

BOOK REVIEWS

K. J. Button and A. D. Pearman, *The Economics of Urban Freight Transport*. London: Macmillan, 1981, 218 pp., £20.

Not many years ago, the U.K. literature on the economics of freight transport concentrated on issues such as road transport licensing and regulation, the organisational structure of the freight industry, fixing rates and charges, and especially with competition between rail and road transport. In the Ken Button and Alan Pearman book, not all of these subjects are ignored but they take second place to the impact that freight transport has on the community, on the environment and on the location of economic activity. Correspondingly, the industry material dwells at length on such matters as physical distribution management and the use of operational research techniques for vehicle scheduling; little heard of two decades before. This contemporary approach is more eclectic, less conscious of disciplinary boundaries, and the economic theory used brings to mind Michael Thomson's (1974) comment: "transport is now treated as a branch of welfare economics in which market economics plays a secondary role, rather than a branch of market economics with welfare implications".

This new "style" is doubly emphasised in the Button and Pearman book by its surprising (and unnecessary) restricted focus on the economics of *urban* freight. Why the authors have chosen to do this is not clear; it is not a long book and neglected sub-fields (to use the authors' phrase) do not always make good books. The consequence is to create a division that on frequent occasions places an undue constraint on the authors' material and comment. For example, their principal concern is with the urban component only of many long distance freight movements. Such is the difficulty imposed by this artificial distinction, that there are several instances when the authors choose to disregard the restrictions they have elsewhere placed on themselves. The sections on background statistics, road track costs, and scheduling techniques provide examples of this. The result is a structure neither as neat nor as rigorous as it might otherwise be.

The text is centred around four main chapters on, respectively, costs, demand, optimising from the operator's standpoint, and optimising in a societal context. They are prefaced by an introduction and a maverick chapter on the basic economic theory underlying subsequent material. The postscript briefly reviews some current developments. These, like most of the material in the book, are written from a U.K. perspective.

The chapters are well written, the comment is generally balanced, although at times superficial. For example, by ignoring emissions at the point of power generation, Table 3.12 (attributed to British Railways) leads one to suppose that electric railways are totally pollution-free. On the whole, though, students should find it a useful source book. The authors have covered a substantial amount of material and the bibliography is extensive. Nevertheless, it would have been more useful if Button and Pearman could have contributed more analyses of their own. The accuracy with which former transportation studies forecast freight demands would have been an interesting area to explore; so too would be the extent to which goods vehicles cover their track costs in urban areas. I

am left, however, with the feeling that it would have been a better structured and a more rewarding book if freight economics had been treated in a context wider than the urban "sub-field".

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Reference

Thomson, J. M. (1974). *Modern Transport Economics*. Harmondsworth: Penguin.

Brian T. Bayliss, *Planning and Control in the Transport Sector*. Aldershot: Gower, 1981, xiv + 202 pp., £16.00.

Although the chapters of this book comprise a set of individual papers originally prepared at different times and for different bodies, the work as a whole has a clear theme – the examination of the case for government intervention in the transport sector, and in particular in transport operations (as opposed to infrastructure, where government inevitably plays a major role). Chapters deal with energy, counter-cyclical policy, regional policy, designated lorry routes, rail subsidies, quantity control of road haulage and EEC transport policy.

In keeping with the author's statement in the preface that "policy studies are only as successful as their empirical base", the emphasis is on application rather than theory. Thus, the chapter on energy concentrates on the difficulties of comparing energy consumption between modes where the traffic characteristics may be very different, on the empirical evidence on price elasticities for freight as well as passenger traffic, and on technical improvements which may save energy in road transport. The chapter on regional policy compares the scepticism with which the role of transport is usually viewed in Britain with the emphasis given to regional effects in road investment and rail network decisions in Germany. The chapters on designated lorry routes and quantity control of road haulage both recount studies made in the British context on behalf of the Department of Transport.

Three countries are chosen for a comparison of rail subsidy policy – Germany, The Netherlands and Sweden. In the first two cases, it is argued that subsidy policy has arisen from a political will to retain an extensive rail network at modest prices, with no real attempt to measure the costs and benefits of this course of action. However, evidence is cited that closure of more than half the German rail network would be required to reduce the deficit by one-third; such a picture is typical of rail network studies throughout Europe. Perhaps this explains why politicians regard the much more modest closures that they might be prepared to countenance as not worth the unpopularity they provoke, even though the sums of money involved might be large, relative to the traffic involved. Sweden find more favour for its rail subsidy policy. Subsidies there have been geared to specific purposes – the maintenance of an identified network of loss-making lines on regional policy grounds, and more recently to permit a chosen alignment of prices

with marginal costs — and attempts have been made to measure the subsidy levels necessary for an optimal allocation of resources.

One of the weaknesses of this book is that there is no attempt to draw together the threads of the chapters into a general view of policy — indeed, even the conclusions to some of the individual chapters are weak. If any general conclusion does emerge, it seems to be that whilst there are good reasons for some government intervention in transport operations, in practice, governments tend to intervene with quite different motives and with harmful — and sometimes disastrous — results. Another weakness is the lack of a clear theoretical context within which to set the arguments. For instance, the statement on p. 6 that “the utilitarian approach to the problem of providing for future generations would be that the current generation should make those sacrifices necessary to ensure that future generations enjoy the same standard of living as the present one . . . if future generations are likely to be at least as well off as the current generation even if the current generation makes no sacrifice then no sacrifice should be made” is certainly not correct, unless the author is adopting an extreme egalitarian form of social welfare function which would find little support in the welfare economics literature, and such issues are nowhere spelt out. However, the practical bent of the book and its extensive coverage of research and policy issues in mainland Europe make it a valuable addition to the literature on transport policy.

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C. A. Nash, *Economics of Public Transport*. London: Longman, 1982, 154 pp., paperback £6.95.

Nash has written a thoughtful and academic book, based on his lectures on public transport to students of transport studies at Leeds University. His approach is one designed to encourage advanced economics students to tackle the awkward way in which real life public transport problems are rather more complex than many simple models — and he is also concerned to argue the case for the economist: that economic analysis does have an important role to play in public transport planning. My judgement is that lecturers will find this a most appropriate textbook to recommend to their students.

Two features in particular are most interesting.

First, Nash comes to quite clear conclusions — not always the case in economics textbooks. He argues, strongly, that purely commercial criteria are “grossly inadequate for decision taking” and that therefore the economist working in the public transport field must have the ability to apply *economic* analysis in the widest sense, not only financial assessment. There is, therefore, a useful section on how to apply such aims as maximising passenger mileage subject to a budget constraint. Similarly, Nash comes down broadly in favour of regulation and planning and coordination, rather than unrestricted competition. (I should say that, while not everybody will agree with his conclusions, they are argued quietly and carefully, with full recognition of the other side of the case. This is not a strident book.)

The second, and most unusual, feature is that Nash has attempted to treat both passenger *and freight* transport in the same framework. He defines public freight transport

as that carried out for hire and reward, and draws many analogies. For example, it is well known that withdrawal of passenger services can cause economic, but often unmeasured, problems for passengers: Nash compares this with the problems for firms that would be caused by withdrawal of freight services. This approach is one that I found full of helpful insights, and with much potential for development: perhaps, eventually, enabling a full synthesis of thinking about the movement of goods and people.

There are two deficiencies in the book, which only reflect deficiencies in the state of the art. While much work has been done on how to use and manage subsidies, the application of economic analysis to the question of how great the level of subsidy ought to be is very weak. Also weak is the peculiar tendency of the subject to treat "need" as though it were primarily a rural concept. No fault of Nash's, these.

I do think, however, that his treatment in three areas — the choice and use of discount rates, the problem of "perception" and misperception of costs, and both theoretical and empirical work later than about 1977 on factors affecting demand — falls short of what can and should be said.

P. B. Goodwin
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Edgar Gold, *Maritime Transport*. Lexington, MA: D. C. Heath, 1981, 425 pp., U.S. \$35.95.

As the title of this book implies, this is a historical treatise. Its concerns are the conditions — political and economic — which combine to provide policies and a legal framework within which marine transportation has developed, prospered, and been challenged by new, emerging maritime powers.

The theme of the book is the simultaneous, yet different, development of the public law of the sea and private shipping law. The law and policies that regulate and govern marine transport are not the same as those that have evolved for other, non-transportation, ocean uses. How to reconcile the two legal systems is the challenge of the future.

Before reaching that conclusion, however, the author gives a scholarly and readable account of the evolution of the ideas and doctrines that have shaped the two legal systems. Starting with the sea law of the ancient mariners, he takes the reader through the age of exploration and trade expansion to the rise and fall of various maritime powers up to the modern age. There is the emergence of Britain as a sea-power, and the modern sea law; there are the maritime powers on collision course on the eve of World War I; there is the petroleum age and shipping in the inter-war era when the sea law developed in an uncertain and unstable fashion; there is World War II with its struggle for control of the seas.

With great skill, the author draws analogies and lessons from each discrete period and when the "story" reaches the post-World War II era, the reader is well aware of what is to come. Essentially, in early times the private maritime law blossomed as the world maritime regime shifted away from the domination of the Roman Empire. As that power declined and the maritime order became fragmented, that is, it was shared by many small powers, the private maritime law developed rapidly, but the later, more nationalistic and political ages of the 14th and 15th centuries gave rise to a new system of public ocean

law. From this era and on, the public law aspect increased in importance as the power of the dominant maritime state decreased (pp. 41–46).

The stage is now set for an understanding of the importance of the emergence of the Third World, new shipping technologies, and new uses of the ocean, all of which, coupled with the decline of the traditional shipping nations, lead to diverging interests with respect to the public ocean law versus the private law of shipping. This reaches a peak in the United Nations Law of the Sea Conferences, bringing us to the challenge of, and need for, new directions for maritime transport and its legal system.

For those who aspire to a deeper understanding of the basic historical forces that have shaped, and continue to influence, the international maritime scene, this book is a valuable source. The extensive bibliography is particularly noteworthy. The author can justifiably be proud of his work.

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Warren E. Clark, *Traffic Management and Collision Investigation*. Prentice-Hall, Englewood Cliffs, NJ, 1982, 332 pp., \$17.95.

Traffic Control From the Police Officer's Perspective

Enforcing traffic laws, identifying drunken drivers, making arrests, investigating and reconstructing traffic accidents are all part of the duties of a traffic police officer. These and other activities normally undertaken by traffic police are examined in this recent book by Warren E. Clark. Although basically a text for a traffic police course, the book is more than merely a manual as it conveys the author's extensive experience in the field and tries to impart to the non-technical reader an understanding of the underlying factors of traffic collisions.

Topics treated in detail are collision investigation, reconstruction and management of traffic around an accident. A portion of the book is devoted to psychology and human factors of driving, and the influence of drugs and alcohol on drivers. Other topics covered in somewhat less detail are traffic management of unusual collisions, enforcement techniques and supervision of a police traffic unit.

The treatment of collision investigation includes the completion of reports, gathering evidence and interrogating witnesses. Emphasis is placed on thoroughness, such that the evidence and witness-statements collected will be usable in court. Here the author shares some interesting personal observations about witnesses with the readers. He finds that nurses tend to be outstanding witnesses while doctors and attorneys are generally very poor witnesses, and that young women tend to notice what is unique about a vehicle or driver while young men usually make the best identification of the make and model of a vehicle.

The chapter on collision reconstruction contains an extremely good discussion of skid marks. The differences among acceleration, deceleration, and centrifugal skid marks are well illustrated. The physics of the situation are explained, and the methods for assessing the vehicle speeds from the skid marks are presented in a simple and clear manner.

Derivations of these speed relationships from Newton's Second Law of Motion are included in the appendix for the more advanced reader. Hydroplaning is explained very clearly. Methods for determining vehicle speeds at collision from fallen glass and vehicle deformation are also presented.

The section on the job of the supervisor of the traffic unit seems to be out of context. It is probably included in an attempt to make this a comprehensive treatment of the duties of a traffic policeman. However, this managerial and supervisory job is given only cursory coverage, without any of the depth given to other topics, and does not add much to the book.

There are also some noticeably awkward sections throughout the book every time the topic of transportation history is approached.

Despite these shortcomings, *Traffic Management and Collision Investigation* does accomplish its objective of conveying the concepts for understanding the prevalent factors in highway traffic collisions.

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Leo H. Klaassen, Jan A. Bourdrez and Jacques Volmuller, *Transport and Reurbanisation*. Gower, Aldershot, Hampshire, Gt. Britain, 1981, x + 214 pp., \$17.95.

One of the hardest problems facing an author is finding a title that reflects the book's contents. This is certainly the case for *Transport and Reurbanisation*. This book is an exceptionally well-written discussion of the interrelationships between travel, transportation supply, land use, and urban form. It is the sort of book that studies the implications and ramifications of each of these parts on the others in cities as they exist today, as they may exist in the future and as they have existed in the past. This is not evident in the title.

Reurbanisation, as defined by Klaassen, Bourdrez and Volmuller, is the fourth stage in their definition of the stages of the life of cities in terms of urban form, travel demand, and transportation systems. The first stage is urbanisation, the central city with housing and work places close together. The second is suburbanisation, which relies on an effective and efficient transportation system to connect central city work places and fringe housing spatially separated from each other. Disurbanisation is the third stage, in which the central city decays and satellite sub-centers grow around it which contain both housing and employment. Reurbanisation, the fourth stage, is one of center city re-birth with both housing and work places in the central city as well as in the suburban fringe. This four part continuum is the basic concept in *Transport and Reurbanisation*. The authors support this concept with examples of cities from Europe and the United States. They define the parts of this continuum with rigorous formulations. The book contains many useful flow charts, models, and diagrams. It is, in fact, a compendium of ECMT (European Conference of the Ministers of Transport) Round Table reports on the interrelationships of travel demand, transport services, and land use/urbanisation levels. It contains not only the basic theoretical and mathematical foundations for the discussions, but also uses the informa-

tion gained from theory and practice to carry each component to its logical conclusion in its impacts on transportation systems and urbanisation levels.

This book is extremely useful. I recommend it as a library book and as a text for graduate courses in transportation and public policy. It is the sort of book which I would have found extremely useful when I was a graduate student. It is also the sort of book which would be extremely useful for those who are new to the area of travel demand, transportation systems, and urban form interrelationships.

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N. K. Taneja, *Airline Planning: Corporate, Financial and Marketing*. Lexington, MA: Lexington Books, 1982, 207 pp., \$26.95.

Quite a bit of material has been published on the subject of airline scheduling and forecasting as a part of a detailed airline planning system. However, as Dr. Taneja pointed out in his book *Airlines in Transition*, published in 1981, the airline industry has undergone a fundamental change in the past few years, brought about by both deregulation and economic uncertainties. Dr. Taneja's new book, *Airline Planning: Corporate, Financial and Marketing*, recognizes those changes and develops a framework for strategic planning to complement previous detailed systems in use by most airlines.

After reviewing the need for change, he examines reasons for past failures, such as management involvement in short-term problems. Unfortunately, many of the problems pointed out by Dr. Taneja still exist and have been exacerbated by the current airline economic environment. Other sections deal with a description of the planning process and organization. Various steps in the process are shown; however, this section would benefit from more examples from current airline data. The organization section is a rather brief discussion of philosophy without specific examples of typical planning department responsibilities and structure.

The financial planning section begins with a good review of various investment analysis and financing decision techniques. Several examples are shown, together with the U.S. trunk airline sources of capital over the past ten years. This material is then used to develop a thorough review of various financial ratios used in airline financial planning. The section concludes with a brief description of non-traditional sources of capital.

The effectiveness of airline marketing is receiving increased attention due to increased competition, slowing traffic growth and the diminishing role of government regulation. Dr. Taneja begins with a typical marketing audit and then a discussion of how to analyze opportunities and develop strategy. Both sections could benefit from more specific examples from the airline industry of alternate strategies and the results. Later in the section on strategy, there is an example of how "hub" scheduling was used to build flight loads and improve overall traffic flows by U.S. Air in Pittsburgh.

The strength of this book lies in the next section on computer-based decision support systems (DSS). The four principal areas of airline analysis are discussed; market analysis, operational analysis, cost analysis and financial analysis. Two specific computer

models developed at MIT are reviewed, and detailed case studies presented in the appendices. The final section reviews Dr. Taneja's view on U.S. international aviation policy (not a pro competitive enthusiast) summarized as "enlightened regulation". Various appendices at the end provide the reader with sources of aviation data, a forecasting technique review and details of various fleet analysis models.

Overall, the book is an excellent review of the state of airline strategic planning and ideas for its improvement. The only criticism, perhaps, would be that the book needs more specific examples from both U.S. and foreign airlines of the techniques discussed in Dr. Taneja's book.

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John Bates with Mick Roberts, Steve Lowe and Paul Richards (all of Martin & Voorhees Associates), *The Factors Affecting Household Car Ownership*. Westmead: Gower, 1981, xvi + 168 pp., £16.00.

The title of this book fairly describes a major and sustained analysis of British sample survey evidence of the last decade or so. The book is in two parts.

The first is an exploratory study. By fitting a logistic curve to car ownership among households and another logit to multiple ownership among car owners, the authors patiently unravel the major determinants from various surveys. At each successive stage of the analysis, the results are tested for their capacity to reproduce the observed ownership patterns among some 500 zones of the Department of Transport's Regional Highway Traffic Model (RHTM), which is the main object of the study. In order of appearance, the factors are gross income, accessibility (or urbanization) and household size, all from RHTM survey data, and bus frequency from the National and the West Yorkshire Travel Surveys. There remains a disturbing residual variation between the North of England where ownership levels fall short of the model prediction and the South where the reverse holds. With the help of Family Expenditure Survey (FES) data, this is traced to the behaviour of manual workers, and labelled a cultural difference.

The second part of the book is a reappraisal of an earlier application of the same logit model to FES data for the years from 1969 to 1977. These did yield consistent ownership-level estimates if gross income was deflated over the years by a car price index. However, when later years are added this relation no longer holds, and from 1976 onwards observed ownership levels are increasingly in excess of the model's prediction. This is rather tentatively ascribed to a more liberal provision of company cars.

The authors employ fairly advanced statistical methods and their tireless efforts and ingenuity in the face of practical difficulties are impressive indeed. I have only a little minor criticism of their methods. Instead of two bivariate logit models nested within one another, with one having logincome and the other income as its determinant, a multinomial logit for the three alternatives of 0, 1 and more cars would have been more elegant. I would also prefer to define the null model (p. 18) as having a constant probability (and hence 1 parameter) rather than probability 0.5, throughout. Finally, I suspect the T^2 test

statistic as defined on p. 157 should not have been divided by r , but these points probably do not affect the substantive results.

On the whole, I like the first part best for its single-minded pursuit of explanatory factors and the ready shift to other survey data when the occasion demands. Yet there is always something stilted about the static categories of survey data. The North–South cultural difference is located with some precision, but it is still in need of a further elucidation.

The comparison of successive cross-sections in the second part is less satisfactory. Deflation of gross income by an imperfect car price index may have worked for a time, but it is hardly acceptable; this is not the way to introduce price, and moreover other indices of running costs are in order. With a little imagination they could have been constructed from data published in the motoring press. Finally, there is more to dynamics than a correct assessment of the factors that vary over time.

The presentation of the book is a curious mixture of the scholarly and British Cmd styles, punctuated by a complete decimal coding of each separate paragraph.

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