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A HISTORY OF CONTAINERIZATION IN THE CALIFORNIA MARITIME
INDUSTRY: THE CASE OF SAN FRANCISCO

University of California, Santa Barbara

PH.D. 1986

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UNIVERSITY OF CALIFORNIA
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A History of Containerization
in
the California Maritime Industry:
The Case of San Francisco

A dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

History

by

Donald Fitzgerald

Committee in charge:

Professor Carroll W. Pursell, Chairman

Professor Robert L. Kelley

Professor John E. Talbott

June 1986

The dissertation of Donald Fitzgerald
is approved by:

J. Galbraith

Robert Kelley

Carroll Purcell

Committee Chairman

June 1986

June 1986

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June 1986

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VITA

9 July 1927	Born--New York City
1957--A.B.	University of Utah
1974-1975	Instructor, Naval Postgraduate School, Monterey, California
1975-1976	Instructor, Monterey Peninsula College
1977--M.A.	University of Rhode Island
1982-1983	Teaching Assistant, Department of History, University of California, Santa Barbara

Publications and Reports

- "A Bite Out of the Machine: Technological Change in the California Maritime Transportation Industry, 1934-1960." Paper presented at the Pacific Coast Branch--American Historical Association Annual Meeting, Seattle, Washington, 15-18 August 1984.
- Review of *The Era of The Joy Line: A Saga of Steamboating on the Long Island Sound* (Westport: Greenwood Press, 1982) in *The Public Historian*, 6, no. 4, Summer 1984.
- Historic Section, Cultural Resources Technical Report for the U. S. Coast Guard Station at Point Arguello, California, for the Office of Public Archeology, University of California, Santa Barbara, 1980.*
- The History and Significance of the Hovden Cannery*, for the Monterey Bay Aquarium Foundation, Monterey, California, 1979.
- "The Community Votes For Growth: The Cachuma Dam Project Controversy," in *Environmental Hazards and Community Response: The Santa Barbara Experience, Santa Barbara: University of California, Santa Barbara, 1979.*

Fields of Study

Major Field: American History

- Studies in U.S. History: General. Professors Robert L. Kelley, Carroll W. Pursell.
- Studies in U.S. History: American Technology and Culture. Professor Carroll Pursell.

Studies in Public History: Professors G. Wesley Johnson, W. Elliot Brownlee,
Carl V. Harris and Otis L. Graham, Jr.

Studies in Political Science: Maritime Policy Issues. Professor Bliana Cicin-
Sain.

ABSTRACT

The History of Containerization
in the California Maritime Industry:
The Case of San Francisco

by

Donald Fitzgerald

Maritime cargo was traditionally delivered to the waterfront, placed aboard ship by crane, and stowed item by item in a ship's hold by hand, a process which had been dependent on manual labor for as long as ships had carried cargo. In the 1960s this system was threatened by the introduction of a process which packaged cargo into large steel containers at its place of origin, transported the loaded containers by specially designed trucks, trains, and ships, and delivered them to their destination without the items of cargo being touched by human hands. This new, mechanized system threatened the jobs of longshoremen on the docks, and required maritime carriers and port managers to accommodate to its special needs. This history describes the manner in which these groups struggled to create a policy to meet the challenges presented by the introduction of containerization into the California maritime industry.

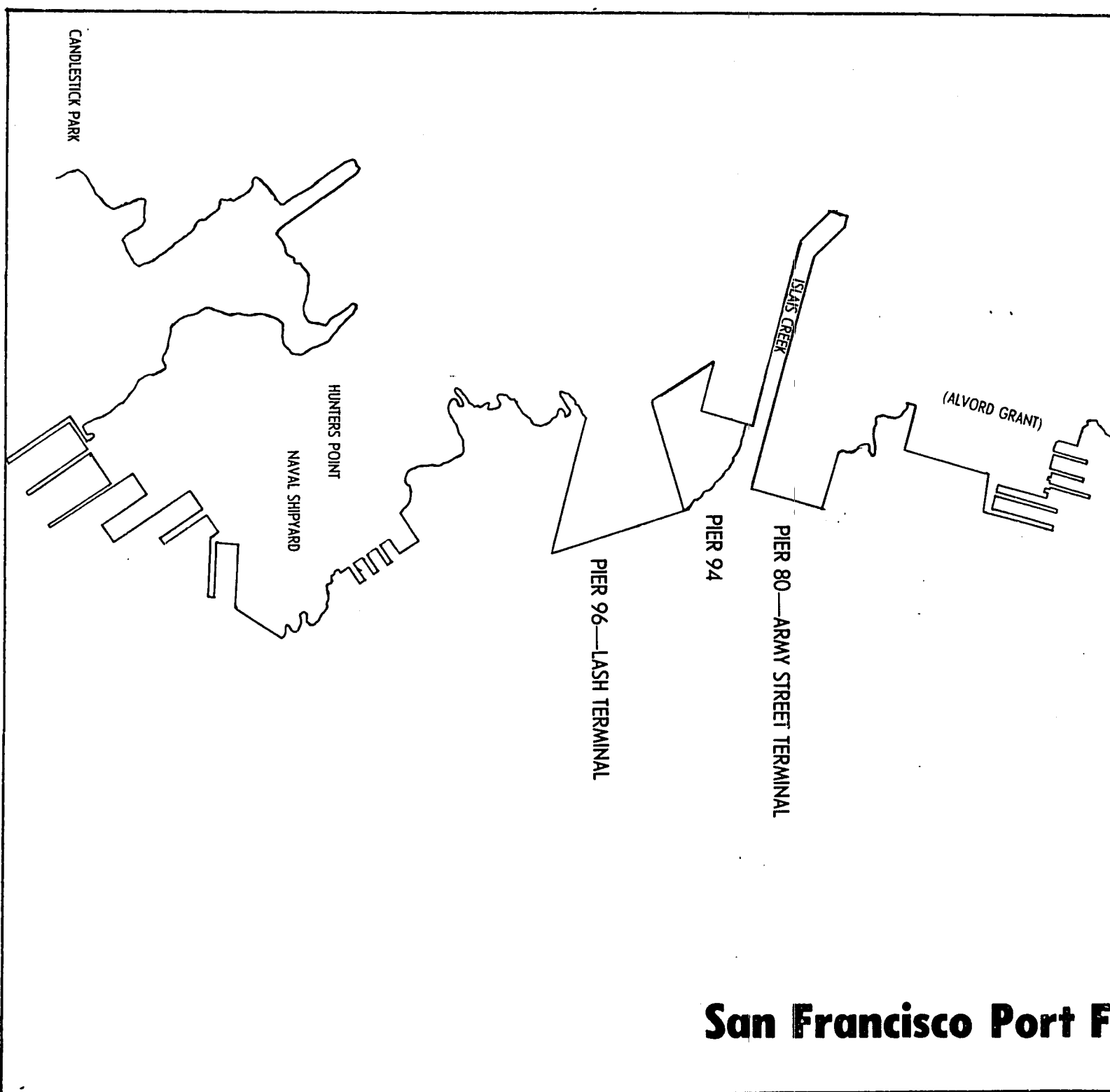
The International Longshoremen's and Warehousemen's Union faced the threat posed by this new labor replacing technology, by abandoning its traditional opposition to mechanization and accepting the new technology on the waterfront.

In the traditionally conservative maritime industry, most carriers either gave short shrift to containerization, or tried to superimpose it onto the existing cargo transportation methods, thus failing to realize the full benefits of the new technology. The Matson Navigation Company, however, after analyzing the new system with operations research methodology, made the full commitment containerization required, and became the pathfinder for the new technology in the California maritime cargo transportation industry.

The Port of San Francisco, however, did not make a full commitment to containerization and failed to reap the benefits which it brought to other state and national ports. In its efforts to meet the challenges posed by the new technology, the port was burdened with the heritage of an outdated system of state ownership with its tradition of conservative management. When port administrators attempted to create a policy to meet the challenges posed by this new cargo transportation system, there was disagreement and public outcry not only over the means to accomplish that goal, but also over the definition of the goal. More than a quarter of a century after Matson's first container ship sailed under the Golden Gate, the Port of San Francisco still struggles to create a viable policy to meet the demands of this now universally accepted maritime technology.

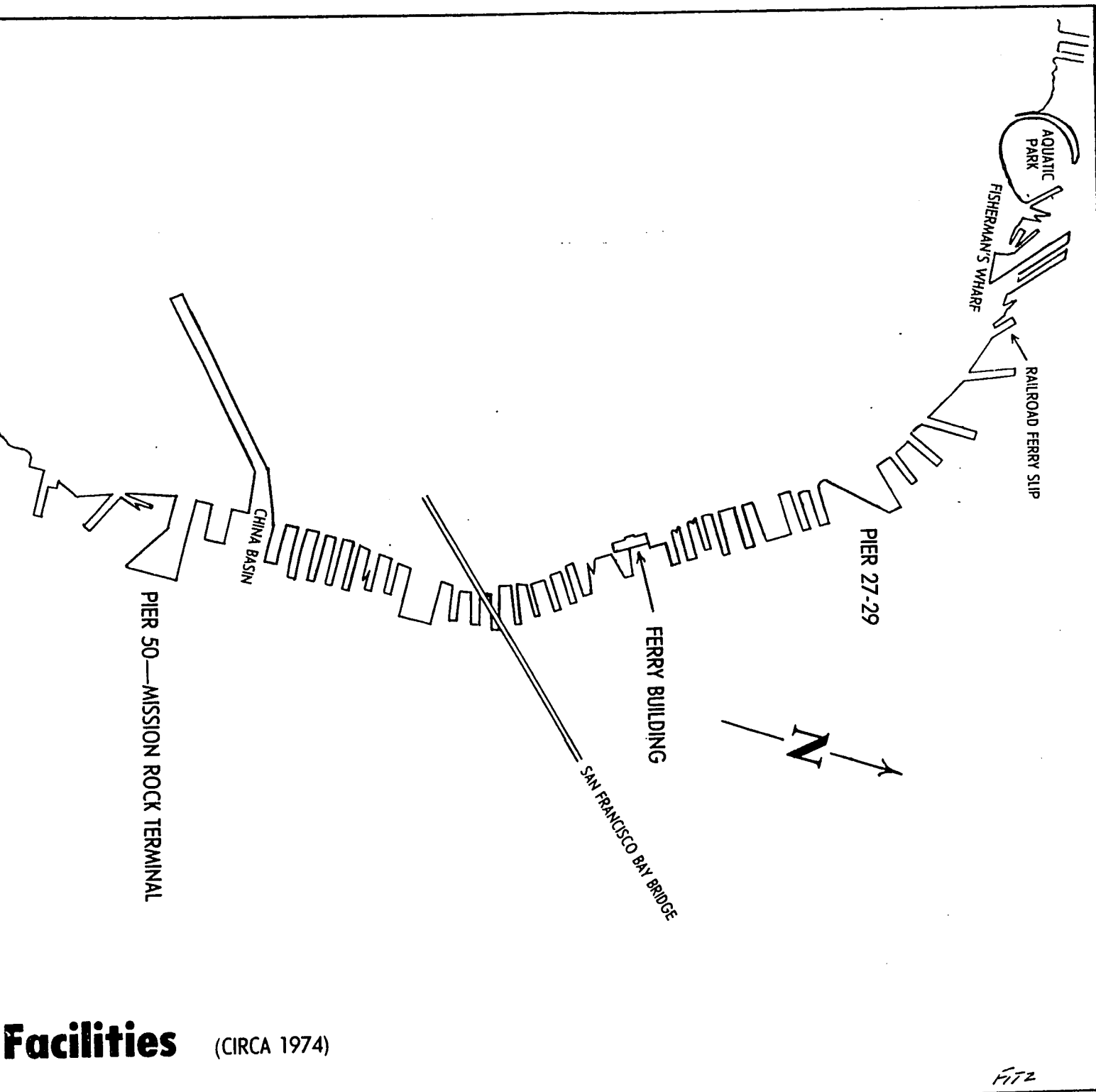
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CHAPTER 1
Introduction of
Unitized Cargo and Intermodal Transportation
Into the United States

For the two hundred years from the Colonial period through the era of the Clipper ships to World War II Victory ships, maritime cargo passing through United States ports was handled manually. Millions of tons of general cargo were packed into and removed from ships' holds by hand. Cargo ships usually remained in port from several days to several weeks allowing longshoremen time to pack bags, boxes and barrels into every available foot of cargo space. Since cargo ships only earn money when they are at sea, these long inport loading periods were a great expense to ship owners. When the expenses of cargo loss and damage were added to these inport cargo handling periods, the costs could amount to as much as 50 percent of the total cost of shipping maritime cargo.

Since World War II the U.S. domestic maritime industry had been seeking ways to improve its economic health. In the 1950s and 1960s the maritime transportation industry developed a system of packing many items into large steel containers which were loaded into a ship's hold and unloaded at its destination without the contents having been touched by human hands. Ships could be unloaded and loaded in a matter of hours rather than weeks. The new system was soon adopted by most major maritime carriers, and by 1971, 73 percent of American maritime cargo was containerized. *Fortune* magazine said this new practice was "setting up a hurricane" in the U.S. maritime transportation industry.¹ Between 1971 and 1981, the U.S. maritime

¹ *Fortune*. v. 76, November 1967, p. 151.

container fleet grew at an average of 10 percent annually, and the ratio of U.S. exports to gross national product rose during those years from 4.4 percent to 8.5 percent. The maritime industry publication *The Log*, satisfied that the container had indeed brought healthy changes to the maritime transportation industry, proclaimed "Revolution Successful."²

The United States is regarded as the birthplace of this "container-revolution," and Malcolm Mc Lean is acknowledged to be the person who pioneered its "real breakthrough."³ It was his evaluation of containers transported on his Pan-Atlantic Steamship Company ships, which introduced containers to the maritime trade in the late 1950s. But the containers Mc Lean used were not too unlike those which were transferred from railroad cars to trucks in a system of intermodal transportation practiced in the United States in the 1920s. Nor were they much different from those used aboard ships in New York harbor in 1906. In fact, the concepts on which containerized cargo are based are found in ancient maritime transport practices. Thus, rather than a revolution, containerization of the 1950s was a chapter in the history of development of maritime cargo transportation.

Early Problem Recognition--the Engineering Solution

This need for improved cargo handling methods was considered shortly after World War II by the community of architects and engineers who designed the ships of America's merchant fleet. In his 1945 annual message to the members of the Society of Naval Architects and Marine Engineers (SNAME), President William S. Newell

² *The Log*, March 1956, p. 28.

³ J.R. Whitaker, *Containerization* (Washington: Hemisphere Pub.1975),p. 107.; G. van den Burg, *Containerisation: A Modern Transport System* (London: Hutchinson and Co. Ltd., 1969), p. 150.

acknowledged that at the close of World War II, the United States was "preeminent along shipbuilding and engineering lines."⁴ American dominance was demonstrated by the quality and size of structural material used, more efficient welding methods, and resultant savings in weight and cost. Advances in engine design had produced high pressure and high temperature turbine and diesel engines, while electronic advances had produced devices such as radar and underwater sound detection and measuring. In 1945, he considered American engineering to lead the world in design and construction methods.⁵

But the wartime shipbuilding program which had nourished these advancements had ended. President Newell, therefore, expressed a fear that the country might relinquish its preeminence by letting the industry "lapse and sink into conditions in which we found it in 1914 and again in 1940."⁶ "We must not," he continued, "again allow the facilities and the brains for shipbuilding to be lost to the industry as we have in the past."⁷ Rather than let this wartime shipbuilding industry be abandoned, he urged support of the report prepared by Harvard University for the Navy and the Maritime Commission, which recommended a program for continuing a nucleus of both naval and merchant shipbuilding: "This the Government should surely do if even a reasonable insurance is to be provided for the future."⁸

⁴ William S. Newell, "President's Annual Address," *Transactions, Society of Naval Architects and Marine Engineers* 53, (1945), p.35; A thorough account of the United States World War II ship building program is contained in Frederick C. Lane, *Ships For Victory* (Baltimore: Johns Hopkins Press, 1951).

⁵ Newell, 1945, p. 35.

⁶ *Ibid.*

⁷ Newell, 1945, p. 36.

⁸ *Ibid.*

Another danger which President Newell described was the recently developed threat which organized labor and its leaders posed to the shipbuilding industry. He felt that if union leaders would work cooperatively with the shipbuilding industry, there would be little to fear. Organized labor's "excessively" rapid expansion and "extraordinary power", however, were "unhealthy," and gave little indication of adopting the philosophy or objectives of the industry.⁹

There were, of course, labor officials who were "adequately trained, of higher character" and aware of the important relations which must exist between labor and management in the promotion of our "common interest." But generally "opportunism and the misuse of power too quickly acquired" had not felt the "leavening influence of experience and responsibility."¹⁰

Newell's annual address to the Society thus contained both the fear of losing industrial momentum and the fear of labor's unbridled power. Since it was the power of the federal government which had created both problems, it was not surprising therefore that Newell looked to the government to solve both of them. The maritime industry, which the federal government had appropriated during wartime, should now be sustained by it in peacetime. Likewise, the Government, which had fostered the rapid expansion of labor unions, should now join with management and labor to address issues such as whether union power should continue to exist permanently, what controls should be exercised against it, and "whether the ship building and ship repair industry in the United States can survive . . . under the [labor] conditions now gravely threatening them."¹¹

⁹ *Ibid.*

¹⁰ *Ibid.*

Although Newell felt that the federal government should have a major role in solving these problems, he also felt that a share of the solution lay in the hands of the SNAME architects and engineers. President Newell told them that it was "more than ever important to develop labor saving methods and to invent and put into use labor incentive practices."¹²

While William Newell spoke of the labor situation in general terms, Arthur C. Rohn, Chief Engineer of the Maritime Commission and member of SNAME, addressed a specific facet of that situation. In an address to the membership, Rohn dealt with what he considered the main problem of the shipping industry: cargo handling. Maritime cargo always had been loaded by hand. Although modern ships were built of steel and used steam-powered cranes and gasoline powered truck lifts, the cargo loading process had remained basically unchanged for almost eighty years. Each piece of cargo was still packed into and removed from a ship's hold, by hand. SNAME member F.M. Hiatt mathematically demonstrated that the 19th century Clipper ship *Flying Cloud* had a better cargo-speed ratio than five of the six different types of cargo ships used in World War II.¹³ He also pointed out that approximately one half of the total voyage cost of a World War II Liberty Ship was devoted to cargo handling.¹⁴ By 1945, Chief Engineer Rohn had adopted as his guiding precept: "economical movement of goods is secured only by not handling them."¹⁵ Rohn's proposed solution to the high cost of maritime labor was came close to reality

¹¹ *Ibid.*

¹² *Ibid.*

¹³ Arthur C. Rohn, "Cargo Handling and Its Relationship to Overseas Commerce." *Transactions, 1945*, pp. 135-137.

¹⁴ Rohn, 1945, p. 111.

¹⁵ Rohn, 1945, p. 110.

with the development of containerization two decades later.

Rohn acknowledged that members of the transportation industry had not been unaware of, nor had they ignored, these problems. They had, however, put their efforts in the wrong direction by aiming all their energies and skill to increasing ship speed in order to reduce the cost of moving merchandise. Architects and engineers had improved engine performance and hull design with the result that ships carried large tonnage at respectable speeds from port to port. Such improvements however, only affected cargo while it was in transit. The weak link in the transportation system was the transfer of cargo across "the strip of water between wharfside and ship."¹⁶ He was sure that this weak link could be strengthened just as other problems had been solved in naval architecture, marine engineering, material handling and scientific management. He pointed out that the solution to problems in these fields had been "rational, methodological and determined," in short, "an engineering approach." "Who was to say", he added, "that the field of cargo handling is not as least as fertile a field for investigation ?"¹⁷

Rohn not only called upon architects and engineers to investigate and solve the problem of antiquated cargo handling methods, but he directed their specific efforts to unitized cargo and container stowage, port facilities and organization, pier design and equipment, ships' hatches, and ship's cargo gear.

Chief Engineer Rohn's suggestions are almost a blueprint of what became the 1960's container revolution. With the development of the new system of handling cargo in containers:

¹⁶ *Ibid.*

¹⁷ Rohn, 1945, p. 111.

1. cargo was unitized and carried in large steel containers;
2. port facilities became vast, sprawling areas which which handled thousands of containers delivered by rail and truck;
3. pier design changed from narrow finger piers of 19th century origins to long, open wharves;
4. ships' hatches were enlarged to accommodate containers and hatch covers were strengthened to become platforms to carry containers; and
5. cargo handling gear was removed from container ships and replaced by specially designed shore based container cranes.

These improvements, which Rohn foresaw, in the 1940s, were based on two old concepts, intermodal transportation and unitized cargo, both of which existed in this country's early transportation system.

Intermodal Cargo Transportation

Intermodal transportation in the United States had its origins in the Colonial practice of transporting stage coaches across rivers on flat barges called stage boats. Because the construction of long bridges was costly, the use of stage boats multiplied before the American Revolution. In the early 1700s, New Jersey alone operated thirty-five stage boats on the Delaware River, connecting Philadelphia with Burlington, Bordentown, and Trenton.¹⁸ In order to compete in the river trade with Philadelphia stage boat companies, the New Jersey Assembly, as early as 1704, granted money for a line of stage boats between Burlington, New Jersey, and Philadelphia.¹⁹

A further refinement of intermodal transportation which included unitizing cargo, developed with the use of inclined-plane railways on American canals in the early 1800s. Canals which crossed elevation changes such as those in Pennsylvania and New Jersey, had locks to raise and lower boats. Some canals, however, had a total

¹⁸ Wheaton J. Lane, *From Indian Trail to Iron Horse* (Princeton: Princeton Univ. Press, 1939), p. 44.

¹⁹ W. J. Lane, p. 66; The rate schedule for this type of service across the Raritan River at Perth Amboy in 1771 called for the payment of "six pence per person, one shilling for each horse, and one shilling for each wheel of a carriage." W. J. Lane, p. 45.

rise and fall of over 1500 feet, which would have required about 200 locks and their accompanying mechanisms and pumps. To avoid such mechanical complexity, a system of inclined plane railways accomplished these topographic elevation changes.²⁰

In this system, cargo was transported on canal boats, called "standard line craft," for the canal portion of the journey. At the point of rise in elevation, the cargo was transferred from these canal boats to an inclined-railway car and hauled up to the next level. The cargo was then retransferred from the railcar back into a boat for the next canal portion of the trip. This process was repeated at each change of elevation until the mountain range had been crossed. Numerous loading and unloading operations were both time consuming and labor intensive, hence quite expensive, which led to the development of a "section boat" system.

Early section boats were small wooden or iron craft, about seven feet wide and up to twenty feet long. Loaded with cargo, they were attached to each other, bow to stern, forming a long chain which was towed by a team of horses for the canal portion of the journey. At a point of elevation change, the section boats were detached from each other, lifted out of the water onto an inclined-plane rail car chassis and hauled up to the next level where the boat, still loaded with its cargo, was placed back into the water. The section boat, serving as an early method of containerization, kept the cargo intact during the intermodal transfer, saved time, and eliminated damage caused by multiple handlings, all characteristics advanced by proponents of container service in the 20th century.

²⁰ Jesse L. Hartman, "John Dougherty and the Rise of the Section Boat System," *The Pennsylvania Magazine of History and Bibliography* VLXIX, No. 4, (Oct. 1945), p. 295.

Section boats were used quite commonly during and after the 1820s, a time of "universal enthusiasm for artificial waterways" in America.²¹ One such use was on the Morris Canal, which connected the upper Delaware River with the Atlantic Ocean. In 1823, James Renwick, Professor of Natural and Experimental Philosophy at Columbia University, devised a section boat system based on one then used in England.²² Initially he planned to transport a tank filled with water up and down a runway of iron rails. Passing canal boats would float in the tank on their way to the next level. In July 1826 he experimented with an improved system in which the tank was replaced by a wheeled cradle on which the boat rested. This system became the normal method of transferring canal boats over elevation changes. The cradle evolved into a wheeled truck which was rolled into the water to have a section boat attached.

As canals were built wider and deeper the size of these sections boats also increased. In 1828 a New Jersey joint Council-Assembly committee is reported to have gone up an inclined plane on a barge containing eighteen tons of stone and one hundred passengers.²³ By 1833, boats called "flickers" could carry up to twenty-five tons, and by 1860, boats with seventy tons of cargo were being hauled up inclined planes. Such loads were originally pulled up by sprocket chains, then hemp rope, and finally by wire cables.

Section boats were also used in the 1840s on the main line of the Pennsylvania Canal, a 395 mile canal-portage railway system connecting Philadelphia with Pittsburgh. As with the Morris Canal boats of Professor Renwick, the Pennsylvania Canal

²¹ W. J. Lane, p. 226.

²² Ibid.

²³ W. J. Lane, p. 231.

section boats evolved through several modifications and adaptations. In 1835 a patent was granted to Captain John Elgar for "Improvements in the Art of, and Apparatus for, the Transportation of Goods upon Canals and Rail Roads."²⁴ Captain Elgar, of Baltimore, was a Quaker machinist who built the first iron steamboat in America and later collaborated with Ross Winans in the manufacture of locomotives for the Baltimore and Ohio Railroad.²⁵ Elgar's design was thoroughly tested by John Dougherty, his patent assignee for the State of Pennsylvania. Dougherty had been a canal shipping agent, a freight forwarder, a merchant, and later the proprietor of the Reliance Transportation Company. Discovering many disadvantages to the Elgar design which prevented its successful operation, Dougherty improved and radically changed it. Then in 1843, Dougherty himself was granted the patent for a new "Manner of Constructing Canal Boats so that they can be Transferred onto Railroad Cars."²⁶

Although Dougherty's section boats operated satisfactorily, two conflicts arose from their use on the Pennsylvania Canal. The first was the question of whose wheeled trucks would be used to haul the boats out of the water and over the railway, those of private companies (such as Dougherty's Reliance Transportation Company) which rented them to individuals transporting section boats, or those owned by the State of Pennsylvania, which was operating its own system of transportation. The other conflict was between proprietors and crews of standard line canal boats and operators of section boats. Because section boats could pass through rail and canal exchange points without having their cargo unloaded and reloaded, they eliminated

²⁴ Jesse Hartman, p. 298.

²⁵ Ibid.

²⁶ Jesse Hartmen, p. 299; Patent No. 2973, patented 24 February 1843 (Specification letter and drawings).

the need for workers to perform such labor. Although both of these debates disappeared when railroads replaced canals, two similar debates arose again one hundred years later when containerization revolutionized the industry.

The first debate, which came in the 1950s, involved standardization of container specifications, which determined whether maritime carriers would design their systems to carry only their containers, or design them to accommodate containers of other carriers as well. The second was the question of whether containerized cargo would be through-shipped between different modes of transportation (trucks and ships) or would be unloaded by teamsters, and reloaded on the dock by longshoremen. Both problems were resolved, but only after years of negotiation and eventual coordination between longshoremen, stevedoring companies, teamsters, and ship operators.

Early Container Use in the United States

When new forms of transportation replace existing systems, the new form usually begins by coordinating with, and then overlapping, the existing system. Stage boats, section boats, steamboats and railroads all enjoyed initial success because they started out as adjuncts of existing methods of transportation.²⁷

While containerization has developed into a coordinated rail-truck-ship system, initially it was introduced as an independent element in the maritime industry. In 1906 the Port of New York was the site for the early development of maritime containers. That year the Bowling Green Storage and Van Company of New York and

²⁷ The link between rail and water is described by Robert Greenhalgh Albion, in *The Rise of the Port of New York* (New York: Scribner's sons, 1939); George Rogers Taylor, *The Transportation Revolution, 1815-1860* (Harper and Row, 1951), and Carl W. Condit *The Port of New York* (Chicago: The University of Chicago Press, 1980); Early coordination between rail, truck and aircraft is described by W. W. Atterbury in "Looking Ahead in Transportation," *Review of Reviews*, LXXIX, 4, April 1929, pp.59-62.

Washington, D.C. began operating its "lift van" service linking American and European cities. Household effects and fine goods were packed into steel containers (vans), carried across the Atlantic by steamship, and forwarded to any destination city. Safe within these steel cocoons, packages required less individual wrapping, and a minimum of handling, and were thus protected from damage. A photograph in a 1911 *National Geographic* advertisement for the company demonstrated how easily the ship's crane could place company lift-vans on a cargo ship's deck. The vans were quite similar in size and shape to the shipboard containers used in the early 1950s.²⁸

Although this maritime use of containers continued for many years, the next stage of development was not by maritime firms but by the nation's railroads. Although the railroad industry was considered conservative in many respects, in the 1920s it spearheaded the use of containers in long haul cargo shipments. A.H. Smith, then president of the New York Central, is credited by the Interstate Commerce Commission with the invention of the railroad container, and the New York Central as the pioneer in American commercial rail container service. Their containers, designed by Smith and manufactured by the L.C.L. Corporation of Delaware, were used in sets of six, which fitted into a drop sided gondola, or shallow freight, car. The containers were loaded and unloaded by a lift truck, using the ramp formed when the car's sides were lowered onto the platform. The New York Central first offered this service on 19 March 1921 between Cleveland and Chicago. The following year it was initiated from New York and Buffalo, and by 1926, service had also extended to Cleveland.

²⁸ *National Geographic XXII, No. 4 (1911), p. 321.*

In January 1928, the Lehigh Valley Railroad began operating L.C.L containers between cities in New York, New Jersey, Pennsylvania, Massachusetts, and Ohio. In June of that year the Pennsylvania Railroad also began offering container service to Baltimore, New York, Pittsburgh, and several other eastern and midwestern cities. Unlike the Lehigh Valley containers, which required a special gondola car, the Pennsylvania containers, manufactured by their subsidiary, the Keystone Container Car Company, were carried in lots of five on regular flat cars.

Railroad containers hauled a great variety of special bulk materials including lime, ore, stone and bricks, and had special features designed for these commodities, such as pressurized air controls and drop bottoms for rapid or controlled discharge of their contents.²⁹ Most of these bulk containers were lifted off flat cars by crane and deposited directly onto motor truck chassis.³⁰ Serving not only as efficient carriers of special materials, these containers also solved the problem of shipments which were too small to fill a railroad box car, called less-than-carload (LCL) shipments.

In the ordinary handling of large freight shipments, an entire box car was filled at a factory rail siding and delivered to a single destination, where the shipment was unloaded and delivered to its consignee. Smaller shipments however, were delivered to the railroad station platform by motor truck or wagon, moved across the platform by handtruck and with other small shipments, were loaded into a waiting box. These LCLs were then shipped to an intermediate point where they were combined with other LCLs to fill up a box car for further shipment to an eventual destination. Consolidating and moving LCL shipments required multiple handlings thereby increasing

²⁹ Herbert H. Hall, "Bulk Shipments," *Industrial Packaging*, 13, No. 1 (Jan. 15, 1957) p. 41.

³⁰ "In the Matter of Container Service," *Interstate Commerce Commission, (I.C.C.) Docket No. 21723*, April 14, 1931, p. 384; hereafter cited as I.C.C. Docket 21723.

labor expense, damage, and loss. During the 1920s, railroads saw containers as the way to solve the problems resulting from LCL shipments. About one-sixth the size of a freight car, containers could be filled with small shipments, shipped to their destinations without the problems of multiple, intraterminal handling and delivered to their final destination by motor truck.³¹ This intermodal process highlighted the benefits of both shipping cargo in containers over long distances and of combining rail and truck modes of transportation.

While containers initially were part of a coordinated transportation system, they soon became a catalyst in the growing controversy between railroads and the emerging motor truck business. In the late 1920s, long-haul freight shipments were made exclusively by railroad, with motor truck companies providing only supportive, feeder service, delivering goods between shippers and rail freight terminals or between terminals themselves. The latter service was provided by companies such as the Cincinnati Motor Terminals Company as early as 1917. Using twenty-three heavy-duty truck chassis, this company operated 250 containers for intraterminal truck movement of merchandise among all the railroad freight terminals in Cincinnati.³² When trucks began expanding their service, however, to include long-haul transport of containers, they threatened the railroads' monopoly of long-haul freight delivery. In order to meet this competition, several railroads proposed to expand the areas to which they offered container service and to lower their shipping rates. The Lehigh Valley Railroad, the Missouri Pacific Lines, and the New York Central, with some of its subsidiaries, proposed extending container service into the central, west

³¹ *I.C.C. Docket 21723*, 1931. pp. 381-382.

³² John R. Immer, *Service on the North Atlantic* (Washington: Work Saving International, 1962), p.3.

and southwest parts of the nation. They also lowered their short-haul container rates to charges below less-than-carload rates, thus increasing the benefits to shippers. The railroads thereby used the same tactics against the competition posed by trucking in the 1920s that they had used against the competition of the coastal steamboat business in the 1890s--eliminating competition by providing parallel service at lower rates.³³

Motor truck operators objected to the railroad strategy, as did other transportation companies which did not offer container service. Some individual cities also objected, either because they were too small to participate, or out of fear that they would not be included in the expanded container service proposed by the railroads. In January, 1931, the Interstate Commerce Commission (I.C.C.) began conducting an investigation into the rates, charges, rules, regulations, and practices of common carriers by railroad "incident to the use of containers."³⁴ The hearings lasted four months and included representation from 165 companies, organizations, and communities.

Railroad representatives appearing before the commission presented the many advantages of the new container service. They supported their rate schedules as necessary to sustain container service, which they saw as the primary answer to motor truck competition. They argued that containers expedited door-to-door receipt and delivery service, cut down the expense of multiple cargo handling, and virtually eliminated claims for loss and damage. Railroads also claimed that, from the shippers' point of view, containers provided savings on packing materials, reduced

³³ Edwin L. Dunbaugh, *The Era of the Joy Line* (Westport: Greenwood Press, 1982).

³⁴ *I.C.C. Docket 21723*, 1931, p. 380.

damage and loss, expedited service, and lowered freight rates. Containers also allowed railroads to ship and receive in smaller units, thus making them responsive to the federal government's request that companies maintain inventories at a minimum.³⁵

Objections to container service came from three sectors of the economic community: shipping companies which were not participating in, or offering, container service, those railroad companies which questioned the advantage of containers, and municipalities which felt threatened by containerization. Witnesses who were not offering the service but who were affected by it included the Detroit and Cleveland Navigation Company, a steamship line which objected to the low container rates proposed by the railroads on the ground that they were arbitrary and unjustified by any economic or competitive standards. Having shipped merchandise freight for sixty years, they stated that if containers were as efficient as the Pennsylvania Railroad had claimed, a means of competing with them would have to be devised by the steamship companies in order to stay in business. They felt, however, that the rates desired by the railroads were unrealistically low and would soon unfairly drive steamship companies out of business.

The efficiency of container service was also questioned by some railroad company witnesses who doubted the wisdom of expending money for a new type of equipment when normal boxcars were more than enough to meet existing needs.³⁶ Western railroads also expressed concern that containers bringing goods to western states would generally return empty, at the shipper's expense. The commission,

³⁵ *Ibid.*

³⁶ *I.C.C. Docket 21723*, 1931, p. 442.

acknowledging the problem of returning empty containers from the nonmanufacturing western region, insisted that to avoid "undue prejudice between localities served by the same carriers east and west of the river . . . the same rates should be applied on both sides of the river." In 1931 the Mississippi River was still an economic as well as a geographic boundary to be reckoned with.³⁷

The last group of opposing witnesses represented small communities with differing concerns. Some were fearful that container service would hurt their chances to compete with larger communities which provided more tonnage for container movement, while others protested that container service in the proposed rate schedules was not being offered to them. In response to these concerns, the railroads "expressed their intention of extending the container service to any additional localities upon demand."³⁸ Supporting this community concern, the commission stated that it expected the railroads to "carry out these promises to the communities, for in no other way can undue prejudice against competing localities be avoided."³⁹ Ironically, when containerization entered its next phase in the 1950s, rather than municipalities determining whether they would request or reject the option of container service, it was the demands of the system of containerization itself which determined which communities were served and which were bypassed.

On 14 April 1931, the commission denied approval of the lower rail rates for short-haul container service. Although clearly supporting the concept of containers, the commission ruling prevented the market place from determining their future. The

³⁷ *I.C.C. Docket 21723*, 1931, p. 445.

³⁸ *I.C.C. Docket 21723*, 1931, p. 442.

³⁹ *Ibid.*

effect of the I.C.C. rate decision was to end the use of freight cargo containers in this country. Upon the commission's refusal to allow the lower rates, the railroads, rebuffed in this effort to compete with the trucking companies, ceased the service altogether. Subsequently, since trucking companies were providing supporting service to railroad container operations, when these operations ceased, trucking companies were forced out of container delivery altogether. G. van den Burg, in his 1960 study of containerization, summed up the effect of the commission ruling by stating that it: "diminished the rate of growth [of containerization] by forbidding the transport industry to pass the benefits of containers on to the customers in lower rates."⁴⁰ Immer expanded this view in 1962:

The I.C.C.'s decision went against the container concept By early 1932, several years of progress in conventional containerization was almost wiped out . . . shipping containers practically disappeared from the American scene and the container revolution in the United States was delayed for over twenty years.⁴¹

Although the commission's rate ruling halted intermodal container service, the commission clearly supported the basic principle of containerization by saying, " we have no difficulty in agreeing that the container . . . is a commendable piece of equipment."⁴² They based that opinion on the container's reduced billing and platform costs, and its ability to relieve congestion at terminals and to reduce the number of claims against the railroads for loss and damage. This ruling was supported by an

⁴⁰ Burg, p. 150.

⁴¹ Immer, p. 3.

⁴² *I.C.C. Docket 21723, 1931*, p. 442.

earlier commission decision "that extensive use of the container would eliminate much of the present heavy expense upon the carriers in loss and damage claims."⁴³

In addition to its support of container service, the commission strongly supported the railroads against the rising threat of motor trucks. "There is no question" it stated, "that truck competition has assumed serious proportions."⁴⁴ Although admitting that trucks benefited the public by providing quick door-to-door service, the commission accepted the Pennsylvania Railroad's claim that it had lost about \$27 million in 1926 because of truck competition. The commission attempted to distance itself from obvious connection with the railroad, by affirming that it was "not the manager . . . of the railroads. If [the railroads] . . . deem it wise to secure a new type of equipment they are at liberty to do so."⁴⁵ Nevertheless, the commission saw itself as the watchdog of the railroad industry. It explained its rationale for denying the lower rates by using reasons usually offered by corporate management, such as "the increased burden . . . container service at the rates proposed would throw upon the remaining traffic . . . the additional outlay in capital expenditures [and] the sacrifice in carrier revenue which respondents are willing to make."⁴⁶ Even if the railroads were willing to accept lower revenue in the process of competing with trucking companies, the I.C.C. was clearly not willing to let it happen.

The decision of the I.C.C. was significant because it not only prevented the budding truck-rail intermodal container transportation system from developing, but it also ended the commercial use of containers in this country until after World War II.

⁴³ *I.C.C. Docket 21723, 1931*, p. 443.

⁴⁴ *I.C.C. Docket 21723, 1931*, p. 387.

⁴⁵ *I.C.C. Docket 21723, 1931*, p. 442.

⁴⁶ *I.C.C. Docket 21723, 1931*, p. 443.

The railroads had filed a container shipping rate schedule which, if approved, would have established short-haul rates lower than less-than-carload rates. These lower rates would have encouraged the use of containers by small companies, which normally were unable to fill a freight car with their smaller orders. But the rates were specifically designed to meet the growing threat of motor truck competition. Truck companies, which had previously limited their operations to local and short haul distances, had gradually expanded their operations and directly challenged the railroad monopoly of long distance land freight transport. The railroads, rather than cooperate with the trucking companies to develop a coordinated transportation system, attempted to eliminate the new threat. The commission saw the need for the railroads "to adopt some plan of [railroad and] truck coordination," but cooperation with a competitor for the sake of efficiency was not a practice of the business community, and the commission's urging was ineffective.⁴⁷ Significantly, the eventual coordination between truck, rail, and maritime industries was one reason for the successful reappearance of containerization.

⁴⁷ *I.C.C. Docket 21729, 1951*, p. 388.

CHAPTER 2
Introduction of Containerization to the
Maritime Industry

The East Coast Experience

The coordinated use of wheeled vehicles and ships had early applications in American colonial stage boats and later in automobile and railroad-car ferry boats. During World War II, the armed forces conducted many amphibious landing operations, highly developing the technique of driving vehicles into and out of landing craft, via the ship's loading ramp. After the war, carriers made a peacetime adaptation of this wartime technique, using converted surplus landing-craft and civilian truck-trailer rigs, which combined the flexibility of truck delivery with the low cost of water transport. The transportation industry soon dubbed this new roll-on/roll-off process "ro/ro."

In 1953, two East Coast maritime carriers initiated ro/ro service, one on the Hudson River, the other in the noncontiguous trade to the territory of Puerto Rico. The Hudson River service was initiated by Trallershops, Inc. when they started carrying truck trailers in converted Landing Ship Tanks (LSTs) between New York City and Albany.⁴⁸ This service, paralleling and competing with existing on-road truck delivery, was seen by teamsters as robbing drivers of their jobs. Their refusal to offload delivered trailers, and the truck owners subsequent avoidance of the service, severely hampered its growth.⁴⁹ Another problem which plagued Trallershops was the

⁴⁸ *Business Week*, 25 April 1953, p. 190-193.

⁴⁹ *Business Week*, 24 March 1956, p. 182.

Coast Guard requirement of twenty crewmen on a vessel the size of an LST (2,000 tons.) Although the company felt this number exceeded actual needs, it had to comply, thus being burdened with excessive labor costs. Suffering with these problems, the trailership service was short lived.

Trans-Caribbean Motor Transport Trailer Ferry Inc. (TMT), a Georgia based company founded in 1953, conducted a more successful ro/ro operation. Starting with a truck trailer purchased from the Freuhauf Trailer Company, founder Eric Rath began experimenting with a trailer lift-on operation in the East Coast domestic trade to Puerto Rico.⁵⁰ Initially, TMT lifted loaded truck trailers onto the deck of a coast-wise motor schooner. Later the wheels of the trailers were removed to utilize space better and to lower the vessel's weight. But because this service was limited by the number of ports which had dockside cranes large enough to lift loaded trailers, TMT went to the ro/ro system, which better suited the island trade in which it specialized. TMT began using surplus LSTs carrying fifty-five trailers in service connecting ports in Florida and Georgia with San Juan, Puerto Rico. The LSTs were stripped of their engines and towed by ocean going tugs.⁵¹ Although this cut crew costs and saved space and weight, the towing operations had limited capabilities, so in 1957 TMT began operating a larger, self propelled vessel, a converted Landing Ship Dock (LSD) (twin screw, 475 feet, 8000 tons), carrying up to ninety-two trailers, ninety-seven automobiles, five hundred tons of bulk cargo, and twelve passengers. The converted ship, renamed the *Carib Queen*, was built with the aid of federal mortgage insurance after Secretary of Defense Charles E. Wilson announced on 4 February 1956 that the con-

⁵⁰ "TMT Takes To The Sea," *Motorship*, June 1956, p. 26.

⁵¹ *Ibid.*

struction of the *Carib Queen* was essential to national defense. This claim seemed affirmed when the ship's first four voyages across the Atlantic were under contract with the Military Sea Transport Service (MSTS), delivering equipment to Army bases in France and Germany.⁵² At the time, the *Carib Queen* was the largest ship adapted for ro/ro, but after several North Atlantic crossings it experienced many mechanical problems and soon ceased operating.

Although the connection between trucking and maritime cargo transportation was indirect when Freuhauf Trailer Company helped TMT get started, trucking and ships were more directly linked when Malcolm Mc Lean became involved in maritime transportation. Mc Lean, who had owned the Georgia-based Mc Lean Trucking Company for twenty years, purchased the Waterman Steamship Corporation and its subsidiary, the Pan-Atlantic Steamship Corporation, in 1955. The sale gave McLean a fleet of thirty-seven C-2 vessels (9000 gross weight tons at fifteen knots), which was the largest single dry-cargo capacity in the U.S. merchant fleet. He immediately set about reducing operating costs, specifically those resulting from cargo handling, which James K. Mc Lean, president of Pan-Atlantic, claimed were the primary reason the domestic shipping industry had not recovered from its World War II curtailment.⁵³

In the spring of 1956, Mc Lean described the two-phase "truck-water" program which Pan-Atlantic had embarked upon to bring about the recovery of domestic maritime shipping. The first was a "tanker-trailer" service created by converting two T-2 tankers, the *Ideal-X* and the *Almena*, into combination ships which carried bulk

⁵² *Maritime Reporter*, 1 Feb. 1957, p. 23.

⁵³ James K. Mc Lean, "Pan Atlantic's Tanker-Trailer Service," *Marine News* May 1956, p. 16; G. van den Burg, 1969, pp. 151-158.

cargo in internal tanks and containers on a special spar deck over the tanks.⁵⁴ Mc Lean saw Pan-Atlantic's "tanker-trailer" service a way to combine the economy of water transport with the speed and flexibility of overland shipment. Shippers were told that they would benefit not only because they could avoid special packaging requirements and pilferage, but also because they would see their goods moved quickly through interchange points between ship and highway, since an entire shipload of trailer vans could be lifted off and replaced with outgoing trailers in four to six hours.⁵⁵ Mc Lean called this exchange of truck trailer vans a "sea-land" service, a phrase which became the corporate name, Sea-Land Services, Inc. in April 1960.

The second phase of Pan-Atlantic's sea-land program, the ro/ro system, involved the planned construction of seven ro/ro ships, each capable of carrying 288 thirty-five-foot trailers.⁵⁶ In March 1956 Pan-Atlantic was deep in negotiations with the Federal Maritime Administration (MarAd) concerning financing the construction of these ships. Discussions included a government guaranteed mortgage covering up to 87.5 percent of construction costs; amortization of 60 percent of the construction costs over a five-year period, made possible because the Department of Defense had certified the ships "essential to national defense;" and MarAd's payment to Pan-Atlantic of \$500,000 for seven of its currently owned ships, which were to be placed in the government's reserve fleet.⁵⁷

While these negotiations on the ro/ro ships were in progress, the first phase of the sea-land program was inaugurated on 26 April 1956, when the first T-2 conver-

⁵⁴ "Pan-Atlantic "Sea-Land" Service Begins," *World Ports*, May 1956, p. 20.

⁵⁵ James Mc Lean, p. 41.

⁵⁶ *Business Week*, 24 March 1956, p. 184.

⁵⁷ *Ibid.*

sion, the *Ideal-X*, carried fifty-eight truck trailer bodies loaded with cargo from Port Newark, New Jersey, to Houston, Texas. The thirty-three-foot-long specially built trailer bodies were capable of being detached from their wheeled chassis for compact stowage aboard ship. The trailer bodies were transferred from the trailer chassis to the ship's deck by shore-based gantry cranes using specially designed, electrically locked, spreader bar lifting devices.⁵⁸ A container of goods traveled from its East Coast origin to a Gulf Coast destination in six days, which, although not faster than truck delivery, cost the shipper less.

With this lift-on/lift-off service proving successful, Pan-Atlantic decided in 1957 to abandon its ro/ro method. Canceling the construction of the planned seven ro/ro ships, Pan-Atlantic converted six C-2s, which had carried general cargo in their holds and truck trailers on deck, to specially designed vessels which carried only truck trailer bodies.

The first of these ships, the *Gateway City*, had two design features which addressed problems encountered with earlier trailer body experiments. In order to utilize a ship's cargo space to its maximum, trailer bodies (without wheels) were stacked on top of each other in vertical cells constructed within the ship's holds. In addition, these ships had on-board gantry cranes with horizontally extended arms which lifted the trailer bodies off the pier and depositing them in the desired cell by moving fore and aft on rails located on the ship's deck. The earlier *Ideal-X* had lifted trailer-vans aboard with large, shoreside gantry cranes which were specially provided to lift heavy loads up to twenty tons. These cranes on the *Gateway City*,

⁵⁸ *World Ports*, May 1956, pp. 20-21.

however, were seen as the answer to port manager's growing concern for the need to obtain special and expensive dock side equipment.⁵⁹

The *Gateway City* began operating between Port Newark and Miami on 4 October 1957.⁶⁰ Although the journey took slightly longer than the overland route, Pan-Atlantic claimed that lowered cost to shippers made this method competitive with trucking. The ship unloaded and reloaded a full cargo of trailer bodies with only two longshore crews in twelve to fourteen hours compared with up to five crews working a week or more on conventional ships.⁶¹ Because the *Gateway City* carried its own on-board cranes, it was a completely self sufficient ship, capable of bringing the new system of cargo handling to any of the many small ports along the East and Gulf Coasts. Carrying trailer bodies as cargo containers promised renewed vitality to domestic maritime carriers, increased activity at East and Gulf port cities, and also allowed participation by truckers.

The self sufficiency of the new process was noted by the Navy Department and the Congress. Observing the loading of the *Gateway City*, Vice Admiral John M. Will, commander of the Military Sea Transport Service (MSTS), hailed the operation as the "answer to the Navy's prayer for speedier transportation," while Congressman Herbert C. Bonner. (D.,N.C.) Chairman of the House Merchant Marine Committee, said that Pan-Atlantic "had pioneered the greatest advance for the merchant marine for our times."⁶²

⁵⁹ *Business Week*, 9 Nov. 1957, p. 108.

⁶⁰ *New York Herald Tribune*, 6 Oct. 1957, Sec. 2, p. 10, Col. 4.

⁶¹ *Business Week*, 9 Nov. 1957, p. 108; *New York Herald Tribune*, 6 Oct. 1957, p. 10.

⁶² *New York Herald Tribune*, 5 Oct. 1957, Sec. 1, p. 6, Col. 8.

Although Pan-Atlantic pioneered containerized maritime cargo on the East Coast in the late 1950s, containers had been introduced on the West Coast in the previous decade in an effort to revive a dying domestic maritime trade.

The West Coast Experience

For years after World War II the United States international maritime trade struggled to return to a viable condition. Immediate post war aid to Europe provided tonnage to East Coast ports, while West Coast ports benefited from a renewed trade with the Far East, inflated by shipments under contract with the armed forces during wars the nation fought in Korea and Viet Nam. By the end of fiscal 1978 the Port of Los Angeles had become the leading port in the United States in net income, and in 1980 national trade with the Pacific Rim nations surpassed trade with Europe for the first time in the country's history.

But while United States international trade was thus surviving, the nation's domestic maritime shipping industry in general, and the Pacific Coast industry in particular, had not regained its health after World War II. In 1955 Alex D. Stewart, Northwest Editor of the maritime journal *The Log*, described the Pacific Coast domestic coastwise shipping industry as "vestigial." The following year a *Business Week* article on American industries stated that the "coastwise and intercoastal [maritime] shipping industry has been anemic since World War II...."⁶³

While the national domestic maritime industry suffered from shortages of coastal vessels and tonnage lost to the greatly expanded trucking business, the Pacific

⁶³ Alex D. Stewart, "Can Trainships Solve This Problem?" *The Log*, March 1955, pp.30-33.; *Business Week*, 24 March 1956, 180-186.

Coast industry additionally suffered a greater reduction than the Atlantic Coast and had been in decline for a longer period. The Pacific Coast maritime industry had actually been in a state of decline from 1930 to 1948. Foreign, coastwise, and coastal trade figures describe decline and erratic fluctuations from the Great Depression to 1940.⁶⁴

With the outbreak of hostilities on 7 December 1941, the American domestic merchant fleet was commandeered into wartime service, which was a treatment unique to the maritime segment of the nation's transportation industry. While both railroads and airlines had some government restrictions, they continued to operate throughout the war under private ownership. Railroads operated with some wartime federal schedule controls, while airline companies continued to sell tickets and manage their own schedules, though complying with some government assigned priorities. The nation's merchant fleet, however, was completely nationalized. William L. Worden, in his history of the Matson Navigation Company, explained the experience of that carrier:

The federal government took over all U.S. merchant shipping at the outbreak of war, along with [any] foreign vessels it could reach if they were registered in nations under enemy control. . . . [American] Steamship lines served as government agents to operate their own and other assigned vessels. . . . In contrast to World War I, shipping in this conflict was the only form of transportation wholly nationalized, the first to have its equipment requisitioned, and the last to have it released.⁶⁵

⁶⁴ Wytze Gorter and George H. Hilderbrand. *The Pacific Coast Maritime Shipping Industry 1930-1948, Vol. I: An Economic Profile*. (Berkeley: Univ. of California Press, 1954), pp. 1-2.

After the war both the rail and airline companies were released from their wartime responsibilities almost immediately, but a large segment of the merchant fleet continued operating under government control and was not returned to private account until 1 July 1947.⁶⁶ This occurred not only because a large percentage of the nation's exports continued to be shipped under government auspices, but also because the armed forces retained a significant number of ships to supply their overseas bases and to provide a nucleus fleet in the event of a future war.⁶⁷ This continued government-shipping activity was one reason why the nation's domestic maritime shipping industry was not recovering from its World War II experience.

Most industries which had prospered in pre-war years regained a post-war economic viability. The national domestic maritime shipping industry was one of the few major industries which proved to be an exception. Of the eleven pre-war lines operating between the East and Gulf Coasts only two survived the post-war slump.⁶⁸ This bleak condition also prevailed on the West Coast. In 1939 the Pacific Coast Conference (an organization of water carriers formed in 1932 to maintain uniform rates) had seventy-nine ships operating between U.S. Pacific Coast ports. On 31 December 1950, the Conference membership had dropped to seventeen, ten of which were devoted entirely to carrying lumber.⁶⁹ The Pacific Coast pre-war coastwise and intercoastal trade not only had not recovered, but had fallen to below pre-war tonnage

⁶⁵ William L. Worden. *Cargoes: Matson's First Century in the Pacific* (Honolulu: Univ. of Hawaii Press, 1981), p. 86.

⁶⁶ State of California Senate Fact Finding Committee on San Francisco Bay Ports, Part Two, *The Water—Borne Trade*, (rpt, Sacramento: California Senate, 1951) p. 106.

⁶⁷ Samuel A. Lawrence. *United States Merchant Shipping Policies and Politics* (Washington: Brookings Institution, 1966) p. 81.

⁶⁸ *Newsweek*, 9 Nov. 1957, p. 104.

⁶⁹ The number of vessels in the coastwise trade had been steadily dropping from a high of 148 vessels in 1930 to the 1939 figure. *The Water—Borne Trade*, 1951, p. 56,107.

levels.⁷⁰

In the face of national post-war economic growth, the decline of the domestic maritime shipping industry was most unexpected. While some decline was expected from the war-induced, feverish, round-the-clock activity, the failure of Pacific Coast ocean commerce to regain its highest pre-war volume was shocking. The western states, California in particular, had developed spectacularly after the war; and there was reasonable expectation on the part of many that this population and economic explosion would result in an equally healthy rejuvenation of the domestic coastal maritime transportation industry. Such a rejuvenation however, did not occur.

In 1951, a California Senate Fact-Finding Committee examined the post-war Pacific Coast domestic shipping industry. Its report on San Francisco Bay Ports listed the cost of ship replacement, poor economy of operations, inequitable rate treatment, increased truck operation in West Coast transport, and changes in the Western lumber industry, as five reasons why the coastal industry did not revive after World War II.⁷¹

1. The cost of ship replacement

The coastwise trade had been built on the steam schooner, a small, economical vessel especially suited for coastal waters. During the war, some of these vessels were commandeered for use by the federal government, and those remaining were forbidden to operate along the submarine-threatened coast. When the war ended, the coastal schooners either were worn out or were disabled from non-use, while the ships

⁷⁰ Gorter and Hilderbrand, 1954, p. vii.

⁷¹ *The Water-Borne Trade*, 1951, p. 110-119.

built for wartime service were primarily designed for overseas trade and hence only partially suitable as replacements for coastal waters. Although the option of ship replacement was available, it was not very inviting. Prior to World War II, a coastal vessel could be purchased for \$ 50,000 to \$ 250,000, but by 1951, the cost of such a vessel had risen to as much as \$500,000 excluding conversion costs.⁷²

2. The economy of operations

In addition to the shortage of coastal steamers and the high cost of replacing them, the rising cost of labor was of great concern to ship operators. The California Senate Fact Finding Committee, addressing this concern, stated that "until cargo handling costs can be reduced, there is little hope for coastwise revival . . . we are simply pricing ourselves out of the market."⁷³

This emphasis on the high cost of labor probably resulted from the appointment of Frank Fosie as the labor representative on the committee. Although listed as an "industrial consultant," Fosie had been president of the Waterfront Employers Association of the Pacific Coast (WEA), the West Coast-based ship operators association organized after the 1934 West Coast labor strike to deal with the threat of growing power of the longshoremen's union. His inclusion on the committee guaranteed a perspective not favorable to dock workers.⁷⁴

⁷² *The Water-Borne Trade*, 1951, p. 110.

⁷³ Merchant Marine Study and Investigation, Final Report, U.S. Senate Committee on Interstate and Foreign Commerce, 81st Cong., 2nd Sess., (1950), *Senate Report 2494*, p. 87, in *Water-Borne Trade*, 1951, p. 110.

⁷⁴ Lincoln Fairley, *Facing Mechanization: The west Coast Longshore Plan* (Los Angeles: University of Los Angeles Press, 1979) pp. 17, 21, 31.

The Senate report went on to identify several new methods of handling cargo which might lower labor costs and bring a chance of revival to the trade. These included strapping (palletizing) several items of cargo to wooden pallets, or platforms, approximately four by five feet, binding separate pieces of lumber together into bundles, and using trailerships (converted LSTs) to carry highway semi-trailers. Pacific Coast carriers had been using the first two of these methods for several years, and trailerships had already been proposed for use on the West Coast.⁷⁵ All of these procedures were aimed at reducing a ship's in-port time by moving cargo more quickly, and thus reducing labor costs.

3. More equitable rate treatment

The California Senate report stated, however, that even if a ship's in-port time could be reduced, the "unrewarding rate structure" deterred most operators from making an investment in coastwise shipping.⁷⁶ The report referred to the rate conflict between railroads and steamboat companies which had gone unregulated despite passage of the Interstate Commerce Act in 1887.⁷⁷

By 1930, although railroad rates were supervised by the Interstate Commerce Commission, water carriers, not having a regulatory referee, were engaged in self-destructive rate wars among themselves. In 1938, the U.S. Congress partially corrected this condition by amending the Intercoastal Act of 1933, to give the Maritime Commission minimum rate power over water carriers. This, however, merely resulted in both regulatory commissions allowing rates "which would attract cargoes

⁷⁵ *The Water-borne Trade*, 1951, p. 111.

⁷⁶ *Senate Report 2494*, 1950, p. 87.

⁷⁷ George Rogers Taylor. *The Transportation Revolution, 1815-1860*. (New York: Harper and Row, 1951); Dunbaugh, pp.221-222.

to their particular forms of transportation" and did not resolve the problem of uncoordinated transportation rate policies.⁷⁸ In 1940, Congress worked to broaden control of rates by passing the Transportation Act, Part III, giving the Interstate Commerce Commission comprehensive powers over rates for water carriers in addition to those it already held over rail and truck carriers. The advent of World War II, during which time coastwise shipping was reduced almost to non-existence, prevented testing of this legislation. By the end of the war, the coastwise shipping fleet had practically disappeared and in addition, was prevented from reviving by the fourth factor listed in the California Senate report: the intense competition from long distance motor trucking.

4. *Trucks in West Coast transport*

Between 1945 and 1959, revenues of all motor freight carriers almost tripled and the number of trucks in the nation had doubled. On the West Coast, the trucking industry expansion exceeded the national rate.⁷⁹ The California Senate report stated that the resulting harm done to the coastwise maritime trade was measured by more than the increased number of trucks or sheer volume of business. Trucking companies not only had taken over the service formerly provided by coastal steamers, but they had created new business because of the specific advantages trucks offered. Trucks not only had the flexibility to carry less than full railroad carloads and to deliver door-to-door, but they could also move with shifting and expanding populations. Phillip H. Small, vice president of Pacific Intermountain Express Company,

⁷⁸ *Senate Report 2494*, 1950, p. 87

⁷⁹ R. Thayne Robson. "The Trucking Industry," *Monthly Labor Review*, 822, No. 5 (1959), pp. 547-551.

pointed out that in the heyday of coastwise shipping, a high proportion of West Coast residents lived at or near tidewater areas. But as the population expanded along the coasts and moved into the hinterland, truck service followed.⁸⁰

5. Changes in the western lumber industry

The final reason given by the California Senate report for the disappearance of the Pacific Coast coastwise trade was the change which had occurred in the western lumber industry. As late as the 1930s a high proportion of coastal vessels were primarily lumber carriers, transporting lumber harvested in Washington to consignees in San Francisco and Los Angeles. When the lumber industry moved its harvesting southward and inland, trucks delivered an increasing percentage of the harvest to sawmills and with the railroad, brought the lumber to markets in the southern part of the state. Although a single ship carried as much lumber in one load as trucks did all year, the flexibility of trucks gave them an advantage over coastal shipping.⁸¹

The problems facing the Pacific Coast maritime industry were both numerous and divergent. Some, such as the competition of trucking or the changes in the western lumber industry, could not be controlled. Yet ship owners and operators as well as other observers of the trade were well aware that "radical measures were necessary to halt the decline in maritime commerce."⁸² It was the drive to survive which gave Pacific Coast steamship companies the incentive to conduct the first post World War II experiments in maritime containerization.

⁸⁰ In October 1970, the *Portland Oregonian* estimated that by the end of that year trucks would have delivered six to seven million board feet of lumber to markets. Water carriers stated that some coastwise vessels could carry that amount in one load. *The Water-Borne Trade*, 1951, fn.(3), p. 118.

⁸¹ *The Water-Borne Trade*, 1951, pp. 118-119.

⁸² Clark Kerr and Lloyd Fisher. "Conflict on the Waterfront." *Atlantic Monthly*, 184, No.3 (1949), p. 20.

The earliest post war use of in the United States maritime industry, predating the 1956 experiments of Mc Lean, were conducted by the pioneer Alaska Steamship Company. The Seattle-based carrier had been sailing between the United States Northwest and the Territory of Alaska since 1895.⁸³ Although during World War II its operations were severely restricted, it survived on the non-contiguous trade, supplying the many military bases constructed in the territory. After the war, while serving an expanding number of military bases and a growing civilian population with a limited number of old ships, the carrier began experimenting with ways to improve its efficiency. Alaska Steam was an early innovator in maritime containerization, beginning an evaluation of shipboard wooden containers in 1949 and introducing both wooden and steel container service in 1953. The wooden containers were open crates sixty cubic feet in volume (approximately six feet long, four feet wide and three feet high) the steel containers 144 cubic feet (approximately six feet long, four feet wide and seven feet high). Later that same year, Alaska Steam began carrying loaded truck trailers on the decks of their ships operating between Seattle and Alaska. By coordinating with the Alaska-based truck line, Alaska Fast Freight, Inc., the company was able to offer a single-rate through service between Seattle and points along Alaska's Richardson Highway to Fairbanks. The single-rate plan replaced four separate tariffs and eliminated transshipping problems at Valdez, the Alaska sea terminus of the Richardson Highway. Truck trailers loaded with goods were driven to Seattle, lifted aboard ship and carried to Valdez, where they were lifted off and driven to their destination.⁸⁴ By 1957 Alaska Steam's service reached throughout Alaska from

⁸³ S. G. Hayman, "A Cargo Handling Revolution," *Transportation Club News*, 27 April 1957, p. 7.

Ketchikan in the southeast to Nome in the northwest, including interim points served in connection with the Alaska Railroad and Alaskan trucking companies.⁸⁵

While Alaska Steam was carrying containers and truck trailers aboard standard cargo ships, other companies were seeking ways to revive the coastal trade. Private carriers, the Department of Defense and other Federal agencies, for instance, discussed carrying fully loaded railroad cars in the West Coast trade. Railroad cars had been transported on ferries and barges in the East for many years. One of the earliest developers was Trainships, Inc. of New York City. In 1932 this company started loading freight cars on and off specially designed ships using 125-ton capacity, shore-based cranes.⁸⁶ The consulting firm of William Wyer Co., East Orange, New Jersey, examined the possible use of the seatrains concept on the West Coast, and issued a report to the Army Transportation Division in the Spring of 1954. The Wyer Report strongly encouraged shipboard transport of railroad cars and truck trailers aboard ships capable of carrying 128 rail cars or trailers. Even though Trainships, Inc. had successfully used shore based cranes, the report recommended using on board cranes.⁸⁷ While onboard cranes were adequate to lift traditional, general cargo loads, fully loaded railroad cars would have required extremely heavy onboard cranes.⁸⁸

In October 1957 the Alaska Steamship Company retained transportation specialist Leslie M. Rudy to evaluate adopting trainship procedures to their operations. Rudy had served as a Colonel in the Army Transportation Corps and later founded

⁸⁴ "Alaska Lines New Storedoor Pickup and Delivery Service," *The Log*, Dec. 1953, pp. 58-59,84; Alex D. Stewart, "Revolution Successful," *The Log*, March 1956, pp. 28-31.

⁸⁵ Hayman, 1957, p., 14.

⁸⁶ W.P. Stoddard, "Seatrains Design," *Marine Engineering and Shipping*, 37, No.12, October 1932, pp. 414-415, 429; "Trailers Go to Sea by the Lift-on Way," *Business Week*, 9 Nov. 1957, pp. 104-110.

⁸⁷ The Wyer Report is quoted in Stewart, 1955, p. 32.

⁸⁸ Stewart, 1955, pp. 30-33.

and managed the Northern Stevedore and Handling Corporation operating in Alaska.⁸⁹ Rudy recommended that the company build two ships which would roll on and off ninety eight rail cars. The company decided, however, that there was insufficient rail traffic to justify such action. The plan was dropped and the company continued to develop its lift-on container and truck-trailer operations.⁹⁰

While various East Coast companies were developing lift-on/lift-off and ro/ro truck trailer and container operations, the Pacific Coast industry was still suffering from depressed and unstable business conditions. From 1946 to 1950 the nation experienced general prosperity resulting from several conditions, including increased post-war production of civilian goods, and released pent-up buying urge. In 1956 when the Suez Canal was closed following the six-day Israel-Egypt war, trade routes were extended around the Cape of Good Hope, requiring more ships in service. To relieve this pressure and to provide carriage for its surplus agricultural and other aid cargoes to Europe, the United States government broke ships out of its reserve fleet to be used as charter vessels.

By 1957, however, the canal had been cleared of scuttled ships, and traffic once again flowed between the Mediterranean and the Red Seas. With the regular shipment of goods making stockpiling unnecessary, Europeans reduced import orders. At the same time, Japan restricted its overseas spending and reduced its imports of U.S. scrap and ore shipments. These conditions resulted in a shortage of goods to be shipped and a surplus of U.S. ships.⁹¹

⁸⁹ *Stewart, 1955*, p. 31.

⁹⁰ *Business Week*, 24 March 1956, p. 186. In both of these endeavors, Alaska Steam was attempting to improve its non-contiguous domestic trade by incremental changes to its existing system and equipment. Therefore they carried containers and truck trailers on the decks of their general cargo ships.

While world events were keeping the overseas maritime industry in a state of uncertainty and East Coast carriers were experimenting with containers and ro/ro, the San Francisco based Matson Navigation Company studied the technology of containerization in their newly established operations and research department. In 1957, the carrier introduced containerization to its Hawaii-West Coast trade, expanded the service to the Far East, and completely reordered California's role in national and international maritime trade.

The Matson Navigation Company—Maritime Innovators

The contribution of the Matson Company to maritime containerization reflected the entrepreneurial philosophy of the founder of the century-old company, Captain William Matson. In 1882, when the Swedish born Matson was in his mid-thirties, he first sailed his three masted schooner, the *Emma Claudina*, between San Francisco and the Hawaiian Islands. In four years he had acquired a fleet of sailing ships which carried cargo and passengers between the Islands and the West Coast and, in addition, had acquired controlling interest in Hawaiian sugar and California oil ventures.⁹²

After William Matson's death in 1917, the company retained both his entrepreneurial spirit and his desire to maintain not merely steamships but all the elements which create a complete transportation system. During the next twenty-five years, the Matson Company expanded its system to include trend-setting luxury liners such as the *Matsonia* and the *Lurline*; luxury resorts, such as the world

⁹¹ *Pacific Shipper*, 30 Dec. 1957, p. 9.

⁹² Worden, p. 28.

famous Royal Hawaiian and Moana Hotels on Waikiki Beach; and a brief experiment in air passenger service between Hawaii and the mainland.⁹³ During World War II, the Matson organization, as were all domestic steamship companies, was commandeered for wartime service by the federal government. At the outbreak of the war the Matson system consisted of a complete transportation system including thirty eight freighters, four large passenger liners, 4000 seagoing and shoreside personnel, terminals and stevedoring organizations at Los Angeles, San Francisco, Portland and Seattle, a mainland ship construction and repair facility, staff organizations in mid-Pacific and South Pacific ports, and the two major Waikiki Hotels.⁹⁴

When the war ended, Matson was confronted with the same challenges facing all American domestic shipping companies, and once again the company's actions were influenced by William Matson's philosophy of combining many separate elements into one complete transportation system. Early in his career, Matson had recognized the value of a complete commodity-handling system; oil wells, ships to carry oil, and tanks to store it in the Hawaiian Islands.⁹⁵ This philosophy of looking at maritime transportation as a link in a complete system resulted in two actions to improve cargo handling operations. First, Matson converted its sugar transportation operation from a manual to a mechanized bulk system. Commodities such as coal, ore and oil had been handled in bulk in the maritime industry for years, but sugar was still packaged in sacks and manually loaded into and out of standard cargo ships. In 1948 Matson mechanized its entire sugar operation by building new terminals in the Islands, replacing sugar sacks with conveyor belts and other loading and discharging

⁹³ Worden, pp. 56-63, 102-104, 198.

⁹⁴ Worden, pp. 86-87.

⁹⁵ Warden, p. 58.

machinery at terminal facilities, converting its standard sugar carriers to bulk carriers.⁹⁶ A ship load of sugar, which formerly took ten days to be offloaded, could now be mechanically offloaded in no more than two. Lincoln Fairley, Research Director for the International Longshoremen's and Warehousemen's Union (ILWU) from 1946 to 1967, called this conversion to mechanization "the most far reaching change [in cargo handling] in the post war period."⁹⁷

The other Matson Company action, and the one most significant to the development of containerization in California, was a study which examined Matson's West Coast-Hawaii cargo shipping operation. The study was supervised by Foster Weldon, who had been Deputy Director and Division Chief of the Johns Hopkins University Operations and Research Office from 1952 to 1956. The office had served as a liaison and coordinator between Johns Hopkins and various government sponsored research projects undertaken on campus during and after World War II.⁹⁸ When Matson established a research department in early 1956, it hired Weldon from Johns Hopkins to be its first director. Weldon and a staff of researchers conducted a study to determine how to develop the most modern, efficient and economical way Matson could transport cargo to and from Hawaii.⁹⁹ The Matson research staff compared the costs actually incurred by Matson during a whole year of manual cargo operations with what those costs would have been if a container service had been in effect during that same year. The study first considered the van service itself, including types of cargo,

⁹⁶ Warden, pp. 114-115.

⁹⁷ Lincoln Fairley, pp. 56-57.

⁹⁸ Letter to author from James Stimpert, Assistant Archivist, The Ferdinand Hamburger, Jr. Archives, John Hopkins University, dated 22 June 1984.

⁹⁹ "Matson History Starts With Schooner Sailing," (mimeographed) San Francisco: The Matson Company, March 1984, p. 5.

routes sailed, size of container vans, design of ships which would carry them, facilities, and handling equipment.

Two observations about the existing manual cargo handling system were highlighted in the study. One was that "almost half of the total transportation costs . . . was directly associated with the cargo handling during ship loading and discharging operations."¹⁰⁰ This statement was underscored by the general observation that longshoremen's wages would continue to increase steadily. The second observation stressed that while manual cargo procedures required cargo to be handled several times, a container van system handled the cargo only once, when it was packed into the container at the point of origin.¹⁰¹ Weldon also noted that final decisions on container dimensions were controlled both by the type of cargo carried and the highway legislation of the various western states. Most of the cargo shipped from Hawaii to the West Coast was uniform and of high density, including large quantities of canned pineapple, while cargo shipped to Hawaii was more varied since it included automobiles, building materials and general merchandise. The weight of denser cargo determined the maximum size of the container. But container size was also limited by the truck trailer length limitations legislated by the western states, over whose highways Matson containers would be towed.¹⁰²

Matson had three principal sea routes connecting Hawaii with Seattle-Tacoma, San Francisco and Los Angeles. The fleet which sailed these routes consisted

¹⁰⁰ Foster Weldon. "Cargo Containerization in the West Coast-Hawaiian Trade," *Operations Research*, 6, No. 5 (Sept. Oct. 1958), pp. 649-670.

¹⁰¹ Weldon, 1958, p. 653.

¹⁰² Maximum height and width were fixed by state highway limits, while length and weight were dependent on the type and size of truck-trailer combination involved. L. A. Harlander. "Engineering Development of a Container System for the West Coast-Hawaiian Trade." *Transactions of the Society of Naval Architects and Marine Engineers*, 1960, pp. 1052-1088;

primarily of fifteen C-3 vessels operating on a schedule of two sailings a week out of San Francisco Bay, one a week out of Los Angeles, and slightly less than one a week out of the Pacific Northwest ports-- a total of almost two hundred round-trip voyages to Hawaii a year.¹⁰³ Thus in studying the process of a container system, Matson enjoyed the advantages of standardized cargoes and a fleet operating on a regular schedule out of company-operated facilities at both ends of the route. Although the study of these conditions provided accurate data, the data applied specifically to the company's West Coast-Hawaii trade.¹⁰⁴

Containerization as a Technological System

After studying the van service itself, the Matson analysts then examined elements of the entire system, including the annual costs of a van service as a percentage of current operating costs; the additional capital required to establish a van service; and the cost reduction achieved by a van service compared to the capital investment required to achieve it. In an article in *Operations Research* in the Fall of 1958, Weldon noted that actual use of the container van service had revealed much information about the nature of containerization itself.¹⁰⁵ Weldon observed that while the process of containerization not only improved Matson's existing method of cargo handling, it also required that the structure of maritime cargo transportation itself change to fit the demands of the new technology. He noted that ninety-eight percent of eastbound van shipments were of the highly desired full van-lot (VL) category, cargo containerized at its point of origin and delivered directly to its consignee.

¹⁰³ Weldon, 1958, p.655.

¹⁰⁴ Matson later expanded its container service to the Far East, but shortly thereafter ceased that operation, limiting its container service to the West-Coast Hawaii trade.

¹⁰⁵ Weldon, 1958, p. 649.

Westbound cargo, however, consisted of small, less-than-van-lot size (LVL) shipments which had to be combined into one container at a consolidation point as railroads had done in the 1930s. Upon arrival in Hawaii, the containerized cargo was separated at a break-bulk area and distributed to its separate consignees. This occurred, for example, when a number of small grocery stores in Honolulu individually ordered a single food product from one manufacturer.¹⁰⁶ Weldon stated that although the system had to deal with such variations in cargo, "it would be hoped that as customers' acceptance of the van service develops, their buying power and shipping patterns would change in order to better accommodate to the van size and shipping schedules offered."¹⁰⁷

An area of major importance analyzed in the study was the type of equipment to be used in the container van system. Because the Matson Company controlled several of the elements of its cargo carrying service, including fleet size, port facilities, and loading and discharging rates, it was able to develop the number of vans, chassis, tractors, trucks and cranes needed to support each level of fleet operation. Because the study envisioned phasing into van service gradually, vans would first be carried on the decks of general cargo ships and later aboard all-van ships, a phased-in process which had been used earlier by Alaska Steam and Pan-Atlantic. Therefore, since vans had to be handled on and off the decks of both conventional and van ships, large shoreside cranes were selected because of their flexibility. Because such cranes were larger and proportionally more expensive than cranes used for regular cargo handling, Matson placed them only at main ports on the West Coast and in the port of Hono-

¹⁰⁶ Weldon, 1958, p. 654.

¹⁰⁷ Weldon, 1958, p. 658.

lulu. It followed, therefore, that in Hawaii, direct van service would only be provided to the single port of Honolulu. Ports on the outer islands were to be served through Honolulu, using ro/ro barges.¹⁰⁸ By applying the load-center concept to its Hawaii-West Coast maritime trade, Weldon demonstrated the manner in which the new technology would effect maritime transportation in the broadest sense. The new process would not only control practices of shippers and consignees (such as small grocery stores), but also would determine the destiny of ports.

While Weldon's study did not tell Matson managers what decisions to make, it provided them with a broadened perspective by comparing "the investment possibilities . . . of containerization with . . . other investment possibilities that may be available," such as ro/ro. It also illustrated statistically and graphically which situations should be avoided, such as a container of a certain length which was clearly less efficient than another in a given situation.¹⁰⁹ Therefore, the study served to remove a great deal of the risk involved in deciding whether to adopt the new technology of containerization. This was evident in comments concerning probable results of financial investments made in the van system. Weldon concluded, that "unlike most physical systems where investment in plants must build up to an efficient operating level, the initial investment in van operations yields the greatest percentage return in terms of annual reduction in operating costs" and the decision to invest in container vans would "not be complicated by considerations of longterm commitments and short-term risks."¹¹⁰

¹⁰⁸ Weldon, 1958, p. 663.

¹⁰⁹ Weldon, 1958, p. 669.

¹¹⁰ Ibid.

The study reflected the cautious attitude within management which Paul Strassmann described in his 1956 study of risk and innovation in American business prior to the turn of the century. Strassmann disagreed with economic historian Joseph A. Schumpeter, who stated that in the last third of the 19th century American business men "gambled boldly in promoting their visions" of technological innovation, which were as risky as "shooting at a moving target."¹¹¹ Strassman, in contrast, felt that American businessmen were generally cautious and adapted innovation tentatively:

It could be that innovators were not necessarily the boldest gamblers in sight but rather those who first bothered to acquire superior information.¹¹² But since the acquisition of information increased predictability, once "confronted with a massive display of evidence and expert testimony, businessmen could, in time be moved, to action."¹¹³

Weldon's cargo handling study convinced Matson's management to "move to action" by investing in a container van service. Once the decision had been made to adopt the new system, the next step was to design and develop the equipment necessary to operate it—containers, lifting connectors, cranes, container-transferring vehicles, and ships. Leslie A. Harlander, manager of the Matson Engineering Department, and SNAME member, noted that Matson was developing a complete system of cargo transportation whose characteristics were influenced by several means of transportation. Highway legislation on truck-trailer dimensions controlled container size. Rail-

¹¹¹ W. Paul Strassmann. *Risk and Technological Innovation*. (New York: Cornell Univ., 1956), p. 3.

¹¹² Strassmann, p. 220.

¹¹³ Strassmann, p. 3.

road transport required that container length conform to flat car dimensions and that their construction prevent cargo movement during the impact of railroad car switching operations. Sea transport also had to be considered in the design of containers because of the corrosive effects of sea spray (galvanic action between aluminum and steel parts of the van structure) and the stress placed on containers and fittings resulting from a ship's roll, yaw and pitch.¹¹⁴

In selecting the type of crane to be used, Matson chose large shoreside cranes which could load containers aboard ships of various design. While Matson considered adopting several of the existing and commonly used boom crane designs, instead it developed, in conjunction with the Pacific Crane Company (PACECO) of Gulfport, Mississippi, a special shore based gantry crane for its container service. These gantry cranes moved on tracks parallel to the ship, lifted containers from the pier, transferred them along a horizontal arm extending out over the ship, and lowered them into specific sections of a ship's hold. Containers, delivered to the pier for placement aboard ship, were transferred between rail and truck areas to pier side cranes by special transporters.

On-deck container storage required fittings to hold them in place against the forces of a ship's pitch and roll, as well as the force of water taken over the deck in heavy seas. In below-deck stowage, containers had to be held in position to prevent their shifting within the hold and be designed to withstand the accumulated weight load placed on the bottom container in a cell. Matson engineers used both the latest engineering methods and equipment to develop their container service, but they also

¹¹⁴ Harlander, 1960, pp. 1084-1087.

relied on the traditional cut-and-try methods characteristic of technological development. They used strain indicators, oscillographs, computations on shear and bending moments, and static load factors. Yet much of the work of the Matson engineers involved more basic procedures. In discussing the final decision on construction of the skin and roof of a container, Harlander said:

Although calculations would yield a roof-bow section module required to support two 200-lb men standing on one roof bow, it is the author's opinion that roof-bow spacing, in conjunction with roof sheet thickness, can best be judged by actually walking and jumping on a test panel or a prototype container.¹¹⁵

Again, in discussing the strength of side walls, Harlander stated that; "because of the variables involved, the most economical scantlings which should be employed will probably not be known until after many years of experience...."¹¹⁶

On 31 August 1958 Matson inaugurated its container van service when the *Hawaiian Merchant* departed San Francisco Bay with twenty containers loaded on her decks. In April 1960, the *Hawaiian Citizen* entered service carrying 436 containers in her hold, the first all-container ship to enter the Pacific service.

Much of the work in developing a container system involved modifying existing cargo handling equipment and developing a new and integrated system. Shipboard containers had been used by the Bowling Green Company in the first decade of the 20th century, while mechanisms to transfer containers from loading docks to railroad flat cars were used by the Pennsylvania and Lehigh Valley Railroads in the late

¹¹⁵ Harlander, 1960, pp. 106-107.

¹¹⁶ Harlander, 1960, pp. 106.

1920s, and shore-based cranes of Trainships, Inc. were lifting 125-ton loaded railroad cars aboard ships in the 1930s. Matson combined these separate elements into a complete, coordinated container handling system. Both the Matson study, conducted by their Operations Research Department, and the development work done by the Matson Engineering Department, envisioned the intermodal use of trucks, railroad cars and ships into a completely integrated system. Thus Matson's approach was a major contribution in the development of containerization in California and eventually in world trade.

CHAPTER 3

Two Decades of Containerization in the California Maritime Transportation Industry.

After World War II, Matson had a low ship inventory, a large, diversified shore-based establishment, and was described as "an outsized organization badly in need of help."¹¹⁷ They had to increase a ship inventory reduced during wartime, reduce a shore establishment expanded during the war, and at the same time create a profit. After losing twelve ships as wartime casualties, Matson began a ship replacement program in 1946, purchasing fifteen C-3s, four C-4s and three slow Liberty ships.¹¹⁸ To rejuvenate its passenger business Matson put three of its passenger liners into its Alameda shipyard for renovation. At the same time, they settled a lawsuit for mismanagement initiated by Walter Buck, son of Captain Matson's one-time partner, by appointing Buck to the Board of Directors and paying his legal expenses of \$20,000. As a result of these various post-war problems and expenditures, Matson posted a \$4.5 million loss in 1949.¹¹⁹

It was into this financially depressed situation that Randolph "Joe" Sevier stepped to become Matson's sixth president on 30 June 1950. Born in Eureka, California, he had served in the navy during World War I. After the war, he worked for Matson in a variety of positions, including freight checker, seagoing freight clerk, and finally as an assistant purser. In 1927 after leaving Matson, he gained managerial experience as head of Castle and Cooke's steamship department. He returned to Mat-

¹¹⁷ Worden, p. 129.

¹¹⁸ Worden, p. 118.

¹¹⁹ Worden, pp. 117,120.

son to become an executive vice-president in 1948, and finally president in 1950.¹²⁰

Sevier embarked on a program to reduce cash outflow and eliminate the company's shoreside losses. He halted the reconstruction of the three passenger ships, although they remained laid up in the Alameda yard, "seagoing Percherons, still eating their heads off in upkeep."¹²¹ He sold off an unprofitable subsidiary, the United Engineering Corporation, and leased Matson's Alameda shipyard (which was later sold.) Paradoxically, Sevier increased other shoreside investments by establishing the Matson Assurance Company in San Francisco, purchasing land on Maui, buying land adjacent to the Royal Hawaiian Hotel in 1950, and constructing the Surfrider Hotel (connected to the Moana) two years later. The company's financial difficulties still existed, highlighted by a 1957 management consultant firm's report that some major departments still operated without any firm requirement to show contributions to company profits.¹²²

In 1959, while shipping operations lost \$196,000, the Matson hotels posted a profit of \$73,000. Sevier, therefore, confounded many by selling all four of Matson's hotels to the Sheraton Corporation in June 1959.¹²³

While many of Sevier's managerial decisions were both praised and criticized, one action which put Matson on a new course and completely reordered the California maritime industry was the decision to hire Foster Weldon and study the possibility on introducing containerized cargo service. Matson Company officers received the Weldon study in mid-1957, decided to develop containerization in the West Coast-

¹²⁰ Worden, p. 121.

¹²¹ Ibid.

¹²² Worden, p. 129.

¹²³ Worden, pp. 127-128.

Hawaiian trade, and spent the rest of that year planning for its introduction. At the same time Matson continued to provide its other regular cargo services. Since one of Matson's largest eastbound cargoes was sugar, the use of bulk handling procedures was of primary importance. Matson therefore continued to expand them, while at the same time developing the new system of containerization. After numerous engineering planning stages, the elements of the container facility were constructed, and they continued to evolve into more efficient designs as operational experience provided design direction. Function continually shaped form.

By the end of 1957 the company had developed two prototype containers with chassis and lifting spreaders, as well as a test vertical "cell" which simulated the internal storage cell aboard ship. The new cargo system centered around the 24-foot aluminum container which the Weldon study had found best suited for the West Coast-Hawaii trade. This length differed from those used by Alaska Steam, Pan Atlantic, and various East Coast carriers. While many architects and engineers questioned Matson's 24-foot length, Leslie Harlander saw no reason to change to a length used by other companies. He felt Matson's choice was sound and it was clear that none of the other carriers were willing to change their container dimensions to move toward container standardization, despite widespread recognition of its advantages.¹²⁴

While the Matson container was being developed, numerous designs were evaluated for the other elements of the evolving system, especially the ships. Harlander stated that during the early studies, "approximately 50 ship-conversion

¹²⁴ Leslie A. Harlander. "Further Developments of a Container System for the West Coast-Hawaiian Trade." *Transactions*, 1961, pp. 30, 34, 41.

schemes were processed to the point where conversion cost, capacity, and operational factors could be determined to allow economic evaluation of the over-all system.¹²⁵ Once evaluation was completed, ship designs were introduced in three phases. First, existing ships were modified to carry containers in addition to their regular cargo. Second, existing ships were converted to all-container vessels. Finally, new vessels were designed and constructed from the keel up as containerships.

Modifying existing Matson ships to carry containers on deck was a pilot program which utilized ships already on hand, put containers into service quickly, gave the company knowledge gained through actual operation, and allowed Matson to evaluate customer response to their use. To implement this first phase of container-ship operations, three C-3s were modified for deck carriage at the Todd Shipyard in Alameda, while three others were modified at Todd's Los Angeles yard. The first of these six C-3s was the *Hawaiian Merchant*, which on 31 August 1958, departed San Francisco Bay for Honolulu carrying twenty containers on her deck and hatch covers, in addition to more than 40,000 tons of general merchandise in her cargo hold.¹²⁶

Matson had decided that although ships would carry deck-stowed containers along with regular cargo while the new process was being introduced, the backbone of container service must eventually be provided by ships designed especially for the exclusive carriage of containers.¹²⁷ Therefore, while the six modified C-3s were carrying containers on their decks, another C-3 underwent major conversion by the Wil-

¹²⁵ Harlander, 1961, p. 7.

¹²⁶ The others which had been modified at the Alameda yard were the *Hawaiian Packer* and the *Hawaiian Refiner*. While the *Hawaiian Farmer*, the *Hawaiian Builder*, and the *Hawaiian Rancher* were modified at the Los Angeles yard. Charles Regal. "20 Years of Containerization in the Pacific." *Ampersand Magazine* (Spring 1978), p. 18.

¹²⁷ Harlander, 1961, p. 7.

lamette Iron and Steel Company of Portland, Oregon, to become the *Hawaiian Citizen*, the first all-container ship to serve in the Pacific.¹²⁸ This conversion consisted of redesigning the ship's standard cargo holds into vertical container cells. Standard cargo holds were approximately as wide as the ship, located on several deck levels below the main deck, interconnected by small deck openings (through which cargo was hoisted), and serviced through a main deck hatch slightly smaller than the hold so it could be covered and securely battened down against the elements. Widening the main deck hatches to fifty four feet to accommodate six containers abreast, presented the problem of vessel torsion and longitudinal bending much as a shoe box twists without its cover. To correct this problem, a new strengthening deck was constructed along almost the entire length of the ship. This new deck not only provided structural rigidity, but it also increased the number of containers which could be carried in below-deck vertical cells.¹²⁹ Because the *Hawaiian Citizen* also carried containers stacked two high on her newly constructed weather deck, visibility from the deck house was assured by raising it one deck height. Potential stability problems from on-deck container stowage and a raised superstructure were avoided by placing the heaviest containers on the bottom of each container cell. The clutter of on-board cargo handling booms and hoists was removed, resulting in a sleek and clean profile and making the ship entirely dependent on shore based cranes for cargo transfer.

The *Hawaiian Citizen*, made its maiden voyage from California to Hawaii on 19 May 1960, carrying 426 containers, including 72 refrigerated containers.¹³⁰ The

¹²⁸ Harlander, 1961, p. 9.

¹²⁹ Harlander, 1961, pp. 7-14.

¹³⁰ The ship had a capacity of 436 twenty four foot containers. *Matson Container Service*, undated and unpaginated, was received by the U.C. Berkeley Transportation Library on 4 Feb. 1964. Future reference will use this date.

ship, scheduled on a 15-day turnaround, of which 12 1/2 days were spent at sea, approached the ideal cargo ship operation, which is to transport cargo the maximum number of days and to be in port the minimum number.¹³¹ Even though the ship lost 24 percent of its former cargo carrying capacity in the conversion process, reduced cargo handling and inport time compensated for the lost carrying capacity and actually increased the vessel's annual container carrying capacity.¹³²

Although the backbone of Matson's container service was to be their all-container ships, at the same time they operated combination ships carrying other special cargo in addition to containerized cargo. This cargo operation was based primarily on the shipment of goods to Hawaii from the West Coast. Ships on westbound journeys carried high volume, general merchandise cargo, in increasing quantities each year as the Islands' post World War II economy and population continued to grow. On return trips to California, ships carried "back-haul" cargoes consisting of molasses, sugar and canned pineapple. Combination ships therefore proved to be efficient since they carried these "back haul" cargoes on the eastbound trips which had low container use.

As a result, in addition to the *Hawaiian Citizen*, Matson made several other major ship conversions of bulk carriers into combination bulk and special cargo carriers. Two such ships, the *Californian* and the *Hawaiian*, were World War II C-4s, which had been jumboized (adding 110 foot midbodies) in 1953-54 to carry bulk ore and oil. Matson acquired the ships in early 1960 from the Hawaiian Steamship Company and converted them to bulk sugar/molasses/container carriers. The conversion

¹³¹ Harlander, 1961, p. 14.

¹³² *Matson Container Service*, 4 Feb. 1964,

of these C-4s involved less structural modification than did the C-3s, since bulk carriers already had large open holds, which easily carried containers. In 1961, the *Californian* and the *Hawaiian*, were each carrying 286 containers to Hawaii, stowed both above and below decks. On the return journey to California they carried 16,000 tons of sugar, 300 short tons of molasses, and 280 on deck containers.¹³³ In 1965, Matson also added 110-foot midbodies to two former military C-4 transports, thereby converting them to the multi-purpose container/automobile/bulk carriers named the *Hawaiian Monarch* and the *Hawaiian Queen*.¹³⁴

In the early 1960s, the basic Matson container fleet consisted of nine ships: the six modified C-3s which carried both general cargo in their holds and containers on their decks; the bulk/container carriers, the *Hawaiian* and the *Californian*; and the *Hawaiian Citizen*, the first all-container ship serving the Pacific trade.¹³⁵ Matson constructed still another specialized ship by converting the C-3 freighter *Hawaiian Fisherman*, to an automobile carrier renamed the *Hawaiian Motorist*. This vessel, called the "nation's first specialized seagoing automobile transport" operated for ten years, carrying more than 500 automobiles below decks and 226 containers on deck on each trip.¹³⁶

Having modified and converted ships, Matson embarked on the third phase of its containership program, the design and construction of a vessel from the keel up as an all-container ship. This was begun in 1970 by constructing the *Hawaiian Enterprize*

¹³³ Sugar was offloaded at the California and Hawaiian refinery at Crockett, California). Worden, p. 144; Matson Container Service, 4 Feb. 1964.

¹³⁴ Worden, p. 149.

¹³⁵ Matson Container Service, 4 Feb. 1964

¹³⁶ The ship was then sold for further conversion to a bulk carrier. Worden, 1981, p. 144; Regal, 1978, p. 21.

and the *Hawaiian Progress*, which were to be the largest containerships afloat at the time, capable of carrying more than 1000 containers. At the same time, Matson began to develop the technology required for a container handling crane.

A few days after the 31 August 1958 voyage of the *Hawaiian Merchant*, the *Hawaiian Packer* departed San Francisco Bay for Hawaii carrying 21 containers. A week later the *Hawaiian Refiner* left carrying 30. It was at Todd's Alameda shipyard that these three ships had been modified for deck stowage, and it was from a temporary landing facility at that same shipyard that containers had been loaded on their decks. Because each ship's on-board gear could not lift the heavy (up to 20 ton) containers, mobile dockside revolving cranes, called "whirly" cranes, were initially used to transfer containers between truck chassis and ships' deck.¹³⁷ These revolving cranes, required five or more minutes per container transfer cycle. Although still faster than manual handling, economical container operations required shorter loading cycles. Matson engineers therefore sought a new crane design with a shorter transfer cycle, to keep containership turnaround time to a minimum.¹³⁸

During the mid-1950s, most ports did not have the heavy-duty whirly cranes necessary to lift containers.¹³⁹ Therefore, when Sea Land Services developed its container system on the East Coast in the late 1950s, it first used onboard cranes, thus relieving the many ports which it served from purchasing heavy duty shore based cranes. Matson, however, which served only a few ports with its many ships, decided that one large dockside crane at each of its ports was a more cost effective system.

¹³⁷ Regal, 1978, p. 20.

¹³⁸ Program for the American Society of Mechanical Engineers Dedication of the PACECO container crane, as an International Historic Mechanical Engineering Landmark, Encinal Terminals, Alameda, California, 5 May 1983. Hereafter referred to as PACECO 1983 .

¹³⁹ PACECO, 1983, p. 3.

Because the slow and cumbersome whirly crane proved inadequate for rapid container handling, Matson searched for a crane to overcome these limitations.

In July 1957, Matson commissioned the Vietsch Engineering Company to conduct a study to determine which type of crane would fulfill operating specifications established by Les Harlander and the Matson engineering staff. The study, conducted by Vietsch engineers Don Harlander (Les's brother) and Murray Montgomery, concluded that no crane then on the market could fulfill all of Matson's requirements. In early 1958 Matson, having requested engineering and design bids for a new crane design, awarded a preliminary contract to PACECO, one of eleven companies which had submitted bids, and the former employer of Don Harlander, Murray Montgomery.¹⁴⁰

The crane design finally agreed upon by Matson's engineering manager and PACECO engineers, including Murray Montgomery, now back with PACECO, was a clean looking A-frame construction with a hinged horizontal boom and through-leg trolley. The crane handled containers averaging twenty tons in a three minute cycle, resulting in a productivity of 400 tons per hour, or a ship turnaround time of eighteen hours, compared to a former twenty one days using manual labor.¹⁴¹

While Matson was loading and unloading containers by whirly cranes at their temporary facilities at Todd's Alameda shipyard, as well as at the ports of Honolulu and Los Angeles, PACECO began constructing a high speed crane. The first of these newly designed cranes erected at the privately owned Encinal Terminals in Alameda, began service on 7 January 1959. Matson also erected PACECO cranes at their newly

¹⁴⁰ PACECO, 1983, p. 3, 4.

¹⁴¹ PACECO, 1983, p. 4.

constructed container handling facilities at Honolulu and Los Angeles harbors.

Once the high speed PACECO cranes were placed into operation, however, their operating speed presented new problems. The PACECO crane solved the problem of slow turnaround by lifting a container from a truck chassis, placing it in the ship, lifting another container from the ship and placing it on a truck chassis, all in a three-minute cycle. This system, however, required two trucks and drivers under the crane delivering and picking up containers, and a line of trucks and drivers waiting in line to serve the hook. The need for a steady flow of containers without tying up many trucks and their drivers was accomplished by establishing a backlog of containers in a container marshaling yard and moving them to and from the crane with specially designed four wheeled transporters. This combination of crane, marshaling yard, and special equipment was the first generation of Matson's complete system of containerization. It centered on the container facility consisting of three basic units: the container yard, the container freight station, and cranes.¹⁴²

Fully loaded containers arrived at the container yard on a truck chassis or a railroad flatcar, were straddled by four wheeled carriers, moved to an outbound marshaling area, and stacked two high to await shipment overseas. Small loads of cargo were delivered to the container freight consolidation station where they were combined with other cargo into a full container load which was then placed by straddle carrier with the other containers in the outbound marshaling area. When a containership was to be served, containers were moved by straddle carrier to the last element of the system, the pierside high speed crane. Matson's PACECO cranes stood

¹⁴² *Matson Container Service*, 4 Feb. 1964.

on A-frame legs, with a 41-foot extension to reach an inboard expanse of four lanes of traffic over the pier apron, and a boom with a 95-foot extension offshore. The PACECO cranes were capable of reaching container cells of the largest ships in service. The 95-foot boom was hinged for clearing ships' structures and when raised, projected 156 feet above the pier apron. The crane picked up a container, placed it in a container cell, removed a container from an adjacent cell, and placed it on the pier to be delivered by a straddle carrier to the inbound container marshalling area in less than three minutes.

Matson began its container operations at the Port of Los Angeles in August 1958 using Whirly cranes, while facilities were constructed that same year for the PACECO shoreside gantry cranes. The PACECO crane began operating at Matson's Los Angeles terminal in August 1960, initially handling containers delivered by semi-truck trailers, and later by straddle carriers.¹⁴³ At that time Matson began operating the PACECO crane at its Honolulu Diamond Head container facility.¹⁴⁴ By 1960, the Matson container system was providing a model for the maritime industry.

¹⁴³ Charles F. Queenan. *The Port of Los Angeles: From Wilderness to World Port* (Los Angeles: Los Angeles Harbor Department, 1983), p. 105.

¹⁴⁴ Construction of the Diamond Head Facility also had begun in 1958. Regal, 1978, p. 21.

CHAPTER 4

The Port of San Francisco: Two Faces Toward Containerization

In 1966 Gerald Nash took note of a problem in early historical accounts, stating that "Mythology abounds in the history of the American West."¹⁴⁵ Nash referred to the folklore of the lone Westerner in "seven league boots" establishing the West's economic growth, a concept which he felt had been given credence by Frederick Jackson Turner's provocative articles extolling the simple frontiersman as the West's prime mover. Nash applauded historians' attempts to correct this conceptual problem through empirical studies of the "volatile mixture of state, federal and individual enterprise" which had frequently been lost in the romantic afterglow of Western legend."¹⁴⁶ The tale of San Francisco's entry into the container age includes claims labeled mythical by many -- such as that San Francisco has for years been a dying port -- and also includes a "volatile mixture" of agencies and people involved in the port's management.

In 1958 the Matson cargo ship *Hawaiian Merchant* departed San Francisco's Golden Gate carrying twenty containers on her decks, an event which seemed to herald San Francisco's entry into what has come to be called the "container revolution." It was, however, not until 1972 that San Francisco provided a facility exclusively designed to handle containers, and this was accomplished only after the port facilities of the famed Embarcadero were reclaimed by the city after more than 100 years of state ownership. The manner in which the city acquired the port and dealt with the new technology of containerization provides an excellent opportunity to

¹⁴⁵ Gerald Nash, "Government in the West: The San Francisco Harbor, 1863-1963." In Gene M. Gressley, ed. *The American West: A Reorientation* (Laramie: Univ. of Wyoming Press, 1966), p. 77.

¹⁴⁶ Nash, p. 78.

examine myth and reality, as well as the "volatile mixture" of elements which have created port policy.

The idea that San Francisco was a dying port had been proposed in 1939 by an *American Mercury* writer and was promptly denied by J.F. Marias, President of the Board of State Harbor Commissioners.¹⁴⁷ The idea however, whether myth or reality, persisted. A study conducted by the California Legislature in 1951 noted that before and after World War II "the press and various periodicals interested in Bay Area maritime affairs had published statements and articles concerning the decline in the water-borne trade of San Francisco Bay ports."¹⁴⁸ The decline of the maritime industry of the Pacific Coast was also affirmed in a 1952 study which stated that "in sum, high instability and long-run decline predominate in the [port's] record for 1930-1948."¹⁴⁹

Many observers, however, continued to vigorously deny that San Francisco's port was suffering decline. In 1957, the *Pacific Shipper* rejected the idea, stating that "we are sure that [marine statistics] will prove beyond cavil that Pacific Coast shipping never came very close to departing this world" and except during periods of dock strikes was "the liveliest corpse you ever saw."¹⁵⁰ A 1966 A.D. Little Study affirmed statements supporting the port's health. In a chapter entitled "The Myth of the Dying Port," the report states "it is clear that San Francisco is not a dead port."¹⁵¹ While it is indeed clear that the Port of San Francisco was "alive", its

¹⁴⁷ The 1939 article blamed the port's decline on press and businessmen blaming labor, farmers boycotting the city, and a decline in shipping. P. Hamilton, "San Francisco: A Dying City," *American Mercury* 47, June 1939, pp. 169-175.

¹⁴⁸ *The Water-borne Trade, 1951*, p. 11.

¹⁴⁹ Gorter and Hilderbrand, Vol. I, p. 13.

¹⁵⁰ *Pacific Shipper*, 13 May 1957.

health was a function of when its pulse was taken and by whom. It is equally clear that the threat of a "dying port" was never completely absent from view or earshot of those people who constituted the "volatile mixture" of elements which went into formulating port policy.

Several years after Matson introduced the new technology of maritime containerization to the San Francisco Bay area in 1958, many still believed that the maritime industry of the port continued to decline. Newspaper articles supporting this opinion with such titles as, "Trucking Executive Says San Francisco Port is Inadequate" and, "How San Francisco Port Lost Some Trade".¹⁵² Writers reached this conclusion because of San Francisco's hesitant start in constructing container handling facilities and because few ships were to be seen tied up along the historic Embarcadero. Although reasonable explanations were advanced for both situations, an Embarcadero without ships presented the apparent reality that San Francisco was a dying port. The City struggled to overcome this impression and tried to meet the challenges of a newly developing maritime technology.

San Francisco, however, failed to match the expansion into containerization accomplished by other California ports, especially across the Bay at Encinal's Terminals and the Ports of Oakland and Los Angeles. The once-thriving port of San Francisco was said to have declined because it failed to meet the challenge of a new idea and thus was the bypassed victim of technological change.

¹⁵¹ *The Port of San Francisco, An In-Depth Study of Its Impact on the City, Its Economic Future, the Potential of Its Northern Waterfront.* (New York: Arthur D. Little, Inc., 1966), p. 6.

¹⁵² *San Francisco Chronicle*, 26 May 1972 and 9 June 1972.

Discussions of whether San Francisco was or is a dying port have been a part of local maritime community tradition for over forty years and will undoubtedly continue to be. What is examined here, however, is the manner in which San Francisco created a policy towards the new process of containerization, how this policy was implemented, and what its results were.

Although any attempt to square myth with reality is fraught with perils, not the least of which is the multitude of available historical realities, the case seems firm that other California ports did not take away San Francisco's trade. San Francisco's trade declined because of several key decisions, all of which created the city's policy toward the introduction of containerization to its maritime industry.

The Early Development of the City and Port of San Francisco

San Francisco, perhaps more than any other city in western America, has a history steeped heavily, if not in mythology, at least in tales of romance, exemplified by the city's unofficial song which honors the "city by the Bay" to which so many have lost their hearts. The Bay was visited by numerous seafarers, (possibly) including Sir Francis Drake, (and surely) including Gaspar de Portola, Baptiste de Anza, Nicolai Perovich Rosanov, and Richard Henry Dana. Exploded into cityhood by the Gold Rush of 1849, devastated by an earthquake and fire in 1906, then risen again to give birth to such wonders as the Pan Pacific Exposition of 1915 and the Golden Gate Bridge, completed in 1937, the City and Port of San Francisco are surrounded by a romantic mystique. This aura has been nourished by numerous monographs about the port, its square riggers, and the hardy life of seafarers and colorful citizens connected with the history of the famed waterfront.¹⁵³

The port itself evolved with the tiny Spanish settlement on Yerba Buena Cove, which was visited in 1846 by the United States sloop-of-war *Portsmouth*, establishing American rule over the settlement.¹⁵⁴ Three years later, the rush of sailing ships bringing prospectors to seek gold in the Sierras exploded the tiny harbor into a bustling, hectic port, now named for the bay around it. Jammed at times with an unbelievable 800 ships, the port quickly became a city.

As the City of San Francisco continued to grow in the 1850s, its waterfront facilities expanded to meet the demands of increasing maritime commerce. Although the California Constitution of 1849 granted ownership of the San Francisco waterfront to the state, the legislature in 1854 authorized the City of San Francisco to construct wharves at the ends of all streets touching the shores of the Bay. Because the city lacked the financial resources to develop the waterfront, the state further authorized the city's debt commission to lease wharf space to private groups for periods of up to ten years.¹⁵⁵ At the same time, the state transferred its domain over beach and water lot property to the city.¹⁵⁶ As a result, the harbor became an area of conflict between several groups, all seeking to reap as much profit from the waterfront as possible.

City officials sold waterfront lots to private individuals both for personal gain and to relieve the city's large operating deficit. State officials confused the issue by

¹⁵³ Some examples are: Felix Riesenber, Jr., *Golden Gate: The Story of San Francisco Harbor* (New York: Tudor Publishing Co., 1940); William Martin Camp, *San Francisco; Port of Gold* (New York: Doubleday and Co., 1947); Harold Gilliam, *San Francisco Bay* (New York: Doubleday and Co., 1957); Richard H. Dillon, *Embarcadero*, (New York: Coward-McCann, Inc., 1959).

¹⁵⁴ Dillon, 1959, p. 7-9.

¹⁵⁵ San Francisco Port Authority. *Frontiers On The Sea*, (San Francisco: San Francisco Port Authority, 1958) p. 2.

¹⁵⁶ "Army Street Terminal Ranks High in Port's Long History," *World's Ports*, Sept. 1967, p. 18.

also selling waterfront lots to help reduce the state's sizable debt of \$2,000,000 in 1853.¹⁵⁷ Waterfront piers deteriorated because owners provided wharf upkeep sufficient only to assure continued income. The condition of the waterfront suffered also from an accumulation of sunken wrecks, collapsed wharves, uncleared rocks and shoals, and continuous silting.

Opposing city and state officials for control of the waterfront were private developers, who sought a ninety-nine year lease to build a sea wall in order to develop the waterfront themselves. In return, the private wharf operators wanted legal authority to control the waterfront and to collect port revenues. In 1860, Governor John Downey vetoed a bill which would have granted these privileges.¹⁵⁸ Local merchants had opposed the project, preferring instead to have a harbor controlled by a municipal government which would more likely be subject to their influence. This early move for municipal control to resolve the argument over port ownership was scuttled in 1863 when the Legislature itself assumed ownership of the harbor and waterfront, deposed all other claimants and entrusted management to a State Board of Harbor Commissioners.¹⁵⁹

State operation resulted in a long-term waterfront improvement program consisting of three major projects. The first, a sea wall, commenced in 1876, remained under construction for half a century. Second, the San Francisco Ferry Building Ter-

¹⁵⁷ Gerald Nash, *State Government and Economic Development*, (Berkeley: University of California Press, 1964) p. 109.

¹⁵⁸ San Francisco Port Authority, *Ocean Shipping Handbook* (Sacramento: State Printing Office, 1966), p.10.

¹⁵⁹ At this time a new waterfront was created by extending its boundary 600 feet beyond the line established by the 1851 Constitution. Much of this new waterfront had been filled in over grounded wrecks and old pier buildings, some of which still reappear as construction crews excavate for new building foundations. The port's administrators have had three titles: 1863, Board of State Harbor Commissioners; 1957, Board of Port Authority Commissioners; 1968, San Francisco Port Commission.

terminal, funded in 1891 to accommodate the increasing ferry boat and railroad train-barge service, connected San Francisco with the western terminus of the transcontinental railroads at Oakland.¹⁶⁰ Third, a belt railroad constructed on the Embarcadero in 1891 linked rail yards, private spurs, and terminals with the waterfront docks.¹⁶¹

These accomplishments under State ownership were unfortunately accompanied by a series of scandals involving graft and political corruption, the first of which was uncovered in 1873 by Lauren E. Crane, an expert accountant appointed by Governor Newton Booth. Crane discovered the theft of waterfront rental receipts, financial kickbacks, and forced tribute involving Harbor Commissioners John J. Marks and his popular colleague, Jasper O'Farrell. Marks was convicted of embezzlement in 1875 and sentenced to seven years in San Quentin, the mid-Bay Island prison. O'Farrell, also convicted, died that same year before he could be sentenced. In 1883, new scandals were uncovered in which Governor Perkins, later a United States Senator, had appointed to the State Board of Harbor Commissioners men who were employed concurrently by corporations providing services for the commission. Legislative attempts to correct such illegal activities continued, but were only partially successful.¹⁶²

¹⁶⁰ These train barges also allowed loaded freight cars to be shipped from San Francisco to the East Coast, without being unloaded for the trip across the Bay to Oakland, a capability which altered the whole pattern of freight movements in the area. Three Class I railroads, with intercontinental connections served San Francisco; the Southern Pacific had direct dockside connections, while the Western Pacific and the Santa Fe had dockside connections through railcar ferries connecting to the East Bay. State of California, Senate Fact-Finding Committee on San Francisco Bay Ports, *Bay Area Ports*, (rpt, Sacramento: California Senate, 1951) p. 28.

¹⁶¹ Roy S. Mac Elwee. *Port Development*, (New York: Mc Graw, 1925, p. 283-4); Nash, 1964, p. 85.

¹⁶² Nash, 1964, p. 87.

After the turn of the century, as industrialization brought increased West Coast commerce, the State Board of Harbor Commissioners expanded dock and waterfront buildings in order to meet space and facility demands created by larger ship capacities, as well as by increased agricultural exports and specialized commerce. The committee also operated a vegetable oil processing plant and provided grain storage and refrigerated warehouses. In 1936, the Harbor Commissioners entered the age of flight by providing hanger space on Treasure Island for the famed China Clippers. State operation of the port, however, was increasingly opposed by private commercial interests and by a succession of San Francisco mayors.

Port Facilities at the Time Containerization was Introduced

At the introduction of containerization in the late 1950s and early 1960s, the waterfront facilities of San Francisco suffered from old age, obsolescence, and neglect under State ownership. At that time, the San Francisco waterfront was fringed with finger piers, jutting out perpendicularly from the shore with large warehouses extending their length. The majority of the piers were constructed completely or partially of wood and were capable of handling the great variety of general cargo which had always been the mainstay of San Francisco's maritime commerce.

In 1959 the Port Authority contracted with Ebasco Services, Incorporated, of New York City, to conduct a survey of San Francisco's harbor facilities.¹⁶³ This survey confirmed that a great part of the port's berthing facilities, both wharves and piers, were in deplorable condition.¹⁶⁴ Of the total of ninety-six "on paper" wharf

¹⁶³ Ebasco Services, Inc. *Port of San Francisco, Facilities Improvement Survey for the San Francisco Port Authority*. (New York: Ebasco Services Inc., July 1959).

berths, three were condemned and awaiting destruction, ten were not suitable for ocean-vessel use, and nine were good only for providing ship repairs. Of the remaining seventy four, only fifty were considered in good condition. Finger pier facilities were also generally considered inadequate to handle the larger ships of the day.¹⁶⁵

To compound the problem of old age, improvements to the harbor facilities had basically ended with the Great Depression. Heavy use during World War II and the Korean War exacerbated the poor condition of the port facilities. Few repairs were made during the wars because materials were in short supply and piers could not be taken out of service in order to perform repairs.

In addition to suffering from poor physical condition, much of the waterfront had become obsolescent as new cargo handling techniques developed. Finger piers had been designed to accommodate the 19th century practice of dockside freight delivery and receipt by railroad cars, supplemented in the 1920s by some truck delivery.¹⁶⁶ After the war, however, an increasingly large amount of freight was handled by trucks. In the San Francisco-Oakland metropolitan area alone, 11,800 for-hire vehicle units were licensed by the California Public Utilities Commission in the late 1940s, and one East Bay port estimated that 80 percent of its cargo was received and delivered by truck.¹⁶⁷ This not only brought increased congestion to the waterfront Embarcadero, but also highlighted the need to modernize outdated piers to accommodate truck delivery and receipt. In order to correct these two problems of

¹⁶⁴ Piers extend perpendicularly from the shoreline, while wharves and docks are generally parallel to the shoreline.

¹⁶⁵ Ebasco, 1959, p. 149.

¹⁶⁶ By 1922 trucks were not only delivering and receiving cargo at dockside, but the practise of transferring containers directly from truck beds to lighters was in use in some Eastern U. S. ports. Mac Elwee, 1925, pp. 360-361.

¹⁶⁷ *Bay Area Ports*, p. 29.

obsolescence and poor physical condition, the State Harbor Commission began a port modernization program in 1946.¹⁶⁸

While outdated facilities were indeed a problem for the port, of more serious consequence was the State's philosophy toward port facilities. A 1951 California State Senate Fact-Finding Committee Report on San Francisco Bay maritime trade stated that while facilities were a necessary ingredient of a port's operations, they were not as significant as other factors. The report stated that an overall healthy maritime trade in the entire Bay Area was more important than the condition of any individual port; and if all Bay ports would work together cooperatively this Bay Area trade could flourish. Several statements of the Senate Committee confirmed this philosophy: "It is not", the committee stated "the docks, wharves, and terminals along the waterfront that make a harbor but [the hinterland] behind those facilities."¹⁶⁹

The Committee concluded that:

Today, the primary tests of successful port operations appear to be competition, shipping and cargo handling costs Without minimizing the value of up-to-date port facilities, modernization of such facilities becomes an important factor [only] insofar as costs of freight movements are affected by out-moded piers, wharves and loading equipment.¹⁷⁰

While admitting that San Francisco's facilities were particularly in need of improvement and modernization, the Senate Committee also felt that the facilities available in the entire Bay Area far exceeded the existing demands of port commerce

¹⁶⁸ *Ocean Shipping Handbook, 1966*, p.11.

¹⁶⁹ *Bay Area Ports*, p. 25.

¹⁷⁰ *Bay Area Ports*, p. 15.

and should be better utilized. This could be accomplished by efficient management and aggressive promotion, both of which would increase the flow of traffic despite the lack of modern facilities:

In the final analysis, the . . . committee staff . . . places stress on the value of effective port operations and on harbor wide . . . support of water-borne commerce rather than on the extent and conditions of facilities. Other factors being equal, the human elements of port organization, management, and promotion appear somewhat more significant in the modern picture of seaport commerce and world trade than modernity of facilities./**

The Senate Report also commented on the national spirit of cooperation which had defeated two enemies across the seas and had launched the "free nations" of the world on a post-war crusade for peace when the first session of the United Nations was convened in this same city. Noting that World War II had increased interport cooperation, the Committee regretted that the cooperative spirit had turned out to be only "a temporary truce of patriotic cooperation that retreated to post war rivalry."¹⁷¹ In an effort to bring this cooperative spirit to the struggling maritime industry, the Committee proposed that all Bay Area Ports come under the jurisdiction of a regional "San Francisco Bay Ports Commission," which could be implemented within two years.¹⁷² With such recommendations, San Francisco municipal

¹⁷⁰ *Bay Area Ports*, pp. 15, 16. This philosophy is strikingly similar to that voiced by Mac Elwee, pp. ix, viii, 4.

¹⁷¹ *Bay Area Ports, 1951*, p. 16.

¹⁷² The Committee report included a proposed organization chart and a legislative schedule for the codification of Bay Area organization. *Bay Area Ports*, p. 17. There have been many efforts to achieve a regional approach to the problems connected to the San Francisco Bay region. The subject of regionalism is discussed by Stanley Scott in, *Governing a Metropolitan Region: The San Francisco Bay Area*. (Berkeley: Univ. of California, 1968). For a brief chronology of efforts toward recent regional cooperation see the Editorial in *Pacific Shipper*, 23 February 1970. A Bay Area Port Authority was recommended by U.S. Maritime Administrator Robert J. Blackwell to the San Francisco Mayor's Port Committee, in October 1972, *Pacific Shipper*, 6 November 1972. Several cooperative organization movements have been success-

officials realized that their problem of outdated pier facilities would not be resolved by a state government whose ideas of port management hardly encouraged revitalization of facilities clearly inadequate to the growing challenge of the container era.

Although most of the maritime industry, as well as the Board of State Harbor Commissioners, expected that the San Francisco Bay maritime trade would reflect the state's post-war economic growth, it did not. While the annual tonnage of several ports in the Bay Area increased, that of San Francisco fluctuated and gradually diminished not only to levels below pre World War II, but down to the levels of the 1920s.¹⁷³ It was a clear indication to city officials that if a major effort were to be made to modernize and expand the port facilities, it would only be accomplished under city ownership. It was, however, another ten years before the city finally acquired its port from the state, an event which involved the colorful and controversial mayor, Joseph Alioto and his family; changes to the port facilities; and a new direction for the entire San Francisco waterfront.

In 1964 James F. Shelley was elected mayor of San Francisco, the first Democrat to hold that office in fifty five years.¹⁷⁴ During his four-year tenure of office, the city struggled with newly examined problems of urban blight, and loss of a sense of

ful, most notably the San Francisco Bay Conservation and Development Committee (BCDC), and the Northern California Ports and Terminals Bureau (NORCAL). Bay Area Ports, however, have basically remained independent and competitive.

¹⁷³ The decline of the Pacific Coast Trade is described in Gorter and Hilderbrand, Vol. 1, 1962, pp. 8-10; In examining the Bay Area alone, Fritz Bartz states that of total Bay Area tonnage in 1920, San Francisco's share was 46 percent, Oakland's 10 percent and Richmond 18 percent. In the year 1949, San Francisco's share dropped to 14 percent, Oakland's remained constant, Richmond's rose to 30 percent (due primarily to oil exports) and other ports had increased to 46 percent. Value however, did not decrease as significantly as did tonnage. The value of freight handled by San Francisco decreased only from approximately 66 percent of the Bay Area total after WW I, to over 52 percent prior to WW II. Fritz Bartz, *San Francisco—Oakland Metropolitan Area*, trans. by G. Phillip Curti. (Debuque: Wm. C. Brown Co., 1980) pp. 49-50. In 1951, the State Senate Fact Finding Committee stated that foreign trade in 1946-47 had remained at the approximate level of the late 1920s. *Bay Area Ports*, 1951, p. 14.

¹⁷⁴ *New York Times*, 9 January 1964.

being the Bay Area's cultural, economic, and social pulse. An awakened environmental awareness spawned several groups which successfully battled unlimited waterfront expansion, the dangers of haphazard bay fill, and the construction of a new in-city airport.¹⁷⁵ Reflecting some of these concerns, Mayor Shelley voiced his determination that economics "must not diminish the natural aesthetics of San Francisco Industrial growth must not reduce this city to a jungle of steel and concrete." Referring specifically to the maritime environment, he opposed:

further defacement of our city by arbitrary freeway design [the elevated freeway which created a visual barrier between the city and the view of the Bay] and indiscriminate construction of high rise buildings which will obscure and blight our cultural base of existence, the Bay of San Francisco.¹⁷⁶

Nearing the end of his first term of office and suffering poor health, Shelley entered the University of California Medical Center for a check-up in September 1967. Shortly thereafter, his aide announced that Shelley was suffering from nervous exhaustion and would not run for reelection.¹⁷⁷ Two months later Joseph Alioto, a businessman and noted antitrust lawyer, was elected the thirty-fourth mayor of San Francisco. After his election, Alioto delivered the nominating speech for Hubert Humphrey at the 1969 Democratic Convention and returned the state's leading Democrat. Alioto, it became clear, did not share his predecessor's concerns about development on the waterfront. City ownership of the port was Alioto's top priority. He

¹⁷⁵ James E. Vance, Jr., Associate Professor of Geography at the University of California, Berkeley, discusses the changing nature and image of San Francisco in *Geography and Urban Revolution in the San Francisco Bay Area* (Berkeley: University of California Press, 1964).

¹⁷⁶ *New York Times*, 9 January 1964.

¹⁷⁷ *New York Times*, 9 September 1967.

stated that city ownership would allow a "renaissance of the waterfront area" and "permit an integrated and creative development of the port's resources."¹⁷⁸

The City Regains its Port

On 22 January 1968, State Assemblyman John Burton, representing San Francisco City and County, introduced Assembly Bill 190 (AB 190):

authorizing the transfer in trust to the City and County of San Francisco the interest of the state in and to, and the control and management of, the Harbor of San Francisco . . . and declaring the urgency thereof, to take effect immediately.¹⁷⁹

Since 1898, when the Ferry Building was completed, nearly every city mayor had tried unsuccessfully to obtain legislation to return the port to its original owners.¹⁸⁰ In 1968, Mayor Joseph Alioto, with strong backing from civic, business and labor leaders finally succeeded. Alioto was supported in this effort by a large segment of the community, including Cyril Magnin, president of the San Francisco Port Authority and president of Joseph Magnin Company; R. Gwin Follis, retired Chairman of the Board of Standard Oil of California; State Senator Milton Marks, later Chairman of the California Senate Select Committee on Maritime Industry; and Assemblyman John Burton.¹⁸¹

¹⁷⁸ *New York Times*, 15 September 1968.

¹⁷⁹ *State of California, Journal of the Assembly, Legislature of the State of California, 1968 Regular Session* (Sacramento: California Legislature, 1968) p. 207.

¹⁸⁰ *San Francisco Examiner and Chronicle*, 21 March 1968.

¹⁸¹ *San Francisco Chronicle*, 21 March 1968.

Mayor Alioto felt that transfer of the port was necessary at this time in order to coordinate port development with the \$300 million worth of trade center and commercial building projects on adjacent lands, scheduled to begin late in 1968.¹⁸² Although previous attempts to acquire the port had failed, some members of the shipping industry as well as civic, legislative and business leaders gave Mayor Alioto strong indications of support for the transfer. In April 1968 Alioto formed a committee to study the terms of the transfer proposal which had been submitted by Assemblyman Burton. The study group, chaired by Mayor Alioto, included co-chair R. Gwin Follis, Cyril Magnin, a member of the Board of Supervisors, and a labor representative.

One of the most enthusiastic supporters for the transfer was the San Francisco Planning and Urban Renewal Association (SPUR). This organization formed a Waterfront Committee which conducted a year-long feasibility study of the transfer, the results of which were incorporated into the arguments of those favoring city ownership of the port. The SPUR report stated that the Port of San Francisco was not keeping pace in the race for the first class facilities and other major shipping contracts, and that the lack of city ownership robbed the port of the concentrated community interest which would come with such ownership. Lack of city ownership had also robbed the city of direct control over 23,000 jobs, a \$195 million annual payroll, and the ability to influence off-waterfront work and revenues of associated industries.¹⁸³ The SPUR report also expressed concern that the port seemed powerless to replace cargo lost when major businesses left the waterfront area.¹⁸⁴

¹⁸² *Journal of Commerce*, 3 April 1968.

¹⁸³ San Francisco Planning and Urban Renewal Association (SPUR). *The San Francisco Port: Asset or Liability* (San Francisco: SPUR, January 1968), pp. 1-11;

SPUR felt that port improvements could be more easily financed under city ownership rather than continuing reliance on statewide bond elections, which put the fate of the port in the hands of voters as distant from San Francisco as Crescent City, 365 miles to the north, and San Diego, 514 miles to the south. Another advantage assigned to city ownership was that land and other assets which were no longer needed for commercial maritime purposes could be more easily redeveloped by the city, giving "optimal utilization . . . for public open spaces, housing or recreation."¹⁸⁵ *San Francisco Chronicle*, 21 March 1968, p. 2.

At this point in the process, non-maritime commercial development of the area was not being stressed.

After Burton's bill cleared the Committee on Public Utilities and Corporations in April, it went to the Committee on Ways and Means. Meanwhile, in San Francisco, Mayor Alioto had appointed a sixteen-member committee to negotiate the transfer of the port to city ownership. The group represented various segments of the maritime community, including the board chairman of American President Lines, the executive vice-president of the Matson Navigation Company, officials of the ILWU, the Marine Cooks and Stewards Union and the Sailors Union of the Pacific, the president of Bulk Food Carriers, Inc., a San Francisco Supervisor (who also owned a ship repair firm), R. Gwin Follis and Cyril Magnin.

¹⁸⁴ Simmon's Mattress Company had left, taking the annual \$30,000 revenue paid to the State's Belt Line Railroad; Calmer Steamship Company had moved its steel carrying operations to Richmond because Bethlehem Steel Company would pay land transportation for shipments only from the port nearest its Contra Costa mill; aviation fuel for the San Francisco International Airport, which used to cross the port's piers from barges, was being shipped directly to the airport by pipeline. *San Francisco Examiner and Chronicle*, 21 April 1968.

¹⁸⁵ SPUR, pp. 1-11.

The campaign continued to gain momentum, aided by support from SPUR, which stressed that funds for improvements to the port would be more easily acquired by the city than by the state, which was limited to bond issues. The city in contrast, could provide greater financial alternatives: city bonds, money from general funds, tax revenue and tax investment bonds, and possibly federal grants for redevelopment projects.

Although city officials and community leaders such as Magnin and Follis strongly approved of city ownership, some of these same people, as well as others within the maritime community, also expressed reservations about the end result. Cyril Magnin and Ralph Dewey, president of Pacific American Steamship Association, both publicly voiced concern that if the city acquired the port, it was essential that port administration be autonomous. As Magnin stated, "The commission can't be expected to run to the Supervisors with every contract. The port is a business and can't divulge its secrets to its competitors."¹⁸⁶ Likewise, the editor of the *Pacific Shipper* noted that while steamship companies varied in their opinions of whether the port facilities should be developed to service passengers or cargo, there was one general concern within the maritime community:

In the rush toward home rule, there has been very little said on perhaps the most important aspect of the whole question, namely, how does San Francisco intend to run the port? In general, what evidence can the city give that it can do, not just as well as the state but that it will significantly improve the present setup?¹⁸⁷

¹⁸⁶ *Journal of Commerce*, 3 April 1968; *San Francisco Chronicle*, 21 March 1968; *San Francisco Examiner*, 21 April 1968.

The man most familiar with the port's operations, and therefore most qualified to answer that question, was Port Director Rae Watts, who had held that post since 1960. During the campaign he cautioned against thinking that city ownership was a cure-all for the port's problems and pointed out that in the competitive maritime industry, marine terminals were not moneymaking operations. Therefore San Francisco would have to develop sources of revenue from nonshipping uses of port property in order to pay for maritime facilities. The port faced rising longshore rates and, according to Watts, the unalterable geographic disadvantage of being located on the northern tip of the peninsula. Changing ownership of the port from state to city would have no effect on any of these problems.¹⁸⁸ Watts' outspoken opinions against city ownership did not work to his advantage when the port came under municipal ownership.

Those few voices of caution had little effect in slowing the progress of AB 190 through the California Legislature. On 29 May 1968, it passed to the Senate where, managed by Senator George Moscone, a Democrat representing San Francisco, the bill went to the Committee on Government Efficiency. Two months later it was referred to the Committee on Finance, where Governor Ronald Reagan's Director of Finance, Casper W. Weinberger, presented it with a temporary roadblock.

Weinberger, formerly a San Francisco attorney, political columnist, television personality, and Assemblyman representing that city, had, since his youth, favored legislation which would allow the city to obtain ownership of its port.¹⁸⁹ As State

¹⁸⁷ *Pacific Shipper*, 22 April 1968.

¹⁸⁸ *Ibid.*

¹⁸⁹ *San Francisco Chronicle*, 15 August 1968. *Who's Who in America*, 43rd ed. 1984-1985, (New York: Marquis Who's Who, 1984) p. 3432.

Finance Director he still favored the transfer, but now he felt strongly that the city should pay the state the full cash value of the port, estimated to be between \$350 and \$400 million.¹⁹⁰ The city argued, however, that since the state had acquired the port in 1863 with no payments to the city, there should be no cash payment now for the transfer back from the state. Although Weinberger's request for cash payment was not granted, the city did agree to assume the port's bonded indebtedness. After other financial safeguards to the state were included, the Senate approved the bill, and on 14 August 1968, Governor Reagan signed the legislation, now named the Burton Act, which offered the voters of San Francisco the option of acquiring their port.

The Burton Act, which presented the voters of San Francisco the opportunity to obtain their port, also encumbered the city financially and provided the state with several financial and administrative safeguards. The voters were presented with two propositions in the November 1968 elections: one to accept title to the port's facilities, the other to assume the port's bonded indebtedness of more than \$50 million. In addition, the city would have to pledge the issuance of \$50 million of harbor improvement general obligation bonds within ten years, and another \$50 million within the following fifteen years. At the insistence of Casper Weinberger's Finance Department, mineral, oil, gas, hunting, and fishing rights were granted to the state. The state was also guaranteed receipt of 85 percent of year end revenues over \$250,000 above necessary operating and maintenance costs.¹⁹¹ The remaining 15 percent went to the port because the city was not allowed to participate in this program. Accumulation or expenditure of revenues in excess of \$250,000 for any single capital improvement

¹⁹⁰ *San Francisco Chronicle*, 15 August 1968, and 7 February 1969.

¹⁹¹ Net earnings for the three previous years were: 1967-68, \$2,282,432; 1966-67, \$1,613,642; 1965-66, \$1,835,846. *Pacific Shipper*, 7 July 1969.

were also subject to Finance Department approval and a determination that it was of statewide interest. The State Port Authority would be replaced by a City Port Commission, whose five members would be appointed by the Mayor, subject to approval of the Board of Supervisors, and augmented by the addition of the State Director of Finance and the Director of Agriculture as ex-officio Port Commissioners.

The terms of the Burton Act appeared to favor the state considerably. It was relieved of the financial and administrative responsibilities for the port yet stood to gain many potential windfalls. The city, on the other hand, felt that the transfer would eventually be in its best interest. City Assessor Joseph Tinney stressing tax revenue as one major advantage of the transfer, stated that the city had been losing "at least a million dollars a year" because an eight-mile stretch of property from Aquatic Park to Candlestick Cove was owned by the State.¹⁹²

On 5 November 1968, San Franciscans voted to accept the port from the state, which had owned and operated it for 105 years. But in regaining its port, with its \$13 million cash surplus, the city also acquired a bonded indebtedness of \$61 million and a commitment to invest \$100 million in port improvements within twenty-five years.¹⁹³ Perhaps the most severe liability was the poor condition of the port's facilities, a result of the state's unwillingness to invest in upkeep and repair. Also, although the state had considered the growing use of containers in its planning, it had continued to retain facilities of varied design with the ability to handle a wide variety of general cargoes.

¹⁹² *San Francisco Chronicle*, 21 March 1968.

¹⁹³ The original \$50 million plus \$11 million for planned small-craft harbors.

Two Faces Toward the Future

Acquiring the ownership of its port was a major event in the city's maritime history. In the years which followed, the city's maritime policy led to the expansion of nonmaritime commercial development in the northern waterfront, while the maritime industry expanded into the southern waterfront area. The port authority's policy toward containerization evolved out of several key decisions made in the Post World War II port modernization process. The Commission rarely stated long-range policy very far in advance, but rather developed it during implementation of short-term objectives, usually after utilizing individual consulting firms in the process. The attempt to convert the maritime oriented northern waterfront into a non-maritime, commercial area is a case in point.

San Francisco's bustling, crowded maritime and commercial Embarcadero has always been a major element in the romanticized view of the city and its waterfront, and it is a large part of the city's tourist appeal.¹⁹⁴ In addition, the dockside activity of loading and unloading ships was clear evidence of an active and healthy maritime industry.¹⁹⁵ After the war, with shipping activity decreased and waterfront facilities in poor condition, the State Harbor Commission, had begun in 1946, a \$20 million port rejuvenation program which involved four major projects to modernize and expand long neglected facilities.¹⁹⁶

The first project joined together several individual finger piers to provide the larger areas required for truck delivery and receipt of cargo.¹⁹⁷ Secondly, the Islais

¹⁹⁴ A. D. Little, Inc., 1966, p. 22.

¹⁹⁵ Ibid.

¹⁹⁶ *Ocean Shipping Handbook*, 1966, p. 11.

Creek grain and copra terminal was improved and expanded, almost doubling its grain handling capability to 500,000 bulk tons.¹⁹⁸ Third, the existing Pier 50 was extended out to, and connected with, the pinnacle of Mission Rock, creating a twenty-nine-acre triangular terminal. The terminal's designers, incorporating the latest advances in cargo delivery, claimed it to be "one of the most efficient and modern facilities for servicing and delivering cargo by truck."¹⁹⁹ Finally, a \$2.5 million World Trade Center, the only West Coast major mart dedicated to import-export commerce, was constructed in the Ferry Building.²⁰⁰

Maintaining this variety of facilities, the port continued its practice of handling a wide variety of general cargoes including bananas; copra; automobiles; cotton; newsprint; bulk liquid cargoes such as coconut oil and tallows, and bulk dry cargoes, such as grain, feed, sorghum, chemical and fertilizer; as well as general "break bulk" cargo. While existing piers were expanded to prepare the port for the anticipated post World War II trade increase, except for including truck access, they still were designed for the same basic cargo handling methods which had been used for a century.²⁰¹

The Northern Waterfront

¹⁹⁷ *World Ports*, 1967, p. 24.

¹⁹⁸ *World Ports*, p. 28.

¹⁹⁹ Board of State Harbor Commissioners, *The Progressive Port of San Francisco*, (San Francisco: San Francisco Maritime Services, 1953) p. 7.

²⁰⁰ *Ocean Shipping Handbook*, 1966, p. 11.

²⁰¹ The dependence on traditional methods of cargo handling in use at the time was emphasized at a meeting of the Maritime Cargo Transportation Conference, which included presentations on how to devise "methods for improvement in productivity without a basic change of system and without making the work more strenuous for the men." National Academy of Science, National Research Council, *Minutes of the Joint Meeting, Port Study Committee and the Advisory Committee, San Francisco Port Study Project of the Maritime Cargo Transportation Conference* (Washington: NAS/NRC, 28 February 1961), p. 3.

The facilities modernization program received support and financing from the Legislature and the voters in 1946. Five years later however, the State Senate Fact Finding Committee emphasized its conservative philosophy of port management, which did not encourage extensive facility improvements.

In a seeming counter-effort, the Harbor Commissioners sought to create an environment which would help it clarify and accomplish its goals and objectives. Therefore in August 1955, the Harbor Commissioners requested an examination of their own organization by the Management Analysis Section of the State Department of Finance. The resultant analysis made 109 recommendations in ten categories of both major and minor administrative procedures. There were, however, about three times as many recommendations concerning port property, its management, and its rental, as there were for any other management area. This not only reflected the increasing complexity of modern port management but also emphasized the increasingly important role that property management played in the business of the Harbor Commission and the Port Director.²⁰²

One reason for the growing importance of waterfront property development was the gradual disappearance of waterfront industries dependent on proximity to water transportation. Their departure left an increasing number of empty piers and warehouses along the Embarcadero. The 1959 Ebasco study found that many of these piers were inadequate or unusable for shipping purposes and could be consolidated

²⁰² As a result of one of the recommendations of this survey the existing Board of State Harbor Commissioners was renamed the San Francisco Port Authority in 1957. This not only eliminated a cumbersome title, but clearly identified the facility governed as the Port of the City of San Francisco, exclusive of other ports in the Bay Area. California State Department of Finance, *Management Survey, Board of State Harbor Commissioners for San Francisco Harbor* (Sacramento: California State Printing Office, December 1955), pp. 3-12.

into contiguous commercial areas to give "an opportunity . . . to San Francisco to create one of the finest waterfront developments in the world."²⁰³

In 1966, the Port Authority contracted with Arthur D. Little, Inc. to conduct another intense examination of the economic potential of the buildings and facilities on the northern waterfront. The development program which the A.D. Little study created for the waterfront property management stated that "the optimum use of the Port's property would involve the expansion of commercial, recreational and, perhaps, residential uses within the area controlled. . . ."²⁰⁴ The study accepted the 1959 Ebasco division of the waterfront into two distinctly different use areas. The southern waterfront, from Pier 24 (the eighth pier south of the Ferry Building) south to Candlestick Cove, would be developed exclusively for maritime use. The waterfront north from Pier 24, which included the Ferry Building and the Fisherman's Wharf area, would retain some piers in maritime use, but would convert most of the areas into nonmaritime, commercial developments. It was assumed that the revenues from these commercial ventures would "provide the Port with the funds . . . [for] new cargo facilities" in the southern waterfront.²⁰⁵

The city waterfront was lined with forty two-finger piers housing cargo and passenger sheds and terminals, the Ferry Building, and the legendary Fisherman's Wharf area. The magnificent view of San Francisco Bay, Treasure Island, San Quentin, Marin County and the Golden Gate and Oakland Bay bridges was basically not obstructed by these waterfront structures because they were interspersed with open

²⁰³ Ebasco, 1959, p.134.

²⁰⁴ Arthur D. Little, 1966, p. 164.

²⁰⁵ Ibid.

water views, and especially because all were within the building height limit of 84 feet. But this historic, scenic Embarcadero, so cherished by natives of San Francisco and its untold numbers of visitors, was threatened six months after the city assumed port ownership. By early 1969, several project feasibility studies were underway for commercial development of the northshore pier areas. For the next few years the City Port Commission considered massive waterfront high rise commercial buildings which would have created, according to many, a wall around the shoreline, the visual barrier which Mayor Shelley had opposed two years earlier.

In May 1969, the Port Commission considered converting the four piers adjacent to the north end of the Ferry Building to a 120-foot high, 800-room hotel and apartment building, with shops, an overwater restaurant and public plazas, all to cost an estimated \$110 million. The enticement for the Port Commission's approval was an guaranteed annual rental revenue of \$400,000 plus 20 percent of gross revenue for any year in which it exceeded the total cost of development by 16 percent.²⁰⁶ The proposed project, named the Ferry Port Plaza, was to be jointly developed by Oceanic Properties, Incorporated, a subsidiary of Honolulu-based Castle and Cooke; Kidder and Peabody and Company, a New York based investment firm; and the Ford Foundation. The height of the project would have required a change of existing zoning regulations, which the city promptly considered approving.

Farther north along the Embarcadero, Pier 37 was being proposed for conversion to a \$15 million hotel development by the Dillingham Land Corporation, also of Honolulu. Grace Steamship Line occupied Pier 37 at the time, seemingly presenting

²⁰⁶ *Pacific Shipper*, 26 May 1969.

an obstacle to its development. The Port Commission removed that obstacle, however, by declaring the pier unsuitable for maritime industry use, thus requiring its occupant to move elsewhere. The third proposed project being studied in 1969 would have converted Pier 45, at that time an automobile receiving terminal, to a 300-room hotel with luxury apartments, offices, and retail shops. The project developer was the Italian Societa Generale Immobiliare, which commissioned a feasibility study by Arthur D. Little Company, whose 1966 study had recommended commercial development of the area.

While these three proposed projects were large and out of proportion to the existing waterfront environment, none of them equaled the scale of proposals submitted for the five piers adjacent to the south end of the Ferry Building. This was an area most suitable for commercial and tourist-oriented use, located as it was near the foot of Market Street, the main city thoroughfare opening onto the Embarcadero. The A. D. Little study of 1966 had noted that the growing traffic congestion at this location would soon make it unsuitable for continued shipping operations, and "in the long run the entire area from Pier 1 [south to] Pier 24 can provide a dramatic site for an urban office and commercial complex."²⁰⁷

The Port Director, citing street traffic problems as the reason, subsequently declared these six piers south of the Ferry Building unsuitable for development as a maritime terminal for container service, thus opening the door for its commercial, nonmaritime development. This was a potential windfall for two of America's industrial giants, the Ford Motor Company and United States Steel, both of whom submit-

²⁰⁷ A. D. Little, 1966, p. 122.

ted proposals for commercial development of these pier areas. The huge size of both projects proved to be their undoing. Ford proposed an \$80 million commercial and residential waterfront complex which included hotels, apartments, speciality shops, retail stores, a marina, 45,000 parking spaces, and retail dealerships for Ford and Lincoln-Mercury automobiles.²⁰⁸ Extending along 1500 feet of Embarcadero frontage, the project consisted of two structures extending into the bay, separated by fifty-foot open strips of water crossed by two bridges. The design by William Perler, creator of the nearby pyramid-shaped Transamerica Building, included two transparent domes, one of which contained a three-story curved vehicle roadway and equally high vertical letters spelling out: F-O-R-D. Although the project contained six different levels, it was still within the maximum height limitation of 84 feet above street level.²⁰⁹

While the Ford project was perhaps the most innovative proposal submitted to the Commission in 1969, the development proposed by U. S. Steel soared to grandiose heights, which ultimately caused the plan to suffer an Icarus-like descent. In January 1970, U. S. Steel proposed a waterfront office building, hotel and passenger terminal which was to rise fifty stories above the waterfront. The Port Commission promptly proposed raising the building height limit to 550 feet, matching the height of the proposed building. The Zoning Commission likewise agreed to a zoning change in order to accommodate the proposed development.

²⁰⁸ Referring to the large number of parking spaces, and apparently sensitive to the growing awareness of automobile congestion which would accompany its project, Ford's manager for marketing services E. B. Rickard, said that the 45,000 spaces would "keep a lot of cars, including Fords, off the streets." *San Francisco Chronicle*, 8 December 1969.

²⁰⁹ However, when the Port Commission later voted to raise the height limit, Ford did not hesitate to start revising its proposal.

The incongruity of a fifty-story high-rise next to the two-story 19th century Ferry Terminal and Clock Tower marked the turning point in these efforts to develop the waterfront. The scale of the U. S. Steel proposal, and the Port Commission's eagerness to change the zoning laws to accommodate it, became the focal point of protests by many groups of citizens and waterfront businesses which opposed the Commission's attempts to run rough-shod over environmental and historic characteristics of the San Francisco waterfront.

In December 1970 the San Francisco Bay Conservation and Development Commission (BCDC) denied permission by a 22-1 vote, to build the Ferry Port Plaza Project. They based their objection on the provision of the Mc Ateer-Petris Act, BCDC's enabling legislation, which prohibited putting fill material into San Francisco Bay for nonmaritime projects, and further prohibited fill if upland locations were available. In addition, the BCDC staff said that the current San Francisco General Plan for the Bay prohibited commercial projects on publicly owned property. Three months later, the City of San Francisco filed suit in Superior Court seeking a reversal of the BCDC permit denial. The City challenged BCDC's interpretation of the Mc Ateer-Petris Act as well as the San Francisco Bay Plan, and also claimed that the Burton Act authorized the Port to seek revenue from nonmaritime developments in order to invest in shipping improvements.

The scale of the conflict broadened until several volunteer groups consisting of environmentalists, architects, and planners, challenged the entire philosophy of commercial development which the Port Commission was trying to implement. One of the most vocal opponents, San Francisco Tomorrow, represented by architect and planner Robert Gryziiec, presented a plan which reflected the group's environmental,

social, and architectural goals for the entire waterfront. Another volunteer organization which opposed the Port Commission's plans, the Citizen's Waterfront Committee, headed by Richard Goldman, attacked the U. S. Steel and Ferry Port Plaza projects in particular and further sought to remove development of all nonmaritime port property from the authority of the Port Commission.

The battle lines were drawn. The Port Commission, headed by Cyril Magnin, supported by the Mayor's office and members of the Planning Commission, waged a major effort (as they saw it) to convert dilapidated, inefficient, unusable relics of a 19th century defunct waterfront industry into modern commercial and residential, revenue-producing projects which would fund development of modern, all-purpose, commercially competitive maritime facilities on the southshore. Their objective was a port which could compete in the 20th century high-tech maritime industry of containers and automated cargo handling processes.

Opposing them were groups of environmentally concerned citizens' groups and small waterfront businesses who were trying (as they saw it) to avoid destruction of the treasured Embarcadero's historic waterfront wharves, open vistas onto the magnificent bay, and Fisherman's Wharf--the San Francisco waterfront environment which gave a flavor to the city. These groups attempted to influence development of facilities which were people-oriented and which would connect the city with the bay, rather than separate them with a "jungle of steel and concrete."

While this battle raged in the newspapers and eventually in the courts, the development of maritime industry facilities on the southern waterfront proceeded almost unnoticed.

The Southern Waterfront

By 1970, containers were being used in increasing numbers in the industry. The *Hawaiian Merchant*, Matson's first ship to receive deck-loaded containers, had sailed out of the Golden Gate in August 1958. In 1962, the Sea-Land vessel *Elizabethport* was serviced by the Port of Oakland's first containerport, five years before San Francisco completed its first container facility.²¹⁰

Oakland chose to develop specialized container facilities rather than concentrate on general cargo facilities as San Francisco had done. As a result of this decision, Oakland became the primary containerport in the Bay Area and on the Pacific Coast. In addition to this key decision, several other important events took place which were in Oakland's favor. In 1957 the Port of Oakland issued the first of a series of revenue bonds for expanding and modernizing its facilities.²¹¹ In 1966, the newly established Federal Economic Development Agency awarded Oakland \$23 million in grants, \$10 million of which were dedicated to a marine terminal at the foot of 7th Street.²¹² Fill material for the 7th Street Terminal came, in part, from the dredging performed by the Bay Area Rapid Transit (BART). Construction of the Oakland BART terminus coincided with construction of the maritime terminal.

Construction of the retaining wall for the terminal site was funded by BART and the Matson Navigation Company, the latter of which was to be one of the terminal's occupants. Finally, the Port of Oakland obtained three key tenants for its container facilities: Sea-Land Industries, Inc., which, after initiating container

²¹⁰ *Sea-Land Industries Investments, Inc.* (background brochure), 1980, p. 5.

²¹¹ *Port Progress* (Oakland: Port of Oakland Public Relations Department, 1977), p. 12.

²¹² Jeffrey L. Pressman and Aaron Wildavsky, *Implementation* (Berkeley: Univ. of California Press., 2nd ed. 1979), p. 2.

service on East Coast in 1958, expanded into the nation's largest container carrier; American President Lines, which had abandoned its historic presence in San Francisco; and a Japanese consortium of three carriers, which San Francisco had hoped to lure to its side of the bay.

While all these events helped Oakland become the major container facility in the Bay Area, the policy decisions made by the Port of San Francisco, combined with several extraordinary circumstances, are the primary reasons that San Francisco lost its position as the major port in the Bay. Although San Francisco's post World War II modernization and expansion plan was enlarging Pier 50, (Mission Rock Terminal), expanding grain elevator capacities at Pier 90 (Islais Creek), and redesigning narrow finger piers into wider berths along the northern waterfront, the need to construct major new facilities became clear to both state and maritime industry officials. To accomplish this, two major steps were necessary: first, to raise money through statewide bond elections, and second, to decide what type of facilities should be constructed.

The first of these problems proved less formidable than the second. In 1958, while the port was still under state jurisdiction, Proposition 4 was placed on the state ballot, requesting voter approval to issue \$50 million of self-liquidating bonds for port improvement. Approval of the Proposition was aided by three factors. First, the Proposition included an additional \$10 million in bonds for the construction of statewide small-craft harbors. Since recreational boating was becoming increasingly popular on the California coast, such a provision helped make statewide approval of the proposition more likely. Second, the Port of San Francisco had always prided itself on operating without use of tax revenues. The Port Improvement bonds would

continue that proud tradition of repaying the bonds with revenues from port operations. Finally, Proposition 4 was strongly supported by two of the state's leading carriers, American President Lines and the Matson Company, whose presidents, George Killian and Randolph Sevier, headed a statewide committee which urged support of the proposition. Popular and industry support assured the proposition easy passage, and in November 1958, California voters approved the bond authorization.

Port Authority Commission Chairman Cyril Magnin indicated the type of construction the Commission intended the money to be used for. He described a large, quay-type general cargo terminal with ship-rail-truck access and, with a nod toward the growing use of containers, a terminal with lift-on/lift-off capability.²¹³ The construction would be financed progressively by issuing self-liquidating bonds over a period of seventeen years. Before deciding on the type of project, however, the Port Authority contracted Ebasco Services to conduct a survey of its harbor facilities. Ebasco's 1959 report recommended commercial development of the northern waterfront, and the construction of a general purpose cargo terminal on the southern waterfront. The features of the proposed terminal bore a striking resemblance to those publically described by Magnin nine months earlier. The report confirmed that the poor material condition of the piers required new construction as well as repair or modernization of the existing facilities. It also established the pattern for the future development of the port: nonmaritime, commercial development of the north waterfront and maritime industrial development of the southern waterfront.

²¹³ *Pacific Shipper*, 15 December 1958.

Ebasco predicted that revenue tonnage would remain relatively unchanged for about three years, then begin a steady rise in 1962 provided that two events occurred. The first was that San Francisco would recapture part of the anticipated coastwise and intercoastal trade. Ebasco assumed this could be accomplished by implementing the roll-on/roll-off technique being used on the east coast.²¹⁴ Capturing a portion of coastal and intercoastal trade was the "single greatest potential area for increasing tonnage in and out of the port."²¹⁵ As we have seen, however, the coastwise/coastal trade did not revive because of the high cost of ship construction, increasing labor costs, the growth of the trucking industry, and the changes to the western lumber industry, all of which were beyond the ability of the port to control.

The second condition required for an upturn in the port's trade was the construction of new facilities for maritime use. The major recommendation of the Ebasco report was to construct a sixty-acre terminal at Pier 80 on the spit of land lying north of Islais Creek at the foot of Army Street. The proposed design of the Islais Creek Terminal, later called the Army Street Terminal, reflected Ebasco's assumption that the port would continue to handle a great variety of general cargoes, as it had always done. Therefore Ebasco proposed a design which contained eight deep water berths for general cargo and container ships, with handling equipment and storage sheds for both, plus facilities for trailer-ships (roll-on/roll-off), and a berth for rail-car ferries. It was a plan for all purposes.

Although the proposed Army Street Terminal did recognize containerization by including container cranes in the design proposal, the terminal was primarily

²¹⁴ Ebasco, 1959, p. 79.

²¹⁵ Ebasco, 1959, p. 57.

designed for general cargo operations. Cargo sheds were close to the docks, railroad tracks were laid adjacent to shipside, and the total back-up storage area averaged seven and one-half acres per ship, appropriate for general cargo operations but inadequate for container operations. By keeping one large foot firmly planted in general cargo handling procedures, the Port of San Francisco retained its traditional role as a non-specialized general cargo port. Admittedly, the trend toward containerization was still hardly noticeable in 1959, certainly not enough to require a decision to specialize and to make the accompanying financial investment necessary to construct a container handling facility. The design for the Army Street Terminal was thus a logical decision in view of the port's past history of general cargo operations. As a prediction of the future however, it was a miscalculation. San Francisco would not be able to compete with other ports which chose to specialize for containerization.

Based on the Ebasco report, the San Francisco Port Authority voted in May 1960 to sell \$15 million of the port improvement bonds approved by the election of the previous November. This was the first step in the construction of what was being called the "super-terminal." Dredging of an estimated four million cubic yards of fill started in December of 1964, with an estimated terminal completion date of mid-1966. San Francisco proceeded into the container age facing both forward to modernization and looking backward to the era of traditional general cargo handling.

CHAPTER 5

San Francisco: Meeting Challenges Head—On

In 1959, Ebasco researchers believed that a revived California domestic trade was possible, and that coastal and intercoastal traffic would again take its place in a well balanced transportation system. This belief in a well balanced mix of trade, supported by the Port's history of handling general cargo, was largely responsible for the Port Authority's decision to construct a general cargo facility at Army Street in the 1960s.

Realizing that this decision had not adequately addressed the new technology of containerization which subsequently became successful, the Port Authority attempted to correct its earlier miscalculation by making a major investment in a facility for another and newer method of container delivery. Ironically, this new cargo handling system, unlike containerization, did not succeed.

The Move Toward Specialization

The San Francisco Port Authority's decision in 1960 to build a general cargo terminal at the foot of Army Street was a miscalculation of the growth of containerization which delayed the port's entry into an era of new container facilities, an era already underway. Two years previously, Matson's *Hawaiian Merchant* had departed the Golden Gate with its first deck load of containers. While the Army Street Terminal was in its design stage, the first all-container ship, the *Hawaiian Citizen* was already operating out of the Port of Oakland's container facility.

The Port Authority's decision to construct a general cargo facility in 1960 was, however, understandable. The State Board of Port Authority Commissioners as well as observers of the industry looked to traditional, formerly successful, cargo handling procedures, as a way to reestablish the domestic and international maritime trade. This port policy, in addition to being influenced by the State Legislature's philosophy, had also been affected by independent research institutions. As containers were used more widely, the Port Authority recognized the growing need for a facility with container capability. The idea of a new container terminal was first mentioned in the 1966 A. D. Little report which stated that the Army Street Terminal and the expanded Pier 27 would not be adequate to handle the expected increase in container traffic: "Although we do not know the rate at which the Port's foreign trade will become containerized, recent trends indicate that a new facility will be needed in early 1970's."²¹⁶ Noting this observation, the city added \$11 million to the existing \$50 million indebtedness it accepted with the Port in 1969. Part of that additional money was earmarked for planning a new container facility on India Basin, on the south waterfront.²¹⁷

Motivation for new, modern facilities also had come from segments of the maritime industry. Ellet Horsman, vice-president of the Marine Terminal Corporation, which provided space, facilities, and services to carriers on waterfront property leased from the Port, was highly critical of the port's existing facilities and administration. He was critical of World War II vintage piers, warehouse doors too narrow to accommodate containers, and inadequate storage space. Horsman also criticized the

²¹⁶ A. D. Little, 1966, p. 119.

²¹⁷ *New York Times*, 15 September 1968.

port's concentration on real estate matters, saying "It has to decide whether it is going to go into real estate and rent its land or operate as a port."²¹⁸ This complaint was to become a major controversy affecting the future direction of the port's maritime policy.

The concept of the India Basin facility changed, however, from a general cargo and container terminal, to one which would primarily handle a new system of carrying cargo and containers aboard lighters. The new system was called Lighters Aboard Ship, or LASH. In the LASH system, a large vessel carried up to forty nine cargo laden lighters (each 60 feet by 30 feet) in her hold. Upon arrival, the ship could anchor off-shore, near shallow water ports, unload its lighters by ship's crane to be moved by tug boat to the LASH shore facility for unloading. The tug then moved other, pre-loaded lighters out to the LASH vessel, where they were lifted aboard for delivery to the next port. The advantage of LASH was its ability to rapidly transfer of cargo between the LASH vessel and shore facilities at shallow-water ports, or small ports without container facilities.²¹⁹

As with ro/ro, lighter operations had roots in military operations. Small boats were served by a mother-ship in World War II coastal invasion operations when loaded boats circled the mother-ship until departure for the landing area. Much of the Vietnam War waterborne operations occurred in estuaries and inland rivers, transporting troops and supplies in small, shallow draft boats.²²⁰

²¹⁸ *Daily Commerce News*, 31 March 1967.

²¹⁹ *Pacific Shipper*, 5 August 1974.

²²⁰ The connection between military requirements and merchant ship design, which is always considered by the Federal government when granting Federal ship subsidies and by shipping lines, in accepting them, is too complex to be addressed here. The subject of Federal maritime policies is examined in Samuel A. Lawrence, *United States Merchant Shipping Policies and Politics* (Washington: The Brookings Institution, 1966) and Gerald R. Jantscher, *Bread Upon the Waters: Federal Aids to the Maritime Industries* (Washington: The Brookings Institution, 1975)

Pacific Far East Lines and the LASH system

The Port Authority's decision to change the design of the new facility to emphasize LASH was the result of the decision of a young and successful steamship company, Pacific Far East Lines (PFEL), to invest in this new system of container delivery. Founded in 1946 by Thomas E. Cuffe, PFEL provided trans-Pacific U.S.-flag service in surplus general cargo ships chartered from the U.S. Government. Twelve years later PFEL replaced these vessels with larger and faster Mariner Class ships under a \$150 million ship construction subsidy from the Federal Maritime Administration (MarAd).²²¹

As were many other carriers, PFEL experimented with ondeck carriage of containers. The carrier continued to expand its container service, ordering 200 containers from Trallermobile division of the Pullman Company in August 1966 and letting contracts for 2500 more in May 1967 for use on its Mariner class vessels.²²² The carrier then converted the major portion of its cargo delivery system from standard container ships to the newly developing LASH system. Although this was a dramatic change, PFEL's management seemed well qualified to make such a momentous decision, since the company's success had allowed it to issue sixty consecutive quarterly dividends since 1955.²²³

PFEL's prospects seemed additionally brightened when Consolidated Freightways, a Menlo Park based trucking company, purchased the carrier in April 1969. The sale was advantageous to PFEL, since Consolidated had a coast to coast trucking

²²¹ *Pacific Shipper*, 14 July 1958. The subsidy contract between PFEL and MarAd was signed by Cuffe and the Maritime Administrator, Clarence Morse. When Cuffe died two years later, Morse became president of PFEL.

²²² *Pacific Shipper*, 22 May 1967.

²²³ *Pacific Shipper*, 11 January 1971.

network, and inland connections in Japan. PFEL was an economically strong asset, which had been sold only to provide capital for foreign oil investments.²²⁴

The future of PFEL seemed no less bright than the promising future of LASH, which was supported in many circles. Not surprisingly, one voice of support was that of LASH designer, Jerome Goldman. A naval architect with the Avondale Shipyard in New Orleans, Goldman predicted in March 1970 that within four years, carriers based on the Pacific Coast would be using LASH vessels for 80 percent of the trade routes they served.²²⁵ Federal legislation supported United States flag carriers using LASH in international service through a Senate bill introduced by Warren Magnuson (Washington), Senate Commerce Committee Chairman. The bill, similar to one introduced into the House, gave foreign-flag LASH vessels the same rights in inter-coastal and inland waters which American-flag carriers needed to operate in foreign waters.²²⁶

The development of the LASH concept was also supported by the Maritime Administration (MarAd) through the introduction of a new ship construction subsidy program announced by Malcolm S. Boyd, Secretary of the Department of Transportation.²²⁷ Departing from the traditional policy of financially subsidizing the construction of individual, standard cargo ships, Boyd announced in June 1967 that the bulk of Federal ship construction subsidies would henceforth be allocated to the construction

²²⁴ Natomas, which had purchased about 43 percent of PFEL from Cuffe, had recently announced an offshore oil find in Java, and the need for capital to expand that, and other oil operations, in Indonesia. *Pacific Shipper*, 28 April 1968.

²²⁵ *Pacific Shipper*, 30 March 1970.

²²⁶ *Pacific Shipper*, 5 April 1971.

²²⁷ When the 90th Congress was in session, and Lyndon Johnson was President, the Congress wanted to make MarAd an independent agency. Secretary Boyd supported its transfer from Commerce to Transportation. *New York Times*, 16 September 1967.

of ships of "specialized design." Additionally, instead of subsidizing single ship construction, MarAd would now support the construction by one shipyard of a series of ships of similar design to be purchased by several carriers.²²⁸ Boyd believed that this production-line system, which was not unlike ship production methods used by this country in both World Wars, would reduce the unit production costs of the LASH vessels.²²⁹ Although MarAd and shipping companies expected bids to be about seventeen million dollars per ship, the low bid submitted by Avondale Shipyard, which produced the vessels, was \$21,794,000 each.²³⁰

At this same time, MarAd subsidized construction of 875 foot LASH type vessels named Sea Bee class after the Navy Construction Battalions of World War II. These vessels could handle barges of containers, landing craft, trucks, and other military vehicles, in their three deck levels.²³¹ The Sea Bee class ships, designed for the Lykes Brothers Line by J. J. Henry Company, a New York City naval architectural firm, had a new type of propeller(screw)/shaft arrangement. Rather than the standard arrangement of a single shaft turning one screw, the Sea Bees ships were to have two shafts, one rotating inside the other, each shaft driving its own screw. This was an adaptation of a system the Navy had tried experimentally on submarines and had the advantage of allowing 36,000 horsepower per shaft, as compared to 30,000 maximum per single shaft.²³² MarAd also departed from its policy of insisting on steam turbine power plants and allowed the optional choice of diesel engines. Diesels were now more mechanically dependable than in earlier years and were more adaptable to

²²⁸ *New York Times*, 16 June 1967.

²²⁹ *New York Times*, 17 August 1967.

²³⁰ *Pacific Shipper*, 20 February 1967.

²³¹ *New York Times*, 11 June 1967.

²³² *New York Times*, 7 August 1967.

automated engine controls, a technology which MarAd supported.²³³

In addition to supporting the construction of the LASH vessels, MarAd encouraged PFEL to enter this special maritime technology by praising LASH's operational capabilities. In early 1968, MarAd stated that the six new LASH vessels on order for PFEL, were the operational equivalent of ten subsidized freighters then being operated by the carrier.²³⁴ Encouraged by MarAd's support of the new LASH system, PFEL and the Maritime Subsidy Board signed an eleven ship, \$234 million construction contract with the New Orleans based Avondale Shipyard. This was the largest commercial order ever placed by the U.S. Merchant Marine.²³⁵ The total contract included six LASH ships for PFEL, and five for Prudential-Grace Line.²³⁶ San Francisco now had ample justification to construct a new shipping facility for this new technology. Supported by the recommendations in the 1966 A. D. Little study and armed with PFEL's need for a terminal for its new venture into LASH, the city began construction of the terminal in the spring of 1970.

The LASH Terminal was to be a nine berth facility constructed on fill deposited between Islais Creek to the south and India Basin which lay to the north. A large basin was planned adjacent to the LASH Terminal to accommodate the barges as they awaited cargo loading and unloading at the large transit shed fronting the basin. A protective canopy running the length of the transit shed protected the loading operation from the weather.

²³³ *New York Times*, 21 June 1967.

²³⁴ *New York Times*, 3 February 1968.

²³⁵ *Pacific Shipper*, 15 May 1967.

²³⁶ *Pacific Shipper*, 20 February 1967.

The LASH Terminal was inaugurated in May 1972, amid claims of being the first (a word much used by maritime industry promoters) LASH Terminal in the world. At the Terminal's inaugural ceremony, PFEL vice-president for operations George J. Gmelch was understandably full of praise for the LASH concept in general, and for PFEL's entry into the new system in particular. Leo Ross, the company's president, compared the impact of LASH on the maritime shipping industry to the revolution the introduction of jet aircraft brought to the airline industry.²³⁷

San Francisco had made a dramatic step in starting construction of a facility which seemed to be on the cutting edge of the newest technology in cargo handling. Although the India Basin Terminal included some general cargo capability, it was specifically designed to support LASH containerized operations. For the first time, the Port Commission had made a major commitment to the new and specialized technology of containerization.

The Fate of PFEL and the LASH Terminal

In the Summer of 1974, controlling interest in PFEL was purchased from Natomas by Freighters, Incorporated, a carrier which owned and operated one cargo ship, and had interest in two Panamanian registered vessels, all serving the East Coast trade.²³⁸ The sale was significant because the president of Freighters, who after the purchase became the president of PFEL, was John Alloto, the twenty-nine year old son of the Mayor of San Francisco. The series of events which followed involving the steamship company, the Port of San Francisco, and the Alloto family, had a dramatic

²³⁷ *Pacific Shipper*, 15 May 1972; *New York Times*, 11 May 1967.

²³⁸ *Pacific Shipper*, 2 September 1974; Natomas had purchased controlling interest from Thomas Cuffe.

effect on the LASH Terminal and the port itself. The most significant events were those centered around the changing financial conditions of the company.

Although PFEL had demonstrated its financial health through its excellent dividend record, its good fortune began to decline when a series of problems started plaguing the carrier in the early 1970s. The most serious of these resulted from the financial investment made in LASH vessels and equipment in 1967. Although the Federal Government had subsidized up to fifty five percent of the cost of constructing its LASH ships, the company still invested about \$58,843,800.²³⁹

While making this large capital investment, PFEL continued to operate a faltering and financially draining passenger service. In June 1971, PFEL had purchased two freighters, two containerships, and the passenger liners *S.S. Monterey* and the *S.S. Mariposa* from the Oceanic Steamship Company, owned by Matson Navigation Company. The Maritime Subsidy Board not only subsidized the purchase, but congratulated PFEL for cooperating in the last ditch battle to keep the United States passenger fleet afloat.²⁴⁰ The Board also provided PFEL with funds to subsidize the operations of the two liners. It was this operating differential subsidy (ODS), available under the provisions of the 1936 Merchant Marine Act, which made it possible for the line to continue operating passenger service. As the end of the subsidy period for the *Monterey* approached, PFEL requested that its ODS be extended for four months.²⁴¹ This request resulted in a series of hearings during which the Maritime Administration examined allegations that the carrier had had a "four year history of

²³⁹ Based on the \$21,794,000 per ship Avondale bid accepted by MarAd. *New York Times*, 17 August 1967.

²⁴⁰ The American President Lines' *President Cleveland* and *President Wilson* were the only other passenger ships under the U.S. flag.

²⁴¹ *Pacific Shipper*, 3 April 1978.

financial instability," and questioned whether government waivers on required amounts of working capital should continue. In May 1977, MarAd denied PFEL's requested subsidy extension for the *Monterey*, stating that continued subsidy was neither justified economically, nor in the best interest of the public.²⁴² Shortly thereafter both passenger liners were laid up, victims of high fuel costs and the growing popularity of air travel.

Although the LASH potential had been previously praised by government and industry, once operational it encountered several logistic and mechanical problems which further burdened PFEL. The first involved labor disputes both with longshoremen and onboard crews. One of the characteristics of the LASH system, seen as an advantage by its proponents, was that the mechanized cargo handling systems reduced labor costs. Longshoremen have historically opposed labor replacing machinery and LASH was no exception. When the LASH vessel *Forest Acacia* completed its sea trials prior to being assigned to Prudential-Grace's Mediterranean service in December 1969, longshoremen at the Port of New Orleans immediately boycotted her. Members of the East Coast based International Longshoremen's Association (ILA) claimed that loading the forty two barges aboard the LASH ship was not in their labor contract, a position upheld by the U.S. courts.²⁴³

In addition to longshoremen difficulties, LASH vessels encountered onboard crew manning problems similar to those which had crippled roll-on/roll-off operations on the Hudson River eighteen years earlier.²⁴⁴ When the Gulf Central Steamship Com-

²⁴² *Pacific Shipper*, 9 May 1977.

²⁴³ *Pacific Shipper*, 17 November 1969.

²⁴⁴ See Chapter 2.

pany was operating a LASH vessel under Norwegian registry in 1971, it manned it with a crew of twenty-nine. When PFEL initially signed a contract with the longshoremen's union, however, it agreed to carry between forty and forty three crewmembers, thus incurring higher labor costs than the European crewed ships. The problem was compounded when the Maritime Subsidy Board (MSB) announced in December 1970 that it would pay operating subsidy for only thirty eight crewmen on each of the eleven LASH vessels under construction for PFEL and Prudential-Grace. The MSB also served notice that on future LASH vessels, manning levels would have to be lower, more in line with foreign-flag LASH manning.²⁴⁵ PFEL appealed the MSB decision to the Federal Maritime Commission law judge who, observing that PFEL had signed labor contracts which were in good faith and in line with other labor contracts on advanced design ships, allowed the extra crew-positions.

Another problem which hampered the operation of LASH ships was presented by foreign port authorities, some of whose actions were probably supported by their governments. LASH had always been considered by its proponents, to have had an excellent potential for success in the Far East, with its many shallow water areas and few ports with heavy container handling gear. Assistant Secretary of Commerce for Maritime Affairs Robert J. Blackwell regarded LASH particularly well suited for a number of Far East areas, including China.²⁴⁶ When PFEL LASH ships arrived in Japan, however, their effectiveness was severely curtailed by Japanese requirements that one tug boat handle one barge, instead of the normal practise of one tug towing a raft of up to twenty barges.²⁴⁷

²⁴⁵ *Pacific Shipper*, 4 January 1971.

²⁴⁶ *Pacific Shipper*, 5 August 1974.

Added to these operational difficulties, was the financial burden of back rent which PFEL owed the Port of San Francisco when John Alioto purchased the company in 1974. After the purchase, Alioto admitted that it was no secret that the company owed \$730,000 in back rent. Harry Bridges confirmed this in October 1974.²⁴⁸ Port Director Wolff said however, that to the best of her memory, the figure was closer to \$1.3 million, while Cyril Magnin said that the line had recently paid \$200,000 and promised to pay the entire balance within six months.²⁴⁹ The amount of back rent, and its repayment schedule, were clearly subjects open to a variety of interpretations.

A solution was presented in August when the port and PFEL announced a plan requiring PFEL to pay off delinquent rent of \$1,617,465.25 by monthly payments of \$75,000, plus current monthly rent, thus eliminating all back rent in two years. The repayment schedule, which included a seven percent interest rate, was highly criticized by Supervisor Quinton Kopp, who pointed out that had the port sued PFEL for the back rent, the court would probably have awarded a seven percent interest rate in the repayment schedule. Therefore the port should have gotten PFEL to agree to an interest rate closer to the going commercial rate of 14 percent, in return for not suing them. Supervisor John Barbageletta, in turn, warned that since the city held the port in trust, any poorly handled financial matters could justify the state taking the port back.

²⁴⁷ *Ibid.*

²⁴⁸ *Pacific Shipper*, 16 September 1974.

²⁴⁹ *San Francisco Chronicle*, 2 July 1974.

In September 1975 the issue was clouded over even more when Port Commissioner Gary P. Vannelli said that Port Commissioners had been aware in March 1973 that PFEL had stopped paying its rent, yet the port had continued to carry the item as paid in the cash flow statement.²⁵⁰

While PFEL eventually paid back the debt to the port, the resultant financial drain was only one of the carriers financial burdens. It was also plagued with the expenses caused by mechanical problems which developed in the LASH system, some of which involved the on-board gantry cranes. Constantly exposed to salt air and sea spray, they suffered corrosion and mechanical break down.²⁵¹ The line's plan to charter two of Prudential's LASH vessels in 1973, was thwarted when the vessels developed gear problems and were returned to Avondale Shipyard for repairs.²⁵² Later, the *Japan Bear* broke down at sea and had to be towed back to San Francisco for repairs. Another, and a particularly expensive, problem occurred when early barges of fiberglass manufactured by the Northrup Hueneme Company were unusable, requiring PFEL to purchase additional barges of steel from the Equitable Equipment Company. Once again, MarAd came through, guaranteeing the \$3.9 million necessary for the purchase of the sixty new steel barges. Meanwhile, PFEL became embroiled in a \$105 million law suit against Northrup Hueneme for damages.²⁵³

By 1975, PFEL was initiating tactics to sustain the faltering and problem plagued LASH system. But in so doing, it used LASH in ways other than those for which it was originally designed. LASH barges were used for a variety of purposes

²⁵⁰ *San Francisco Chronicle*, 19 September 1974. As late as November 1975, the port was still dealing with a three page list of tenants with delinquent rents. *San Francisco Chronicle*, 27 November 1975.

²⁵¹ *American Shipper*, January 1978.

²⁵² *Pacific Shipper*, 18 June 1973.

²⁵³ *Pacific Shipper*, 8 July 1974; 31 March 1975.

including one called "mini-bulk" service, in which barges were used to carry wheat, which was more efficiently handled by large mechanized dry bulk carriers.²⁵⁴ PFEL extended its cargo operations to eventually include service to Singapore, Indonesia, Malaysia, the Philippines, Japan, Australia, the Persian Gulf and the Gulf of Oman.²⁵⁵ To maintain this trade PFEL occasionally withdrew from shipping conferences and lowered its rates to meet the competition of nonconference carriers such as the Russian owned Far East Shipping Company (FESCO) and other nonconference, or independent carriers.²⁵⁶

PFEL abandons LASH

In 1973, the year before PFEL was purchased by Freighters, the carrier had posted a net loss of \$18,978 490. At the end of the first year of Alloto's management, the carrier posted a profit of \$1,269,816, vindicating Alloto's belief that the carrier's financial difficulties had stemmed from the heavy investment it had made in LASH prior to Freighters having purchased it.²⁵⁷ Faced with repaying loans from large capital investments, operational and logistic problems, increasing expenses, and diminishing revenues, PFEL decided in late 1976 to abandon LASH and convert its LASH vessels to all-container ships.

²⁵⁴ One ship carried a barge with 364 tons of wheat to Japan, with the expectation that California and other Western wheat could be shipped from Stockton, via San Francisco, to Far East outlets. This proved impractical, since large dry bulk carriers operated directly from Stockton to Pacific Rim nations.

²⁵⁵ *Pacific Shipper*, 31 March 1975. LASH was most economical when delivering and receiving barges in and out of many ports. Long ocean voyages increased operating expenses because LASH ships carried cargo and containers in as many as forty nine steel barges, plus a heavy-duty on-board gantry crane, all of which was non-revenue producing weight. The expense of carrying this extra weight was compounded by rising fuel costs in the early 1970s, and rate increases applied by the Panama Canal Company with the approval of President Nixon. *Pacific Shipper*, 24 July 1977; 31 October 1977.

²⁵⁶ *Pacific Shipper*, 9 June 1975.

²⁵⁷ *Pacific Shipper*, 3 March 1975.

After PFEL signed a contract with the San Francisco Bethlehem Steel Shipyard for the conversion, and obtained MarAd construction differential and Title XI financing guarantees, they borrowed approximately \$11.6 million for the project. Ships which had carried the equivalent of 550 twenty-foot containers annually as LASH ships, could carry 1930 containers or their twenty-foot equivalent units (TEU) after conversion to all-container ships.²⁵⁸ John Alioto estimated that this investment in containerships would increase the company's annual container carrying capability from 35,000 to 135,000 TEUs. The first of these conversions, the *Pacific Bear*, began serving the Far East in November 1977.

While investing heavily to convert from LASH back to container service, PFEL continued to expand its operations and in late 1976 and early 1977 purchased several roll-on/roll-off vessels to provide what they called "Seabridge" service between the East Coast and the Middle East. In addition to these investments, the carrier was still bound to pay the Port Commission an annual rent of \$ 3 million for the use of the LASH terminal. Although PFEL no longer provided LASH service, it continued to operate the terminal, providing maintenance, repair and stevedoring services, as well as operating its reinstated container service.²⁵⁹

But by 1977 the fortunes of PFEL were slipping rapidly. In the first quarter of that year, the value of its stock fell from \$8.24 to \$3.99 for the same period the previous year, and losses for the first three quarters of 1977 were \$ 16.4 million.²⁶⁰ The company performed many cost cutting maneuvers, perhaps the most symbolic and

²⁵⁸ To quantify the great variety of container lengths, the industry adopted the twenty foot unit (TEU) as the standard unit of comparison.

²⁵⁹ *Pacific Shipper*, 3 March 1975; *American Shipper*, January 1978.

²⁶⁰ *Pacific Shipper*, 16 May 1977; 6 February 1978.

practical of which was the move from its suite of offices in the Embarcadero office complex, to the LASH Terminal. The company raised cash by selling its barges and the LASH onboard barge cranes which were to be used aboard vessels of foreign registry. In approving the sale, MarAd again assisted PFEL by removing the subsidy restriction against disposing of the cranes for foreign flag use.²⁶¹ MarAd also advanced them one million dollars in December 1977, an act which was intensely questioned by Congressman Paul N. McCloskey, Jr., Republican of California, in oversight hearings on PFEL held in February and March of 1978.²⁶² The carrier also tried to sell its barges and two passenger liners, but to no avail.

The tide of indebtedness continued to rise until on 31 January 1978, Pacific Far East Lines filed for Chapter XI protection in bankruptcy court. They owed 1155 creditors an indebtedness of more than \$150 million: \$103 million was owed to the Maritime Administration, \$1.2 million to the Port of San Francisco in unpaid rent for the LASH Terminal, and \$3 million to union benefit funds.²⁶³ Allowed to continue operations under Title XI protection, the carrier released John Alioto as president, and approved former American President Lines' president, Lawrence Buser, as the new chairman.²⁶⁴ One PFEL executive probably spoke for many, when he said, "it's good to see a steamboat man on the job." Buser, however, was more likely hired for tactical, than professional, reasons. While a staff consultant to the House Merchant

²⁶¹ *Pacific Shipper*, 19 December 1977.

²⁶² House Hearings before the Subcommittee on Merchant Marine of the Committee on Merchant Marine and Fisheries, *Pacific Far East Line Oversight*, 95th Cong., 2nd sess., Serial No. 95-36 (Washington, D.C.: GPO, 1978), pp. 1-31.

²⁶³ *Pacific Shipper*, 6 February 1978; *American Shipper*, July 1978. Union benefit funds were part of the 1960 Mechanization and Modernization Agreement, which is discussed in the following chapter.

²⁶⁴ In 1976 the PFEL Board of Directors had elected former mayor Joseph L. Alioto chairman of the board and legal counsel. When his son John was released, Joseph remained as legal counsel. *Pacific Shipper*, 2 February 1976.

Marine and Fisheries Committee, he had recently conducted a study of United States' subsidized lines.²⁶⁵ Having gained an intimate knowledge of PFEL's condition, and established connections with the Maritime Subsidy Board, he was hired by PFEL with the hope of obtaining immediate Federal interim financial aid of \$18 million. When that attempt failed, he was replaced after only six weeks by Bernard Orsi, former political campaign manager and longtime associate of the Alloto family.

The carrier, while operating under Title XI protection for four months, accumulated an additional \$10 million indebtedness. With little relief in sight, U.S. Bankruptcy Court Judge Lloyd King removed Bernard Orsi as president and appointed a former executive of the American Mail Line, Robert Benedict, as company receiver.²⁶⁶ The following week, after the Union Bank of Los Angeles demanded payment of mortgage obligations on the ro/ro vessel *Atlantic Bear*, PFEL was dealt the final blow by the company's largest creditor, the Maritime Administration.

While PFEL owed MarAd \$103 million, MarAd, to the chagrin of other creditors, had not taken any legal action against PFEL since it filed for Title XI protection. This had allowed the carrier to continue accruing additional indebtedness under the Alloto family, whose management many creditors condemned as unfit to run a shipping company in a crisis.²⁶⁷ On 15 June MarAd issued default notices on the *Thomas Cuffe* and the *Pacific Bear*, both of which were in port in San Francisco. MarAd also obtained a court directive ordering the *Japan Bear* and the *Golden Bear* to turn about in midocean and return to San Francisco.²⁶⁸ This drastic action was

²⁶⁵ *Pacific Shipper*, 20 February 1978.

²⁶⁶ *Pacific Shipper*, 12 June 1978.

²⁶⁷ *American Shipper*, July 1978.

taken to prevent the Far East based ships from being seized in foreign ports, as had happened to some of PFEL's LASH barges in Bahrain.²⁶⁹ The final months of 1978 also were the final months for PFEL. Benedict was assigned trustee and proceeded to auction off company assets.

With PFEL bankrupt and the LASH system defunct, the Port of San Francisco was left with a facility designed especially for a cargo handling system which had failed to become a successful element in the general technology of containerization. Although due to circumstances quite out of its control, the Port Commission had lost a second opportunity to successfully participate in the container era.

The Role of Port Directors

The Port of San Francisco had no control over the unexpected growth of containerization or the failure of the LASH system, both of which left San Francisco lacking sufficient container facilities. Although the port's administration was directly under the supervision of the Port Commission, the Port's maritime policy was affected by internal conflicts involving the Commission, the Mayor and the Port Directors. Rae Watts was hired as Port Director in December 1959 to administer San Francisco's port rebuilding program which had been made possible by the \$51 million bond issue approved the previous year. Cyril Magnin, Port Authority Board President, described Watts at that time as a "vigorous, progressive port executive" who was the "right man to develop and direct this new program . . . to exploit our new facilities and services in an aggressive manner."²⁷⁰

²⁶⁹ *Ibid.*

Watts indeed seemed to fulfill Magnin's expectations. He energetically guided the development of the Port in general, and its entry into containerization, in particular. He strongly supported the development of the Army Street and Mission Rock Terminals for general cargo, and as containerization came on the scene, included container operations in their capabilities. In 1967 the port, under his directorship, purchased 33 acres from the Federal Government for development as a future container terminal.²⁷¹ The following year Watts announced the port's plan for the LASH Terminal, stressing its specialized facilities but including its general cargo handling capabilities.²⁷² Under Watts, San Francisco seemed to exemplify a description contained in a MarAd port management study which found U.S. ports quite capable of responding to the new technology of containerization without the assistance of the Federal Government. He particularly seemed to support the study's caveat that port managers not "underestimate the continuing role of break-bulk general cargo traffic in the container age."²⁷³

Watts' resignation was therefore quite unexpected when he submitted it in January 1970. There were, however, several factors which accounted for his decision. Watts was hired when the port was still owned and operated by the State of California, and during the transfer campaign he had publically questioned the advantages of city ownership. Second, he applied his energies to develop and manage facilities for the maritime industry which port directors generally assume is their primary duty. But as non-maritime property development became an increasingly large part of

²⁷⁰ *New York Times*, 25 December 1959.

²⁷¹ The property, purchased for \$3.25 million, was formerly owned by the Bethlehem Steel Corporation. *New York Times*, 22 October 1967.

²⁷² *New York Times*, 15 March 1968.

²⁷³ *New York Times*, 18 October 1969.

port administration, differences arose between Watts and the Port Commissioners, who increasingly emphasized non-maritime commercial development projects.²⁷⁴ Finally, while Watts felt that containerization should be stressed in any plans for new port facilities, he also included general cargo capabilities with the new technology, which reduced the effectiveness of both.²⁷⁵

Watts was replaced in January 1970 by Miriam E. Wolff, who as the first woman deputy attorney general in California, had served as legal advisor to the Port of San Francisco since 1948. In this capacity, she had acquired a knowledge of port operations and gained the ability to speak the language of both steamship operators and shippers. Six weeks after her appointment, Wolff reminded the members of the San Francisco Propeller Club that the port had fallen behind in its development plans during the period of transfer from the State to the City, and it had "a great of deal of catching up to do . . . but . . . I expect we can accomplish much."²⁷⁶

Directing her energies to port management, Wolff supported the LASH concept, which she saw as a chance for a "resurgence in water transportation."²⁷⁷ She also strongly supported the immediate construction of other new facilities. When the Port Commission discussed the proposal to seek voter approval of a general obligation bond issue for \$40 million to construct a new container terminal (later to be called Pier 94) Wolff immediately supported this method of funding. This stand was significant since it opposed that of Cyril Magnin, who preferred revenue bonds, and the redoubtable Harry Bridges, who wanted to explore other methods of raising

²⁷⁴ *San Francisco Chronicle*, 24 January 1970.

²⁷⁵ *Ibid*; *Journal of Commerce*, 27 January 1970.

²⁷⁶ *Pacific Shipper*, 2 March 1970.

²⁷⁷ *Pacific Shipper*, 2 March 1970.

money for the construction of the terminal.²⁷⁸

Although few in the community or the industry questioned the need for a new container facility, Wolff still continued to favor the LASH concept primarily because its barges could move large quantities of all types of cargo by water, cheaply. In addition, she stated that while she "had no quarrel with containers . . . they do use the highways," which she felt were choking the nation.²⁷⁹

After two years in office, her former reputation as "a tough, trailblazing attorney" seemed equally applicable to her performance as Port Director. While she recognized the need to develop non-maritime property to earn revenue, she wanted to devote her time and energies to maritime affairs, not real estate management. Therefore, as Port Commissioners increased their attention on waterfront real estate developments, relations between Wolff and Cyril Magnin became tense. This situation was eased when John Williams was appointed to a newly created position of port commercial property developer, relieving Wolff of those responsibilities. Williams, a former land developer and city manager of South Lake Tahoe, had been chosen for that position by Cyril Magnin, and approved by the Mayor in late 1973.²⁸⁰

Wolff had other problems during the northern waterfront development controversy involving the Port Commissioners, commercial developers and environmental groups. While some within each of these groups often sought compromise, Wolff clashed abrasively with representatives particularly of the latter camp. Part of the reason the commercial property developer position was created was to mediate such

²⁷⁸ *Pacific Shipper*, 8 March 1971.

²⁷⁹ *Pacific Shipper*, 2 March 1970.

²⁸⁰ *San Francisco Chronicle*, 19 July 1974; *Pacific Shipper*, 22 July 1974.

disputes.

After four and one half years in office, Wolff resigned in July 1974. Commenting on her resignation, Cyril Magnin described her as "an outstanding lawyer and an able and dedicated person," while Mayor Alioto commended her "both as an attorney and as a port director for her services in a difficult time of development for the Port of San Francisco." A city newspaper reported, however, that her resignation came under mounting pressure from city officials because, "she was too brash and offended too many people," while her defenders said she was the victim of city politics and a Port Commission more interested in real estate development than operating a port.²⁸¹ Whatever the reasons, her resignation, unlike that of her predecessor, was not unexpected. What was unexpected however was the person appointed as her successor. By-passing possible nominees with maritime experience, Mayor Alioto appointed his former political campaign manager, Bernard Orsi, to the position of Port Director. That appointment was one of the several actions in the patchwork of events which comprised and confused San Francisco's policy towards its maritime industry.

The Third Attempt to Enter the Container Age

The port's maritime policy was affected by the policies of its Port Directors, specifically the hesitancy to accept a basic concept of technological development; specialization. In order to continue handling the variety of general cargo which had traditionally provided her with revenue, the Port of San Francisco had relied on a variety of types of facilities. As containerization was introduced into the maritime industry however, the port failed to develop specialized facilities which this new

²⁸¹ *San Francisco Chronicle*, 19 July 1974.

technology required. Port Directors constantly had to deal with the problem of conflict between these concepts of generalization and specialization. This conflict continued into the next phase of San Francisco's entry into the container era.

The Army Street Terminal at Pier 80, which had been designed as a pre-container era general cargo facility, failed to compete in the era of this new technology. Port officials then constructed a LASH terminal to handle a new off-shoot of containerization. The LASH system failed, and the company which was its primary advocate on the west coast, and the master tenant of the LASH Terminal, abandoned the ill-fated process. Battered but undaunted, the Port embarked on a third major effort to enter the container era by creating a new terminal, especially designed as a containerport; the uniquely conceived but ill fated Pier 94. This project not only became an engineering failure, it led to the departure of the last major container-using carrier in San Francisco, American President Lines, and contributed to the collapse of PFEL by adding to its momentous financial burdens.

The idea for a containerport at Pier 94 was conceived not by the Port Commission but by a group of citizens and city officials who formed a "citizens waterfront committee" in October 1970. Supervisor Roger Boas and Planning Commissioner Mortimer Fleishhacker, observing that the proposed U. S. Steel high rise project was involved in battles between environmentalists, local citizen's groups, developers and city officials, created a committee to examine port and waterfront plans.

Two months later, in a report and a separate letter to Mayor Alloto, the committee stated that "a competitive response" to the new cargo handling technology required \$32 million for the immediate construction of another new container facility in addition to the LASH Terminal which was still under construction.²⁸² The

Committee stated that, with the U. S. Steel project bogged down in controversy, the city could not afford to wait for revenues raised by non-maritime commercial developments to fund their proposed container terminal. The Boas-Fleishhacker group therefore recommended the issuance of general obligation bonds, which were less costly to the city than revenue bonds. The Committee also recommended the separate financing of maritime facilities from non-maritime commercial projects.

While admitting that the investment in a containerport was risky because of Oakland's headstart in containerport development, the Committee still felt commitment necessary and therefore urged the Mayor to reverse the City's policy of relying on commercially developed revenue for new facility construction, to endorse obtaining construction funds by general obligation bonds, and to "get going."²⁸³

Both APL and PFEL supported the need for a new container facility as necessary to keep San Francisco a competitive port, while Port Director Wolff saw it essential to the port's survival. Although no one opposed the idea of Pier 94, the proposal became involved in controversy as to method of funding; general obligation bonds or revenue bonds. Cyril Magnin, acknowledging that the high cost of revenue bonds gave the Port Commission no other choice, reversed his earlier opposition, and supported the issuance of general obligation bonds. To help gain Board of Supervisors acceptance of this method of funding, the Port Commission promised that prior to issuance, the bonds would be secured by leases signed with prospective tenants.

²⁸² *Pacific Shipper*, 21 December 1970.

²⁸³ Cyril Magnin supported the idea of a new container terminal, but continued to support commercial revenue producing projects as the method to provide the necessary funding. *Pacific Shipper*, 4 January 1971.

Having decided on the method of funding, the city received BCDC approval for eleven acres of fill required to complete the one hundred acre facility, with the proviso that fill would be limited to material which would not produce water pollution problems. In November 1971, the bond Proposition for Pier 94 was overwhelmingly approved by San Francisco voters, who were undoubtedly comforted by the Commission's promise that the general obligation bonds would be secured with firm rental agreements prior to sale, thus freeing the city from the responsibility of paying them off.

Two months after the bond issue was approved, the Port Commission included the container terminal in the concept of a "multiport" complex to be completed during the next ten years. The plan encompassed some already completed facilities, others under way, and some yet in the planning stage. Multiport was to consist of (north to south); the Army Street Terminal; the soon to be constructed Pier 94; the existing adjacent LASH Terminal (Pier 96); nearby grain and automobile terminals (Piers 90 and 92); and two newly proposed facilities, both planned for construction on yet to be deposited fill, Piers 70-72 (adjacent to the Alvord Grant) and Pier 98 (south of the LASH Terminal Basin). Just as a recommendation from a "citizens" committee led the Port Commission into the concept of Pier 94 container facility, a request of the City Board of Supervisors led the Commission to create the "multiport" waterfront plan.²⁸⁴ The Port Commission's tendency to create project-by-project policy was replaced by this long range statement of intentions.

²⁸⁴ *San Francisco Examiner*, 26 January 1972.

The 1974 San Francisco Grand Jury annual report highly praised the action of the Port Commission and its staff saying:

In today's modern world of technology, the old concepts of ships and shipping methods has been completely changed . . . the complexities of the new ships, their enormous size and turn-around time have given the Port of San Francisco great challenges and it is meeting each one head-on.²⁸⁵

The report also acknowledged the creation of port facilities, both planned and under construction, which were meeting the new complexities of containerization.

As fill material for Pier 94's retaining walls was being deposited within the provisions of the BCDC permit, the project seemed to be going well. In May 1974 however, Port Engineer Charles Vickers reported to the Port Commission that due to a loosening of mud, a part of the underwater excavation had collapsed, and construction had been temporarily halted at the site of the pier.²⁸⁶

The exact cause of the collapse was unknown. The Port Engineer reported to the commission that the slide occurred after an earth tremor, which had occurred the previous November. When the LASH Terminal was still in the planning stages in July 1969, the Port Engineer, citing "unique problems with the deep mud" in that area, had obtained the commission's approval to hire two engineering firms for soil study, static design and seismic foundations. At the same Port Commission meeting, the attorney for a dump truck contractor complained that slurry was being used at the debris dike area of the Islals Creek dump operation, a charge which the operators

²⁸⁵ *Pacific Shipper*, 11 March 1974.

²⁸⁶ *Pacific Shipper*, 27 May 1974. At a hearing before the State Senate Select Committee on the Maritime Industry on 21 October 1974, questions arose as to the type of fill used in construction of Pier 94, *Chronicle*, 22 October 1974.

subsequently denied.²⁸⁷ It is also possible that the mud slide was caused by an unstable condition resulting from creating too steep an angle of repose at the dredged site. Whatever the cause, the port attempting a solution, conducted soil tests and poured stable fill material into the area. This however, continued sliding off of the northeast corner of the planned Pier 94 foundation, leaving the northern half of the facility unusable.

The collapse of the Pier 94 foundation not only halted the construction of the container facility, it began a series of events which resulted in a key tenant of the Port of San Francisco, American President Lines (APL), moving across the Bay to the Port of Oakland.

APL, the oldest tenant of the port, had been conducting its container operations at the Army Street Terminal since the late 1960s, but gradually expanded beyond that terminal's capabilities. The Port Commission, having decided that it wanted to build a new containerport at Pier 94, signed a rental agreement with APL for the use of the planned facility. This agreement provided a suitable terminal for APL, and fulfilled the city's promise to its voters that the \$34 million bond issue for the proposed terminal would be guaranteed with prior lease agreements. The port offered APL a five year lease for \$1 million annual rent, although it was later reported that it would cost the port \$2 million a year to repay costs of building the facility. Although the lease arrangement was later questioned, it allowed the Port to get Pier 94 construction underway.

²⁸⁷ *Port Commission minutes, 9 July 1969.*

When Pier 94 north collapsed, the port utilized the remaining undamaged portion of the facility by joining it to the northern edge of the adjacent LASH Terminal, Pier 96. APL temporarily moved to the now expanded Pier 96 and began negotiations with PFEL exploring the possibility of a joint permanent leasing agreement until the problems of Pier 94 could be resolved. The talks foundered, however, on how much space would be provided APL, and for how much. The joint lease agreement was never signed and APL, frustrated by the fruitless negotiations with PFEL, announced in August 1974 that it had concluded an agreement to move its container operations to Oakland.²⁸⁸

APL's move, the loss of the anticipated \$1 million annual rent, and the accrual of PFEL back rent of more than \$1 million, all were serious financial problems to port officials, and soon became matters of public awareness and concern. The same day that APL announced its departure, the city's grand jury, which five months earlier had praised the port's administrators, announced that it was considering bringing in an independent auditing firm to examine the port's contracts and records.²⁸⁹ The port's financial health had been declining for several years because of reduced tonnage and the costs of modernizing and constructing facilities. Net income had dropped from \$2 million in 1968, the year the city took over the port, to \$317,173 in 1974. During the same period its cash reserve fund had dropped from \$10 million to \$1 million, and the Port's tonnage had declined from 4.8 million tons to 3.6 million tons.²⁹⁰ The port was also burdened with the dual problem of non payment of rents

²⁸⁸ *Chronicle*, 31 August 1974.

²⁸⁹ *Examiner*, 30 August 1974.

²⁹⁰ *Examiner*, 29 August 1974; *Chronicle*, 28 August 1974. During this same period Oakland's tonnage had increased from 3 million tons to 7.2 million tons. This was aided by APL's relocation which removed twenty percent of San Francisco's tonnage, and boosted Oakland to the second largest containerport in the world. *Chronicle*, 13 November 1974.

and repayment of the bonded indebtedness which the city had assumed with the port in 1969. The Port Commission had unsuccessfully attempted to gain forgiveness of the debt from the State, and by January 1978 more than 43 percent of the annual budget adopted by the Commission was devoted to paying bond obligations.²⁹¹ In addition to the loss of revenue from the bankruptcy of PFEL, the Port was also impacted by the recently passed Jarvis-Gann property tax initiative, which ended the long held practise of using property taxes to fund community services. Since this included port operations and maintenance, the port released ten percent of its staff, including its public relations director, and froze pay increases for its employees in July 1978.²⁹² Parenthetically, this presented a projected net savings to the financially beleaguered port of \$450,000.²⁹³

After construction of the Army Street Terminal for general cargo purposes in the container age, and the construction of the ill-fated LASH Terminal, the collapse of Pier 94 north, which was specifically designed for container operations, was an especially hard blow for the commission. After six years of owning and managing its port, San Francisco had lost a great share of its trade and many of its tenants, almost eliminated its cash reserve fund and failed to create a timely or successful method of capitalizing on the new technology of containerization. Port management was not only impacted by a declining financial reserve, but was fragmented by the disparity of goals of port directors who wanted to manage the port, and a Port Commission which devoted great energy to real estate development projects. To say that the port's maritime policy lagged behind the technological process of containerization is an

²⁹¹ *Pacific Shipper*, 31 January 1978.

²⁹² *Pacific Shipper*, 11 September 1978.

²⁹³ *Pacific Shipper*, 10 July 1978.

incomplete statement. More accurately, in 1978 San Francisco was a port with a policy lagging behind container technology primarily because its decisions had been based on a conservative philosophy steeped in past performance, and was thwarted by divided goals of port directors and the Port Commission. The newly developing process of container technology required a full commitment to constructing specialized maritime facilities. San Francisco's emphasis on non-maritime commercial developments overshadowed the rapidly developing needs of the maritime industry.

The final element in this complex and volatile mixture which created San Francisco's maritime policy during this period, was the human element. While containerization affected the design of facilities and altered the face of the City's waterfront, it threatened the very means of livelihood of the men on the docks. The manner in which longshoremen faced the threat which containerization posed to their jobs and life styles is a vital aspect of this story.

CHAPTER 6

A Bite Out of the Machine: Technological Change and Longshormen in the California Maritime Industry, 1934—1971

In 1960 the International Longshoremen's and Warehousemen's Union signed an agreement with the Pacific Maritime Association, which protected the jobs of longshoremen in the face of mechanization and gave them a share of the financial benefits resulting from its use on the docks. This Mechanization and Modernization Agreement (M & M) is often considered a breakthrough in labor relations, having anticipated the effect containerization would have on the work of longshoring. Because the agreement protected the work force and distributed to it some of the financial benefits of mechanization, it is considered by many to be as revolutionary as the era of containerization. The relationship between longshoremen and mechanization, however, predated the containerization era and was formed during the Great Depression, when longshoremen were threatened by more basic forms of mechanization.

In the days of sailing ships, longshoring was a skill practised by a few ship's riggers and stevedores, men who knew how to safely and securely stow cargo in their ship's hold. When a vessel arrived in port, these men needed help to load and unload cargo, therefore unskilled labor was recruited from the beach with the call, "Men Along the Shore!" These men along the shore came to be called longshoremen, while the term stevedore, seldom used in the western hemisphere, now refers to contractors who employ longshoremen and provide their services to employers.²⁹⁴

²⁹⁴ *The ILWU Story, Three Decades of Militant Unionism* (San Francisco: Phillips and Van Orden Co., 1962), p. 12.

Longshoring had depended on human power from ancient times until steam-power was introduced to the cargo handling operation on the four masted bark *Great Republic* in mid 19th Century.²⁹⁵ With the introduction of powered mechanical cargo handling equipment, heavier loads could be lifted in slings and cargo nets, while the introduction of iron hulls created larger ships to carry these greater loads.²⁹⁶ Although mechanical equipment lifted greater quantities of cargo into the ship's hold, each sack, barrel, and box still had to be manually stowed by longshoremen, who therefore had a powerful hold on the rate at which work was performed. The work was difficult to obtain, often back-breaking, and performed under extremely difficult conditions. Thus, whatever degree of control longshoremen exercised over the rate of work was tenuous, requiring regular confirmation through work stoppages and strikes against ship operators. Because longshoremen had been acquiring this control over a quarter of a century, it was a major policy reversal when the ILWU accepted mechanization and relinquished this hard earned control.

Effect of Containerization on the Maritime Industry

The process of containerization, developed in the United States in the late 1950s, was quickly hailed by many in the industry as a "cargo handling revolution."²⁹⁷ Within fifteen years of its introduction, seventy three percent of American national and international maritime general cargo was containerized, an event which the *Scientific American* called the "most significant change since steam replaced sail a little more than a century ago."²⁹⁸ As early as 1956 a maritime writer called

²⁹⁵ Rohn, 1945, p. 112.

²⁹⁶ S. C. Gillfillin. *Inventing the Ship* (Chicago: Follett Publishing Co., 1935), pp. 147-8.

²⁹⁷ S. G. Hayman, "A Cargo Handling Revolution," *The Marine Digest*, 27 April 1957, p. 7; Alex D. Stewart, "Revolution Successful," *The Log*, March 1956, p. 28.

containerization a "revolution successful."²⁹⁹

Maritime containers, however, were more evolutionary than revolutionary, having been used successfully in the United States, as we have seen, from the turn of the century until the 1930s. The maritime transportation industry experimented with them again after World War II in an effort to regain its prewar level of domestic trade. The bleak condition of the postwar national domestic maritime industry was reflected on the Pacific coast by a large drop in domestic maritime cargo tonnage. The industry and population of the western states, especially California, had developed during and after the war and there was a reasonable expectation by many that this expansion would likewise promote a return of prewar domestic shipping activity. This revival did not occur for several reasons, three of the most important being the growth of the trucking industry, labor disputes, and rising operating costs.

Since World War II the national revenues of motor freight carriers had almost tripled, with the west coast exceeding the national average increase.³⁰⁰ Secondly, the west coast had a long history of maritime industry labor disputes beginning with the first longshoremen strike occurring in 1851.³⁰¹ Between 1934 and 1949 alone, the entire Pacific Coast was shut down four times by strikes and shipping operations were interrupted by minor work stoppages more than a thousand times.³⁰² The third problem, the rising costs of cargo handling, was illustrated by the industry estimate

²⁹⁸ J. R. Whittaker, *Containerization* (Washington: Hemisphere Pub., 1975), p. 188; Roger H. Gillman, "Cargo Handling," *Scientific American*, October 1968, p. 80.

²⁹⁹ Stewart, p. 28.

³⁰⁰ R. Thayne Robson, "The Trucking Industry," *Monthly Labor Review*, May 1959, p. 547.

³⁰¹ Paul T. Hartmen, *Collective Bargaining and Productivity, The Longshore Mechanization Agreement* (Berkeley: Univ. of California, 1969); Robert Edward Lee Knight, *Industrial Relations in the San Francisco Bay Area, 1900—1918* (Berkeley: Univ. of California, 1960); Betty V. H. Schneider, *Industrial Relations in the West Coast Maritime Industry* (Berkeley: University of California, 1958).

³⁰² Paul Eliel, "Industrial Peace and Conflict: A Study of Two Coast Industries," *Industrial and Labor Relations Review*, 2, No. 4, July 1949, p. 480.

that from fifty to seventy percent of the cost of shipping cargo was involved in moving it across the narrow strip between wharfside and ship.³⁰³ Many in this ailing industry began experimenting with various cures including the old concept of unitized or containerized cargo.³⁰⁴

The importance of this search for a healthier industry was highlighted in 1949 by Clark Kerr, the Director of the Institute of Industrial Relations at the University of California, Berkeley, when he stated that "radical measures were necessary to halt the decline in maritime commerce."³⁰⁵ That same year the Seattle-based Alaska Steamship Company began experimenting with, if not a radical, at least a new method of shipping several items of cargo in one wooden container.

Since a great deal of the cost of shipping maritime cargo occurred when moving it between the dock and the ship, the speedy transfer of cargo was a primary goal of shipping companies. Containerization accomplished that goal. Previously, one eight man longshoreman gang using ships gear handled nine tons of cargo in one hour. With containerization, four hundred tons were moved in the same period of time. Containers weighing on the average of twenty tons were loaded and unloaded in a three minute cycle. These most telling statistics meant that a ship's inport time, the time when it was not earning revenue, was reduced from three weeks to as little as eighteen hours.³⁰⁶ Containerization provided tremendous benefits to ship owners, but

³⁰³ Rohn, *Transactions*, 53, 1945, pp. 135, 137; Philip Ross, "Waterfront Labor Response to Technological Change: A Tale of Two Unions," *Labor Law Journal*, 21, No. 7, July 1970, p. 399.

³⁰⁴ Gorter and Hilderbrand, 1952, p. vii.

³⁰⁵ Clark Kerr and Lloyd Fisher, "Conflict on the Waterfront," *Atlantic Monthly*, 184, No. 3, Sept. 1949, p. 20.

³⁰⁶ "The American Society of Mechanical Engineers Dedicates an International Historic Mechanical Engineering Landmark," the brochure of the dedication of the PACECO container crane at the Encinal Terminals, Alameda, California, 5 May 1983, which called the crane the "world's first high speed, dockside, container crane."

was seen by many longshoremen as a threat to their jobs and thus contributed fuel to the fire of conflict which had existed between these two groups for many years.

The Nature of Longshoring Work

A key reason for that conflict was in the very nature of longshoring work. Loading cargo aboard ship was physically demanding and unpleasant. Richard Henry Dana described the backbreaking task of hauling cattle hides out to the brig *Pilgrim* while it was anchored off of San Pedro and Santa Barbara in the late 1830s.³⁰⁷ An even more detailed account of loading hides in the the 1950s was given by San Francisco longshoreman Reg Theriault, who described the practise of packing steer manure within the folds of hides so that maggots would be attracted to it, leaving the hides undamaged. The perils of a bundle of hides breaking apart while on a longshoreman's back leaves little to the imagination. Theriault mentioned one longshoreman, however, who volunteered for such work knowing that he would always have a seat made available to him on his streetcar ride home at the end of each work day.³⁰⁸

The nature of longshoring is also universal. As Harry Bridges noted: "longshore work has some things in common in every port in the world--it's casual and irregular, it's insecure, it's hard, it's dirty and hazardous."³⁰⁹

As unpleasant as the work sometimes was, even more significant to an understanding of the nature of longshoring is understanding the method by which longshoremen were hired, the "shape-up," a system not much removed from the

³⁰⁷ Richard Henry Dana, *Two Years Before the Mast* (first published in 1840; New York: The Heritage Press, 1947), pp. 82-86, 133-135.

³⁰⁸ Reg Theriault, *Longshoring on the San Francisco Waterfront*, (San Pedro: Singlejack Books, 1978), p. 10-11.

³⁰⁹ Bridges' column "On The Beam," *The Dispatcher*, 21 November 1950, quoted in Fairley, p.27.

haphazard selection which resulted from the old call "men along the shore!" In the shape-up, which existed before longshoremen were organized into unions, the regular workers on shipping company payrolls were augmented with a few men selected from the hundreds who gathered at the docks each morning. The chances of being chosen were slim because the number of workers always exceeded the number of jobs available. In addition, the selection criteria of the work boss often included kickbacks and favoritism, forcing men degrade themselves by fighting, or begging, for a job.³¹⁰ A similar and perhaps more brutal system which existed in Australia prior to World War II was described by an Australian wharf laborer : "A ghastly frightening [group] of men at times fighting and tearing each other's clothes off in sweating jungle-like scuffles, for a starting dicket to earn twenty-three shillings for a day's work on the wharves."³¹¹ Such a humiliating and frustrating system, combined with its low wages and unpleasant working conditions, had led California longshoremen to engage in conflict with ship owners from the time California entered the Union.

Longshoring on the West Coast

The conflict between longshoremen and employers can be traced through key events starting with the first Pacific Coast longshoremen's strike in 1851, through World War I and the subsequent years of depression, and finally to the most dramatic longshoremen's strike in labor history which occurred in San Francisco in 1934.

³¹⁰ Hartman, p. 27.

³¹¹ Malcolm Tull, "American technology and the mechanization of Australian ports," *Journal of Transport History*, Third Series, v. 6, No. 1, March 1985, pp. 79-90. For a description of the shape-up as practised on the East and Gulf Coasts see Vernon H. Jensen, *Hiring of Dock Workers*, (Cambridge: Harvard University Press, 1964) pp. 21-35.

During the Depression west coast longshoremen operated within a district of the east coast based International Longshoremen's Association (ILA). In 1934 they sought recognition as an independent union, a coastwise agreement with employers, participation in the hiring procedures, and higher wages. Negotiations with employers failed, and on 9 May of that year west coast longshoremen began a strike of most west coast ports, a strike which lasted for eighty one days.³¹² The longshoremen call that strike the "first successful general strike in American history," while a University of California Industrial Relations Institute Study termed it the beginning of "the most violent and widespread labor management wars in American history," and General Hugh S. Johnson, national administrator of the National Industrial Recovery Administration called it "revolution."³¹³

Employers attempted to continue operations by using strike breakers which resulted in frequent violent confrontations and, on 5 July, in the killing of two longshoremen by the police. Following these deaths, and at the call of Harry Bridges, most unions on both sides of the Bay joined in a general strike on 16 July, closing down San Francisco's entire municipal community for three days.³¹⁴ When longshoremen and employers agreed to arbitration, the longshoremen called off the strike, the employers agreed to discharge all strikebreakers, and both parties awaited a decision by the National Longshoremen's Board, the Roosevelt appointed mediation board now serving as arbitrators.

³¹² *The ILWU Story*, p. 18.

³¹³ *The ILWU Story*, p. 18; Schneider, 1958, p. 34.

³¹⁴ Bonthius, p. 393.

The arbitrated settlement granted most of the longshoremen's demands and the west coast maritime industry came to life once again. After the settlement, the Pacific Coast District of the ILA joined the Congress of Industrial Organizations (CIO), and in September 1937, under the provisions of Section 7(a) of the National Industrial Recovery Act, the Pacific Coast longshoremen reorganized into their present independent organization, the International Longshoremen's and Warehousemen's Union (ILWU).

The settlement replaced the infamous shape-up with hiring hall, jointly operated by employers and the union, with a union approved work dispatcher assigning jobs in an orderly manner. The union was also permitted to maintain a list of fully registered longshoremen, the "A" list. These men had first priority to work assignments and were eligible for all benefits. A second category of men, the "B" list, were given work assignments after the "A" list had been exhausted. These "B" list men were were not eligible for full benefits.

The Settlement also allowed the Union and employers to sign a coastwide contract which ended the shipowners control of individual ports. Through their union, the longshoremen achieved a united voice against shipowners, while the shipowners grudgingly accepted unionism as a means to convert dockside chaos into the order which was necessary for their survival.

The Move Towards Cooperation

Although conflict between California longshoremen and employers had raged intermittently since mid 19th century, a change occurred in their relationship after World War II. While maritime writers differ on details, it is clear that the strikes of

1934 and 1948 were key events which led to labor-employer cooperation in the 1960s.

The 1934 strike was a "decisive social experience" which shaped the attitude of longshoremen as they emerged from their contact with "police, tear gas, community condemnation . . . [and an] antagonistic public press." The strike united longshoremen in a feeling of community, a tradition of militancy, and feelings of bitterness.³¹⁵ William Glazier, Administrative Assistant to the national affairs officer of the ILWU, confirmed that after the conflict of the 1930s, union members were convinced that the ship owners association had the "determination to stamp out the union by whatever means they could employ."³¹⁶ Likewise, Harry Bridges, then president of the ILWU, left no doubt of the longshoremen's attitude saying "We take the stand that we, the workers, have nothing in common with employers."³¹⁷ Shipowners also had emerged from the 1934 strike united, in their case with "tactics of conflict . . . collective thrust and counter thrust."³¹⁸

One maritime writer, however, finds the roots of a cooperative spirit between longshoremen and employers to lie in their willingness to accept an arbitrated solution to the 1934 strike.³¹⁹ Although from 1934 to 1948 there were three hundred days of coast-wide strikes, job actions against individual ships, and employer's lock-outs, it is equally important to note that during that period, arbitration was almost continuous with 250 awards becoming part of the basic contract.³²⁰ Bitterness may have remained, but after the 1934 strike settlement, arbitration had replaced violence.

³¹⁵ Kerr, p. 17.

³¹⁶ William Glazier, "Automation and the Longshoremen, A West Coast Solution," *The Atlantic Monthly*, 206, No. 6, December 1960, p. 57.

³¹⁷ Kerr, p. 18.

³¹⁸ Kerr, p.17.

³¹⁹ Kerr, p. 18.

³²⁰ *Ibid.*

An equally important event in this move towards cooperation came out of the longshoremen's strike of 1948, which was two weeks longer than that of 1934, and was supported by all other maritime unions, the CIO and overseas longshore unions. While the strike did not include the violence which occurred in 1934, its settlement was complicated by the anti-communist rhetoric of the cold war era. Harry Bridges, an Australian by birth, was accused by many of being a communist, and underwent deportation hearings and trials, aimed at proving the charge.³²¹ Although the charges were never proven, the the employer's association leadership, taking every opportunity to confront the longshoremen's union, angrily announced in 1948 that "no more negotiations will be held and no more contracts will be signed with any unions unless, and until their officers have disavowed communism."³²² The Cold War provided the excuse for such a statement, but its rational lay in the long tradition of labor-management strife which had raged during the last century. The union countered with the charge that employers were attempting to destroy the union by achieving an open shop policy.³²³ As we have seen, the post World War II California maritime industry was suffering not only from post war economic conditions, but also from continuing work disruptions which were, as Clark Kerr observed (recalling the old IWW slogan) "injury to one . . . injury to all."³²⁴ There was a change needed, and during the latter days of the 1948 strike, signs of changed attitudes occurred. The Waterfront Employers Association (WEA), representing ship owners and stevedoring companies, by-passed their confrontation oriented negotiator, Frank Fosie, and appointed as

³²¹ Larowe describes these proceedings in great detail in Chapters 5-12.

³²² Kerr, p. 18.

³²³ Ibid.

³²⁴ Ibid.

their representative, Dwight Steele, who had gained the respect of union and employers during successful negotiations in Hawaii.³²⁵ While strikes and lock-outs had been the hallmarks of waterfront labor relations for years, Steele preferred informal collective bargaining. The employers were abandoning their policy of confrontation and initiating negotiations, to which the longshoremen responded.³²⁶ An employer representative at a 1949 joint conference reflected this change, saying "we employers have a new spirit and we know if we supplement it with the right kind of action, we can turn it into new jobs for all hands."³²⁷

The Acceptance of Mechanization in 1960

In addition to its willingness to find areas of agreement with employers, the longshoremen's union at this same time began a gradual and important philosophical change by abandoning its long-held resistance to mechanization on the docks. This resistance was traditional among longshoremen and was supported by Bridges, who had risen to the leadership of the Pacific Coast longshoremen during the 1934 strike.³²⁸ His opposition to mechanization was, however, more a position held to seek goals such as job protection, improved working conditions and higher wages, than a philosophical rampart never to be abandoned. During a 1956 longshoremen official's

³²⁵ Several years later, the employers formalized this reorganization by establishing a new organization, the Pacific Maritime Association. *Ibid.*; Fairley, p. 31. Frank Fosie, who had represented employers for years, was chosen by the 1951 California Senate Fact Finding Committee as their "Industrial Consultant." *Bay Area Ports*, 1951, p. (2).

³²⁶ Fairley, p. 31; There were several possible reasons why the employers turned from confrontation to negotiation, including; (1) Thomas Dewey, the Republican presidential candidate whom ship owners felt would support their cause, was defeated by Harry Truman in 1948, (2) Randolph Sevier, who brought vigorous management to Matson in 1948 (See Chap.3), objected to Fosie's flag waving, red-baiting tactics against Bridges and the ILWU as unproductive towards settling genuine issues, and (3) Bridges had formed the Committee for Maritime Unity, consisting of seven maritime unions, a move which ship owners saw as causing potential problems for them. Larowe, pp. 287-298.

³²⁷ Kerr, p. 18.

³²⁸ *The ILWU Story*, p. 64; With the approach of World War II, however, Bridges had announced his willingness to improve dockside efficiency. Hartman, p. 19.

caucus, Bridges acknowledged that men on the docks welcomed the relief from hard labor provided by machines, and sought the jobs which used machines, leaving the harder jobs to non-union casual workers.³²⁹ At that time, he stated:

we have resisted the impact of labor-saving machinery, mechanization, automation, whatever you want to call it, possibly with greater success than any other organization . . . However, we have reached the point . . . where the battle against the machine for us has become a losing one . . . we can continue to fight a losing battle . . . [but] we will lose in more ways than one.³³⁰

Several years later he stated even more clearly that machinery should be used to lighten the burden of the longshoremen, literally and figuratively, stating: that, "we intend to push to make the addition of machines compulsory. The days of sweating on these jobs should be gone . . . We want to eliminate hard work by the use of machines."³³¹ Bridges knew that mechanization had brought improvements over the years to west coast dock workers as well as to longshoremen in his native Australia.³³²

Mechanization, however, was not universally accepted by all ILWU members. Bridges' 1956 call for abandoning the practise of resisting labor saving innovations was seen by Local 13 of Los Angeles and Long Beach, as a step towards the loss of men on the job. A Los Angeles delegate described the threat of continued acceptance

³²⁹ Fairley, p. 63.

³³⁰ 1956 ILWU Caucus Proceedings, quoted in Hartman, pp. 81-82.

³³¹ Hartman, p. 147.

³³² Fairley, p. 60; For an account of the impact of machines on the Australian docks, see Tull, cited above.

of mechanization:

We have relinquished enough men There are the banana conveyors down there [in the San Pedro area], there is the copra conveyor, there are packaged loads of lumber. Christ! We have given them [the employers] enough. Let's stop it. We don't have to give them any more.³³³

Bridges' philosophy prevailed in 1959 when representatives of the union and the PMA signed an agreement which resolved many of the disputes resulting from mechanization and the workers' attempts to deal with it. In the following year, the two groups formalized that agreement into a series of amendments to the basic coast-wide agreement, which was called the Mechanization and Modernization Agreement (M & M) of 1960. The 1960 M & M was composed of two major elements: mechanization, the dockside use of cargo handling machines such as lift-trucks to move pallets of goods to and from the crane hook; and modernization, the removal of restrictive work rules which had been acquired by the ILWU over the years. The details of mechanization were agreed upon relatively easily since the longshoremen's union no longer opposed, and in fact encouraged the use of machines. Union approval of modernization, however, was the major accomplishment of the M & M Agreement.

The union gave up the work rules which they had used to control the pace of work on the docks since the 1934 strike agreement. In return, it obtained a guarantee against lay offs of its A list men whose jobs might be threatened from increased mechanization. The union was also guaranteed that union men would operate new machinery introduced onto the docks. Further, the workers obtained a share of the

³³³ 1956 Caucus Proceedings, quoted in Hartman, pp. 82-83.

financial rewards from the increased productivity which mechanization was expected to bring-- in a sense, a "share of the machine." The employers provided this share in a longshoremen's benefit fund which they created from the financial rewards flowing from increased efficiency of operations.³³⁴ This increased efficiency and control of dock operations would in turn provide the employers what they sought, stability of operation.

The benefit fund eventually amounted to \$29 million, an amount based on the estimated number of man hours expected to be saved as a result of mechanization. The fund consisted of three trusts each of which was designed for separate needs. The first, the supplemental wage benefit trust consisting of \$11 million, guaranteed to fully registered longshoremen a total average weekly earning equivalent to thirty-five hours of work at the current wage scale. This was designed to assure a steady income to men whose hours might be reduced because of mechanization. The second fund, about \$18 million was, in the union's view, their "share of the machine."³³⁵ One portion of this fund was allocated to meet benefit claims for death and disability while the other was a vesting benefit created to induce voluntary retirement. This fund paid thirty-six monthly payments of \$220 each to eligible longshoremen who elected to withdraw from the work force early (at age sixty-two). If a qualified longshoreman did not retire early, he received the lump sum of \$7920. The vesting fund was paid in addition to the normal industry pension of \$100, and the minimum social security benefit, which in 1960 was \$120.00.

³³⁴ Fairley, p. 222.

³³⁵ Hartman, p. 102.

Union members gave up a great deal by relinquishing their control of work rules on the docks. They relinquished control over slingloads, which had limited the number of bags, boxes, and barrels, which could be hoisted in a sling into or out of a ship's hold in one load; manning scales, which required the maximum number of men possible on a specific job so as to make the work easier; and double handling, which required that cargo already strapped onto a pallet when trucked to the dock, be unloaded from the truck by teamsters and placed, item by item, on the skin of the dock to be repalletized on a stevedore pallet by longshoremen before it was taken to the ship for loading. In return for giving up their control of such work rules, the longshoremen were guaranteed that the registered work force would be maintained, less normal attrition, and would be provided a guaranteed wage. One writer quoted a longshoreman's sentiments, "no layoffs, and a bite of out of the machine."³³⁶

The employers, through gaining the right to introduce labor-saving machinery and controlling dock work, had gained a stability within the work process which they previously had been unable to maintain because of strikes and work stoppages. Their expectation of man-hours to be saved through the two actions made the creation of the multi-million dollar fund an acceptable trade-off to most of them, as indeed it turned out to be. After the agreement was signed, both sides felt that they had accomplished their objectives. The ILWU published a booklet explaining the agreement to Union members, and in conjunction with the PMA published the book *Men and Machines*, which described the M & M and expressed mutual satisfaction with it. The booklet contained an opening statement co-signed by Harry Bridges, president of the ILWU, and Paul St. Sure, president of the PMA.³³⁷

³³⁶ Glazier, p. 59.

Reactions to the 1960 M & M Agreement

Interest in the M & M Agreement among experts in the labor relations field was high and generally favorable. Roland P. Mc Laughlin, an attorney in the office of the U. S. Secretary of Labor, wrote

While this plan may not be the final answer to the problems growing out of "automation," it certainly represents the kind of hard thinking that is necessary to resolve the complex issues it presents . . . the plan is a real achievement because it is the product of free and voluntary collective bargaining . . . [and is] one of the first major private efforts to grapple with these matters.³³⁸

Professor Thomas Kennedy of the Harvard School of Business Administration included a chapter on the M & M fund in his 1962 book, *Automation Funds and Displaced Workers*.³³⁹ The reaction towards the M & M from the labor movement was generally silence, or as Fairley put it; "perhaps a shocked silence reflecting concern that any union should barter away any of its hard-won work rules."³⁴⁰ The AFL/CIO made an obscure but grudgingly favorable reference to the agreement while neither the Teamsters Union nor the Railroad Brotherhoods published a reaction.

In 1962, the International Longshoremen's Association criticized the M & M caustically. ILA president, Terry Gleason said, "The West Coast sold their men out,

³³⁷ *Information and Union Comment on the 1960 Mechanization and Modernization Fund Agreement*, (San Francisco: ILWU, November 1960); Louis Goldblatt, *Men and Machines*, (San Francisco: Phillips and Van Orden Co., 1963), pp. 3-4.

³³⁸ Richard P. Mc Laughlin, "Collective Bargaining - The New Trend," *Labor Law Journal*, 15, No. 8, August 1964, p. 504.

³³⁹ Thomas Kennedy, *Automation Funds and Displaced Workers*, (Boston: Harvard University, 1962) Chapter IV.

³⁴⁰ Fairley, p. 169.

but here on the East Coast and Gulf Coasts, we don't do that."³⁴¹ The ILA went on to work out an agreement with their employers which also provided job security in return for making concessions to employers. Unlike the west coast agreement however, the ILA agreement was reached only after protracted strikes and government intervention, because the Union insisted on maintaining its traditional manning scales even after the introduction of new procedures.³⁴²

Operating under the M & M

When the M & M went into effect, stevedore companies quickly began increasing sling loads to sometimes twice what was previously lifted. This increased loading required hold men in the ship's holds to speed up their work pace in order to "meet the hook." Longshoremen had less time to unload a sling load onto a four wheeled dolly to move cargo into the ship's wings (recesses in the hold) for a tight stow. When the union complained, the employers countered by saying the men could "belly pack" the sacks to the wings, which the workers saw as a reversion to the onerous work of pre-machinery days.³⁴³ The M & M provision to add men or machines to specific jobs was dependent on interpretations of working conditions and although both workers and employers had certain validity to their conflicting positions concerning sling loads and speed-up, problems concerning these two procedures continued to exist and required solution.

³⁴¹ In 1951 there was serious tension between the ILA longshoremen and their Union leadership, which was examined in investigations by a board of inquiry and the New York State Crime Commission. Jensen, 1974, pp. 29-35, 384-386; Fairley, p. 297.

³⁴² Fairley, p. 296; For a comparison of ILWU with ILA, see Fairley, Chap. XII; and Ross, 1970.

³⁴³ "Belly Packing" was carrying a sack held against the belly. Sacks could weigh up to one hundred pounds. Fairley, p. 196, 208.

Another problem which arose concerned reduced manning resulting from the introduction of new mechanical devices such as the "robot," a lifting device which was remotely controlled so as to face the lift-truck driver at all times thus speeding up the loading and unloading operations; the "squeeze-lift," a clamp which grasped up to eight rolls of news print at one time, which led to specially designed ships to carry news print rolls; and containers.³⁴⁴ Although containers were still not used very extensively from 1960 to 1966, they had provided a more dramatic impact than other labor saving devices, primarily because they performed loading and unloading operations twenty to thirty times faster than those using conventional gear and conventional ships.³⁴⁵

Despite this impressive statistic, however, the primary source of increased productivity came not from the use of containers, but from the elimination of double handling and the increased use of palletized cargo. The latter accounted for most of the dockwork manhours saved, which amounted to 600,000 annual hours from 1960 to 1963.³⁴⁶

Although these measures resulted in greatly reduced manning levels on individual jobs, there was, however, no overall reduction in employment. It had been anticipated that as "A" men retired, the reduced number remaining would obtain a greater amount of work since "B" men would be frozen from advancement to the "A" list. While there had been an immediate and sharp reduction in the work force as many "A" men took advantage of the early retirement provision of M & M, the work

³⁴⁴ Goldblatt, p. 94

³⁴⁵ Fairley, p. 221.

³⁴⁶ Hartman, p. 130.

force basically remained unchanged. This occurred because "B" men were advanced to "A" status to handle the work load of increased tonnage caused by general prosperity and the Vietnam War.³⁴⁷ Therefore the union's objectives had been substantially met since the 1965 work force, while slightly younger, was almost as numerous as in 1960. This did not occur, however, because of provisions of the M & M , but as a result of the war. This benefit was particularly ironic since Bridges had gone to jail because of his position on the Korean War, and ILWU conventions had uniformly opposed both the Korean and Vietnam Wars.³⁴⁸

The M & M Agreement seemed to have been successful beyond the expectations of its proponents within the PMA. Even the doubters in the association were eventually pleased since the increased productivity and profits greatly surpassed their contributions to the fund. The productivity index had risen from 100 in 1960 to 130 in 1965 while labor costs per ton had dropped from 100 to 98 during the same period despite the increased wages and fringe benefits granted the longshoremen.³⁴⁹ Shipowners enjoyed the additional gain of reduced turn-around time resulting from more efficient handling procedures. *Moody's Transportation Manual* showed the income of Matson to have risen from \$2.6 million to \$7.2 million, while that of Pacific Far East Line rose from \$0.5 million to \$4.8 million during the six year term of the M & M Agreement.³⁵⁰

Although the composition of the work force had not changed drastically during the M & M , a change in attitude had gained momentum within the union during that

³⁴⁷ Hartman, pp. 163-172.

³⁴⁸ Fairley, p. 227.

³⁴⁹ Fairley, p. 222.

³⁵⁰ Fairley, p. 226.

time. The union emphasis during the 1960 agreement negotiations had primarily concentrated on protecting jobs and obtaining a share of the financial rewards which the companies were expected to experience from increased mechanization. Within the concept of job protection was the effort to protect the status of older men on the "A" list from reduced hours caused by usurpation by younger men advanced from the "B" list. By 1966, however, many longshoremen considered the M & M too much "an old man's" contract, protecting older workers with its stress on pensions and job protection. As the contract renewal date approached, younger voices within the union wanted the immediate benefit of increased wages and less concern about retirement benefits or job guarantees.

Renewal of the M & M in 1966

Five years after the M & M Agreement was signed, the five leading Pacific coast carriers had experienced cargo handling efficiency and man-hour savings worth more than \$59 million despite their \$5 million annual contribution to the workers benefit fund.³⁵¹ During the nearly six years in which the union and the PMA operated under M & M, increases had occurred in tonnage, work hours, the productivity index, longshoremen's wages, and shipowners and stevedore companies' profits; tonnage rose from 18,668,967 revenue tons in 1960 to 26,701,377 tons in 1965; manhours worked increased from 23,757,382 to 24,387,133; and perhaps most significantly, the productivity index rose from 100 in 1960 to 130.8 in 1965.³⁵²

³⁵¹ Hartmen, p. 178.

³⁵² Tonnage was 31,233,729 in 1966. The 1966 Agreement was effective on 1 July; Fairley, p. 395.

By 1966, some within each group were having second thoughts about the way M & M had worked out. Some workers, in addition to seeking slightly different goals than those of 1960, and realizing the greatly improved financial condition of the carriers, felt that they had "sold too much for too little." Employers, knowing they had done well, wanted even more work rule concessions. When the stage was set for negotiating a new agreement, however, differences did not loom large and both parties were prepared to renew.

In the renegotiated agreement signed in 1966, both employers and longshoremen gained their objectives. The union relinquished its wage guarantee and obtained in its place a large pay increase and the mandatory use of machines on the docks. Employers obtained increased control over work on the docks by eliminating redundant manning and obtained greater flexibility through the reassignment of longshoremen from one job to another when required by working conditions.

The union, abandoning the wage guarantee and obtaining mandatory mechanization, reflected the attitudes of a remaining cadre of older men and the growing number of younger men moving up from the ranks to replace those who retired or died. The older men chose to work to maximum age and years service, 65 and 25 respectively, and eagerly accepted machines to do the heavy work they no longer were able to perform. Younger longshoremen were not familiar with the unpleasant working conditions or low wages of earlier days on the docks which had been overcome through years of Union efforts. Instead, they faced an increased cost of living, and had little concern at that point in their lives for retirement benefits. Because they were working in an environment basically free from burdensome or undesirable conditions, they primarily expected the Union to provide them with pay increases. This

trend was familiar--when work abounds, there is little concern for security amidst plenty.

Although longshoremen's opposition to machinery had gradually decreased over the years, their making it mandatory appeared to be a complete about face of historical precedent. This attitude was a continuation of the trend towards acceptance previously described and was influenced by several situations. First, there were few coastwise and intercoastal general cargo carriers, and those remaining suffered from low profit margins. The union realized that the wages they were demanding and obtaining would result either in fewer workers or the collapse of even more companies. It was evident that increased efficiency from relaxed work rules was delaying that danger. Second, the union was aware that the influence of the Federal government could threaten, as easily as in the past it had supported, union influence over the work force. The union run hiring hall and its maintenance of closed membership lists were on the edge of legality, and a 1955 Senate Committee hearing on the Los Angeles Harbor labor conditions spoke ominously of possible restrictive Federal legislation. Since subsidized steamship companies were susceptible to government demands for increased efficiency they were no more desirous than was the union for increased government presence. Finally, accepting mechanization and abandoning control of work rules on the docks gave the union the chance to gain greater uniformity within the various Pacific Coast ports, since local conflicts over work rule interpretations were a constant cause of non-union sanctioned work stoppages.

A New Concept of Mechanization: Containerization

Because the M & M directly preceded the container era, it is often described as a far sighted preparation for the effects of that technology. The M & M Agreement however was actually created in the maritime industry which still relied on pallets and fork-lifts. As the industry struggled with issues created by double handling, sling loads, and manning limits, containers were used in increasing numbers, introducing new problems which gradually became major issues. One of these, concerning the freight consolidation station, focused on the growing practise of teamsters handling maritime cargo which had traditionally been handled by longshoremen. Not only was a new technology overtaking older mechanization, but new practises were becoming traditions, replacing the old.

In signing the 1960 M & M Agreement, the ILWU, as we have seen, had several goals including improved working conditions, obtaining retirement benefits and a share of the financial gains which steamship and stevedore companies were expected to gain from the increased use of mechanization. Members of the PMA for their part, had wanted complete, or at least increased, control of the work on the docks to provide a reliable cargo handling operation as free as possible from the disastrous effects of continual labor stoppages. Both parties, however, had the common goal of reviving a maritime shipping industry suffering from many causes. costs. While modernized work rules and increased mechanization were achieved by the agreement, the entire negotiating process took place before containerization was seen as a threat by longshoremen or as a boon by steamship and stevedore companies. It is almost coincidental that the renewed agreement was in effect as the "container revolution" arrived in the late 1960s. Since it was in effect, however, its existence was probably a prime reason containerization was incorporated into the California maritime

industry without major confrontations between labor and employers.

Earlier, we have followed the events in which the Alaska Steamship Company had changed from the use of wooden cribs to metal containers, and Matson, after a highly sophisticated use of systems research and analysis, had introduced containers starting with the maiden voyage of its *Hawaiian Merchant* in 1958. Sea-Land, the leading East Coast proponent, was operating a viable intercoastal container service which successfully challenged truck and rail service.

Container use, however, had grown slowly. By 1968 it was still seen as only a "strong trend" in maritime trade, primarily in the domestic, short voyage, trade.³⁵³ It was not considered applicable to foreign trade due to a variety of problems, including lack of container facilities in foreign ports, the necessity of carrying empty containers on return runs (as observed in the early Matson Hawaiian trade), heavy capital investment containerization required, large areas of shoreside storage space, and the coordination between ship, truck and rail companies required for expeditious container handling. Eventually, of course, all these obstacles were overcome and containers became a mainstay of international trade.

As the new system developed, it created its own problems, one of them being jurisdiction over the packing (called "stuffing") and unpacking of less-than-full container loads for shipment. Containers provide their most efficient and economical service when they carry goods directly from the packer to the consignee without being opened or their contents handled while enroute. While this is true for full con-

³⁵³ Roger Gilman, "Cargo Handling," *Scientific American*, 219, No. 4, October 1968, pp. 80-88; The domestic trade included Alaska and Hawaii from the West Coast, Puerto Rico from the East Coast, and intercoastal routes.

tainer loads, partial loads must be consolidated at freight consolidation stations and later separated for distribution. This process occurred on canal section boats in the 1800s and even then brought conflict over loading and unloading at exchange points. Containerization brought a new generation of problems concerning jurisdiction over stuffing and unstuffing cargo.

By the late 1960s, the question of who would stuff and unstuff containers, longshoremen or teamsters, and whether it would be done on the docks or elsewhere, was becoming a major issue. The question of jurisdiction over stuffing had not come up during the 1960 Agreement negotiations because the union was concerned with pre-containerization issues and most ship operators were only in the early stages of container use and did not foresee the problem. Matson, however, already was using teamsters to stuff its containers when M & M was negotiated and adopted but did not broach the question of jurisdiction during the negotiations. Neither party brought up the subject during the 1966 negotiations. By that time, although the Union was aware of the conflict between teamsters and longshoremen, questions as to who would stuff and where, seemed impossible to answer. Also, at that time longshoremen were doing so well because of the increased work, that the issue of stuffing was not a major concern.

What evolved therefore was the use by steamship companies of container freight stations (CFS), facilities away from the docks where goods were consolidated, stuffed into containers and delivered to the docks by teamsters. The off dock CFS developed primarily because conventional facilities such as Alameda's Encinal Terminals and San Francisco's Mission Rock Terminal were carrying out container operations without the large waterfront areas necessary for storing cargo during the

consolidation and distribution processes. San Francisco, with a limited amount of waterfront real estate, was developing its facilities to be able to handle both break-bulk and container cargo, and this delayed the need for container freight consolidation. Oakland had developed the Oakland Mole into a major container handling facility by the late 1960s.

In 1968, however, longshoremen and teamsters argued over who had jurisdiction over stuffing, with the result that the Mole remained out of use for nearly a year.³⁵⁴ The union argued that stuffing operations conducted away from the dock by teamsters not only took work away from longshoremen, since no union clerks or walking bosses were employed, but also removed the process from the control of the longshoremen's union.³⁵⁵ There were, however, different opinions on CFSs within union ranks, and some locals, including those at Seattle and Los Angeles were using stuffing arrangements not approved by the Union.

There was division also within the PMA ranks. Since most steamship companies owned their own containers, they were interested in keeping the process of stuffing on the docks and under their control, to prevent it from going to other companies. Yet Matson, as it always had, was still using teamsters to stuff its containers away from the docks, and Sea-Land, not a PMA member, was also using teamsters at Oakland.

After difficult negotiations, interrupted by several work stoppages, the union and PMA signed a CFS Agreement effective January 1970, which directed that all

³⁵⁴ Ross, 1970, p. 416.

³⁵⁵ For the early relationship between teamsters and longshoremen, see Harvey Schwartz, *The March Inland*, (Los Angeles: Institute of Industrial Relations, University of California, 1978), Chap. IV.

stuffing and unstuffing operations would be conducted in container freight stations, at the docks or away, by longshoremen. The problem with this agreement was that one of the parties to the controversy, the International Brotherhood of Teamsters (IBT), was not a party to the agreement. Subsequently they demonstrated their objection, through numerous strikes, against longshoremen assuming the work which teamsters had been doing now for years. Dissension within the ranks of both ILWU and PMA resulted in union locals operating outside the CFS Agreement, and ship owners postponing the cancellation of contracts with teamsters which existed prior to the CFS Agreement.

For years, several companies including the California Cartage Company, the IBT, the ILWU and the National Labor Relations Board battled over the CFS Agreement. The NLRB ruled that the Agreement was illegal because it required employers of teamsters to agree not to handle the products of another employer, the shipper. The ILWU argued that the purpose of the CFS Agreement was to preserve and recapture work traditionally done by longshoremen. It was, in effect, arguing to return to the pre-M & M philosophy of reestablishing its control over work rules. The NLRB stated that the union had bargained away make-work rules in the 1960 M & M and had agreed to technological progress. The employers, likewise, had accepted economic responsibility for job loss by longshoremen. If, the NLRB reasoned, container stuffing practices had reduced longshoremen's work opportunities, a way should be found to solve the problem without reverting to pre-1960 make-work rules which affect the rights of other employers and employees. The union countered that it should not be penalized for a situation which had arisen out of a new process which the union, under "enlightened leadership," had created in cooperation with employers

to "help revive a dangerously ill industry."³⁵⁶ It is ironic that the M & M Agreement, which had been considered of historic significance by the NLRB, should have been used against the union in its attempt to secure the right to stuff and unstuff containers, whose use had been promoted by the same agreement.³⁵⁷ By the 1970s, the question of who should stuff and unstuff containers and where it should be done, was still an unsolved and frustrating issue.

Changing Conditions Within the Industry after 1966

After 1966 the Pacific Coast maritime industry experienced conditions which were good news for ship operators and stevedore companies and bad news for longshoremen. Since 1960, members of PMA had enjoyed tremendous gains in productivity and profits, accompanied by great reductions in costs per ton. The productivity index had risen 139 per cent while national productivity, less farm work, had risen only 29 percent. While longshoremen's labor costs per ton had dropped 30 percent, national unit labor costs had risen 28 percent.³⁵⁸ The increase in productivity and lower labor costs reflected the combination of more efficient dock work, because of removal of union work rules, and the increased use of containers. The most impressive indication of PMA members' satisfaction with the M & M was that they probably had saved over \$ 900 million in the eleven years following 1960. That only \$ 62 million of that amount had been shared with longshoremen was now a strong motivation for the latter to obtain a larger share of the machine.³⁵⁹

³⁵⁶ ILWU Opening Brief in Cases Nos. 73-1266 and 1296, 4 Sept 1974, quoted in Fairley, pp. 292-295.

³⁵⁷ Fairley, p. 294.

³⁵⁸ Fairley, 306, 308, 405.

While these figures demonstrated tremendous improvement, it was paradoxical that company profits peaked in 1966. The subsequent profit decline resulted in part from the large capital investment required for the shift to containerization, the rapidly growing competition amongst American shipping companies themselves, and the growing number of foreign operators, especially Japanese, who had quickly adopted container operations. Because profits were still high, however, PMA members were pleased with the M & M formula but wanted even more control over work on the docks which they had been gaining since 1960.

Once again the objectives of the Union had changed as the conditions within the industry had changed. The increase in productivity accompanied by a lowering of work hours was a result of the growing use of containers and subsequent drop in break bulk handled. Containerized cargo had increased from 494,000 tons in 1960 to 8,743,415 tons in 1970, while other break bulk tonnage (exclusive of containers, automobiles, lumber and logs) had dropped from 16,076,078 tons (81 per cent of the total weighed tonnage) in 1960 to 3,490,055 tons (15 per cent of the total) by 1977.³⁶⁰

These conditions and the slightly younger composition of the Union membership, resulted in a different set of Union objectives as negotiations began in November 1970. We have seen that the 1960 M & M had already been attacked by the younger men as an "old man's contract." Then in 1966, with plenty of work available, union members had given up the security of the wage guarantee which they had obtained in 1960. Now, however, with work opportunities greatly reduced, the younger longshoremen had been struggling through increasingly difficult economic

³⁵⁹ *Monthly Review* (San Francisco: Federal Reserve Bank of San Francisco October 1972), p. 19.

³⁶⁰ Fairley, p. 321.

times during the past several years and were beginning to look more towards security. They also reflected a general dissatisfaction among younger members which was being experienced by other unions and society at large.³⁶¹ Therefore the Union now wanted to re-establish the wage guarantee and convert the cash in the M & M fund to additional benefits. The PMA agreed to the work guarantee, but argued as criteria for eligibility that workers be available for work in the hiring hall five days a week. This was not received well by many longshoremen, who wanted to preserve a side of longshoring not generally discussed: the traditional option longshoremen had to work only when they chose.

Much has been written about the arduous, often onerous, work of longshoring, with ample examples of long hours, low pay, heavy loads, and lack of sanitary facilities.³⁶² Other facets of longshoring are also described, including the comraderie among men which exists at the work place which flows over into recreational and social environs, and the less discussed practices of pilferage and theft, problems to which sealed containers offered a solution.³⁶³ A side of longshoring not often discussed, however, and one which came up during the 1970 negotiations, was the autonomy which longshoremen enjoyed in their work. Workers could usually select the type of work they wanted, and could often select starting and quitting times, loca-

³⁶¹ Albert A Belman, article on the 1971 ILWU convention, "Union Conventions," *Monthly Labor Review*, 94, No. 8, August 1971, p. 60.

³⁶² For examples of the U. S. experience see Dana and Theriault cited above, plus Andrew Bonthius, "Origins of the International Longshoremen's and Warehousemen's Union," *Southern California Quarterly*, 59(Winter, 1977), 379-426; For an example of the Australian experience see Tull cited above, and for a view of the British experience, see R. B. Oram, *The Docker's Tragedy*, (London: Hutchinson, 1970).

³⁶³ For the sociological effects of mechanization on longshoring see Theriault, cited above; Herb Mills, *The San Francisco Waterfront, Labor/Management Relations: On the Ships and Docks, Part One: "The Good Old Days"* (Berkeley: Institute for the Study of Social Change, 1978); Herb Mills, "The San Francisco Waterfront: The Social Consequences of Industrial Modernization, Part Two: The Modern Longshore Operations," *Urban Life*, 6, No. 1, April 1977, pp. 3-31.

tions, and day or night shifts. Perhaps their most treasured privilege was their ability to choose when they would work and when they preferred not to, without losing their place on the hiring hall availability list. Of course the need to earn a living always existed, but within that requirement longshoremen enjoyed a great deal of autonomy. As one union official paraphrased a workers thoughts, "Its the freedom I really like-- the freedom we've got to do what we want."³⁶⁴ It was the desire to retain this autonomy, this freedom of choice not held by any other type of worker, which made some longshoremen object to the requirement of being available in the hiring hall five days a week. To some this was indeed the end of an era. Nonetheless, while important to many, this question did not become a major issue in the contract renewal discussions.

During the 1971 negotiations, the question of jurisdiction over container freight stations was left unresolved and confused for the union had approved resolutions which dealt both with the stuffing of PMA owned containers by longshoremen and with those containers stuffed away from the dock, presumably by teamsters. It was in this CFS problem that the ILWU, for the first time since its founding in 1934, followed the lead of the ILA, and required that all containers originating or going to consignees within a fifty mile radius of the port be stuffed and unstuffed by longshoremen.

PMA members, having enjoyed the benefits of the M & M for ten years, wanted even greater control of work rules on the docks because of the pressures of falling profits. Reacting to these pressures, PMA readily agreed in principle to the union's demands for a wage guarantee, an increase in pensions, and no lay off of "A" men for

³⁶⁴ Herb Mills, "The San Francisco Waterfront; A Morality Play Moves On," *Labor, Technology, and Culture* (Berkeley: Institute for the Study of Social Change, undated); See also Henry Swados, "West-Coast Waterfront-The End of an Era," *Dissent*, 9, No. 2, Spring 1962, pp. 448-460

the life of the contract. In return, however, they proposed a long list of requirements concerning availability and steady men, specifically the right to determine how many men to place on a job, a control they had been seeking for years.

Because the objectives of both parties conflicted and had been not resolved by the contract termination date of 1 July 1971, the ILWU at that time called its first major strike since 1948. The strike, which lasted for a total of 134 days, was the longest strike in the union's history. The nations entire maritime industry was crippled when the 45,000 members of the ILA struck the East and Gulf Coast Ports, creating the first simultaneous shutdown of all the major ports in the nation's history.

End of the 1971 Strike

In October 1971 a personal arbitration attempted by President Richard Nixon between Harry Bridges and Paul St. Sure, PMA president since 1952, failed, after which the President obtained an eighty day cooling-off period under the Taft-Hartley Act. While members of the ILWU resumed work, several key issues, particularly jurisdiction over stuffing containers and the steady hiring of skilled workers by steamship operators remained unresolved. In January 1972, longshoremen went off the job again.

When the Union and PMA reached agreement in February, the contract terms included pay increases, fringe and retirement benefits, and a guaranteed thirty-six hour work week for fully registered longshoremen. Although the pay increases were reduced by the President's Pay Board, they were allowed to remain higher than the Administration's wage guidelines because of the good faith which had been shown in

the past by both the ILWU and the PMA, and because "arrangements between the parties specifically [had been] designed to foster economic growth."³⁶⁵ The Board referred to the 138 per cent increase in labor productivity which had been achieved during the M & M decade.³⁶⁶

The industry was shut down in 1971 by the longest, and most comprehensive waterfront strike in the nation's history, which resulted in the imposition of a Taft-Hartley injunction, and ended with the 1972 contract covering only a seventeen month period. By 1972, the era of Mechanization and Modernization cooperation and agreement between employers and longshoremen had ended.

³⁶⁵ Federal Reserve Bank of San Francisco, *Monthly Review*, October 1972, pp. 17-18.

³⁶⁶ *Monthly Review*, p. 19.

Epilogue

Of the many challenges containerization brought to the California maritime industry, one of the most dramatic was to the men on the shore, whose livelihood depended on the manual loading and unloading of cargo. Harry Bridges led the men of the ILWU away from their traditional opposition to mechanization, to its acceptance, and a share of the financial benefits it produced. For the first time in their history, longshoremen worked with, not against, a new concept of mechanization.

The Port of San Francisco, taking another course, developed a policy toward containerization in most difficult times and in the face of several calamities. Just as containerization was becoming a major element in the maritime transportation industry, the port was transferred from its one hundred year old state controlled operation, to the volatile arena of municipal government. This transfer and subsequent adjustment took place during the traumatic 1960s and 1970s when the new port administrators faced environmental and social concerns which complicated their attempts to build income producing projects on the shores of one of this country's most historic and aesthetically pleasing waterfronts.

At the same time, port administrators made the decision to add the specialization required by new technology, to the generalization required of the old. Finally, when the port faced containerization head-on with plans for a container facility for the future, the LASH concept failed, and plans for an all-container facility slowly slipped into the bottom mud of the Bay.

The maritime policy which the Port of San Francisco created to meet the challenge of containerization was hesitantly created, based on recommendations of independent research institutions, and hobbled by misfortunes. This study has sought to present a broad view of the arena in which this policy was created, and to give examples of some of the factors affecting the policy formulating process. The examples are representative and not complete, nor is the process. At this writing, the port is embarking on plans for yet another facility to meet the challenge of the container age, which is now more than twenty five years old. Time will tell how this latest project will fit into the overall story of containerization and the Port of San Francisco.

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