BOOK REVIEWS


Intended to be used as a textbook for a course in transportation economics, this volume is on the whole quite well-suited to its purpose. A broad range of problems is treated with admirable conciseness and clarity, and the student is given the advantage of the author's wide acquaintance with significant recent work in the transport field. The presentation of material, both theoretical and factual, is attractive and straightforward, e.g., the statistical tables are models of comprehensibility and succinctness.

The first Part of the book—some seventy pages in length—contains a stimulating summary treatment of relevant aspects of economic theory, thus setting forth the analytical framework within which specific policy problems are to be considered. This theoretical discussion is concerned not only with the economic functions of transportation, but also with the general goals of public policy, the theory of investment, the theory of rate-making, and the theory of industrial organization. It is therefore not surprising that extremely short shrift is given to a number of difficult and disputed questions. One can only congratulate the author for having covered so much ground so quickly with a remarkable degree of success. Moreover, where a dispute exists, the author usually calls attention to it, e.g., the chapter on "organization" outlines present controversies regarding entry control, mergers, and the proper scope of regulation.

It is to be hoped, however, that the glib marginalist "solution" for the problem of traffic congestion will receive more critical treatment in the next edition. Where, as in this case, the level of a price affects the very nature of the product, so that the entire demand curve (and hence intramarginal consumers' surplus) varies with price variation, the usual "welfare" arguments for marginal cost pricing must obviously fail, and any choice of price policy must be made on the far more difficult basis of a direct comparison of alternative total benefits and costs. Practically speaking, as Mr. Lansing himself later points out (p. 278), a very large toll indeed might well be needed to bring about an appreciable change in the traffic level on a crowded highway. It follows, then, that such an effective toll might be far higher than could be justified by estimates of the value of motorists' time loss, gasoline wastage, and the like which are generally suggested as measures of "marginal social cost" in this connection. Thus, the relief of congestion—and the maximization of surplus—may in many if not most cases involve "value-of-service" pricing, in the sense that
price is determined not by reference to incremental cost but by reference
to the level of the surplus. Similarly, more attention should be given to
the very serious objections to a marginal cost pricing policy (here at least
tentatively suggested for the Mackinac Straits Bridge (pp. 46-47)) which
does away with an important objective check on investment decisions by
abandoning any attempt to cover full costs with revenues.

Part II deals with transportation policy in its relation to economic
growth. The experience of Great Britain (1700-1850), the United States
(nineteenth century), Canada (to 1923), the Soviet Union, India, and
several other developing nations is examined, with primary emphasis on
problems of investment.

Part III, entitled "Modern Transportation in the United States," be-
gins with a discussion of transport statistics. The interest and value of this
discussion is greatly enhanced by attention to methodological issues and
to the existence of significant gaps in the available information. Succeeding
chapters deal with railroads, highway transportation, urban transportation,
airlines, marine transport, waterways, and pipelines. The chapter on urban
transportation introduces the student to some of the problems and tech-
niques of urban planning, a subject which is of great and growing im-
portance to most Americans. Here, in the short space of thirty-six pages,
are taken up the financial difficulties of the transit industry, proposals for
pricing existing facilities, criteria for investment in urban transportation,
and "the economic functions of urban areas and the relation of trans-
portation to the location of activities within urban areas" (p. 265). A
fairly thorough treatment of the Chicago Area Transportation Study,
1955-1962, lends concreteness to the discussion and serves to exemplify
some all-too-prevalent defects in recent metropolitan planning.

Perhaps inevitably, some of the chapters in Part III are so compressed
as to be actually misleading. It might have been better merely to mention
such matters as the noneconomic aspects of air transport policy or the
Civil Aeronautics Board's policy towards the supplemental and local-
service carriers than to treat them superficially. On page 305, it is stated
that supplemental air carriers "may schedule up to ten round trips a month
. . . between any pair of points"; in fact, these carriers are certificated to
perform only charter services. It was not to be expected that the excep-
tional coverage given to development and planning problems in this text
could be achieved without some considerable loss of depth in its treatment
of organizational and regulatory issues. These shortcomings can and should
be remedied by outside reading assignments.

The two concluding chapters, "Competition among Methods of Trans-
portation" and "Issues of Economic Policy in Transportation," contain
a highly competent and interesting discussion of some of the most impor-
tant features of the United States transport system and its relationship with
government.

Lucile S. Keyes
DOMESTIC TRANSPORTATION, by Roy J. Sampson and Martin T. Farris. Houghton Mifflin, Boston, 1966, pp. xvi, 464. $7.95

This volume is offered as a college textbook in transportation. Such a text, the authors say (p. vii), "should be both introductory and comprehensive, and suitable for both economics and business administration students." The book is in fact both "introductory and comprehensive." It is introductory in the sense that its subject matter is treated cursorily and comprehensive in that it covers all modes of transportation, regulation, and traffic management. Thus, the book includes a wide range of information and demonstrates the authors' knowledge of the field, at least from an empirical standpoint. It is not clear, however, that it is suitable for economics and business administration students, if students embrace those who want more than a descriptive survey of the subject, because the book fails to make use of the analytical tools necessary to understand the basic problems of the transport industries and regulation.

The relevant analytical tools are chiefly those of economic theory, particularly the theory of the firm as developed in micro-economics. Their application to the problems of the transport industries affords educational value to students and justifies the inclusion of transportation in the college curriculum. A considerable amount of empirical matter is inescapable, but properly it should be used for the most part as the subject matter of economic analysis. From this point of view, the book is unsatisfactory because of its inadequate treatment of demand and cost concepts in their application to transportation. In the discussion of the demand for transportation (p. 145), the authors employ the much abused and ambiguous term, "value of the service." This term is not used in precise economic analysis, and as used by transport specialists, its meaning is not clear. If it has any meaning at all, it signifies demand in the technical sense in which economic theory defines demand. Transport problems having to do with demand can be usefully treated by employing the economic conception of demand and shunning "value of the service." In fact, the latter term is useful only as an illustration of confusion.

The discussion of elasticity of demand is also deficient. The authors do not define elasticity. It is not sufficient for analytical purposes merely to illustrate elasticity by assuming changes in quantities purchased associated with changes in price (p. 146). Elasticity of demand is so important in transportation that the student needs not only a clear understanding of its generalized meaning but also an ability to apply it, which he can acquire only if he understands it. Such an understanding and ability are not beyond the competence of undergraduates, particularly if a course in economics is a prerequisite to the study of transportation, as it should be.

The authors' management of cost theory is similarly vulnerable. The basic cost conception used by the Interstate Commerce Commission in the determination of rates is "out-of-pocket" costs. This term is not found in the cost categories of economic theory. The authors state (p. 150):
"Its meaning varies with the speaker. It may actually mean marginal cost, average variable cost at some particular level of output, or one of these plus some additional arbitrary overhead amount to cover a portion of fixed costs." In transportation, however, out-of-pocket cost assumes whatever definition the Commission establishes. The Commission has said that rail out-of-pocket costs "include 80 percent of the freight operating expenses, rents and taxes (excluding Federal income taxes) plus a return of 4 percent after Federal income taxes on 50 percent of the road property and 100 percent of the equipment used in freight service." This is the meaning of out-of-pocket costs. It is obviously neither marginal cost nor average variable cost. Discussion of the Commission's policy in determining rates must necessarily be in error unless based on this conception of out-of-pocket costs.

Despite its deficiencies, the book presents a clear survey of the transport industries and the regulatory agencies. It is undoubtedly useful to anyone seeking a general acquaintance with the field. But the business subjects, including transportation, have been severely criticized on the ground that as traditionally taught they lack the disciplinary values associated with the application of the tools of rigorous analysis. This book will do little to mitigate such criticism.

Joseph R. Rose*


Written in a very light style and relating to one of the most characteristic aspects of our modern civilization, this book is a history dealing largely with commercial aviation in the United States. Though its span embraces only the years 1903 to 1941, its survey is an appropriate experience for immediate application. The omission from 1941 to the present is explained by the fact that it is a reprint of an up-to-date recording of events as they existed in 1941, and implicitly an invitation for someone to write on the next phase. Commercialization of the airplane was the application to practical purposes of a great invention, initially seen as limited to the somewhat frivolous satisfaction of having a ride in the air. Even now the airplane is not openly recognized, as it should be, as the most important invention to possess the properties of both communication and

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For the derivation of the 80 percent see ICC, Explanation of Rail Cost Finding Procedures and Principles Relating to the Use of Costs, Bureau of Accounts, Statement No. 7-63 at 73 (Nov. 1963). For motor common carriers, the Commission uses 90 percent as the measure of out-of-pocket costs. ICC, Cost of Transportation Freight by Class I and Class II Motor Common Carrier of General Commodities, Bureau of Accounts, Statement No. 7-65 at 27 (Aug. 1965). In other words, the Commission (Bureau of Accounts) assumes cost elasticity of 80 percent for rail and 90 percent for motor and employs these measures in its determination of rates.
transportation. In the inescapable future, air transportation has prospects of unlimited universal possibilities in all senses and degrees, more than any other known activity.

The book begins (Chapter 1, "Kitty-Hawk") with the curtain-lifting of aviation. The invention of the airplane, as we know it, is exclusively to the glory of the Wright brothers' name. Unsuccessful flying machines were, of course, invented and constructed by others but flying machines that did fly, can fly, and do fly, were the immeasurable achievement of these two great Americans. Many of the successes of other early aviators were attributable in part to the fact that much information about the Wrights' invention was divulged and much acquired by foreign centers of aviation investigation through lectures given abroad and through information released to researchers sent to the United States.

No less interesting are the following chapters of the book. Chapter 2 ("The Day of the Birdman") is concerned with the beginnings of flying—the precommercial history of the gypsy fliers or barnstormers, the heroic circus-like shows, harbingers of the mastering of flying for the oncoming war purposes, and the obvious concern of the government with those public exhibitions. "Swivel Chair Colonels" (Chapter 3) refers to the financiers whose influence was not long in appearing, as a first manifestation of the need for more than flying skills to develop aviation became apparent. Chapter 4 ("The Mail Flies Through") develops the surge of the first "commercial" side of aviation. Even if it was World War I that brought about the plane manufacturing industry, mail service requirements made possible the creation of airlines. The chapters on air mail are fascinating, signaling the very primary cells of the service, even before 1918 when the Government started operating it with the idea that the new means of mail service could work where others were impossible or difficult and that flying the mail could provide military training for future Army pilots. Another chapter ("The Night Riders") examines the extraordinary gallantry of the pilots and the stubborn will of the Government to have the service running in spite of the accidents, deaths, failures, and disheartening experience incident to night operations devoid of the electronic instruments of recent times. These harassing difficulties sometimes led the fliers to protest and even to strike against their "bosses" until they were recognized as more than simple cogs in a wheel and accepted as interested parties. The pilots then were asked for their opinions and were given some authority over their planes and conditions of labor. Chapter 7 ("The Mail Must Pay") explains the initial attempts to privately manage the air mail transportation which followed the unsatisfactory Army operation of the service. It was felt that there existed a better service in Europe, where operating companies were subsidized by the governments. Because subsidies had been given to other American industries, no persuasive argument existed against private subsidized operation. In Chapter 8 ("Law and Order in the Airways") we see the beginnings of a legal order, with the Kelly Act of 1925 as the primary source of
law in the field, by which air mail service was opened to private bids. Big business was contemplated as the appropriate type of enterprise to handle responsibly an activity of such foremost importance, a conviction that was no more than a first step toward the unavoidable mergers of the future. In Chapter 9 we read how the mail service started with only five private lines in 1925 but, with the entry of Henry Ford into this newest of commercial activities with his usual personal undeniable imprint, the service prospered. Another chapter ("The Wings Grow Stronger") notes that when a complete service for the mails materialized, passenger traffic began to become significant, especially after Lindbergh's feat and the ensuing boom. In order to obtain adequate service by responsible companies, two instruments were devised in the 1928 amendment of the Kelly Act: a cut in the air mail rate which caused a tremendous increase in the volume of mail, and the power given the Postmaster General to change, after two years of satisfactory service, the contracts into air mail route certificates. While this made the carriers more secure in their business, it also made them more dependent on the Postmaster General. The proliferation of impresarios showed the correctness of government thinking and made even stronger the inclination toward large responsible companies rather than a number of small individual operators. The merger, with its enormous capital investment, was the logical next step toward achieving to the extent possible a unified system. Then, in two formidable chapters ("Urge to Merge" and "E Pluribus American") the author kaleidoscopically shows us the men, their strategy and tactics of business life, and their successes and failures, out of which emerged the very definitive broad features of our present aviation system.

The author expands upon two governmental figures of the highest relief: Brown as an individualistic czar of lasting influence, a dreamer for the good of the industry, and Farley his successor who, abiding by the policy of the Administration to which he owed allegiance, began to exercise his duties attempting to better markedly what he found. Under Farley the existing contracts were cancelled and the mail service was restored to Army pilots. After disastrous results with the Army, operation of the mails was restored to private enterprise with new contracts being given to several operators. New airlines were created, most of which are still operating today (Chapter 23, "Head Winds and Ceiling Zero"). Then, in 1938, "the magic tonic" to the debilitated industry was provided in the form of the Civil Aeronautics Act, often called "the most important piece of air legislation ever passed by Congress." Chapter 24 ("Back to Normalcy") shows how the act rejected the concept of "competition" and returned to Postmaster General Brown's principles of eight years before. Chapter 25 ("The Age of the Skyliner") pictures the important equipment improvements and the corresponding advances in airport construction, while Chapter 26 ("They Made the Sky Ships") is a parade of the engineers, builders, and manufacturers responsible for these improvements. Chapter 27 ("Safety Pays Dividends") discusses the extra-
ordinary role of the CAA and shows how the mastering of security in flying brought about the present (1941) stage of aviation and influenced insurance and the Air Line Pilots Association. Meaningful statistics confirm the idea that "eternal vigilance and care are the answer to the safety problem," and a gradual cure for the users' fear ("the greatest deterrent to air travel"). The final chapter ("Peace and War") brings aviation up to 1941, with the best part of the greatest contemporary achievement still to come.

As the book unfurls this magnificent pageant of aviation, the outstanding names in aviation development appear, such as Richenbacker, Henry Ford, Woolman, Curtis, Douglas, Boeing, Trippe, Hughes, and Braniff. Whereas the primary source of aviation information occurring prior to 1926 was volume 31 of the ANNALS of the American Academy of Political and Social Science, the book under review illustrates, in a historical approach, the same topics contained in the ANNALS, duly updated. In 1963, volume 345 of the same ANNALS, in a different perspective and under the group heading of "transportation renaissance," deals with the significant aviation problems of the sixties: merger and survival, containerization in transport, influence of users on transportation, and the commonplace fact that air cargo is becoming the preponderant aspect of commercial flying because of the increasing demand and the possibility of air carriage of all surface mail. Accordingly, there is a need for a new history book to fill the gap from 1941 to 1967. Such a work would span the period when air mail transport was the primary factor in the use and development of aviation (plus a tiny number of passengers as a sideline), to when passenger service was the main aspect (plus a tiny, incipient air cargo), to the present when it is soon expected that passenger operation may well occupy the back seat to freight volume, and to the oncoming SST days.

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