Airline Operations And Delay Management Insights From Airline Economics Networks And Strategic Schedule Planning

Practical Airport Operations, Safety, and Emergency Management
Commercial Aviation
Encyclopedia of Transportation
The Global Commercial Aviation Industry
An Analysis of the Emirates Airline Operation Management System
National Airspace System: Setting On-Time Performance Targets at Congested Airports Could Help Focus FAA's Actions
Modelling and Managing Airport Performance
Defining and Measuring Aircraft Delay and Airport Capacity Thresholds
Beyond Airline Disruptions
Airline Schedule Planning and Operations
A System Analysis of Airline Industry Dynamics
Increasing Airline Operational Control in a Constrained Air Traffic System
Optimization-based Approaches for Delay Mitigation
Complexity Science in Air Traffic Management
Incorporating Uncertainty and Passenger and Airline Preferences
Airline Operations Control
Method for Deriving Multi-factor Models for Predicting Airport Delays
The Global Airline Industry
National Airspace System longterm capacity planning needed despite recent reduction in flight delays.
Airport Planning & Management
Airline Operations and Scheduling
Air Transportation
Service Improvement and Cost Reduction for Airlines
Social Science and Policy
A New Approach for Disruption Management in Airline Operations Control
Operations Research in the Airline Industry
Protocols for Today and the Future
Air Transportation Systems Engineering
Airline Operations and Delay Management
Insights from Airline Economics, Networks and Strategic Schedule Planning
Insights from Airline Economics, Networks and Strategic Schedule Planning
Framework, Models and Applications
A Management Textbook
Airline Operations and Delay Management
Airline Operations
Disruption Management
Handbooks in Operations Research and Management Science: Transportation
Beyond Airline Disruptions
Understanding Decision-making Processes in Airline Operations Control
Future Flight

Airline Operations And Delay Management Insights From Airline Economics Networks And Strategic Schedule Planning ***Downloaded from*** db.mwpai.edu ***by guest***

HOGAN RAIDEN

Practical Airport Operations, Safety, and Emergency Management SAGE Publications
Operations research techniques are extremely important tools for planning airline operations. However, much of the technical literature on airline optimization models is highly specialized and accessible only to a limited audience. Allied to this there is a concern among the operations research community that the materials offered in OR courses at MBA or senior undergraduate business level are too abstract, outdated, and at times irrelevant to today's fast and dynamic airline industry. This book demystifies the operations and scheduling environment, presenting simplified and easy-to-understand models, applied to straightforward and practical examples. After introducing the key issues confronting operations and scheduling within airlines, Airline Operations and Scheduling goes on to provide an objective review of the various optimization models adopted in practice. Each model provides airlines with efficient solutions to a range of scenarios, and is accompanied by case studies similar to those experienced by commercial airlines. Using unique source material and combining interviews with alumni working at operations and scheduling departments of various airlines, this solution-orientated approach has been used on many courses with outstanding feedback. As well as having been comprehensively updated, this second edition of Airline Operations and Scheduling adds new chapters on fuel management systems, baggage handling, aircraft maintenance planning and aircraft boarding strategies. The readership

includes graduate and undergraduate business, management, transportation, and engineering students; airlines training and acquainting new recruits with operations planning and scheduling processes; general aviation, flight school, International Air Transport Association (IATA), and International Civil Aviation Organization (ICAO) training course instructors; executive jet, chartered flight, air-cargo and package delivery companies, and airline consultants.

Commercial Aviation Routledge

Practical Airport Operations, Safety, and Emergency Management: Protocols for Today and the Future focuses on the airport itself, not the aircraft, manufacturers, designers, or even the pilots. The book explores the safety of what's been called ‘the most expensive piece of pavement in any city’— the facility that operates, maintains, and ensures the safety of millions of air passengers every year. The book is organized into three helpful sections, each focusing on one of the sectors described in the title. Section One: Airport Safety, explores the airport environment, then delves into safety management systems. Section Two: Airport Operations, continues the conversation on safety management systems before outlining airside and landside operations in depth, while Section Three: Airport Emergency Management, is a careful, detailed exploration of the topic, ending with a chapter on the operational challenges airport operations managers can expect to face in the future. Written by trusted experts in the field, users will find this book to be a vital resource that provides airport operations managers and students with the information, protocols, and strategies they need to meet the unique challenges associated with running an airport. Addresses the four areas of airport management: safety, operations, emergency management, and future challenges together in one book Written by leading professionals in the field with extensive training, teaching, and practical experience in airport operations Includes section on future challenges, including spaceport, unmanned aerial vehicles, and integrated incident command Ancillary materials for readers to reinforce concepts and instructors teaching operations courses Focuses on the topics of safety, operations, emergency management, and what personnel and students studying the topic can expect to face in the future

Encyclopedia of Transportation Elsevier

TRB's Airport Cooperative Research Program (ACRP) Report 104: Defining and Measuring Aircraft Delay and Airport Capacity Thresholds offers guidance to help airports understand, select, calculate, and report measures of delay and capacity. The report describes common metrics, identifies data sources, recommends metrics based on an airport's needs, and suggests ways to potentially improve metrics.

The Global Commercial Aviation Industry World Scientific

* A one-stop source for current developments, cutting-edge planning and managing techniques, new technologies, statistics, trends, and regulatory issues * Expert guidance on airport site selection, design, access, financing, law and regulation, security, capacity, and technological advances * NEW and expanded airspace and air traffic control system coverage * NEW breakout of key Federal Aviation Regulations, Advisory Circulars, forms, etc.

An Analysis of the Emirates Airline Operation Management System Taylor & Francis

Airline Operations and Delay ManagementInsights from Airline Economics, Networks and Strategic Schedule PlanningRoutledge

National Airspace System: Setting On-Time Performance Targets at Congested Airports Could Help Focus FAA’s Actions Ashgate Publishing, Ltd.

Modeling Applications in the Airline Industry explains the different functions and tactics performed by airlines during their planning and operation phases. Each function receives a full explanation of the challenges it brings and a solution methodology is presented, supported by numerical illustrative examples wherever possible. The book also highlights the main limitations of current practice and provides a brief description of future work related to each function. The authors have filtered the rich literature of airline management to include only the research that has actually been adopted by the airlines, giving a genuinely accurate representation of real airline management and its continuing development of solution methodologies. The book consists of 20 chapters divided into 4 sections: - Demand Modeling and Forecasting - Scheduling of Resources - Revenue Management - Irregular Operations Management. The book will be a valuable source or a handbook for individuals seeking a career in airline management. Written by experts with significant working experience within the industry, it offers readers insights to the real practice of operations modelling. In particular the book makes accessible the complexities of the key airline functions and explains the interrelation between them.

Modelling and Managing Airport Performance GRIN Verlag

Previous studies conducted within the aviation industry have examined a multitude of crucial aspects such as policy, airline service quality, and revenue management. An extensive body of literature has also recognised the importance of decision-making in aviation, with the focus predominantly on pilots and air traffic controllers. Understanding Decision-Making Processes in Airline Operations Control focuses instead on an area largely overlooked: an airline's Operations Control Centre (OCC). This serves as the nerve centre of the airline and is responsible for decision-making with respect to operational control of an airline's daily schedules. The environment within an OCC is extremely intense and a key role of controllers is to make decisions that facilitate the airline's recovery from frequent, highly complex, and often multiple disruptions. As such, decision-making in this domain is critical to minimise the operational, commercial and financial impact resulting from disruptions. The book examines many aspects of individual decision-making in airline operations, and addresses the deficiencies found by presenting to the reader an examination of the relationships among situation awareness, information completeness, experience, expertise, decision considerations and decision alternatives in OCCs. The text utilises a multiple case study approach and proposes a number of relevant and important implications for OCC management. Practical outcomes highlight the need for enhancing training programs enabling existing controllers to readily identify and classify elements of situation awareness and decision considerations as a means of improving the decision-making process. They also draw attention to the need for airline OCCs to understand the extent to which industry experience and expertise of controllers is important in the selection of future staff.

Defining and Measuring Aircraft Delay and Airport Capacity Thresholds DIANE Publishing

The air transport industry has high economic impact; it supports more than 60 million jobs worldwide. Since the early years of commercial air travel, passenger numbers have grown tremendously. However, for decades airlines’ financial results have been swinging between profits and losses. The airline industry’s aggregate net average profit between 1970 and 2010 was close to zero, which implies bankruptcies and layoffs in

downturns. The profit cycle's amplitude has been rising over time, which means that problems have become increasingly severe and also shows that the industry may not have learned from the past. More stable financial results could not only facilitate airline management decisions and improve investors' confidence but also preserve employment. This book offers a thorough understanding of the airline profit cycle's causes and drivers, and it presents measures to achieve a higher and more stable profitability level. This is the first in-depth examination of the airline profit cycle. The airline industry is modelled as a complex dynamic system, which is used for quantitative simulations of 'what if' scenarios. These experiments reveal that the general economic environment, such as GDP or fuel price developments, influence the airline industry's profitability pattern as well as certain regulations or aircraft manufactures' policies. Yet despite all circumstances, simulations show that airlines' own management decisions are sufficient to generate higher and more stable profits in the industry. This book is useful for aviation industry decision makers, investors, policy makers, and researchers because it explains why the airline industry earns or loses money. This knowledge will advance forecasting and market intelligence. Furthermore, the book offers practitioners different suggestions to sustainably improve the airline industry's profitability. The book is also recommended as a case study for system analysis as well as industry cyclicality at graduate or postgraduate level for courses such as engineering, economics, or management.

Beyond Airline Disruptions Routledge
The increase in practical problems generated by the intensive growth in air transport has necessitated the development of specialised operations research methods and modern computer technology. By combining operational research data from both scientific publications and airline companies, this book, first published in 1988, provides a unique source of information for those working on the development and application of operations research analysis in air transportation. Topics include air transport analysis, flight frequency determination, the scheduling of flights and personnel, and the problems of airline overbooking.

Airline Schedule Planning and Operations Ashgate Publishing, Ltd.
"Traffic Flow Management (TFM), in coordination with Airline Operation Centers (AOC), manage the arrival and departure flow of aircraft at the nations airports based on the airport Arrival and Departure rates for each 15 minute segment throughout the day. The management of traffic flow has become so efficient in the U.S., that approximately 95% of the delays now occur at the airports (not airborne). Inefficiencies in the traffic flow occur when non-traffic flow delays (e.g. carrier, turn-around, aircraft swapping and non-terminal area weather) are super-imposed on the traffic flow delays. Researchers have correlated these non-traffic flow delays at airports with sets of causal factors and have created models to predict aggregate delays at airports on the time scale of a day. To be consistent with the way traffic flow is managed, a model of causal factors of delays in 15 minute segments would provide the analytical basis for improving the efficiency of TFM. This dissertation describes the development of multi-factor models for predicting airport delays in 15 minute segments at 34 OEP airports. The models are created using Multivariate Adaptive Regression Splines (MARS). The models, generated using historic individual airport data, exhibit an accuracy of 5.3 minutes for generated delay across all the airports, and 2.1 minutes for absorbed delay across all the airports. A summary of the factors that drive the performance of each airport is provided. The sensitivity of each of the factors is also analyzed. Analysis of the models indicates that the factors that determine Airport Delays in 15 minute segments are unique to each airport. The most significant factors that generate delays at most of the nation's airports are Carrier Delay, GDP Delay at the outbound destination, and Departure Demand Ratio. Because of the relationship between these factors, and the propagation of delays throughout the network, the only way to mitigate system-wide delays is via a holistic network approach. The implications of these results are discussed. The potential benefits from this research include providing: (1) researchers and analysts a method to identify systemic causes of delays in the NAS and study the trends of influential factors; and (2) airlines and Air Traffic managers a means to evaluate predicted delays while executing Traffic Flow Management initiatives"--Abstract.

A System Analysis of Airline Industry Dynamics Emerald Group Publishing
Essay from the year 2014 in the subject Business economics - Business Management, Corporate Governance, grade: A, University of Sunderland, course: BUSINESS MANAGEMENT LEVEL 7, language: English, abstract: This essay examines the operation management system of Emirates airlines. It focuses on a number of criteria that should be met in order to create the most customer satisfaction possible. Additionally, the author analyses how the four stages model of Hayes and Wheel is used by Emirates.

Increasing Airline Operational Control in a Constrained Air Traffic System Routledge
The global airline industry is a multi-stakeholder stochastic system whose performance is the outcome of complex interactions between its multiple decisions-makers under a high degree of uncertainty. Inadequate understanding of uncertainty and stakeholder preferences leads to adverse effects including airline losses, delays and disruptions. This thesis studies a set of topics in airline scheduling and air traffic control to mitigate some of these issues. The first part of the thesis focuses on building aircraft schedules that are robust against delays. We develop a robust optimization approach for building aircraft routes. The goal is to mitigate propagated delays, which are defined as the delays caused by the late arrival of aircraft from earlier flights and are the top cause of flight delays in the United States air transportation system. The key feature of our model is that it allows us to handle correlation in flight delays explicitly that existing approaches cannot handle efficiently. We propose an efficient decomposition algorithm to solve the robust model and present the results of numerical experiments, based on data from a major U.S. airline, to demonstrate its effectiveness compared to existing approaches. The second part of the thesis focuses on improving the planning of air traffic flow management (ATFM) programs by incorporating airline preferences into the decision-making process. We develop a voting mechanism to gather airline preferences of candidate ATFM designs. A unique feature of this mechanism is that the candidates are drawn from a domain with infinite cardinality described by polyhedral sets. We conduct a detailed case study based on actual schedule data at San Francisco International Airport to assess its benefits in planning of ground delay programs. Finally, we study an integrated airline network planning model which incorporates passenger choice behavior. We model passenger demand using a multinomial logit choice model and integrate it into a fleet assignment and schedule design model. To tackle the formidable computational challenge associated with solving this model, we develop a reformulation, decomposition and approximation scheme. Using data

from a major U.S. airline, we prove that the proposed approach brings significant profit improvements over existing methods.

Optimization-based Approaches for Delay Mitigation Routledge

Airline Operations and Management: A Management Textbook is a survey of the airline industry, mostly from a managerial perspective. It integrates and applies the fundamentals of several management disciplines, particularly economics, operations, marketing and finance, in developing the overview of the industry. The focus is on tactical, rather than strategic, management that is specialized or unique to the airline industry. The primary audiences for this textbook are both senior and graduate students of airline management, but it should also be useful to entry and junior level airline managers and professionals seeking to expand their knowledge of the industry beyond their own functional area.

Complexity Science in Air Traffic Management Springer Science & Business Media

Written by a range of international industry practitioners, this book offers a comprehensive overview of the essence and nature of airline operations in terms of an operational and regulatory framework, the myriad of planning activities leading up to the current day, and the nature of intense activity that typifies both normal and disrupted airline operations. The first part outlines the importance of the regulatory framework underpinning airline operations, exploring how airlines structure themselves in terms of network and business model. The second part draws attention to the operational environment, explaining the framework of the air traffic system and processes instigated by operational departments within airlines. The third part presents a comprehensive breakdown of the activities that occur on the actual operating day. The fourth part provides an eye-opener into events that typically go wrong on the operating day and then the means by which airlines try to mitigate these problems. Finally, a glimpse is provided of future systems, processes, and technologies likely to be significant in airline operations. Airline Operations: A Practical Guide offers valuable knowledge to industry and academia alike by providing readers with a well-informed and interesting dialogue on critical functions that occur every day within airlines.

Incorporating Uncertainty and Passenger and Airline Preferences Routledge

Despite airlines' tremendous efforts to streamline their operations to minimise controllable costs and improve flight punctuality, system inefficiencies are continuously on the increase. They inevitably lead to a higher number of operational disruptions, and consequently unforeseen losses. Beyond Airline Disruptions addresses this issue by taking a wider, more strategic perspective. By focusing on prevention rather than operational fire-fighting, and laying out the hidden aspects of operational disruptions, this book reveals the significant unexploited potential for cost savings and improvements in on-time performance. It explains for the first time what operational disruptions really are, describes their costs, tangible and intangible causes, and supports the creation of strategies for decreasing system inefficiencies and minimising the risks of operational disruptions.

Airline Operations Control McGraw Hill Professional

Now in its Eighth Edition, Air Transportation: A Management Perspective by John Wensveen is a proven textbook that offers a comprehensive introduction to the theory and practice of air transportation management.

Method for Deriving Multi-factor Models for Predicting Airport Delays Transportation Research Board

Viewing transportation through the lens of current social, economic, and policy aspects, this four-volume reference work explores the topic of transportation across multiple disciplines within the social sciences and related areas, including geography, public policy, business, and economics. The book’s articles, all written by experts in the field, seek to answer such questions as: What has been the legacy, not just economically but politically and socially as well, of President Eisenhower’s modern interstate highway system in America? With that system and the infrastructure that supports it now in a state of decline and decay, what’s the best path for the future at a time of enormous fiscal constraints? Should California politicians plunge ahead with plans for a high-speed rail that every expert says—despite the allure—will go largely unused and will never pay back the massive investment while at this very moment potholes go unfilled all across the state? What path is best for emerging countries to keep pace with dramatic economic growth for their part? What are the social and financial costs of gridlock in our cities? Features: Approximately 675 signed articles authored by prominent scholars are arranged in A-to-Z fashion and conclude with Further Readings and cross references. A Chronology helps readers put individual events into historical context; a Reader’s Guide organizes entries by broad topical or thematic areas; a detailed index helps users quickly locate entries of most immediate interest; and a Resource Guide provides a list of journals, books, and associations and their websites. While articles were written to avoid jargon as much as possible, a Glossary provides quick definitions of technical terms. To ensure full, well-rounded coverage of the field, the General Editor with expertise in urban planning, public policy, and the environment worked alongside a Consulting Editor with a background in Civil Engineering. The index, Reader’s Guide, and cross references combine for thorough search-and-browse capabilities in the electronic edition. Available in both print and electronic formats, Encyclopedia of Transportation is an ideal reference for libraries and those who want to explore the issues that surround transportation in the United States and around the world.

The Global Airline Industry Routledge

Modelling and Managing Airport Performance provides anintegrated view of state-of-the-art research on measuring andimproving the performance of airport systems with consideration ofboth airside and landside operations. The considered facets ofperformance include capacity, delays, economic costs, noise,emissions and safety. Several of the contributions also examinepolicies for managing congestion and allocating sparse capacity, aswell as for mitigating the externalities of noise, emissions, andsafety/risk. Key features: Provides a global perspective with contributing authors fromEurope, North and South America with backgrounds in academia,research institutions, government, and industry Contributes to the definition, interpretation, and sharedunderstanding of airport performance measures and relatedconcepts Considers a broad range of measures that quantify operationaland environmental performance, as well as safety and risk Discusses concepts and strategies for dealing with themanagement of airport performance Presents state-of-the-art modelling capabilities and identifiesfuture modelling needs Themed around 3 sections – Modelling Airport Performance,Assessing Airport Impacts, and Managing Airport Performance andCongestion Modelling and Managing Airport Performance is avaluable reference for researchers and practitioners in the globalair transportation community.

National Airspace System longterm capacity planning needed despite recent reduction in flight delays. Routledge

260 2 Crew Legalities and Crew Pairing Repair 264 3 Model and Mathematical Formulation 266 4 Solution Methodology 271 5 Computational Experiences 277 6 Conclusion 285 REFERENCES 286 10 THE USE OF OPTIMIZATION TO PERFORM AIR TRAFFIC FLOW MANAGEMENT Kenneth Lindsay, E. Andrew Boyd, George Booth, and Charles Harvey 287 1 Introduction 288 2 The Traffic Flow Management (TFM) Problem 289 3 Recent TFM Optimization Models 292 4 The Time Assignment Model (TAM) 302 5 Summary and Conclusions 307 REFERENCES 309 11 THE PROCESSES OF AIRLINE SYSTEM OPERATIONS CONTROL Seth C. Grandeau, Michael D. Clarke, and Dennis F.X. Mathaisel 312 1 Introduction 313 2 The Four Phases of Airline Schedule Development 315 The Airline Operations Control Center (OCC) 3 320 4 Analysis of Operational Problems 331 5 Areas For Improvement 352 6 Case Study: PT Garuda Indonesia Airlines 357 REFERENCES 368 12 THE COMPLEX CONFIGURATION MODEL Bruce W. Patty and Jim Diamond 370 1 Introduction 370 Problem Description 2 371 Problem Formulation 3 375 4 Model Implementation 379 ix Contents 383 5 Summary REFERENCES 383 13 INTEGRATED AIRLINE SCHEDULE PLANNING Cynthia Barnhart, Fang Lu, and Rajesh Shenoi 384 1 Introduction 385 2 Fleet Assignment and Crew Pairing Problems: Existing M- els and Algorithms 388 3 An Integrated Approximate Fleet Assignment and Crew Pa- ing Model 393 4 An Advanced Integrated Solution Approach 395 5 Case Study 396 6 Conclusions and Future Research Directions 399 REFERENCES 401 14 AIRLINE SCHEDULE PERTURBATION PROBLEM: LANDING AND TAKEOFF WITH

Airport Planning & Management

Butterworth-Heinemann

This pioneering book addresses the latest research findings and application results on disruption management, which is the study of how to dynamically recover a predetermined operational plan when various disruptions prevent the original plan from being executed smoothly.

Best Sellers - Books :
• The Mountain Is You: Transforming Self-sabotage Into Self-mastery
• What To Expect When You're Expecting
• Blowback: A Warning To Save Democracy From The Next Trump By Miles Taylor
• A Court Of Wings And Ruin (a Court Of Thorns And Roses, 3)
• Tucker
• Girl In Pieces
• The 5 Love Languages: The Secret To Love That Lasts
• The Light We Carry: Overcoming In Uncertain Times
• Fahrenheit 451
• How To Catch A Leprechaun