



## Transportation Science

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## Books of Interest

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## Books of Interest

### Review

*Pedestrian Planning and Design* by JOHN J. FRUIN, Metropolitan Association of Urban Designers and Environmental Planners, New York, 1971, 206 pages, \$5.95

Primarily a design guide, this monograph would appeal mainly to traffic engineers and architects. The book centers around an ambitious one-man attempt by the author to develop "level of service" design standards for such pedestrian facilities as walkways, stairs, and waiting areas. Expanding this result into a handbook, the author also included chapters on the history, the human factors, and the flow characteristics of pedestrians; chapters on the general philosophy and procedures of planning and designing transportation facilities; as well as a chapter on different people conveyors and a chapter on recent examples of urban planning and building design that give special emphasis to the pedestrians.

One only needs to think about the amount of his walking every day from car to door, from one end of the building to another, etc., in order to realize the significance of walking in our daily transportation. While urban transportation has been subjected to the onslaught of many large-scale and very expensive paper studies in recent years, the ancient and yet still indispensable transportation mode of walking has received very little technical attention. Nevertheless, among the few research works that have been carried out, a number of them are very interesting and delightful, especially those carried out at the Road Research Laboratory. A survey of the literature would show that pedestrian traffic can be a very stimulating subject for technical and scientific pursuit.

This book could have been a much more significant contribution to the traffic literature if the author had embedded his research results in a thorough review and a complete bibliography of previously published relevant work. Unfortunately, by narrowing his objective to that of writing an engineering design manual, the author did not even bother to give direct references to the results and the data quoted. This shortcoming limits the usefulness to only those who have an immediate design task.

A large portion of the book is devoted to general discussions. A professional transportation engineer might be bored by all these. As to the layman, this monograph is not written for him. However, I have found many interesting observational results reported for the first time. These results, most of them based on rather limited data,

probably come either from internal reports or from the author's own observations at the Port of New York Authority. It may be because of the author's affiliation that the emphasis is heavily biased towards the types of facilities related to the operations of the Port Authority, such as terminals or large buildings. The most heavily used pedestrian facilities, namely, the sidewalk, the cross-walk, and the grade separated crossings, have received very little coverage.

The "level of service" concept used is along the same line as the new Highway Capacity Manual of the Highway Research Board. The basically qualitative approach would allow much more intelligent planning and design if it were complemented with absolute quantitative limits. On the other hand, effective operations and cost-benefit analyses must be based on solid quantitative knowledge about the elements in the system. It is regrettable to note that current knowledge is very inadequate for such detailed tasks.

The author should be commended for his efforts in producing the "level of service" design guidelines. They seem to be reasonable, but at best they can only be tentative. The greatest service rendered by this work is that it may create a basis from which the practicing engineer can start the trial-and-error process towards a final set of standards. In the meantime, the proposed standards should be useful to the practitioner; and, hopefully, it will also benefit the pedestrians as well by making planners and designers more conscious about effective and systematic designs.

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*Economic Appraisal of Transport Projects: A Manual with Case Studies* by HANS A. ADLER, Indiana University Press, Bloomington/London, 1971, 190 pages, \$2.95

**T**his book is about economic appraisals in undeveloped countries; though much of it, of course, is of universal application. It is divided, rather disproportionately into two parts: 50 pages on appraisal methodology and 140 pages on fifteen case studies.

In part one a number of important and fairly basic points, that are all too often overlooked, are emphasized in a clear and simple fashion. These include: the importance of considering all reasonable alternatives—that the comparison is between the 'with' and 'without' situations—the difference between economic and financial returns—the relevance of considering the marginal return—the fallacy of attributing the benefits that arise subsequent to a road improvement entirely to the road irrespective of any other investment that has taken place. Some readers might welcome a fuller exposition on some of these points and certainly the discussion is far too brief on more controversial topics. The section on whether to base the assessment on net present value, the internal rate of return or cost-benefit ratios is brief and inconclusive and would be of little help to the newcomer to the field. Time saving can be the most important item of benefit and particularly in under-developed

countries there is little agreement on how to value it. In this book it is dealt with briefly and there are some rather dogmatic statements about the valuation of small time savings and the variation of the unit value of time with the length of journey. A very similar comment could be made about the treatment of accident costs.

In part two there are fifteen case studies divided into four groups: road projects, railway projects and a pipe line, port projects, and aviation projects. The studies are selected not only from different transport fields but also or mainly to illustrate different economic aspects—for example, the importance of timing the investment or the determination of standards. Nevertheless there is unavoidably a large amount of repetition and long before he had got to Case Study No. 15 this reviewer was rather tired of reading about many of the points that were common to all of them, such as “adjusting the foreign exchange component by 1.75 times the official exchange rates.” A useful and interesting aspect of all the studies is a discussion of the sensitivity of the result in terms of the uncertainties surrounding some of the inputs. On the whole the case studies are fairly comprehensive, and when any aspect is not considered this is pointed out and usually there is a cross reference to another case study. Costs that appear to have been overlooked are those of storage and holding stocks. One case study involved replacing a route part of which was only useable for six months of the year by an all weather road from a quarry to a plant, which would save either the holding of six months stock or the plant being idle for six months of the year—neither of them negligible expenses, particularly in a project that was fairly marginal.

What is missing from the book is a section linking the basic methodology to the case studies. The book appears to be written as an aid to those who are engaged in carrying out economic appraisals, but there is little information as to how in any particular instance or country they are to obtain much of the relevant data on which the assessment will depend. Generated traffic, which can be extremely important in the underdeveloped countries, is dealt with very scantily and the discussion of how to value it is very obscure. An important consideration, particularly when considering the ‘without situation,’ is the amount of congestion there would be without the improvement. No indication is given of how to estimate this, but in the case studies there are statements such as “. . . congestion would have become increasingly important on the gravel road. It is estimated that this would increase vehicle operating costs by about 8 per cent after 1974 . . . and by an additional 12 per cent after 1979. . . .” No indication is given as to how the 8 and the 12 per cent were calculated or how they could be calculated in other situations. The necessity to use shadow prices for the foreign exchange element of costs is pointed out, but no indication is given as to how these might be calculated. All the reader has to go on is the shadow price that was relevant in Pakistan in the late 1960’s.

To summarize, Part One gives a brief but very useful summary of the principles lying behind an economic appraisal and Part Two gives a number (too many) of interesting examples. The book, however, does not live up to its claim to be a manual.

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