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Book review

3 *Introduction to Transport Systems, Joseph Sussmann;*
4 *Artech House Publishers, Boston, 2001, 470 pp, £61.00,*
5 *ISBN 1 58053 141 5*

6 'Introduction to Transportation Systems' offers a
7 comprehensive conceptual overview to transportation
8 science, mainly from an engineering perspective. It tar-
9 gets a graduate audience being exposed to the field for
10 the first time, but the book is also quite suitable for
11 undergraduate levels. Since the scope of the book is
12 educational, this review focuses mainly on its pedag-
13 ogical intentions. The approach undertaken by the
14 author is divided into three major parts; the first one
15 being conceptual, the second concerning freight and the
16 third concerning passengers.

17 In the first part, the authors develop 30 key points
18 that are fundamental in understanding the principles of
19 transportation systems. Each of these points is sequen-
20 tially introduced, with each point leading to its logical
21 extension into further concepts. These include the con-
22 cepts of service, competition, flow, volume, infrastruc-
23 ture, costs, demand, peak period, network and
24 performance, just to name a few. This approach, com-
25 bined with the example of elevators servicing a sky-
26 scraper, contributes significantly to the usefulness of the
27 book as a pedagogical guide. The author then concludes
28 the first part with a very good overview of models and
29 their utility for representing and analyzing transporta-
30 tion systems. This is the part of the book that I enjoyed
31 the most.

32 The second part deals with freight transportation
33 systems. It begins with concepts pertaining to logistics
34 where key issues are introduced within the problematic
35 of a store selling umbrellas. As in the first part, this
36 example has a sound pedagogical relevance. Each
37 freight mode is then presented, mainly from an opera-
38 tional perspective. This part is highly imbalanced with
39 six chapters (78 pages) dealing with rail transportation
40 and only one chapter dealing with trucking and mari-
41 time transportation, respectively (24 pages). Considering
42 the relative importance of each of these modes for
43 freight transportation (especially in the US, the main
44 intended audience), this imbalance is empirically unjust-
45 ified and reflects a bias imposed by the author's re-
46 search interests. No consideration was given to air
47 freight, which is difficult to justify in a globalized
48 economy that has seen a remarkable growth in traffic
49 handled by this transport mode.

The third part addresses passengers transportation 50
systems. It is rather disorganized and at some points 51
confusing because it is difficult to grasp the logic behind 52
the choice in the sequence of chapters. Some chapters 53
are very general and encompassing while others are ex- 54
cessively specific. For instance, one chapter is titled 55
"Commuting, Non-work Travel and Safety, and Some 56
Transportation History" while another one is titled 57
"Deterministic Queuing". I failed to understand why the 58
chapter concerning intelligent transportation systems 59
has been placed in the third part, especially when this 60
issue concerns surface transportation; freight and pas- 61
sengers alike. This chapter would have had more rele- 62
vance concluding the first part of the book or could have 63
acted as the book's absent conclusion, especially con- 64
sidering the author's solid involvement on this issue. The 65
chapters concerning public transit and inter-city rail 66
provided a very good introductory perspective for each 67
of these issues from an operational point of view. 68

The book is grounded in an effective pedagogy of 69
introducing transportation systems and is clearly the 70
result of a pragmatic teaching experience and the com- 71
pilation of teaching notes that comes with it. What can 72
be perceived as disappointing is the overall simplistic 73
narrative tone accompanied with a high level of frag- 74
mentation of the material. It is not uncommon to have 75
sections that have four or five lines and chapters that 76
have four or five pages, hinting that parts of the book 77
may have been hastily assembled. The graphic quality of 78
the figures leaves much to be desired, if not excessively 79
poor, although they are always clear and to the point. 80
On the relatively rare occasions where data tables are 81
presented, nothing more recent than 1994 is offered, 82
which is surprising considering the wide availability of 83
transportation-related information in the US (e.g. Bu- 84
reau of Transport Statistics website). These issues un- 85
dermine the pedagogical value of the book. 86
Imbalances are also a drawback, notably when dealing 87
with freight transportation, but also in methodological 88
developments. For instance, it is difficult to understand 89
why mathematical formulations were only used for the 90
passengers transportation part, while they are virtually 91
absent in other parts of the book. 92

A good indicator of the relevance of a book is its 93
actual intended use. As far as this reviewer is concerned, 94
the book will act as a useful teaching reference, never far 95
from one's desk. It will also be part of the list of rec- 96
ommended readings for transport-related courses. Fur- 97

98 ther, each time a student or a colleague asks for a basic
99 guide to transportation science, this book will certainly
100 be part of the suggestions. However, the scope of the

book forbids a specialized usage and it was clearly not
the author's intention to pretend otherwise.

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