En gennemgang af vedligeholdelsen af luftfartøjer og kravene hertil. Egnet som lærebog.

On 4 October 1992, El Al Israel Airlines Flight 1862, a Boeing 747-200 Freighter, departed from Schiphol Airport, Amsterdam, on its way to Tel Aviv, Israel. Seven minutes after take-off the plane lost engine no. 3 and 4 and crashed in an apartment block just outside Amsterdam, killing 43 people. The investigation concluded that the design and certification of the B 747 pylon was inadequate to provide the required level of safety. Furthermore the system to ensure structural integrity by inspection failed.

Hardbound. The need to reduce costs has generated a greater interest in condition monitoring in recent years. The Handbook of Condition Monitoring gives an extensive description of available products and their usage making it a source of practical guidance supported by basic theory. This handbook has been designed to assist individuals within companies in the methods and devices used to monitor the condition of machinery and products.

The management of technical plants for productivity and safety is generally a complex activity, particularly when many plants in one territory are affected, quality guarantees and cost results are required, and the technology involved is heterogeneous and innovative. To enable readers to manage technical plants efficiently, despite the above complications, Methodologies and Techniques for Advanced Maintenance presents theories,
methodologies and practical tools for the realization of an intelligent maintenance management system for distant monitoring. It also covers the development and running of a remote control center. The so-called granted availability management system (GrAMS) was conceived to enable organizations involved in technical-industrial plant management to move towards “well known availability” and “zero failures” management. In particular, Methodologies and Techniques for Advanced Maintenance deals with the diagnostic aspects and safety levels of technical plants (such as elevators, thermo-technical plants, etc.). The author also discusses the usage of ad hoc designed software analysis tools based on neural networks and reliability indicators. Methodologies and Techniques for Advanced Maintenance is a useful text for practitioners and researchers in maintenance and facilities. Its application spans industrial, plant, technological, infrastructure and civil fields.

Reliability Centered Maintenance – Reengineered: Practical Optimization of the RCM Process with RCM-R® provides an optimized approach to a well-established and highly successful method used for determining failure management policies for physical assets. It makes the original method that was developed to enhance flight safety far more useful in a broad range of industries where asset criticality ranges from high to low. RCM-R® is focused on the science of failures and what must be done to enable long-term sustainably reliable operations. If used correctly, RCM-R® is the first step in delivering fewer breakdowns, more productive capacity, lower costs, safer operations and improved environmental performance. Maintenance has a huge impact on most businesses whether its presence is felt or not. RCM-R® ensures that the right work is done to guarantee there are as few nasty surprises as possible that can harm the business in any way. RCM-R® was developed to leverage on RCM’s original success at delivering that effectiveness while addressing the concerns of the industrial market. RCM-R® addresses the RCM method and shortfalls in its application -- It modifies the method to consider asset and even failure mode criticality so that rigor is applied only where it is truly needed. It removes (within reason) the sources of concern about RCM being overly rigorous and too labor intensive without compromising on its ability to deliver a tailored failure management program for physical assets sensitive to their operational context and application. RCM-R® also provides its practitioners with standard based guidance for determining meaningful failure modes and causes facilitating their analysis for optimum outcome. Includes extensive review of the well proven RCM method and what is needed to make it successful in the industrial environment Links important elements of the RCM method with relevant International Standards for risk management and failure management Enhances RCM with increased emphasis on statistical analysis, bringing it squarely into the realm of Evidence Based Asset Management Includes extensive, experience based advice on implementing and sustaining RCM based failure management programs.

Identification in Vibrating Structures · Monitoring of Delamination Defects in Composite Beams · Identification of Stiffness Variation in Structural Systems by Modified Littlewood-Paley Wavelets · A Neural Network Based Health Monitoring Methodology for Co-Cured/Co-Bonded Composite Aircraft Structures · Crack Identification in the Complex Beam-Type Structures Based on Frequency Data DAMAGE DETECTION EXPERIMENTAL METHODS · Simulation Based Health Assessment of Engineering Structures · Thermal Damage Identification in Metallic Honeycomb Thermal Protection System Panels using Active Distributed Sensing with the Method of Virtual Forces · Merging Sensor Data from Multiple Temperature Scenarios for Vibration-Based Monitoring of Civil Structures · Development of a Non-Contact Defect Detection System for Railroad Tracks for the US Federal Railroad Administration · Detection of Damages in Beams and Composite Plates by Harmonic Excitation and Time-Frequency Analysis · Reliability Study of Thermocouple Array Instrumented on a Titanium Plate using Modal Impacts and Piezo Actuation · Modal Analysis and Damage Detection by Fiber Bragg Grating Sensors · Active Sensing for Disbond Detection in CFRP Strengthened RC Beam · Advanced Self-Sufficient Structural Health Monitoring System · Damage Detection Based on Structural Stiffness and Experimental Verification · An Acoustic Emission Based SHM Technique for Aircraft Applications · Detection and Characterization of High-Velocity Impact Damage in Composite Laminates using PVDF Sensor Signals · Experimental Impact Force Identification of Composite Structures · 2D Layerwise Modeling of High-Frequency Modal Response in Delaminated Composite Beams with Active Piezoelectric Sensors · Wavelet-Based Analysis of Concentrically Braced Frames Subjected to Seismic Loading · Real Time Dynamic Mass Identification · Processing Effects and Structural Integrity of Fabric Reinforced Thin-Walled Composite Components · Compressive Properties of Polymer Laminates Containing Internal Sensor Cavities FIBRE OPTIC SENSORS · Fibre Optic Sensors for Lamb Wave Detection · Carbon Nanotubes-Based Optical Sensor for Hydrogen Detection at Cryogenic Temperature · Structural Health Monitoring System for Detecting Impact Events and Acoustic Emissions · Structural Health Monitoring of Bonded Composite Repairs using Embedded Fiber Bragg Grating Sensors and Neural Networks · 1932076582

This book provides the design engineer with concise information on the most important advanced methods that have emerged in recent years for the design of structures, products and components. While these methods have been discussed in the professional literature, this is the first full presentation of their key principles and features in a single convenient volume. Both veteran and beginning design engineers will find new information and ideas in this book for improving the design engineering process in terms of quality, reliability, cost control and timeliness. Each advanced design concept is examined thoroughly, but in a concise way that presents the essentials clearly and quickly. The author is a leading engineering educator whose many books on design engineering methods, engineering management and quality control have been published in different languages throughout the world. This recent book is available for prompt delivery. To receive your copy quickly, please order now. An order form follows the complete table of contents on the reverse.

In this book the authors provide a fresh look at basic reliability and maintainability engineering techniques and management tools for application to the system maintenance planning and implementation process. The essential life-cycle reliability centered maintenance (ReM) activities are focused on maintenance planning and the prevention of failure. The premise is that more efficient, and therefore effective, life-cycle main tenance programs can be established using a well disciplined decision logic analysis process that addresses individual part failure modes, their consequences, and the actual preventive maintenance tasks. The premise and the techniques and tools described emphasize preventive, not corrective, maintenance. The authors also describe the techniques and tools fundamental to maintenance engineering. They provide an understanding of the interrelationships of the elements of a complete ReM program (which are applicable to any complex system or component and are not limited only to the aircraft industry). They describe special methodologies for improving the maintenance process. These include an on-condition maintenance (OeM) methodology to identify defects and potential deterioration which can determine what is needed as a maintenance action in order to prevent failure during use.
This is a practical approach to, and comprehensive examination of, the problems that face the aviation supervisor. The first chapter discusses the impact of population and geographic changes on the regulation of the airline industry. Chapter 2 deals with “The Federal Aviation Administration,” Chapter 3 with “Regulatory Requirements,” and Chapter 4 with “Organizational Structures.” Chapter 5, “Management Responsibilities,” explores such practical aspects as directing programs, leadership, providing motivation and incentives, and communication. Chapter 6, “Aviation Maintenance Procedures”—Chapter 7, “Applications of Aviation Maintenance Concepts”—and Chapter 8, “Budgeting, Cost Controls, and Cost Reduction”—also explore the daily problems of aviation supervision in practical terms. Chapter 9, “Training and Professional Development in Aviation Maintenance,” discussed here are safety in the maintenance hangar and on the ramp, fueling aircraft, electrical safety, radiation concerns, and building requirements. Chapter 11, “Electronic Data Processing,” covers the computer and applications of received data. Chapter 12, “Aviation Maintenance Management Problem Areas,” deals with matters ranging from parts ordering to administrative concerns. The final chapter is a “Forecast and Summary.”

Selecting the right aircraft for an airline operation is a vastly complex process, involving a multitude of skills and considerable knowledge of the business. Buying The Big Jets was first published in 2001 to provide guidance to those involved in aircraft selection strategies. This Second Edition brings the picture fully up to date, incorporating new discussion on the strategies of low-cost carriers, and the significance of the aircraft cabin for long-haul operations. Latest developments in aircraft products are covered and there are fresh examples of best practice in airline fleet planning techniques.

This book outlines the structure and activities of companies in the European aviation industry. The focus is on the design, production and maintenance of components, assemblies, engines and the aircraft itself. In contrast to other industries, the technical aviation industry is subject to many specifics, since its activities are highly regulated by the European Aviation Safety Agency (EASA), the National Aviation Authorities and by the aviation industry standard EN 9100. These regulations can influence the companies' organization, personnel qualification, quality management systems, as well as the provision of products and services. This book gives the reader a deeper, up-to-date insight into today's quality and safety requirements for the modern aviation industry. Aviation-specific interfaces and procedures are looked at from both the aviation legislation standpoint as well as from a practical operational perspective.

The Code of Federal Regulations is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.

On April 28, 1988, at 1346, a Boeing 737-200, N73711, operated by Aloha Airlines Inc., as flight 243, experienced an explosive decompression and structural failure at 24,000 feet, while en route from Hilo, to Honolulu, Hawaii. Approximately 18 feet from the cabin skin and structure aft of the cabin entrance door separated from the airplane during flight. One flight attendant was swept overboard and is presumed to have been fatally injured; 7 passengers and 1 flight attendant received serious injuries. The flight crew performed an emergency descent and landing at Kahului Airport on the Island of Maui. The National Transportation Safety Board determines that the probable cause of this accident was the failure of the Aloha Airlines...
maintenance program to detect significant disbonding and fatigue damage which led to failure of a lap joint and the separation of the fuselage upper lobe.

As part of the national effort to improve aviation safety, the Federal Aviation Administration (FAA) chartered the National Research Council to examine and recommend improvements in the aircraft certification process currently used by the FAA, manufacturers, and operators.

Selecting the right aircraft for an airline operation is a vastly complex process, involving a multitude of skills and considerable knowledge of the business. Buying The Big Jets was first published in 2001 to provide guidance to those involved in aircraft selection strategies. This Second Edition brings the picture fully up to date, incorporating new discussion on the strategies of low-cost carriers, and the significance of the aircraft cabin for long-haul operations. Latest developments in aircraft products are covered and there are fresh examples of best practice in airline fleet planning techniques. The book is essential reading for airline planners with fleet planning responsibility, consultancy groups, analysts studying aircraft performance and economics, airline operational personnel, students of air transport, leasing companies, aircraft value appraisers, and all who manage commercial aircraft acquisition programmes and provide strategic advice to decision-makers. This book is also a valuable tool for the banking community where insights into aircraft acquisition decisions are vital. Buying The Big Jets is an industry-specific example of strategic planning and is therefore a vital text for students engaged in graduate or post-graduate studies either in aeronautics or business administration.

On 23 June 1985, Air India Flight 182, a Boeing 747-237B was on its way from Montreal, Canada, to London when it was blown up while in Irish airspace, and crashed into the Atlantic Ocean. 329 people perished. It was the largest mass murder in modern Canadian history. The explosion and downing of the carrier was related to the Narita Airport Bombing. Investigation and prosecution took 25 years. The suspects in the bombing were members of the Sikh separatist Babbar Khalsa. Inderjit Singh Reyat, the only person convicted, was sentenced to 15 years in prison.

Lauda Air Flight NG 104, a Boeing 767-300 ER of Austrian nationality was on a scheduled passenger flight Hong Kong-Bangkok-Vienna, Austria. NG 104 departed Hong Kong Airport on May 26, 1991, and made an intermediate landing at Bangkok Airport. The flight departed Bangkok Airport at 1602 hours. The airplane disappeared from air traffic radar at 1617 hours, about 94 nautical miles northwest of Bangkok. The probable cause of this accident is attributed to an uncommanded in-flight deployment of the left engine thrust reverser. All 223 people on board died in the accident.

On July 17, 1996, about 2031 eastern daylight time, Trans World Airlines, Inc. (TWA) flight 800, a Boeing 747, crashed in the Atlantic Ocean near East Moriches, New York. TWA flight 800 was a scheduled international passenger flight from John F. Kennedy International Airport (JFK), New York, New York, to Charles DeGaulle International Airport, Paris, France. All 230 people on board were killed, and the airplane was destroyed. The weather was good. The National Transportation Safety Board determines that the probable cause of the accident was an explosion of the center wing fuel tank, resulting from ignition of the flammable fuel/air mixture in the tank. Contributing factors to the accident were the design and certification concept that fuel tank explosions could be prevented solely by precluding all ignition sources and the design and certification of the Boeing 747. The safety issues in this report focus on fuel tank flammability.

Every issue of Ashgate’s Human Factors and Aerospace Safety: An International Journal publishes an invited, critical review of a key area from a widely-respected researcher. To celebrate a successful first three years of the journal and to make these papers available to a wider audience, they
have been collated here into a single volume. The book is divided into three sections, with articles addressing safety issues in flight deck design, aviation operations and training, and air traffic management. These articles describe the state of current research within a practical context and present a potential future research agenda. Contemporary Issues in Human Factors and Aviation Safety will appeal to both professionals and researchers in aviation and associated industries who are interested in learning more about current issues in flight safety.

On 14 August 2005, a Boeing 737-300 aircraft departed from Larnaca, Cyprus, for Prague. As the aircraft climbed through 16,000 ft, the Captain contacted the company Operations Centre and reported a Take-off Configuration Warning and an Equipment Cooling System problem. Thereafter, there was no response to radio calls to the aircraft. At 07:21 h, the aircraft was intercepted by two F-16 aircraft of the Hellenic Air Force. They observed the aircraft and reported no external damage. The aircraft continued descending and crashed approximately 33 km northwest of the Athens International Airport. All 121 people on board were killed.

What does the collapse of sub-prime lending have in common with a broken jackscrew in an airliner's tailplane? Or the oil spill disaster in the Gulf of Mexico with the burn-up of Space Shuttle Columbia? These were systems that drifted into failure. While pursuing success in a dynamic, complex environment with limited resources and multiple goal conflicts, a succession of small, everyday decisions eventually produced breakdowns on a massive scale. We have trouble grasping the complexity and normality that gives rise to such large events. We hunt for broken parts, fixable properties, people we can hold accountable. Our analyses of complex system breakdowns remain depressingly linear, depressingly componential - imprisoned in the space of ideas once defined by Newton and Descartes. The growth of complexity in society has outpaced our understanding of how complex systems work and fail. Our technologies have gotten ahead of our theories. We are able to build things - deep-sea oil rigs, jackscrews, collateralized debt obligations - whose properties we understand in isolation. But in competitive, regulated societies, their connections proliferate, their interactions and interdependencies multiply, their complexities mushroom. This book explores complexity theory and systems thinking to understand better how complex systems drift into failure. It studies sensitive dependence on initial conditions, unruly technology, tipping points, diversity - and finds that failure emerges opportunistically, non-randomly, from the very webs of relationships that breed success and that are supposed to protect organizations from disaster. It develops a vocabulary that allows us to harness complexity and find new ways of managing drift.

Reliability Based Aircraft Maintenance Optimization and Applications presents flexible and cost-effective maintenance schedules for aircraft structures, particular in composite airframes. By applying an intelligent rating system, and the back-propagation network (BPN) method and FTA technique, a new approach was created to assist users in determining inspection intervals for new aircraft structures, especially in composite structures. This book also discusses the influence of Structure Health Monitoring (SHM) on scheduled maintenance. An integrated logic diagram establishes how to incorporate SHM into the current MSG-3 structural analysis that is based on four maintenance scenarios with gradual increasing maturity levels of SHM. The inspection intervals and the repair thresholds are adjusted according to different combinations of SHM tasks and scheduled maintenance. This book provides a practical means for aircraft manufacturers and operators to consider the feasibility of SHM by examining labor work reduction, structural reliability variation, and maintenance cost savings. Presents the first resource available on airframe maintenance optimization includes the most advanced methods and technologies of maintenance engineering analysis, including first application of composite structure maintenance engineering analysis integrated with SHM Provides the latest research results of composite structure maintenance and health monitoring systems.

To be able to compete successfully both at national and international levels, production systems and equipment must perform at levels not even
thinkable a decade ago. Requirements for increased product quality, reduced throughput time and enhanced operating effectiveness within a rapidly changing customer demand environment continue to demand a high maintenance performance. In some cases, maintenance is required to increase operational effectiveness and revenues and customer satisfaction while reducing capital, operating and support costs. This may be the largest challenge facing production enterprises these days. For this, maintenance strategy is required to be aligned with the production logistics and also to keep updated with the current best practices. Maintenance has become a multidisciplinary activity and one may come across situations in which maintenance is the responsibility of people whose training is not engineering. This handbook aims to assist at different levels of understanding whether the manager is an engineer, a production manager, an experienced maintenance practitioner or a beginner. Topics selected to be included in this handbook cover a wide range of issues in the area of maintenance management and engineering to cater for all those interested in maintenance whether practitioners or researchers. This handbook is divided into 6 parts and contains 26 chapters covering a wide range of topics related to maintenance management and engineering.


THE COMPLETE, UP-TO-DATE GUIDE TO MANAGING AIRCRAFT MAINTENANCE PROGRAMS Thoroughly revised for the latest aviation industry changes and FAA regulations, this comprehensive reference explains how to establish and run an eff cient, reliable, and cost-effective aircraft maintenance program. Co-written by Embry-Riddle Aeronautical University instructors, Aviation Maintenance Management, Second Edition offers broad, integrated coverage of airline management, aircraft maintenance fundamentals, aviation safety, and the systematic planning and development of successful maintenance programs. LEARN HOW TO: Minimize service interruptions while lowering maintenance and repair costs Adhere to aviation industry certification requirements and FAA regulations Define and document maintenance activities Work with engineering and production, planning, and control departments Understand the training requirements for mechanics, technicians, quality control inspectors, and quality assurance auditors Identify and monitor maintenance program problems and trends Manage line and hangar maintenance Provide materiel support for maintenance and engineering Stay on top of quality assurance, quality control, reliability standards, and safety issues

The major objective of this book was to identify issues related to the introduction of new materials and the effects that advanced materials will have on the durability and technical risk of future civil aircraft throughout their service life. The committee investigated the new materials and structural concepts that are likely to be incorporated into next generation commercial aircraft and the factors influencing application decisions. Based on these predictions, the committee attempted to identify the design, characterization, monitoring, and maintenance issues that are critical for the introduction of advanced materials and structural concepts into future aircraft.

Aircraft maintenance, repair and overhaul (MRO) requires unique information technology to meet the challenges set by today's aviation industry. How do IT services relate to aircraft MRO, and how may IT be leveraged in the future? Leveraging Information Technology for Optimal Aircraft Maintenance, Repair and Overhaul (MRO) responds to these questions, and describes the background of current trends in the industry, where airlines are tending to retain aircraft longer on the one hand, and rapidly introducing new genres of aircraft such as the A380 and B787, on the other. This book provides industry professionals and students of aviation MRO with the necessary principles, approaches and tools to respond effectively and efficiently to the constant development of new technologies, both in general and within the aviation MRO profession. This book is designed as a primer on IT services for aircraft engineering professionals and a handbook for IT professionals servicing this niche industry, highlighting the unique information requirements for aviation MRO and delving into detailed aspects of information needs from within the industry. Provides practical and
realistic solutions to real-world problems Presents a global perspective of the industry and its relationship with dynamic information technology
Written by a highly knowledgeable and hands on practitioner in this niche field of Aircraft Maintenance

An indispensable guide for engineers and data scientists in design, testing, operation, manufacturing, and maintenance A road map to the current challenges and available opportunities for the research and development of Prognostics and Health Management (PHM), this important work covers all areas of electronics and explains how to: assess methods for damage estimation of components and systems due to field loading conditions assess the cost and benefits of prognostic implementations develop novel methods for in situ monitoring of products and systems in actual life-cycle conditions enable condition-based (predictive) maintenance increase system availability through an extension of maintenance cycles and/or timely repair actions; obtain knowledge of load history for future design, qualification, and root cause analysis reduce the occurrence of no fault found (NFF) subtract life-cycle costs of equipment from reduction in inspection costs, downtime, and inventory Prognostics and Health Management of Electronics also explains how to understand statistical techniques and machine learning methods used for diagnostics and prognostics. Using this valuable resource, electrical engineers, data scientists, and design engineers will be able to fully grasp the synergy between IoT, machine learning, and risk assessment.

This volume looks at the operational standards and obligations in civil aviation, and the consequences of failure to comply with them. It covers a wide range of topics both international and complex in measure.

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