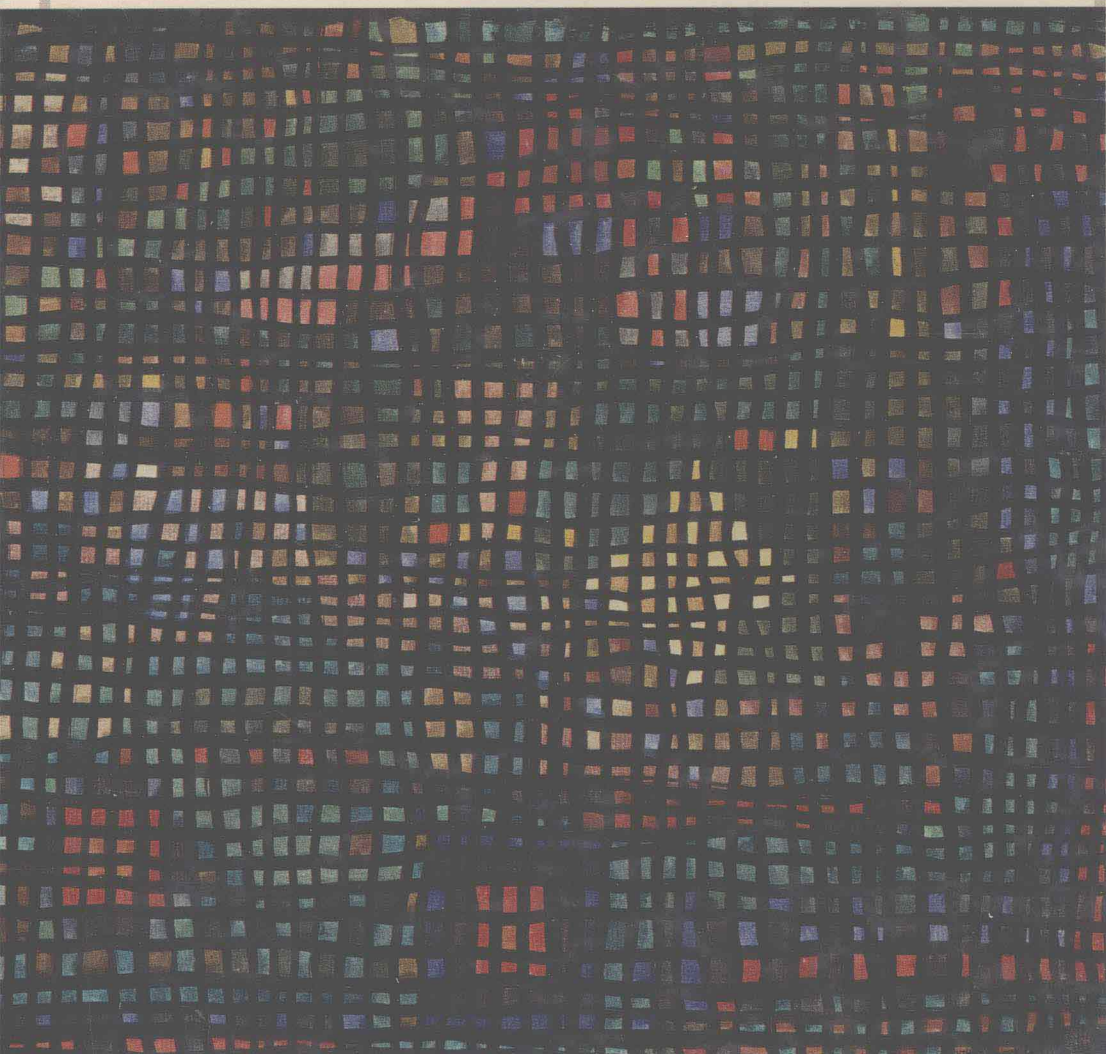


DOMESTIC TRANSPORTATION

PRACTICE, THEORY, AND POLICY • SIXTH EDITION

SAMPSON • FARRIS • SHROCK



DOMESTIC TRANSPORTATION: PRACTICE, THEORY, AND POLICY

SIXTH EDITION

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PREFACE

Transportation is ever changing and dynamic. New developments and new approaches, as well as new institutional arrangements, are common. The most significant change has been the complete deregulation of air transportation and surface freight forwarding and the reform of the regulation of other modes of transportation (rail, motor, household goods, and intercity bus). Adjustment to these regulatory changes personifies the 1980s and will continue into the 1990s.

We have attempted to integrate the deregulation of transportation into all parts of this book. An entirely new chapter (Chapter 14, "Consequences of Deregulation") has been added which discusses the ramifications of regulatory reform up to the late 1980s. New chapters have been added in carrier management (Chapters 20 and 21) and in physical distribution management (Chapter 24, "The Logistics Function" and Chapter 25 "Logistics Interface"). Additionally, our readers will note considerable coverage of passenger transportation and its problems — both in specific chapters (Chapters 8 and 9) as well as blended into examples and applications in other chapters. Most students relate more directly to this aspect of transportation and therefore this approach assists in the learning process. Likewise, the order of the chapters has been revised to make a more teachable book and give earlier emphasis to deregulation and its consequences. Finally, all factual and statistical data and end-of-chapter readings have been carefully updated, some chapters have been substantially rewritten and almost every chapter has been revised to some extent. As transportation has changed and developed, each edition of this book has been updated to reflect these changes.

Still our basic approach remains the same. We continue to integrate and present the transportation industry as a whole rather than separating the problems and practices artificially into rail, motor, air, water, pipeline, forwarder, or shipper spheres. We feel that incorporating both applied and theoretical approaches to transportation will be valuable to both economics and business administration students. We have merged the traditional subfields of transportation economics and physical distribution/business logistics, since both are essential to transportation majors and are obviously desirable for students in both economics and business. Rather than specializing in one area, we have favored a middle ground equally comfortable for business administration and economics students.

We have organized the text into eight parts. Part I establishes the importance of our domestic transportation system and portrays its historical background and evolution as well as societal concerns with transportation. Part II is a comprehensive overview of our present system and its general performance as well as the international, passenger, and geographic aspects of transportation. Part III deals with the regulatory structure and institutions within which transportation operates and stresses deregulation and its consequences. Part IV considers rates, both theory and practice, in the important area of transportation pricing where the interrelationships of demand, costs, rates and the location of economic activities come into play. Part V is composed of two chapters which consider the interesting area of carrier management while Part VI analyzes in detail physical distribution/business logistics or the user side of transportation. Part VII discusses transportation problems and policy that are part of the institutional environment. Finally, Part VIII, a single chapter, presents the authors' educated guesses concerning future transportation technology, regulation and public policy, and the future role of traffic management/physical distribution/business logistics. After studying these 30 chapters, potential transportation majors should be ready for advanced courses, and nonmajors should have at least the minimum transportation background necessary for most general business activity. An instructor's manual is again available.

We wish to acknowledge our indebtedness and grateful appreciation to our former transportation professors, the late Professor Stuart Daggett, University of California at Berkeley, and the late Professor Ralph L. Dewey, The Ohio State University, and Professor L.L. Waters, Indiana University. We also wish to thank the many professors and students in four-year colleges and universities, and community colleges, independent study groups, and transportation practitioners whose use of our previous editions encouraged us to make this revision.

In particular, we are extremely grateful to our many colleagues throughout the country and abroad who have suggested numerous improvements through formal reviews, private correspondence, and informal verbal communication over the years. Their names are far too numerous to list here, but we hope that this new edition continues to meet their needs and that they will continue to give us their suggestions.

R.J.S. M.T.F. D.L.S.

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PART I

THE ROLE OF DOMESTIC TRANSPORTATION

In order to appreciate the complexities of the domestic transportation system of the United States, it is necessary to understand three things: (1) the significance of transportation, (2) its environmental impact, and (3) its development.

A grasp of the significance of transportation, and its general and specific environmental effects, prepares us to understand why the specifics of the system are meaningful. An understanding of the past as well as the development and evolution of our transportation system prepares us to appreciate the position of domestic transportation today and to gain insight into its problems.

The first three chapters of this book are written with these ideas in mind.

CHAPTER 1

THE SIGNIFICANCE OF TRANSPORTATION

Our American transportation system is so all-pervasive and so efficient that most of us rarely think about it unless we are inconvenienced by a breakdown of some of its parts. Instead, we tend to take transportation for granted. Our daily journeys to and from work, shopping centers, or university classrooms involve transportation. Every product we consume has been transported, usually several times, before it gets to us. Even the services we consume would be impossible without transportation of tools, repair parts, or other means of producing services.

In a more general way, transportation is an important part of our culture and heritage. It played a pivotal role in the discovery, settlement, and development of our nation. The westward movement, discussed by historians and immortalized by folk songs about steamboating, railroading, and long cattle drives, was a chapter in transportation development. The freedom and mobility of our people, literally a nation on wheels and a people ever curious to see new places and ever anxious to undertake new tasks, is based upon efficient transportation. Our lives are shaped by transportation much more than we realize.

This wonderfully complex and efficient transportation system, however, did not reach its present form without travail, nor does it operate without direction. Its past history is dwarfed only by its present immensity and its future prospects. Therefore some understanding of this system — its general significance and its specific uses, its internal workings and its external relationships, its origins and its future paths, its problems and its accomplishments — is a necessary part of the education of every person aspiring to play a significant part in the economic, business, or political life of our country.

GENERAL SIGNIFICANCE OF TRANSPORTATION

Much of our social and cultural unity is based upon the existence of adequate transportation. Society is a blend of many regional and local viewpoints and traditions growing out of differing heritages, environments,

and problems. Interregional contacts through travel and the exchange of goods promote the interchange of ideas and the breakdown of parochialism, thus encouraging an upward uniformity in tastes, health, education, and way of life in general.

Likewise, efficient transportation makes it possible for large geographic areas to be politically unified. Cultural similarity, mutual understanding, and the economic interdependence brought about by large-scale interregional trade reduce tendencies toward isolationism, while the ability to communicate rapidly makes unification administratively feasible. Ancient Egypt was held together for many centuries by its Nile River and ancient Rome by its magnificent system of highways. Ancient Greece, on the other hand, with a terrain that hindered a well-developed system of internal transport, remained a group of independent and squabbling city-states until it fell victim to an outside conqueror.

One cause for our own country's secession from Britain, despite a common heritage, was the slow and inefficient transport that hampered political administration and mutual understanding. In more recent times, the United States government authorized and supported the building of the first transcontinental railroad partly to encourage California to remain within the Union during the Civil War. The first Canadian transcontinental railroad was likewise built to encourage the province of British Columbia to remain a political part of Canada. Australians built a railroad across the wide desert area of their continent to hold their country together politically. Railroads played a key role in Bismarck's unification of numerous small independent states and principalities into modern Germany during the late 1800s. Many other examples of this kind could be cited illustrating the cohesive force of transportation.

Good transportation is also vital to national defense. The ability to transport troops and materials quickly and to mobilize industrial power is essential both in actual war and in international political bargaining. Transportation is both a weapon and a deterrent, and its importance to defense has increased rather than diminished in this age of global conflict and potential push-button nuclear warfare.

ECONOMIC SIGNIFICANCE OF TRANSPORTATION

The economic significance of transportation can best be appreciated by considering transportation in five separate but interconnected roles. These are: (1) transportation and economic development, (2) transportation and production, (3) transportation and distribution, (4) transportation and prices, and (5) transportation and the economy. Each will be considered in turn.