

Traditional Transportation Systems

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Roads

The shogun and feudal lords of the Edo period strictly controlled road transportation. Five main highways radiated out from Edo (present-day Tokyo), the seat of the central government. Every 10 kilometres or so along the five roads stood post-station settlements with horses, bearers, porters, and inns always ready for the travel and lodging needs of the samurai class. Officials appointed by the *bakufu* (the shogunate) were assigned to the post-stations to directly control transportation and lodging. Each post-station along the Tokaido – the main highway between Edo and Kyoto, residence of the emperor – had 100 transport workers, porters, and bearers, and 100 horses on duty at all times. Next in order of highway priority was the Nakasendo, where 50 persons and 50 horses were permanently detailed to each post-station. Post-stations on the other three highways, the Koshu Kaido, the Nikko Kaido, and the Oshu Kaido, had 25 bearer-porters and 25 horses each. Highways other than these five were secondary, lacking the importance and volume of traffic of the main highways. Secondary highways were under the control of local lords, who set up post-stations and stables for fresh horses and bearers, the number of which was determined by traffic levels. However, samurai still had preference in the use of facilities and at amounts much lower than the going rate. But even they could not do as they wished; they had to comply with limits on use just as everyone did, for limits determined by class were placed on all users. Rented horses and bearers transported people or cargo only as far as the next station, where it was necessary to hire another relay to reach the next stage of the journey.

To prevent hostile forces from entering the capital, inspection stations with sturdy wooden gates were built along each highway. Further defence measures were designed to prevent all wheeled vehicles from using the roads and forbade the construction of large bridges over rivers.

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Fig. 1. Traffic network at the end of the Edo period

To compensate for the burden of providing transportation and lodging services to the ruling classes, post-stations were exempted from certain land taxes, provided with subsidies at a fixed rate, and permitted to do business in transportation and lodging with commoners. However, the government restricted the use of bearers, horses, and lodging by commoners so that they would not hinder travel by the samurai class. Commoners also had to pay the going cost. The samurai demand for transportation was very high and if bearers, porters, and horses on permanent station in the post-stations could not handle the traffic, auxiliaries would be drawn from neighbouring villages. The villages' corvée labourers were attached to each post-station and, each time the need arose, the villages provided horses and bearers who would be under the direction of a post-station official. The villages were

compensated for this service by exemption from certain taxes. But the exemptions were not enough to offset the costs for transport labour. Village debt increased continually throughout the Tokugawa period, so that by the *bakumatsu* (1853–1868), the decline and fall of the shogunate, many villages were financially exhausted.

The transportation system that the new Meiji government inherited from the *bakufu* was feudal, requiring mandatory corvée labour from post-stations and nearby farms to make it go. The government needed time to renovate the system because, as well suited as the framework was to feudal military and administrative use, the highways and subordinate facilities had not been improved in 200 years and were in an underdeveloped state not suited to industrial and commercial use. Another obstacle to immediate re-vamping was the civil strife occurring when the new government took power. That strife made the government fully aware of the military role of transportation. Even after clear assurances of victory, the government clung to the system and, in June 1868, expanded the transportation labour force levy to every village in the country. The official reason for the decree was fairer distribution of corvée, but the government's continuing high demand for transportation meant an equally heavier burden on all villages. Military and administrative road use stayed at the same high levels as always, restrictions on bearer and horse fares remained almost unchanged, and the low rates for official road use were about the same.

The villages on which corvée was newly imposed protested vehemently, pleading diverse reasons for exemption. The government found it more and more difficult to obtain the necessary men and horses. The real value of the fixed price for public road use declined by half because of civil-war-induced price inflation, and the emergency increases in transport labour greatly impeded farm work. The government dealt with the protests by issuing a series of decrees, some of which rebuked the villagers for laziness, others that sought to appease them. The economy was the final arbiter, however; it eventually proved impossible to procure large amounts of labour from farm villages at rates that were both fixed and far cheaper than real prices. Under pressure from farmers demanding fair wages, the government was in the unenviable position of continually loosening the overall restrictions on the amount of horses and labour and increasing the fixed price.

These concessions increased government costs and rapidly undermined the basis of support for a system that was fast becoming unworkable. The government's railroad construction that began in April 1870 was another factor reducing the need for official supervision of road transport. As a result, when the first railroad opened between Shimbashi (now Shiodome) and Yokohama (now Sakuragicho), people living along the roads were allowed to contract transport work at each post-station. Then, in 1875, the work was completely privatized – anyone could apply to the government for permission to operate a transport business and the conditions for granting licences were all the same.

River Transport

As overland transportation performed important functions in the military and administrative context, so too river and auxiliary facilities (docks, inspection stations, etc.) played a vital role in distribution as the major mode for transporting tributary rice and other cargo under the *bakuhan* system, the dual structure of feudal rule under the shogunate and some 270 baronial domains. This role in cargo transport was equivalent to the military and administrative role of the roads and subordinate facilities such as the post-stations and inspection stations. The construction of castle towns and the *sankin kotai* system (alternate residence, in which each lord was forced to spend several months every other year in the shogunal capital of Edo and leave there members of his family as hostages when he returned to his domain) show how closely the feudal lords were linked to the urban-centred commercial economy from its inception. Under this framework they had to sell their tributary rice and other goods so that they could buy necessary consumer goods and services. To satisfy these requirements, feudal lords in every region began in the early years of the Edo period to reclaim rivers and construct new river-banks for loading and unloading goods. Representative examples are Suminokura Ryoi's reclamation of the Fuji and Tenryu rivers in 1607 and Kawamura Zuiken's reclamation of the Abukuma River and the Mogami River in 1671–1672. Most Japanese rivers flow fast and short out of mountain ranges running along the country's spine, but despite the obstacles to navigation, transportation became possible through dredging and reclamation and the use of boats of many different types and sizes. Goods loaded onto a small boat at the upper reaches of a river would be reloaded into a larger craft where the river was wider. At the mouth of the river, the load would finally be transferred to a large cargo ship. Transfer of freight along the river was controlled by river-bank agents. But despite such difficulties, there were fewer reloads and thus fewer damaged goods than in road transport; river transport was cheaper and it could carry much more cargo. This made the rivers important highways throughout the Tokugawa period for hauling tributary rice and other goods, as well as passengers and cargo from commoners.

Banks were built along all navigable rivers, and those engaged in river transport included river-bank agents, boat owners, boatmen, and stevedores. The agents handled the stevedores and cargo transportation. Some of what the cargo owner paid went for boat-owner fees, the rest for agent's handling fees.

As time went on, some river-bank agents bought their own boats and engaged directly in transportation work. The agents provided mandatory offerings to the shogunate and feudal lords for authorization to operate. In many cases, the agents were also village officials or road agents, providers of bearers, porters, and horses to travellers and cargo owners. Directing boat owners, boat handlers, and stevedores, the river-bank agents worked together to organize river transport. During the Meiji period, they joined

forces with a major transportation company, Naikoku Tsuun Kaisha, and many operators who aided in modernizing river transport were former river-bank agents.

Coastal Shipping

The sealing of the country to foreign entry and native exit and prohibitions on construction of large ships in the early Edo period confined sea transport to the coast for more than two centuries. The prohibitions deprived Japan of all opportunity to develop the arts of deep-water navigation and ocean-going shipbuilding acquired from the West in the latter half of the sixteenth century. Japanese ships were now limited to the single-square-sailed flat-bottomed Yamato *bezaisen* and the navigation techniques were restricted to those usable only in coastal waters. However, coastal-sea transport flourished as the *bakuhau*n system solidified and the volume of tributary rice and other goods increased.

Farm villages in the Kanto region cultivated mainly dry crops, which lacked the potential of the Kinai's wet-rice paddies to sustain large populations and could not keep up with consumer demand from Edo. To keep watch on the feudal lords, the Tokugawa shoguns extended the land they controlled strategically throughout the country. Under the *sankin kotai* system, which the shogunate devised to keep the lords impoverished and under central control, the feudal lords were required to spend part of alternate years in Edo, to provide tribute to the shogun, to build villas in Edo, to keep their wives and children in the shogunal capital as hostages, and to ship rice and other consumables from their home provinces. This provided the initial boost, in the 1620s, for the ships of the Higaki Line to begin plying the waters between Osaka and Edo and supplying the Tokugawa capital with cotton, oil, sake, vinegar, soy sauce, and other everyday articles. By the 1670s, another service between Osaka and Edo, the Taru Line, was transporting to Edo sundry articles such as sake, paper, lacquer, and hardware goods. From 1700 to 1702, 4,036 of these ships docked in Edo.¹

Two other main lines flourished mightily after their start in the 1670s: a western sea route carrying tributary freight from the Tohoku, Hokuriku, and San'in regions to Osaka and Edo, and an eastern route carrying similar goods along the Pacific coast from Dewa, Sanriku, Iwashiro, and Iwaki to Edo. Ships on these routes carried return cargo from the Inland Sea regions of salt, ginned cotton, cotton cloth, paper, and oil. Thus, many large ports were opened along the Japanese coast and eventually formed themselves into a coastal navigation network.

However, after ports were opened to foreign shipping in the *bakumatsu* period, non-Japanese ships posed a strong threat to the prosperity of native coastal shipping. British consular reports² from 1868 to 1872 indicate that foreign ships carried a large portion of domestic goods in and out of the open ports of Yokohama, Kobe, Hakodate, Nagasaki, and Niigata.

Moreover, an increasing number of foreign ships chartered under Japanese name were entering and leaving the closed ports. The Meiji government therefore used its maritime transport policy to strengthen Western-type shipping and prevent foreign ships from entering coastal ports. In October 1868, it prohibited all fiefs from arbitrarily chartering foreign ships for transporting cargo. In August 1869, the government completely prohibited chartered foreign ships from entering other than open ports.

At the same time, the government actively encouraged the domestic construction of ships and the development of native shipping. In November 1869, it allowed anyone to own Western-style steam- and sailing-ships. In February 1870, it handed down commercial shipping regulations that strongly promoted ownership of Western-style ships and boats. By consigning tributary rice shipments, chartering government-owned boats, and granting subsidies, the government began policies to promote and protect native shipping.

Notes

1. Toyoda Takeshi and Kodama Kota, eds., *Kōtsū shi* (History of transportation) (Yamakawa Shuppan Sha, 1970), p. 265.
2. Yamaguchi Kazuo, "Meiji shoki no gaikoku kaiun to Mitsubishi Kaisha" (Foreign shipping in early Meiji and the Mitsubishi Company), *Sekai keizai bunseki* (Analyses of the world economy) (Iwanami Shoten, 1962).