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PROCEEDINGS — Eighteenth Annual Meeting

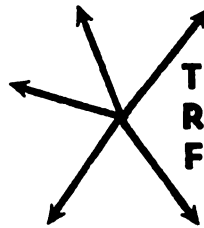
Theme:
“Transportation in Transition”

October 17-18-19, 1977
Colony Square Hotel
Atlanta, Georgia



Volume XVIII • Number 1

1977



TRANSPORTATION RESEARCH FORUM

Problems of Truck Terminals in Japan

by *Yoshimasa Yamanobe**

TRUCK TRANSPORT SITUATION

SINCE WORLD WAR TWO, the heightening of industrial structure in Japan has brought about a great change in traffic volume, which decreased the primary products and increased the secondary products. Along the high growth of the Japanese economy, demands for transport services increased and necessitated a greater transport capacity. Japanese National Railways (JNR) experienced a shortage in capacity and could not comply with the demands promptly.

Increased demands for transport services, which were accrued from the high growth of economy, were absorbed mostly by trucks. As the result, 52% market share of JNR in 1955 to 30% in 1965 and 13% in 1975 in terms of ton-kilometers. On the other hand, share of trucks (for-hire and private trucks) increased 12%, 26% and 36% in the same years.

Coastwise transport services place an overwhelming weight upon raw materials such as petroleum and steel. Bulky cargo was transported increasingly on the sea with the development of industrial areas along seashores. In the former days, plants were located around big cities. However, plants, especially heavy chemical industry, have been dispersed to remote localities due to tight demand and supply of labours, lack of appropriate space and pollution.

Truck services have increased because of a great demand for short distance cartage. It is due to highly processed and system industry located around big cities. Such a market of short distance belongs to trucking, for which there is no substituted mode.

And moreover, a change has occurred as to how to select a mode in the shippers' side. Shippers have become to select a mode so as to make the total physical distribution (PD) system optimum in view of PD management.

The central problem of PD management is to reduce PD costs through an inventory squeeze. Accordingly, speediness, exactness, mobility and convenience as characteristics in trucking are highly appreciated. As the result, in the middle and long distance also, which is

so competitive with other modes, share of trucking has been significantly on the increase. On the suppliers side, significant growth of automobile manufacturers and expansion of road network absorbed increased demands for transport services.

COMING OF TRUCK TERMINALS

Automobile terminals, which are similar with railway stations, airports and marine ports, are facilities for automobiles' departure and arrival. And, they are categorized in the two types: bus terminals and truck terminals.

The truck terminals are the established facilities for stationing of two and more units of trucks at the same time. And truck terminals are divided in the two kinds: general (public) terminals and private terminals. The former serves for others' trucking business as truck terminal enterprise. The latter serves for trucking businesses of truckers themselves.

Truck terminals were strongly required to build up in 1960s. Growth of demands for truck transport services needed to be bigger capacity of truck. And, truck transport services of high-speed, large-sized and trailer equipment came to fore.

On the other hand, worse conditions of intra-city transport raised traffic congestion and low operating efficiency, which required to separate trunk-line road transport from pickup and delivery services.

In other words, truck terminals were required, as interchange points between intercity long-distance transport by big trucks and small one of intracity pickup and delivery.

Severe road congestion within cities strengthened traffic control. For example, driving of big trucks in central area of cities was prohibited in Tokyo and Osaka in early 1960s.

Accordingly, facilities having physical distribution interchange function were required to build up at a main road of inter-cities, where not under any traffic control for bigger trucks and easily access to the cities. Pickup and delivery services within cities were to be made by small trucks. And, appeasement of traffic congestion and smoothness of pickup and delivery services were intended.

Truck carriers also wanted to build

*Chief, Economic Research Division, Nittu Research Center, Inc., Tokyo, Japan.

truck terminals, in view of transport cost-down and efficient operation of inter and intra cities. There was a boom of construction of truck terminals at Sendai and Kokura.

A positive move of such terminals construction was raised by not only private enterprise level, but governmental level. The Government intended to promote strongly "City redevelopment project."

And, it laid down a policy of construction of comprehensive truck terminals equipped with facilities of transport, warehouse, material handling, parking, oil-supply and repairing.

However, truck terminal businesses are low in profitability and are not expected to maintain management by private enterprises from the following reasons:

- 1) The construction requires big-sized spaces at the neighbouring places of big cities.
- 2) It requires so much cost for purchasing land spaces and terminal construction.
- 3) It requires prior investment in view of future plan.
- 4) Changes for terminal use are under restraint not to influence cargo rates as regulated public charge.

Therefore, in view of public nature, emergency and low profitability for such truck terminals, the Government decided to establish a special company jointly subscribed by private companies, national and local governments and finances of low interest with long terms, by which to set up public truck terminals.

And, Japan Motor Terminal Co., Ltd., the special company, was established in 1965 as authorized by the "Law concerning Japan Motor Terminal Co., Ltd."

The company has an objective for establishing truck terminals at main places in order to improve city functions, strengthen and rationalize truck transport services along national policy such as city redevelopment plan and city traffic improvement.

The company started, first of all, to build truck terminals along Tokyo metropolitan area upon emergency needs and has completed the following four terminals:

Keihin Truck Terminal (433 berth) completed year: 1968

Itabashi Truck Terminal (320 berth) 1970

Adachi Truck Terminal (320 berth) 1977

And, two more terminals are preparing to establish.

Kasai Truck Terminal (460 berth) scheduled year: 1979

Seinan Truck Terminal (340 berth) 1982

Management framework of the company is called "The Third Sector," which is constructed by investment of local public corporations, government and private enterprises.

The enterprises to be done by national and local public corporations (public sector) connect with funds and ability of private enterprises (private sector).

The Japan Motor Terminal Co., Ltd. has begun to invest the funds for other third sector companies to equip the facilities along highways in the nationwide scale from 1975 and intended to form all the country-network of physical distribution concerned facilities, centered upon truck terminals.

FUNCTIONS OF TRUCK TERMINALS

Truck terminals have the following five functions: 1) interchange 2) consolidation 3) warehouse 4) distribution processing, collection of merchandise 5) information gathering and dispatch.

In the past, from a view of transporters, importance was placed upon functions of cargo interchange and consolidation to increase transport efficiency.

But, these functions are not enough in order to imply with requirement of physical distribution system. Integration functions are required, which include warehousing, inventory control, distribution processing, collection of merchandise, gathering, analysis and processing of information. And moreover, public truck terminals are required to be a base of intermodal transport including freight-liners of railways and carferries, etc.

EFFECTS OF PUBLIC TRUCK TERMINALS

Economic effects of public truck terminals are 1) reduction of transport cost by high efficiency of transport, 2) security of transport capacity. These benefits are constructed by the following main items.

- 1) Reduction of transport cost by big-sized truck.
- 2) Reduction of terminal cost by big-sized public truck terminals.
- 3) Reduction of interchange cost by interchanging of cargo in public truck terminals.
- 4) Increase of load factor of pickup and delivery trucks by consolidation services.

The benefits come from so much amounts of investment. Ratio of costs to benefits is 1.22 (2 public truck terminal) and 2.06 (5 public truck terminals), which Japan Motor Terminal Co., Ltd., computes.

Social effects of public truck terminals are as follows:

- 1) Supply of goods stably.
- 2) Decrease of traffic congestion by decreasing of traffic volume.
- 3) Prevention of living environment from getting worse by decreasing of traffic congestion, air pollution and traffic accident.
- 4) Decrease of energy consumption by decreasing of traffic volume.
- 5) Effective utilization of land-Co-use of yards, and streets, consolidation of

facilities, utilization of space by high building in public truck terminals, etc. Appropriate use of transferred place, which was used as private terminal (own-use) of truckers.

6) Development of neighbouring districts — Increase of employment and receiving of transport services.

On the other hand, some demerits sometimes accrue from establishment of public truck terminals, which are traffic congestion for the neighbouring people, but city planning equips public facilities as roads concerned with establishment of public truck terminals and such demerits are less.

As such, Japanese economy requires public truck terminals.