

AIRLINE OPERATIONS

A PRACTICAL GUIDE

Edited by
Peter J. Bruce, Yi Gao,
and John M. C. King

ROUTLEDGE

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.

Peter J. Bruce spent nearly seventeen years as an operations controller in airline operations and has considerable first-hand experience and expertise in this environment. His PhD focused on operational decision-making in airlines and he has presented his work at domestic and international forums and conferences. He is Deputy Chair in the Department of Aviation at Swinburne University of Technology, where he is an active researcher in the areas of airline operations, controller selection and training strategies, operational decision-making, and airline safety.

Yi Gao is the Aviation Undergraduate Course Director in the Department of Aviation, Swinburne University of Technology. Yi worked with US airlines for his PhD and his research areas include airline operations optimization, aviation safety, pilot selection, and pilot learning/cognitive styles. As an aviation enthusiast, he holds an FAA Private Pilot license.

John M. C. King established a consultancy providing government relations services for airlines and the tourism industry after a twenty-year career in the airline industry. He also conducted several aviation sector reviews for international organizations including The World Bank, UNDP, and the UN World Tourism Organization. He has been Chairman of a stock exchange-listed company in the tourism sector, Chairman of the Travel Compensation Fund (a co-regulator of the travel agency industry), and he served for three and a half years as a Commissioner of the International Air Services Commission.

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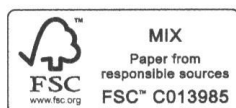
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Peter J. Bruce spent nearly seventeen years as an operations controller in airline operations and has considerable first-hand experience and expertise in this environment. His PhD focused on operational decision-making in airlines and he has presented his work at domestic and international forums and conferences. Besides being chief editor of *Airline Operations: A Practical Guide*, he has written and published four other texts, including *Understanding Decision-making Processes in Airline Operations Control* (Ashgate, 2011). He is Deputy Chair in the Department of Aviation at Swinburne University of Technology, where he is an active researcher in the areas of airline operations, controller selection and training strategies, operational decision-making, and airline safety. He instigated and developed the highly popular Aviation Study Tour at Swinburne, conducting the first six global tours which took groups of students to visit key aviation organizations. Peter's teaching areas focus on aviation business and strategy, and airline planning and operations.

Yi Gao is the Aviation Undergraduate Course Director in the Department of Aviation, Swinburne University of Technology. As a researcher, his principal research areas include airline operations optimization, aviation safety, pilot selection, and pilot learning/cognitive styles. As a senior lecturer, he is currently teaching Aviation Regulation and Operation and the undergraduate capstone research project. As an aviation enthusiast, he holds an FAA Private Pilot license.

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Foreword

Airlines have been flying passengers and freight between cities for over a century, but for all its glamour, the industry has developed very little in the way of profits for those who have invested in it.

There is much to like about the aviation industry – a mixture of exciting technology, skilled practitioners, customer service and international links.

But it is so easily buffeted by a myriad of forces, both internal and external. Fuel costs, currencies and travel markets can quickly change, often much more rapidly than airlines are able to adjust in response.

In the early days of the industry, most airlines were government owned and run. Some still are, but many have been privatized over the last four decades. As governments have relinquished airline ownership to private industries, they have become much less prescriptive about airlines' commercial agenda and route networks.

Bilateral aviation agreements are now much more liberal, and airlines are increasingly free to build route networks around commercial opportunity rather than government diktat.

In many of the early airlines, including some of the best known and most admired, carriers in the industry struggled to cope with the resulting increased competition. Iconic names from the post-war boom in commercial aviation are no more – Pan Am, TWA, Eastern and British Caledonian to name but a few. Others have only survived because they continue to be propped up by governments that are still committed to the idea of the national 'Flag Carrier'.

More recently the rise of the low-cost carriers has increased the pressure on the legacy airlines still further. The latter's short-haul networks in particular have been aggressively challenged by these newcomers with a simple business model and a relentless focus on costs.

The airlines that have survived and prospered have only done so by being agile and adaptive – by challenging the way things are done and embracing new ideas and game-changing technologies, and by chasing new markets. The winners have put the customer at the centre of their thinking rather than clinging to the production-centric mind-set of the past.

This book covers the important aspects of airlines' operations in considerable detail. It provides both a historical context and some very important pointers to the future in the core functions of an airline's operation.

The authors bring a thorough understanding of the aviation industry to their work. Successful airlines get the details right – and attention to the key detail runs through this book.

It reminds us what a complex and fascinating industry aviation has been and still is – and one that has transformed our lives in so many wonderful ways.

Rod Eddington, February 2017

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