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## Book Review

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*A Short History of Transport in Japan from Ancient Times to the Present*

by John Andrew Black

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It is a great honour to have the opportunity to write a review of *A Short History of Transport in Japan from Ancient Times to the Present* by John Andrew Black, Emeritus Professor of Transport Engineering at the University of New South Wales in Sydney. As Professor Kazuaki Miyamoto points out in the Forward to this book, Professor Black is an internationally renowned researcher in the field of transportation who has led many international academic activities. He has a deep experience with Japan and is very familiar with Japanese transportation policy through his long-term stays in Japan and joint research with many Japanese researchers.

This book is a brief, but comprehensive history, of Japan's transportation and surrounding conditions, from its formation as a nation some 2000 years ago, to the present day. Of course, the older the period, the less information is available to researchers, but the information he has painstakingly collected, including field surveys, provides a concise history of the formation of Japan's transportation system. Many Japanese transportation engineers, including myself, have studied the history of transportation in our country since the modern era, at best, so reading this book is an ideal base for a systematic study of the country's longer-term history. Importantly, it is also the only historical book in the English language that comprehensively describes Japan's transportation policies. Thus, it makes an ideal book for researchers around the world who wish to refer this history. Furthermore, because no expert knowledge is required to read the book general readers interested in the history of Japan will enjoy its scholarly depth.

The author is an Australian academic, which is essential to point out because most Japanese cities were established in pre-modern times and are inefficient compared to large Australian cities that are laid out according to modern principles of urban planning. The urban framework and shape of Japanese cities embody a continuous history, and this book provides an unique foreign perspective on how the Japanese transportation institutions and organisations and its urban systems have evolved. It is imperative to know the organisational theory of transportation policy in Japan, which has a different spatial pattern to that of European cities, for example, in any international comparative study which would be an interesting avenue for future research.

The structure of this book is as follows: Chapter 1 is an introduction, explaining the aims and approach of this book. Chapter 2 summarises the Japanese administrative system governing transportation policy from ancient times. Chapters 3–7 describe the history of shipping, inland water transportation, roads, railroads, and aviation. Chapter 8 details the integration of urban planning, land use and transportation. Chapter 9 is a summary of the book and looks towards the future. In the following, I now describe my personal view of the significance of this book.

### *History of Japanese transportation*

First, Chapter 1 sets forth the key questions that this book seeks to clarify, and also explains the research approach. The main objective of this book is to clarify what are the Institutions and Organisations that have shaped Japan's transportation systems. The main research method is a bibliographic survey in Japanese and English. In addition, with the cooperation of many Japanese researchers and practitioners, field surveys of transportation infrastructure, and records of transportation found in paintings, novels, and other cultural properties from various periods, have also been investigated and used as sources of information. The survey covers the period from the Archaic period (250 B.C. to A.D. 603) to the present day with capturing history of institutions and organisations and associated transport arrangement of the time as comprehensively as possible.

Next, Chapter 2 divides Japanese history into six major periods and details the Japanese system of governance in each period. This is fundamental information for discussing formation of transportation systems. Needless to say, building and operating a large-scale transportation system requires a large organisation, and the national governance system will have a significant impact. The history of Japanese governance began with a tribal society, followed by the establishment of the emperor system, the rise of the samurai class, the Warring States period and unification, the establishment of the modern state, and the establishment of a democratic state following the defeat of the war, and has continued to the present day. This chapter provides a concise summary of Japan's long history, describing the governing systems of each period and the events that brought about those changes.

Japan is surrounded by oceans, and shipping has been an important means of transportation since ancient times. Chapter 3 describes the history of ports and shipping. The book focuses on the Osaka Bay region because of the abundance of data, which documents the role of ports and shipping in each period, management organisations and actors, management methods, and facility use. In particular, during the early years of Japanese history, most of the culture, technology, and institution systems were imported from China, and ports played an extremely important role in the wide range of trade and exchange.

In many countries, transportation by rivers, lakes, and canals is also an important means of transportation, but it has not developed well in Japan compared to other countries. Chapter 4 first shows that the topography of Japan is not suitable for a canal network, and then introduces typical examples of canal construction. In urban areas, such as Tokyo, canal networks formed in pre-modern times have been reclaimed in modern times and used for road construction. In such cities, the current district and road layout is based on a network of canals. The main focus of river administration in Japan has been flood control, and its use as a transportation route has been suppressed. Although multi-

purpose use of rivers is currently being promoted, the use of rivers for transportation purposes remains very limited.

In contrast, roads were the main means of transportation in the interior. Chapter 5 describes the development of roads from ancient times, showing that roads played a pivotal role as part of a nation's governance system, especially since the Middle Ages. The early Japanese trunk road system was a direct imitation of the Chinese system. Its routes still function today as a trunk network centred on Kyoto and Osaka. In the Edo period (1603–1867), a network of roads radiating from Edo (Tokyo) was formed and served as infrastructure to support the political economy of the Edo shogunate. They still function as part of the current highway system. The Edo period's street scenes can also be seen today in the form of ukiyo-e woodblock prints. Ukiyo-e, and other documents, describe how those road networks were also used for mass tourism in the Edo period. The book then describes the organisation and systems of road maintenance since the modern era, and shows that, especially in the postwar period, road construction and maintenance, corresponding to the diffusion of automobiles, was rapidly promoted with the technical assistance of the USA.

Railroads are a product of the Industrial Revolution and have a history only since the modern era in Japan. Chapter 6 describes the early days when the technology was imported from the UK, the formative years when the national policy was to strengthen the transportation capacity of railroads, and the postwar period when the development of inter-city high-speed railroads was promoted. The book describes the development and operation of railroads in each period, and in particular, details the development system and organisation of the Shinkansen (including the maglev system), an inter-city high-speed railroad network that is unique to Japan. On the other hand, intra-city railroads and subways are only briefly described.

Chapter 7 describes the civil aviation business and airport development in Japan. The first commercial aircraft flight in Japan took place in 1921. The establishment of airline companies as government-run enterprises, the regulation of the airline business by the government, deregulation, and the entry of private companies into the market have all contributed to the formation of Japan's current airline business. It also explains the airport development institutions and shows the history of the development of Tokyo, Osaka, and Nagoya airports. In particular, the Narita Airport project was delayed and scaled down due to the escalating conflict between the Japanese government and the local residents, and the prolonged violence caused by the intervention of anti-government activists. The case has already been referred to internationally as the failure of consensus building in airport development: this book also gives an overview of these events.

Transportation is considered a derived demand, and land use has a significant impact on transportation demand. Chapter 8 describes urban planning and the integration of land use and transportation. This book mainly describes the history of urban planning in the Tokyo metropolitan area since the Meiji period, the system and mechanism of the land readjustment program, examples of transit orient development by private railway companies, and the development of new towns in the Tokyo metropolitan area. Four smart city projects are also described as ongoing projects. In particular, the collaboration between railroad development and residential land development by a private railway operator is introduced as an example of a large-scale realisation of value capture in the railway business. The development of large-scale new towns in the suburbs by public agencies has also greatly contributed to alleviating the housing shortage during the period

of rapid population growth, but, as has been pointed out that, there are also negative aspects, such as long commuting times and poor access to urban functions.

Chapter 9 provides a summary of the previous chapters, followed by a look at future research. In particular, the article describes the Japanese government's vision of the future, Society 5.0. Based on this vision, the book looks at the future role of transportation in the face of contemporary situations such as technological progress, population decline and ageing, and the intensification of disasters. It then points out the need for change in institutions and organisations to cope with this new society.

### *Conclusion*

This book shows that, since ancient times, Japan has adopted foreign technologies and systems in the construction of its transportation system and has made improvements to adapt them to domestic conditions. A country's transportation system is a large complex of subsystems, including various modes of transportation, business organisations that operate them, various technologies that support transportation, infrastructure development, business operation financing, and regulatory systems that coordinate interests among businesses and users. Transforming that transportation system requires a great deal of energy. This book shows how transportation systems have been shaped in each period of social change in Japan, where change can often involve serious conflicts, as in the case of Narita Airport construction, for example. That result may be a great disservice to future generations.

Japan is now in a phase of population decline, requiring a major shift in goals of transportation policies formerly designed to accommodate population growth in the modern era. In a phase of population decline, the efficiency of transportation infrastructure and services declines, so a major challenge is how transportation services can be maintained and provided to guarantee the public's right to mobility. Japan's current population decline is ahead of that of other countries, partly due to the suppression of immigration from abroad. This means that importing ideas from abroad is impossible, as has been the case in the past. Japan has to create its own methods of transforming the transportation system to cope with this declining population. Looking at the history in this publication, creating a new concept of transportation system is a great challenge for Japan. Many Asian countries, including China, are experiencing declining birth rates and are expected to reach their population peaks in the near future. The successes and failures of Japan's ongoing efforts to transform its transportation system to accommodate a shrinking population will serve as case studies that can be referenced by other countries.

As the author of *A Short History of Transport in Japan from Ancient Times to the Present* points out "History helps us to understand the past and informs us as to what might be relevant for the future" (p.255). By presenting a comprehensive history of the formation of Japan's transportation system, this book should provide an important perspective for future innovations in Japan's transportation system.