The contributions

cover a wide range of methodologies and application areas for safety and reliability that contribute to safe societies in a changing world. These methodologies and applications include: - foundations of risk and reliability assessment and management - mathematical methods in reliability and safety - risk assessment - risk management - system reliability - uncertainty analysis - digitalization and big data - prognostics and system health management - occupational safety - accident and incident modeling - maintenance modeling and applications - simulation for safety and reliability analysis - dynamic risk and barrier management - organizational factors and safety culture - human factors and human reliability - resilience engineering - structural reliability - natural hazards - security - economic analysis in risk management Safety and Reliability – Safe Societies in a Changing World will be invaluable to academics and professionals working in a wide range of industrial and governmental sectors: offshore oil and gas, nuclear engineering, aeronautics and aerospace, marine transport and engineering, railways, road transport, automotive engineering, civil engineering, critical infrastructures, electrical and electronic engineering, energy production and distribution, environmental engineering, information technology and telecommunications, insurance and finance, manufacturing, marine transport, mechanical engineering, security and protection, and policy making.

Requirements specifications. Vendor selection and bid conditioning. Machinery reliability audits and reviews. Maintenance and benchmarking reliability. Life cycle cost studies. Extending motor life in the process plant environment. Equipment reliability improvement through reduced pipe stress. Spare parts and their effect on service factor. Startup responsibilities. Maintenance for continued reliability. Maintenance cost reduction. Lubrication and reliability. Providing safety and reliability through modern sealing technology. Appendix. Index.

Life Extension, Fourth Edition

Practical Machinery Management for Process Plants: Major process equipment maintenance and repair

Hazard Identification, Assessment and Control

Safety and Reliability – Safe Societies in a Changing World

The Competitive Edge

100 Years in Maintenance and Reliability

**Existing maintenance engineering techniques pursue equipment reliability with a focus on minimal costs, but in the food industry, food safety is the most critical issue. This book identifies how to ensure food product safety through maintenance engineering in a way that produces added value and generates real profits for your organization. Integrating food safety techniques with reliability and maintenance engineering techniques, Designing Food Safety and Equipment Reliability Through Maintenance Engineering details a maintenance design process that captures all conceivable critical factors in food manufacturing lines. While maintenance engineering normally starts with equipment reliability, this book starts with product safety to identify**

equipment criticalities and maintenance solutions. The text examines the problems currently facing the food industry and introduces powerful solutions to help food producers and consultants manage both food safety and manufacturing effectiveness. It presents an innovative tool for weighing food, human, and equipment criticalities and also describes how to maximize maintenance design outcome through the empowerment of equipment operators and their close cooperation with maintenance and quality specialists. Detailing how to design reliable task lists, the book includes case studies that illustrate the problems that low equipment reliability can create for your customers and your company's image. It outlines key performance indicators that can help producers and suppliers easily identify quality, availability, and productivity gaps. It also highlights critical factors that can help you avoid process bottlenecks.

Powders and bulk solids, handled widely in the chemical, pharmaceutical, agriculture, smelting, and other industries present unique fire, explosion, and toxicity hazards. Indeed, substances which are practically inert in consolidated form may become quite hazardous when converted to powders and granules. The U.S. Chemical Safety and Hazard Investigation Board is currently investigating dust explosions that occurred in 2003 at WestPharma, CTA Acoustics, and Hayes-Lemmerz, and is likely to recommend that companies that handle powders or whose operations produce dust pay more attention to understanding the hazards that may exist at their facility. This new CCPS guidelines book will discuss the types of hazards that can occur in a wide range of process equipment and with a wide range of substances, and will present measures to address these hazards.

Safety and Reliability of Complex Engineered Systems contains the Proceedings of the 25th European Safety and Reliability Conference, ESREL 2015, held 7-10 September 2015 in Zurich, Switzerland. It includes about 570 papers accepted for presentation at the conference. These contributions focus on theories and methods in the area of risk, safety and

The Best On-the-Job Guide to Industrial Plant Equipment and Systems This practical, one-of-a-kind field manual explains how equipment in industrial facilities operates and covers all aspects of commissioning relevant to engineers and project managers. Plant Equipment and Maintenance Engineering Handbook contains a data log of all major industrial and power plant components, describes how they function, and includes rules of thumb for operation. Hundreds of handy reference materials, such as calculations and tables, plus a comprehensive listing of electrical parts with common supplier nomenclature are also included in this time-saving resource.

**FEATURES DETAILED COVERAGE OF:** Compressors \* Air conditioning \* Ash handling \* Bearings and lubrication \* Boilers \* Chemical cleaning and Flushing \* Condensers and circulating water systems \* Controls \* Conveyor systems \* Cooling towers \* Corrosion Deaerators \* Diesel and gas turbines \* Electrical \* Fans \* Fire protection \* Fuels and combustion \* Piping \* Pumps Turbines \* Vibration \* Water treatment

**Maximizing Machinery Uptime**

**A Practical Guide to Compressor Technology**

**Plant Equipment & Maintenance Engineering Handbook**

**Practical Lessons from Three Lifetimes at Process Plants**

**Equipment Management in the Post-Maintenance Era**

**Practical Machinery Management for Process Plants: Machinery component maintenance and repair -v. 4 Major process equipment maintenance and repair**

***A conceptual design and estimate for a limited maintenance radiochemical separations plant for processing irradiated nonproduction reactor fuels have been prepared to supplement the cases presented in Report DP-566. The authors use their decades of experience and draw upon real-world examples to demonstrate that the application of their techniques provides a basis for equipment management, uptime maximization, and reduced***

***maintenance costs. The text explores reliability assessment techniques such as Failure Mode, Effect Analysis, and Fault Tree Analysis of commonly encountered rotating machinery. These are all highly effective techniques that the engineer can apply to maximize uptime and thereby maximize production and profitability. \*Provides the tools to drastically improve machinery productivity and performance \*Bridges the gap between the theory of "reliability engineering" and the practical day-to-day measures that lead to machinery uptime \*Authoritative reference for maximizing the uptime of process equipment***

***A modern reference to the principles, operation, and applications of the most important compressor types Thoroughly addressing process-related information and a wider variety of the major compressor types of interest to process plants, Compressors and Modern Process Applications uniquely covers the systematic linkage of fluid processing machinery to the processes they serve. This book is a highly practical resource for professionals responsible for purchasing, servicing, or operating compressors. It describes the main features of over 300 petrochemical and refining schematics and associated process descriptions involving compressors and expanders in modern industry. The organized presentation of this reference covers first the basics of compressors and what they are, and then progresses to important operational and process issues. It then explains the underlying principles, operating modes, selection issues, and major hardware elements for compressors. Topics include double-acting positive displacement compressors, rotary positive displacement compressors, understanding centrifugal process gas compressors, power transmission and advanced bearing technology, centrifugal compressor performance, gas processing and turbo-expander applications, and compressors typically found in petroleum refining and other petrochemical processes. Suitable for plant operation personnel, machinery engineering specialists, process engineers, as well as undergraduate students of this subject, this book's special features include: \* Flow schematics of modern process units and processes used in gas transport, gas conditioning, petrochemical manufacture, and petroleum refining \* Listings of licensors for each process on the flow schematics \* Identification of each process flow schematic of compressors, cryogenic, and hot gas expanders at their respective locations \* Important overview of surge control, estimating compressor performance, applications for air separation and gas processing plants, petroleum refinery issues, and important criteria that govern compressor selection and application Placing hundreds of associated process flow schematics at the fingertips of professionals and students, author and industry expert Heinz Bloch facilitates comprehension of the workings of various petrochemical, oil refining, and product upgrading processes that are served by compressors.***

***Supplement to 3d ed. called Selected characteristics of occupations (physical demands, working conditions, training time) issued by Bureau of Employment Security.***

***Reinventing the Factory II***  
***Problem Solving for Operators and Specialists***  
***Machinery Failure Analysis and Troubleshooting***  
***Managing the World Class Factory***  
***Practical Machinery Management for Process Plants: Volume 2***  
***Process Plant Equipment***

This text explains just how and why the best-of-class pump users are consistently achieving superior run lengths, low maintenance expenditures and unexcelled safety and reliability. Written by practicing engineers whose working career was marked by involvement in pump specification, installation, reliability assessment, component upgrading, maintenance cost reduction, operation, troubleshooting and all conceivable facets of pumping technology, this text describes in detail how to accomplish best-of-class performance and low life cycle cost.

Looks at more than a hundred modern applications of productivity improvement, and discusses subplants, international manufacturing, and organizational changes.

“Process Plant Equipment Book is another great publication from Wiley as a reference book for final year students as well as those who will work or are working in chemical production plants and refinery...”

-Associate Prof. Dr. Ramli Mat, Deputy Dean (Academic), Faculty of Chemical Engineering, Universiti Teknologi Malaysia “...give[s] readers access to both fundamental information on process plant equipment and to practical ideas, best practices and experiences of highly successful engineers from around the world... The book is illustrated throughout with numerous black & white photos and diagrams and also contains case studies demonstrating how actual process plants have implemented the tools and techniques discussed in the book. An extensive list of references enables readers to explore each individual topic in greater depth...” -Stainless Steel World and Valve World, November 2012

Discover how to optimize process plant equipment, from selection to operation to troubleshooting From energy to pharmaceuticals to food, the world depends on processing plants to manufacture the products that enable people to survive and flourish. With this book as their guide, readers have the information and practical guidelines needed to select, operate, maintain, control, and troubleshoot process plant equipment so that it is efficient, cost-effective, and reliable throughout its lifetime. Following the authors' careful explanations and instructions, readers will find that they are better able to reduce downtime and unscheduled shutdowns, streamline operations, and maximize the service life of processing equipment. Process Plant Equipment: Operation, Control, and Reliability is divided into three sections: Section One: Process Equipment Operations covers such key equipment as valves, pumps, cooling towers, conveyors, and storage tanks Section Two: Process Plant Reliability sets forth a variety of tested and proven tools and methods to assess and ensure the reliability and mechanical integrity of process equipment, including failure analysis, Fitness-for-Service assessment, engineering economics for chemical processes, and process component function and performance criteria Section Three: Process Measurement, Control, and Modeling examines flow meters, process control, and process modeling and simulation Throughout the book, numerous photos and diagrams illustrate the operation and control of key process equipment. There are also case studies demonstrating how actual process plants have implemented the tools and techniques discussed in the book. At the end of each chapter, an extensive list of references enables readers to explore each individual topic in greater depth. In summary, this text offers students, process engineers, and plant managers the expertise and technical support needed to streamline and optimize the operation of process plant equipment, from its initial selection to operations to troubleshooting.

This newly expanded edition discusses proven approaches to defining causes of machinery failure as well as methods for analyzing and troubleshooting failures.

Reciprocating Compressors:

Guidelines for Safe Handling of Powders and Bulk Solids

Operation, Control, and Reliability

Pump User's Handbook: Life Extension, Fourth Edition

Predictive Maintenance of Pumps Using Condition Monitoring  
NDE Handbook

"This book is an essential tool to help pass on the wealth of knowledge of best practices to future generations of maintenance leaders. My only hope is that lots of professionals read it so that many companies and economies reap the benefits of these solid practices." Joel Leonard "The Maintenance Evangelist" MPACT Learning Center "The book represents a great wealth of practical experience on many topics ... an essential primer on maintenance topics ... from a practical point of view. I will make this required reading by the SAMI maintenance consultants. There is certainly food for thought even for the most experienced manager." S. Bradley Peterson President Strategic Asset Management, Inc.

"This is a must read for people who have to struggle with the day-to-day problems of plant life. If you have a subordinate field position in a manufacturing facility, this book will reveal why bosses do the things they do. If you are in a supervisory or management role, this book will help you steer your career." Charles J. Latino CEO and President Reliability Center, Inc. This unique and practical book describes 42 real-life events and/or situations in the careers of three authors from which they gained insights into the applicable best practice maintenance and reliability. The authors explain the underlying philosophies where relevant, drawing on the teachings of the leading thinkers in leadership and management. Designed to share knowledge and experience with the readers, in a readily accessible fashion, this resource does not tell the readers what to do or how to do it; it merely explains the event or situation the author faced, and how they dealt with it. Readers can choose whether they wish to adopt or adapt the authors' examples. These stories are dynamic illustrations of real life situations which readers will recognize in their own work situations. With a vast potential for improvements in reliability and maintenance performance in the industry, these well proven approaches and best practices are sure to help stimulate improved performance on all fronts--safety and environmental, production, maintenance costs, and reputation! Provides a logical organization with chapters grouped into six broad headings, enabling readers to choose the order in which they wish to absorb the lessons, which are based on the Shewhart-Deming Continuous Improvement cycle. In addition to the Plan-Schedule-Execute-Analyze elements, the authors have added Leadership and People to complete the suite. Each chapter has broadly similar sections, beginning with a Background to the events, going on to describe the key elements of the approach, and ending with Lessons and Principles. Underlying theories, philosophies or even detailed descriptions of methods are stripped out of the main chapters and described in Appendices, so that only those readers who wish to delve into details may do so. Contains a Book Summary which draws all the principles and lessons together, and gives references to the relevant chapters. Copiously illustrated, with charts, diagrams and tables which relate closely to the text.

A Complete overview of theory, selection, design, operation, and maintenance  
This text offers a thorough overview of the operating characteristics, efficiency, design features, troubleshooting, and maintenance of dynamic and positive displacement process gas compressors. The author examines a wide spectrum of compressors used in heavy process industries, with an emphasis on improving reliability and avoiding failure. Readers learn both the theory underlying compressors as well as the myriad day-to-day practical issues and challenges that chemical engineers and plant operation personnel must address. The text features: Latest design and manufacturing details of dynamic and positive displacement process gas compressors Examination of the full range of machines available for the heavy process industries Thorough presentation of the arrangements, material composition, and basic laws governing the design of all important process gas compressors Guidance on selecting optimum compressor configurations, controls, components, and auxiliaries to maximize reliability Monitoring and performance analysis for optimal machinery condition Systematic methods to avoid failure through the application of field-tested reliability enhancement concepts Fluid instability and externally pressurized bearings Reliability-driven asset management strategies for compressors Upstream separator and filter issues The text's structure is carefully designed to build knowledge and skills by starting with key principles and then moving to more advanced material. Hundreds of photos depicting various types of compressors, components, and processes are provided throughout. Compressors often represent a multi-million dollar investment for such applications as petrochemical processing and refining, refrigeration, pipeline transport, and turbochargers and superchargers for internal combustion engines. This text enables the broad range of engineers and plant managers who work with these compressors to make the most of the investment by leading them to the best decisions for selecting, operating, upgrading, maintaining, and troubleshooting.

This updated edition is an invaluable source of practical cost-effective maintenance, repair, installation, and field verification procedures for machinery engineers. It is filled with step-by-step instructions and quick-reference checklists that describe preventive and predictive maintenance for major process units such as vertical, horizontal, reciprocating, and liquid ring vacuum pumps, fans and blowers, compressors, turboexpanders, turbines, and more. Also included are sections on machinery protection, storage, lubrication, and periodic monitoring. A new section examines centrifugal pumps and explains how and why they continue to fail. More new information focuses on maintenance for aircraft derivative gas turbines. This revised edition gives special attention throughout to maintenance and repair procedures needed to ensure efficiency, performance, and long life.

Operation and Maintenance  
Improving Machinery Reliability

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Second Edition Practical Machinery Management For Process Plants**

Rules of Thumb for Maintenance and Reliability Engineers

Safety and Reliability of Complex Engineered Systems

A New Alternative to Total Productive Maintenance (TPM)

Designing Food Safety and Equipment Reliability Through Maintenance  
Engineering