



AIR TRANSPORTATION
A Management Perspective

ALEXANDER T. WELLS



AIR TRANSPORTATION

A M A N A G E M E N T P E R S P E C T I V E

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PREFACE

Air Transportation: A Management Perspective started out more than a decade ago as a collection of mimeographed pages—handouts for my students, explanations my students could understand. Although they have been transformed into a textbook, the original purpose of those mimeographed handouts has not changed. It was my intention from the beginning of this undertaking to write a book *for students* that they would find easily readable, understandable, and interesting.

CHARACTERISTICS OF THIS BOOK

This book employs a number of features that are designed to facilitate student learning. The main ones are:

1. *Chapter outlines.* Each chapter opens with an outline of the major topics to be covered.
2. *Chapter checklists.* After the outline, each chapter includes a checklist of objectives that the student should be able to accomplish upon completing the chapter.
3. *Relevancy.* Most of the examples, applications, and extensions of the basic material are drawn from and apply to the air transportation environment of the 1980s.
4. *Staying power.* The text is designed to have staying power over the years. It emphasizes the underlying principles, practices, and policies that will not change appreciably over time. It is recognized that instructors will supplement the material covered with current applications and happenings.

5. *Figures, tables, and boxed exhibits.* Important points in each chapter are illustrated with strong visual materials.
6. *Logical organization and frequent headings.* Air transportation can easily become overwhelming in its multitude of topics, concepts, practices, and examples. The material covered here has been put in a systematic framework so that students know where they have been, where they are, and where they are going in the text. Frequent headings and subheadings aid organization and readability.
7. *Key terms.* Each chapter concludes with a list of key terms used in the text.
8. *Review questions.* Review questions at the end of each chapter cover all of the important points.
9. *Appendices and suggested readings.* Two chapters include appendix sections that are of practical interest and reinforce the material covered. A list of suggested readings is included after all chapters for students who wish to pursue the material covered in greater depth.
10. *Glossary of air transportation terms.* All key terms appearing at the end of each chapter, as well as many other terms used in the text and others of significance in air transportation, are included in the glossary.
11. *Complete index.* The book includes a complete index to help the student find needed information.

INSTRUCTOR'S TEST BANK

An *Instructor's Test Bank* has been prepared to accompany the textbook. It briefly summarizes each chapter and then provides over 600 questions—fill-in, true–false, multiple-choice, and discussion—that can be used for quizzes, examinations, and class discussion. Answers to all objective questions are included. The questions in the *Instructor's Test Bank* cover all of the important concepts in each chapter of the text. This invaluable resource can save many hours of time that the instructor can use more efficiently in preparing for class sessions.

INTENDED AUDIENCE

Since the aspirations of most students of air transportation (and, for that matter, most career paths) lead to the airline segment of the air transportation industry, the major focus of this text is on the management functions and organization of airlines. However, the significance and contribution of general aviation is not overlooked.

This book is intended for three somewhat different audiences with similar interests: students enrolled in a course such as “Air Transportation” or

“Airline Management”; students in transportation and traffic management programs who wish to gain a greater insight into the air transportation industry, since most of their studies concentrate on surface transportation modes; and individuals who work for an airline and want to gain a better understanding of managerial aspects. Too often an airline employee, as a specialist, sees only a limited part of the overall operation and has very little knowledge, if any, of such important subjects as marketing, pricing, scheduling, or fleet planning. Even a person within marketing—reservations, for example—has very little appreciation of his or her company’s growth strategies and market segmentation. The employee is simply too busy fulfilling the functions of the particular job description.

ORGANIZATION OF THE TEXT

Air Transportation: A Management Perspective is introductory, not exhaustive. Its objective is to impart to the student a broad understanding of the air transportation industry and an appreciation of the major management functions within an airline. It also encourages the student to explore and keep abreast of current periodicals, such as *Business and Commercial Aviation*, *Professional Pilot*, *Airline Executive*, *Commuter Air*, *Air Transport World*, and *Aviation Week and Space Technology*. It is hoped that the ability to reason accurately and objectively about problems facing the industry and the development of a lasting interest in the air transportation industry will be two valuable byproducts of the text’s basic objective.

The following is an outline of *Air Transportation: A Management Perspective*.

Part One An Introduction to Air Transportation

- Chapter 1. *Aviation: An Overview*. Chapter 1 introduces the student to the characteristics, scope, and economic significance of the aerospace industry and its major segments—the government market and the commercial market for air transport and general aviation aircraft. The air transportation industry is clearly defined and its contribution to the economy is discussed in depth.
- Chapter 2. *Historical Perspective*. This chapter provides a historical sketch of the U.S. airlines and general aviation, including the federal legislation that has affected their growth and development.
- Chapter 3. *Air Transportation: Regulators and Associations*. Chapter 3 discusses the roles played by the four primary federal agencies that interface with both segments of the air transportation industry: the Department of Transportation, the Federal Aviation Administration, the National Transportation Safety Board, and the Civil Aeronautics Board. The purpose and

major functions of the prominent aviation trade associations are also described.

- Chapter 4. *The General Aviation Industry.* Chapter 4 concludes the first part of the book with a review of the general aviation industry, including its statistics and description of widely diverse segments according to their primary use categories. Other topics include the role of general aviation airports, FAA services to general aviation, and the general aviation support industry, which like a three-legged stool is made up of the manufacturers, the FBOs, and the users of general aviation aircraft.

Part Two Structure and Economics of the Airlines

- Chapter 5. *The Airline Industry.* This chapter provides a review of the current structure of the airline industry in the United States and its composite financial and traffic statistics.
- Chapter 6. *Economic Characteristics of the Airlines.* Chapter 6 deals with the economic characteristics of oligopolies in general and the unique characteristics of airlines. The significance of airline passenger load factors is thoroughly explored in this chapter.

Part Three Managerial Aspects of Airlines

- Chapter 7. *Airline Management and Organization.* The opening chapter of Part Three introduces the student to the principles and practices of airline management and organization. The different levels of management within an airline are explored, along with the functions of management—planning, organizing, staffing, directing, and controlling. This is followed by a comprehensive review of organization planning and a description of a typical major air carrier's organizational structure, including the purpose and function of various administrations and departments.
- Chapter 8. *Forecasting Methods.* Forecasting is extremely important in the management of airlines. All planning involving manpower and equipment needs is based on forecasts of future traffic and financial expectations. For this reason, *Forecasting Methods* naturally precedes all of the chapters relating to the other managerial aspects of airlines. The purpose of this chapter is to expose students to the primary forecasting methods used by firms engaged in air transportation.
- Chapter 9. *Airline Passenger Marketing.* This chapter begins with a discussion of how the marketing of air transportation has changed over the years. The *marketing mix* (product, price, promotion, and place) is then analyzed in depth before the text proceeds to discuss the consumer-oriented marketing

concept of the 1980s. Various current airline marketing strategies are then explored, including such intensive approaches as gaining deeper market penetration, increasing product development, and developing new target markets.

- Chapter 10. *Airline Pricing, Demand, and Output Determination.* Chapter 10 addresses the subject of pricing, certainly one of the most volatile of the “four Ps” of marketing since deregulation. Subjects include the determinants of airline passenger demand and elasticity of demand. The types of airline passenger fares are discussed, followed by in-depth coverage of airline operating costs. Given the revenue and cost side of the equation, the student is then introduced to the subject of profit maximization and output determination in the short run. The remainder of the chapter deals with air freight, including the market, types of air freight rates, services provided, and factors affecting rates.
- Chapter 11. *Principles of Airline Scheduling.* Unquestionably one of the most critical and yet most difficult tasks facing airline management is scheduling equipment in the most efficient and economical manner. This chapter deals with the numerous internal and external factors that affect schedule planning. Types of schedules are discussed, along with several examples of how a carrier goes about putting a schedule together.
- Chapter 12. *Principles of Airline Advertising.* Chapter 12 is concerned with the most important nonprice area of competition in the airline business: advertising. The role of airline advertising is explored, followed by a discussion of the characteristics of good advertising and types of advertising used by the carriers. The critical problems of defining advertising goals is then explored, and a complete analysis of the various media used by the carriers is undertaken.
- Chapter 13. *Fleet Planning: The Aircraft-selection Process.* The decision to purchase new aircraft is certainly one on which management expends a great deal of time and effort. This crucial decision will entail millions of dollars, and its effects will remain with the carrier for years. The student is introduced to the aircraft selection process first from the standpoint of the manufacturer and then from the individual carrier’s viewpoint. All of the inputs to the process are explored, followed by a discussion of the criteria by which a carrier evaluates a particular aircraft.
- Chapter 14. *Airline Labor Relations.* Representing over 35 percent of a typical carrier’s operating expense, labor is certainly one of the most important areas of concern to management. This chapter opens with a historical sketch of airline union activity in

the United States. The all-important Railway Labor Act is then discussed, including the steps involved in the bargaining process. The remainder of the chapter deals with labor relations in the 1980s and possible solutions to the labor-management conflicts within the established carriers that have arisen as a result of competition by the newer carriers with much lower labor costs.

Chapter 15. *Airline Financing*. Chapter 15 takes up the problem of airline capital financing. The major sources of funding are examined, followed by a discussion of the sources and use of funds over the two decades following the introduction of jets. The latter portion of this chapter deals with funding sources in the 1980s and the important subjects of cash management and financial planning.

Part Four The International Scene

Chapter 16. *International Aviation*. The final chapter rounds out the text coverage of air transportation by adding the dimension of international aviation. Air transportation plays a significant role in the movement of passengers and cargo between countries, and this chapter discusses how the various international conferences and conventions have shaped international aviation.

A NOTE TO INSTRUCTORS

Anyone who has taught courses in air transportation has surely recognized the paucity of texts on the subject. The few books that are available are either too broad in scope, resulting in a shallow overview of most topics, or they examine a particular segment of the industry or phase of management in depth with very little breadth. I have attempted to take a balanced approach, recognizing that most instructors will have their own ideas regarding the importance of the subject matter under discussion and will supplement the text with their own materials accordingly.

This book is designed to carry its fair share of the burden of instruction. Students using this text should not rely on you for detailed, repetitive explanations. Less class time is required to generate functional understanding of the subject, so more time is available for class discussion and the application of the material to current issues. In researching this book I acquired a wealth of materials, most of them free, from numerous sources, including DOT, FAA, CAB, NTSB, ICAO, ATA, RAA, and many more in the *World Aviation Directory*. The air carriers are a rich source of material that can be used to supplement your course: write to the particular depart-

ment about which you are seeking information. GAMA, AIA, and the individual aircraft manufacturers can supply a host of materials.

Another source that I have found helpful in my courses is the Harvard Business School Case Services (formerly Intercollegiate Case Clearing House), Harvard Business School, Boston, MA 02163. Some of the air transportation cases will be appropriate for your courses, and the students will enjoy them. I would particularly recommend the cases on Southwest Airlines and Federal Express.

Suggested Outlines for a One-semester Course

These recommendations are flexible. Other combinations are possible.

<i>Chapter topic</i>	<i>Introductory air transportation course</i>	<i>Airline- management course</i>
1. Aviation: An Overview	•	•
2. Historical Perspective	•	•
3. Air Transportation: Regulators and Associations	•	•
4. The General Aviation Industry	•	
5. The Airline Industry	•	•
6. Economic Characteristics of the Airlines	•	•
7. Airline Management and Organization	•	•
8. Forecasting Methods		•
9. Airline Passenger Marketing		•
10. Airline Pricing, Demand, and Output Determination	•	•
11. Principles of Airline Scheduling	•	•
12. Principles of Airline Advertising		•
13. Fleet Planning: The Aircraft-selection Process		•
14. Airline Labor Relations	•	•
15. Airline Financing		•
16. International Aviation	•	

A NOTE TO STUDENTS

I hear and I forget
I see and I remember
I do and I understand

—Confucius

The most effective and interesting way to learn any subject is by doing it. No professor or textbook could ever teach you all about air transportation: all they can do is help you to learn it. Much of the learning process is up to you. This text has been designed to be easy to understand. Usually as you read the text you won't have to struggle to get the meaning of a concept or principle. But understanding is one thing; learning something well and applying it to current events is something else.

Before starting a chapter, review the chapter outline and checklist. Take notes and highlight the major points as you proceed with your reading. After reading the chapter, see if you can accomplish the objectives listed in the chapter checklist. The review questions at the end of each chapter are also designed to bring out the most important points made in the chapter.

Become familiar with the aviation trade journals and magazines. You will be surprised to see how many articles there are relating to the material discussed in class. This literature will not only enhance your own background in the subject matter but also enrich your classroom experience in discussing these items with others.

This is probably one of the most exciting periods in the brief history of our air transportation industry. With the passage of the Airline Deregulation Act of 1978 we are witnessing the emergence of a completely new structure for air transportation services in the United States. The industry stands poised for a new surge of growth. Many new career paths will surface in the next several years for those of you who have prepared for them. Good luck!

ACKNOWLEDGMENTS

Although this textbook has been written by a single author, it owes its existence to many people. A great debt is owed to the pioneers of aviation education who first identified the field's major issues, clarified air transportation's purpose and scope, and contributed major ideas to its development. Any textbook writer owes a debt to these pioneers.

Two individuals immediately come to mind: Bill George, who is still teaching air transportation courses at SUNY-Farmingdale and with whom I had my first course in the field back in the early 1950s; and Harold Wood, who for many years was with Parks College of St. Louis University and has been an inspiration to many of us in the field of aviation education.

The contributors also include my colleagues at Broward Community College, Miami-Dade Community College, Embry-Riddle Aeronautical University, and the University Aviation Association, who are a constant source of new ideas and critical insights into the subject of air transportation.

This book has benefited greatly from reviews supplied by colleagues around the country who made suggestions for its improvements: Bill Beckwith, Georgia State University; Jerry Fairbairn, San Jose State University; Bill McMurray, Catonsville Community College; Bill Rourk, Metropolitan State University; Don Smith, University of North Dakota; and Keith Turner, Indiana State University.

Thanks are also due to many industry sources who provided a great deal of material that was extremely helpful in putting together this textbook. In this regard, I am indebted to personnel of the Civil Aeronautics Board, Department of Transportation, Federal Aviation Administration, National Transportation Safety Board, Air Transport Association, Regional Airline Association, General Aviation Manufacturers Association, Aerospace Industries Association, National Business Aircraft Association, Aircraft Owners and Pilots Association, International Civil Aviation Organization, and the International Air Transport Association.

I am grateful to the companies that provided pictures of aircraft and specifications. Included are Airbus Industrie, The Boeing Company, McDonnell Douglas Corporation, Lockheed-California Company, Beech Aircraft Corporation, Cessna Aircraft Company, and Piper Aircraft Corporation.

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