THE ECONOMICS OF CONTAINERIZATION

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Containerization today reminds me of a story I read the other day. An airplane pilot who took off on a transatlantic flight came across some problems and decided to go on the intercom and tell his passengers. "Ladies and gentlemen," said the pilot, "I have some bad news and some good news to tell you. The bad news is that my radio is out, my direction finder is out, and I haven't the slightest idea where we are; but the good news is that we are ahead of schedule."

Assuming that most everyone knows what containerization is, yet realizing that some may not, I feel that a definition of containerization is desirable. Containerization is a means of shipment whereby a large number of individual packages are consolidated in a physical envelope made of aluminum, steel, wood, plastic and/or rubber that can be lifted by mechanical means and is used for the transportation, security, protection and preservation of cargo contained therein. It is also designed for repeated use and for the through transit of cargo by different forms of transport. A container can be interchanged between truck, train, barge and ocean vessel.

The history of containerization can be traced back to 1834 when the Pennsylvania Railroad began a through service between Philadelphia and Pittsburg involving railroads, wagons and canal boats which necessitated no break-bulk. There have been numerous other attempts at containerization but not until the 1950's did it look as if the world was really ready to accept this new innovation in the transportation world.

One might call Mr. Malcolm McLean the "Father" of today's container. Malcolm McLean was a very successful trucker. The savings that could be made by using containers occured to him one day as he was watching his trucks sitting still while longshoremen loaded the steamships from his trucks. His idea was, instead of individually handling each item, it would be cheaper if it could all be handled in one move by machine. In 1955, he sold his McLean Trucking Company to concentrate on his newly acquired steamship line. His dream was to operate full container ships.

The objective of containerization is to provide the shipper transportation and distribution services at the lowest possible cost.

The ultimate goal is to have a pipe line between factory and consumer. One effect of this might be to put food on the tables in Europe cheaper than it can be grown there.

Mr. Nicholas Johnson of the Maritime Administration has said that "At a time when fifty per cent of the cost of moving goods is incurred within ten miles of the port, anything we can do to reduce hauling time and increase productivity will pay big dividends."[1]

How do containers fill the objective and how do they fit into Mr. Johnson's statement?

Relative to conventional ships, container ships spend approximately one-fifth the amount of time in port. Stevedoring costs are roughly one-fifth those of noncontainer ships.

The Port of New York Authority estimates that it costs about one-third as much to make the trip from New York to Rotterdam with container ships as it does with break-bulk ships. This estimate takes into consideration the amortization cost or the container rental. The Maritime Commission has made a similar study and come up with results very close to those of the Port of New York.

What are the advantages of containerization?

Here are a few of these advantages, particularly those dealing with economics.

First, the container is stuffed at the factory or at the point of origin. It is sealed, not to be unsealed, until it reaches its ultimate destination. The ultimate destination may be another point in the country in which the shipment originates or in a country overseas.

The container is loaded onto a truck, train, or barge in one movement. This movement is usually handled with a specially designed crane which requires only one person for operation. This procedure eliminates the numerous handlings which would be necessary if it were a break-bulk shipment.

Second, insurance rates are generally lower for containers. Lower rates are due primarily to the manner of packing, which makes the product safer on its journey, reduces pilferage, and lowers the loss rate.

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[1] "Shipping: Storm Signals Lowering?" in Duns Review, May, 1966, p. 126.

Third, pilferage has been called the undeclared fringe benefit of the longshoremen. Unless a container is damaged badly in transit, it is almost pilfer proof. There have been cases where entire containers have been lifted and there are a few cases where containers have been broken into and resealed. The latter cases are small in number.

Fourth, transportation costs are less because the mode of transportation causes less delay than with break-bulk products. Not having to furnish housing for the product also lowers expenses.

Fifth, the problem of leaving something on the carrier or the dock which is quite common with break-bulk, is eliminated. It is difficult to let an eight by eight by twenty or forty-foot container go unnoticed on the dock, whereas a small box or even a pallet can go unnoticed.

Sixth, the containers serve as field warehouses.

Seventh, containers are break-regulatory, meaning that a container bearing food can be placed next to a container carrying insecticides without running afoul of Coast Guard regulations prohibiting the shipment of toxic products alongside food.

Eighth, containers eliminate platform congestion and inventories can be kept to a minimum.

Ninth, containers also reduce the requirements and costs of documentation. Marking and labeling shipments simplify price quotations. These attributes improve the marketability of some shipments, increasing customer satisfaction.

Let us now change points of vantage and examine the disadvantages. The prime problems of containerization are customs, standardization and labor.

Customs people are working on their problems and are attempting to have customs inspectors placed at the point of the original packing or unpacking.

In order to solve the standardization problem, flexible machinery is being designed to accept various size containers. Standardization is limiting some of the economic benefits derived from containers; some products do not fit in the "standard" twenty and forty foot containers as well as they do in the twenty-four foot size.

The labor problems although it will always exist to a degree, is not the threat that some consider it to be. Pensions are being offered to

entice those nearing retirement age to retire at an earlier age. Laborers also have guaranteed wages. For a while there will undoubtedly be some sandbagging, but this is to be expected until the labor force can be cut down without a tremendous layoff problem.

Most disadvantages concern overseas problems and, since most containers go overseas, these problems cannot be ignored. Germany prohibits weekend traffic the year around and other European countries are considering adopting this policy, particularly during peak tourist seasons. The other European countries are attempting to eliminate the problem of highway usage by using barges. Germany is currently using barges for twenty-nine per cent of its transportation problems; Holland, forty per cent and Belgium twenty-three per cent. The biggest problem here is the Amsterdam-Rhine Canal which is too narrow in some places for the larger containers.

Europe has other problems. One problem is shipments which are too large and must be broken down. As a solution, full containers are being delivered and then broken into smaller lots for truck shipments.

Trucks capable of handling United States containers are quite frequently too large for normal European trailer use and are also quite expensive. Seventy-nine Dutch truckers are attempting to solve this problem by forming a cooperative called Cobincon. This system allows any of its members, with too many containers for his fleet to handle, to draw on the entire 450 truck pool.

Holland is expecting by 1975 it will be able to have forty per cent of its container traffic on a door-to-door basis.

The inability of all phases of transportation to get together on a common program, plus a lack of knowledge on everyone's part, is slowing down containerization's potential.

The elimination of pilferage, which has been cited earlier as one of the major "advantages" of containerization, has not been eliminated to the degree expected. Thieves have been known to break into containers and then seal them back so the thievery is not detected until the product reaches the consignee. Containerization has cut down on the amounts of small pilfering but the individual losses are usually greater. The pilferage problem can be eliminated by not being so explicit with labeling. Some people actually advertise their product on their containers, inviting pilferage.

Another problem--and it is listed by some as a tremendous problem--is the large capital outlay required for construction of a container ship. If a ship is to receive operating subsidy, there is a statutory requirement that the vessel must be built in an American shipyard. In the United States company costs to build an average size cargo vessel taking about 1.2 million man hours are approximately $3.16 per man hour; in Great Britain, about $1.00 per man hour; and in Japan only seventy-five cents per man hour. It is no wonder that the United States Government believe that subsidies are the only way in which it can keep its shipyards from dissolving.

As a matter of interest, I thought that perhaps a few examples of actual savings incurred by participating concerns might be noted.

The Singer Company has estimated its savings on the distribution of products to Latin America to already be between three and four million dollars.

Union Carbide Corporation has found containerization shipping to be convenient as well as economical. This corporation can delay decisions on how to package chemicals until the last minute. Multiple packaging is no longer necessary, and silos for storage of plastic powder or pellets as they come off the line are no longer necessary.

National Cash Register Company, using steel containers, cut export package costs from $2.50 per cubic foot to sixty-five cents.

A 10,500 pound non-containerized shipment of household goods shipped from Chicago to London will cost $57.50 a hundred pounds but the same shipment containerized would cost only $51.00 per hundred for a total saving of $700 on the shipment.

The future of containers look most promising. The Maritime Administration predicts that by 1972 there will be twenty-seven container-carrying ships in service alone on the transPacific routes.

At the present time, serving all routes, there are eighty-eight steamship lines operating one hundred forty-one vessels capable of carrying containers. Fifty-four of these are full container ships with the capacity to carry 27,562 containers. Ninety-three container capable vessels are due delivery in 1969 and twenty-four are scheduled for 1970-71 delivery. Of these 117 vessels, 56 are full containerships. It is predicted by 1970 there will be 300,000 seagoing containers.

The most significant aspect of containerization today, the greatest contribution to international trade, is that for the first time in history, distribution facilities available to the trader are preceding the demand. Not only are these facilities preceding demand, but they are also creating demand by providing economies which will render new products more competive on the market.

Our economy will continue to grow and prosper only if each method of transportation uses containerization to its best advantage. Such utilization must be based on the needs of our economy for efficient transport service and low delivery costs consistent with the quality of services rendered.