

## Preface

This book presents the results of research by the study group on Japanese transportation, part of the Project on Technology Transfer, Transformation, and Development: The Japanese Experience, a survey research project entrusted to the Institute of Developing Economies by the United Nations University. After completing preparations in 1977, the study group officially began work in April 1978. The study group's five members were Eiichi Aoki of Tokyo Gakugei University; Ichiro Ishii of Toyo University; Katsumasa Harada of Wako University; Hiromi Masuda of Bunkyo University; and myself. I was group leader, a post that gave me the duties of organizing all research. The group met on the first Tuesday of every month at IDE, where they were also able to be in direct liaison with the IDE-UNU project team. The historical period under study was originally from the beginning of the 1860s to around 1900, although our framework changed as research progressed. Reports were turned in sequentially. Research was divided according to the particular specialty of each scholar. Road transportation was handled by me, road construction by Professor Ishii, river and coastal shipping by Professor Masuda, and railroads by Professors Aoki and Harada. By October 1978, each member had submitted a 50-page interim report in Japanese. The reports were published in Japanese and subsequently in English by the UNU between 1979 and 1982. In 1986, the UNU published the Japanese edition of which the present book is a translation.

The latter part of the nineteenth century was one in which Japanese on every level felt themselves under pressure from the West as they strove to bring Japanese levels of technology up to those in the West. The nation sought to introduce, acquire, improve, and develop advanced technology in every field, things as well as systems. Transportation was of course no exception. One after another, transportation means that were already in use in the West, and may have even become obsolete there, were brought into Japan: horse-drawn carriage and railway, Western sailing-ship, steam locomotive, and steamship. With government subsidies concentrated on

railroads and Western shipping, Western means of transportation, old and new, sometimes competed and at other times supplemented each other, until by the year 1900 a modern transportation system was established centred on the railroad and steamship. The above-mentioned reports dealt chiefly with the introduction of advanced technology during the industrial revolution of that time. They discussed the distinctive features of Meiji government industrialization policy, and the process by which technology was improved and developed and technological independence was gained in land and water transportation. The analyses in each report remain within the author's specialized field, but provide totally new perspectives and insights.

This book was conceived in order to provide a more integrated look at Japan's experience with technological development than could be expected from the individual studies, and with the aim of suggesting how the Japanese experience might offer a useful reference for countries now undergoing technological development. This overall report covers the years up to 1980.

The reports are structured so that the years from 1867 to 1980 are divided into eight different periods. Each chapter begins with a general description of the features of the period in regard to railroad and road transport and river and coastal shipping and then examines specifics for each transportation mode. The first chapter examines the transportation system in the Edo period that was in existence prior to technological transfer. The second chapter explains the situation during the beginnings of transfer (1868–1891). Chapter three deals with the 1892–1909 period, which marked the start of Japan's railroad era and the establishment of a modern transportation system. Chapter four takes up the development of sea transport during World War I and the domestic production of ships and motor vehicles. Chapter five discusses the period 1922–1937, in which land and sea transport were organically synthesized by constructing large piers and land routes near the ports. It also discusses the development of urban railroads and motorization. Chapter six concerns transportation during World War II. Chapter seven examines the problems of the post-war recovery period 1946–1954. Chapter eight discusses developments during Japan's rapid economic growth.

The development of transportation in Japan is of course an individual case that cannot be seen apart from what was happening on the world and domestic historical stages from the 1860s to the 1980s. Although Japan's experience is one that cannot be applied directly to the developing countries as a model of technological transfer, there are certain factors that can be selected from specific conditions that give the Japanese experience great worth, at least as a reference. Judgments of value must, however, be left to the reader. Finally, all members of the study group would like to thank the United Nations University and the Institute of Developing Economies for their support.