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Nota di contenuto	Cover; Front matter; Half Title Page; Copyright; Contents; Acknowledgments; Preface; 1. Introduction; Grooming Talent and Skills; Sound Organizational Setup Explained; PdM, TPM, TPR, and ODR/DSS Explained; Reliability-Focused Plants and Operator Involvement; Awareness of Availability Needs and Outage and Turnaround Planning; Insurance and Spare Parts Philosophies; Reliability-Focus versus Repair-Focus; Mentoring, Resources, and Networking; More Keys to a Productive Reliability Workforce; "CARE" - Deming's Method Streamlined and Adapted to Our Time; References; Bibliography 2. The meaning of reliability System and Mission; Assembly and Part; Assembly Hierarchy; Failure; Failure Mode; Service Life; Reliability; Maintainability; Surveillability; Availability; References; 3. Uptime as probability of success; References; 4. Estimating machinery uptime; Estimation of Failure Distributions for Machinery Components; Application of Failure Distributions; Obtaining the Weibull Function; Construction of the Replacement Model; Data Sources; Analysis of Run-Time Data; Analysis of Pumps; Analysis of Motors; Analysis of Rebuild Data

Life Comparison With Other Industrial Experience Conclusion; References; 5. Is there a universal approach to predicting machinery uptime?; Reliability of Parts In Series; Prediction Procedures; Failure Rate Data; Current Methods of Predicting Reliability; Development of the Handbook; Example Design Evaluation Procedure; Summary; References; 6. Predicting uptime of turbomachinery; Interpretation of Reliability Factors (RF); Factors Influencing Reliability; Examples; Application Issues for Centrifugal Pumps; Pump Selection Reliability Factors; Comparison with Field Experience; Summary
Bibliography 7. Failure mode and effect analysis; Design FMEA; Definitions and FMEA Forms; Procedure; Examples; The FMEA Form; Evaluation; Examples; References; 8. Fault tree analysis; Procedure; Examples; Assessment and Evaluation; Review; References; 9. Machinery risk and hazard assessment; Assessing Risk; Assessing Hazards; Preliminary Hazard Analysis (PHA); Hazard and Operability (HAZOP) Study; References; 10. Machinery system availability analysis; Machinery System Unavailability; Priorities; 11. Practical field uptime assessment; Determining the Reliability Index Number
Equipment Replacement and Rebuilding 12. Life-cycle cost analysis; Asset Management; Examples; Repairing Pumps; Life-Cycle Costing of Pumps; Piping; LCC is a Total; Benchmarking; From Theory to Practice; Gearbox LLC Evaluation; Making LCC Policy; References; Bibliography; 13. Starting with good specifications; Apply Mechanical Reliability Principles to Turbomachinery Design: Use these Guidelines to Improve Availability; Origins of Turbomachinery; Machinery Reliability by Design; Mechanical Reliability Design Principles; Designing Out a Failure Mode; Applying the Integral Design Principle
Building Reliability into Your Reciprocating Compressor Specifications

Sommario/riassunto

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 productivi