Engineering Economics For Aviation And Aerospace

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GIANNA PALOMA

What Now for Aviation and Climate Change? Brookings Institution Press
Engineering Economics for Aviation and AerospaceTaylor & Francis
The Economics and Political Economy of African Air Transport Routledge
Africa is the smallest of the 'regional' aviation markets but one that Boeing and others expect to expand over the medium term. Developments on the continent that require the creation of robust and efficient air transport include growth in tourism, the export of 'exotics', and the emergence of modern manufacturing and high-tech industries. Africa's regional aviation markets generally lack good airports and air traffic control, viable airlines, and adequately skilled labour. Airline safety is also a major concern. Written by a 'Who's Who' of aviation specialists and policy makers, The Economics and Political Economy of African Air Transport fills an emerging void in the literature regarding Africa's aviation markets. Its original papers focus explicitly on the economic and political dimensions of the subject, although with relevance to the strategic planning and management of airlines and their associated infrastructure. Topics discussed include external and internal market efficiencies, air service liberalization, the emergence of new carriers, safety and security, low cost airline and other business models, and airport economics. Focusing on the broader issues surrounding the subject, this book will be of interest to both the aviation community and those with an interest in economic and social development.
Aviation Investment Routledge
This book highlights the latest research in the field of Sustainable Aviation. In recent decades, there have been considerable improvements in aircraft efficiency and noise reduction. However, with the demand for both passenger and freight transportation expected to increase significantly in future years, the aviation sector is becoming a growing source of environmental problems and a major contributor to global warming. Focusing on the need to address this mounting problem, this book discusses important new trends and outlines likely future developments in carbon emission reduction, carbon trading, and the impact of emerging technologies, as well as social, legal, and regulatory changes as they pertain to the aviation sector. The book offers an invaluable reference guide for practitioners, regulators, academics, and students alike, in fields ranging from business and engineering to the social sciences. It can be used as a textbook, and will benefit anyone interested in the future of aviation and our planet.
Safety in Aviation and Astronautics Routledge
Globalization is a pervasive feature of recent industrial and commercial developments, not least in the airline business with concomitant effects on human resource management. This book focuses on the organization and human resource changes that have taken place in the international airline industry in recent years. It provides an extensive analysis of airline organization and external relations, airline organization and internal relations, changes in industrial relations and human resource management and also, the integration of human resource management and other management functions. The authoritative second edition of an already established work that covers both theory and practice, this book will be of great interest to managers in all areas of the airline industry, as well as to students of air transport and personnel/human resource management.
Introduction to Air Transport Economics Routledge
The purpose of this book is twofold. First, it lays out the forces that shaped the international aviation industry and that changed all the rules in the drive for liberalization. Second, it looks at the many interesting and difficult choices ahead that the airline industry in general and the international aviation industry in particular face. These choices include many dichotomies: pulling back from the trend toward liberalization or embracing the liberalization trend, merging in search of profitability or fragmenting the industry in search of economies. These possible futures are explored including the pros and cons of each future from a national, consumer, employer, and employee perspective. As with the previous two editions, Evolution of International Aviation reviews the historical development of the international aviation system. From this foundation it then provides an updated and expanded account of the current state of the aviation and aerospace industry including profitability, consolidation, and merger activity. New to this edition, the book broadens the coverage of the industry segments - airlines, air cargo, and manufacturing - to include the emerging commercial space sector. It also emphasizes the relationship between aviation and the political process, exploring the sustainability of this mode of transportation in a world of climate change, high oil prices, and political instability. Because this book is intended for both the interested amateur and the more serious student, references are provided in the text and at the end of each chapter to allow for further in-depth study. The third edition also adds to each chapter a set of learning objectives and a concluding series of questions for discussion.
Phoenix Rising Routledge
In recent years the airline industry has experienced severe volatility in earnings, with airlines recording periods of substantial profits that are closely followed by periods of financial distress. This trend has continued into the new millennium, with numerous examples of airlines across the globe entering bankruptcy protection or liquidating. The text provides an introduction to both the basics of finance and the particular intricacies of airline finance where there can be significant fluctuations in both revenues and costs. This new edition also includes: capital budgeting management of current assets financial risk analysis fuel hedging aircraft leasing This textbook contains chapters that cover unique aspects of the aviation financial decision-making process. These include a rigorous and structured presentation of the buy versus lease decision that is prevalent in the industry, a valuation process for aviation assets, the recent trend toward privatization and the difficulty inherent in the valuation of a publicly-owned or semi-publicly owned asset. The Foundations of Airline Finance, now in its second edition, is an introductory text that can be used either as a general financial text or in a specialized class that deals with aviation finance in particular.
Cognitive Engineering in the Aviation Domain Springer Science & Business Media
This work offers a concise, but in-depth coverage of all fundamental topics of engineering economics.
A Study in Comparative Political Economy Routledge
Air Traffic Management: Economics Regulation and Governance provides the latest insights on approaches and issues surrounding the economic regulation and governance of air traffic management (ATM). The book begins by explaining what ATM is, showing its importance within the aviation industry. It then outlines the unique institutional characteristics that govern ATM, also discussing its implications for economic regulation and investment. Technological developments and the issues and approaches to safety regulation are also covered, as are the implications ATM has on airports. The book concludes with an exploration of future directions, including the entry of drones into airspace and the introduction of competition in ATM services Air traffic management plays a critical role in air transport, impacting both air safety and the efficiency of air services. Yet air navigation services are shifting from government provision to private industry, creating the need for more critical analysis of governance and economic regulation within the ATM industry. Consolidates the latest economic regulation and reform material regarding air traffic management Provides numerous practical examples and real-world case studies drawn from around the globe Explores economic regulation in both larger and smaller economies Written from an objective, informed and practical perspective by an experienced regulation practitioner and researcher
Sustainable Aviation AIAA
International aviation is a massive and complex industry that is crucial to our global economy and way of life. Designed for the next generation of aviation professionals, Fundamentals of International Aviation, second edition, flips the traditional approach to aviation education. Instead of focusing on one career in one country, it introduces readers to the air transport sector on a global scale with a broad view of all the interconnected professional groups. This text provides a foundation of 'how aviation works' in preparation for any career in the field (including regulators, maintenance engineers, pilots, flight attendants, airline and airport managers, dispatchers, and air traffic controllers, among many others). Each chapter introduces a different cross-section of the industry, from air law to operations, security to environmental impacts. A variety of learning tools are built into each chapter, including 24 case studies that describe an aviation accident related to each topic. This second edition adds new learning features, geographic representation from Africa, a new chapter on economics, full-color illustrations, and updated and enhanced online resources. This accessible and engaging textbook provides a foundation of industry awareness that will support a range of aviation careers. It also offers current air transport professionals an enriched understanding of the practices and challenges that make up the rich fabric of international aviation.
From Theory to Applications CRC Press
Aviation networks play a critical role in the success of today's airlines and airports. This book provides insight on all aspects of modern network strategies and structures, ranging from market research to hub design, operations, organization, alliances, benchmarking, and antitrust issues. Considering both the airline and the airport perspectives, the book explains the economics of connectivity or productivity-driven hub structures through basic mathematics, which helps the reader to comprehend the structural strengths and weaknesses of aviation networks. More than 100 charts help clarify the topics at hand.
Evolution of International Aviation CRC Press
For all engineers and practitioners, it is essential to have a fundamental understanding of cost structure, estimating cash flows, and evaluating alternative projects and designs on an economic basis. Engineering Economics for Aviation and Aerospace provides the tools and techniques necessary for engineers to economically evaluate their projects and choices. The focus of this book is on a comprehensive understanding of the theory and practical applications of engineering economics. It explains and demonstrates the principles and techniques of engineering economics and financial analysis as applied to the aviation and aerospace industries. Time value of money, interest factors, and spreadsheet functions are used to evaluate the cash flows associated with a single project or multiple projects. The alternative engineering economics tools and techniques are utilized in separate chapters to evaluate the attractiveness of a single project or to select the best of multiple alternatives. Most of the engineering economics and financial mathematics books available in the market take either a pure theoretical approach or offer limited applications. This book incorporates both approaches, providing students of aviation and industrial economics, as well as practitioners, with the necessary mathematical knowledge to evaluate alternatives on an economic basis.
A Survey of Experience in North America, Europe and Australia Taylor & Francis
This third edition of Straight and Level thoroughly updates the previous edition with extensive comments on recent industry developments and emerging business models. The discussion is illustrated by current examples drawn from all sectors of the industry and every region of the world. The fundamental structure of earlier editions, now widely used as a framework for air transport management courses, nonetheless remains unchanged.

Part 1 of the book provides a strategic context within which to consider the industry's economics. Part 2 is built around a simple yet powerful model that relates operating revenue to operating cost; it examines the most important elements in demand and traffic, price and yield, output and unit cost. Part 3 probes more deeply into three critical aspects of capacity management: network management; fleet management; and revenue management. Part 4 concludes the book by exploring relationships between unit revenue, unit cost, yield, and load factor. Straight and Level has been written primarily for masters-level students on aviation management courses. The book should also be useful to final year undergraduates wanting to prepare for more advanced study. Amongst practitioners, it will appeal to established managers moving from functional posts into general management. More broadly, anyone with knowledge of the airline industry who wants to gain a deeper understanding of its economics at a practical level and an insight into the reasons for its financial volatility should find the book of interest.

Management of the Integrated Aviation Value Chain PHI Learning Pvt. Ltd.

Aviation performance is an important cog in modern globalized economies, which demand flexibility, mobility, efficiency, and dependability. Airport delays have gone from being a nuisance to being a salient public concern, drawing the ire of even the White House. In this important book, international transportation experts compare and contrast how different nations have managed their airports and air traffic control systems and how well they are meeting the needs of their people. The book's cross-national approach encompasses several different institutional arrangements, making it a timely and valuable study in comparative political economy. Among the countries studied, the United States is sometimes seen as a bastion of free markets, at the forefront of airline deregulation, but its airports and air traffic control system are publicly owned and operated. The same is true in continental Europe, for the most part. In contrast, Australia, New Zealand, the United Kingdom, and Canada are experimenting with privatization, while even mainland China is allowing the private sector to participate in airport ownership. Which methods work best, and under what circumstances? This book provides the answers.

Fundamentals of Aviation Operations Elsevier

This book analyses the political, economic and managerial challenges for policy makers and the air transport industry as they face climate change. Based on an overview of the scientific background and technological options for emissions reduction, Aviation and Climate Change provides an in-depth assessment of environmental regulation and management. It provides an up-to-the-minute analysis of the effects of aviation on climate change, and an economic analysis of policies to reduce or eliminate greenhouse gas emissions. The main emphasis of the book is on the economic mechanisms used to lessen emissions – carbon taxes, emissions trading schemes and offset schemes. It pays particular attention to the ways these policies work, and to the interaction between them – for instance, the interaction between taxes and emissions trading schemes. One feature of the book is that it analyses the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) which has been developed by ICAO for international aviation, and which is due to commence operation shortly. The advantages and disadvantages of this controversial scheme are discussed. This book will be of interest to researchers in diverse areas (economics, political science, engineering, natural sciences), to air transport policy makers, and to managers in the aviation industry.

Straight and Level Routledge

Engineering has changed dramatically in the last century. With modern computing systems, instantaneous communication, elimination of low/mid management, increased complexity, and extremely efficient supply chains, all have dramatically affected the responsibilities of engineers at all levels. The future will require cost effective systems that are more secure, interconnected, software centric, and complex. Employees at all levels need to be able to develop accurate cost estimates based upon defensible cost analysis. It is under this backdrop that this book is being written. By presenting the methods, processes, and tools needed to conduct cost analysis, estimation, and management of complex systems, this textbook is the next step beyond basic engineering economics. Features Focuses on systems life cycle costing Includes materials beyond basic engineering economics, such as simulation-based costing Presents cost estimating, analysis, and management from a total ownership cost perspective Offers numerous real-life examples Provides excel based textbook/problems Offers PowerPoint slides, Solutions Manual, and author website with downloadable excel solutions, etc.

Airline Economics and Marketing McGraw-Hill Higher Education

Aviation Markets: Studies in Competition and Regulatory Reform is a collection of 17 papers selected from David Starkie's extensive writings over the last 25 years. Previously published material has been extensively edited and adapted, and combined with new material, published here for the first time. The book is divided into five sections, each featuring an original overview chapter, to better establish the background and also explain the papers' wider significance including, wherever appropriate, their relevance to current policy issues. These papers have been selected to illustrate a significant theme that has been relatively neglected thus far in both aviation and industrial economics: the role of the market and its interplay with the development of economic policy in the context of a dynamic but partly price regulated industry. The result provides a strong flavour of how market mechanisms, and particularly competition, can operate to successfully resolve policy issues. The book will be of interest to academics and those engaged in the formulation of aviation policy, such as public administrators and consultants, as well as those working in the aviation industry. It is also relevant to economic studies in a more general context, particularly to students and practitioners in industrial organisation economics, including those studying and researching the public utility industries.

Strategies and Structures Routledge

Air safety is right now at a point where the chances of being killed in an aviation accident are far lower than the chances to winning a jackpot in any of the major lotteries. However, keeping or improving that performance level requires a critical analysis of some events that, despite scarce, point to structural failures in the learning process. The effect of these failures could increase soon if there is not a clear and right development path. This book tries to identify what is wrong, why there are things to fix, and some human factors principles to keep in aircraft design and operations. Features Shows, through different events, how the system learns through technology, practices, and regulations and the pitfalls of that learning process Discusses the use of information technology in safety-critical environments and why procedural knowledge is not enough Presents air safety management as a successful process, but at the same time, failures coming from technological and organizational features are shown Offers ways to improve from the human factors side by getting the right lessons from recent events

Aviation Safety, Human Factors - System Engineering - Flight Operations - Economics - Strategies - Management McGraw-Hill College

This text covers the basic techniques and applications of engineering economy for all disciplines in the engineering profession. The writing style emphasizes brief, crisp coverage of the principle or technique discussed in order to reduce the time taken to present and grasp the essentials. The objective of the text is to explain and demonstrate the principles and techniques of engineering economic analysis as applied in different fields of engineering. This brief text includes coverage of multiple attribute evaluation for instructors who want to include non-economic dimensions in alternative evaluation and the discussion of risk considerations in the appendix, compared to Blanks comprehensive text, where these topics are discussed in two unique chapters.

Air Transport Management Springer Nature

Sustainable Alternatives for Aviation Fuels presents a technical and economic guide to the development of sustainable aviation fuels from renewable sources. With a focus on commercial viability and cost reduction, the book explores every aspect of the alternative aviation fuels supply chain, including commercially feasible and environmentally sound feedstock, production routes, the roles of catalysts in processing, conceptual process design, process economics, engine performance, and future market trends, and case studies illustrating the practical implementation of specific technologies and analyses. Readers are provided with the tools to make decisions at every stage, supported by in-depth techno-economic analyses, life cycle assessments, and consideration for development prospects within the context of sustainability. Sustainable Alternatives for Aviation Fuels offers an excellent overview for readers involved in bioenergy and aviation and is an invaluable resource for researchers and industry practitioners seeking to produce commercially viable alternative aviation fuels. Presents the current sustainable alternative fuels for aviation, including commercially viable and environmentally sound feedstock and production routes Provides practical guidance on topics such as the role of catalysts in processing, conceptual process design, and engine performance analysis Explores process economics, market trends, and LCA analysis, in addition to a techno-economic analysis of biojet fuel and its sustainability

Air Traffic Management Springer Science & Business Media

This book presents the outcomes of the annual “Engineering Economics Week – 2020,” organized by the Russian Union of Industrialists and Entrepreneurs, the Institute of Management and the Institute of Market Problems of the Russian Academy of Sciences (RAS), the South-Russian State Polytechnic University and Samara State University of Economics, and held in online format in May 2020. Focusing on the following topics: - the globalized economy and Russian industrial enterprises: development specifics and international co-operation; - state support for the real sector of the economy; - decisions in production and project management in the context of the digital economy; - big data and big challenges in production networks and systems ; and - economic and social aspects of the innovation management: decision-making and control this book will appeal to scientists, teachers and students (bachelor’s, master’s and postgraduate) at higher education institutions, economists, specialists at research centers, managers of industrial enterprises, business professionals, and those at media centers, and development fund and consulting organizations.