

which was enacted and put into force in May 1970. Table 11 shows the extent of roads that are controlled by these organizations.

Note

1. Japan National Trucking Association, *Torakku yusō sangyō no genjō to kadai* (The situation in the lorry transport industry and its problems), p. 20.

Inland Shipping

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Policies for Domestic Marine Transport in the Period of Rapid Economic Growth

The so-called quantitative boom of 1955 was the start of the Japanese economy's era of high-growth rates. Even though the upswing period was short and soon declined, gross national product remained high every year, with an annual average growth, in real terms, of 10.4 per cent until 1973, when OPEC increased oil prices four-fold (known in Japan as "the oil shock"). The -1.3 per cent growth in GNP the following year, 1974, was the first of minus growth, and from then on the economy shifted from high rates to stable rates of growth.

Marine transport during this period mirrored the trends in the Japanese economy. Japanese shipping recovered in 1955-1956 its prewar, 1934-1935 levels, transporting 59 million tons of cargo in 1955 and 69.88 million tons in 1956; the transport figures steadily increased from then until 1973. The share of shipping in total domestic transport volume was not great in terms of number of tons transported, but in ton-kilometres, inland shipping showed notable progress, expanding dramatically to 51 per cent in 1973. Growth during the period was dramatic in passenger-hauling as well as freight, and this was especially true in the expansion of ferry use that accompanied the progress in motorization from 1965 on, with high growth rates obtaining both in number of passengers transported and in passenger-kilometres.

Domestic economic activity brought a recovery in inland shipping, and by 1956 the number of tons transported reached the prewar levels. However, the good times in shipping led to an excess of ship tonnage, and, although the 180 million tons and 80 billion ton-kilometres transported in fiscal 1965 gave shipping a 43 per cent share of the domestic transport market, excess tonnage kept fares down for a long time.¹ While excess tonnage was a major cause, other important factors were the worsening effect that low-performance standard wartime ships were having on postwar ship quality and the disorderly market situation caused by heavy competition between too many small operators. A rapidly growing economy demanded stable

domestic transport – especially considering the large share that inland shipping had in raw-material transport. Various policies were conceived and implemented to achieve such stability.

In an effort to organize small operators and prevent fare undercutting, the government enacted the Small Ship Operators' Association Law in June 1957 (effective from October that year), which would cover operators of wooden boats and operators of steel ships of less than 500 gross tons. A system of registration had been in effect since 1952 for wooden-ship operators and competitors operating ships of 500 gross tons or less, but in May 1962, the Law on Small Ship Operators was enacted to strengthen the registration policy and Ministry of Transportation administrative "guidance" over these operators. The Domestic Passenger Boat Corporation Law was partially revised in April 1961, and a Special Maritime Credit Corporation was created, which, in cooperation with the ship owners, formed a shipbuilding system for the replacement of wartime standard ships. The stipulation was to build 1 ship for every 1.5 scrapped, and even after the three-year period (1961–1963) for replacing wartime standard ships had elapsed, the system continued to be used to build replacements for obsolete ships.

A series of like policies was carried out to stabilize the inland shipping business, but the problem of excess tonnage in inland shipping remained unsolved. This is because the pertinent regulations were applied only to inland operators of small vessels, wooden boats, and steel vessels under 500 gross tons; operators of large inland ships were excluded. People began to realize that any thorough overhaul of the inland shipping industry would require that the entire industry come under the purview of its laws and regulations. This realization led to the revision of the Law on Small Ship Operators and the Small Ship Operators' Association Law, and to the enactment, in July 1964, of the Inland Shipping Law and the Inland Shipping Association Law, which expanded legal jurisdiction to cover all inland maritime operators. The Inland Shipping Law set a maximum on the number of ships to avoid excessive increases and maintain the number of vessels at an appropriate level. Progress in organizing all inland shipping operators was rapid under the Inland Shipping Association Law, so that by December 1965, all shipping associations could be placed under one umbrella organization, the Japan Federation of Inland Shipping, which was set up in that month.

Although the stabilizing policies achieved certain results, the 1964–1965 slow-down in the domestic economy led to a decline in transport demand, and the excess in ship tonnage grew ever more serious. The appropriate number of ships for general freight at the time was considered to be 1,504,000 gross tons, so the excess was 711,000 gross tons,² thus the actual number was 147 per cent of the appropriate quantity. To remedy this situation, a General Plan for Inland Shipping, which consisted of a two-pillar policy, was adopted and was aimed at both promoting the construction of more modern, economical ships – thus eliminating excess tonnage – and modifying the previously established permit system based on registry to one

based on licensing; the ultimate goal of these measures was establishing an appropriate scale for inland shipping operators.

As part of the effort to reduce the excess in tonnage, legal revisions were made in December 1966, resulting in a change of the Special Maritime Credit Corporation to the Maritime Credit Corporation, increased construction of replacements for existing cargo ships, and financial support for the joint mooring operations performed by the shipping associations. The Inland Shipping Operations Law was revised, also in December 1966, and, after three years of interim measures, went into effect in September 1969 to create a licensing system for inland shipping corporations.

These steps allowed the Maritime Credit Corporation, and its predecessor, the Special Maritime Credit Corporation, to finance replacement construction that scrapped 3,696 (629,000 tons) wartime standard and obsolete ships and produced 377 (462,000 tons) new ships in the eight years from 1961 to 1968. The number of vessels was cut by 10 per cent and the tonnage to 73 per cent of what it had been. Construction also increased the per-ship tonnage 7.2 times, eliminating 3,696 small vessels averaging 170 tons and adding 377 large ships averaging 1,225 tons.

The adoption of a licensing system, the 1965 recovery in the economy, and the other measures to eliminate excess tonnage had, by 1969, achieved success and eliminated a situation chronic since 1945. The problem arose again, however, when the economy began to decline in the autumn of 1970. To deal with the situation, construction of freighters was halted and a joint mooring project was again set up by the Japan Federation of Inland Shipping. The industry was not able to completely extricate itself from the situation until the economic recovery in the latter half of fiscal 1972.

The Effects of the Oil Crisis

The oil crisis of 1973 hit an already downed inland shipping. Transport demand slowed in the latter half of 1973, although, despite the minus growth rates in the economy in 1974, transport volume increased over the previous year by 27.5 per cent, to 410.41 million tons. However, 1975 registered an 8.1 per cent drop from the previous year's level, to 377.34 million tons. Materials for public works projects that were part of the government's economic pump-priming policies begun in 1976 spurred transport demand and pushed transport volume into an increase trend, but the increase was of a low level, reflecting the beginning of a low-growth period. This was especially true of the transport of oil by inland tanker, which peaked in 1973 but then began a series of yearly decreases, until the volume carried in 1980 reached only 81 per cent of what it had been in 1973.³

The decline in transport volume after the oil crisis again, of course, produced an excess number of ships. The exceptionally good economic conditions before the oil crisis permitted the construction of highly efficient new ships, but when, following the oil crisis, the ships were ready for service, an excess number of tankers was again a problem. In 1975, there was a 20

per cent (660,000 gross-ton) excess of freighters and a 9 per cent (90,000 gross-ton) excess of tankers.⁴ This presented inland shipping operators with an extremely bad management situation as they were forced into direct confrontation with a serious recession.

As a part of the measures adopted between March 1975 and March 1979 to fight the recession, inland shipping companies (excluding tanker operations) were designated as medium and small corporations eligible for bankrupt-related project funds and loans. In addition, the Maritime Credit Corporation provided aid in the form of bond guarantees and deferred payments on ship charges. To cope with the excess number of ships, the Japan Federation of Inland Shipping adopted, in 1977, guidelines for the scrapping of 200,000 gross tons; and, beginning in April 1978, the constructed-to-scrapped ratio for general freighters would be raised to 1:1.3.⁵

In addition to these measures, increases in investments in private plants and equipment to stimulate domestic demand were begun around the middle of 1978, and eventually transport demand grew and the situation enjoyed some improvement. But, in the period of stable growth the Japanese economy entered after the oil crisis, it became difficult for inland shipping to progress along a smooth path. But, even without smooth growth, it is highly unlikely that inland shipping, with its ability to carry large volumes of cargo at low rates, will lose its importance in the transport picture.

Modernizing Inland Shipping

By 1955, when the Japanese economy began almost two decades of high growth rates, transport volume had regained its prewar levels. From that time, inland shipping exploited its inherent advantage in being able to transport large volumes of freight at low rates and about half the domestic freight transport volume in ton-kilometre terms. However, as we have seen, inland shipping was also afflicted with a chronic excess in ship tonnage and poor ship quality, particularly from the low-performance wartime standard wooden vessels, and there was consequently constant pressure to rationalize and make transportation more efficient. Thus, while high economic growth expanded transport demand and developed inland shipping during this period, it also forced strict efforts to modernize. There was, moreover, a continuing revolution in energy during this period that replaced coal with oil as the main transport good, which assured the tanker of an extremely important position in inland shipping. Japan's basic steel production continued to increase during this period, making the country the world's number one steel exporter from 1969 on, and inland shipping continued to increase its quantities of structural steel transported. By 1966, structural steel had reached first rank in volume of inland dry-cargo items transported, and in 1980 it made up 21 per cent of such cargo. This is equivalent to 70 per cent of the structural steel produced by the seven steel companies large enough to turn out their own pig-iron in blast furnaces.⁶ In addition, inland shipping maintained a major role in transporting steel, limestone for ce-

Table 12. Tons transported by transport mode (1956–1980) (1,000 tons)

Year	Motor vehicle	Railroad		Inland shipping
		National Railways	Private railroads	
1956	651,000	172,892	36,607	69,882
1957	777,000	177,792	37,862	76,914
1958	905,000	167,141	34,861	73,330
1959	1,062,000	181,403	38,689	89,843
1960	1,156,291	195,295	42,904	108,285
1961	1,437,348	206,395	45,342	116,185
1962	1,602,418	201,646	45,789	108,118
1963	1,948,380	206,051	47,327	177,201
1964	2,209,818	206,606	52,175	164,682
1965	2,193,195	200,010	52,463	179,654
1966	2,654,005	195,776	53,900	201,576
1967	3,272,479	202,570	55,554	243,265
1968	3,812,517	198,808	54,781	262,743
1969	4,164,837	197,171	55,458	320,814
1970	4,626,069	198,503	57,254	342,077
1971	4,795,677	193,296	57,970	318,392
1972	5,203,418	182,450	56,919	321,476
1973	4,911,957	175,681	53,161	321,856
1974	4,377,347	157,705	48,114	410,415
1975	4,392,859	141,691	42,737	377,342
1976	4,355,945	140,913	45,110	401,492
1977	4,456,443	132,036	43,128	412,554
1978	4,860,424	133,343	45,416	440,780
1979	5,258,000	121,619	47,454	455,885
1980	5,318,000	110,572	44,931	450,783

Source: *Shōwa kokusei sōran* (Survey of Showa Japan), vol. 1, p. 417, 7-3, “Yusō kikan betsu no kamotsu yusō” (Freight transport by transport mode).

ment, cement, coal, coke, motor vehicles, grain, and feed. The relationship of inseparability between these raw materials, the end-products, and inland shipping led to the development of new coastal industrial belts turning out structural steel and petroleum products and other representative goods.

Rapid economic growth changed Japan's industrial structure, and inland shipping, too, sought modernization to enable it to deal effectively with the changes. What was sought was a rationalization backed by technical innovation. One of the steps adopted was improving transport capability by building bigger ships and creating special designs for specific purposes, and another was improving ship equipment to reduce the number of crew members and save energy. The period from 1955 on was one of thorough modernization in inland shipping.

Modernization in inland shipping started with the change from wooden to small steel boats. Relative to wooden vessels, steel ships have superior

speed and navigability, operate more stably, and have fewer problems at sea. Of the 1,319,000 gross tons of inland shipping vessels in 1955, 51 per cent, or 677,000 tons, were made of wood. Wooden ships reached their peak in 1965 with 891,000 gross tons before gradually declining to 168,000 gross tons in 1980. In contrast, steel ships shot up from 642,000 gross tons in 1955, to 2,130,000 gross tons in 1965 and finally to 3,738,000 gross tons in 1980. Thus, the portion occupied by wooden ships fell from 51 per cent in 1955 to 29.5 per cent in 1965 and 4.3 per cent in 1980. At the same time as the conversion from wood to steel vessels, ships were being made larger, their cargo capacities were expanded, and the number of round trips was increased; the greater efficiency brought fare costs down. As the Maritime Credit Corporation's figures on replacement construction from 1961 to 1968 clearly show, 7.2 times as many large ships were constructed as were scrapped. Moreover, since simple increases in size and cargo capacity have limits in their ability to increase operational capability, special-purpose ships were designed to further increase that capability. But most of the special-purpose ships were simply general-purpose ships, and there was a need to develop ships that would further raise efficiency; this led to the eventual birth of special-purpose ships designed to handle a particular kind of cargo. Thus, there are ships designed to carry only coal, limestone, cement, motor vehicles, liquified petroleum gas, asphalt, containers, etc. Beginning in 1965, RORO, or roll-on, roll-off ships, were designed especially for carrying motor vehicles and are now used almost exclusively for transporting vehicles because the cars can be driven directly in and out of the hold.⁷

Port facilities are a crucial aspect of shipping, and the modernization of ports provided the push for ship modernization. The Five-Year Plan for Economic Self-sufficiency of 1956 led to the Five-Year Plan for Port Facilities, implemented in 1962 and now in its fifth period. With the development of coastal industrial belts throughout the nation, the traditional methods of unloading cargo by barge were being abandoned in favour of direct unloading from ships tied to the wharf. This trend is clearly apparent in the figures for cargo carried by barge. The peak year in volume for barge-transported cargo was 1968, with 81,117,000 tons. This decreases yearly until 1977, when it dropped to 49,797,000 tons, or 61 per cent of the peak. The proportion of cargo transported by barge was 30.9 per cent in 1968, falling to 12.1 per cent in 1977.⁸ Rationalizing the loading/unloading of cargo reduced the base price of transport, which in turn improved conditions for locating port facilities and coastal factories and led, in the area of distribution, to even greater use of the special transport features offered by inland shipping; that is, its ability to carry large volumes at low rates. One notable trend in this connection was the building of large-scale distribution bases, separated into categories according to the type of material handled, at ports close to the consumer destination, which further rationalized the transport and distribution of large quantities of materials – materials that were transported by special-purpose ships. In addition to these distribution bases, transit centres, which functioned similarly to the distribution bases and which were a

Table 13. Inland ship tonnage by structural type (1955–1980) (1,000 tons)

Year	Steel	Wood
1955	642	677
1960	981	795
1965	2,130	891
1970	2,922	539
1975	3,668	401
1980	3,738	168

Source: Japan Federation of Inland Shipping, *Naikō kaiun* (Inland shipping), 1982, p. 178.

part of the broad efforts to modernize port facilities, were constructed to receive overseas products that were subsequently handled by inland shipping operators for distribution within the country. In 1970, for example, the Nippon Oil Group built transit facilities at Minami Hata Kiire, in Kagoshima, and other examples of facilities for liquified petroleum gas, industrial (Mexican) salt, etc., can be offered. The so-called central transit system rationalized the transport and distribution of goods.⁹

The modernization of shipping began with the conversion from wooden to steel vessels and proceeded with technical innovations in equipment (radar, automatic pilot, remote control, autotension winches, etc., for loading, and steel hatches) and structure (double decks, pusher barges, special-purpose ships) and received further boosts from the technical innovations made in port equipment.¹⁰ The modernization of inland shipping began in 1955 and obtained healthy results during the period of rapid growth. But the demands for further modernization have grown even stronger in the harsh environment of stable economic growth after the 1973 oil crisis.

Notes

1. *Un'yushō sanjū-nen shi* (Thirty-year history of the Ministry of Transport) (Un'yu Keizai Kenkyu Senta, 1980), pp. 333–336, figures IV-1-4 and IV-1-5.
2. *Ibid.*, p. 363.
3. *Naikō kaiun* (Inland shipping) (Japan Federation of Inland Shipping, 1982), p. 170, table 28, "Oil Transport Performance by Inland Tankers," gives an index of 100 to the 186.56 million kilolitres carried in 1973; the figures for 1974–1980 are as follows: 1974, 95; 1975, 91; 1976, 91; 1977, 91; 1978, 90; 1979, 87; and 1980, 81.
4. *Un'yushō sanjū-nen shi*, p. 526.
5. *Ibid.*, p. 527.
6. *Naikō kaiun*, p. 121, table 1, "Transport Performance According to Type for Transporting Structural Steel."

7. *Ibid.*, pp. 181–184, where the different types of special-purpose ships are introduced.
8. *Shōwa kokusei sōran* (Survey of Showa Japan), vol. 1, p. 440, “Naikō sempaku yusō ryō” (Volume transported by inland ships).
9. *Naikō kaiun*, pp. 184–185, “Ryūtsū kichi” (Distribution terminals).
10. *Ibid.*, pp. 189–198, “Sempaku no gijutsu kakushin” (Technical innovations in shipping).