

The San Francisco Waterfront: excerpts from Men and Machines:

**A photo story report on the technological changes
- both container-related and otherwise -
published by the union and the employers of the west coast dockers
in the summer of 1963
- the midpoint of their first Modernization and Mechanization ("M & M")
Agreement.**

by

Herb Mills

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PREFACE

In turning to a reading and viewing of these excerpts it is important to know that the second five year "Modernization and Mechanization" ("M & M") Agreement of the West Coast longshore industry (1966 -- 1971) was followed by a coastwide strike of the dockers which -- after its resumption with the ending of an eighty-day, Taft-Hartley "cooling-off" injunction secured by President Nixon -- also became the longest strike in the history of the US maritime industry. It thus should be noted, too, that the author has posted the five basic strike documents published by ILWU - Local 10 as "Article 15 " on this website.

Men and Machines -- Front cover.

MEN and **MACHINES**

**A STORY
ABOUT
LONGSHORING
on the
WEST COAST
WATERFRONT**

PHOTO STORY

Otto Hagel

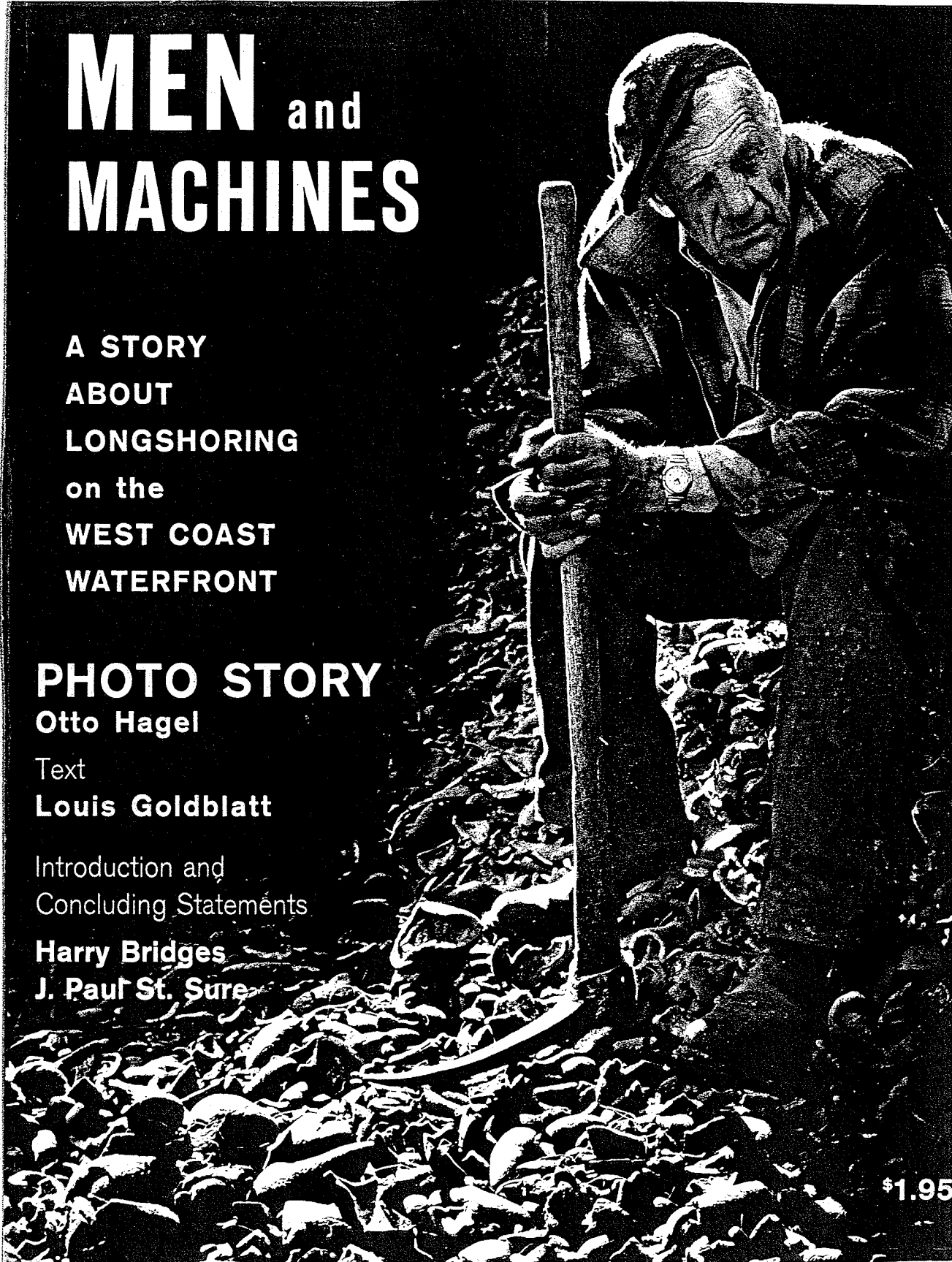
Text

Louis Goldblatt

Introduction and
Concluding Statements

Harry Bridges

J. Paul St. Sure



\$1.95

Men and Machines -- Inside from cover.



Coffee in burlap bags being landed on a 4-wheeler - HM.

Men and Machines -- Title page and credits,



MEN AND ^{MILES} MACHINES

A photo story of the
Mechanization and Modernization
Agreement between the
International Longshoremen's &
Warehousemen's Union and the
Pacific Maritime Association
now in operation in the ports of
California, Oregon and
Washington.

Photo Story and Book Design—
OTTO HAGEL
Editor and Text—
LOUIS GOLDBLATT

Editorial Board and Publishers

**International Longshoremen's
& Warehousemen's Union**

Pacific Maritime Association

TRUSTEES

Mechanization and Modernization Fund

HARRY R. BRIDGES	CAPT. CLIFFORD PRYOR
HOWARD J. BODINE	EDWARD W. LETSON
WILLIAM WARD	K. F. SAYSETTE

Photographs copyright 1963 by
Otto Hagel

*All photographs in this publication are of
present-day longshore operations*

MEN AND MACHINES
150 Golden Gate Avenue
San Francisco, California

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INTRODUCTION

There is currently in effect, by contract between the International Longshoremen's & Warehousemen's Union and the Pacific Maritime Association, an agreement on Mechanization and Modernization covering longshoremen, shipclerks and walking bosses in the ports of California, Oregon and Washington. It is a pioneering agreement—the first of its kind in American industry, even more striking when seen against the earlier background of turbulence and violent conflict on the West Coast waterfront.

The shipowners and stevedoring contractors are freed of restrictions on the introduction of labor-saving devices, relieved of the use of unnecessary men and assured of the elimination of work practices which impede the free flow of cargo or ship turnaround. These guarantees to industry are in exchange for a series of benefits for the workers to protect them against the impact of the machine on their daily work or on their job security.

West Coast longshoremen fully registered are guaranteed 35 hours' work opportunity per week or the equivalent in pay. (As of July 1, 1963 the hourly base rate was \$3.19, which will permit a weekly guarantee of \$111.65.)

There can be no layoffs of fully registered longshoremen. If the introduction of machines or new methods of cargohandling cuts into work opportunity, the guarantee of work or earnings goes into effect or the size of the work force is reduced by early retirement.

A longshoreman with 25 qualifying years' service

and age 62 is entitled to a monthly pension of \$220, payable until age 65, when he shifts over to the regular pension plan which provides for \$115 per month from the joint pension fund, plus social security.

Medical care for the worker and his dependents continues in effect during early as well as regular retirement.

In the event it is necessary to reduce the size of the work force by compulsory early retirement, the pension is increased by \$100, making the early retirement benefit \$320 per month. The basic concept behind this aspect of the agreement is to shrink the work force from the top, either by compulsory or voluntary retirement. So far the compulsory retirement provision has not been used. Normal attrition (death, disability, and occasional quits), regular retirements and early retirements through the Mechanization and Modernization Agreement have taken up the slack. In fact, most ports on the West Coast are now adding new workers.

If a longshoreman decides against early retirement, and the compulsory early retirement section is not invoked by the parties, he accumulates a vested right in his early retirement benefit. At age 65, he is entitled to the cash equivalent of his early retirement benefit, \$7,920. A worker under age 65 with 20 years' service has a vested right, payable in the event of death, of \$5,000.

A disabled worker under age 65 with 25 years' service is entitled to the full benefit of \$7,920

plus a regular pension of \$115 per month. Disabled workers with less than 25 years receive graduated pro rata benefits.


These benefits are paid from the ILWU-PMA Mechanization and Modernization Fund, built by contributions of \$5 million per year from the shipping industry over a span of 5½ years. Together with the initial token payment to the Mechanization Fund when negotiations were first undertaken on the issue, the fund will bring in \$29 million by the end of the contract period, June 1966.

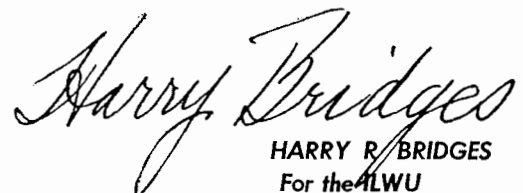
This agreement, covering the Pacific Coast ports from San Diego, California to Bellingham, Washington, was reached by direct collective bargaining between the ILWU and PMA without third party participation. The shipowners and longshoremen have had coastwide collective bargaining since the middle 1930s, and the M & M contract is part of the basic coast agreement, applied and interpreted through the regular labor relations machinery. It is integrated with other aspects of the contract such as joint registration of longshoremen, control of the size of the work force, rotary dispatch of longshore gangs and men through jointly operated hiring halls, central records-keeping of earnings and hours, and a range of contractual provisions from wages, hours and conditions of work to benefits such as vacations, pensions, medical care, life insurance and dental care for children. In addition, the longshoremen retain their contract protection regarding health and safety on the job, joined by new provisions prohibiting individual speed-up or onerous work demands.

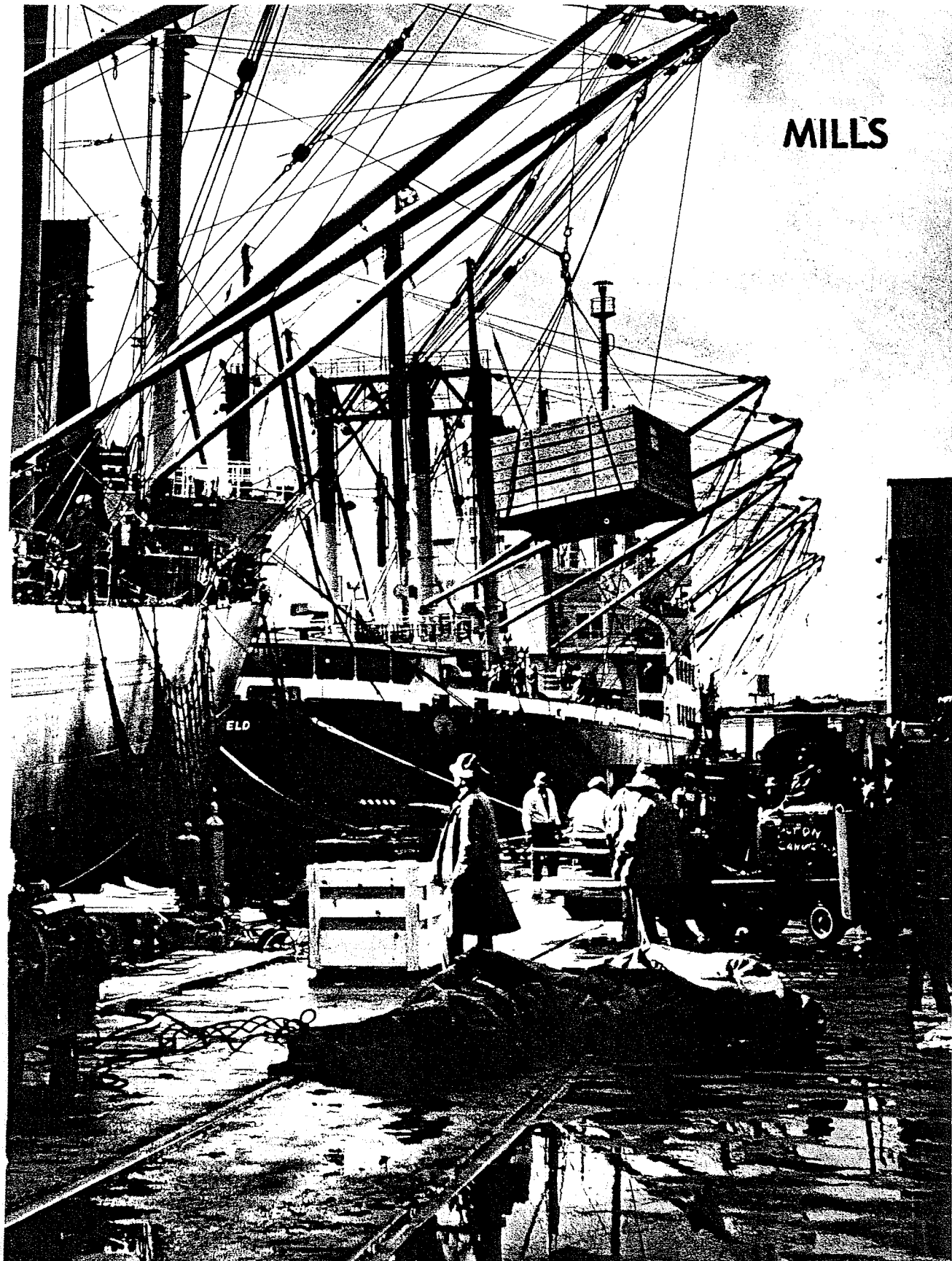
The Agreement went into effect January, 1961. Far from perfect, it requires continuous attention to residual problems. The agreement itself was controversial, and in some quarters it still is. No claim is made that it is automatically applicable to other industries, but we believe it warrants attention and analysis by those who are concerned with the question of men and machines.

We have had a chance to watch the Agreement work, and believe our experience under the plan has definitely proven its worth. This publication, *Men and Machines*, presents old and new methods of cargo handling, problems to be resolved in negotiating an agreement on mechanization and modernization, and the application of collective bargaining to these problems.

Although *Men and Machines* is a joint publication by the employers and the union, the approach to the many issues involved is by no means identical or similar. The respective opinions and conflicting points of view are presented as a part of the entire picture in the development of the program on mechanization and modernization now in effect on the Pacific Coast.


J. PAUL ST. SURE
For the PMA


HARRY R. BRIDGES
For the ILWU



Hoisting a strapped, unitized cargo – HM.



The standard sling board is used to handle drums, boxes sacks of mail and many other types of loose cargo.

The board here in question was owned by the stevedore company and was therefore called a "stevedore" board - HM.

* For an offshore weather deck scene as a conventional vessel was worked, see p. 129 below.

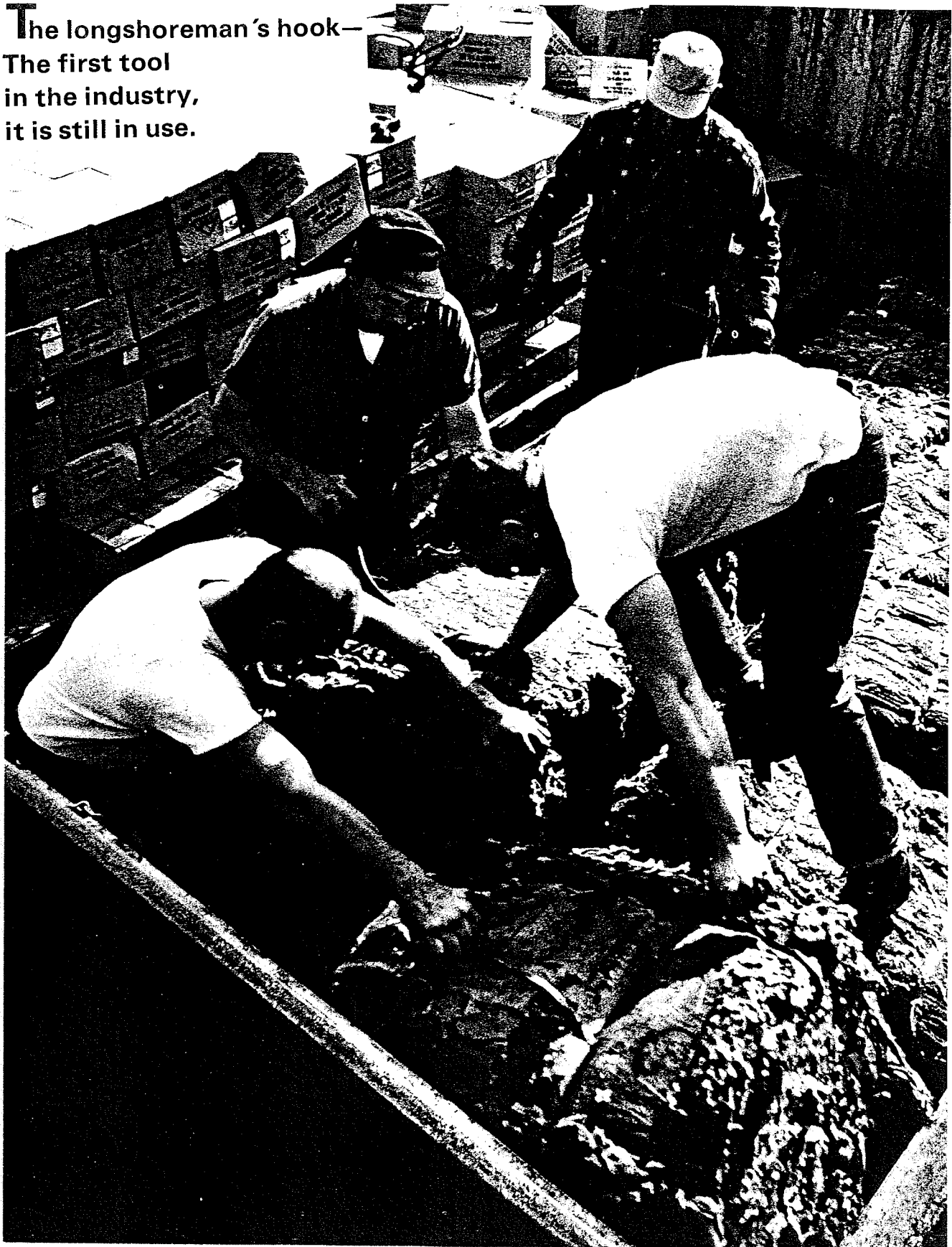


A stevedore board again in use - HM.

*This ship came from Formosa.
Longshoremen have opened
the hatch and are digging out
a cargo of cartons and bales.*

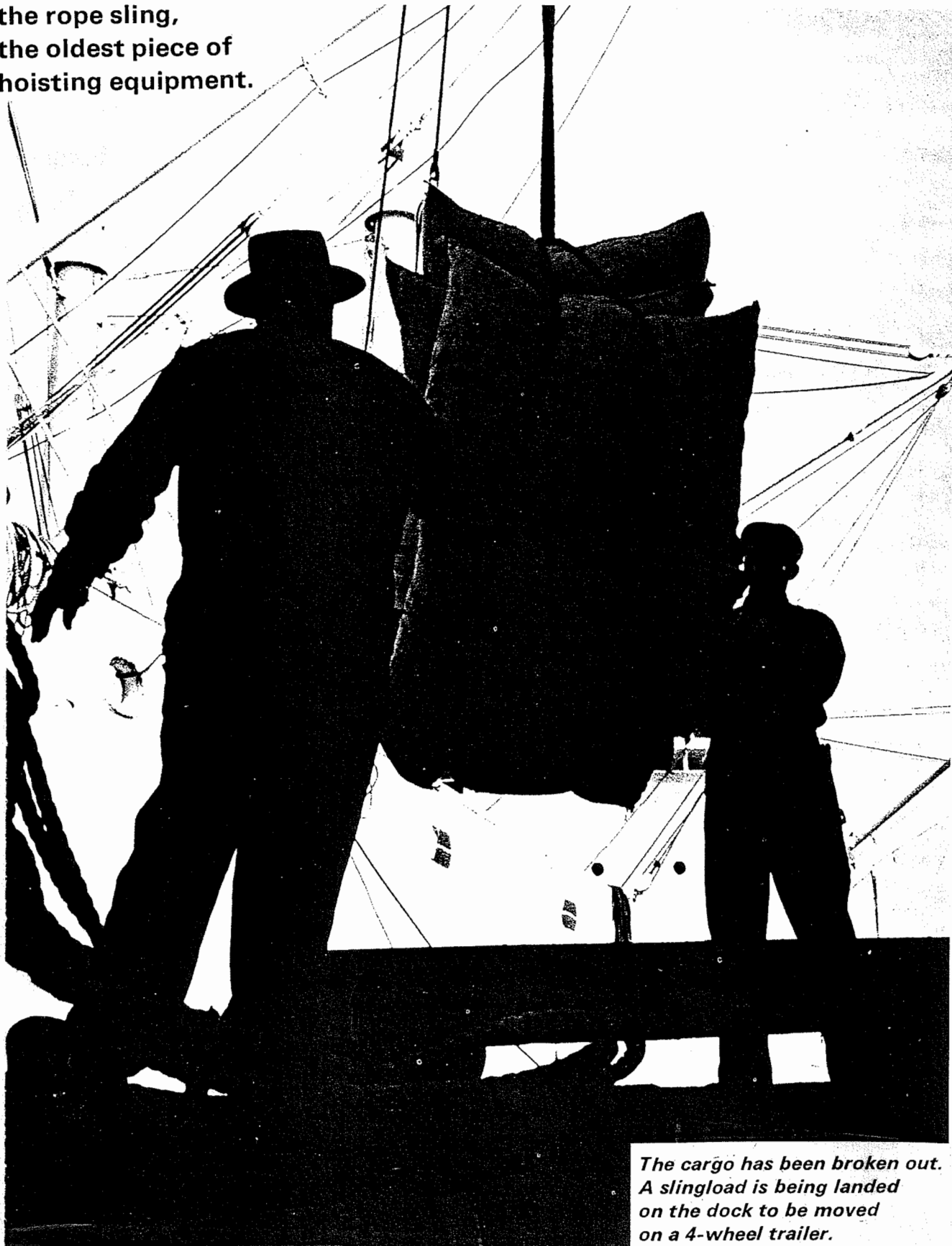
Men and Machines - pp. 12 - 13.

The longshoreman's hook—
The first tool
in the industry,
it is still in use.



500-pound bales of jute.

Then came
the rope sling,
the oldest piece of
hoisting equipment.



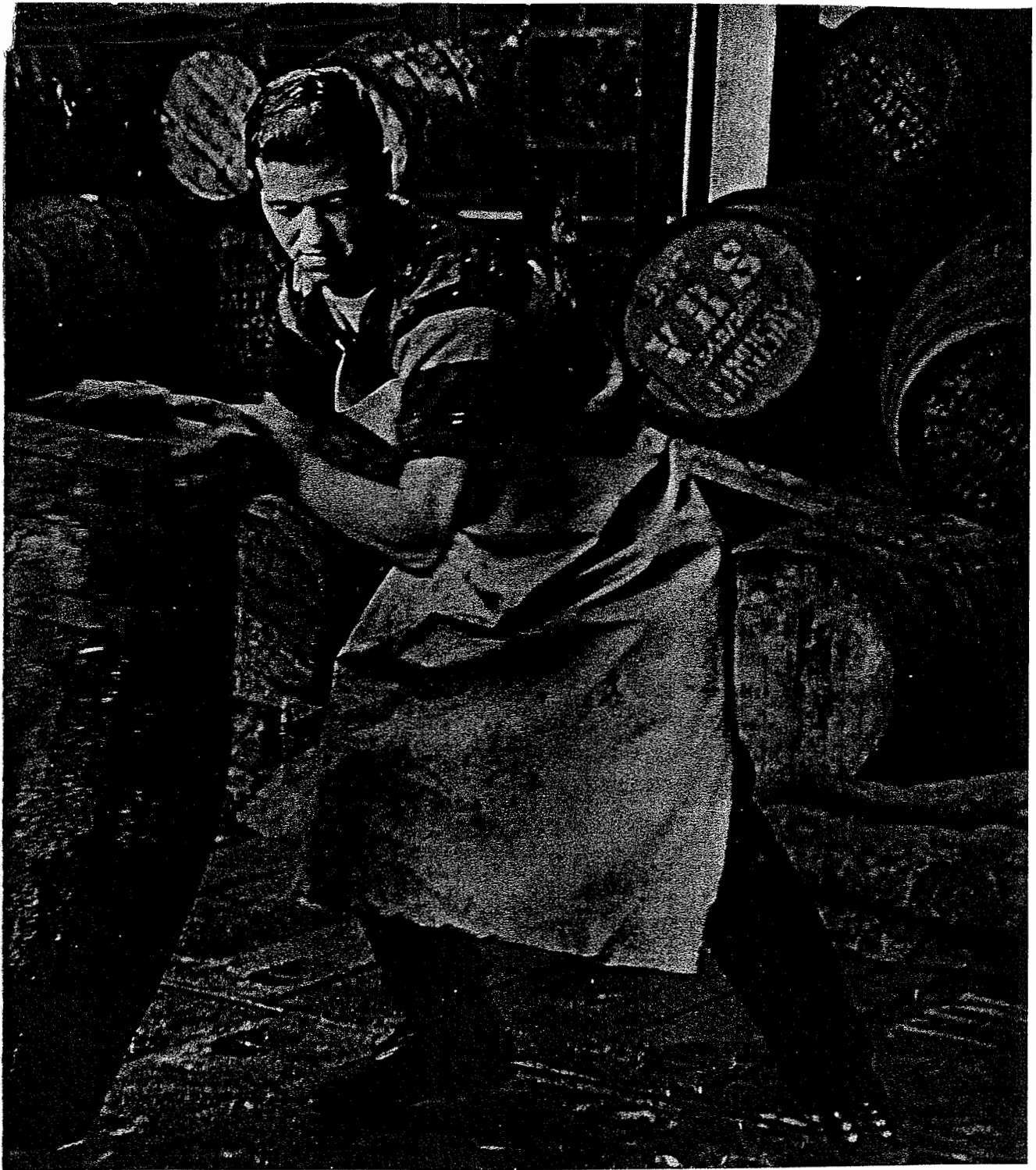
*The cargo has been broken out.
A slingload is being landed
on the dock to be moved
on a 4-wheel trailer.*



*The load is being steadied
on a 4-wheeler.
The rope sling will be separated
from the ship's hook and the coffee
moved onto the dock.*



*Inside the dock,
man-handled
all the way,
the coffee
is weighed,
sampled and made
ready for delivery
to the consignee.*



Barrels of olives from Greece - HM.

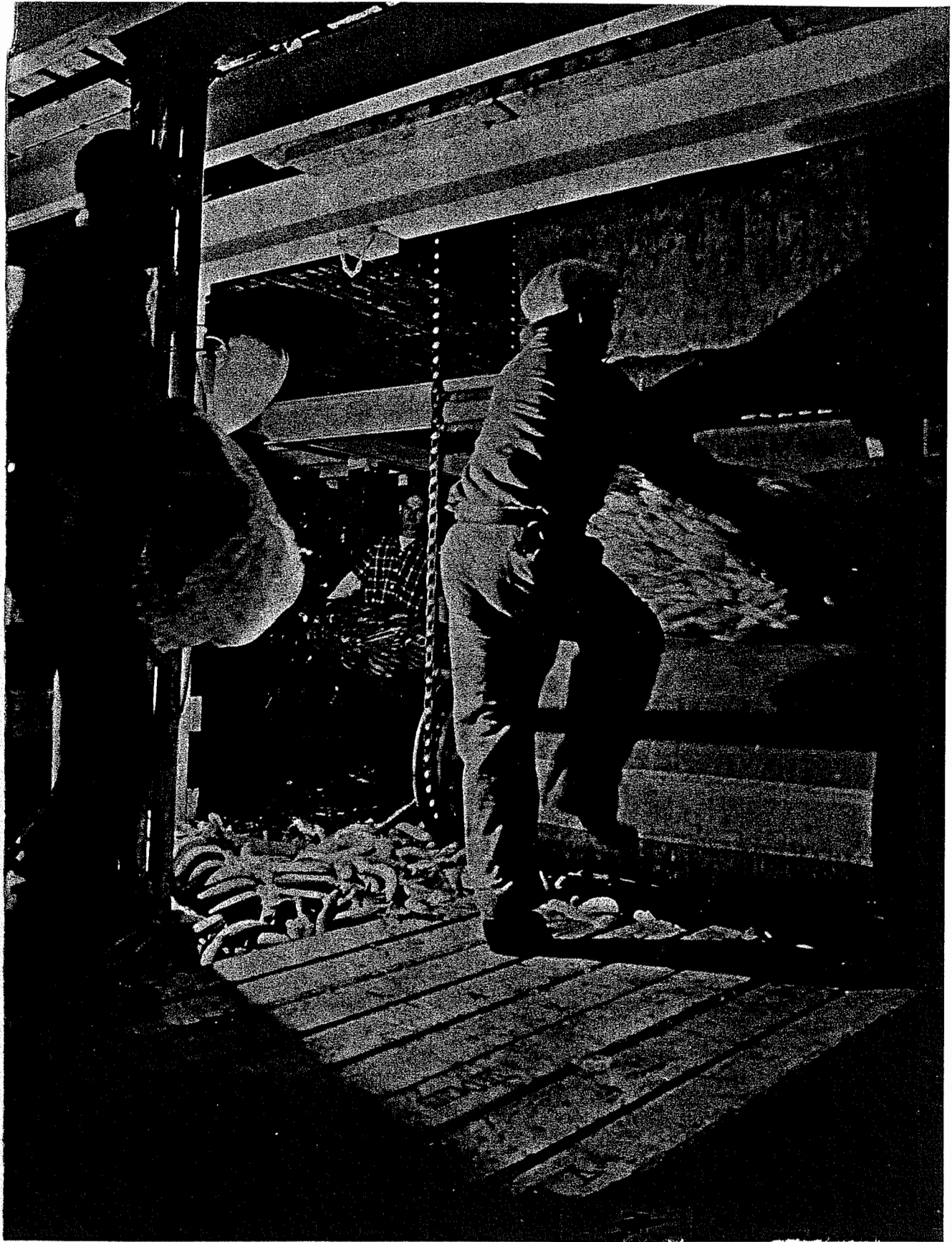
Bananas from Costa Rica, Panama, Honduras and Ecuador come out of the hold of the ship onto a continuous escalator belt.

Each stem weighs from 50 to 95 pounds.

The escalator is one of the earlier attempts to mechanize longshore operations.

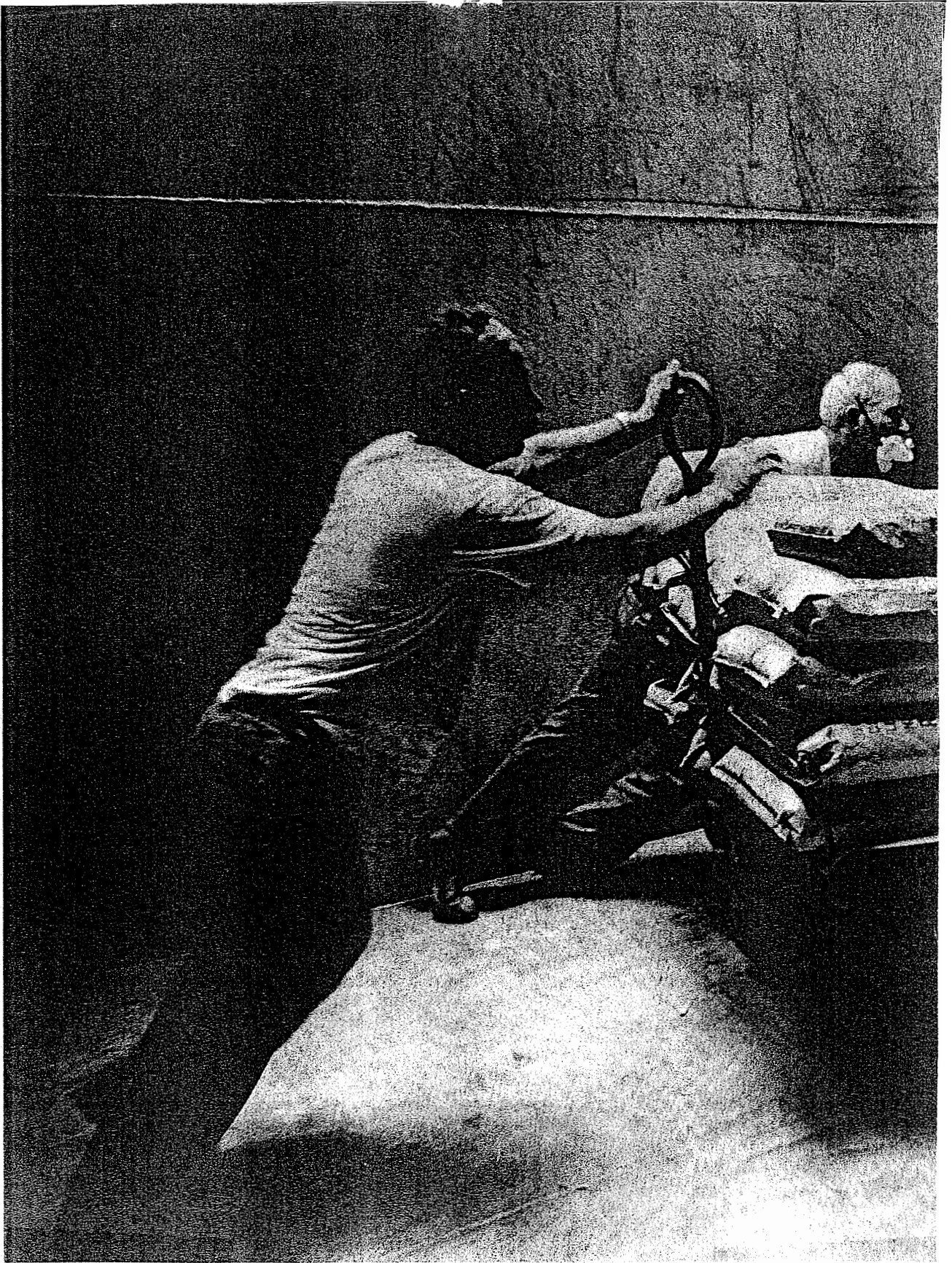
Some bananas come wrapped in plastic bags, others are shipped in cartons.

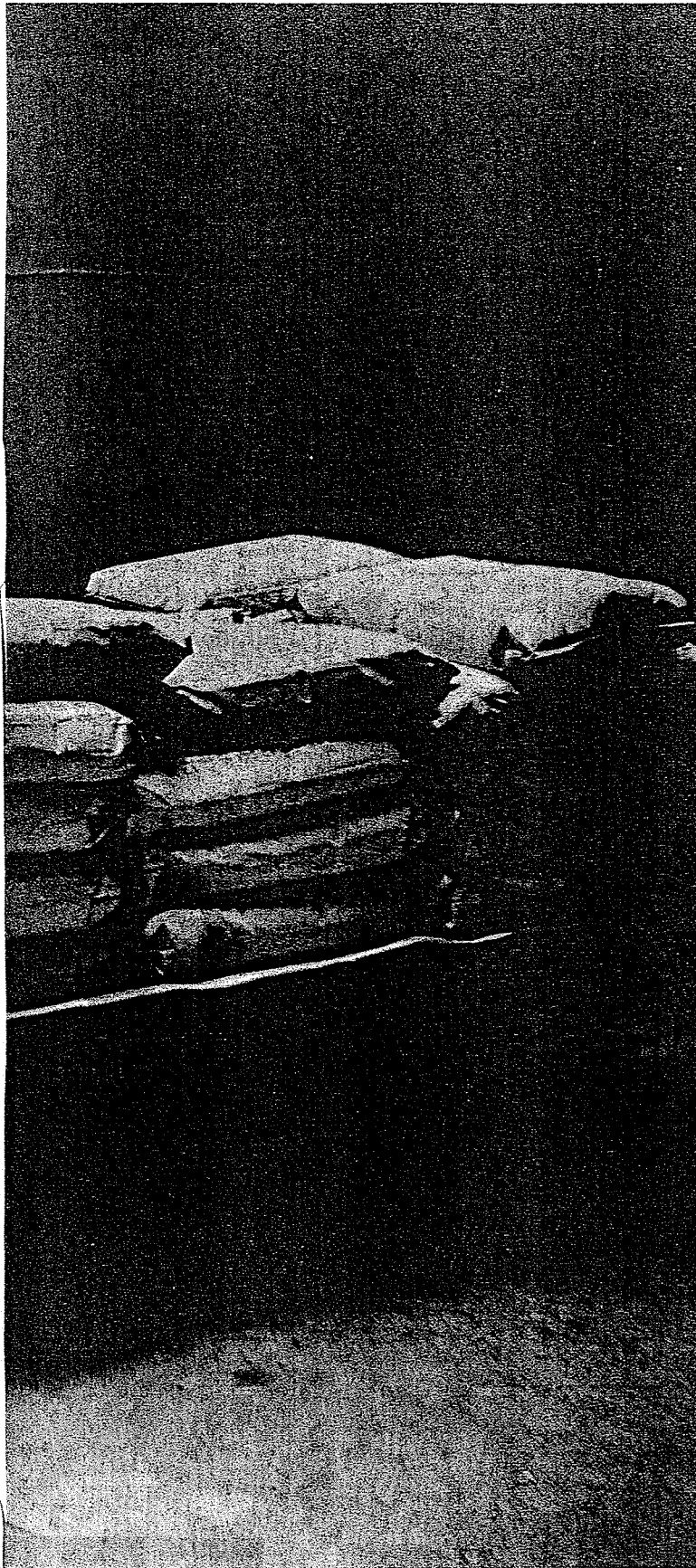






Frozen tuna loaded to scows for discharge - HM.

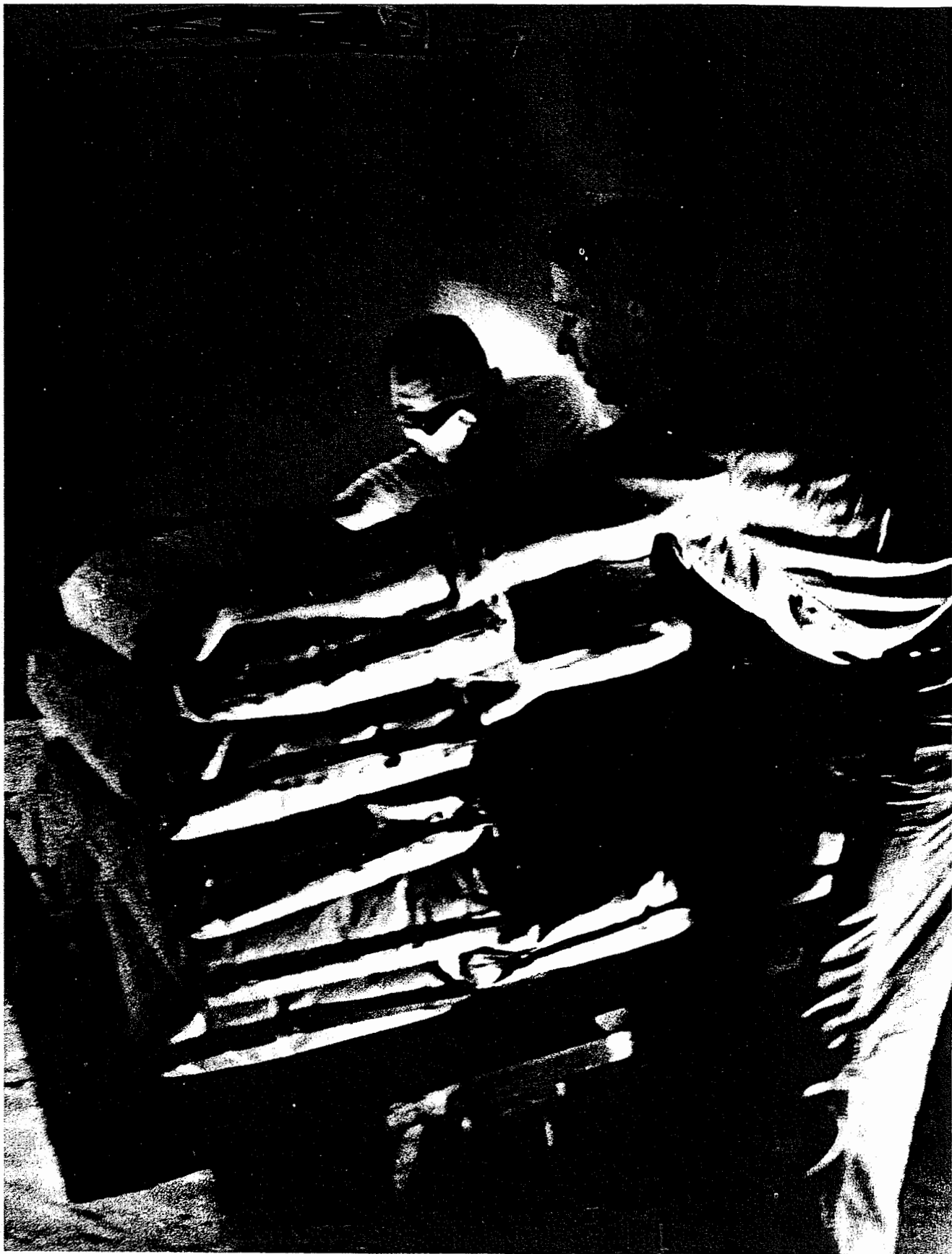




For many American exports, the paper sack has replaced burlap and jute.

Flour and macaroni, insecticides, fertilizers and disinfectants, sugar, salt, paint pigment, potash, borax, cement and a long list of products travel this same road to stowage.

For more than fifty years, the 4-wheeler has been standard longshore equipment to transport cargo from the square of the hatch into the wings and fore and aft. Dusty cargo—masks are optional.



Stowing a paper-sacked cargo from a 4 - wheeler - HM.



*The cargo is skillfully
hand-stowed
piece by piece to get
maximum use of
the cargo space
in the vessel.*



*Barrels, boxes, cartons—
most waterborne cargo
the world over
still is hand stowed
piece by piece.*

The story of the machine is never new and never old—it is a fact of life. How man copes with the impact of the machine is always new; his never-ending struggle to master the machine, to garner the benefits and make good the wonders it can provide, while protecting himself against its dangers.

Many things can be done by machine which are now done by man; some things can be done better by machine than by man; and some things can be done only by machine. But the machine cannot reason, cannot feel, and cannot guide its own destiny.

The fear that the machine will turn against its creator is found throughout literature and legend: the Golem of Rabbi Mendelsohn; the Frankenstein monster of Mary Woolstonecraft Shelley; Capek's RUR (Rossum's Universal Robots). These stories have the same apprehensive theme: Man is fascinated by the potential of the machine, man invents the machine, the machine turns on man and destroys him.

Most people have recovered from these nightmares. They welcome the advantages which machines can bring to them, but all of the old fears return to the average worker when the machine threatens *his* job, *his* security, and *his* paycheck. If he is likely to be hurt he sees no difference between the machine and the guillotine.

Nothing is more degrading to a man than unemployment. It robs a man of dignity, destroys his place at the head of the family, and deprives him of the essential feeling of usefulness as a human being.

To tell a worker who is about to lose his job to a machine, that this is the price of progress, and that great good will nevertheless come to the American economy as a whole, is of no avail.

The employer believes that new machines and new methods are essential for survival. He would, of course, prefer that this not result in personal hardship to his employees, but he cannot see his way clear to accepting individual responsibility for the security of every worker affected by change. In addition, many employers feel strongly that the domain of operating methods is strictly their own business, not subject to collective bargaining.

These are the outer limits of the problems of men and machines. When the issue is drawn without resolving or reconciling this basic conflict, the result is often a wide open battle. Unfortunately, in most industry there has never been anything resembling a planned solution to the impact of new production methods. Employers and unions move from one make-shift standoff to another, leaving a residue of dissatisfaction and hostility on both sides; the worker with his fear of unemployment and insecurity from any changes in work practices; the employer frustrated and indignant at obstacles to doing business with imagination, efficiency, and increased profit.

Much has been said about "featherbedding" and its evils. Yet featherbedding, seen through the eyes of the worker is something else again. For these are the efforts of a man who needs a job so desperately that he clings to one which no longer exists.

Resistance to Change

If industry, government, unions, and everyone else involved established a mechanism through which a worker displaced by a machine would be assured another job of equal worth and security, resistance to production changes would evaporate, for it is not the old methods that workers want to preserve but the old security. In the absence of such guarantees, the conflict will be with us.

All segments of our society have turned over to

Government the responsibility for full employment, and it would be idle to suggest that any one industry or any one union can furnish the answer to this challenge. No such claim is made by the parties to the West Coast Mechanization and Modernization Agreement. Technological unemployment is a continuing, long run social problem which can only be solved by a nationwide approach; whereas a collective bargaining agreement is necessarily not only limited as to the workers who are covered but also to remedies for the duration of the contract period. However, because no national plan or pattern yet exists to deal with the needs, the fears and the consequences of rapid industrial change, the best which can be hoped for is a piecemeal effort to tackle the issue.

How a single union and a single industry wrestled with this problem is the subject of *Men and Machines*. We are telling the story not because we believe the answers found in this industry are necessarily applicable elsewhere, but because they might offer some suggestions toward resolution of one of the most pressing issues of modern day America—automation and mechanization; its effect on employment, job security and collective bargaining.

Mechanization on the Waterfront

The revolution in materials handling hit the longshore industry full force in the years after World War II. However, even before the war there had been some changes such as the loading of grain by pouring it into the holds of the ships rather than handling it sack by sack.

A major development in longshoring in those years was the advent of the lift jitney or fork lift. It made possible the speedier movement of a slingload of cargo to and from the ship's hook and was also used to get better utilization of dock space by high-piling cargo on the dock. In the main, longshore work

The Tight Stow is Essential

on board ship continued substantially as in past years, due in large part to the limits imposed by vessel construction, types of cargo, and ports of call.

There is only a certain amount of space in the holds of the ship where cargo can be landed and loaded in large units. As a result, many nooks and crannies remain to be filled, for a tight stow is essential for the safety of the vessel at sea as well as the most economical use of space. Besides, ships travel to all corners of the world and in many ports there is nothing available but muscle, the ship's gear, and the most primitive machinery to move cargo.

The year 1942 saw the first movement of sugar in bulk from the Hawaiian Islands to the West Coast of the U.S.A. By the 1950s all sugar from Hawaii was moving in bulk. When raw sugar was shipped in bags, stowed by hand in the Hawaii ports and discharged sack by sack on arrival at the California-Hawaiian Sugar Refinery at Crockett, California, seven shifts of ten hours each, worked by five gangs of longshoremen, were required to unload a 10,000 ton vessel—a total of 6,650 manhours. Currently 10,000 tons of sugar can be discharged with 1,000 manhours of work—all of it in bulk. The improvement ratio is 6½ to 1, or well over 500 percent.

The impact of the machine on the shipment of sugar was felt not only by the longshoremen of the West Coast but by the longshoremen in Hawaii and by the warehousemen in Crockett who handled the raw sugar after its discharge from the vessel. Formerly there had been 600 warehousemen in Crockett, most of them storing raw sugar or feeding it to the refinery; now less than 200 men are employed.

In recent years general or break bulk cargo, that is to say loose merchandise of all sorts ranging from canned goods to cartons to rolls, has increasingly

been carried in containers. These containers hold over 20 tons apiece, and several fully containerized vessels are now in operation. The ratio of tonnage to man-hours of a fully containerized cargo compared to the same cargo handled piece by piece, varies from 13-1 to 18-1. In other words, with the use of containers one man handles between 13 to 18 times more cargo per hour.

Similar changeovers in operations included the bulk loading of rice, improvement in the bulk discharge of copra, and the movement of wine in huge tankers instead of by case. Another major development was the introduction of packaged or unitized loads—loads made up at the place of production, strapped or glued together, and handled as a unit when they reached dockside or the ship.

The impact of such change is obvious. If all cargo on the West Coast were shipped by container or in bulk, using these examples of sugar and general cargo, the work force would be reduced by some 80% of the present longshoremen. However, these changes do not apply equally to all branches of longshore work. Some cargoes do not adapt themselves readily to mechanical handling and many ships still have to be stowed in the old way. The changeover to new techniques varies widely. What is technologically feasible has not yet become economically necessary or desirable.

With such new methods in effect, and others under way, the shipowners and longshoremen could try to do something about them or could decide to do nothing.

Doing nothing is always a clear alternative. The parties might walk around the issue, or try to walk around it. Under the old West Coast waterfront con-

The Do Nothing Alternative

tract the employers, of course, were free to introduce new methods and new machinery. As each change was made means were provided to argue out such questions as the number of men to be employed, the rules to be applied, and any related matters. The basic rules covering working conditions, size of the long-shore gang, weight and size of slingloads, and methods of cargo handling were written into the contract. Prior to agreement on mechanization and modernization it was the position of the union that none of these rules could be changed other than by direct negotiations at the expiration of the old contract. Consequently, new operations were frequently introduced while old work rules remained in force.

Walking around the challenge of an overall approach has a certain appeal to a union, inasmuch as the initiative—and onus—for change then comes entirely from the employer side. The union concentrates on hanging onto the old work practices and rules. If a change is finally forced through, resistance notwithstanding, the responsibility is entirely that of the employers. The union need make no effort to meet the problem even halfway. Nor does it have the headache of convincing the membership that the old way of doing things is obsolete and that it is time for a change. The result is invariably a makeshift solution which leaves the antiquated and outworn work practices in its wake. It is only a matter of time before these too go by the board. The best to be hoped for under these circumstances is an attritional stand-off between union and employer which can be made costly to the owner; in the long run it gains nothing for the men but the postponement of the day of reckoning.

The Hit-And-Miss Approach

The counterpart of this hit-and-miss union approach is the employers' refusal to bargain on the introduction of the machine or on sharing in the savings made by the machine. They can maintain that

operational methods lie solely within their own discretion and undertake to force through changes regardless of consequences.

Still other approaches to mechanization and automation include consideration of such stopgaps as supplementary unemployment benefits, severance pay, retraining programs, or other devices to cushion the blow on the worker displaced by the machine or new methods of work. These, and similar concepts, are simply ameliorative; they aim, with minimal success, to ease the blow on the victims of change.

These generally accepted approaches are of little or no value in longshoring because the registered work force, for years past, has shared all of the available work in good times and bad. While there is provision in the contract for layoffs by the application of seniority, the men have been adamant in their refusal to protect themselves by deserting a part of their fellow workers on the beach. Thus they must all be equally beneficiaries or victims of the machine as it comes into the industry.

As far back as 1957, the ILWU and the PMA decided they could not afford to bury the problem. By then it was clear that the old contract did not provide enough flexibility to meet sudden and major changes in cargo handling, and that the only way to tackle the issue was on an industrywide basis.

The union had concluded that new methods and machines would be introduced no matter how great the effort by the membership to resist change. As employers had the right by contract to make changes and to arbitrate changes, the best the union could hope to do was to retain, as long as possible, the old rules governing size of gangs, methods of cargo handling and related contract guarantees.

Other Approaches

New Problems for Industry

New ideas for cargo handling, revolutionary ship design, large-scale use of containers and bulk movement of cargo, the introduction of strapped loads, and numerous other devices would sooner or later bypass the existing rules. In the mind of the union there were also officially announced programs of legislation which would make illegal many of the guarantees and safeguards afforded by the contract. Were this to come to pass it would leave the workers with no new forms of security or protection in exchange.

Meanwhile, the shipping industry was confronted with a series of difficult operational problems. Post-war construction costs skyrocketed the investment in ships. The price of fuel, wharfage fees, and wages for seafaring personnel all moved up with the times. The only way to offset these rising costs was to speed cargo handling and ship turnaround. When a ship is in port it loses money; it makes money when it is on the high seas. Speedier loading and discharge not only improves the ship's turnaround but in the long run also increases the number of trips the vessel can make each year. The savings in capital investment and the increase in earnings resulting from the introduction of new machinery and new methods of cargo handling could well be decisive in determining the profitability of the industry.

The sum total of developments added up to one conclusion: The time had come to review and re-examine labor relations in the light of the mechanization and modernization of West Coast longshoring.

The decision to discard the piecemeal approach and to tackle the entire issue of mechanization and modernization, the free introduction of machines and new methods of work and the elimination of obsolete practices and artificial restrictions on cargo movement was no small matter in itself. Whether it was even

possible to come up with an equally encompassing solution was the question.

The impact of change is devastating to many people. Would it be possible for the union—working collectively—to cope with these changes and eliminate the fears and insecurity they arouse? Did the workers have sufficient confidence in their union and in their own strength to face up to the reality of mechanization instead of waiting until they were victimized and were forced to struggle out of fear and desperation?

Much of trade union organization is primarily defensive. This is the origin of unionism, developed under the force of circumstances: the employer acts and the union reacts. In the main, unions are geared to remedy past grievances and to take care of present problems. They rarely prepare to meet the future—let alone anticipate it. There is always the temptation to drift, hoping for the best and meeting problems as they arise.

The shipowners had their own knotty questions to resolve. Should they permit collective bargaining on mechanization—something which many employers have considered an employer prerogative—not subject to contract negotiations? True, the very existence of a union and the establishment of any kind of work rules limit management's right to manage, but these are much easier to accept than agreement to negotiate on the issue of mechanization. In the same way that the union can drag its feet, hang on to old work rules, and finally blame any change on the employer, the employer can emphasize the need for new production methods, do his best to introduce them unilaterally, and blame his lack of success on the union.

Knotty question to Resolve

As early as 1957, the ILWU and the PMA had

agreed to the guiding principle that the men, through the union, should be guaranteed a share of the benefits of the machine. But this very agreement led to a whole series of unsolved questions.

Protection and Security

If the workers were to be assured a share of the machine as a means of providing guarantees of earnings and security, what would happen to the work rules and other contract provisions made obsolete by the new machines and methods? It would have been incongruous indeed for the union to insist on a share of the machine without conceding that new machines make certain work rules obsolete—work rules which did not provide for safety or protection against speedup, but rather served as work guarantees in lieu of other forms of job security.

On this score, it is important to recognize that many union work rules fall into the category of protection against abuse and provide a type of minimal job security. For example, the old longshore contract specified the minimum number of men to be used in each cargo operation. This basic gang structure guaranteed that there would be sufficient men to do the work with no one forced to double up or carry more than his share of the load. The provisions limiting the cargo in a single load (the slingload agreement) coupled with the gang size ultimately determined the pace of work. Such contract provisions are often criticized as "make-work," but a union man sees them as a guarantee of job security and protection against speedup.

Once the parties agreed to negotiate a mechanization and modernization contract which would include sufficient funds to accord security of employment or commensurate benefits—such as minimum work opportunity or earnings and early retirement—the union could no longer insist on keeping some of the guaran-

tees and protections embodied in the old contract. The price for getting a share of progress was to discard the work rules and practices made obsolete by progress.

The parties consequently worked toward a set of benefits and guarantees for the men which would be offset by removing the obstacles to the free and unimpeded introduction of new machinery and new methods of work. Such an understanding would relieve the shipowners of the requirement to employ unnecessary men. Past practices in cargo handling would be discarded if new and better ways were found.

For example, "double handling" would disappear. Double handling is the result when cargo comes down to the dock and is first unloaded from the truck onto the floor of the dock before a longshoreman stacks it on a longshore cargo board. Longshoremen, in accordance with the work rules, would not take the teamster load into the hold as a unit or permit the teamster to put his cargo directly onto a longshore board. This practice stemmed from the old safety rule that the longshoremen under the hook in the ship's hold would work only under a load built by fellow longshoremen. In some ports one longshore gang was employed to take the cargo off the teamster pallet board and stack it on the floor of the dock, and another longshore dock gang took it from the floor of the dock and built a longshore load to go on board ship.

Conflicts arose under the old contract when loads coming to the docks were in excess of the slingload limits. If a load was over the limit, longshoremen had to be employed to "skim" the load down to size.

The standard ship gang also conflicted with new methods. Under the old agreement, for example, em-

When Conflicts Arose

The Witness and the Magnet

ployers were required to hire a basic size gang to load scrap iron. With the introduction of new machinery, men who had previously been used in the hold of the ship were no longer needed.

The scrap iron was now lifted from the dock with a magnet and then released into the hold. The hold men who continued on the job were "witnesses"; they watched the magnet.

With M & M these obsolete work rules went by the board. However, the union insisted upon tight guarantees of job security and assurances against speedup or onerous individual workloads.

Then came the question: How do you go about negotiating the elements of an M & M Agreement? How do you determine the workers' "share of the machine"? Do you price out each change? Do you allocate a specific share of the savings on each new operation? What is it worth to set aside the slingload limit or to end the skimming of loads and double handling?

The parties gave serious thought to "costing" out the separate elements of a mechanization and modernization plan. But the administrative obstacles to such an approach, and the inevitable endless haggling over each change or new piece of machinery, precluded any success in this direction. Additionally, changes in longshoring are not uniform; they do not affect all commodities equally nor do they come about at the same time in all places. Some commodities readily lend themselves to speedy mechanization through containerization or handling in bulk or as packaged loads; others will probably be handled in the conventional manner for years to come.

The parties decided they were better off to

tackle the issues as a whole, and the following principles were agreed upon:

- .. The longshoremen were entitled to a "share" of the machine.
- .. There would be no layoffs of registered longshoremen.
- .. The Mechanization and Modernization Agreement would provide a guarantee of work or earnings.
- .. If the unhindered introduction of new machinery and new methods of work resulted in the curtailment of work opportunity so that the size of the work force had to be reduced, this would be done by shrinking the work force from the top.

The last principle is exactly the reverse of normal practice in most industry. One form of security for which every union strives is the application of strict seniority on layoffs and rehiring. The oldest worker is the last man laid off and the first rehired.

In longshoring on the Pacific Coast, however, early retirement on a voluntary basis is part of the workers' share of the machine; and compulsory retirement, with a greater benefit, will be used if this is ever needed to reduce the work force. This is an innovation in American industry: the older man leaves the labor market by getting credit for his years of service when the machine cuts into job opportunity; the younger man has added job security. The resulting younger work force is not without value to the employer.

This is not to criticize the principle of seniority as applied in most industries. Ordinarily, when layoffs

An Innovation In Industry

are necessary the younger man has a better chance to land a new job. The M & M Agreement, in contrast, eliminates layoffs while providing both early retirement for the older workers and job security for the younger ones; both age groups benefit from this approach.

There were other general questions upon which required agreement in order to complete an M & M contract. What happens if a port loses a large share of its cargoes and there is no work on hand for those men—as might happen to a lumber port which is timbered out? Do these workers stay on in this port, and do they get the guarantee of earnings under M & M? Provision had to be made to offer these men transfers to other ports where work was available. *The parties agreed longshoremen would have coast-wise registration and could therefore be shifted from port to port, giving them industrywide preference and seniority.* In addition, while negotiations moved ahead on mechanization and modernization, the work force was frozen and no new men were registered. This afforded an opportunity to watch the impact of the M & M Agreement on work opportunity before a determination was made on additional men.

Joint Study Was Essential

Lastly, it was essential that the parties allow for a joint study of each new job situation as it arose. There had to be guarantees against abuse if old restrictions were dropped. For example, if bigger loads are hoisted on board ship, the agreement provides that either men or machines will be added if onerous conditions or speedup of the individual worker result. The principle is sound, but it is subject to differing interpretations.

A listing of these problems demonstrates the understanding, confidence and mutual security called for from the men, through their union, to make it possible to handle the variety of issues which would result from

the new contract. All through the negotiations it was essential that the parties overcome the suspicion, hostility and feeling of helplessness, which generally accompany the impact of the machine or of any other sudden change on a group of workers.

For the employers negotiations demanded the most detailed analysis of operations, an understanding of what could be expected in increased productivity and turnaround of vessels through an M & M agreement, and the balancing of these considerations against the old way of doing business.

Terms of Agreement

Agreement was reached in October 1960 to go into effect January 1, 1961. *The Union won a substantial degree of security for its members provided for in no other union contract; the Employers won a substantial degree of freedom for productivity improvements.* The agreement on M & M runs until July 1, 1966, and is not subject to review. The basic longshore and clerks' agreements were extended for the same period, but they are open periodically on all matters except mechanization and pensions.

The PMA agreed to contribute into a fund \$5 million annually for 5½ years, beginning January 1, 1961; but the employers reserved to themselves the right to determine how to raise the money. The trust fund is for the exclusive use of those men who had full registration at the time the agreement was signed. Three million dollars each year is considered to be, in the union's terminology, the men's "share of the machine"; this portion of the Fund is intended for early retirement, cash vesting and death benefit features.

The remaining two million dollars per year represent what the men are to receive for selling their property rights in certain of the working rules. It is recognized that eleven million dollars is the total price (\$2 million for 5½ years) and that by 1966 the trans-

action will be completed. This portion of the Fund will, if necessary, be used for the wage guarantee. Men who are registered in the work force from now on will not be entitled to any of this part of the Fund because they were not party to the bargain on the working rules.

Guarantees Against Layoffs

Maximum possible security for the present fully registered work force is provided in the following way:

1. There is a flat guarantee against layoffs. The parties prepared for this first by freezing registration in 1958 and second by placing registration on a coastwide instead of a port by port basis thereby facilitating the shifting of men from area to area.

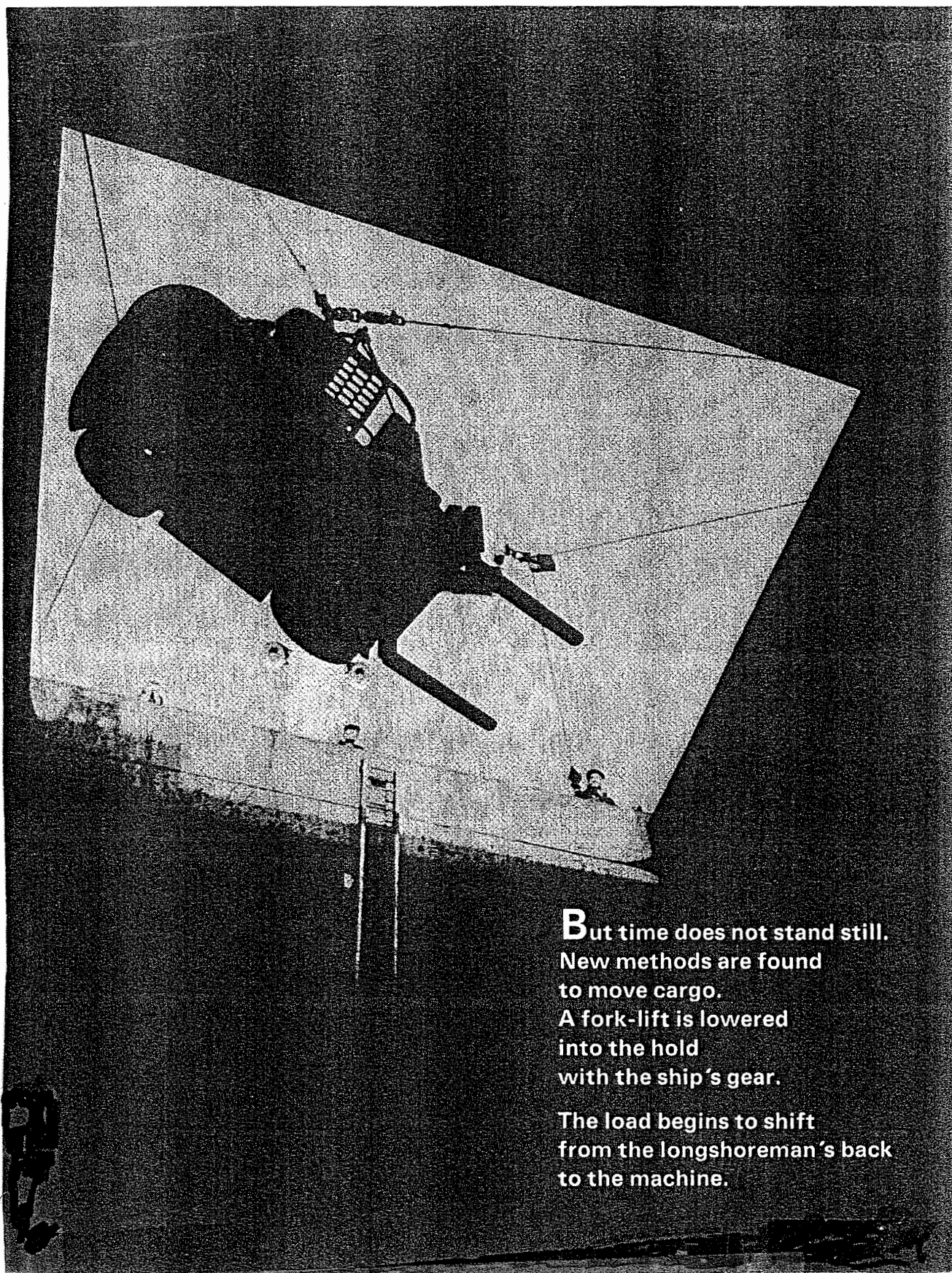
2. There are two cushions to take up the shock as work opportunity declines from rising productivity. First, normal attrition is high because the average age is well over 45 years. Deaths and normal retirements remove about 4 percent of the work force each year. Secondly, the parties have agreed to reduce the amount of work performed by other than regular longshoremen.

3. The Agreement provides for voluntary early retirement, at age 62, with a monthly benefit of \$220. At age 65, when Social Security is payable, the industry pension drops back to \$115. This provision induces the retirement of men who would have otherwise continued working. Their withdrawal leaves more work for the younger men. This is seniority in reverse.

If a man chooses not to retire early, but continues to work until normal retirement, he receives a lump sum of \$7,920—the equivalent of \$220 per month for the 36 months from age 62 to age 65.

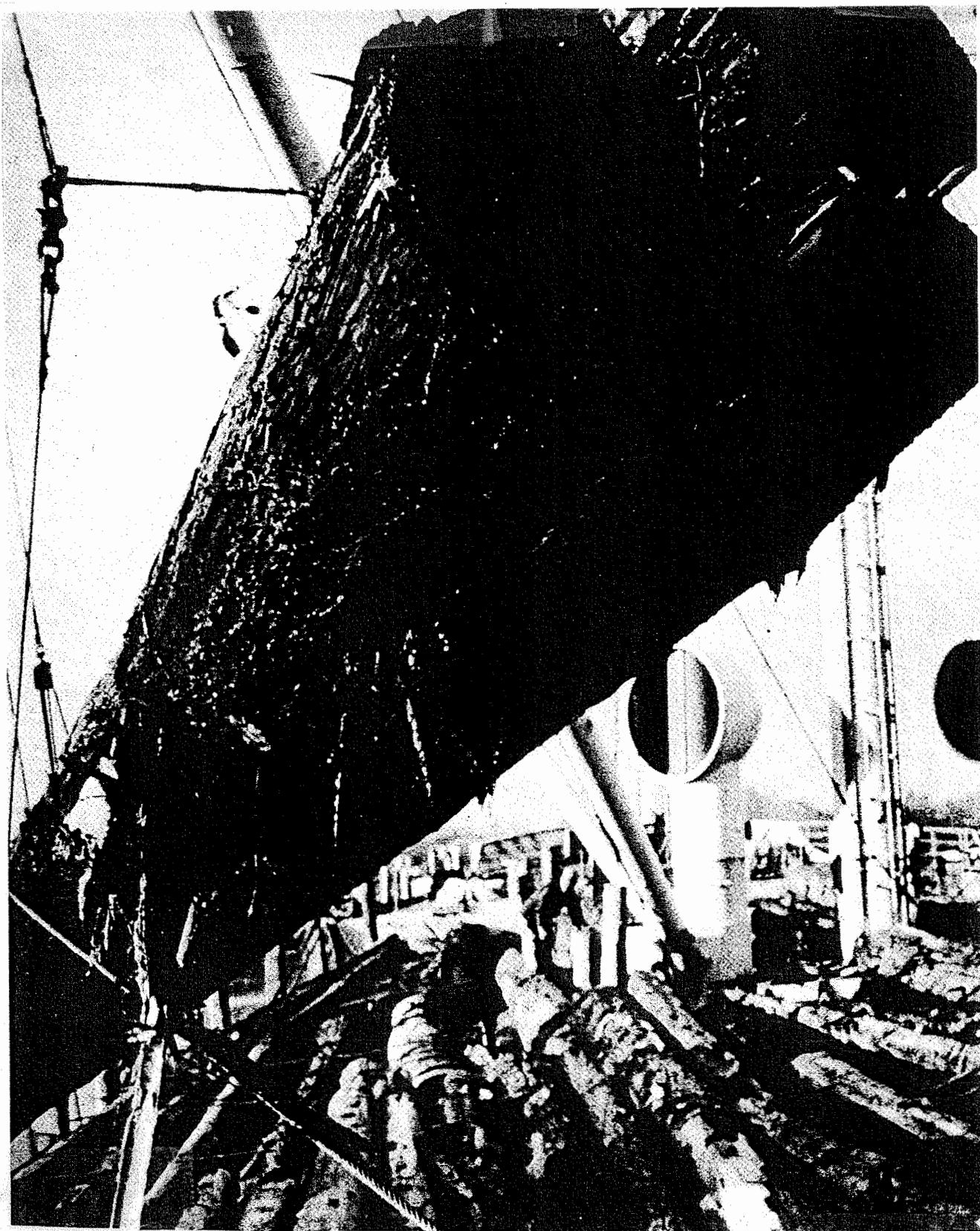
4. If a sharp decline in work opportunity makes it necessary, the parties may invoke compulsory early

Continued on Page 113

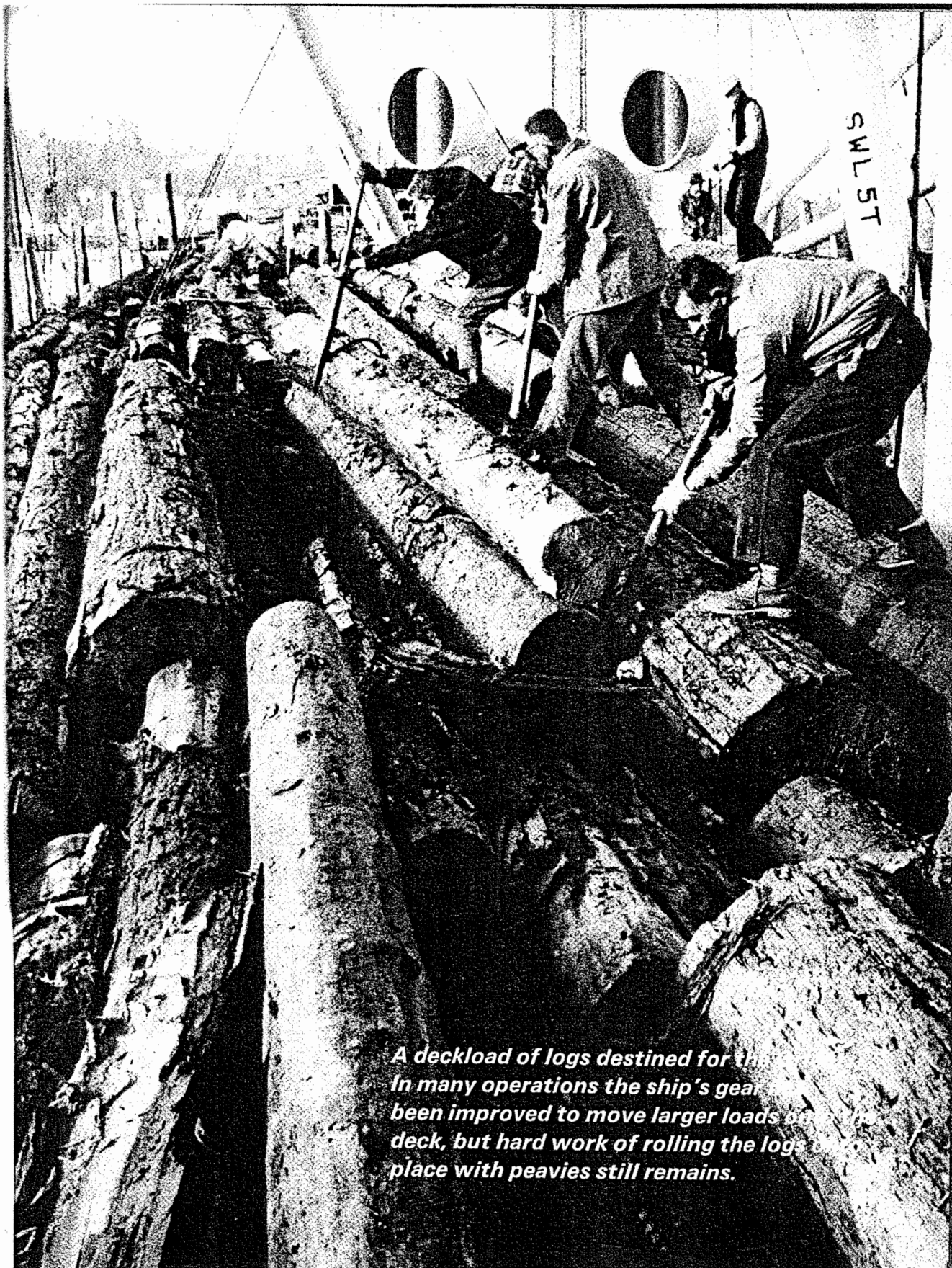


But time does not stand still.
New methods are found
to move cargo.
A fork-lift is lowered
into the hold
with the ship's gear.

The load begins to shift
from the longshoreman's back
to the machine.

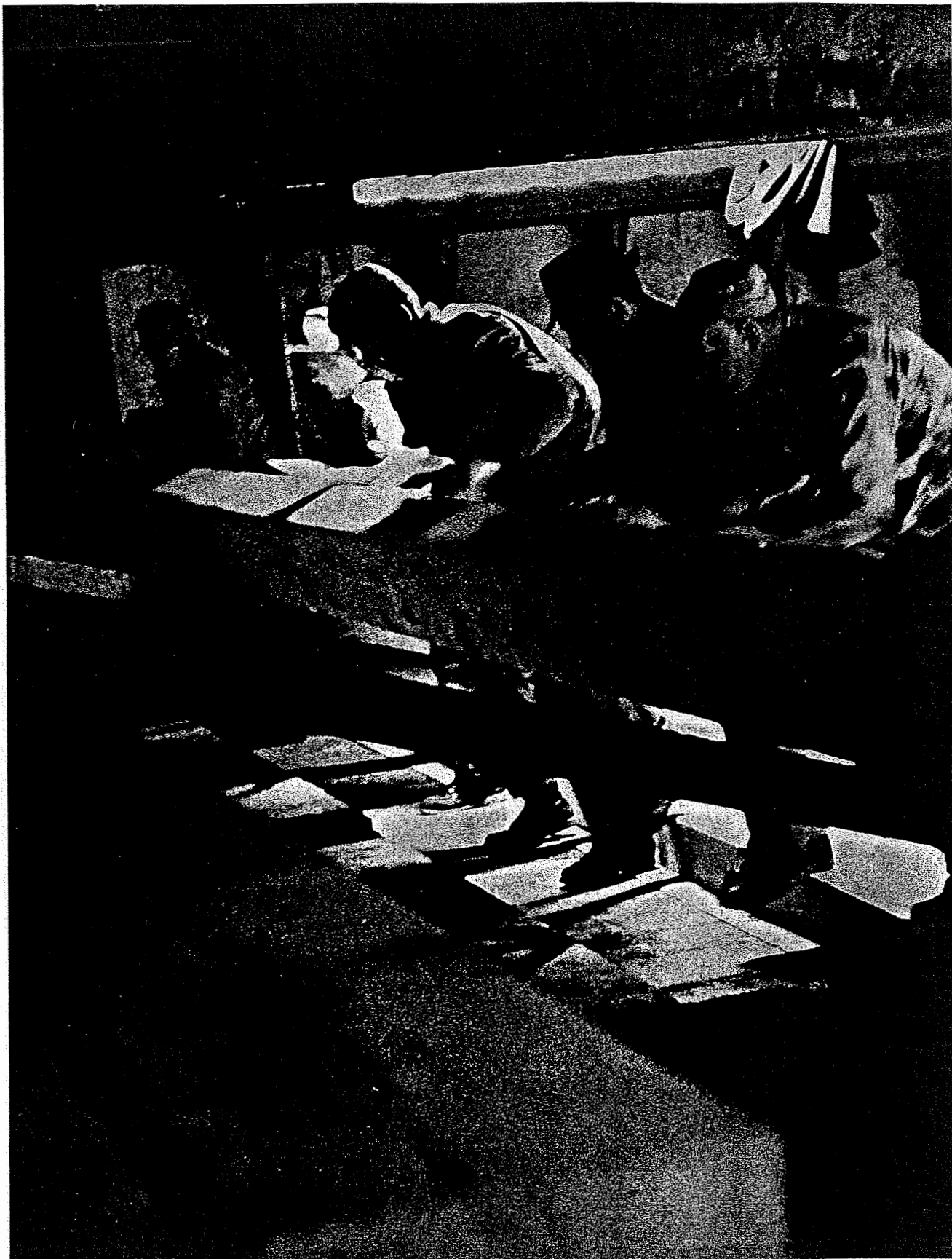


* Logs were (are) hoisted into the hold or to the weather deck from the dock or from a "log raft" moored to the offshore side of the vessel being worked. For a number of log rafts under tow and one being moored to a vessel, see p. 133 below. And something of log raft work is also pictured on pp. 135 and 136 below.



*A deckload of logs destined for the
In many operations the ship's gear
been improved to move larger loads on
deck, but hard work of rolling the logs
place with peavies still remains.*

Peavies were also thus used in the hold to insure a tight and proper stow - HM.

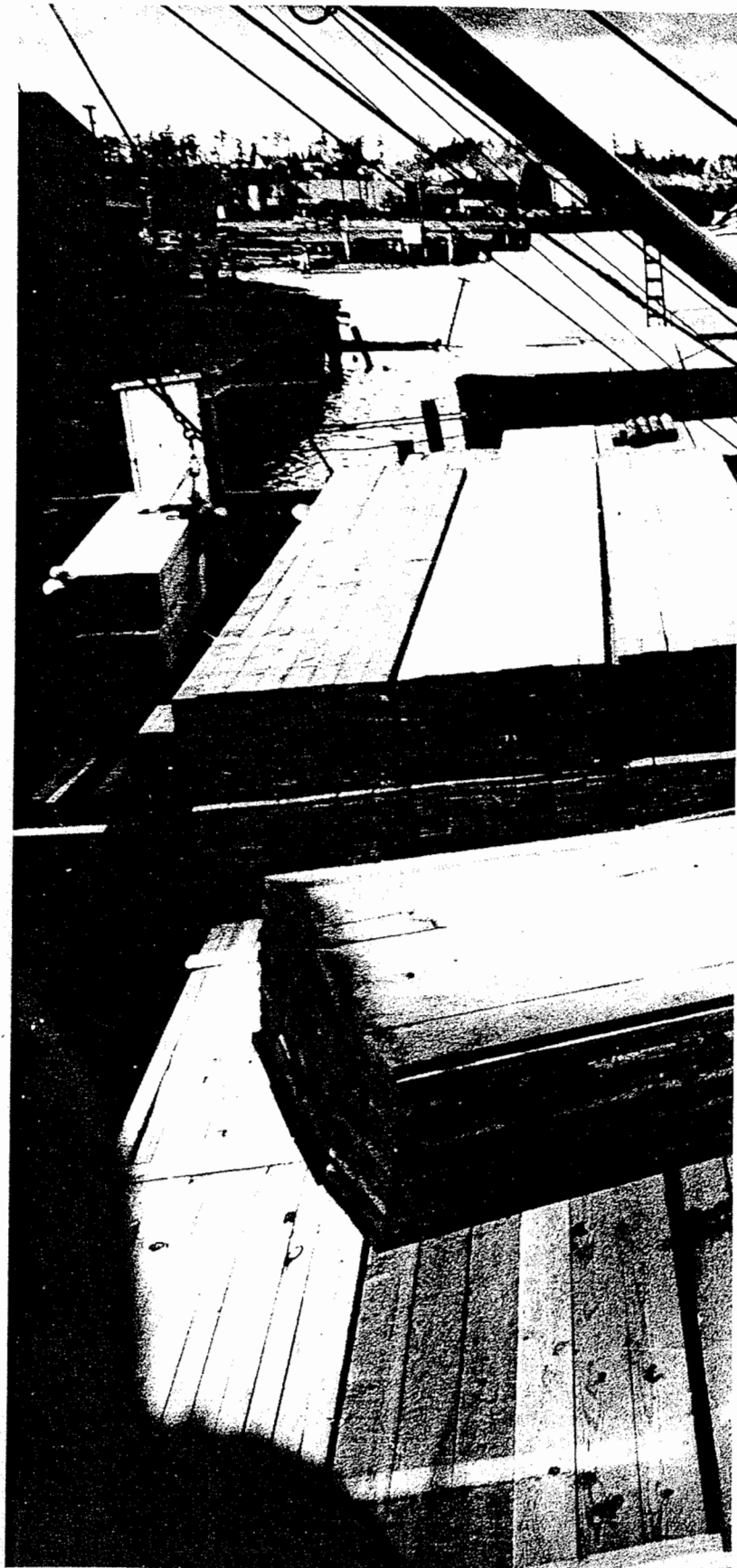


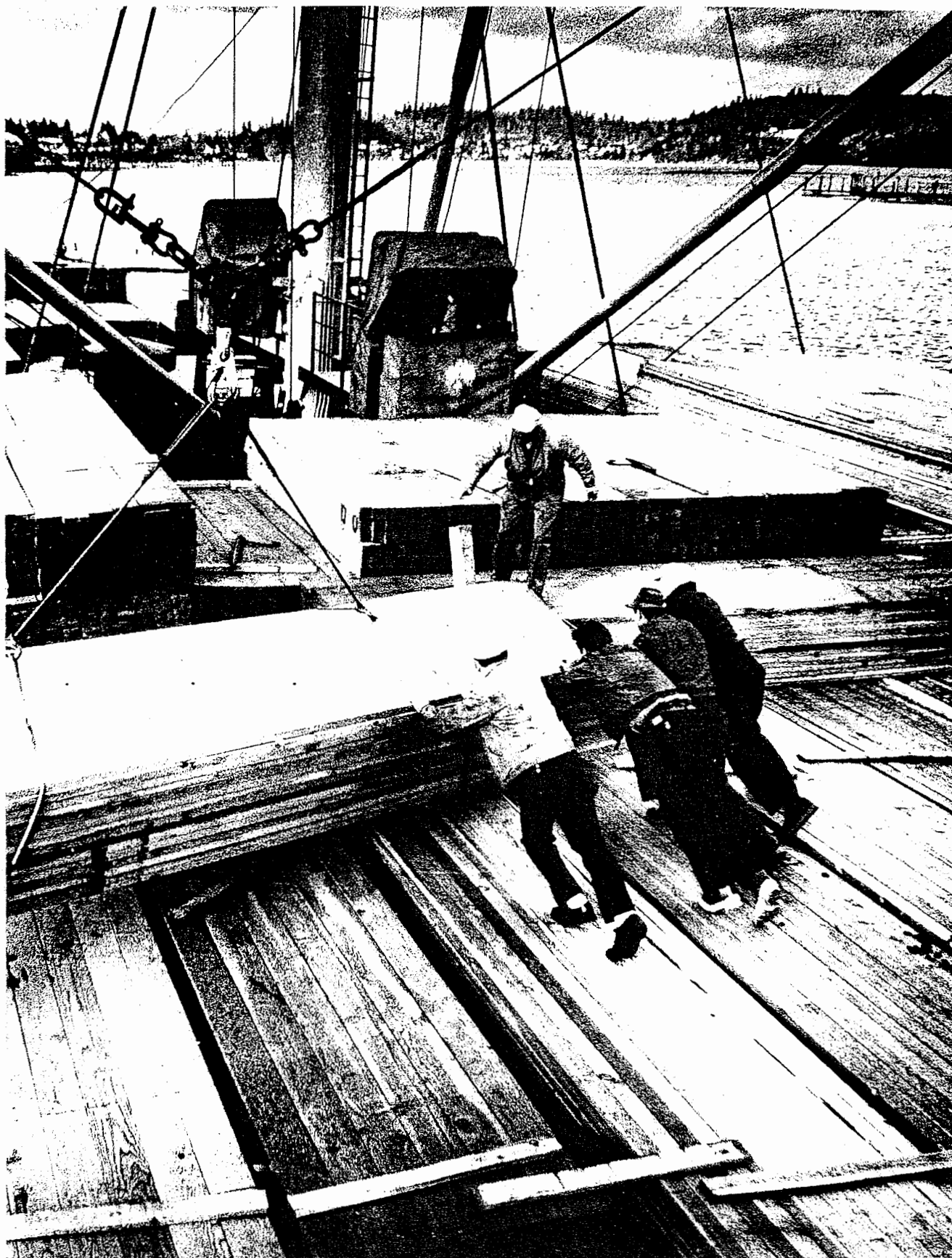
Rolling a "fletcher" up a jury-rigged skid to a place of stow - HM.

At one time
all lumber was loaded
piece by piece
in the hold of a ship.

The first shipments of
unitized loads of lumber
took place on deck.
The stickers between loads
allow space to place
a sling around the same
load for discharge
when it arrives
at its port of destination.

*Coos Bay, Oregon.
Longshoremen maneuver
a load into place.*





Men and Machines - p. 58.

In years past,
loading lumber
required some
of the most
skilled longshoremen
on the West Coast
who stowed lumber
piece by piece
with the uniformity
of parquet flooring.

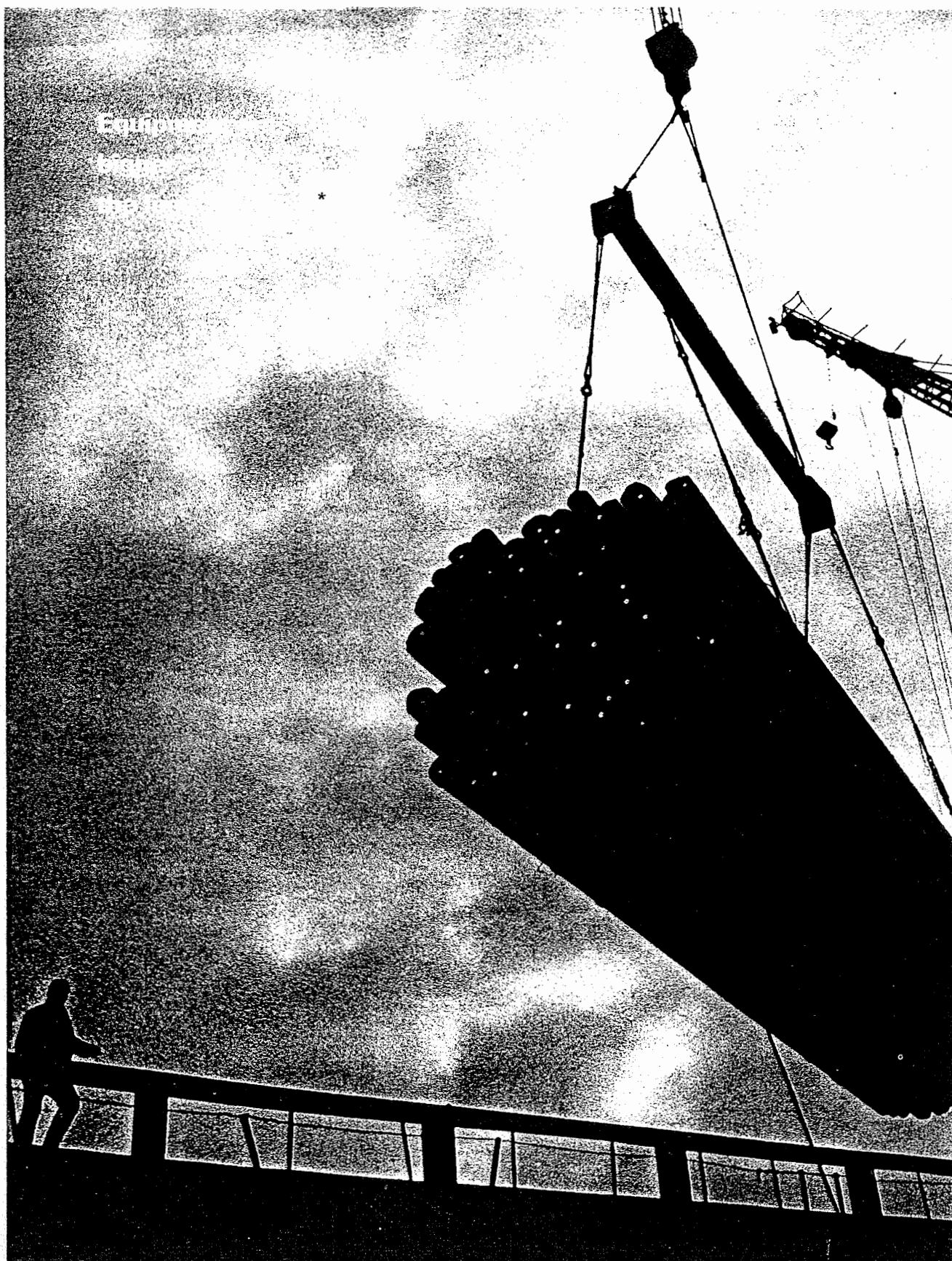
It took a good eye
and a special skill
to judge
length and width
and to utilize
every inch of space.

Today,
loads of lumber,
cut to order and
strapped at the mill,
are moved as a unit
into the hold
of the ship, and
stowed with the help
of a fork-lift.

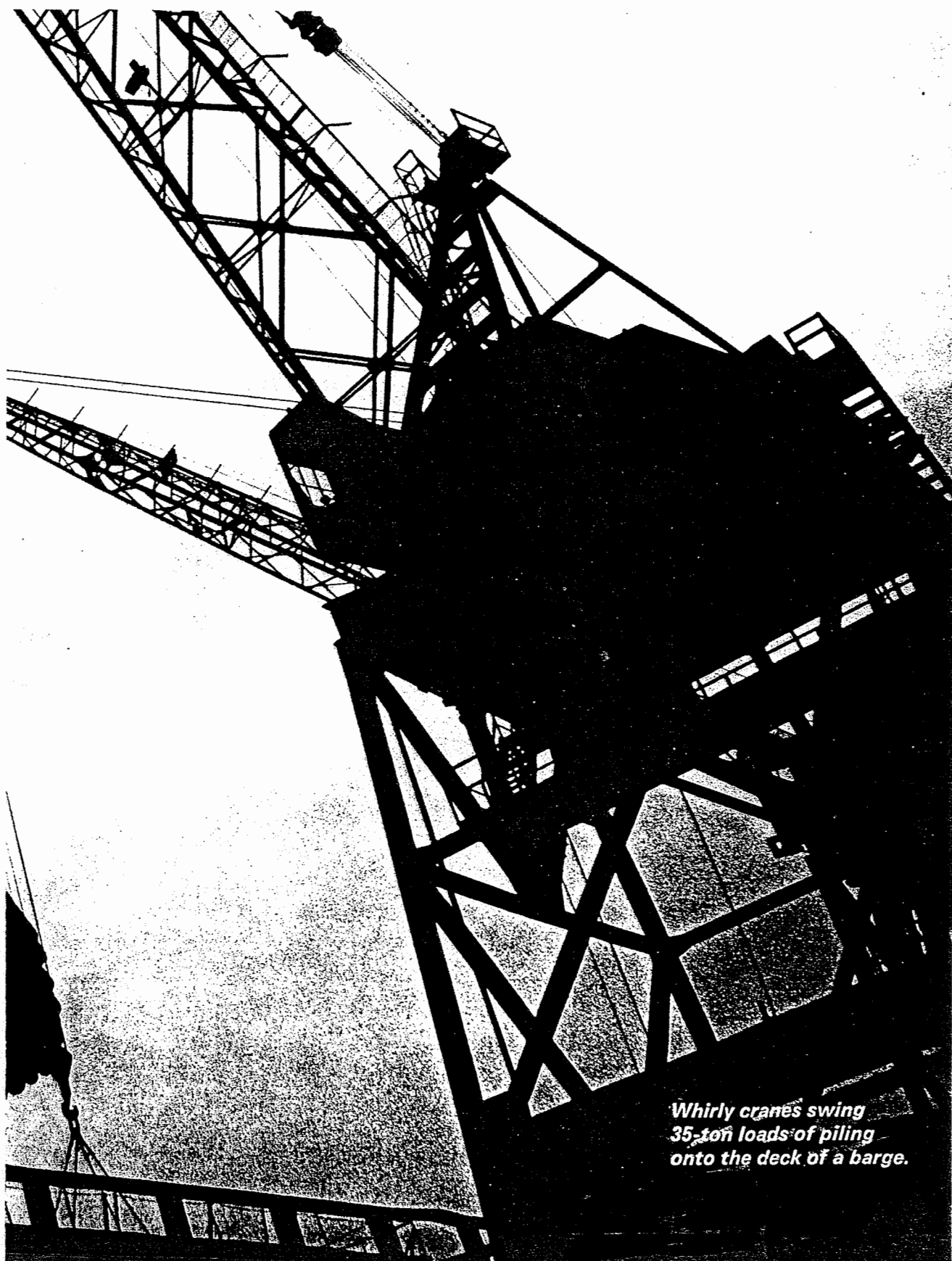
Men and Machines - p. 60.

With fork-lifts
in the hold,
lumber ships
began to cut
their turnaround
from more than
two weeks to four
to five days.
Some cargo space
was lost, but was
made up by
the increase in
the number of voyages
a ship could make
each year.
A million board feet
per vessel-shift
is not uncommon
in this operation.

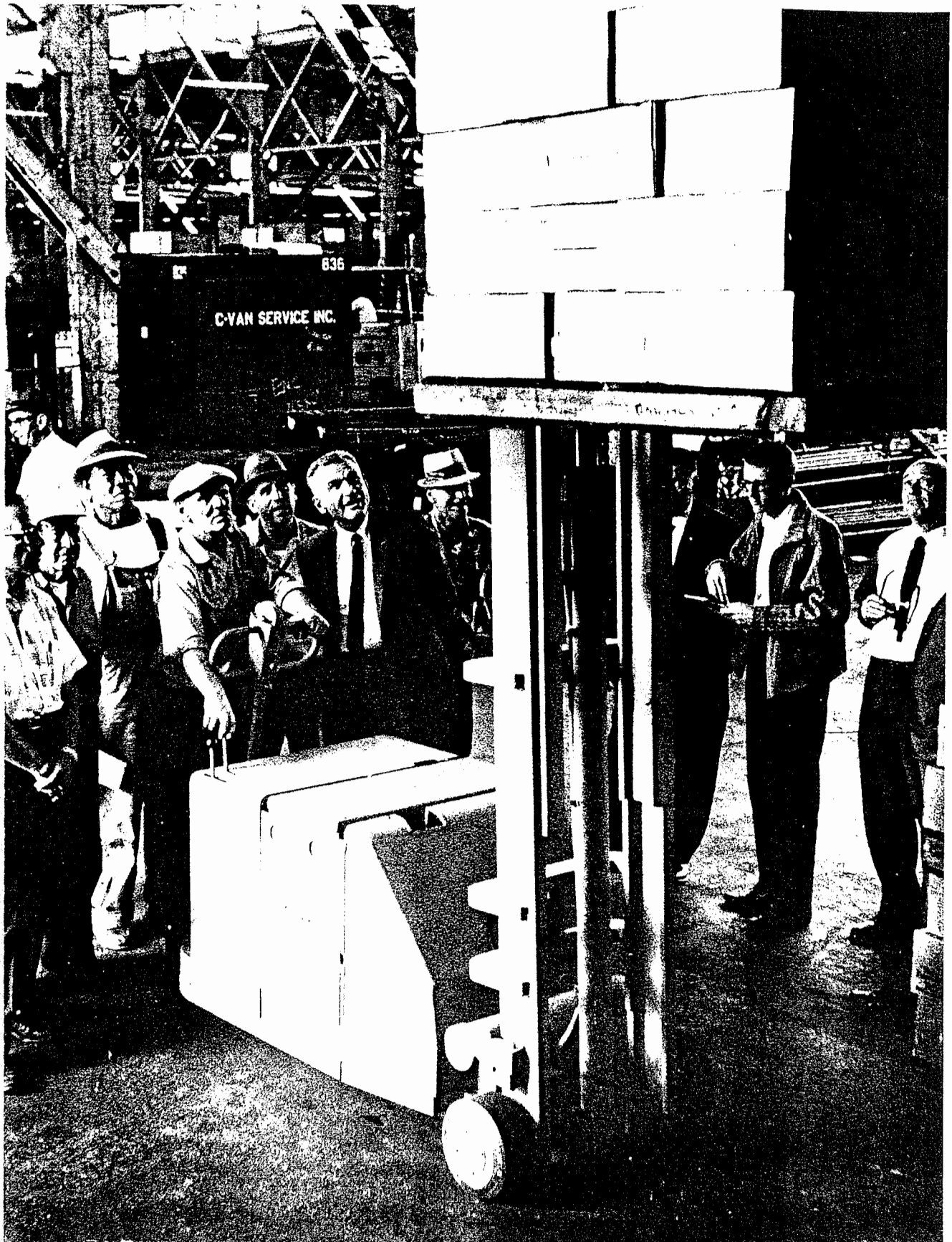




* The equipment gets bigger, the loads heavier.



*Whirly cranes swing
35-ton loads of piling
onto the deck of a barge.*



Men and Machines - pp. 64 - 65:
Transition - not all new ideas work.

*In a pier shed
a walk-around fork-lift
is being given a tryout
for high piling
of pre-stacked cargo.*



*This fork-lift, moving two
pallet board loads at a time,
is high-piling on the dock.*

The most important and versatile piece of equipment introduced into longshoring was the fork lift.

Adaptable to many operations, it took on many names: fork-lift, bull, lift-jitney, hi-low, finger-lift. With it came the multiple use of the pallet board.

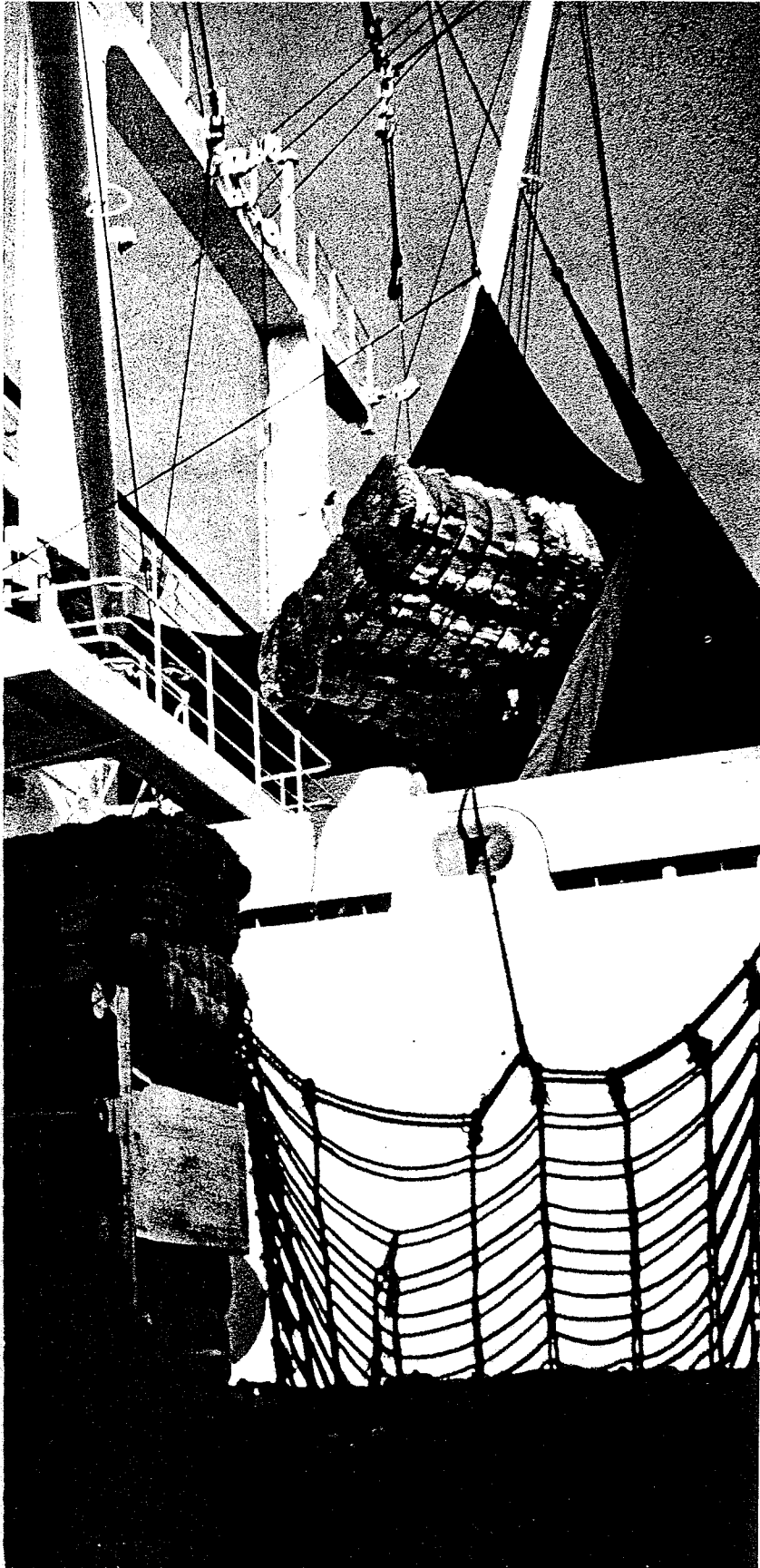
The pallet board had slowly evolved from a makeshift device meant to keep cargo off damp floors into a valuable transportation tool. With the fork-lift, the pallet board came into its own. Together they brought about the first important change in longshore operations in decades.

Repeated man-handling of cargo could be reduced and eliminated. Many types of cargo—cartons, canned goods, sacks—could be pre-stacked, standardized and unitized.

First, the fork-lift and pallet boards were used to high-pile and break down cargo on the dock.

Then they were shifted to moving cargo loads to and from the ship's hook.

Now they are used more and more in the actual loading and discharge of cargo in the ship's hold or on deck.



VERSATILITY

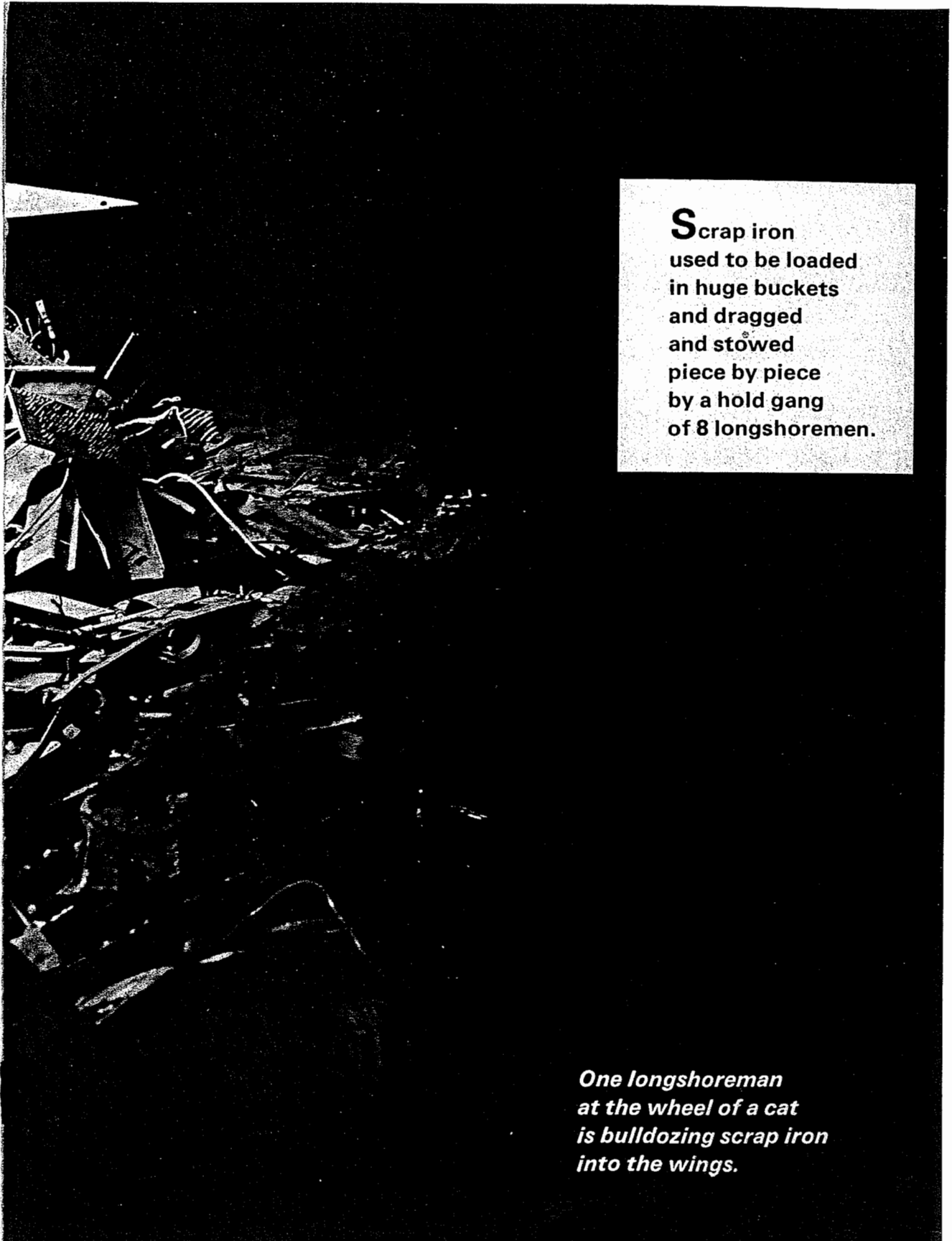
*Forklift,
adapted
to handling
bales
of cotton
or similar
cargo
by means of a
hydraulically
operated
squeeze
delivers six
doubly compressed
cotton bales
to the hook,
to be hoisted
aboard
three bales to
a slingload.*



Men and Machines - p. 70.

Stowing containers in the wings
- or fore or aft of the square - HM.

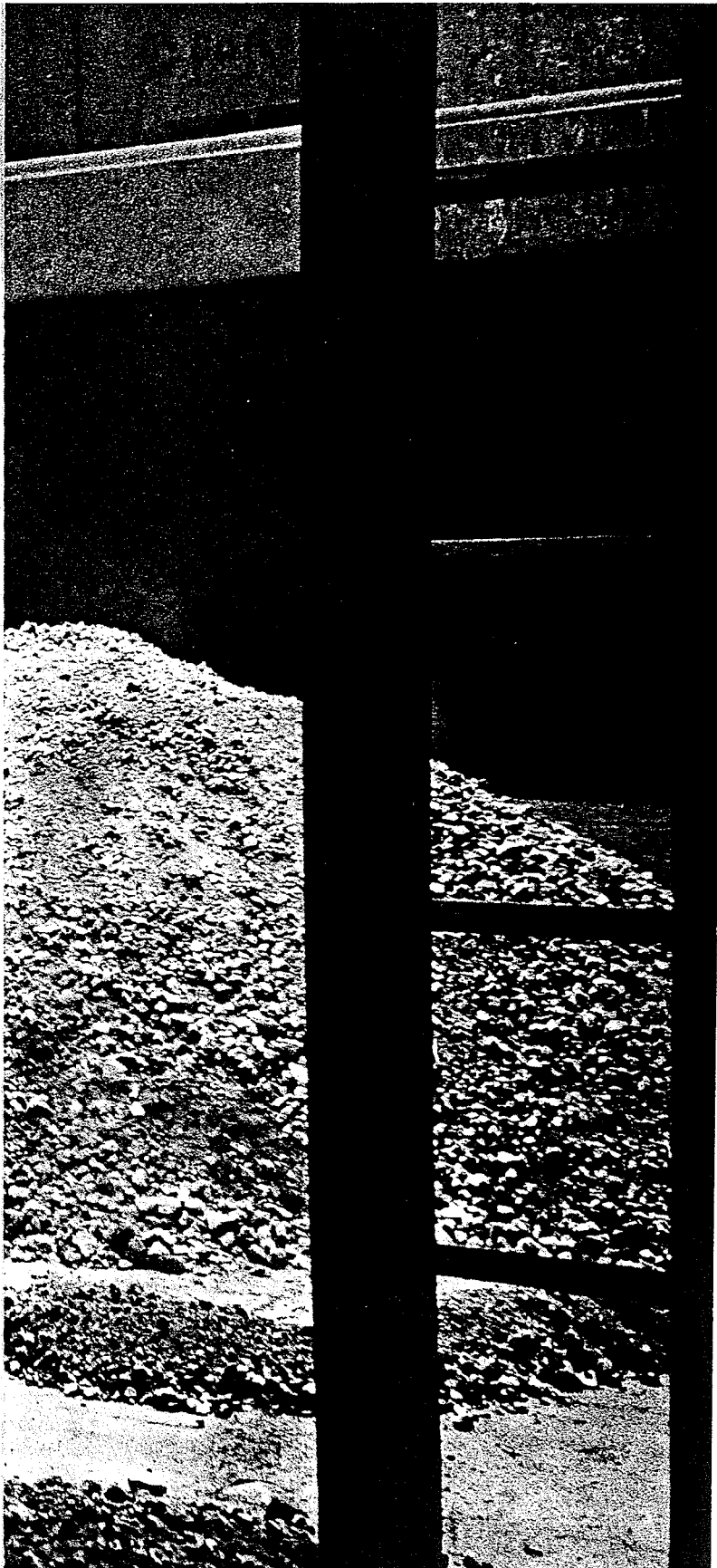




Scrap iron
used to be loaded
in huge buckets
and dragged
and stowed
piece by piece
by a hold gang
of 8 longshoremen.

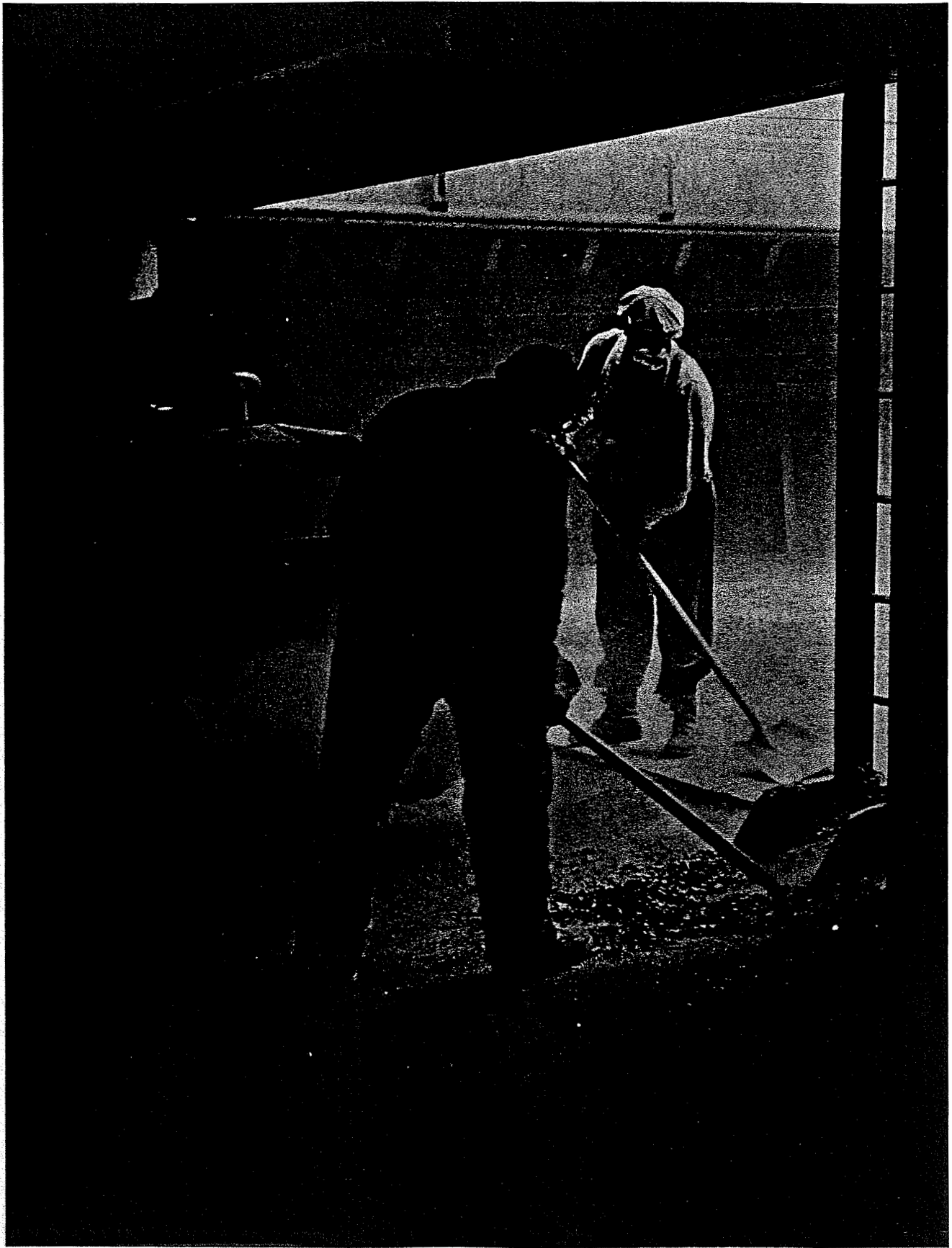
*One longshoreman
at the wheel of a cat
is bulldozing scrap iron
into the wings.*





Ore and other bulk cargoes which once were shoveled by hand into tubs and buckets are now discharged mechanically.

The payloader, another adaptation of the fork-lift, bulls the ore into the square of the hatch, getting it ready for the clamshell.



*Lead ore being shoveled
and discharged by
longshoremen.*



This clamshell takes two tons at a bite. Others take up to 13 tons.

The only shoveling left is cleanup around stanchions, ribs and ladders and out of the corners.

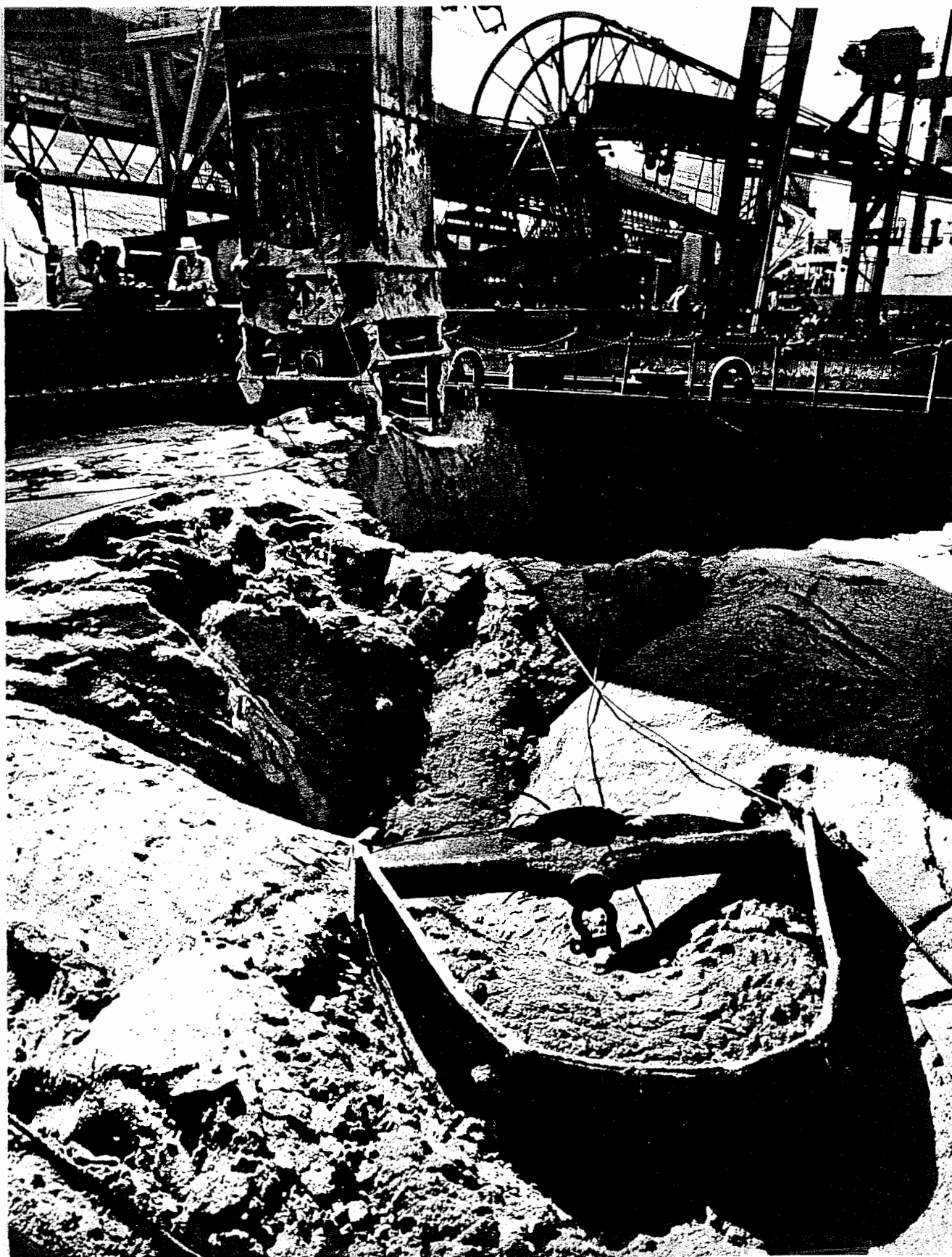




Now machines make possible a continuous flow of bulk cargo from rail to dock to storage to ship.

A railroad car, clamped into a huge revolving cylinder, dumps 90 tons of ore in 45 seconds by turning the entire car on its side.

Automatic car dumpers are installed in the ports of San Pedro and San Diego. Similar machines handle grain at Portland, Ore , and Longview, Washington.



Discharging raw sugar from hold of ship

The first full impact of automation on the West Coast waterfront came with the total conversion from sacks to bulk operation in the movement of raw sugar from the Hawaiian Islands to Crockett, California, on the upper San Francisco Bay.

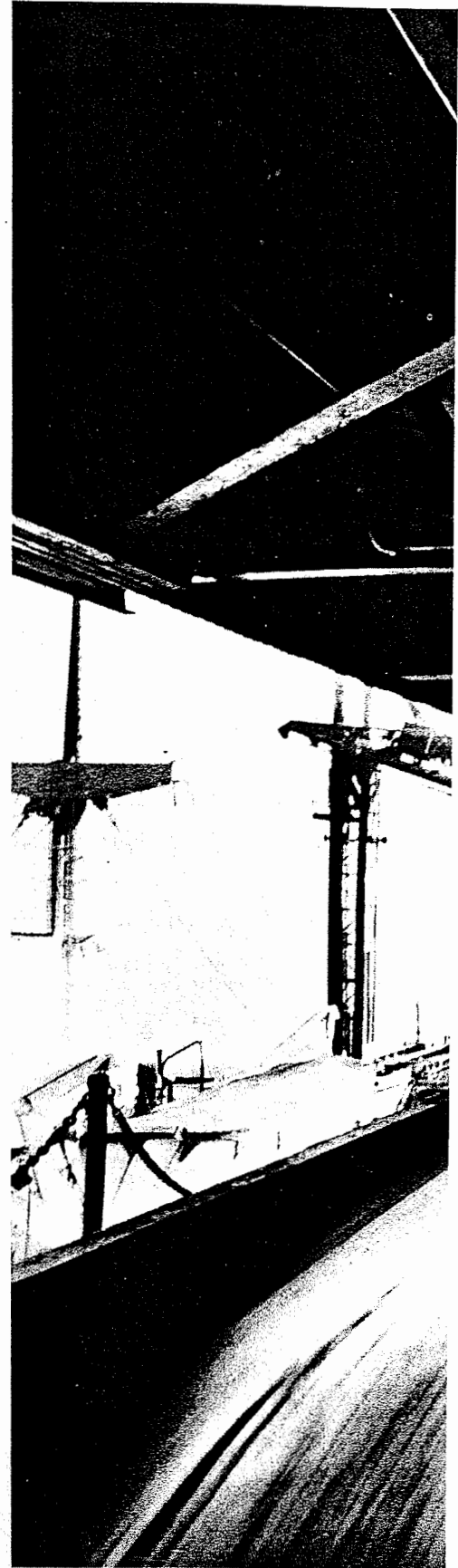
Ship Operation

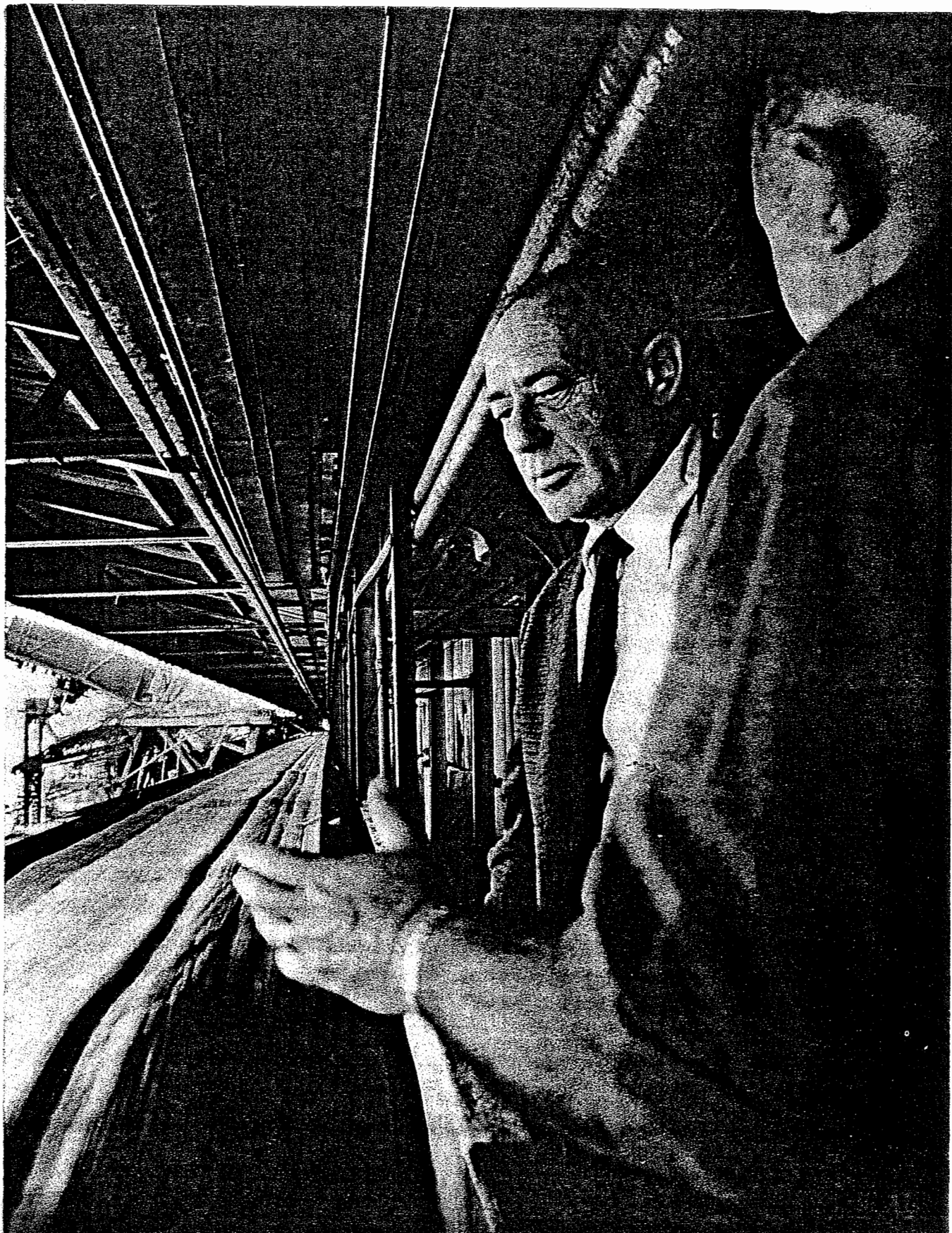
Raw sugar unloaded in sacks:
10,000 tons 6,650 manhours
Raw sugar unloaded in bulk:
10,000 tons 1,000 manhours

Warehouse Operation

Raw sugar handled in sacks:
Work force 80 men
Raw sugar handled in bulk:
Work force 8 men

*Raw sugar moves
on an endless belt
from ship to storage.
It is automatically
weighed and sampled.*





Lou Goldblatt, editor of Men and Machines and author of its text, photo captions, and sidebars, at the Crockett, CA. refinery of C & H Sugar - HM.

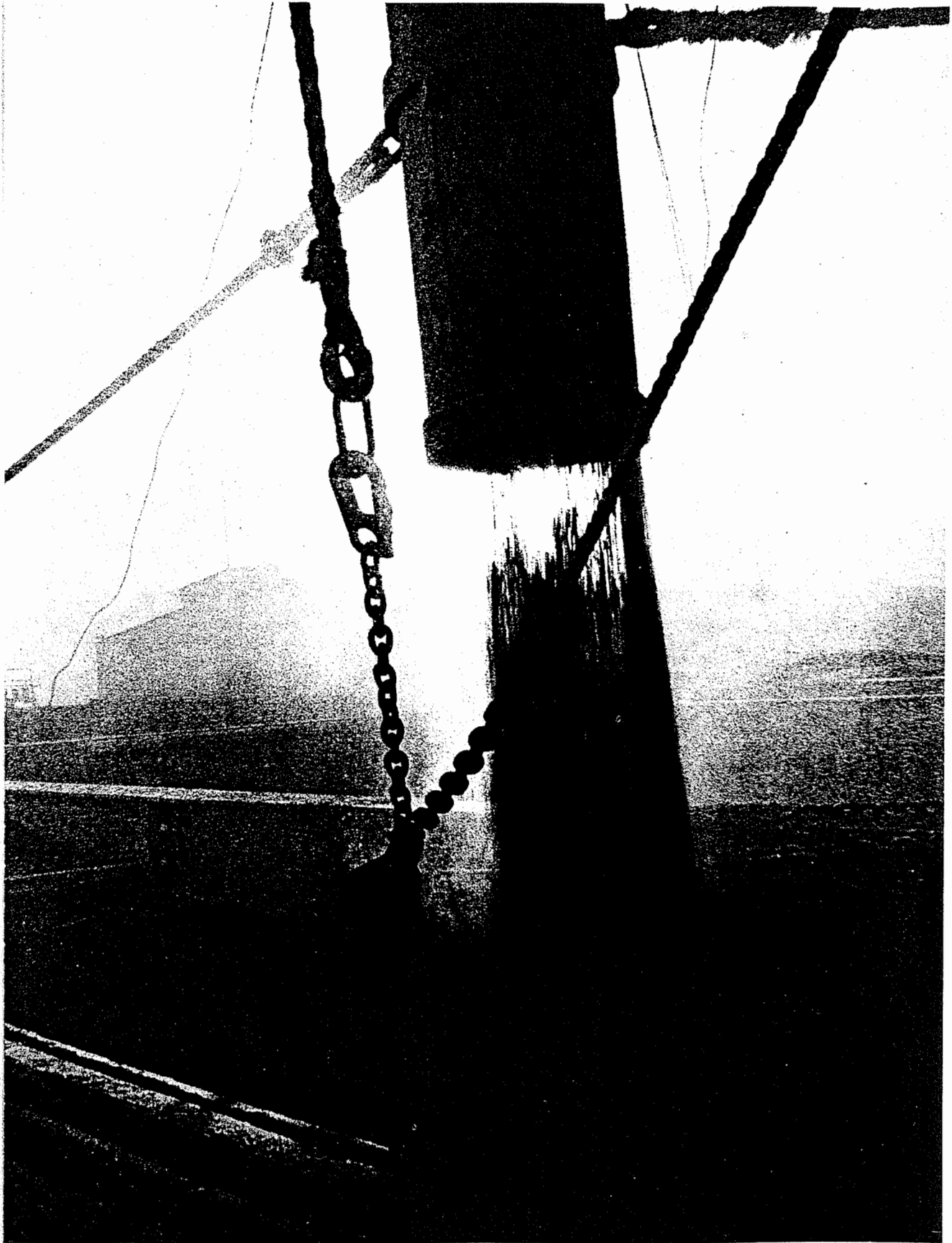
The grain ships in the Northwest were among the first to be converted from sacks to bulk.

Grain pours into the hold at a rate of 145 to 700 tons per hour.

The job is dusty, requiring masks and goggles.

The spout is fed from huge grain silos and moved about to get an even stow.





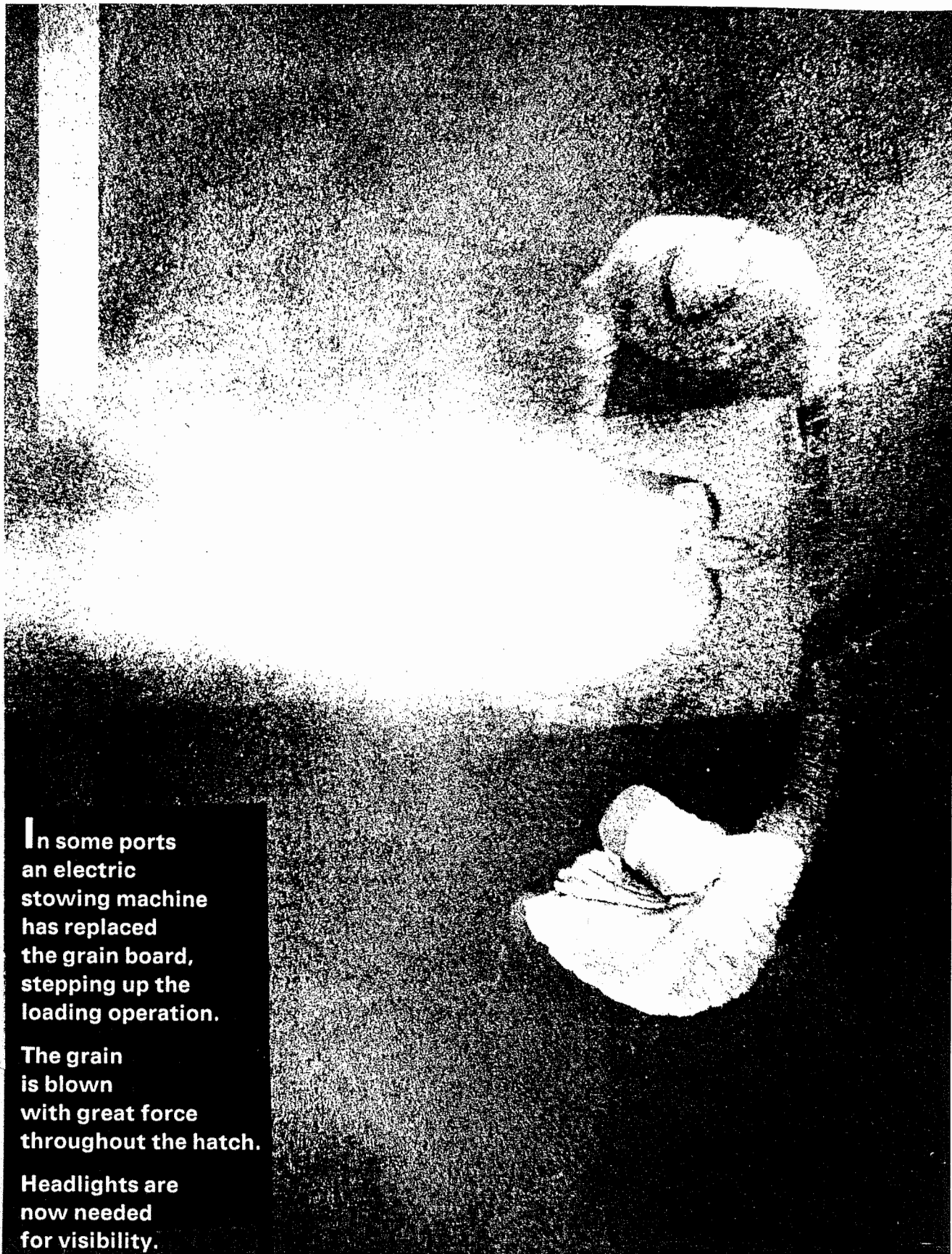
**In the hold
of a grain ship
a pan and stowing board
are used
to shoot the grain
into the corners
of the hatch.**

**Longshoremen work
knee-deep in the grain.
The dust
reduces visibility
to almost zero.**

**One man is
swinging the pan
while his partner
works the board.**



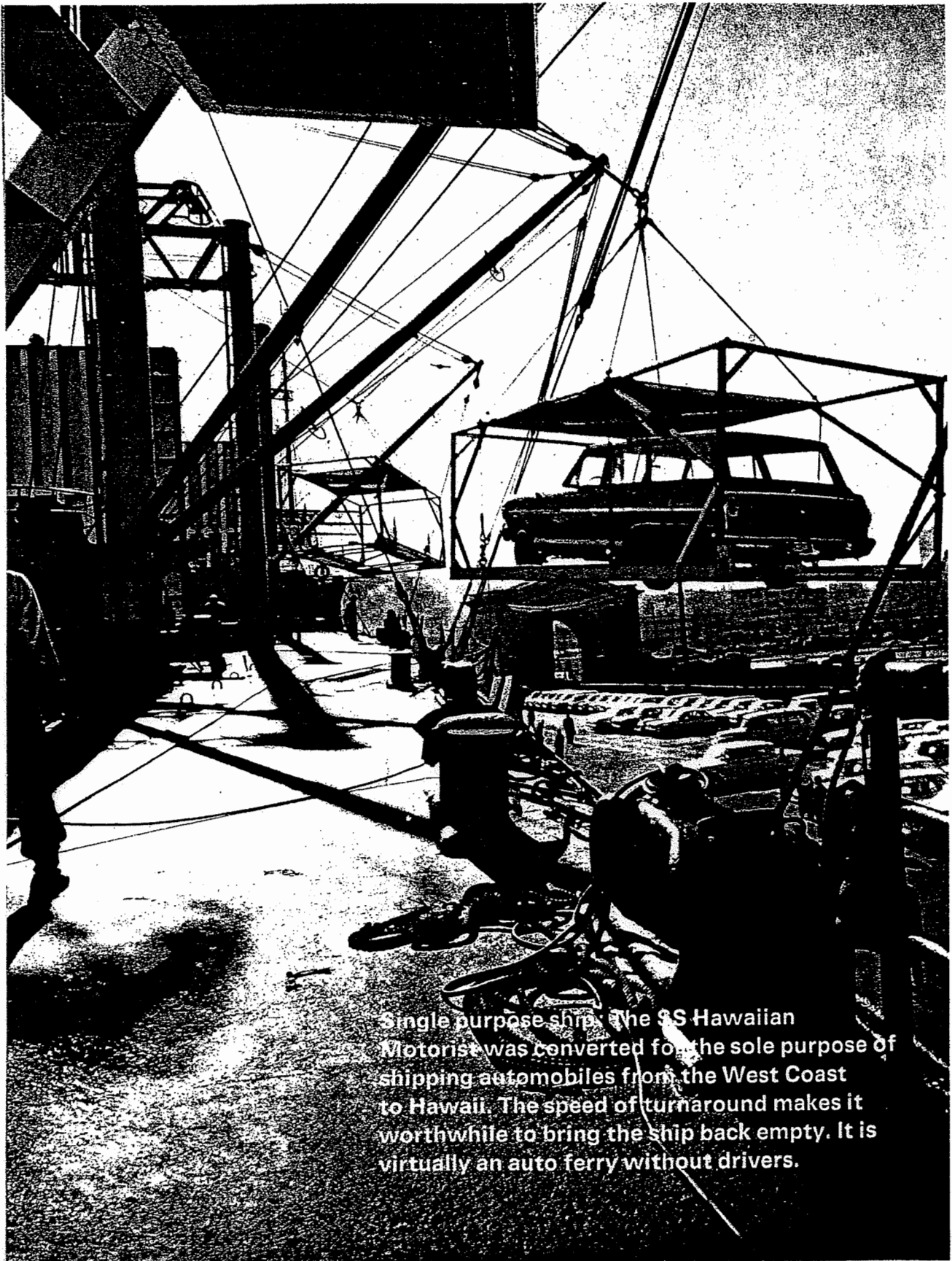




In some ports
an electric
stowing machine
has replaced
the grain board,
stepping up the
loading operation.

The grain
is blown
with great force
throughout the hatch.

Headlights are
now needed
for visibility.



Single purpose ship: The SS Hawaiian Motorist was converted for the sole purpose of shipping automobiles from the West Coast to Hawaii. The speed of turnaround makes it worthwhile to bring the ship back empty. It is virtually an auto ferry without drivers.

See p. 127 Addendum 1 for the type of auto bridle which this "cage" began to replace in the early 1960's - HM.



*Winch driver operating
electrical controls.*

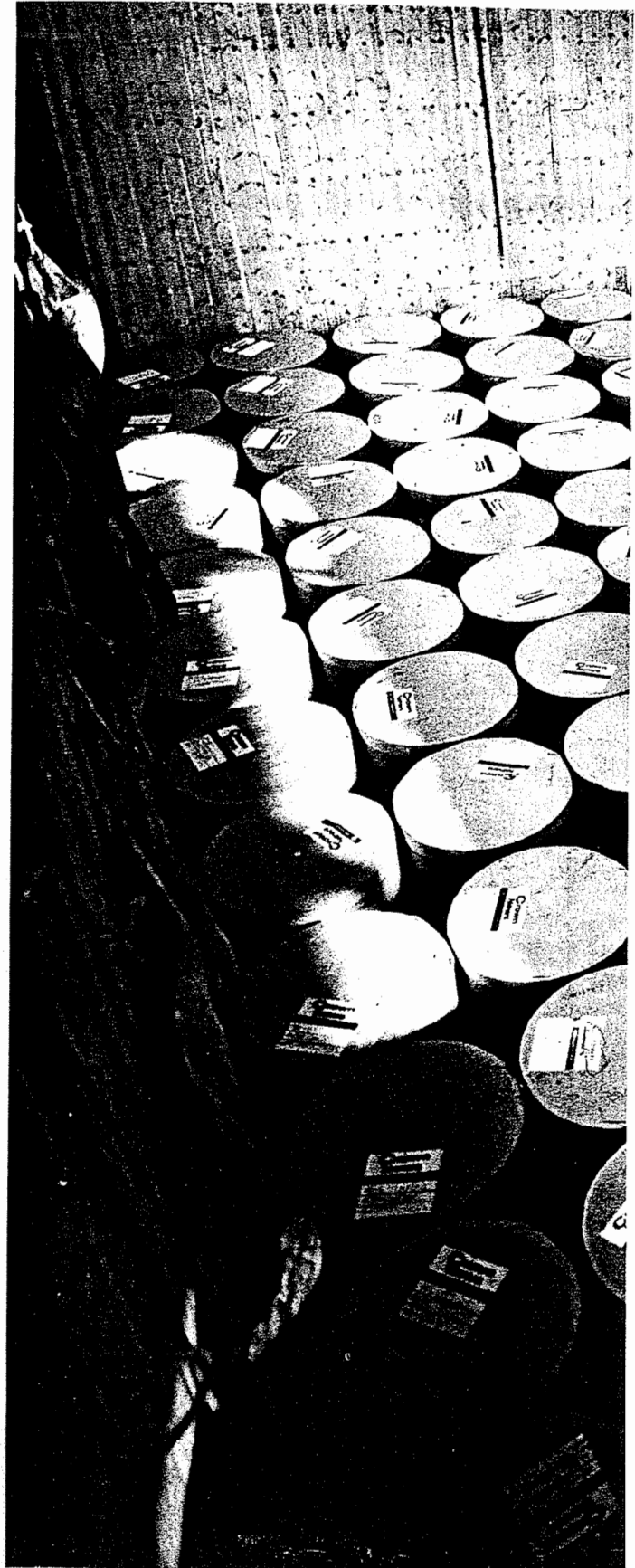
A smaller and lighter and strap carried version of such controls was also introduced to eliminate the need for a second winch driver to serve as a gang's "safety man" and signal man for the winch driver. When two drivers were so employed, they switched their working position every two hours. Having begun to longshore in September of 1963, the author occasionally worked in the hold under burtoned hoisting gear being so controlled. Within a year, however, such controls were no longer being used -- largely because of the tripping and other such hazards which routinely got built up even on the inshore weather deck as conventional operations progressed - HM.

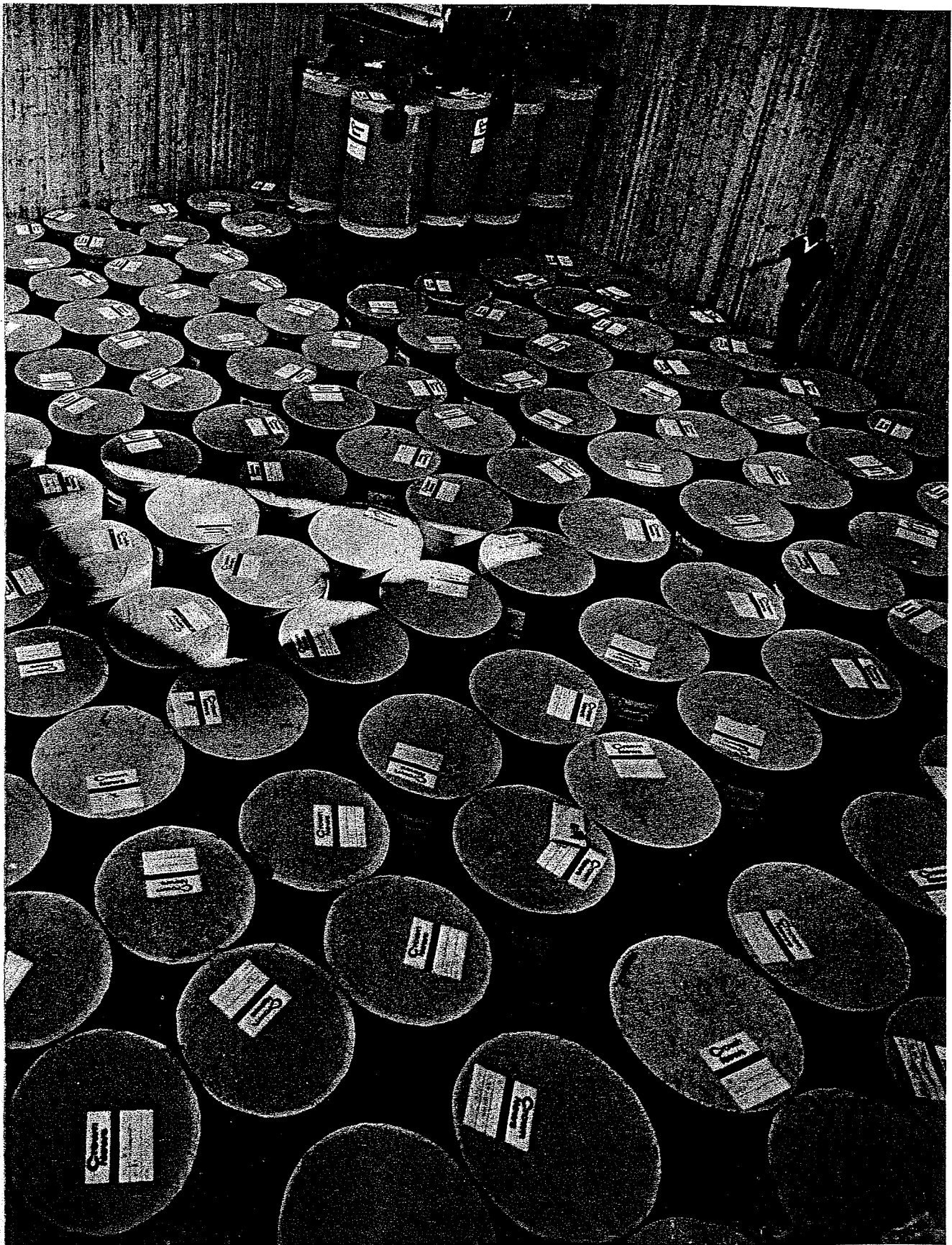
Before mechanization,
paper rolls were
man-handled
by six to eight men
in the hold
and brought out
by conventional
ship's gear
and rope slings.

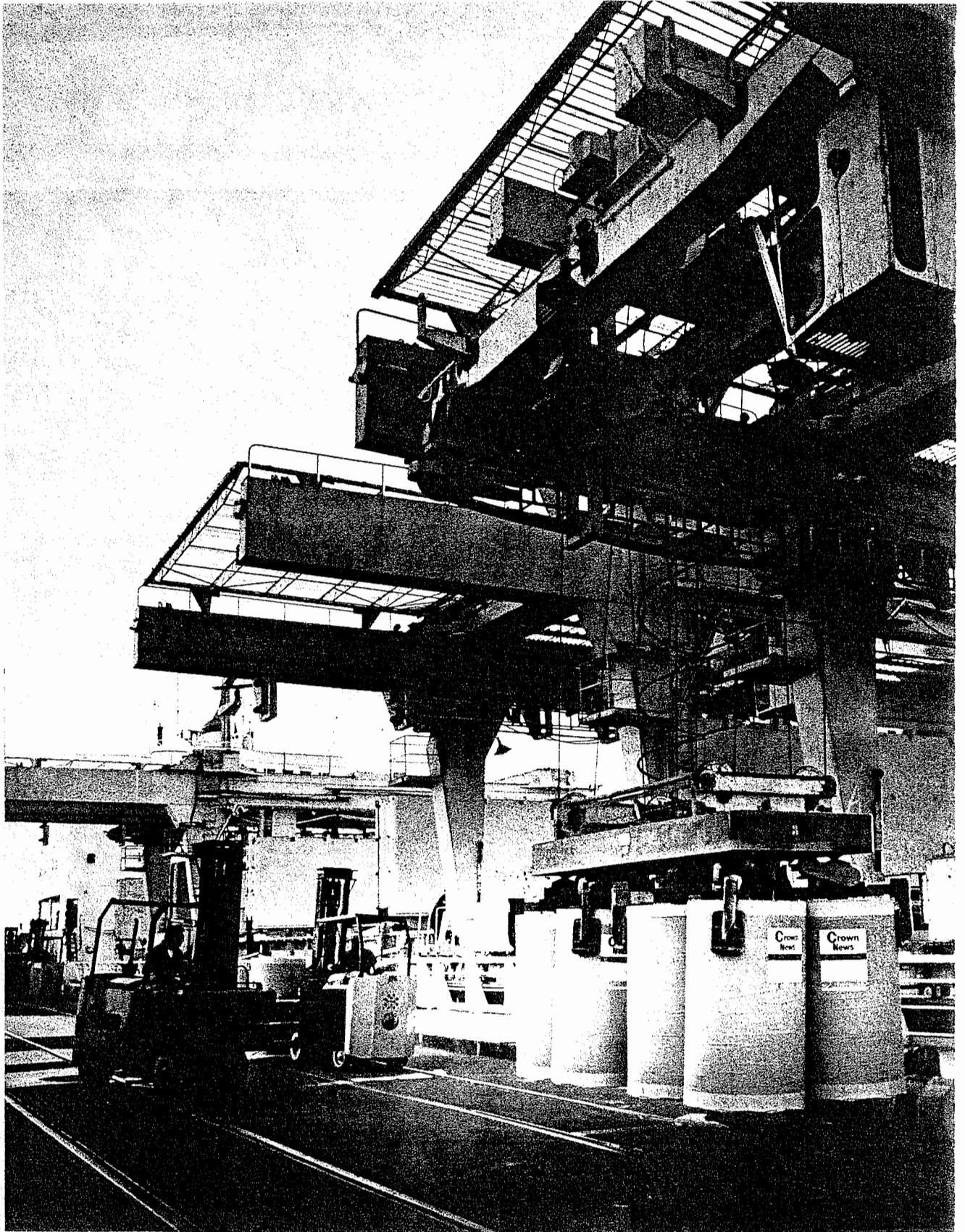
Today, these rolls,
each weighing nearly
a ton,
come out of the hold
eight at a time with
a specially-designed
grab which deposits
them on the dock.

Inflated rubber bags
along the sides
of the hold
keep the rolls
from shifting at sea;
they are deflated
for discharging.

*Newsprint from Canada
reaches West Coast ports
in a paper ship
which carries its own
built-in loading and
discharging devices.*









Large rolls
of paper
are landed
on the dock.

Fork-lifts,
adapted with
squeeze grabs,
carry away
two rolls
of paper
at a time
after the load
is released
from the tug clamps.

*These three large gantry
cranes are part of the
ship's superstructure.
They travel with the ship.*



The earliest type of container hoisting bridle --
and an early way to so employ ship-mounted hoisting gear - HM,



Containers stacked on deck fit into specially-designed brackets and are lashed down with chains. Container cargo is unseen, untouched.

These containers carry 25 to 40 tons of freight loaded at a factory or distribution point.

This type of cargo handling was first introduced in the Seattle-Alaska trade.

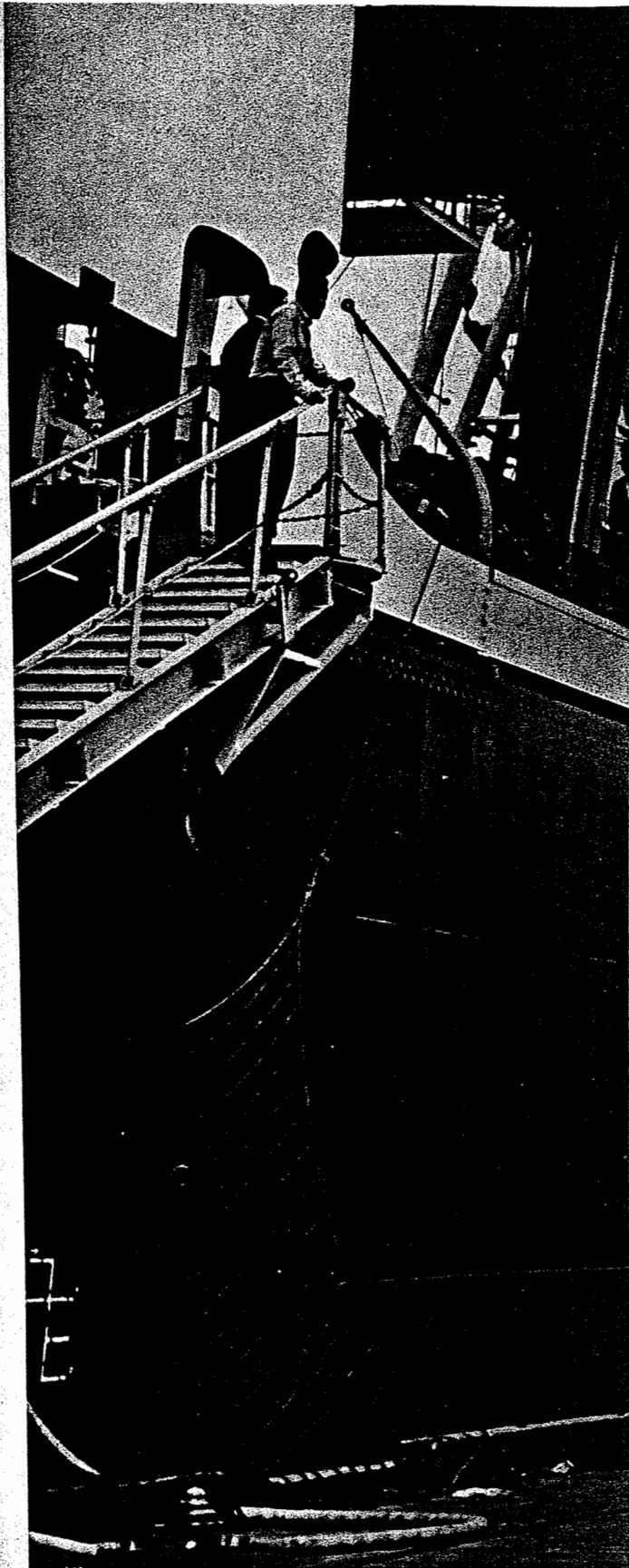
The trade in question was thus remarked upon by Lincoln Fairley, research director of the ILWU from 1946 to 1967, in his Facing Mechanization: The West Coast Longshore Plan, (Institute of Industrial Relation, University of California, Los Angeles), 1979, p. 58 - HM: "In Seattle, the Alaska Steamship Company had already largely converted to what it called 'cribs.' They were pallet boards with removable sides, like a baby's crib. They were handled as units, just as vans were, the whole crib being stowed in the hold as a unit. The biggest concern about the cribs was that many of them were filled "uptown" by other than longshoremen, thus eliminating much of the dock work force. The same was of course true of the Matson vans, but concern over the loss of work on this account was first expressed from Seattle because a larger proportion of the work force was affected."

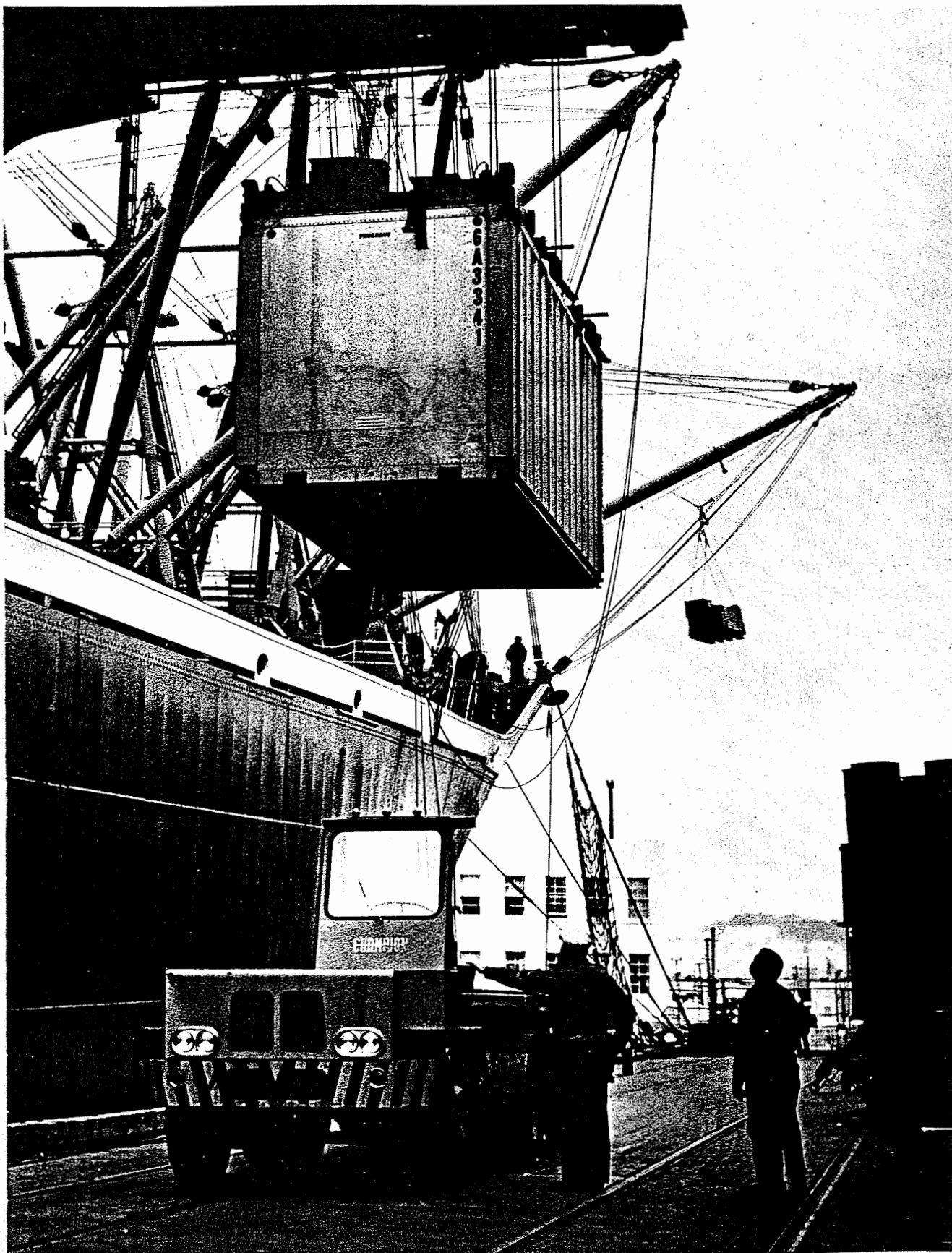
Some newly-designed ships load conventional cargo side by side with truck body containers.

A traveling gantry crane moves fore and aft over two hatches and stacks the containers in the holds.

The gantry loads 20 tons in 5 minutes.

In the forward hatch, where space is too narrow for containers, a 14-man gang—8 in the hold—is handling conventional cargo at a fraction of this rate.







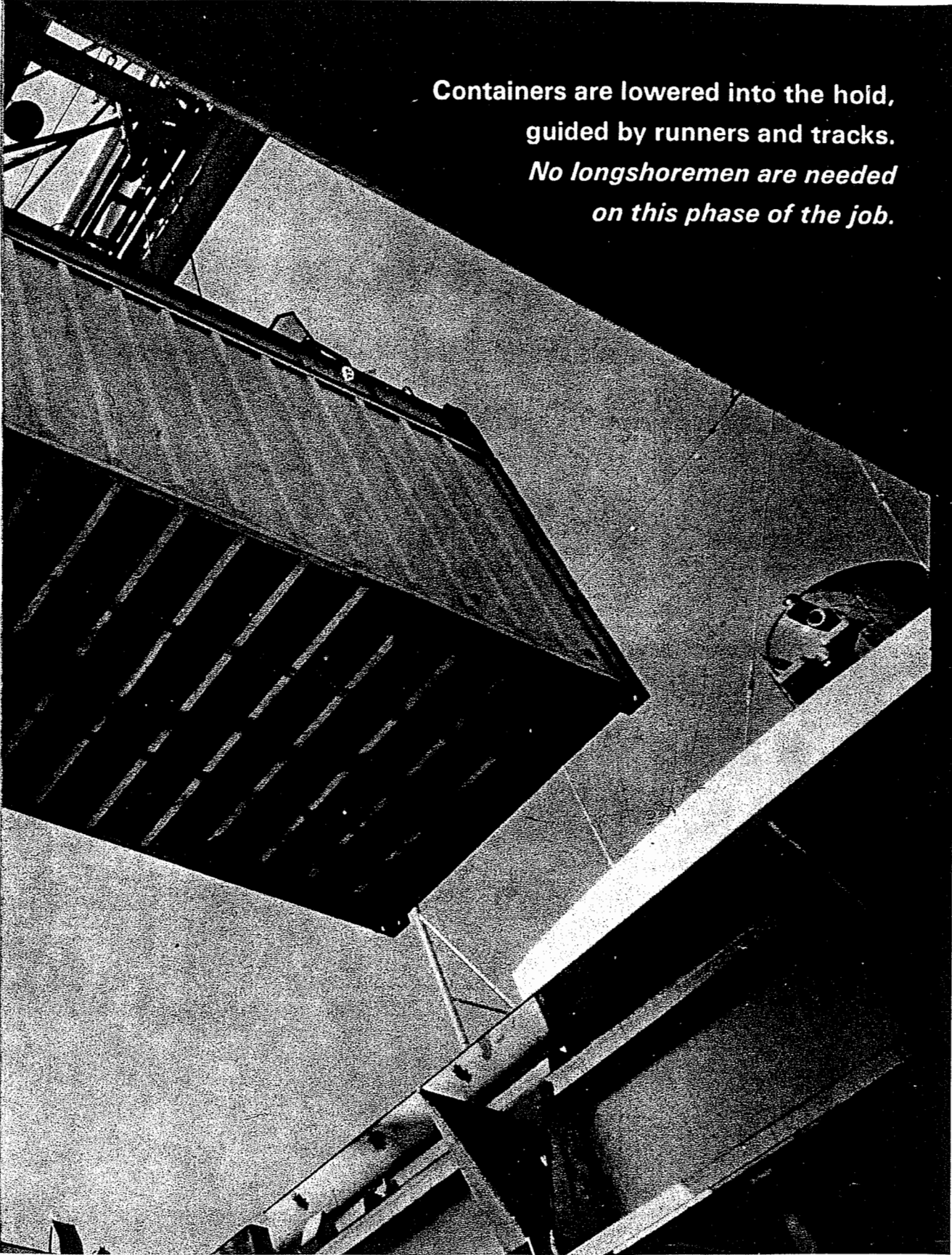


This recently installed dockside gantry travels the length of a fully containerized ship and covers all hatches. The containers are stacked six deep in the holds and three-high on deck.

The operator works in the cab located halfway up the crane, alongside the arm. A ladder leads up to his station.

The only other longshoremen required aboard ship are those who lash the containers into place.





Containers are lowered into the hold,
guided by runners and tracks.
*No longshoremen are needed
on this phase of the job.*

A container ship,
fully loaded, carries
296 truck body vans
below,
140 on deck.
A total of 6,500 tons.

Total man hours
required to discharge
and load: *850*.

Total man hours
required for
same cargo in
conventional operation:
11,088.

Turnaround time
for container ship:
40 hours.

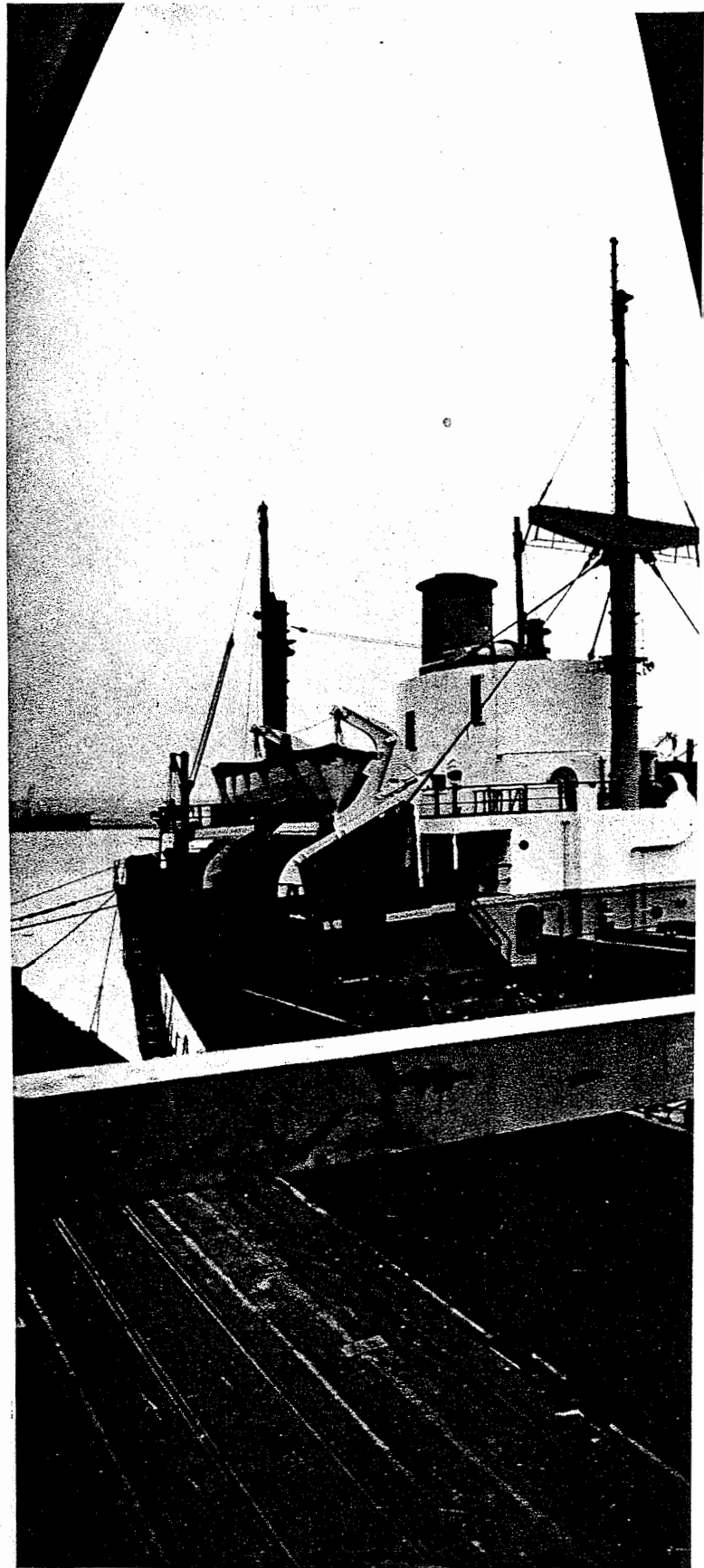
Turnaround time in
conventional operation:
5½ days.

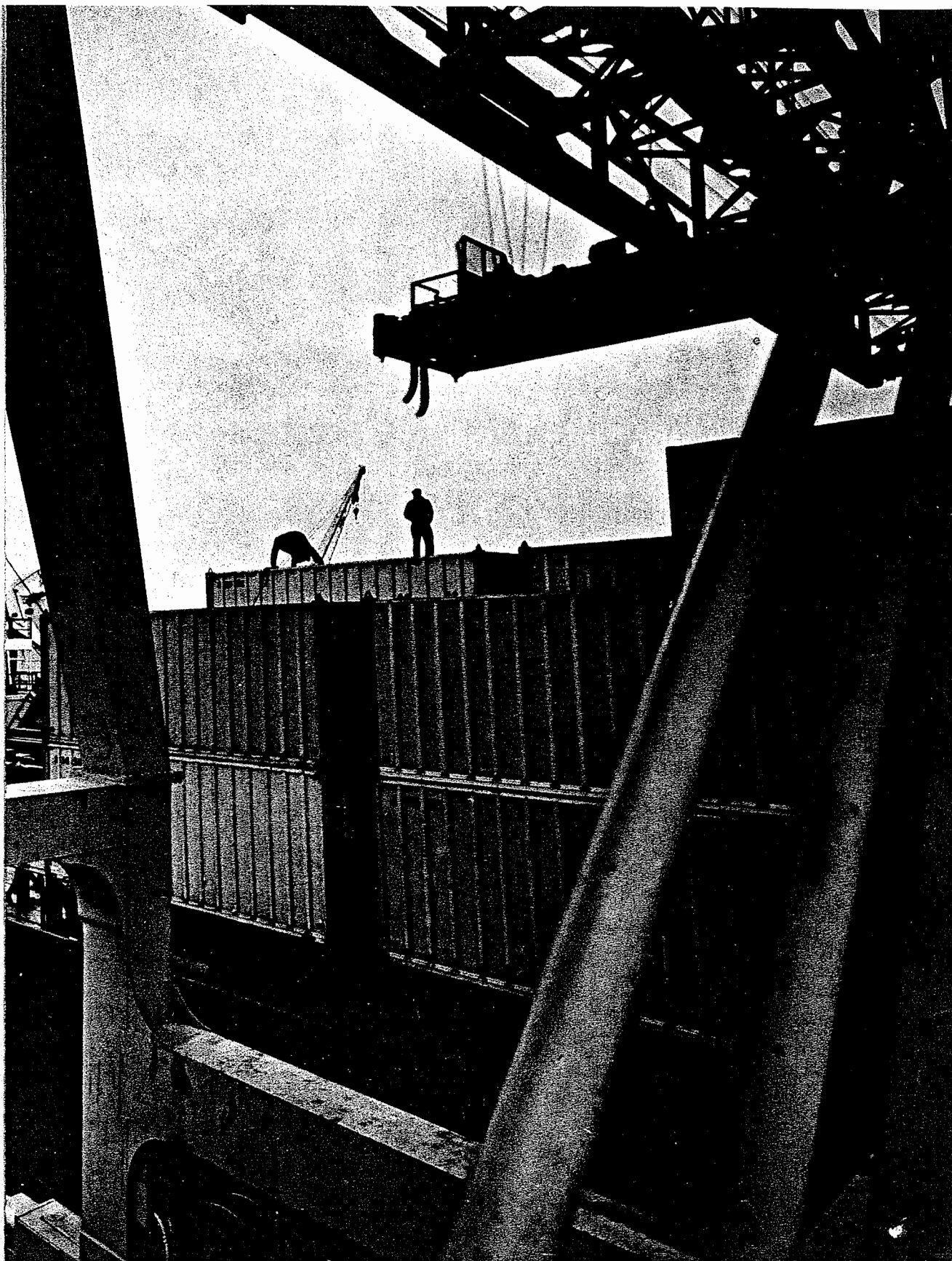
One thing is sure:
The machine
is here to stay.

How soon
will it take over
more of the work?

The bigger question
yet:
*What about
the men?*

This ship carries
containers on deck,
raw sugar below.





Men and Machines - pp. 113 - 128.

Continued from Page 48

retirement. In this event, the men will receive \$320 a month; the additional \$100 is intended to make early retirement more palatable.

5. If, despite these steps, average weekly earnings fall below the equivalent of 35 straight-time hours as a result of mechanization and modernization, the weekly guarantee of this amount (\$111.65 per week as of July 1, 1963) will become operative.

6. A disabled worker with 25 years of service receives the M & M benefit of \$7,920 in addition to a full pension; disabled workers with less than 25 years' service receive pro rata pensions and M & M benefits.

If the agreement works out as planned, funds for the wage guarantee will no longer be required after 1966. It is anticipated that once the rule changes have been completed the rate at which mechanization will increase productivity—and, thereby, reduce work opportunity—will probably not be greater than the rate at which men will leave the industry because of normal attrition. Thus, by controlling the manpower intake the parties should be able to prevent average work opportunity from dropping below a reasonable level.

At the same time the employers can proceed to put in any new machine or method provided only that they can establish, through the grievance machinery, that the method is safe, that there is no speedup of the individual, and that the work is not onerous. These safeguards are written into the agreement. Defining "speed-up" and "onerous" has presented some problems but interpretations are beginning to come out of the labor relations committees and arbitration awards. Subject to these safeguards, any existing working rule which can be shown to prevent or to limit efficient operations must be changed.

Under the Agreement, the employers are under

**Safeguards
in Agreement**

no obligation to perform work with unnecessary men, or "witnesses." The number of men necessary to any longshore operation will be determined in accordance with the Agreement. In this the Agreement takes into account contractual provisions for relief and recognizes that on many jobs all men will not be working at all times due to the cycle of the operation.

Standards for Measurement

The old contract slingload limit of listed commodities will continue to apply to all loads built by longshoremen where conditions, number of men on the dock and in the ship, and the method of operation remain unchanged. By this standard the union will be able to measure changes which do take place.

Slingload limits are lifted for changed operations, new commodities or new operations. Under these circumstances the size of the loads will be as directed by the employer, within safe and practical limits and without speedup of the individual. An increase in the number of men manhandling cargo or the use of machinery to move or stow cargo on docks or aboard ships will be considered a changed operation thereby permitting loads in excess of the standard previously agreed upon.

Past practices which resulted in over-standard loads being skimmed or cargo being removed from pallet boards and placed on the skin of the dock while in transit to or from the ship's hold are eliminated. This will end unnecessary handling of cargo to the benefit of the employers; it will, of course, also eliminate those man hours of work from the industry.

The men so employed in the past are assured that there will be other work for them. Men incapacitated by age or illness and therefore unable to handle ship work will be given priority for dock work.

In addition, the union is guaranteed that any new

equipment used by PMA employers will be operated by ILWU members, trained if necessary by the employers. Some difficulties have been encountered on this score but the problems are being resolved.

Finally, continuing a process which has been going on for some years, modifications were made in the grievance machinery to insure more expeditious settlements on the spot and to provide, when necessary, quicker reference to the coastwide grievance machinery. Largely because of the many radical changes in operations resulting from the adoption of the 8-hour guarantee in 1959 and of this new Mechanization Agreement, both parties have moved in the direction of greater centralization in the handling of grievances. Coastwide rules are superseding many local rules.

These are the essentials of the agreement on mechanization and modernization now in effect in the Pacific Coast ports of the U.S.A.

An agreement on mechanization and modernization was essential for the orderly economic expansion of the West Coast waterfront. The big question was whether the collective bargaining machinery of the ILWU and the PMA had the resiliency and the resourcefulness to bring about an agreement. These could be no ordinary negotiations; they involved the complete overhaul of the contract, its rules and its regulations.

From the employer's association negotiations required the ability and willingness to reconcile diverse points of view toward mechanization and to resolve the reservations of individuals or companies regarding the principle of sharing the benefits of mechanization with the men.

The Pacific Maritime Association is made up of shipping companies headquartered on the Pacific

**Points of view
reconciled**

Coast, foreign lines calling on these ports, East Coast shipping companies with service to the Pacific, and stevedoring contractors. Since cargoes and trade routes vary enormously, the shipping companies were bound to differ in their estimates of how rapidly each would be affected by changing methods. Some elements of an M & M contract could be translated quickly into speedier turnaround or greater efficiency, but there were many imponderables which could only be met by an educated guess. Without long range planning and willingness to take a considerable gamble on the future, negotiations would have been hopeless from the start.

The International Longshoremen's & Warehousemen's Union represents all but a very few of the longshoremen, shipclerks and walking bosses in all West Coast ports. The members of these waterfront local unions form a separate division of the ILWU, the longshore caucus, specifically designed to deal with longshore contract problems, including the formulation of demands, election of a negotiating committee, and a review of all industry agreements. Locals in each port are entitled to send as many delegates as they wish to the caucus, although voting is based on membership strength. In order to guarantee representation from the small as well as the large locals the cost of the first delegate from each local is pro rated to the longshore division of the Pacific Coast as a whole. The vast majority of the caucus delegates come directly off the job.

Confidence in Organization

The primary condition for successful bargaining was the confidence of the longshoremen in the organized strength and democratic structure of their union. These furnished the forum and the freedom to make a drastic departure from old forms of security and old methods of work, and to venture into a relatively unknown area of job protection. The members themselves would have to reach the conviction that change was inevitable, that change was needed, and

that ways and means could be found to make the change. Under the circumstances, union leadership would have to confine itself to presenting the facts and the alternate courses of action—with the final decision resting in the hands of the membership.

It would have been a serious mistake to call in an outside third party. The only bargain the parties could live with was one which they had made themselves. Anything less would have made a shambles of negotiations and inevitably led to the violent resumption of guerrilla warfare over work rules and practices.

Third Party Not Involved

The beginning of the M & M contract can be traced back to 1957. The longshore caucus held in April of that year discussed the loss of work opportunity due to mechanization, and instructed the union officers to make an industry-wide survey and prepare a full report for presentation to the following caucus. The next caucus held in Portland later that same year was called specifically to review this report. The report concluded:

"Presently it seems possible for the union to negotiate a contract embracing the full use of labor-saving machinery with maximum protection for the welfare of the workers. Such protection can generally be spelled out in the following terms:

1. Adequate guarantees against speedup of individual longshoremen.
2. Guarantees of Safety.
3. Guarantees against layoffs of the basic work force; the basic work force here is defined as the presently registered longshoremen, clerks and walking bosses.
4. No reduction in take-home pay.

5. Shortening the work shift.
6. The possibility of guaranteed work opportunity to provide guaranteed weekly take-home pay.
7. Improvements in pension, welfare and vacation conditions.

"It is the recommendation of the International Officers and the Coast Committee that the caucus empower the International and the Coast Committee to continue their unofficial discussions in order to learn how far PMA will go in giving adequate guarantees for the workers in the industry."

The problem under discussion was formulated in these words: "Do we want to stick with our present policy of guerrilla resistance or do we want to attempt a more flexible policy in order to buy specific benefits in return?"

Three full days of Debate

Debate followed for three full days. Had a vote been taken on the first day a decision might easily have been made to continue the use of the union's muscle to preserve the status quo, but as discussion proceeded the view gradually prevailed that to continue guerrilla resistance was to fight a losing battle—a delaying, or holding action at best. Finally, the delegates voted unanimously to accept the recommendation to explore further with the PMA the possibilities of some sort of *quid pro quo*, a share of the machine in return for the employers' demand for full freedom to modernize.

With this action of the caucus, informal conversations with PMA were resumed and this led in 1957 to the adoption, still informally, of the following agreement of objectives:

- "1. To extend and broaden the scope of cargo traffic moving through West Coast ports and to revitalize the lagging volume of existing types of cargoes by:
 - (a) Encouraging employers to develop new methods of operation;
 - (b) Accelerating existing processes of cargo handling and
 - (c) Reducing cargo handling costs in water transportation, including faster ship turnaround.
- "2. To preserve the present registered force of longshoremen as the basic work force in the industry, and to share with that force a portion of the net labor cost saving to be effected by introduction of mechanical innovations, removal of contractual restrictions, or any other means.
- "3. To accomplish objectives 1 and 2 WITHOUT:
 - (a) Individual speedup;
 - (b) Breaching legitimate safety rules and codes;
 - (c) Indiscriminate layoffs;
 - (d) Bankrupting operations which do not lend themselves to change;
 - (e) Driving away existing cargoes; and
 - (f) Distorting hourly wage rates of longshoremen in comparison to rates paid

workers of comparable skill in the longshore industry.

"4. An additional objective proposed by the union is to reduce the length of the present longshore work shift."

Factual basis sought

Union and employer technicians then undertook to devise methods to measure productivity changes and the resulting savings which would accrue to the employers, including those from faster ship turnaround.

When negotiations were initiated under the 1959 contract opening, the PMA indicated that although there was agreement in principle on the objectives of a mechanization program, the employers needed more time to develop the necessary factual basis for detailed negotiations. The union however was unwilling to defer action for another year, and consequently an interim agreement was reached which accomplished the following:

1. Re-stated the basic objectives of the parties, including a specific guarantee against layoffs of the fully registered men;
2. Established a Mechanization Fund to which the PMA agreed to contribute a down payment of one and one-half million dollars during the ensuing contract year, the money to be raised as the PMA saw fit;
3. Formalized a procedure for modifying gang sizes and other rules, case by case, whenever new labor-saving devices were introduced. Work rules were otherwise frozen.

Immediately after the 1959 agreement, the parties settled down in earnest to prepare for the 1960 contract review. Both sides recognized that by 1960 there would have to be a breakthrough to a full-fledged agreement on M & M, or the work done that far would unravel. For all intents and purposes discussions and negotiations went on all year as each side increasingly clarified its own objectives and more fully understood the demands from across the table. When negotiations had reached the point where it appeared agreement might be in sight, the longshore negotiating committee convened the caucus for extended sessions. Each contract proposal was placed before the caucus for debate, and finally the entire caucus sat in on the negotiation sessions.

The M & M agreement did not take form as a recommendation of the negotiating committee to the membership; it took shape with the help and active participation of the full caucus in the "fishbowl" negotiations. The caucus remained in session for 18 days before agreement was reached. Then followed publication of the text, reports of delegates to local stop-work meetings, and a secret ballot referendum vote by the membership.

Meanwhile, the PMA had also geared itself to M & M negotiations. In addition to its coastwise meetings at which the directors were chosen and empowered to select their negotiating committee, sessions were held in each port area to secure the broadest participation of employer operating personnel in the discussion of standards, requirements, and objectives of an M & M contract. The local personnel were most familiar with the application and effect of work rules and practices, and in the last analysis they were the ones who could make the agreement on M & M profitable.

Two fundamental contract conditions, already in

Broad Participation

effect in the industry, were the mainstays of the successful negotiations:

The hiring hall
Multiple-employer coastwise collective bargaining

Introduction of Dispatch Halls

It was on the West Coast, after the 1934 maritime strike, that the system of joint registration of longshoremen and the operation of the jointly controlled dispatch halls were first introduced. These were the most important steps taken to decasualize longshore work. Before the hiring hall a few longshoremen worked steadily for the same company; the vast majority drifted from pier to pier in search of a job. There was no limit to the number of men who hunted for work on the front, and there was no guarantee to any of them that they would be hired if work was available. This pier to pier job hunting was called the "shape-up," and inevitably brought on discrimination and favoritism.

In those days each company paid its employees separately, and men who had worked on several piers for several different employers would spend most of a day making the rounds of the pay offices. Men who didn't want to lose the time, or needed the money in a hurry, would discount their work tokens—"brass checks"—with the loan sharks.

The pier to pier hunt for jobs, the shape-up and its evils, and the brass check were eliminated from the West Coast forever with the coming of the joint dispatch hall. The casual workers were transformed into a stable, skilled and mobile work force, available to the entire industry.

Through the joint dispatch halls, each longshoreman works for the industry as a whole. The principle is quite simple: The employers and the union determine

the number of men needed to meet the demands of the port and the coast as a whole. The objective is to have sufficient longshoremen to handle the regular flow of cargo, but not so many that their equal sharing is a sharing of starvation; the aim is to strike a balance between men waiting for ships and ships waiting for men.

There are bound to be peaks and valleys in the demand for labor, but the policy of the longshoremen has been to share good times and bad. In peak periods casual, or extra men, are employed.

All longshoremen are entitled to equal work opportunity. Discrimination and favoritism are strictly prohibited. The worker with the lowest hours to his credit is sent out to a new job first (jobs vary in length, hence the difference in hours). If each man made himself available as his turn came, earnings at the end of the year would be approximately equal. Longshoremen, whether in gangs or working "off the board" (a pool to fill out or make up gangs when required) fall into categories such as holdmen, dockmen, winch drivers, or fork lift operators. Men in gangs need not report to the hall in person; they can get their job assignment over the phone or from their gang bosses. They stay with the gang, and must take the assignment to which the gang is dispatched. On the other hand, a man working off the board reports to the hall after the completion of each job, but he has greater latitude in accepting or declining a work assignment. However the basic principle of equal work opportunity through rotary dispatch applies to all. The dispatchers are joint employees, but they are elected by the longshoremen who would make short shrift of any violators of the rules.

The shipowners and stevedoring companies have an allocations committee which determines the priority of operations and the distribution of labor to ship and

**How Labor is
Allocated**

Mobility Is Asset

dock work. These determinations or allocations are transmitted to the joint dispatch hall, which in turn distributes the specific men and gangs in keeping with the orders.

The joint dispatch hall, the centralization of records, and the mobility of manpower have become an important operational asset to the employers. The industry obtains the maximum utilization of the work force, and at the same time avoids having some ships idle in one part of the port while men are idle before a pier gate elsewhere. Without this control over the size and distribution of the work force and the authority to move the men about through the dispatch hall, an agreement on mechanization and modernization would have been impossible. The machinery which had efficiently decasualized the longshore industry became the vehicle for launching the new program on mechanization.

All men work all cargoes for all companies in all ports. Work and skills are transferable so the PMA and the ILWU can deal with the impact of change and improvement in cargo handling on an industry-wide basis. As a result, mechanization and modernization takes on a different and much wider dimension; the problem is not confined to what happens to the group of men with specialized skills whose work for a single employer has been partly or completely eliminated by a machine.

Because the Pacific Maritime Association and the International Longshoremen's & Warehousemen's Union are bargaining for all men and all cargoes in all Pacific Coast ports, they had a spring long enough and strong enough to absorb the shock of change—light in some cases, drastic in others.

Equally important was the fact that in the west coast longshore ports there is no need to arrange for

the meeting of a man with his new job when the old one disappears; the hiring hall does this for him.

The joint control over registration of longshoremen makes it possible for the union and the employers to adjust to changing manpower needs. They can make effective decisions either to add new men on a permanent or temporary basis or to freeze the work force and allow it to contract by normal attrition.

Other forms of stability flowed from the decasualization of longshore work through the hiring hall. Records were already being kept on the work hours of all men to assure equal distribution of work and equalization of earnings. The establishment of central pay offices logically followed. As all men worked for all companies arrangements could be made to issue a single check for each man, paid at the central place. The area of contract benefits generally associated with steady employment also opened to the longshoremen: vacations with pay, computing hours for all companies, medical care, life insurance, pensions, and dental care for children became a part of the basic contract guarantees.

The experience gained by the employers and the union in the administration of the dispatch system and central records keeping office readily applied to the introduction of jointly administered plans in the area of welfare and pensions, which are among the most efficiently and economically operated plans in the country.

The M & M agreement was fitted into this framework of collective bargaining and contractual relationships. Many of the benefits could be slotted into existing plans or integrated with them.

Early retirement under M & M does not prejudice benefits to which a longshoreman is entitled under the

**No Benefits
Prejudiced**

regular industry pension and a smooth transition can be made from one to the other.

The medical coverage, including dependents, which applies to pensioners, is extended to those who take early retirement.

In cases of disability where longshoremen can no longer continue on the job, the M & M fund pays full or partial benefits, depending on years of service, on top of the industry pension. This is an extremely important aspect of M & M in an industry which unfortunately still has a high accident and injury rate.

While new funds had to be established to pay the benefits set forth under M & M, the existing administrative structure of welfare and pension funds readily absorbed these added functions.

On the contract operating level, the local and coastwise grievance machinery is responsible for the enormous job of making the changeover to mechanization and modernization. Notwithstanding the broad scale participation of the entire longshore caucus in negotiations around the M & M agreement, including attendance at the "fishbowl" negotiations, the test of the contract came in the response of the men.

Pact Printed In Full

The proposed agreement was printed in full and distributed to all longshoremen. Adequate time for study was allowed before the scheduling of debate. All locals held stop-work meetings to receive the reports of their caucus delegates, question them on negotiations, and argue the merits of the M & M proposal.

A secret ballot referendum of the entire coast is required for approval of any longshore contract. Only after full and free debate in union halls, on the pier heads and in the ship's hold was the vote taken on ratification. Although the M & M agreement was rati-

fied by a substantial majority, the vote was by no means unanimous. Many members were not convinced that the old work rules should be given up. No one argued that the old order could be kept for any length of time and there was universal recognition of the fact that with mechanization (what the men call automation), things would never be the same. Still in all, it is hard to let go of the past.

It is doubtful whether the longshoremen would have voted for the M & M agreement had they not had the democratic machinery for full participation and debate. Above all, they had the confidence in their own strength to protect themselves if anything went wrong with the program.

Full Participation and Debate

Nor was the vote for the M & M agreement unanimous among the employers. Some anticipated little or no benefits from the program; others thought it was not worth the price. And here, too, the old way of doing business had its attractions. However, the majority of the shipowners and operating personnel could see the potential value in mechanization and modernization and the promise it gave for improved efficiency and speedier ship turnaround.

As in all bargains, the question arises: Is it a good deal, and who gets the best of the bargain? This will be argued for years to come but in this case the question is not material.

True, the longshoremen could have clung to the old rules and work practices, maybe for some time to come. Equally true, the shipowners could have refused to bargain on new methods and new machines. Then both sides would have lost. The old rules and work practices would sooner or later have gone by the board. The employers might have rammed through some changes, but at what cost?

Both Sides Gained

In this bargain both sides gained: the worker a new form of security, the employer a new latitude in operations.

The important point is that the turn was made. If it develops that one side or the other got the better part of the bargain, then this will undoubtedly be a subject of future collective bargaining. Both the ILWU and the PMA are strong enough in their own right. They can take care of themselves.

The decision to launch the M & M program is irreversible; The change has been made.

Old work rules cannot be restored; employer contribution to the M & M fund cannot be returned.

It is too early to tell whether the agreement itself might have to be modified, but it will not be abandoned.

Meanwhile, this pioneering effort in the field of Men and Machines is working, and working well on the West Coast waterfront.

Contracts come out of people

The M&M Agreement was born of necessity recognized by both sides—a bargain of equals.

The men sure of their strength and their union. The employers confident in their association and its ability to get performance out of the contract.

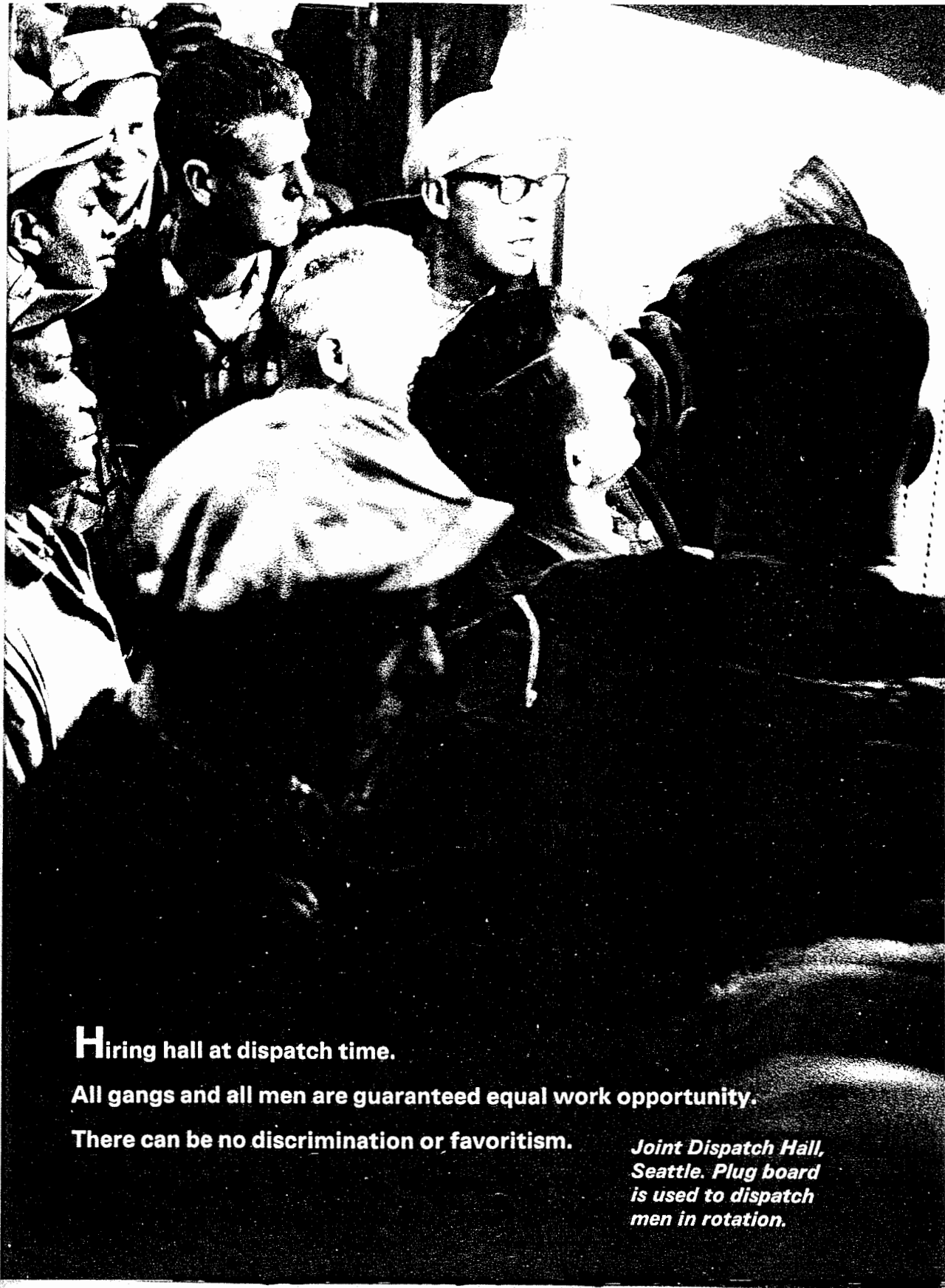
The rockbottom foundation of bargaining was broadscale participation by the members of both sides; men willing to put it on the line, hard bargaining by seasoned adversaries.

But agreement does not end argument, and the debate goes on:

We could have hung tough,
we could have gotten more,
we gave up too much for too little—

We bought what we already owned,
we paid too much for too little,
our operation doesn't fit this agreement,
we can not mechanize; we are too small—

Such doubts are a byproduct of change—the answers will be found through the same machinery which brought about the agreement in the first place.



Hiring hall at dispatch time.

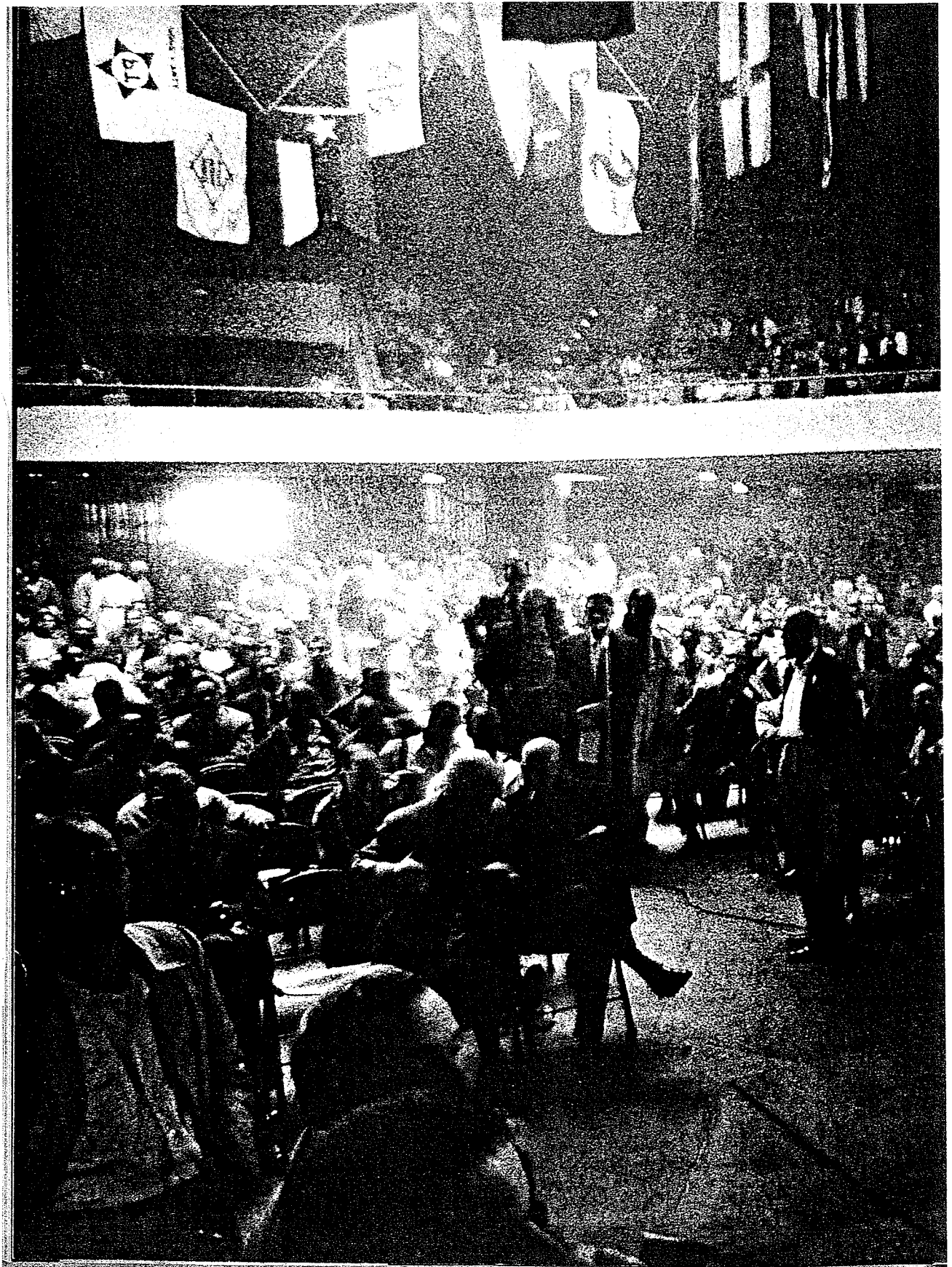
All gangs and all men are guaranteed equal work opportunity.

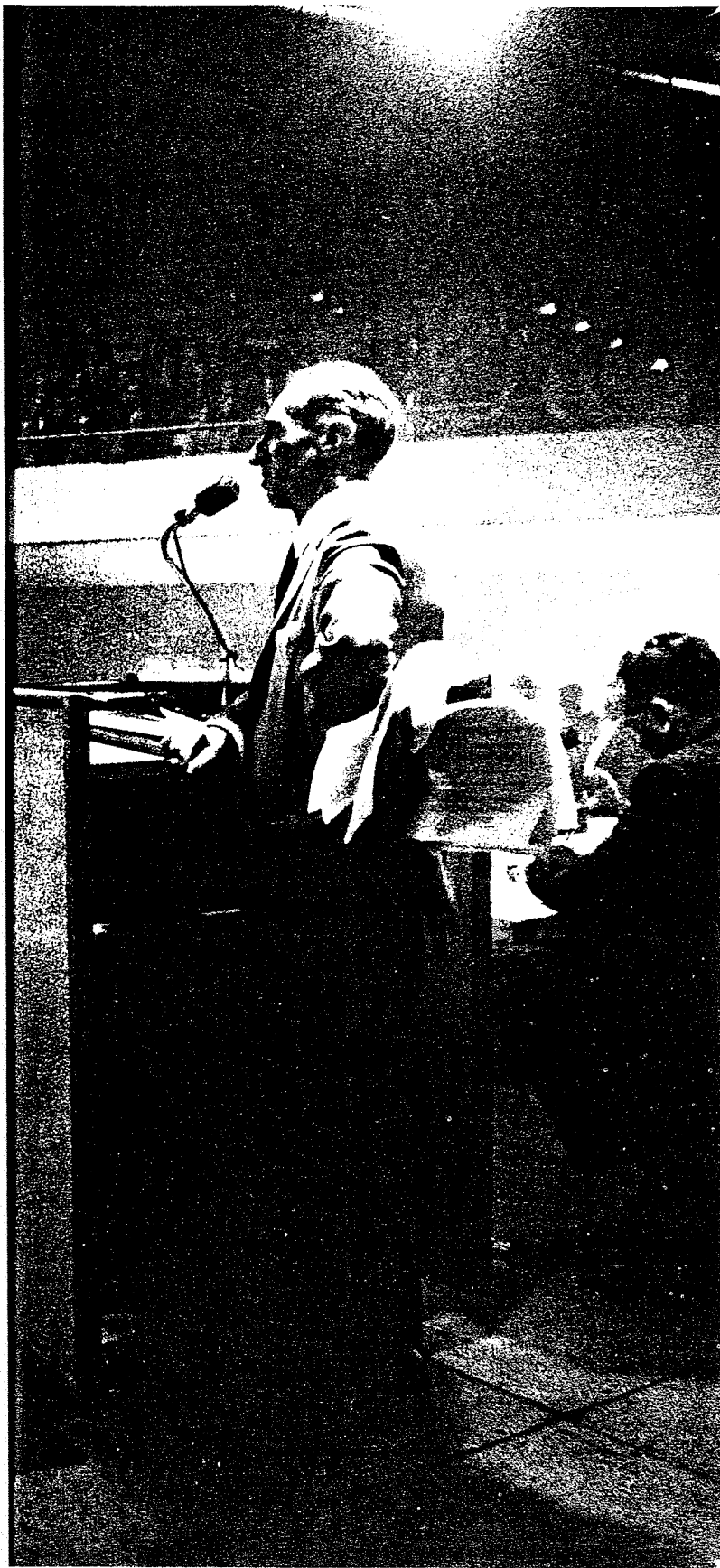
There can be no discrimination or favoritism.

*Joint Dispatch Hall,
Seattle. Plug board
is used to dispatch
men in rotation.*



The Pacific Maritime Association keeps complete records on every man's work and earnings. These furnish the data for equalizing work opportunity and preparing the single weekly payroll, distributed by the Central Pay Offices in each port. This information is the basis for computing vacations, welfare benefits, sick and disability pay, social security, life insurance, M&M and pension credits. The record keeping is fully automated.





Twice a month the union membership meeting provides the forum to thrash out all issues.

One microphone is on the platform, three are placed on the floor. Good beefs, bum beefs, every member is entitled to his say.

Men line up at the mike at a meeting of the San Francisco local.

Harry Bridges -- the International President of the ILWU -- is pictured here at the platform mike - HM.

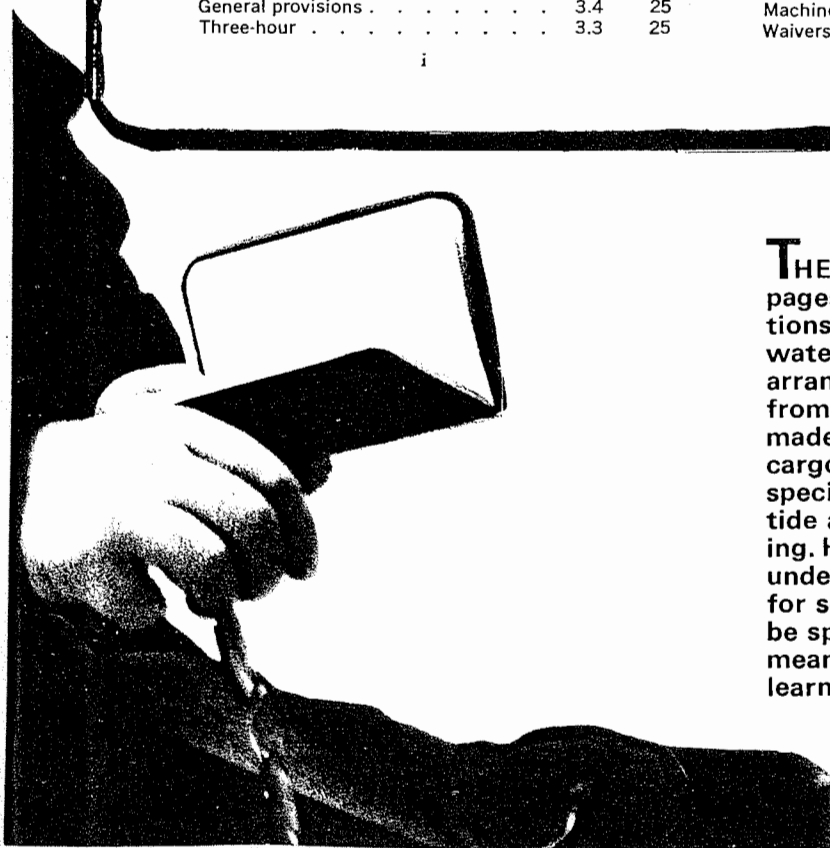
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THE CONTRACT: The "*Bible*," 170 pages of rules, regulations and conditions governing the daily work on the waterfront. Unlike a factory, working arrangements and conditions vary from day to day. Provision must be made for the whole range of ships, cargoes, gear and equipment, and the special conditions of each port; from tide and weather to shifting and sailing. Hiring and dispatch rules, benefits under the contract, and the procedure for settlement of grievances must all be spelled out. The contract takes on meaning as the parties themselves learn how to make it work.

**THE LONGSHORE
CAUCUS—**

The governing body
of the longshore division
of the ILWU
represents all locals
on the Pacific Coast.
The majority
of delegates
are working
longshoremen.

*The Caucus delegates,
instructed by
their membership,
elect the union
negotiating committee
and review
all contracts.*

In the final negotiations
on the M&M agreement,
the Caucus stayed in
session 18 days and
participated as a body
in the "fishbowl"
negotiations.

The results of the
negotiations and the
recommendations of the
Caucus were then reported
back to the membership
at stop-work meetings
and ratified by secret
ballot referendum vote.

*The contract must work
at the job level.*

The parties are pledged
to settle each beef
as it arises.

If a beef cannot be settled
on the job by the
job steward
and walking boss
or other company
representative, it goes
to the local union
officials and their opposite
numbers among employer
representatives, and next
to the Local Labor Relations
Committee composed of equal
numbers from each side.

If the dispute has more
than local significance
it may go to an
area arbitrator, the
Coast LRC and, if necessary,
to the Coast Arbitrator.



All basic contract questions go to the Joint Coast Labor Relations Committee for interpretation and ruling.

It is composed of three union and three employer representatives.

Any grievance, which cannot be settled at the local level, is sent here for clarification and decision.

If they deadlock, the dispute goes before the Coast Arbitrator for a final ruling that is binding on both parties.

PETER BOLOTOFF

*Longshore Registration No. 5881,
Union Book No. 5046, Local 10, ILWU
Age: 62*

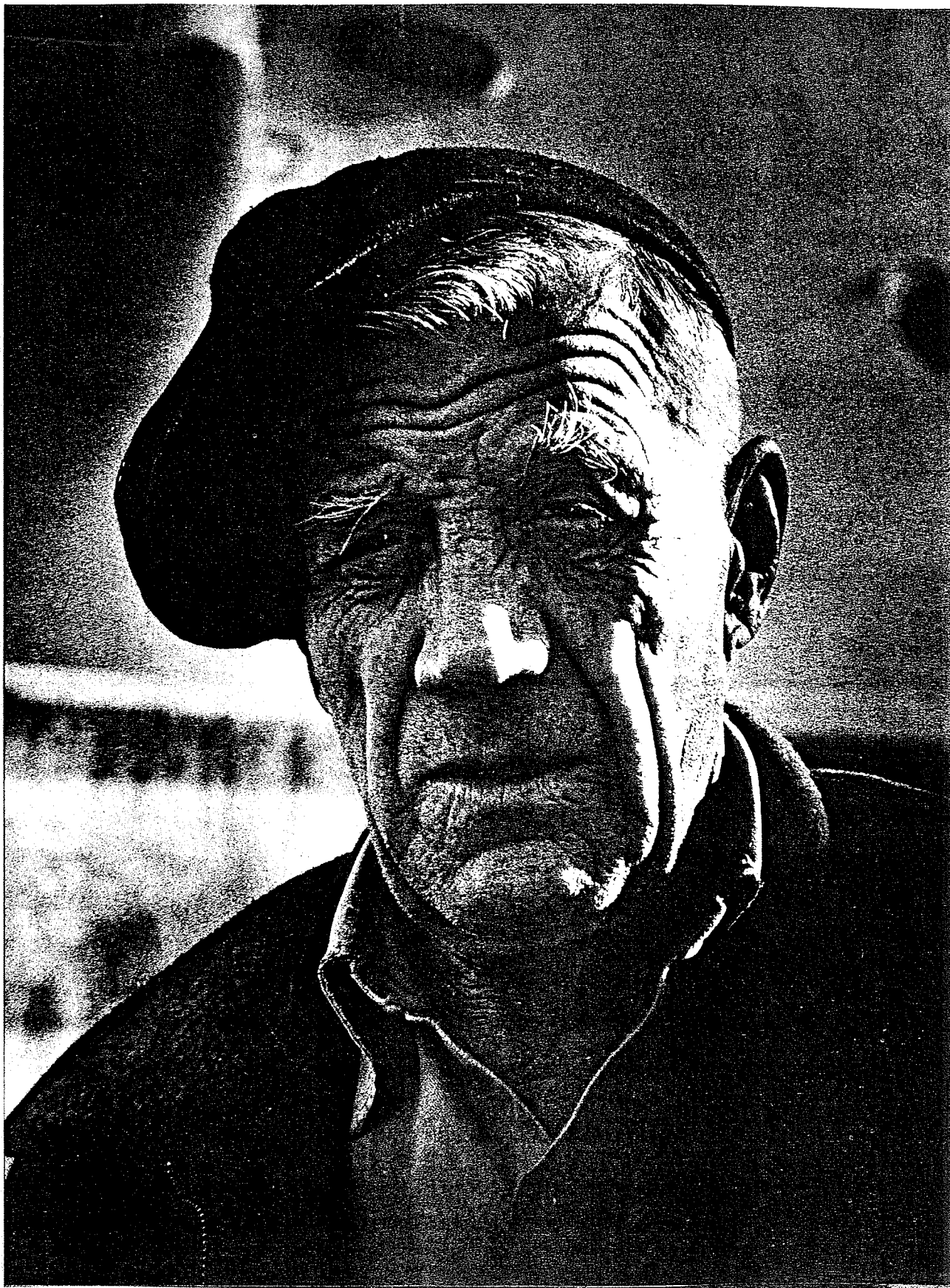
Pete started working on the waterfront in 1936. For nine years he worked lumber. He worked as a hold man, first on general cargo, finally as a member of a shoveling gang. He spent the last 18 years working ore, bones, meal and copra. It hasn't been an easy life, but Pete had a home on the waterfront. He liked the companionship of his fellow workers and enjoyed the freedom of his job. As a fully registered longshoreman with more than 25 qualifying years of work to his credit, Pete had three alternatives under the M&M program:

He could take early retirement at age 62 with a pension of \$220 per month from M&M funds plus full medical coverage and limited life insurance. At age 65, he would then transfer to the regular industry pension of \$115 per month, plus medical care, life insurance and social security.

He could continue at work until normal retirement age of 65. At that time he would be eligible for the regular pension of \$115 per month from the industry fund, plus a lump sum payment of his early retirement benefit of \$7,920.

He could continue on the job for a while and take early retirement any time before age 65; his vested rights would still be protected.

Pete has worked long and hard on the waterfront. He chose early retirement at age 62.

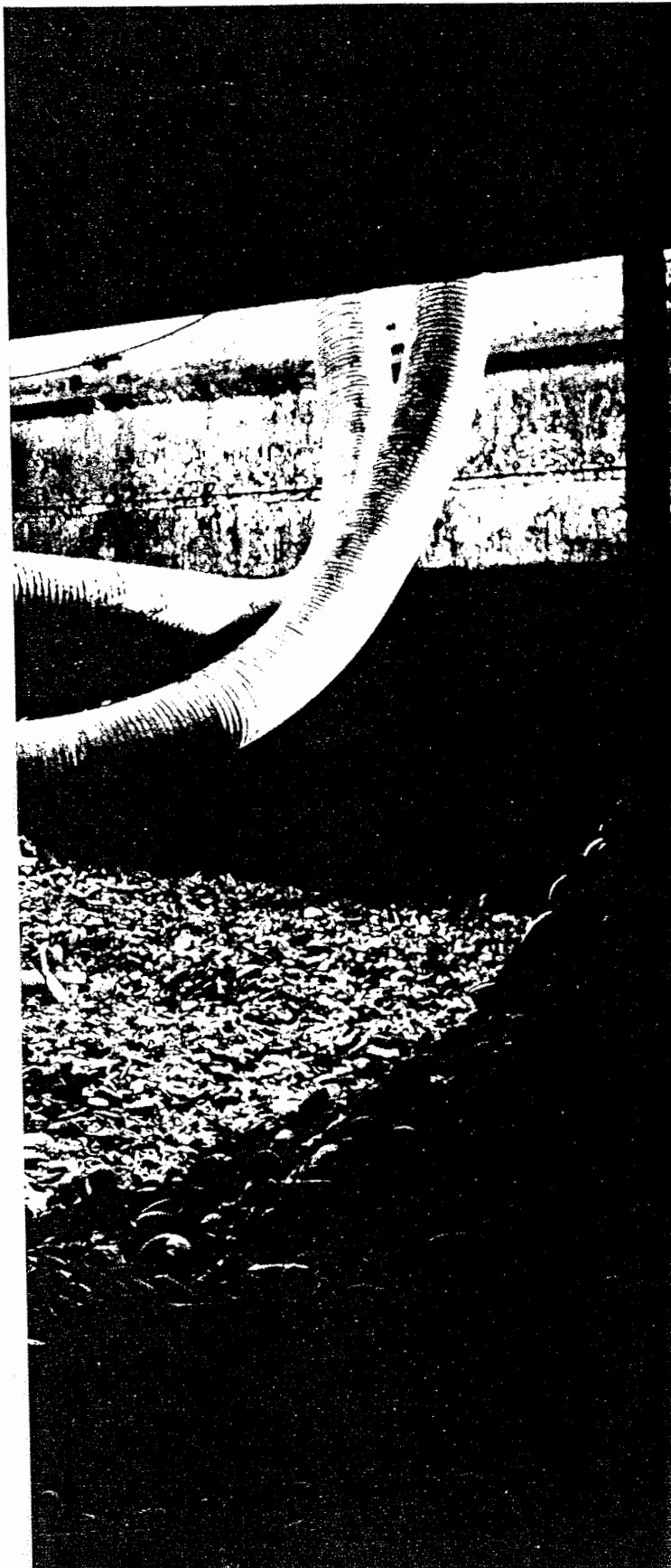




The text reads: Working copra - 20 minutes pick







Then came the machine:
The screw now does
the pick and shovel work
Pete used to do.
The screw loosens
the copra and feeds it
into huge vacuum tubes
which pump it
out of the hold.

The pick and shovel
are obsolete
on the waterfront.
New skills and training
are called for.

Under the contract, Pete,
with his seniority,
was entitled to
preference in training
and filling the new job
of operating the machine.

Pete's decision to retire
opened up a job
opportunity
for a younger man.

This electrically powered
and controlled
machine loosens the copra
and feeds it into
the suction tubes.





FACING THE FUTURE

The photographs in this book show dramatically some of the changes that have taken place—and are continuing to take place—in the loading and unloading of cargoes on the Pacific Coast.

But they cannot show the equally dramatic changes in approach to labor-management negotiations that produced the PMA-ILWU Mechanization and Modernization Plan.

In the mid-fifties, both the Union and the Association were acutely aware of increasing pressures from the owners of cargo and of ships for more efficient—and consequently, less expensive—methods of cargo handling. Both parties also knew that, during more than twenty years, attitudes had hardened—the men resisting labor saving methods or machines—the employers complaining bitterly, but ineffectually, against increasing inefficiency and costs.

The bargaining representatives knew that they had a mutual problem. They agreed that it should be examined objectively—not against a strike deadline—but over whatever period of time might be required to find a solution.

Each side had to make a primary decision, before any detailed negotiations could be undertaken. The union had to authorize its negotiators to bargain with the employers for removal of restrictions and practices that interfered with efficiency, provided the workers on the job were protected. The employers had to authorize their negotiators to

concede a share of savings, in order to buy out the restrictions.

Once this authority was granted and a joint statement of general policy was formulated, the actual negotiation began.

The statement of the ultimate bargain is described in the accompanying text. The implementation of the ultimate bargain is still in process.

Each party believes that the agreement is accomplishing its purposes—to remove unreasonable restrictions, to protect men on the job, and to permit efficient operations. In addition, the men who have left the work force have the unique benefits contained in the M and M Plan.

Certainly, the agreement does not solve the overall problems of so-called automation and industrial unemployment. But it does represent an approach to solving the problems of our own industry and the men in the registered work force who look to it for a living.

Paul St. Sure
President, Pacific
Maritime Association

If I needed a reminder of the years I worked as a longshoreman, watching the coming of machines to the docks and dreading what the impact might be on my job, on my family, and my future, I find it in these photographs. About all I had was my job—that is, as long as it was there, and around



The text reads: "In the port of San Francisco this year 400 probationary longshoremen were sworn in as full union members and jointly registered in the work force."

it revolved the wellbeing and security of my family and me.

Machines when they came appeared as merciless monsters, more deadly by far than slack times, because jobs swallowed never came back, as one could hope would happen when slack times eased.

The camera captures the power and versatility of shiploading machines. It shows also another form of power; that of workers united and strong in a labor union, sharing a unique collective bargaining pact with management. The pact is an armistice in the ceaseless conflict that inevitably goes on between those who work to live, and those who pay for work to be done.

Here union power was poured into negotiating contracts to cushion the machines' impact on jobs and people, and to seek maximum security now and in the future for longshoremen rendered jobless by modern change.

Machines stay and their use increases. But, under jointly agreed upon provisions many men and jobs stay, too. The men stay without speedup, and with security for now and later, working along with machines as needed. Longshoremen are either provided with work or are guaranteed a minimum income wage from the industry. Older men, by incentives of cash shares of the machines' cost savings, are encouraged to retire early, thereby making jobs available for younger men.

In this book men and machines are shown operating in just one segment of modern American industry. The full story, the total problem of how an entire nation will meet

the displacement of millions by technological change, is not told here. It couldn't be, because neither union nor management had an answer. Where are the young people out of high school and college going to find jobs? What about jobs for the millions of presently unemployed? Unemployment due to machines is not solved by the PMA-ILWU mechanization agreement. This limited joint effort had no such intent, nor is any such result claimed.

What of the future then of this mechanization agreement? Only time will tell; that is, time and the continuance of a strong, united union. An economy increasingly sustained by machines without men can be either a blessing or a calamity.

The rub is that as machines become more efficient they become cheaper than people. Not until we change our own thinking, not until we put people first, or much higher, in our scale of values, and appraise the performance of our society by this measure more than any other, can we guarantee that modern technology will have been a boon to the American nation and not a blight.

One thing about machines: they lighten labor, and they can and must be used to shorten hours of work, especially hours of heavy physical labor. So must unions. This union, the ILWU, surely will.

Harry Bridges.
President, International
Longshoremen's &
Warehousemen's Union



This year nearly 2000 men were added to the West Coast longshore work force.

They were selected from more than 20,000 applicants.

Ten men for every job opening!

Men and Machines - Back cover.





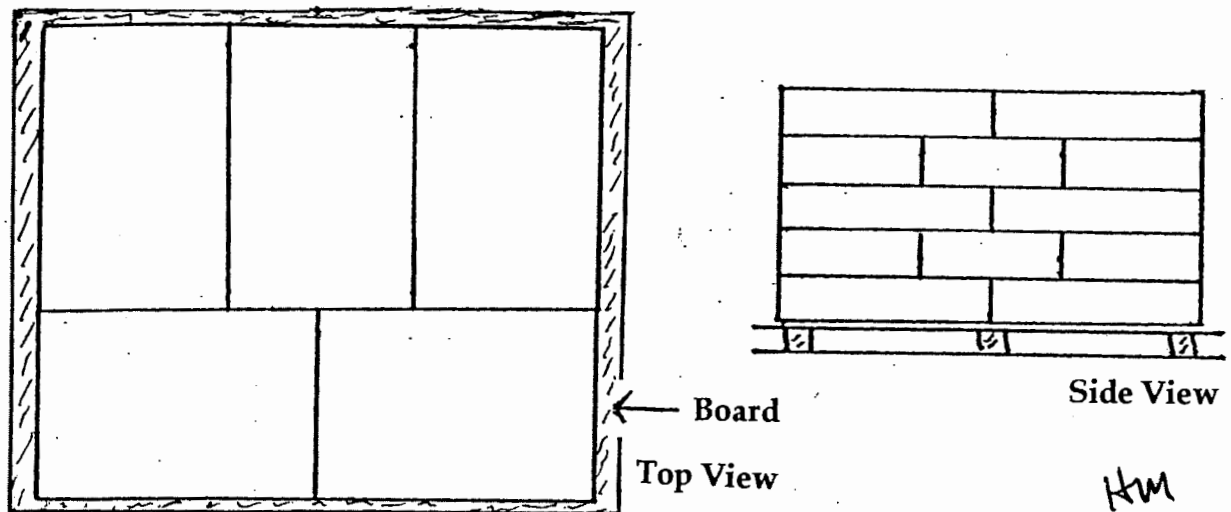
ADDENDUM 1 *

Larger and Heavier Sling Loads of General Freight

By the summer of 1963 four of the components of what would shortly thereafter become the most sweeping and important change in the work in question had been introduced. The first of these were larger and heavier sling loads of cargo than had been worked in the past. ** The second was the use of forklifts to move all sling loads to and from stow aboard ship and not just on the dock, as, of course, had long been done. The third was the increasing use of whirlybird cranes since they could easily hoist all of the heavier loads to and from the dock and also do so to and from the entire "square" of each and every hatch. *** And the fourth was the increased use of hydraulic hatch covers. And, finally, too, by the end of 1963 - and thus beyond the purview of the already published Men and Machines -- new hoisting devices to more fully exploit the capacities of the whirlybird began to be introduced.

In turning to these changes it should first be noted that for many years -- and, indeed, beyond the end of 1963 - the most common conventional sling load had been a "stevedore" pallet board upon which rested a symmetric pattern, of the same cargo, e.g., a "five block, five high" or a "six block, six high" as in Figure 1 and 2.

Figure 1



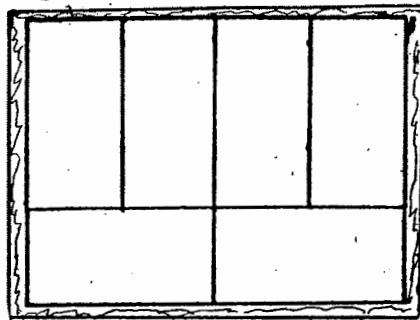
* With respect to the subject at hand, virtually all of the "visuals" presented in the 14th entry of this website (pp. 405 - 459) may be viewed with benefit.

** If the technological manner of working a cargo had not been changed from what it had been in 1937, the slingload agreement of 1937 remained in effect. For that agreement, see entry # 18 - "Contractually Sanctioned Job Action and Workers' Control: The Case of San Francisco Longshoremen" -- of the author's website Table of Contents.

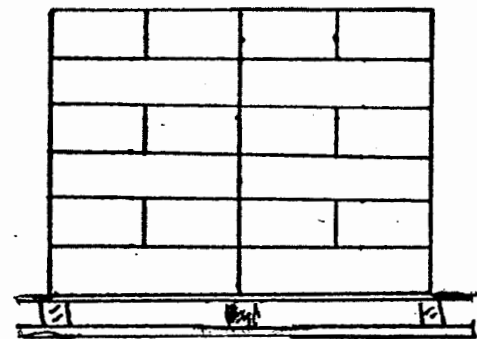
*** It perhaps should be recalled that the "square" of a hatch is that part of each succeeding lower deck which can be directly reached by the hoisting gear being used. In any event, the driver of a ship-mounted whirlybird crane could begin and finish a shift without the dockers dispatched to the hold having to help to rig the cargo booms of "conventional" burtioned hoisting gear. And during a shift, he could also reach the entire square of a hatch without those dockers having to climb to the weather deck so as to re-rig those booms. These circumstances and, as a rule, the much greater lifting capacity of the whirlybirds very largely explains their ever increasing use.

Figure 2

Top View

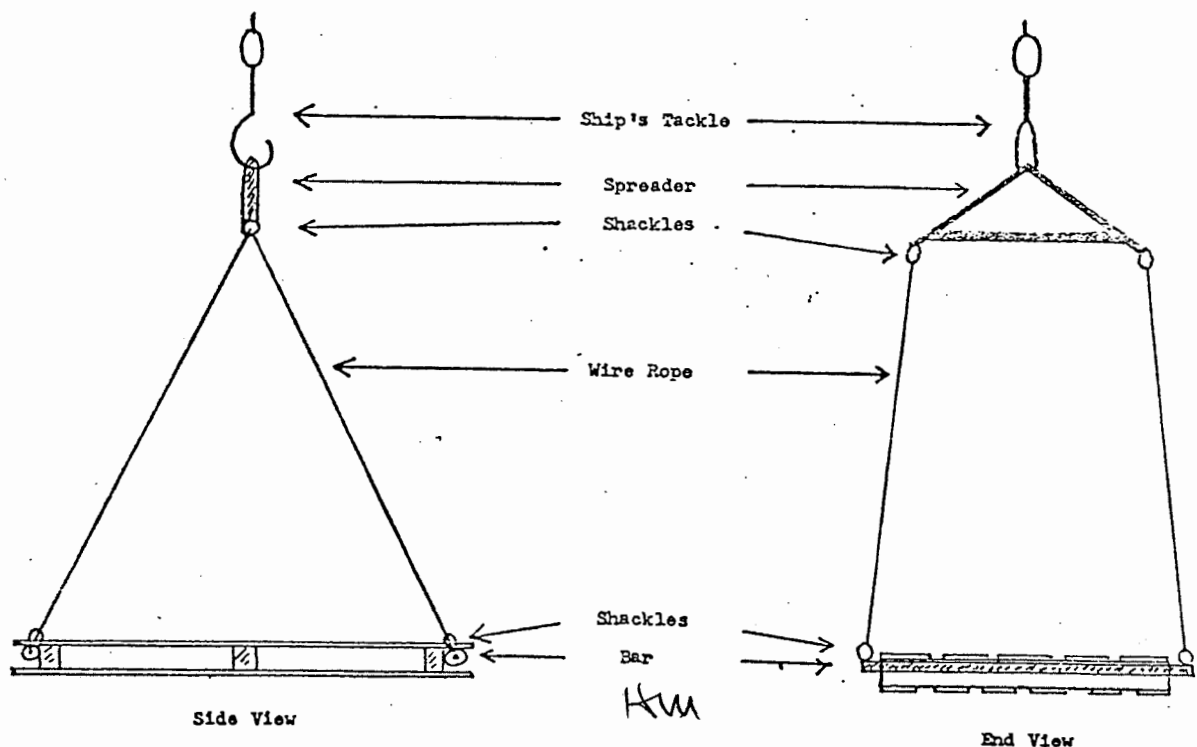


Side View



The stevedore pallet board in these figures was heavily constructed and hence fairly costly and hence, of course, too, intended for repeated use by its stevedore company owner. Conventional cargo sling loads on such boards were routinely hoisted with a bar bridle -- Figure 3. The two bars of this bridle, each of which was

Figure 3

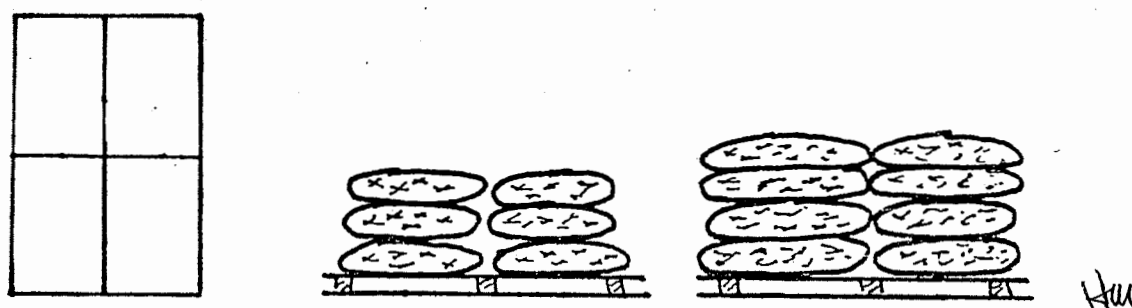


slightly longer than the width of a stevedore board, were of tempered bar stock. The ends of each of bar was individually attached to a spreader bar of a slightly shorter length than the width of the board by wire ropes and shackles. In slinging a stevedore board, each of these hoisting bars was placed at an end of the board so as to rest between its upper and lower planked surfaces and against its outer cross member. This work was performed by the two "slingmen" or "front men" of a conventional gang who for that and other purposes were "stationed beneath the hook." Having thus been hoisted into the hold the load would be hand-stowed, piece-by-piece, by

the dockers stationed there. And with that accomplished, the empty board was sometimes hoisted back to the dock, unslung by the front men, and removed by the gang's lift driver to a stack of empty boards in the cargo shed. Since, however, hoisting a single board by itself surely had its dangers, empties were virtually always hand-stacked in the hold until there were eight or so ready to go the dock.

This order of events would also be reversed, of course, for the discharge of most conventional cargoes. Thus, the holdmen then would build the sling loads on an empty stevedore board, which with seven others or so had been hoisted into the hold. And, thus, too, for example, when coffee was being discharged prior to when it began to arrive pre-slung, the holdmen would palletize twelve or sixteen bags in a four block on a stevedore board. And, once built, the board would be slung by them with a bar bridle and hoisted to the dock - Figure 4. And having been landed and

Figure 4

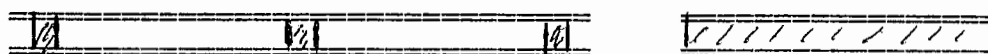


unslung by the front men, it would be delivered by fork-lift to the cargo shed at the direction of the clerk assigned to the gang. Often, however, and having set a load aside, the lift driver for the gang would stack the next load on top of it and then deliver both of them as he was directed.

While such break-bulk sling loads were frequently still being loaded as of the summer of 1963, shipments of "unitized" loads or what were also called "shipper" loads, i.e., loads of identical cargoes which were strapped together and thereafter moved as a unit by a fork-lift, were by then also being increasing loaded and also discharged to a lesser extent. In either case, such might be built and strapped by their shipper, by a freight forwarding firm, or by a dock gang of longshoremen. As might be supposed, the use of fork-lifts to move such both on the dock and aboard ship was facilitated by the fact that the "shipper's pallet board" could be so lifted from any side. Thus, and unlike the stevedore board, it had two cuts in its cross-members so that forks could be placed beneath its load -- Figure 5.

Figure 5

Stevedore Board -- Side and End Views

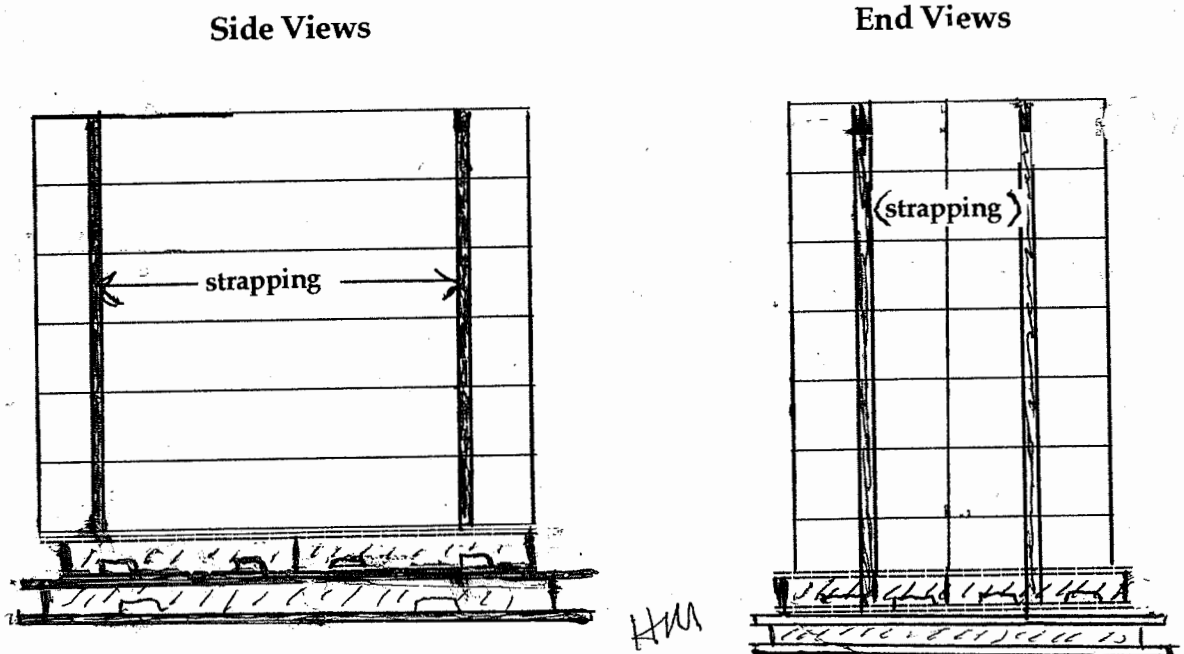
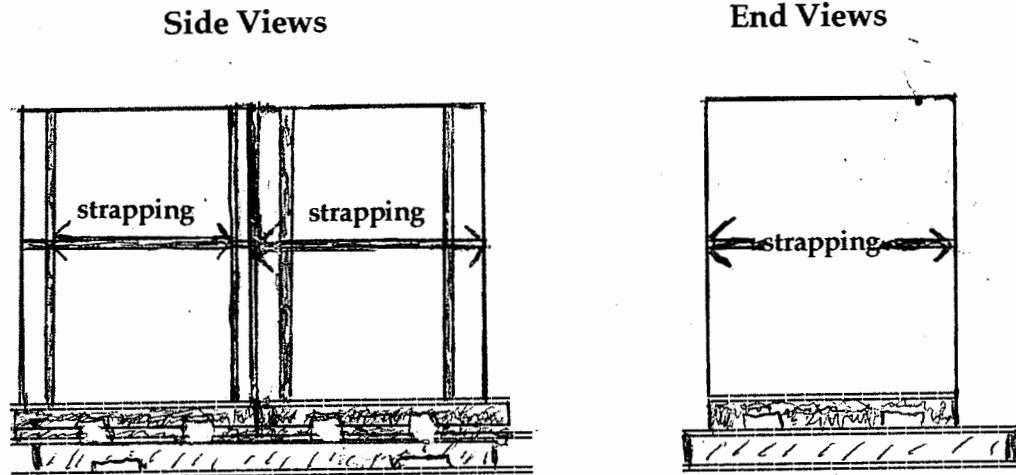


Shipper Board -- Side and End Views



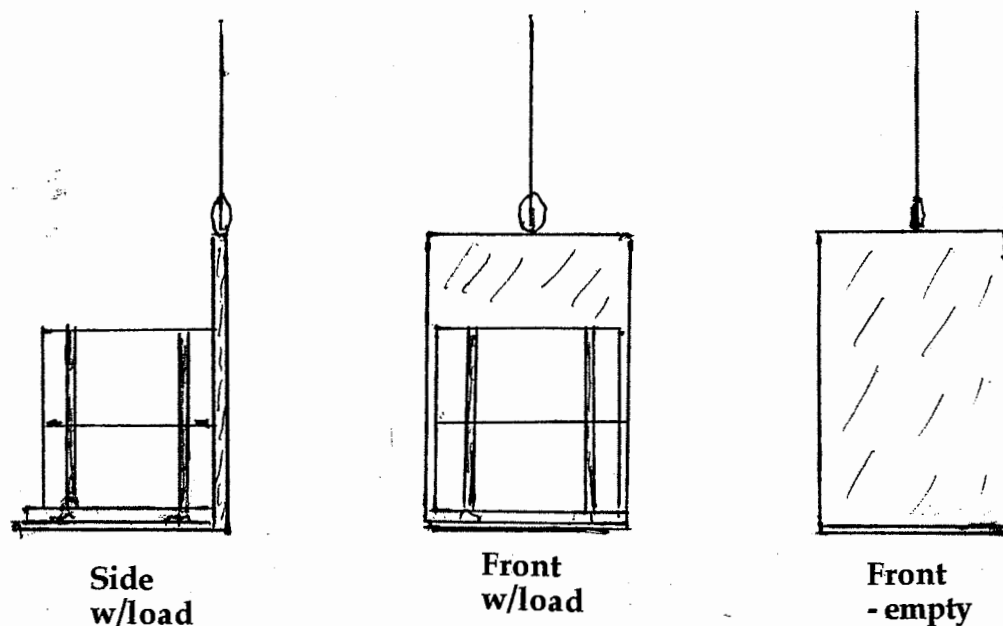
And with it thus intended to be a "one-way" board which would be stowed with its load of cargo intact, it was also unlike the stevedore board in it being always built square in its many different and smaller dimensions and it being of a much lighter construction. And since it was also built without a set of opposing and overhanging "lips", its hoist from dock and ship when first introduced was made with it placed on a stevedore board which then was lifted by a bar bridle or by being directly slung by rope or nylon slings. And hence the hoist of such sling loads might look as is shown in Figure 6. By the mid-winter of 1963, such sling loads also began to be loaded and

Figure 6



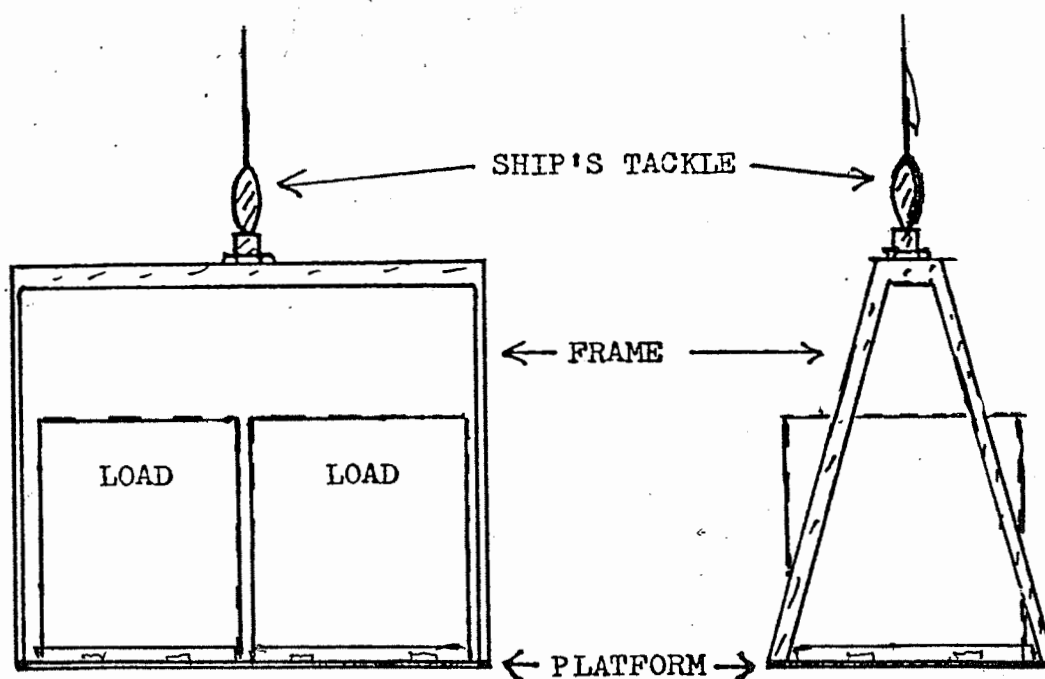
discharged by having been placed on a "hoisting platform" -- such as is pictured in Figure 7 -- by a fork-lift. And, as might be supposed, of course, such platforms were

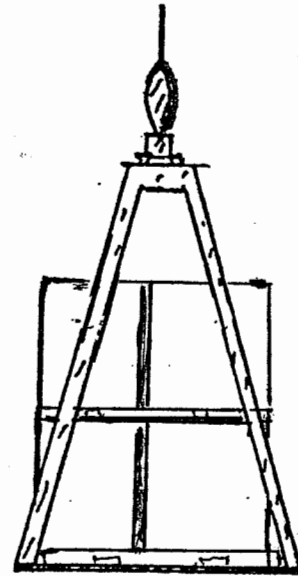
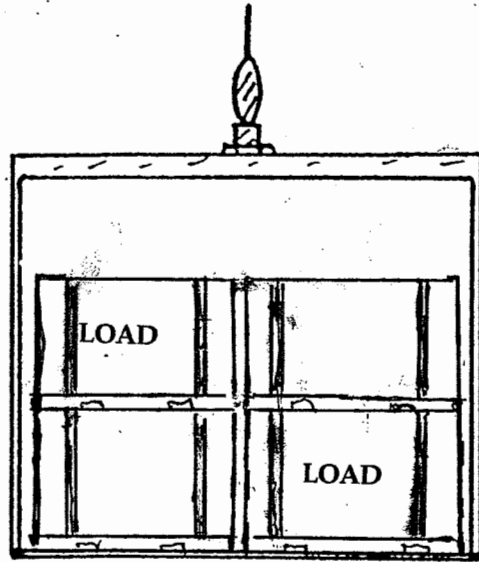
Figure 7 - a "robot".



soon called "robots". And as might also be supposed, they soon were enlarged - as pictured in Figure 8 --so as to accommodate a number of shipper loads and to also be soon known as "cages".

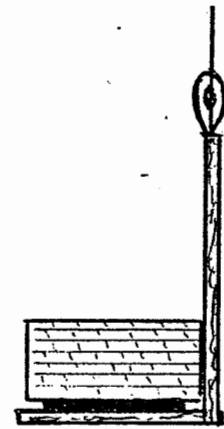
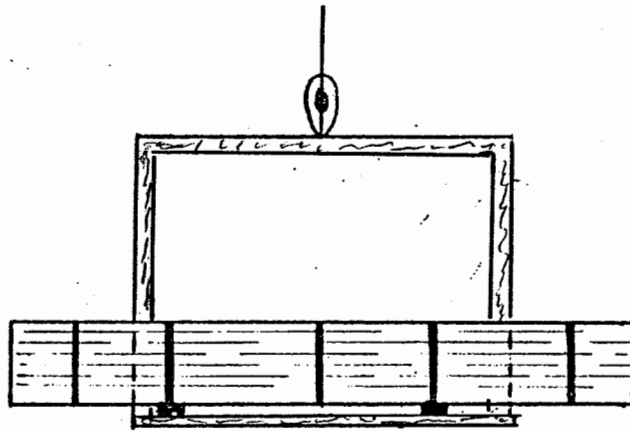
Figure 8 - a "cage".





And, then, by the summer of 1964, robots began to be introduced which - having far wider platforms - such as shown in Figure 9 - could accommodate shipper loads of

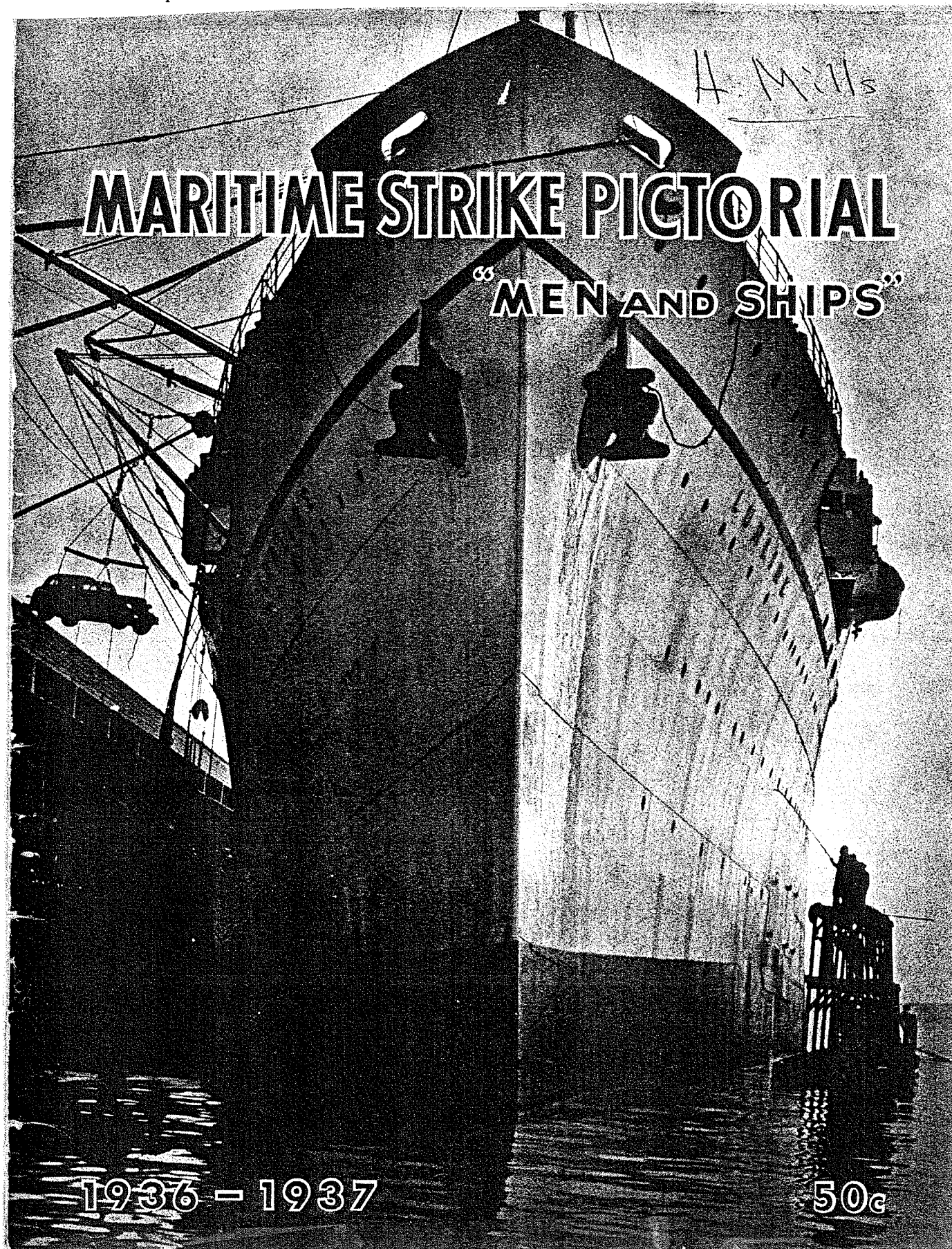
Figure 9



DM

lumber, pipe or bar stock or heavily-crated items of up to twenty- five feet in length. And to facilitate the fork-lift movement of such loads to their place of rest on dock or ship, they were unitized by being strapped to supporting cross-members of wood.

The first historic pictorial on the West Coast Maritime industry.

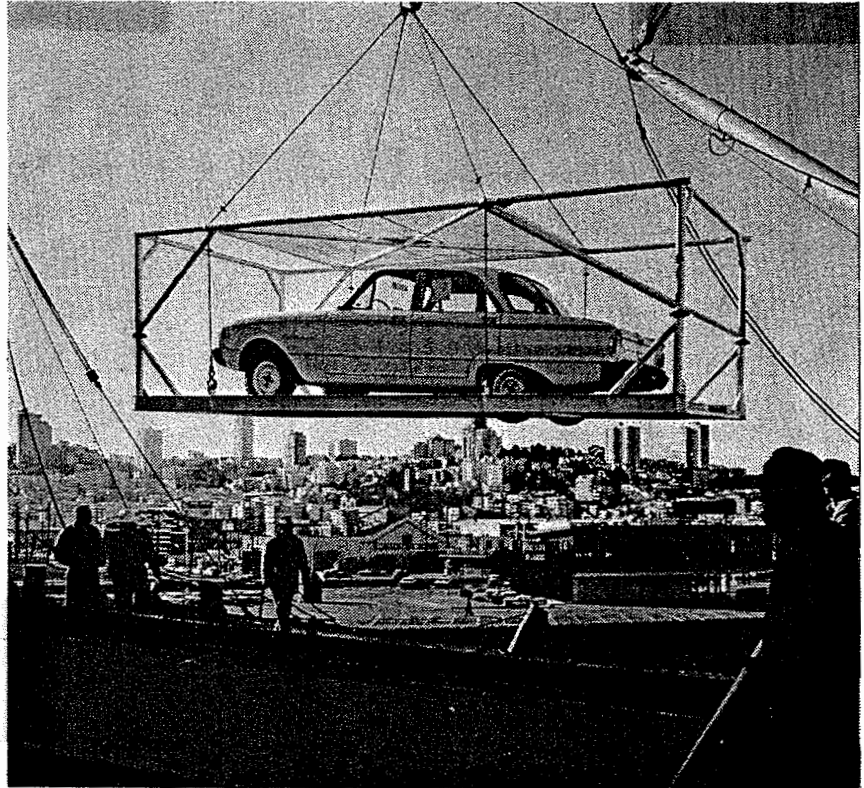


The type of auto hoisting bridle commonly used into the early 60's - HM.

The car cage.

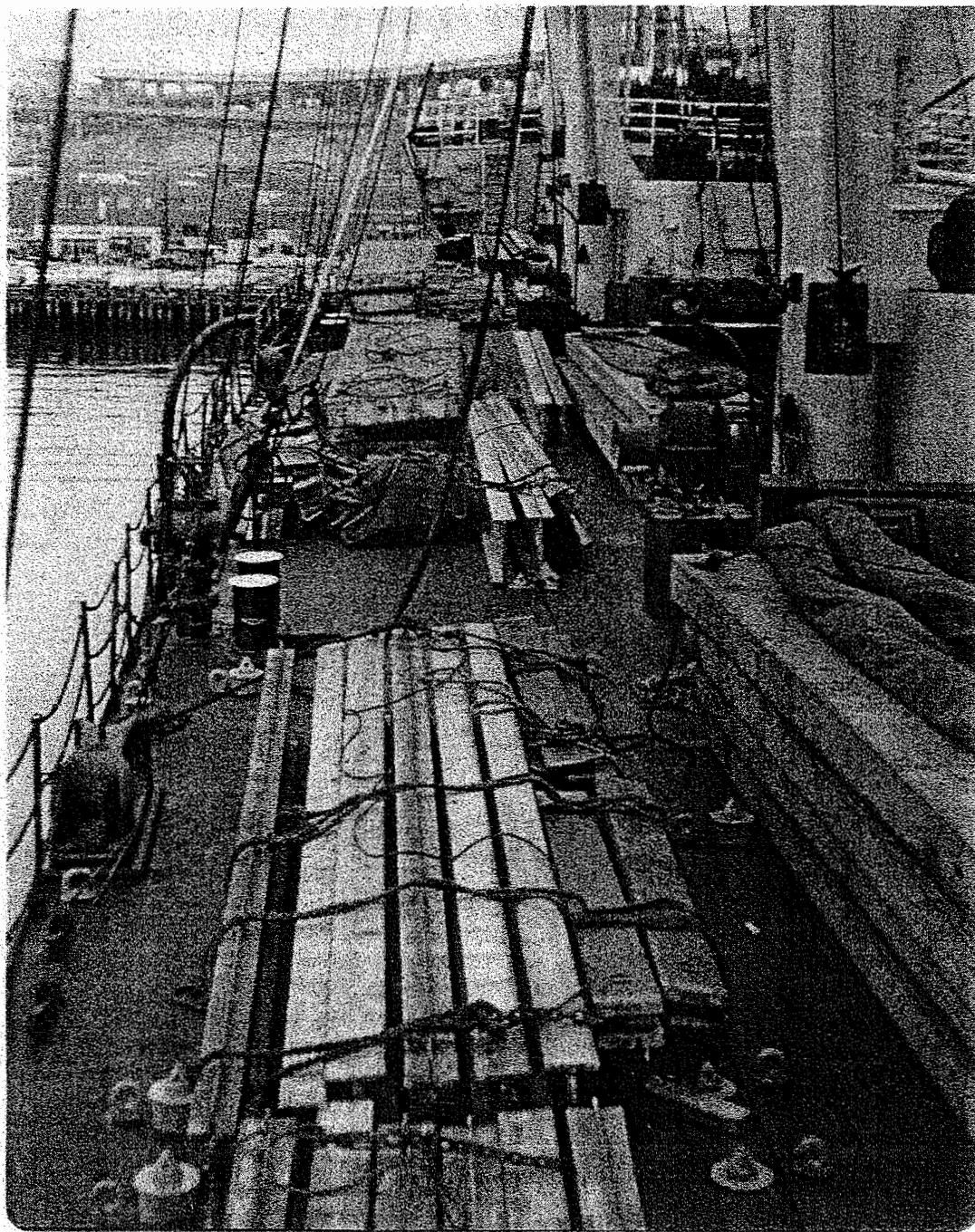
The SS Hawaiian Fisherman is a floating garage. The autos are driven onto a cradle, hoisted and lowered, and driven to parking spaces between decks for shipment to Hawaii.

Source misplaced - HM

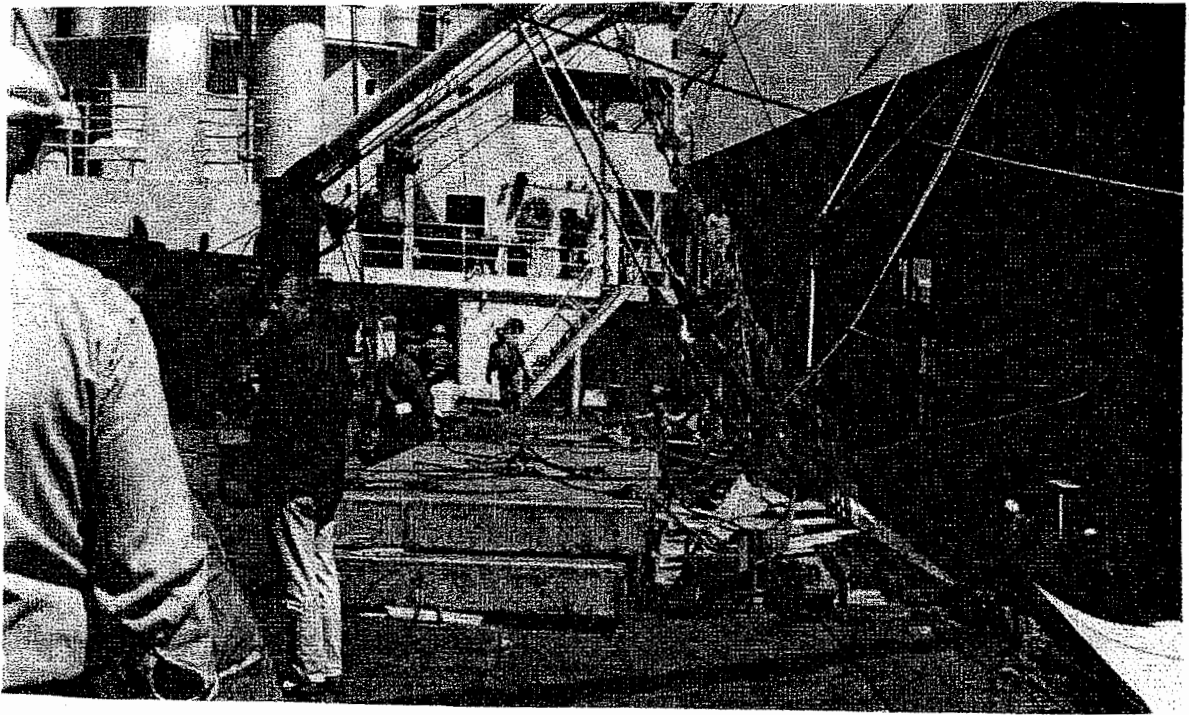


See p. 69 above. And for the next step in waterborne auto transport, see the photos of "car carrier" vessels - a specialized version of the "RO / RO" - the "roll - on/ roll off" vessel -- on pp. 137 - 141.

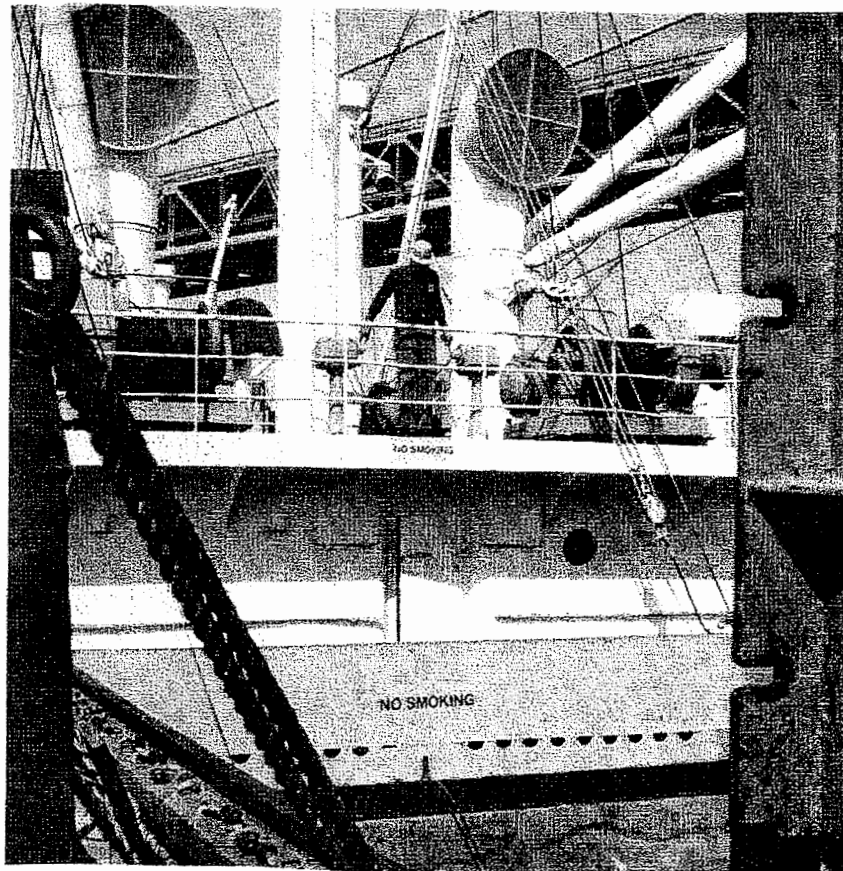
Strongbacks - hatch boards and tarps
/ hydraulic hatch covers - and fork-lifts in the hold



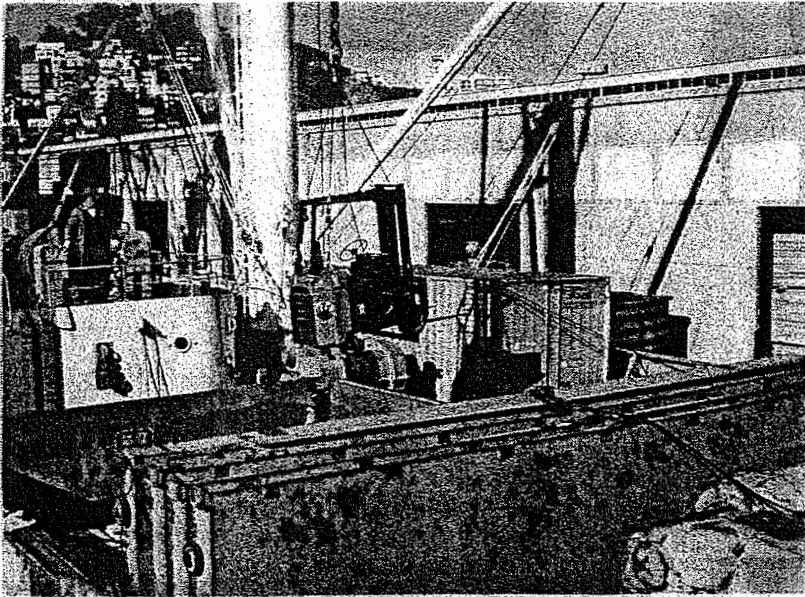
From the author's photo collection -- c. 1965.



Two hatch covers stowed on the inshore weather deck.

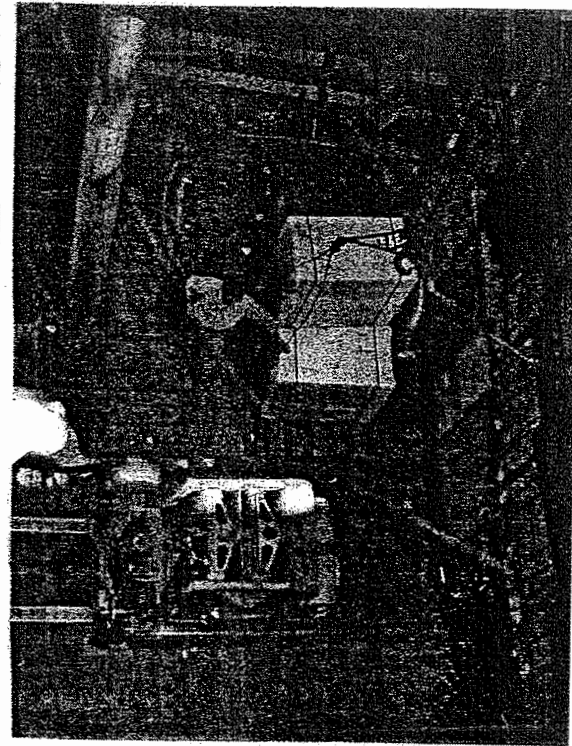


A hatch uncovered by hydraulically raising and folding hinged hatch covers to an upright position to which they are then are secured as here on the right.
The visuals on p. 18 of the author's website entry 14.



**A gasoline-powered forklift
being hoisted into the hold - late 1963.**

From the author's photo collection.



**Stowing a strapped, wood-crated cargo
with a butane-powered lift - late 1963.**

www. Smithsonian Institute
National Museum of American History
"America on the Move"
Explore Transportation - Work and Industry - Conntainer Back Story.

**"Local 10 longshoreman Herb Mills (left) and Peter H. Brown
working in the hold of a ship, 1960's."**

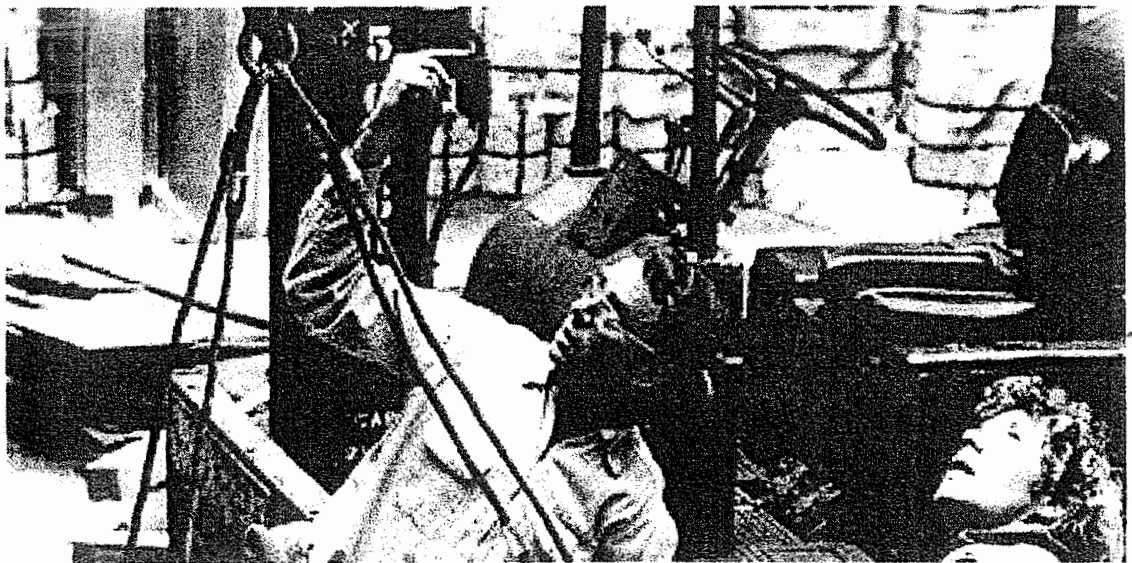
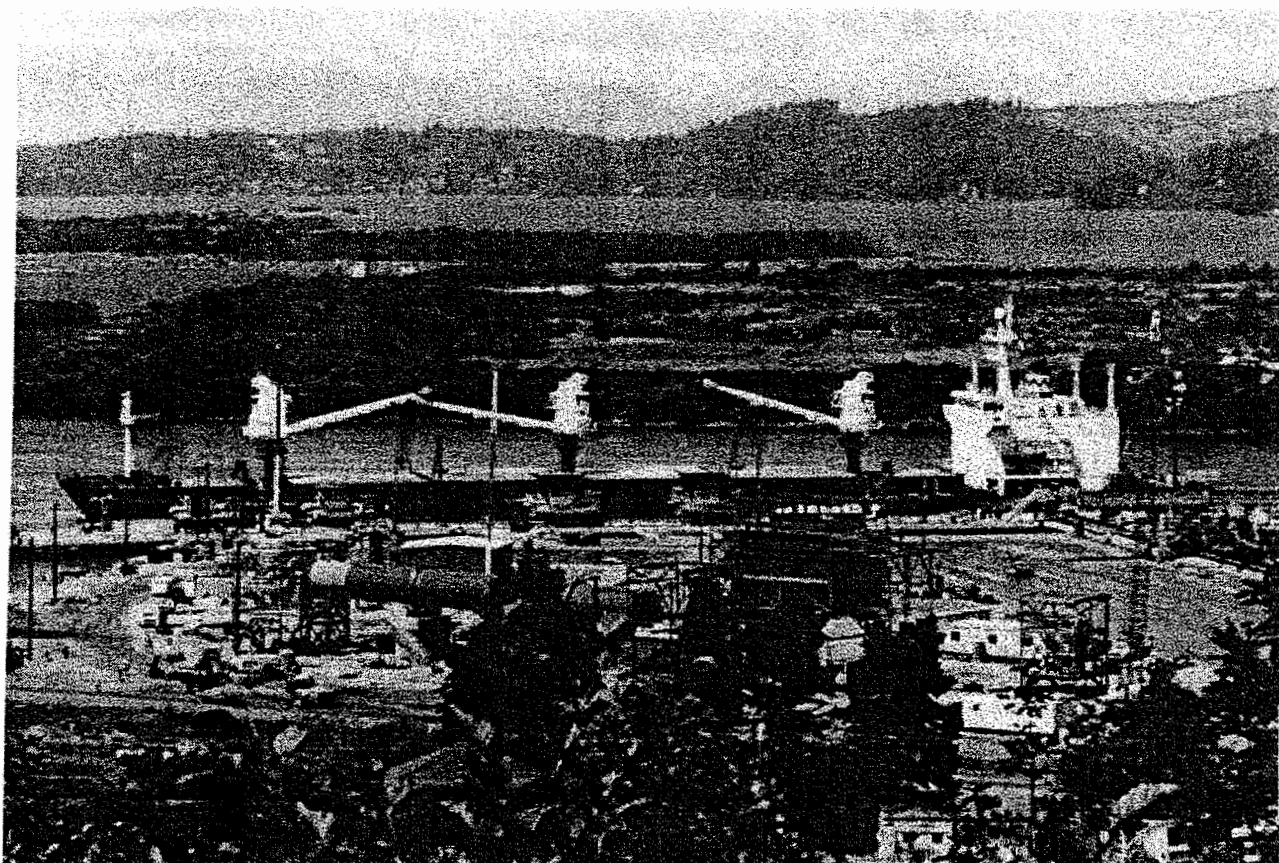


Photo by Mike Vauter - also a Local 10 brother.

Ship-mounted whirlybird cranes and log rafts and hoists

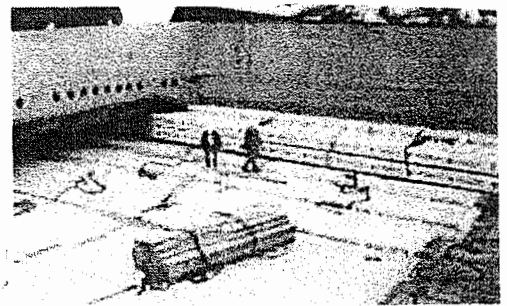
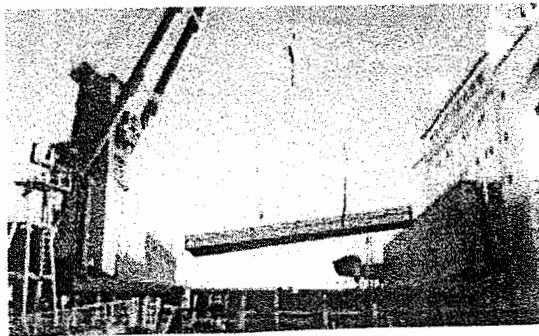
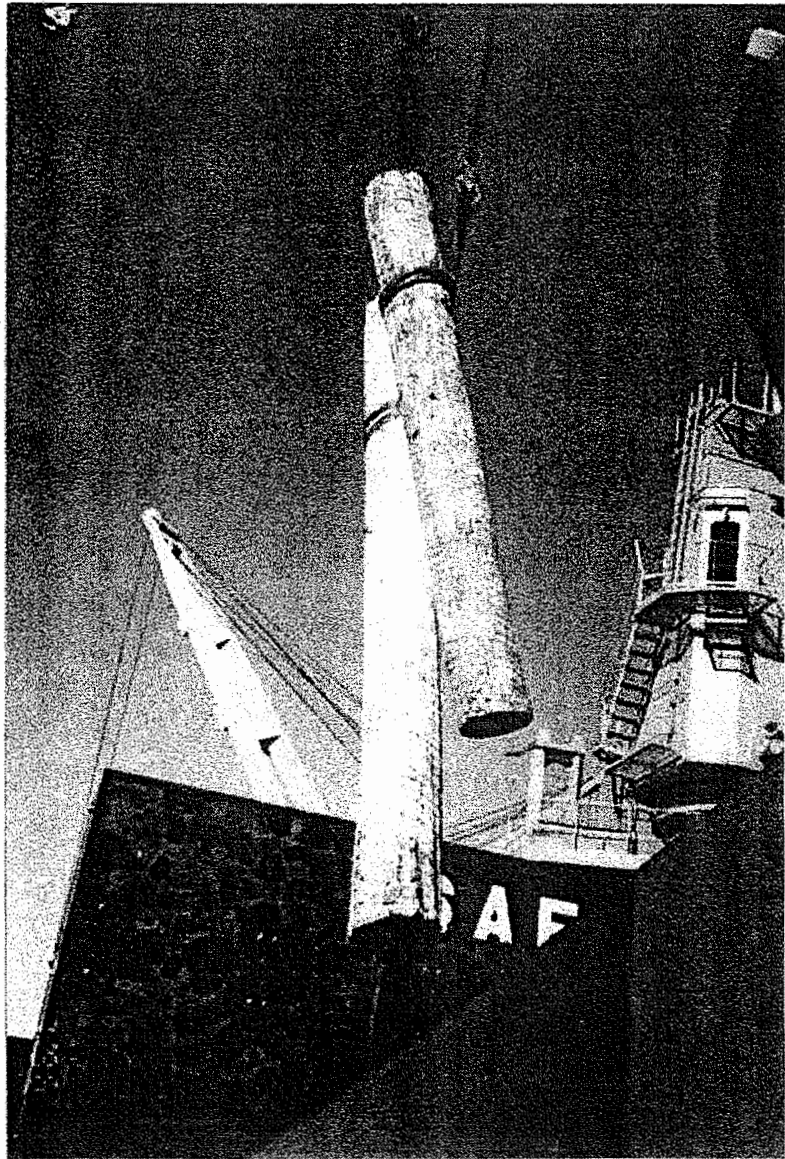




Google - Lograft - p. 10 - "Logging"
-- Wikipedia , the free encyclopedia.



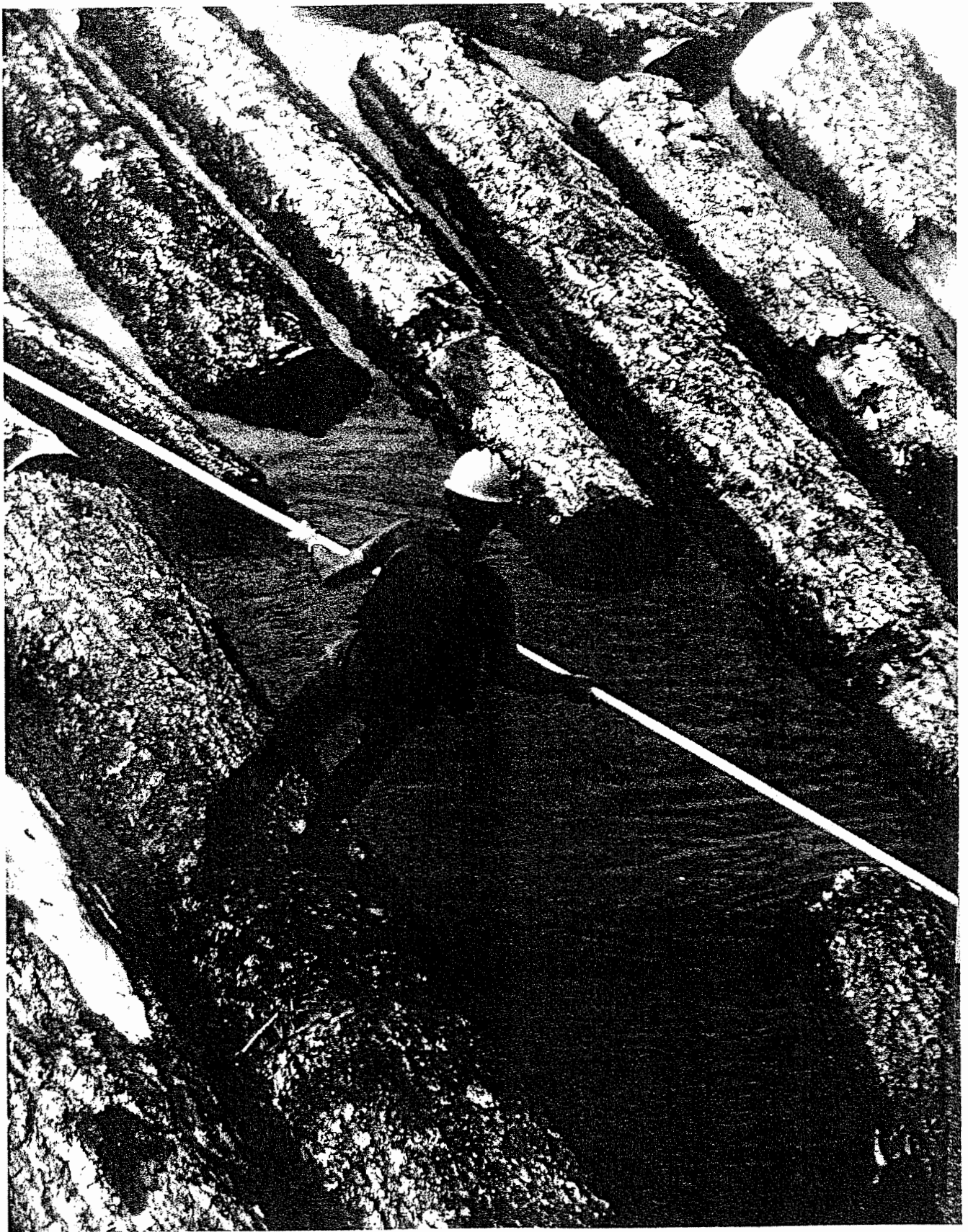
Google - Lograft - p. 2 - "Stock Images
of Aerial Views of a Floating Log Raft."



This photo is on p. 50 of the International Longshore and Warehouse booklet "The ILWU Story - Six Decades of Militant Trade Unionism."



ongshore workers load logs in British Columbia, 1968.



The author working a log raft under a ship-mounted whirly: Coos Bay - c. 1976.

ADDENDUM 2

**A note on the closely linked evolution of two important technologies
-- both unrelated to those of containerization --
during and subsequent to the first M & M Agreement:
the "Pure Car Carrier" and the "RO / RO" Vessel of Today.**

A Brief Introduction and Overview to a Complex History.

The distinctive and interrelated technological evolution of the ship-to-shore ramp of the car carrier and the RO / RO vessel of today began with the landing craft of World War II and the then existing vehicular ferry boats. After the war, the concept of a ship with a bow or stern mounted ramp which would permit self-powered vehicles to be driven to and from their place of shipboard stow began to be slowly adopted for merchantmen and ferry boats. In time, the concept also led to a wide variety of a new types of vessels. Thus, for example, the following lengthy passage may be cited from Google - MV (Motor Vessel - HM) - p. 1 - "Variations of the Ro - Ro Theme."

Today the world ro-ro fleet can be subdivided into a number of different types. They include ships designed to carry freight vehicles only; to carry a combination of containers and freight vehicles and to transport cars without passengers. There are various other types and freight-only ro-ro ships form about two thirds of the world ro-ro fleet at present. However, the best known ro-ro ships are ferries designed to transport commercial vehicles and private cars, together with large numbers of passengers, usually on short voyages.

Most ships of the Ro-Ro type, i.e. ships for the transportation of wheeled vehicles which may be driven into, and out of the ship, respectively, or which are adapted to take care of containers or other standardized cargo units which are handled by fork lift trucks or similar transportation means, are usually provided with a single deck only. Ships having two or more decks are provided with lifts for transferring the cargo vertically between the decks, or has built-in inclined ramps, making it possible to drive from one deck to an other. Both arrangements require a considerable amount of space, and especially the lift arrangements are expensive. The handling of the cargo in the vertical direction will further take more time than the driving on-board.

Sto-Ro (Stowable Ro-Ro) -- Contrary to the Ro-Ro, no cargo remains on wheels but is directly loaded onto vessel decks. The stowage is similar to an open Load-on/Load-off (Lo-Lo) vessel; however, the cargo is brought on board either over a stern/bow quarter ramp or through a side port door. Vessel operations can turn to this concept of cargo handling as a means of combining the undoubted handling advantages of the Ro-Ro (improved turnaround times) with the efficiency of a Lo-Lo (increased utilization of a ship's cubic capacity).

Float-On/Float-Off -- A heavy deck semi-submersible vessel designed to permit oversized indivisible cargo being floated into position for deck stowage. The reverse procedure is used at the destination port where the load is floated from the submerged deck that is ballasted down for the outturn. The vessel travels with its deck and load above the water.

Trot-On/Trot-Off -- Ro-Ro conversion or version in which vessel trailer decks are transformed into modern cattle pens capable of accommodating in excess of 2,000 animals. New installations include provision of fresh water through evaporation and increased tankage "barns" for 1,600 cubic meters of hay or straw and an air circulation plant.

Combination Container and Ro-Ro Vessels -- This design allows for flexibility of operation by incorporating container and other wheeled cargo handling capability. These vessels carry containers on and under deck forward and have a stem ramp with tween decks for the carriage of Roll-on/Roll-off cargo in the aft underdeck area. The Ro-Ro cargo may consist of over-sized pieces such as construction equipment, i.e., bulldozers and excavators, which are driven onto the vessel via the ramp. Containers can also be stowed on the Ro-Ro decks but are brought aboard on chassis and removed with forklift machines. If space and equipment is available the container can be left on its chassis during transport.

A ferry is any vessel used to provide transportation only between places that are no more than 300 miles apart, and to transport only - passengers, or vehicles, or railroad cars, which are being used, or have been used, in transporting passengers or goods. The fundamental objective of ferry terminal design is to enable passengers and vehicles to proceed from the ferry to access a mode of continued travel. The internal layout of facilities reflects this concern for the convenience of passengers and their vehicles by providing simple and direct passenger/vehicle flow routes through the facilities. A tractor-trailer carried on a ferry with a container either loaded with cargo or empty will classify the vessel as a ferry and the goods within the trailer or container are looked upon as having arrived in the Customs territory by ferry.

Some current designs of roll-on/roll-off ferries for relatively short sea passages are twin-hulled designs. The engines are housed in the base of the hulls near the waterline, with power offtake shafts extending sternwards to the propulsors, which may comprise waterjets. These vessels are designed for high speeds, with small wetted hull areas to minimise drag from the water. Their loading decks are arranged to span the distance between the two hulls at as low a level as is possible compatible with the seagoing ability required by the vessel and the rest of their superstructures are designed as far as possible with long low continuous lines to minimise aerodynamic drag and susceptibility to cross winds and to obtain the greatest possible stability for the vessel. A further design aim is to maximise cargo capacity.

RO-RO ships have also been developed to handle multicargoes, whereby they are enabled to transport different vehicles as a part of the cargo. In these ship types the cargo is transferred aboard by means of waggon and carriage pallets, which are carried along with the cargo to the port of destination. This method is applied particularly to transporting forest products. To increase loading flexibility, containers are also loaded on these pallets. Straddle carriers and trucks are also used for container handling. A high cargo space can be divided vertically in two or three sections by means of so-called hoistable car decks. The loading and unloading capacity of the ship is satisfactory. All in all, this method is, however, expensive on account of terminal facilities and special ship equipment. Space utilization and stowage efficiency are not good.

In 1992, the Washington State Ferry System decided three new Jumbo Mark II Ro-Ro Ferries were needed for its Bremerton and Bainbridge Island runs. The Jumbo Mark II was the first new auto ferries built for Washington State Ferries [WSF] in 20 years. While the name didn't show much imagination, it isn't entirely unjustified. The ferries are modern versions of the Jumbo Class ferries Spokane and Walla Walla. The Jumbo Mark II boats are designed to separate walk-on and auto traffic. The Mark II's

hold 2,500 passengers, 500 more passengers than the Jumbos. The increase bumped their size up 20 feet. At 460 feet, they are the largest double-ended auto ferries in the world. While carrying 500 more passengers, the auto capacity only went up by about 12, to 218. Passenger capacity was more important on the Bainbridge run, where the 2,000 passenger Jumbos were filling to capacity on the morning and evening commuter runs.

As of early 2006 the largest PCC in service was the MV Mignon, owned and operated by Wallenius Wilhelmsen Lines of Sweden, it can carry some 7,200 car equivalent unite [CEU]. The Mignon was the first of five Wallenius Boheme-class vessels to be stretched by 28 metres to 228 metres LOA. The lengthening results in making these the biggest car carriers in the world. The Mignon unloads cars, pleasure craft, etc and load export cars, trucks and haulers, predominantly for the US, at Port of Göteborg's Car Terminal. In addition to the five vessels stretched or to be stretched, Wallenius Lines have a newbuilding program of six pure car/truck carriers, three of 6,500 and three of 8,000 cars capacity.

Five of the ships will be built at the Daewoo Shipyard in Korea. The first two new vessels will have a cargo capacity of 6,700 cars and will be delivered at the end of 2006. The other three, each with a cargo capacity of 8,000 cars, will be delivered in late 2007 and early 2008. The ships will be operated by the subsidiary Wallenius Wilhelmsen Lines. The sixth ship, with a capacity of 6,400 vehicles, is being built at Hyundai Heavy Industries in Korea and will be operated by the Wallenius Korean subsidiary, EUKOR.

Wallenius Lines reached an agreement in early 2006 with Wilh. Wilhelmsen ASA regarding the sale of two LCTC newbuildings at Daewoo Shipbuilding & Marine Engineering. Each vessel has a capacity of 8,000 cars and is due for delivery in 2009. The Wallenius Lines newbuilding program now comprises eight vessels to be delivered between 2006 and 2008.

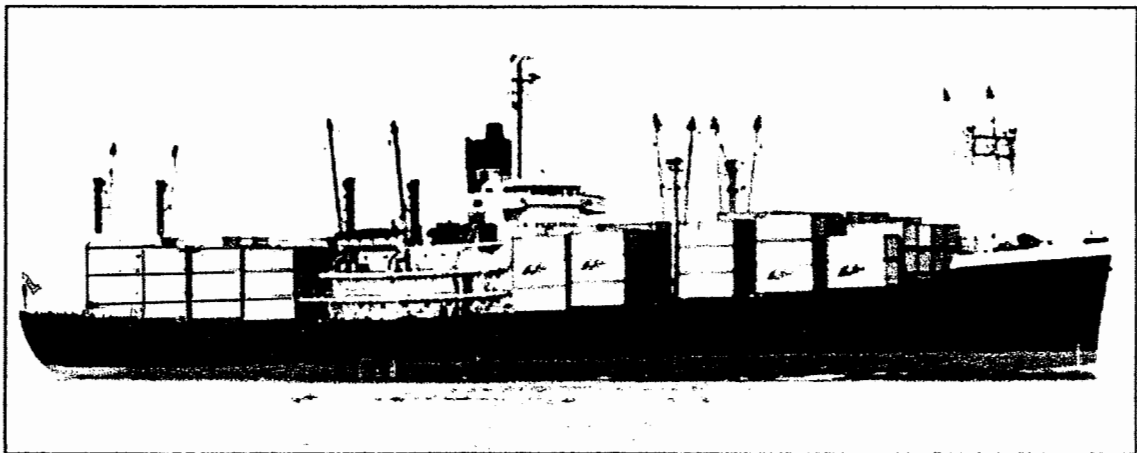
The First Historic Steps:

– the USS Comet, Matson's Hawaiian Motorist,
and a Recounting and Photograph
of an Early Ship-to-Shore Auto Ramp.

In 1957 the Sun Shipbuilding and Dry Dock Company of Chester, PA was contracted by the US Department of Defense to build "a new type of motorized vehicle Carrier. This was the Comet, a vessel with a stern ramp and interior ramps

* As will have been noticed by now, the terminology used to speak of the types of vessels now being discussed has not been settled upon. Given these circumstances, it perhaps should be suggested that a "PCC" - "Pure Car Carrier" may best be defined today as "a large, ocean going vessel for the exclusive transport of several thousand newly made cars to be sold in a foreign market" and a "RO/RO" vessel as "a large, ocean going vessel fitted with ship-to-shore ramps on its stern (and / or sometimes its bow) and on its port and starboard sides and also fitted with internal ramps or car elevators between all cargo decks which permit the movement of cargoes both self-propelled and not to and from their place of shipboard stow.

which allowed cars to be driven to and from their place of shipboard stow. It also had what many such vessels later had, too: an adjustable choking system for securing all cars to their place of stow and a ventilating system to prevent the buildup of exhaust gases. As might be supposed, when such vessels began to be built they had automatic fire fighting and sprinkler systems. Since, however, the international market for newly manufactured cars only began to very slowly emerge during the early sixties, newly fashioned car carriers were initially limited to an ever-growing number of C - 3's and 4's which had been rebuilt with ramp-connected RO / RO decks beneath their weather deck, but still employed their conventional hoisting gear to load and discharge the cars which they carried. And thus as already noted in part, this innovation -- as with containerization - had been pioneered by Matson Navigation when in 1961 it rebuilt its HAWAIIAN FISHERMAN with ramp connected decks beneath its weather deck, as it also refitted that deck for the transport of 3-high stacks of 24 -foot containers. And with that, the C - 3 which Matson then rightly called "the first 'ocean going' automobile ship" was proudly renamed the HAWAIIAN MOTORIST. *



The Hawaiian Motorist is developed as the first "ocean going automobile ship" with a specially designed auto lifting cage to help minimize the handling of cars between dock and ship. **

It was not until the late sixties, however -- by which time the U. S. market for foreign built cars had very greatly expanded - that the San Francisco dockers began to drive cars and vans and pick-ups over stern and / or side port ramps mounted on fully converted C - 3's and C - 4's or ship-to-shore ramps carried on the weather deck prior to docking and discharge. And, thus, for example, this may be cited from "MAN ALONG THE SHORE! -- The Story of the Vancouver Waterfront -- As Told by Themselves -- 1960 -- 1975." ***

* Google - Hawaiian Motorist - p. 3 - MNC (Matson Navigation Company - HM) -- The Birth of a Ship -- History - From Conventional to Containerized Vessels.

** It will be recalled that this "cage", as a newly developed hoisting device, is pictured, as is, of course, the MOTORIST, too, on p. 69 above.

*** This very unique and always very valuable and interesting work should be cited thusly: "Published and Copywrited by ILWU Local 500 Pensioners, 1685 Franklin, Vancouver 6, B. C."

... Automobiles ... used to come in on conventional ships and the ships were never kept as clean as they are today. They took them off with nets, racks, and so forth. And then we got a little more sophisticated, especially for Volkswagens. We made a flat rack to run the Volkswagens on and this did away with the nets and eliminated some of the damage to the sides of the cars. Then the Japanese came up the "Roll on and Roll off" automobile ship. They had ramps which came out of the side of the ships and elevators inside the ships. Today it has become such a sophisticated operation that about 35 men can discharge 2000 automo-



"Drive off vessel" discharging automobiles at Centennial Dock 1971. Courtesy Leonard Frank Photos.

biles from a Roll-on Roll - off ship in 8 hours. Our production before that was about 16 to 29 hours.

New Docker Auto Work and Its Safety Concerns

These matters were thus very briefly described and discussed by the present author in remarks delivered in 1972 at UC - Berkeley's Institute for the Study of Social Change.

Once the ship-to-shore or shore-to-ship ramps are in place and secured, the dockers can go aboard over the gangways affixed to them. As some begin to cut the rope lashings or otherwise release the wrie-rope lashing which have secured the cars while the vessel was at sea, others begin to drive them to the dock and then to a large storage and maintenance area which of necessity is some distance away. The drivers

are returned shipside in groups of six to eight by a docker driven van or minibus. And while, of course, they can and do converse as they are thus transported, there is nothing in their work which requires them to communicate. And the nature and structure of their work is so routine and repetitive that it also creates for them no need or opportunity for innovation of any kind. And, so, too, they are virtually never required by an operational circumstance to in any way "take the initiative". These operations, however, are also often distinguished by a self-imposed speed-up, i.e., there is some inclination on the part of the drivers to begin to drive too fast. And, as might be supposed, such seems to be occasioned by the boredom induced by the routine and a sheer liking of speed -- *especially* in the Porches! In any event: "There's always a few who start to think they're in 'the 500' . . . and they'll start to tool around as if they Andretti."

On the other hand, of course, there are a great many dangers intrinsic to every such operations. And, thus, for example, the reader may be "economically" referred to the RO - RO safety rules first pub-
were Mario Andretti.



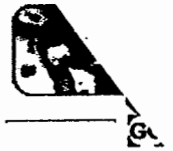
U.S. Department of Labor
Occupational Safety & Health Administration

www.osha.gov

MyOSHA [skip navigational links]

Search

Index



Regulations (Standards - 29 CFR)

Roll-on roll-off (Ro-Ro) operations (see also ? 1918.2, Ro-Ro operations, and ? 1918.25). - 1918.86

◀ [Regulations \(Standards - 29 CFR\) - Table of Contents](#)

• Part Number:	1918
• Part Title:	Safety and Health Regulations for Longshoring
• Subpart:	H
• Subpart Title:	Handling Cargo
• Standard Number:	1918.86
• Title:	Roll-on roll-off (Ro-Ro) operations (see also ? 1918.2, Ro-Ro operations, and ? 1918.25).

..1918.86

1918.86(a)

Traffic control system. An organized system of vehicular and pedestrian traffic control shall be established and maintained at each entrance/exit ramp and on ramps within the vessel as traffic flow warrants.

* Google - RO / RO - p. 3 -- Roll-on -- Roll-off (RO - RO) operations. This referral is "economic" in that the PMA - ILWU contractually enforceable health and safety rules governing such operations are much broader in scope and also far more detailed.

1918.86(b)

Ramp load limit. Each ramp shall be plainly marked with its load capacity. The marked capacity shall not be exceeded.

1918.86(c)

Pedestrian traffic. Bow, stern, and side port ramps also used for pedestrian access shall meet the requirements of § 1918.25. Such ramps shall provide a physical separation between pedestrian and vehicular routes. When the design of the ramp prevents physical separation, a positive means shall be established to prevent simultaneous use of the ramp by vehicles and pedestrians.

1918.86(d)

* **Ramp maintenance.** Ramps shall be properly maintained and secured.

1918.86(e)

Hazardous routes. Before the start of Ro-Ro operations, the employer shall identify any hazardous routes or areas that could be mistaken for normal drive-on/drive-off routes. Such hazardous routes shall be clearly marked and barricaded.

1918.86(f)

Air brake connections. Each tractor shall have all air lines connected when pulling trailers equipped with air brakes and shall have the brakes tested before commencing operations.

1918.86(g)

Trailer load limits. After July 27, 1998, flat bed and low boy trailers shall be marked with their cargo capacities and shall not be overloaded.

1918.86(h)

Cargo weights. Cargo to be handled via a Ro-Ro ramp shall be plainly marked with its weight in pounds (kilograms). Alternatively, the cargo stow plan or equivalent record containing the actual gross weight of the load may be used to determine the weight of the cargo.

1918.86(i)

* **Tractors.** Tractors used in Ro-Ro operations shall have:

1918.86(i)(1)

* Sufficient power to ascend ramp inclines safely; and

1918.86(i)(2)

* Sufficient braking capacity to descend ramp inclines safely.

1918.86(j)

* **Safe speeds.** Power driven vehicles used in Ro-Ro operations shall be operated at speeds that are safe for prevailing conditions.

1918.86(k)

* **Ventilation.** Internal combustion engine-driven vehicles shall be operated only where adequate ventilation exists or is provided. (Air contaminant requirements are found in 1918.94 and part 1910, subpart Z, of this chapter.)

1918.86(l)

Securing cargo. Cargo loaded or discharged during Ro-Ro operations shall be secured to prevent sliding loads.

1918.86(m)

Authorized personnel. Only authorized persons shall be permitted on any deck while loading or discharging operations are being conducted. Such authorized persons shall be equipped with high visibility vests (or equivalent protection ⁽¹⁰⁾)

Note To Paragraph (m): High visibility vests or equivalent protection means high visibility/retro-reflective materials which are intended to make the user clearly visible by day through the use of high visibility (fluorescent) material and in the dark by vehicle headlights through the use of retro-reflective material. For example, an acceptable area of material for a vest or equivalent protection is .5 m² (760 in.²) for fluorescent (background) material and .13m² (197 in.²) for retro-reflective material. Vests or equivalent protection, such as high visibility/retro-reflective coveralls, that are available for industrial use, may also be acceptable.

1918.86(n)

Vehicle stowage positioning. Drivers shall not drive vehicles, either forward or backward, while any personnel are in positions where they could be struck.

The First of the "Pure Car Carriers" Constructed "from the keel up"
-- K - Lines EUROPEAN HIGHWAY.

While many partially or fully converted C - 3 and C - 4 car carriers remained in service into the 1980's, Japan's K - Line was the first to construct -- "from the keel up" -- a "pure car carrier". And as may be learned from K - Line's website -- which now will be quoted -- it thereafter continued to be much involved in the global transport of newly made automobiles. *

Car Carrier Service.

"K" Line commenced maritime car transport by specialized car carriers earlier than any other shipping line ...

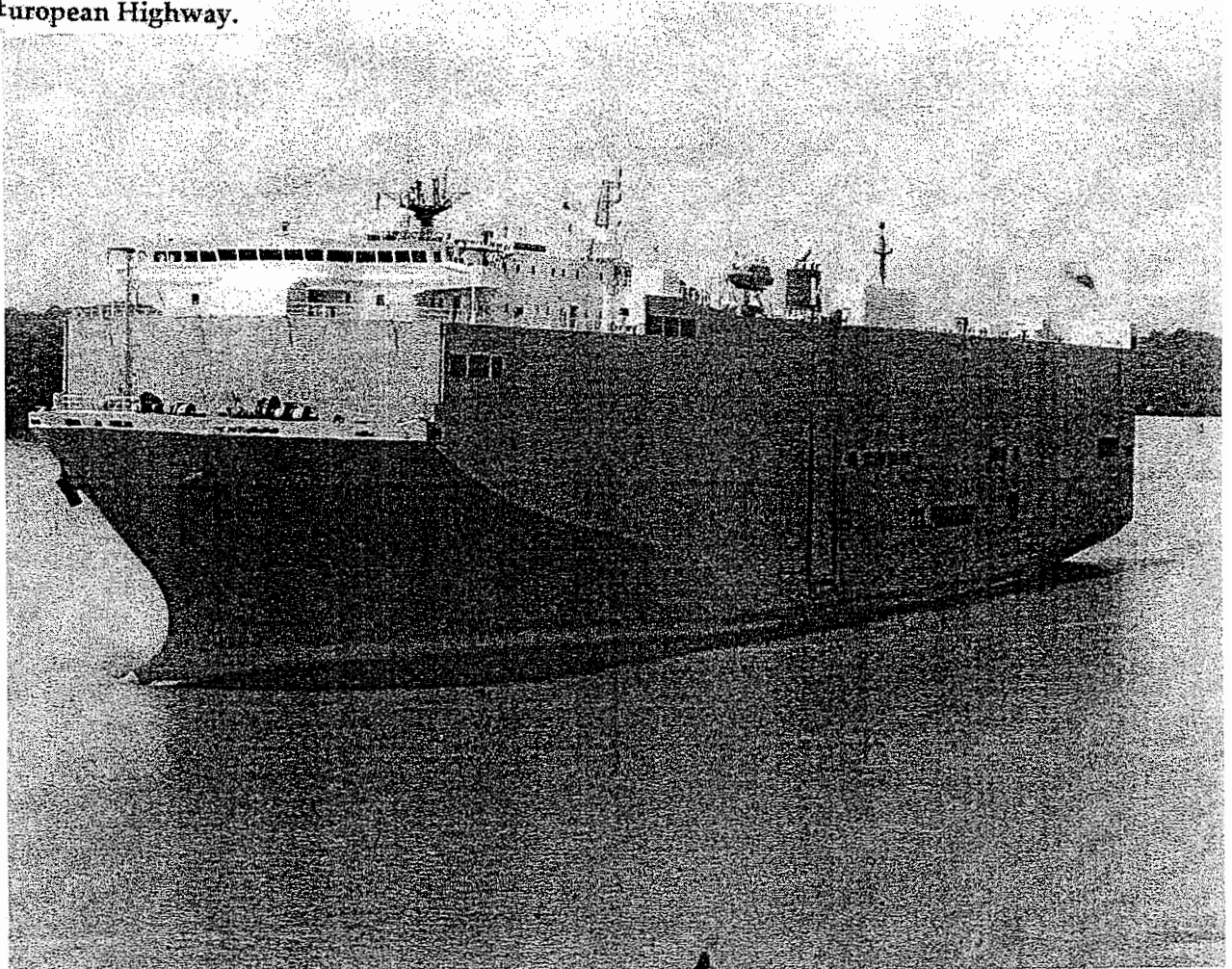
Start of "K" Line's Car Carriers.

Back in 1968, delivery was taken of our first Car Bulker, the Toyota Maru No. 1 ...

* See Google - K Line - p. 1 - K - Line Europe - Car Carriers.

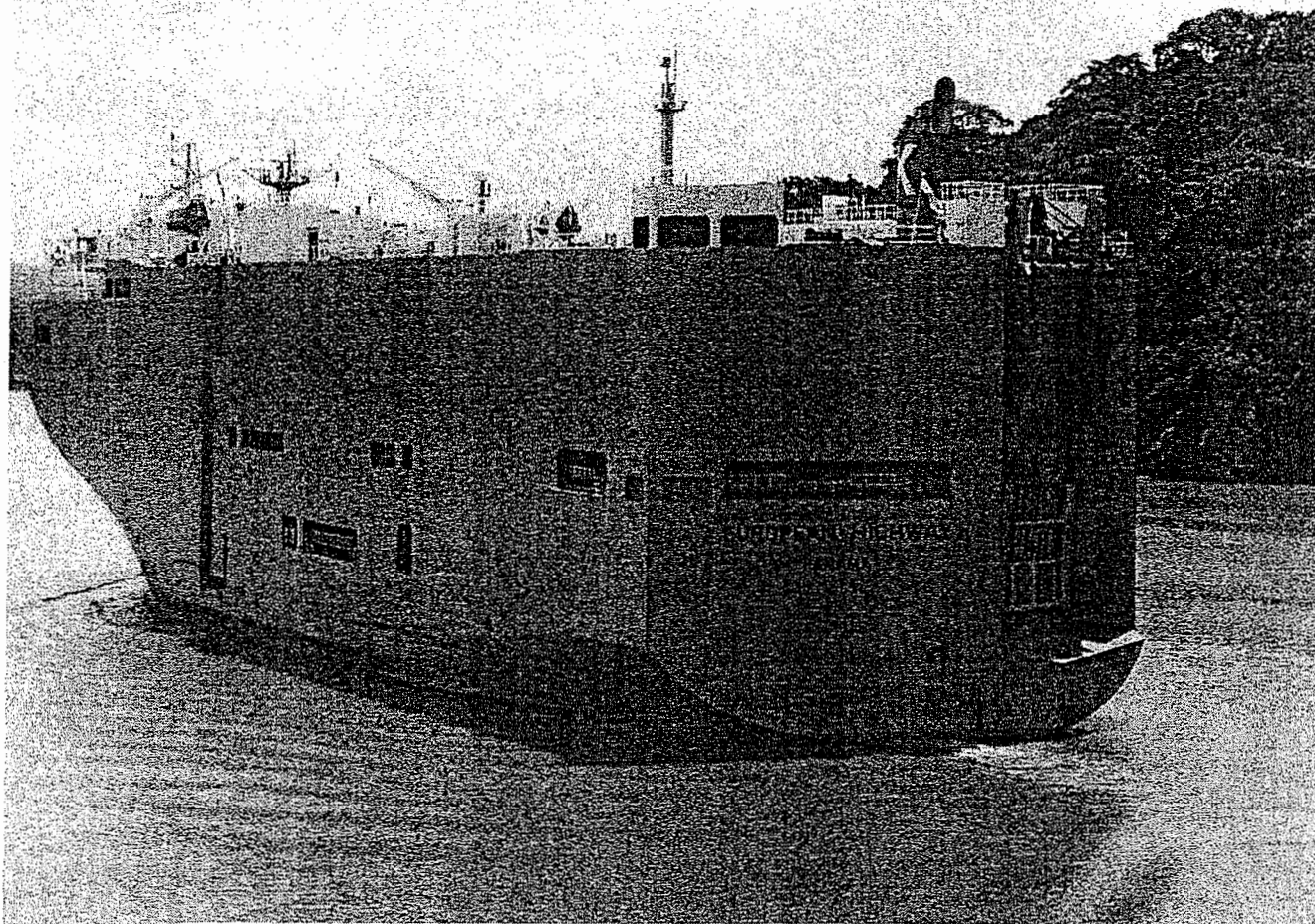
Japan's first Pure Car Carrier ("PCC"), the Toyota Maru N. 10, * was put in service in 1970. Since 1970 the market for exporting and importing cars has increased dramatically and the number and type of RO / RO s has also so increased. In 1973, Japan's K Line built the European Highway (i.e., she was the first such carrier to be constructed as she was delivered, rather than being converted by a major rebuilding - HM), the first Pure Car Carrier, which carried 4,200 automobiles. Today's pure car carriers and their close cousins, the Pure Car / Truck Carrier -(i.e., pick-up truck - HM) are distinctive looking ships with a box-like superstructure running the entire length and breadth of the hull, fully enclosing and protecting the cargo. They typically have a stern ramp and a side ramp for dual loading of many thousands of vehicles, as well as extensive automatic fire control systems.

European Highway.



* A search of Google and Yahoo produced no photographs of the Toyota Maru No. 1, nor of the Toyota Maru No. 10.

** Yahoo - European Highway - p. 1 - european highway in panama Canal
-- 08 . 09 . 2003.



Loa/Bm/Dft:	179.99 x 32.20 x 9.41
Builder:	Kawasaki Heavy Industries, Ltd. Sakaide Shipyard
Yard number:	1494
Year:	1999
GT:	48039
NT:	14412
DWT:	15075
Eng make:	MAN B&W
Power:	18002 hp / 13240 kW
Speed:	20.0

It should also be noted here that the "Pure Car/ Truck Carrier" (i.e. the "PCTC"- HM) "... has liftable decks to increase vertical clearance as well as heavier decks for 'high and heavy' cargo. A 6,500 unit car ship with 12 decks can have three decks which can take cargo up to 150 tons with liftable 'panels' to increase clearance from 1.7 meters to 6.7 meters on some decks. Lifting decks to accommodate higher cargo reduces the total capacity. (Google - MV Mignon - p. 1 - Roll-on / Roll - off Ships). This entry then also notes what was earlier noted here: "The largest PCC currently in service is the MV Mignon, which can carry up to 7,200 cars."

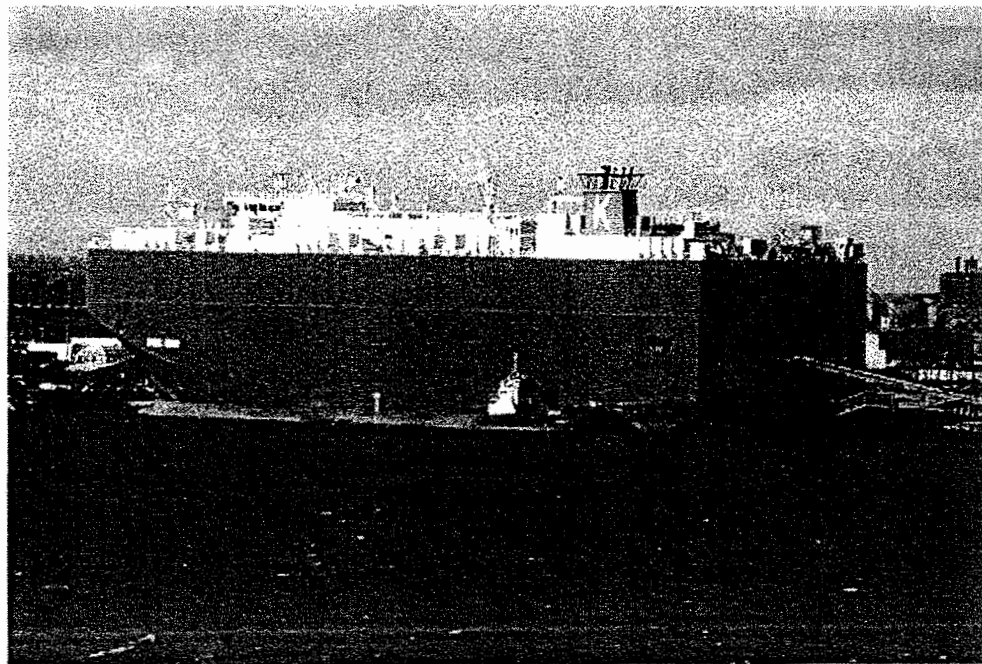
"K" Lines Present Fleet (2004 - HM) and the Latest of its Two Sister Ships
-- the Amber Arrow and Ivory Arrow,

As of June, 2004, we operate 75 car carriers and annually carry as many as 1.75 million units, equivalent to 15% of the total of all transported units per annum on a global basis. Our fleet ranges from super-speed and large-sized 6,000-unit carriers with a speed of 20 knots to 800-unit small size carriers for short-sea transport in Europe . . .

. . . In May and June of that year (2004 - HM) we also took delivery of two new 6,600 unit vessels, the AMBER ARROW and the IVORY ARROW, following 2 6,000-unit vessels during 2003. * We had by then also adapted a ramp with a capacity of 150 tons and a ship--board trailer system for heavy and large construction equipment.

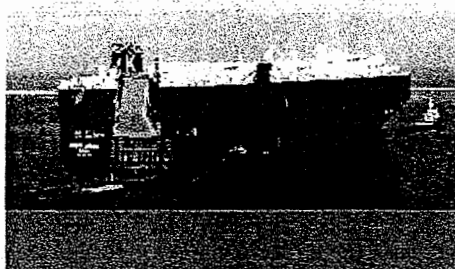
And thus with respect to these sister ships, the following photographs and the ship data sheet will perhaps suffice.


Amber Maritime Limited's "Amber Arrow"



Google - Amber Arrow - p. 23 - Flickr - Photo tagged New York Harbor
- by Tom Hoboken - January 10, 2007.

* See Google - K - Line - Wikipedia - p. 1 for the following: "Unlike elsewhere in the shipping industry where cargo is normally measured by the metric tonne, RO / RO cargo will typically be measured in the more convenient unit of lanes in meters (LIMs). This is calculated by multiplying cargo length in meters by its width in lanes (lane width differs from vessel to vessel and there are a number of industry standards). Aboard PCCs cargo capacity is often measured in RT or RT43 units which is based on a 1966 Toyota or by car equivalent units (CEU



Type	car carrier	Hull number	8168/6
Vessel's name	AMBER ARROW	Flag	Bahamas 
Shipowner	Amber Maritime Limited, Isle of Man		
Classification	DNV +1A1,CAR CARRIER RO/RO,+MCDK,pwdk,EO,W1-OC,PET,TMON		

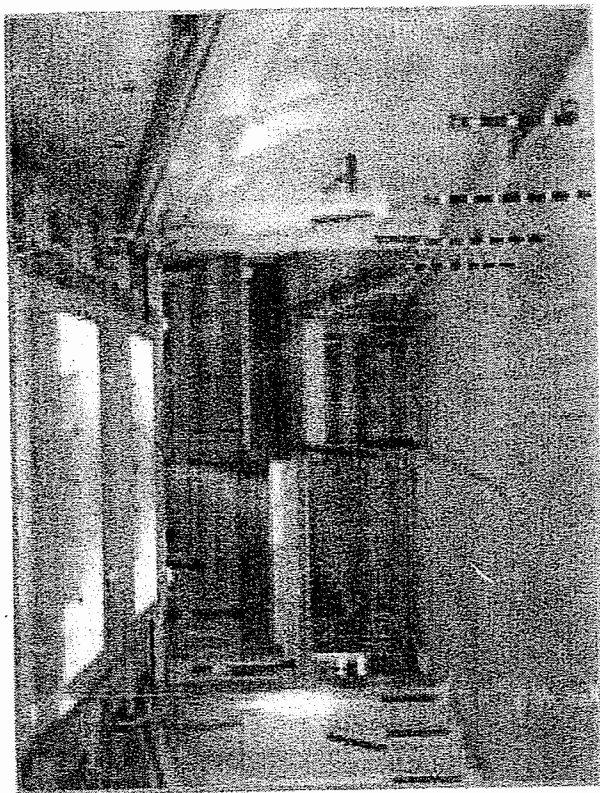
MAIN DIMENSIONS (moulded)			PROPULSION			BUILT		
		Number	1	Shipbuilder				STOCZNIA GDYNIA
Length o.a.	199.90			H.				Stoczniove Biuro
	m	Make		Designer				Projektowe - Stocznia
Length b.p.	188.00			NSD				Gdynia
	m	Type		7RTA 62U	Delivery			4/27/04
Breadth mld	32.26	MCR		15540 kW	date			
	m	rpm		113				
Depth to main deck	14.00	FOC		59.60 t/day	Number		MANOEUVRING GEAR	
	m				1		Output [kW]	Thrusters type
Depth to deck 12	32.74	SPEED					1300	bow thruster
	m	Service speed		20 knots				
Design draught	9.00	at: draught T = 9.00 m,						
	m	90.00% MCR, 15% sea margin						
Scantling draught	10.00	TANKS CAPACITIES (100%)						
	m	ballast water		7380				
				m ³				
TONNAGE		lub oil		150 m ³				
Gross	57718	GT		3350				
Net		NT		m ³				
Deadweight at:		potable water		260 m ³				
Design draught	15700	diesel oil		130 m ³				
	t							
Scantling draught	21214	RANGE						
	t	cruising range		24000 Nm				
VEHICLES CAPACITY		COMPLEMENT						
number of vehicle		Suez Canal crew		6				
decks	13	pilot		2				
number of hoistable		officers and crew		29				
Car deck areas:								
total	54500	CARGO HANDLING GEAR						
	m ²	Lifting						
hoistable	17000	Type No Drive capacity						
	m ²	[t]						
Vehicles:		1		5				
cars	6000							
	pcs							
Length of lanes:								

ADDITIONAL DATA

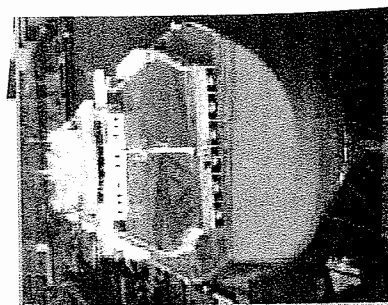
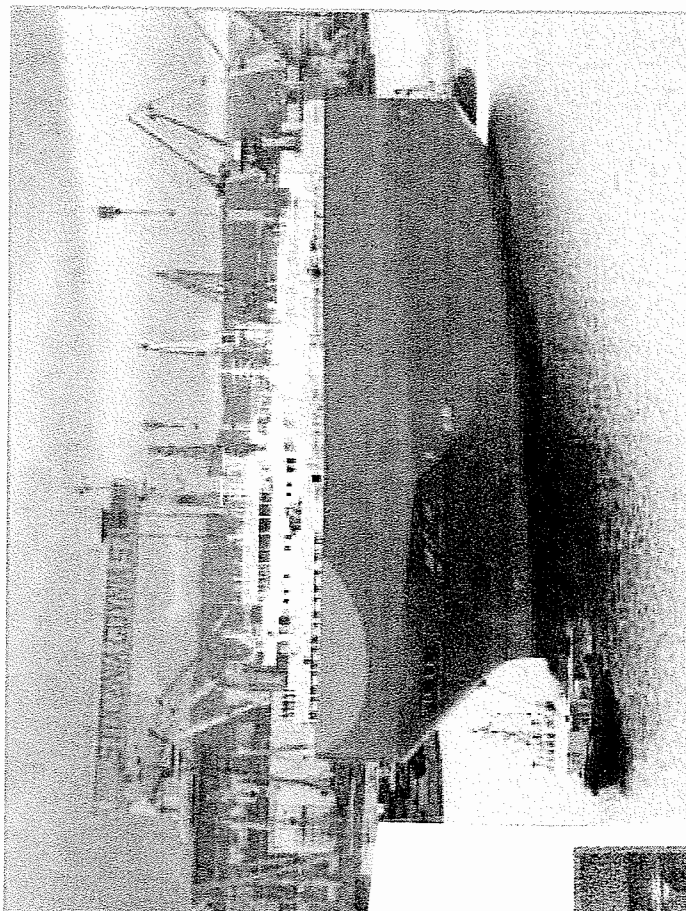
The ship is chartered by Japanese company K-Line.

Google - Amber Arrow - p. 1 - Polship - Information About Ship.

Amber Arrow & Ivory Arrow *
2 newbuildings for Gdynia Shipyard



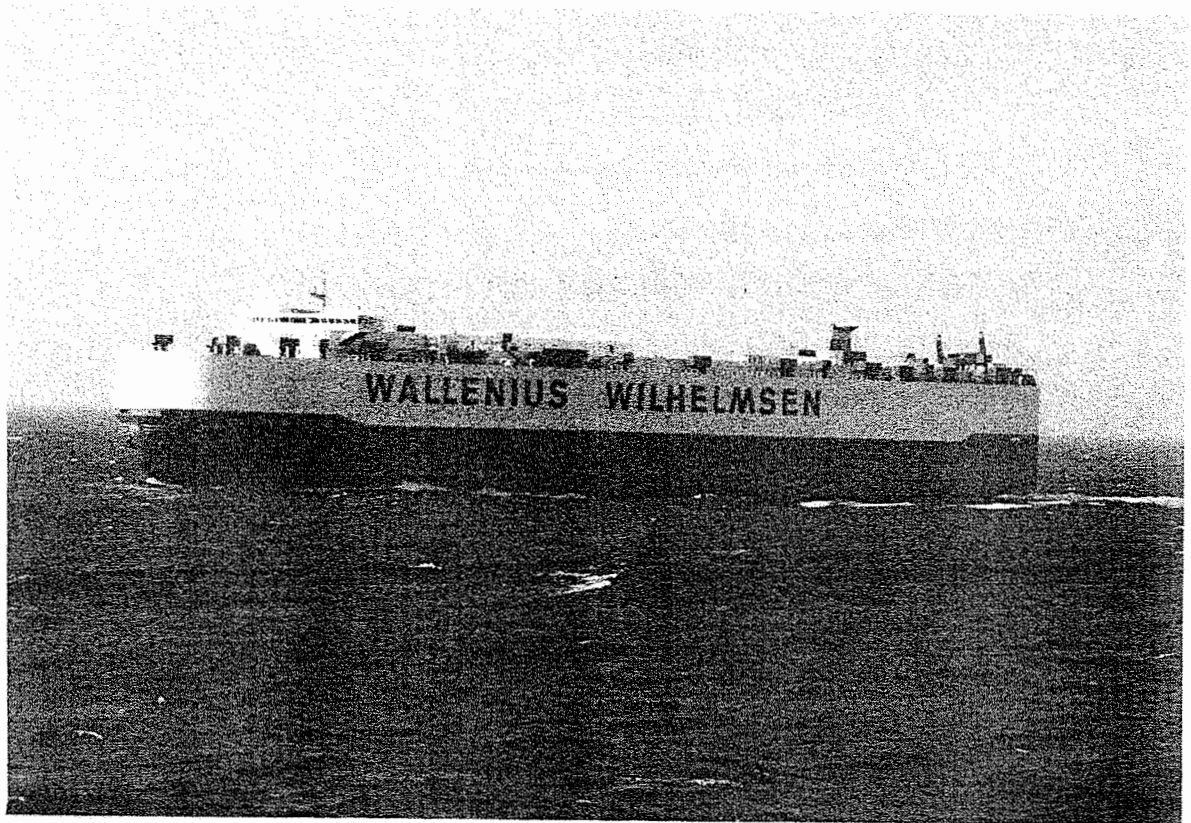
ramps



Car decks

* Google - Amber Arrow - p. 1 - Marine Products Line - Amber Arrow & Ivory Arrow - pp. 1 and 2.

The MV Mignon, the largest PCC as of early 2006 *
-- and Still Other Related Dimensions to its Historic Technology.



The vessel can carry up to 7,200 cars. **

Other technologies related to those of the Mignon.

The first three of these were introduced at their Internet site by the following paragraph. ***

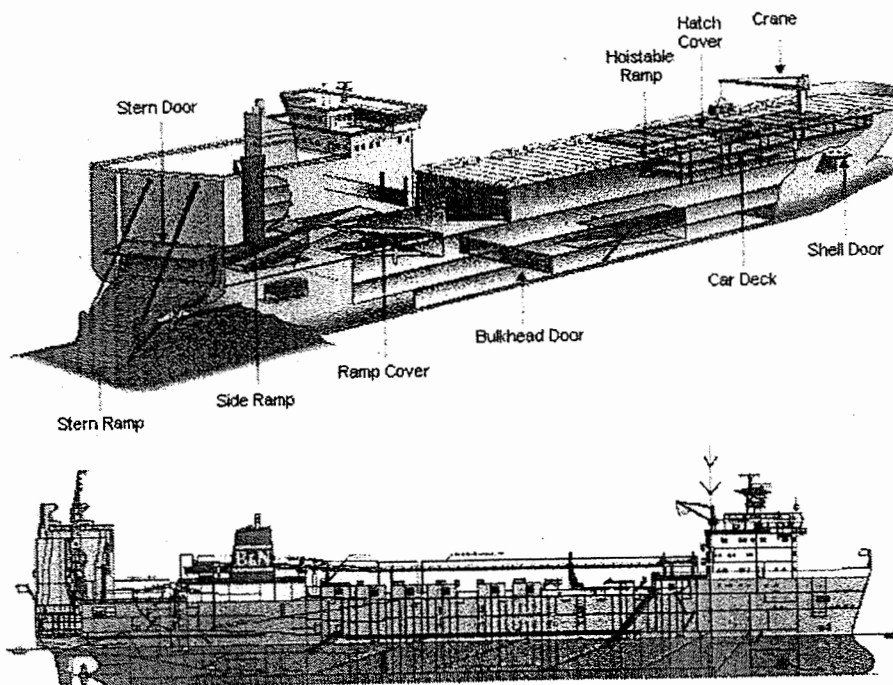
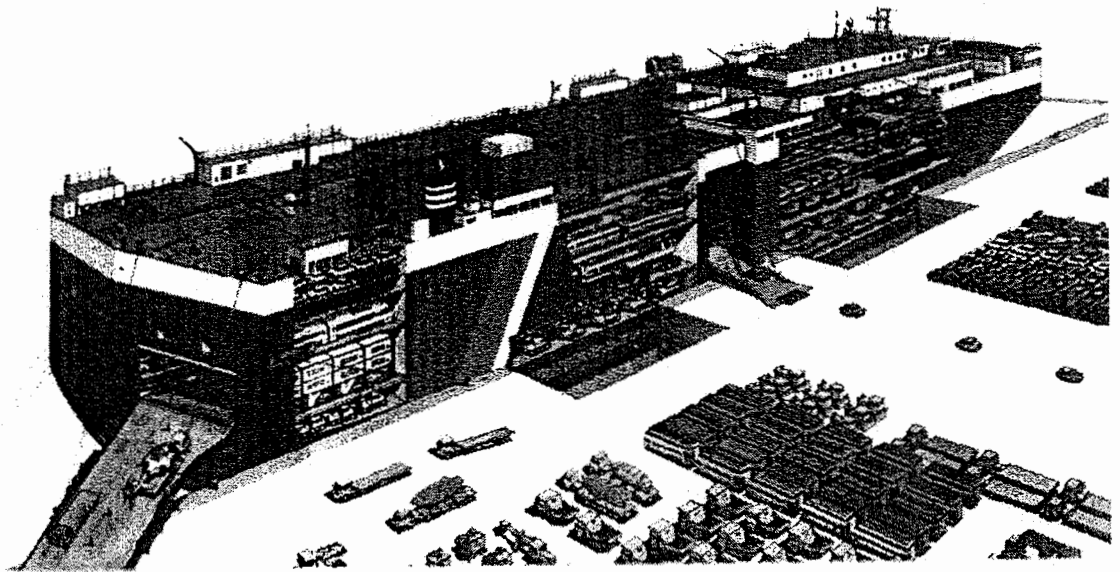
In the 1960's and early 70's, conventional vehicle carriers of the Lift-On Lift Off (LOLO) type were used extensively in connection with the transportation of factory new cars. The vessels would rig hoistable car decks and load anything from 500 up to 3000 cars depending on the size of the vessel. The LOLO was soon replaced by the Roll On Roll Off (RORO) car carrier. As the 70's developed, the Pure Car Carrier (PCC) started to replace the conventional vessels. The PCC was then developed into the Pure Car Truck Carrier (PCTC) in order to meet the

* Google - MV Mignon - Index of /krevne / images - 03 . 09 . 2006.

** It will be recalled that other vessel particulars were reported on p. 140 above.

*** Google - MV Mignon - p. 1 - Roll-on / Roll-off - Wikipedia - References - Cut-away of PCC.

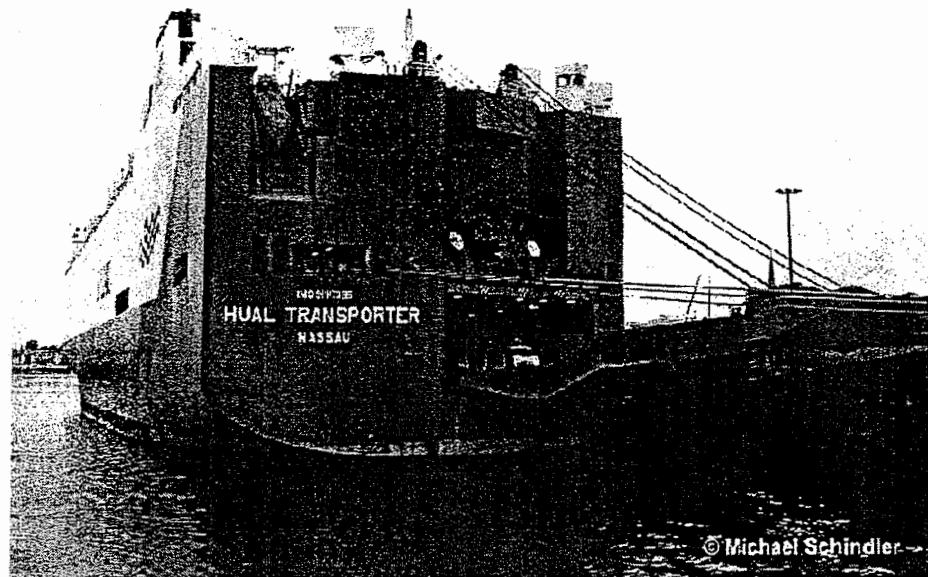
demands for high and heavy cargo. The introduction of the PCC / PCTC resulted in radical reduction of transportation damages. A PCC with 9 - 10 decks can usually carry 2,000 - 3,000 cars. Large carriers with 12-tier decks and a cargo capacity of 6,000 cars have been built in recent years. Although essentially a vehicle carrier, breakbulk and containers are carried on bolsters, lift trailers, roll trailers and cassettes. Pictures of these are in the loading section of this site. Ro-ro ferries are detailed in the Ferries section of this site.



Google - MV Mignon - p. 1 -- Roll - on / Roll - off / Wikipedia
 - References - Cut-away of PCC.

Google - MV Mignon - p. 1 - Roll - on / Roll - off - Wikipedia
- Pictures of ships - Enter Gallery - Vehicle carriers and RO - RO.

Hual Transporter



Google - MV Mignon - p. 1 -- Roll - on / Roll - off / Wikipedia
- Pictures of ships - Enter Gallery - Vehicle carriers and Ro - Ro.

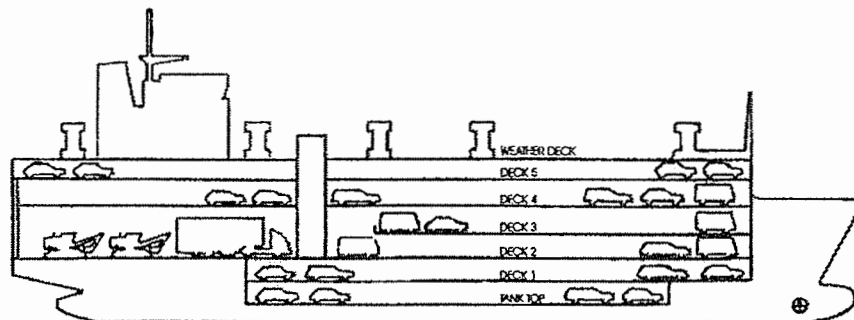
Hoegh Herlin



M/V AUTOCARRIER

Built 1982 Lübeck (Germany)

Class LR; 100A1, Ro/Ro cargoship, mov. deck, LMC, UMS



PRINCIPAL PARTICULARS

Length over all	89.52 m
Breadth moulded	18.00 m
Dead-weight maximum	1472 T
Draft at DW maximum	4.26 m
Service speed	13.5 knots
GT/GRT	6421/985.42
NT/NRT	1926/481.88
Air draft	29.51 m
Main engine	1 x Mak 6M551, 2940 kW
Aux. engine	2 x Caterpillar D353TAU
Bow thruster	Jastram BU 601, 478 kW, Becker rudder
Shaft alternator	Anton piller GMBH & Co, NKT 600-4 Three phase-synchrone alternator, 530kW

LOADING CAPACITY

	FREE HEIGHTS	STOW AREA	STRENGTH
Weather deck		755 m ²	0.25 T/m ²
Deck 5	1.70 m	1205 m ²	0.50 T/m ²
Deck 4	2.30 m	1200 m ²	0.40 T/m ²
Deck 3	2.20/1.60/ 0 m	1130 m ²	0.40 T/m ²
Deck 2	2.30/2.90/4.50 m	1085 m ²	4.50 T/m ²
Deck 1	1.70 m	740 m ²	0.25 T/m ²
Tank top	1.70 m	525 m ²	0.25 T/m ²
Sum ex. Weather deck		5885 m ²	
Sum, total		6640 m ²	

RAMP PARTICULARS

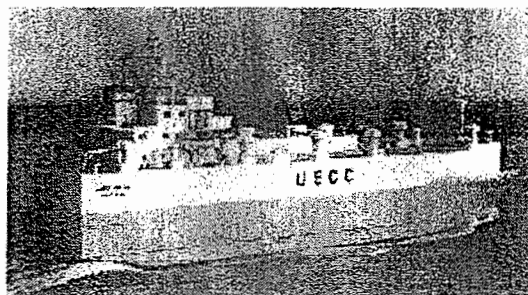
STERN RAMP: Height of ramp pivot: 6.6 m above the keel

Length: 8.00 m + 2.00 m flaps Width: 8.00 m Strength: 4.5 T/m².

STARBOARD SIDE RAMP: Height of side ramp variable I.E. available for main deck/car deck/upper deck

Length: 11.00 m + flaps 2.00 m Width: 3.00 m Strength: 0.4 T/m² or 0.9T/m²

Ventilation: 35 air changes per hour.

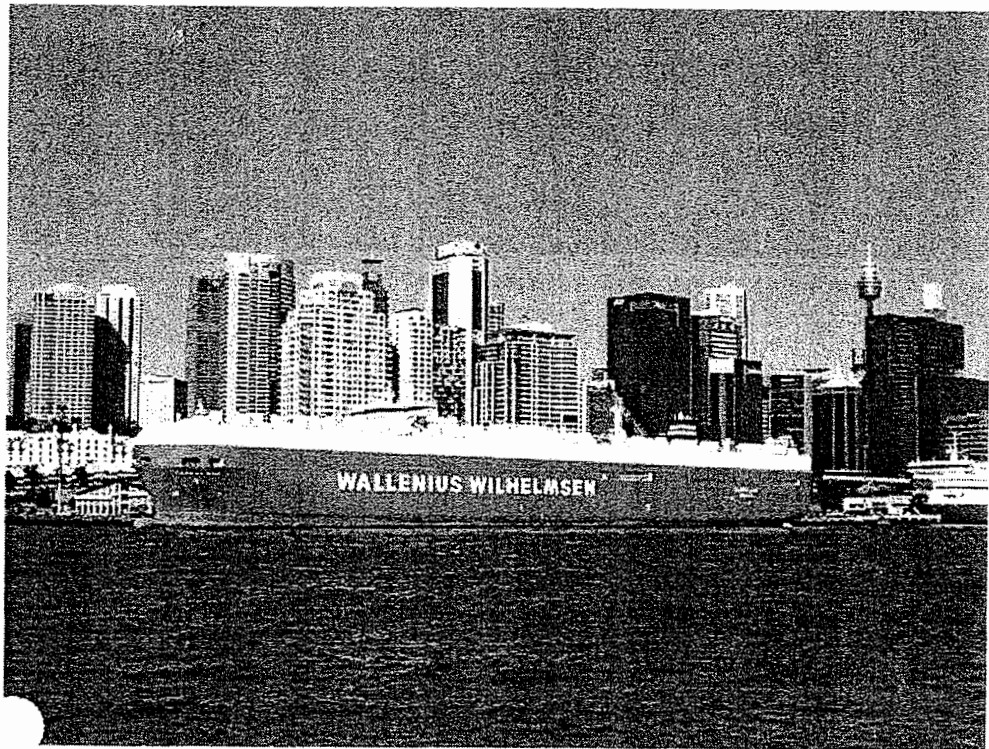


M/V AUTOCARRIER

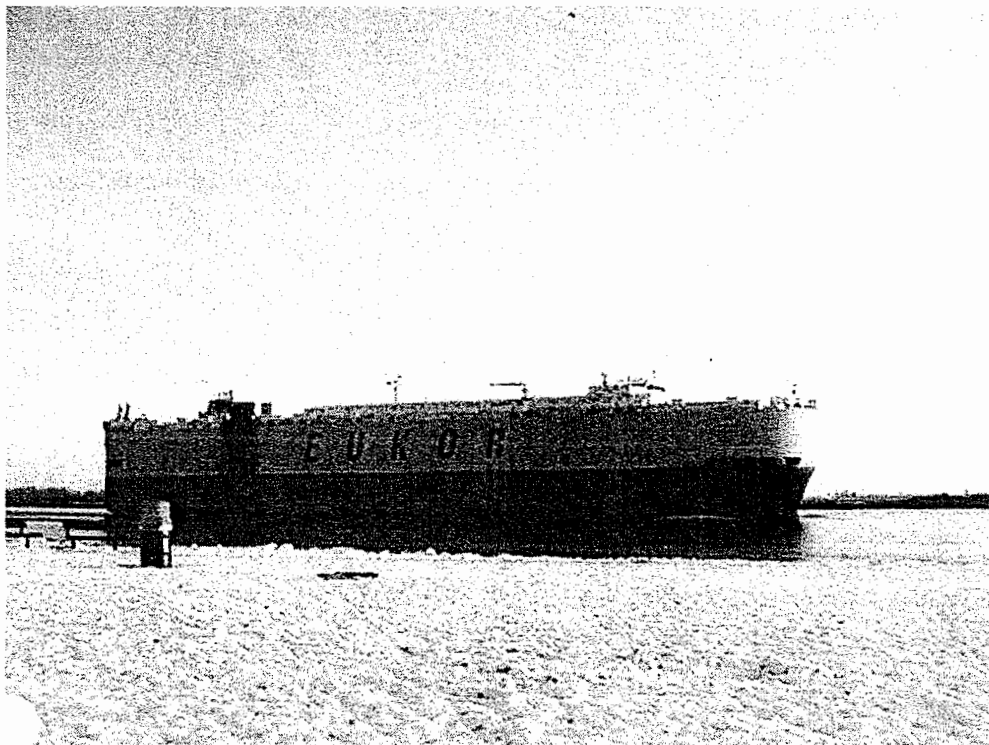
Car capacity	650
Length overall	89,52 m
Breadth moulded	18 m
Deadweight max	1472 T
Draft DW maximum	4,26 m
Service speed	13,5 knots
Built	1982

Google - Amber Arrow - p. 29 - Flickr.

Wallenius Wilhelmsen, Tamerlane



Darling Harbour



One of the many ships that travels up the South Arm of the Fraser River. This ship carries automobiles for distribution across the continent.

A brief PS on the owner and operator of the MV Mignon -- an update on the new building program of Wallenius Lines. *

Wallenius orders four more 8,000 vehicle LCTC's

Wallenius Lines continues its newbuilding program. It has ordered a further four 8,000 vehicle capacity LCTC-vessels (Large Car Truck Carriers) from Daewoo Shipbuilding and Marine Engineering (DSME) in Korea for deliveries in 2008 and 2009.

The vessels will be 228m long and capable of carrying 8,000 vehicles.

With these four new contracts, Wallenius Lines order book now includes ten newbuildings. of which nine vessels are being built at DSME and one is being built at Hyundai Heavy Industries.

During the year, five of the existing vessels in the Daewoo-series (built in the late 1990s) have been elongated at Hyundai-Vinashin Shipyard in Vietnam, increasing the capacity of each vessel by 20 percent.

The LCTC vessels will be deployed in the Wallenius Wilhelmsen Logistics fleet (WWL).

The total investment in the Wallenius Lines newbuilding program adds up to \$800 million.

* Google - LCTC - p. 3 - Shipping, Shipbuilding, Offshore News
- Marine Log - Decemer 6, 2005.

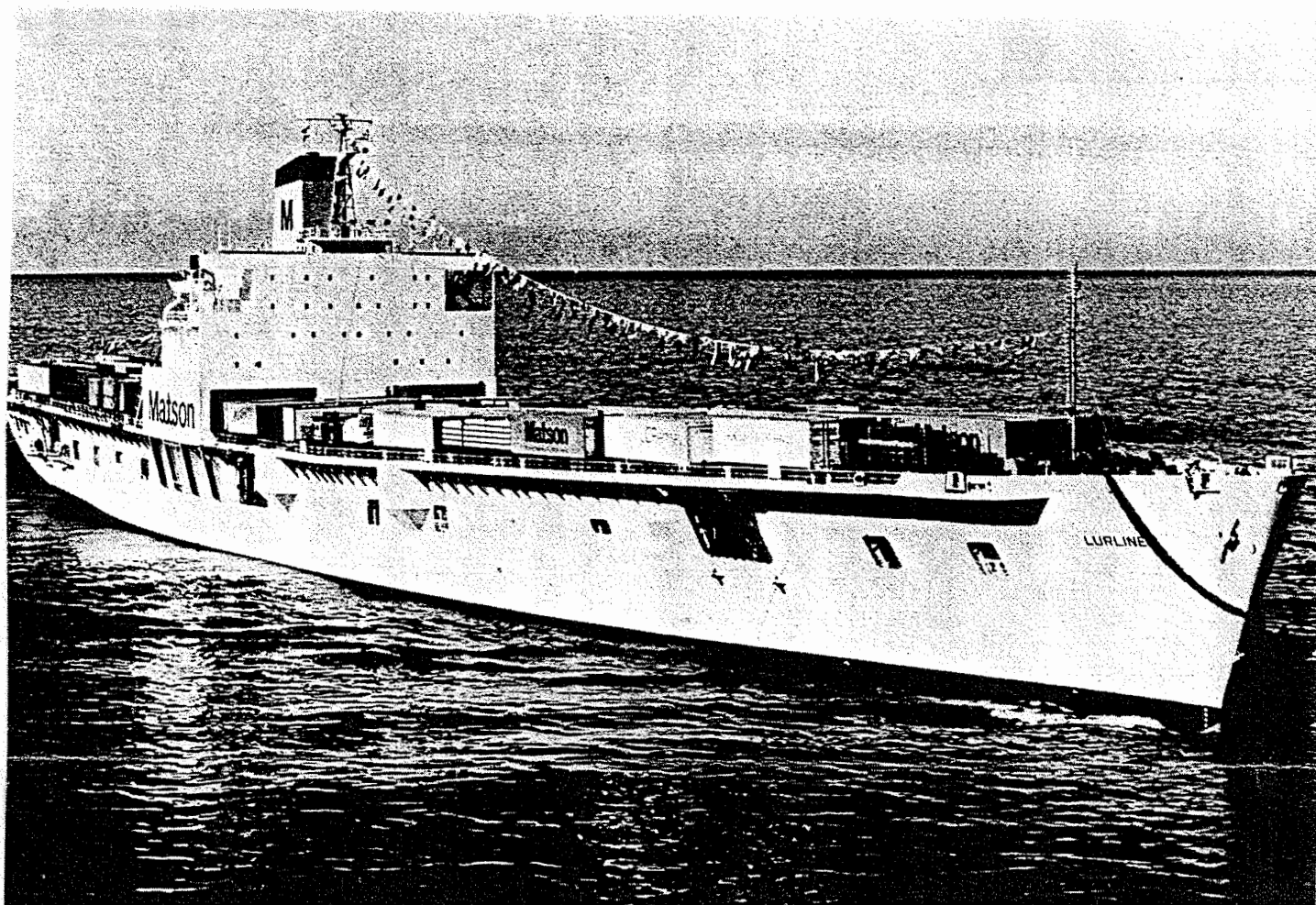
A concluding note: The evolution of Matson Navigation's transport of car - van - and pick-up and its RO / RO capabilities.

Containerized trade was introduced in the Pacific by Matson Navigation with the sailing of its Hawaiian Merchant on August 31, 1958.* Shortly thereafter, it also began to convert its fleet of C - 3's and C - 4's for the transport of containers. And by 1969, it had also placed into service the first full containership to ply the Pacific trade routes, the Hawaiian Enterprise. And having shortly thereafter begun the building of another four such vessel, it had by 1973 also placed into service the Lurline, a roll-on / roll-off (RO / RO) vessel with seven ramp-connected decks. And in a short time it also placed into service its new Matsonia, a so-called "container ship hybrid" which with the containers it carried forward and aft of its "house" - i.e., its superstructure - and its engine space, also had on her stern a multi-decked, ro / ro garage for 422 cars. But as regards the details of these very important "spin-offs" of the containerization of West Coast trade and the details of the longshore work which they required, such by now can best be made clear simply by the following photographs.



Lashing aboard the Lurline
by Ms. Pat Goudvis.

* For the role Matson played in the containerization of Pacific trade, see Article 14, pp. 43 - 50 on the author's website. The photographs which follow, excepting for the first three, are courtesy of Matson Navigation.

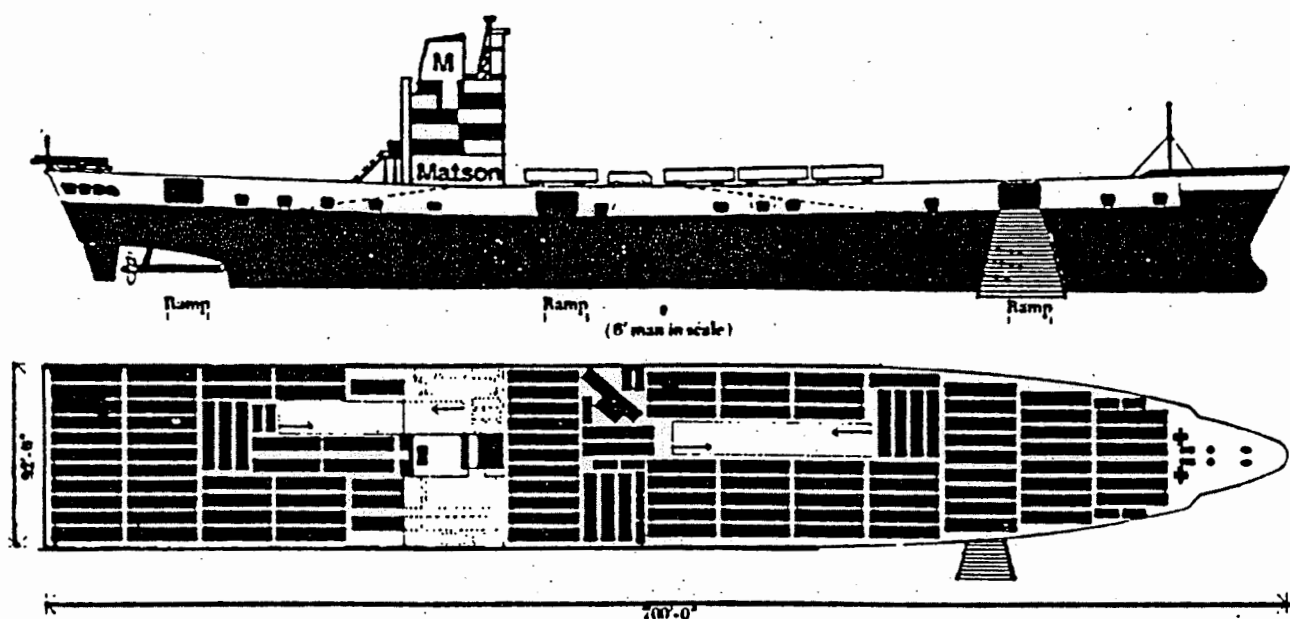


LURLINE (FIFTH)

Built by Sun Shipbuilding & Drydock Co., Chester, Penna., at a cost of \$30,600,000. Christened *Lurline*, when launched, June 7, 1973, by Mrs. Maryanna Gerbode Shaw, great-granddaughter of Samuel T. Alexander, one of the founders of Alexander & Baldwin, Inc., parent company of Matson Navigation Company. Vessel jointly owned by two banks and chartered to Matson under long-term agreement. Delivered to Matson, August 24, 1973, and sailed the following day from Philadelphia to Los Angeles. Maiden voyage from Los Angeles, September 9, 1973, inaugurating first roll-on, roll-off service to Hawaii. Vessel capacity 293 40-foot trailers to 343 27-foot trailers. After 187 voyages to Hawaii, vessel departed San Francisco, October 22, 1980 for Chester, Penna., where it arrived on November 10, 1980 to have a 126½-foot midbody section installed to increase cargo capacity; containers and trailer units to 1,175; autos, 179; and refrigerated units to 204. Vessel to return to West Coast-Hawaii service in early 1982.

Length oa	700'
Beam	92'
Depth	60'-1½"
Net tons	9,230
Gross tons	15,257
Speed	25
Crew	39
Official No.	549,000

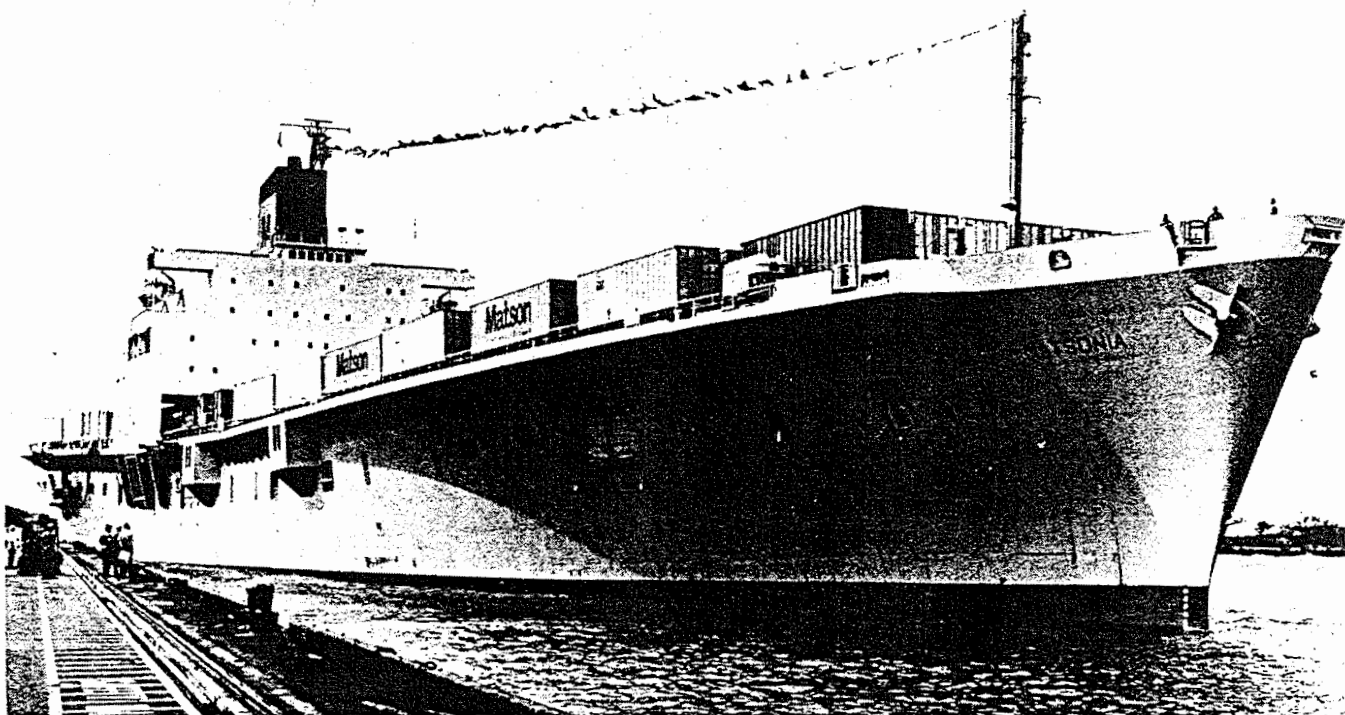
* Matson's Century of Ships, Fred A. Stindt, Modesto, CA, 1982, p. 279.



ROLL ON - ROLL OFF ("RO - RO")

Courtesy: Matson Navigation

This is the Lurline with one of three ramps in place - HN.

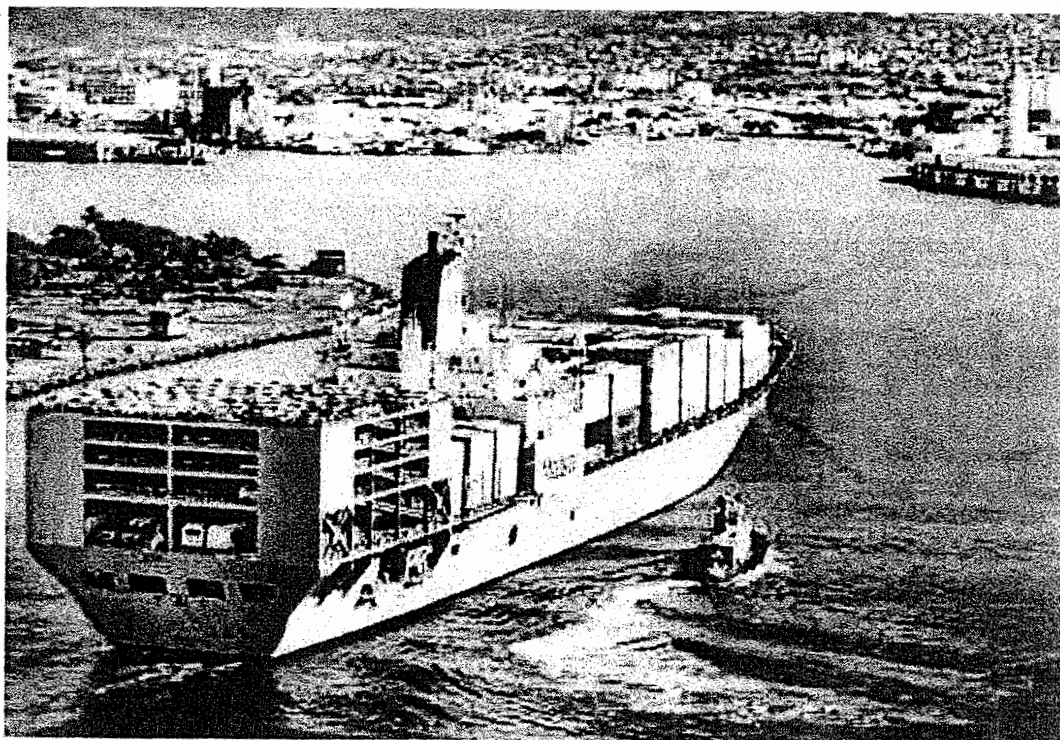


MATSONIA (FOURTH)

Built by Sun Shipbuilding & Drydock Co., Chester, Penna., at a cost of \$31,100,000. Christened *Matsonia*, when launched, October 11, 1973, by Mrs. Jane Baldwin King, great-granddaughter of both H. P. Baldwin, co-founder of Alexander & Baldwin, Inc., and Emily Alexander, sister of S. T. Alexander, the other founder. Vessel jointly owned by two banks and chartered to Matson under long-term agreement. Delivered to Matson, December 11, 1973, and sailed the following day from Philadelphia for San Francisco. Maiden voyage from San Francisco, January 9, 1974. Vessel capacity 293 40-foot trailers to 343 27-foot trailers. Laid up July, 1981. Available for service.

Length oa 700'
 Beam 92'
 Depth 60'-15"
 Net tons 9,230
 Gross tons 15,257
 Speed 25
 Crew 39
 Official No. 553,090

PHOTO
 MATSON COLLECTION



Google - Matsonia - p. 4 - Sailors' Union of the Pacific - entering Hono harbor

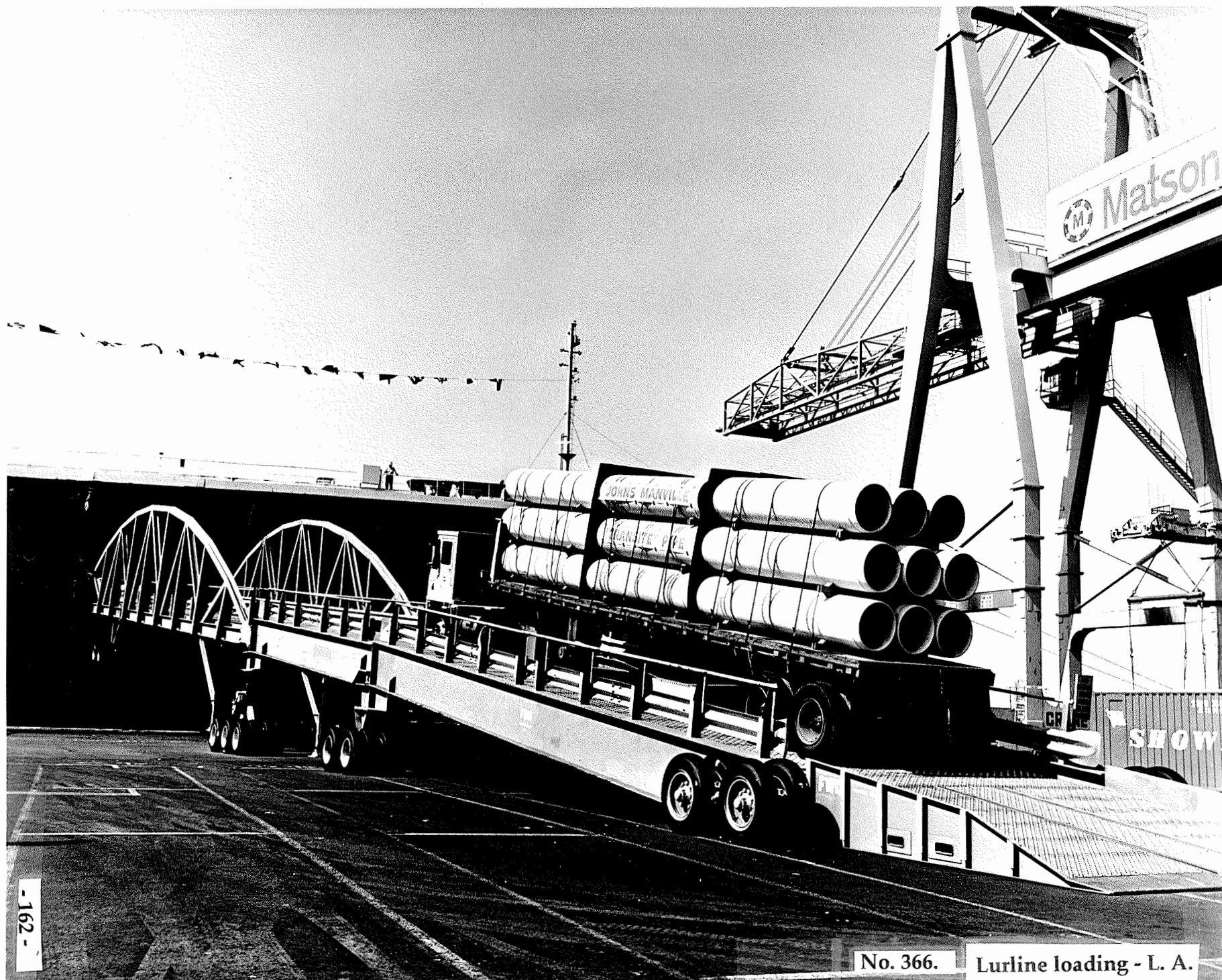
* Ibid., p. 280.



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Courtesy of Matson Lines - reverse: Print No. 363.

The Lurline - L.A.



-162-

No. 366. Lurline loading - L. A.

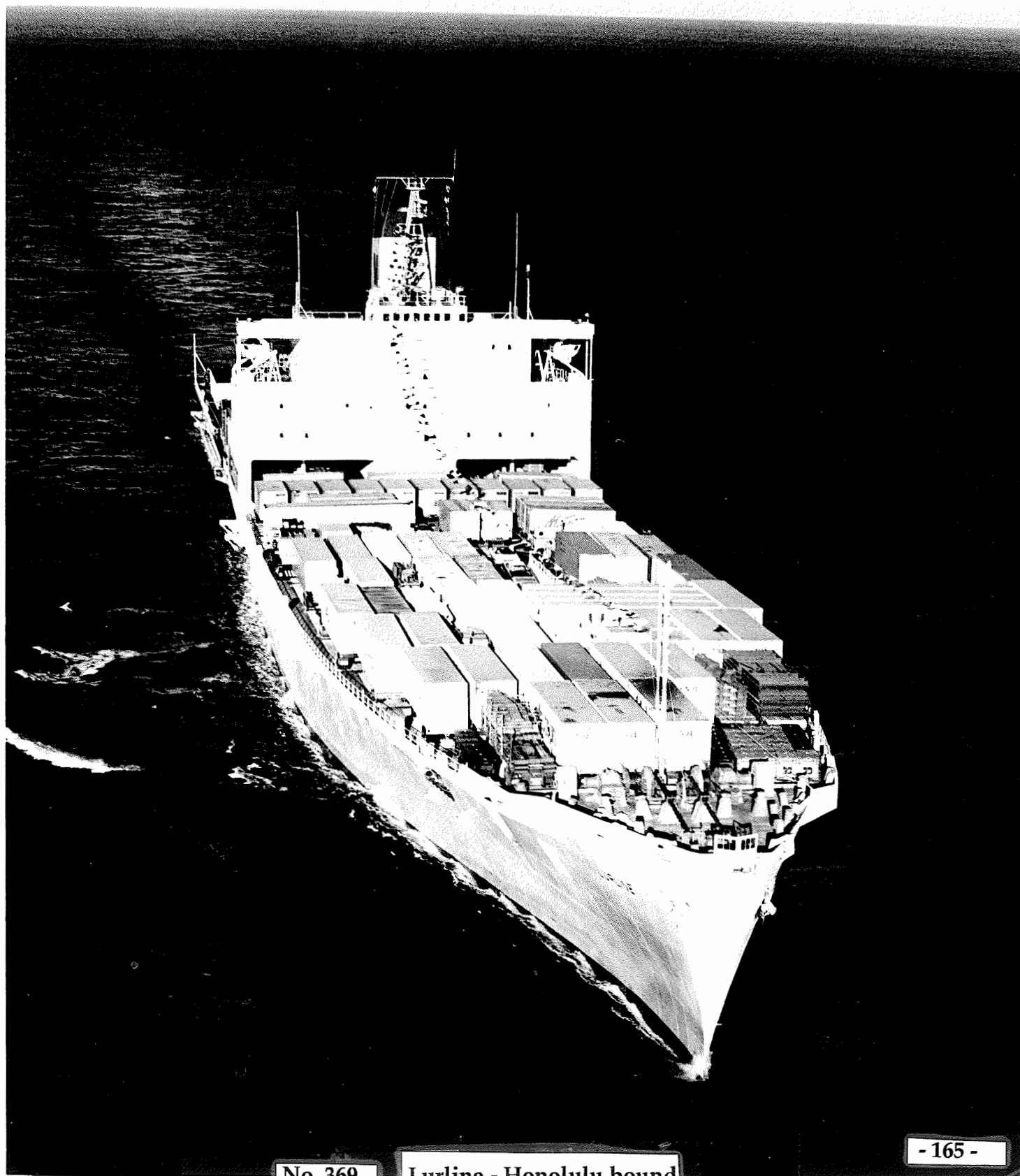




- 164 -

No. 368

Lurline sailing from L. A.



No. 369. Lurline - Honolulu bound



No. 377. Lurline - Hono



No. 378 Lurline unloading - Hono

ADDENDUM 3:

**Pacific Far East Lines: The west coast introduction of "LASH"
– "Lighter Aboard Ship" - and the disappearance of PFEL.**

Four introductory notes to LASH.

The present author:

This ancient form of cargo transport has occasionally been adopted when the port(s) of call of a vessel are routinely crowded with anchored vessels of like size waiting for an open berth. It is thus distinguished by a hoisting of lighters (barges) loaded with cargo to the decks of a much larger vessel and their discharge and movement to suitable berthing when it arrives at the port to which they are destined. In a word, this form of cargo transport may be adopted so as to reduce the "turn-around" time of a larger vessel. And, by the same token, it may also greatly reduce the loading time of that vessel in its home port and all of its ports of call.

Google - Lash vessel - p. 1 - Shipping, Logistics, etc.
- LASH (Lighter Aboard Ship).

The lighter aboard ship or LASH---barge-carrier or barge-carrying vessel---is designed to carry lighters (barges), where they are lifted by crane over the stern (rear) of the vessel.

The LASH and barge come in different configurations. Some LASHes can accommodate over 24 barges. Each barge may carry 600 to 1,000 metric tons of cargo, which is much bigger than the ocean freight container, and can float and be towed up and down a river or canal, thus the barge is often referred to as the floating container.

The LASH is useful in moving a relatively large volume of cargo in the short-sea trade and to and from sites on rivers and canals, such as Rhine Canal in Europe, that cannot be used by the larger ocean-going vessels. The LASH keeps the load in the same vessel for the entire trip, thus reduces cargo handling, transport costs and time.

The LASH is popular in Europe, taking advantage of the extensive inland waterway systems which are the cheapest means of inland transport. The export goods from landlocked European countries like Switzerland may move by LASH or other inland waterway transports to the port of Rotterdam (Netherlands) or Antwerp (Belgium), and transfer to the ocean going vessel for the deep-sea voyage.

Yahoo - PFEL - p. 7 - Houe Flags (shows PFEL house flag, but does not copy - HM).

Pacific Far East Line, San Francisco (1946-1978)<us~\$pfel.gif>

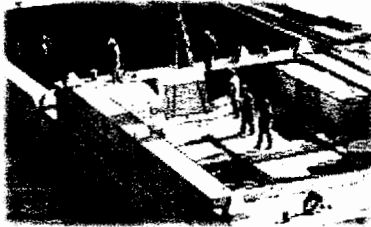
The Pacific Far East Line was created by Thomas E. Cuffe after World War II to take advantage of the availability of surplus wartime cargo ships. The line was exceptionally successful for its first decade, operating across the Pacific with 31 ships by 1949 and an especially strong position in shipping US military cargoes. However, after Cuffe suddenly died in 1959, the standard of management declined and the company repeatedly missed opportunities to upgrade to the new container technology. It finally went bankrupt in 1978. All PFEL ships had names ending with the word "Bear," and the flag was blue with a golden bear below the script letters PFEL.

Source: US Navy's 1961 H.O.

Joe McMillan, 8 November 2001

THE LASH SYSTEM

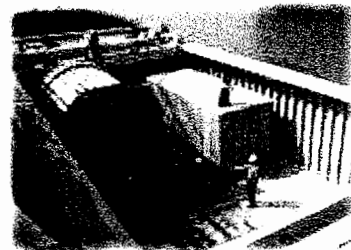
1. Cargo Loading



LASH, an acronym for **L**ighter **A**board **S**hip vessels each carry about 82 LASH barges. The barges, all of a standard size with cargo capacity of 385 tons, are towed in ports and on inland waterways to various shipping points where they are loaded with cargo and then returned to the oceangoing vessel. They are hoisted aboard by a special shipboard gantry-type crane and transported overseas where the process is reversed. LASH ships do not require special docks or terminals. LASH cargo rarely requires transshipment, moving from origin to destination with a single bill of lading.

A wide variety of commodities and manufactured goods are handled by LASH. These include pipe, vehicles, pallets, bagged cargo, forest products, and bulk. If required, forced air ventilation is available.

Heavy lift shippers enjoy considerable savings. Cargo such as machinery and construction equipment can often be stowed in one piece, eliminating costly disassembly, boxing, and reassembly.



Once loaded, LASH barges are water tight with hatch covers for each barge secured. LASH barges are considered vessels. Thus, once your cargo is loaded, an on-board bill of lading may be issued.

2. Ocean Port and Inland Capability

Cargo may be loaded into LASH barges at inland waterway points, ocean ports, and shallow draft terminals. In the United States, inland waterway points include the Alabama, Arkansas, Mississippi and Ohio Rivers.



Barges are then towed to port fleeting areas to await the arrival of the LASH mother vessel. The LASH mother vessel does not require special docks or terminals and is often worked at anchor in rivers, roadsteads and light traffic port areas.

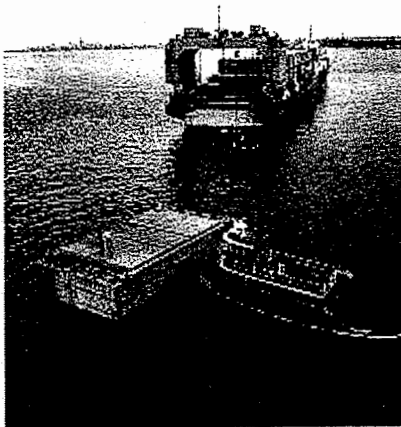


Another advantage is the ability of LASH ships to load and discharge cargo from anchorage. So your shipment is never delayed by a lack of dock facilities or port congestion. In fact, LASH ships spend far less time in port, compared to other vessels.

US River Ports include Baton Rouge, Birmingham, Catoosa, Cincinnati, Little Rock, Louisville, Memphis, Peoria, Pittsburgh and St. Louis. [View inland river chart.](#)



3. Barges Lifted Onboard



On arrival, the LASH mother vessel's 481 metric ton capacity gantry crane moves the LASH barges from positions onboard over the stern sponsons into the water to be towed to destinations. In succession, the same onboard gantry crane lifts the outbound loaded LASH barges from the water and places them in the holds and on deck of the mother vessel.

The LASH mother vessel proceeds to an overseas destination where the process is reversed.

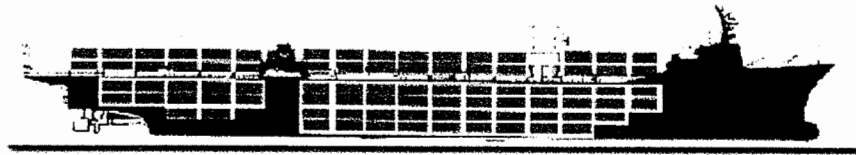


Lighter Aboard SHIP Specifications

SHIPS

Flag of Registry: U.S.A.
Classification Society: American Bureau of Shipping
Gross Tonnage: 37,460 (average)

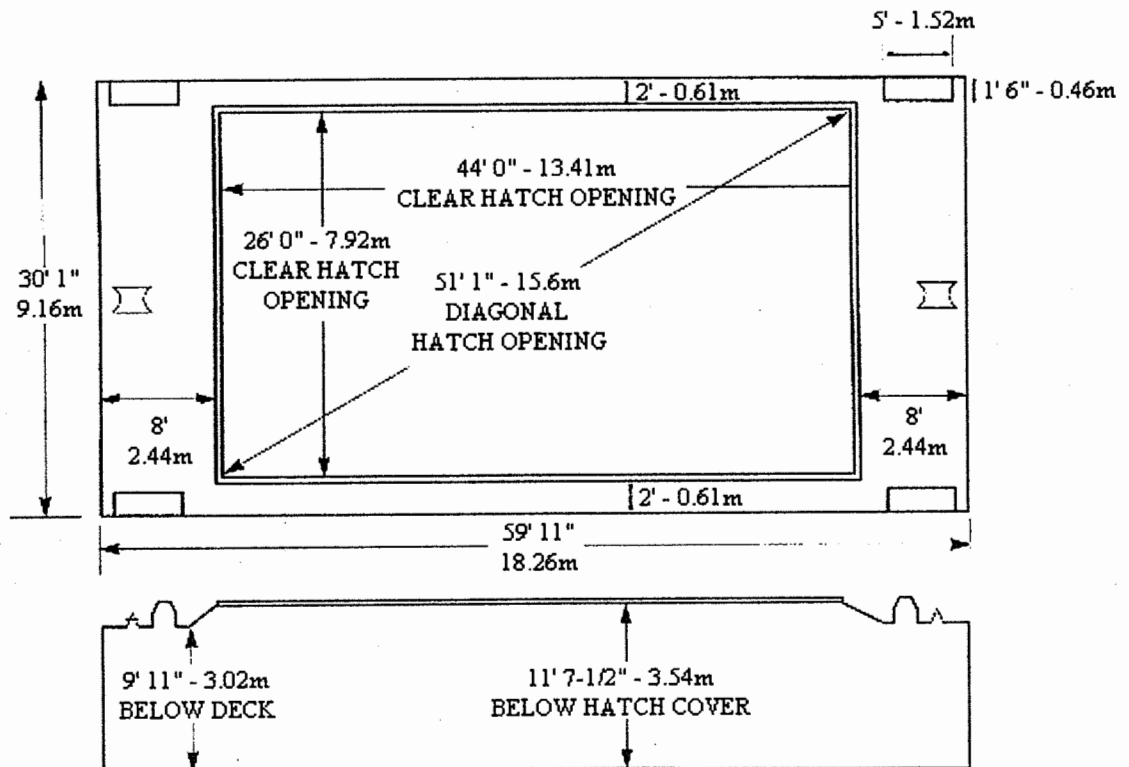
Capacity: 82 barges (Lighters)
 Length Over All: 237.4 m
 Draft: 12.7 m
 Beam: 32.2 m



BARGES

Class: ABS +A1 barge, river, bay & sound service
 Length: 18.75 m or 61.50 ft
 Breadth: 9.50 m or 31.17 ft
 Depth: 3.96 m or 13.00 ft
 Bale: 555 cbm or 19,600 cft capacity
 Grain: 569 cbm or 20,100 cft capacity
 Tonnage: Average 385 metric tons cargo capacity
 Ventilation: Forced air supply equipped
 Draft: Empty barge with hatch covers has a fresh water draft of about two feet. Ten metric tons of evenly distributed cargo increases draft by 2.2 inches.

Internal Dimensions:



The West Coast Introduction of LASH.

30 *San Francisco Chronicle*

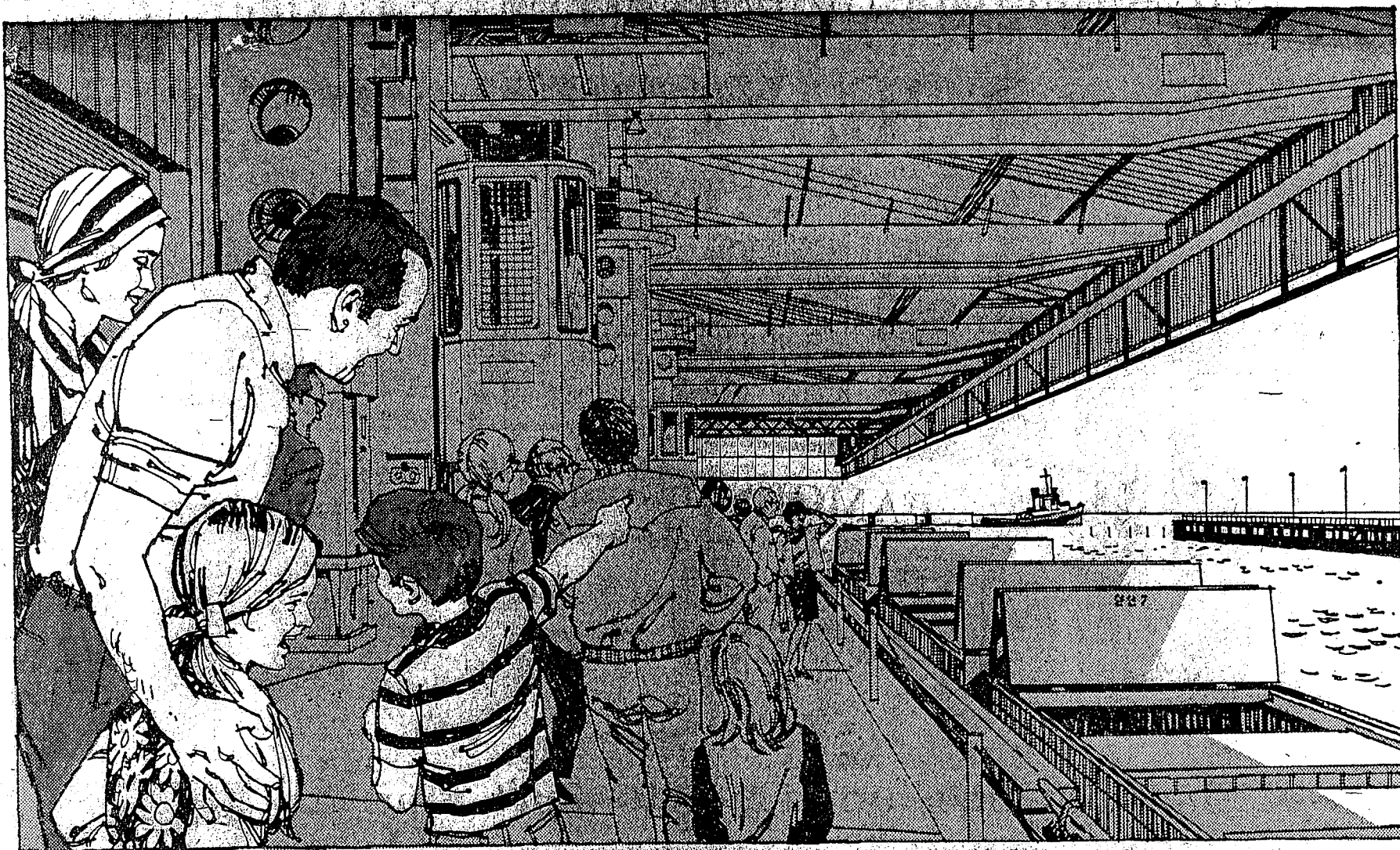
Fri., May 5, 1972

**Port of San Francisco will
open its mammoth new "Lashport"
to the public.**

Can you come?

**PORT OF
SAN FRANCISCO**

FERRY BUILDING, SAN FRANCISCO, CALIFORNIA 94111



Sunday, May 7, 1972.

It's a great day for every San Franciscan.

It's your day to come see how mammoth new facilities are assuring the City's leadership in shipping. Lashport is a totally new kind of terminal. A "world's first," and another big step in San Francisco's voter-approved Multiport complex.

Here's your once-only chance to come inside. Walk around. And enjoy. Come yourself. Bring your family. The world's first Lash Terminal, Pier 96, will be open for inspection 11 a.m. to 4 p.m.

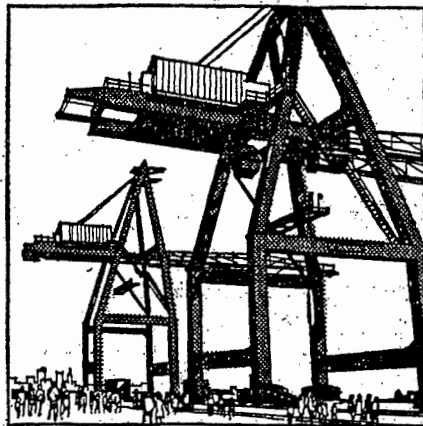
Sunday only, because after that, cargo starts moving!



Walk inside the largest barge cargo building in the world.

You'll step into a building more than twice the size of the Cow Palace. The big Lash Lighter Terminal.

Here is 300,000 sq. ft.—floorspace and waterspace—under one roof, for transferring valuable shipments from trucks and railcars to Lash barges. You'll see where fifteen 61-ft. barges can float right in, out of the weather!



See cranes fifteen stories tall travel with 30-ton containers.

Lashport's 48 acres also includes space for handling more than 2500 modern sea-going cargo containers. You'll see how the largest, most sophisticated traveling container cranes hoist these

high. Can even turn a 20- or 40-foot container around mid-air for lowering it into the ship.

LASH (Lighter Aboard Ship) is a new shipping method using giant barges (called lighters) to carry cargo to, from and aboard the mothership.

Exhibits will show you how the new LASH ships of Pacific Far East Line will actually lift the barges over the stern and stack them aboard. 500 tons per barge. 49 barges, plus 334 standard containers, per ship.

These are the largest, fastest new class of freighters in the world.

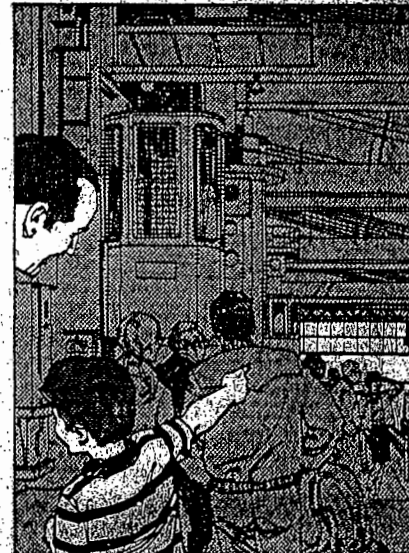
Learn how the world's first LASH terminal will speed cargo.

San Francisco—with Lashport—has the world's only complete LASH terminal. This will be the center of LASH shipping for the entire Pacific. And home port for PFEL's six new giant LASH ships.

You'll see the modern methods of dockside truck and ship operations. Palletizing. Containerizing. An education in itself.

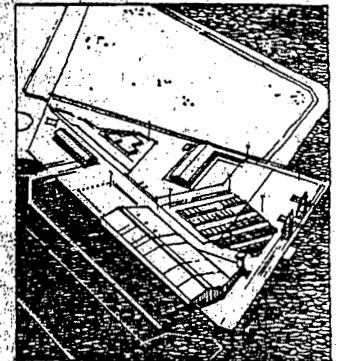
Watch as giant "flying forks" move cargo from dock to barge.

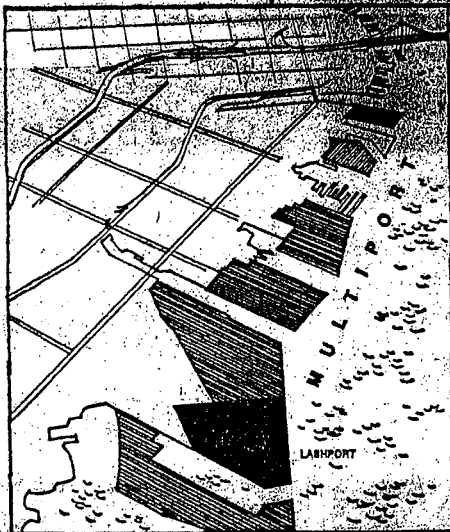
We'll demonstrate. It's dramatic to watch. These cranes look



like monsters' arms reaching down from the Lighter Terminal ceiling. Telescoping. Lifting boxes or pallets. Trolleying out over floating barges, to gently stow them full. The long-shoreman operator rides right along.

Enjoy a refreshing day by the Bay! Souvenirs and entertainment!





Get up-to-date on other steps San Francisco is taking into the shipping future. Lashport is just the beginning. Other big Port additions—to create a totally modern "Multiport" complex—won overwhelming approval of San Francisco voters last fall.

Our 360-acre Multiport project (shaded area) is now well under way. It will centralize all methods of

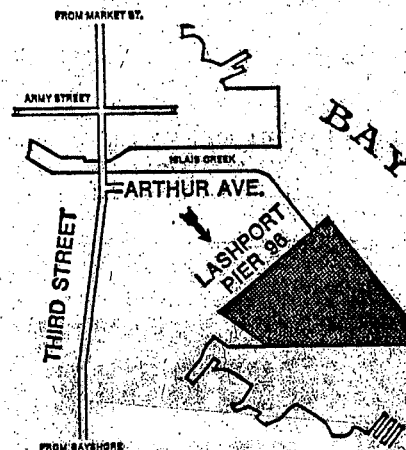
handling. The largest concentration of intermodal facilities in the Pacific.

Shipping is San Francisco's biggest occupation. Sunday we will show you why.

And how.

Come and enjoy your day!

Sunday, May 7,
11 a.m. to 4 p.m.

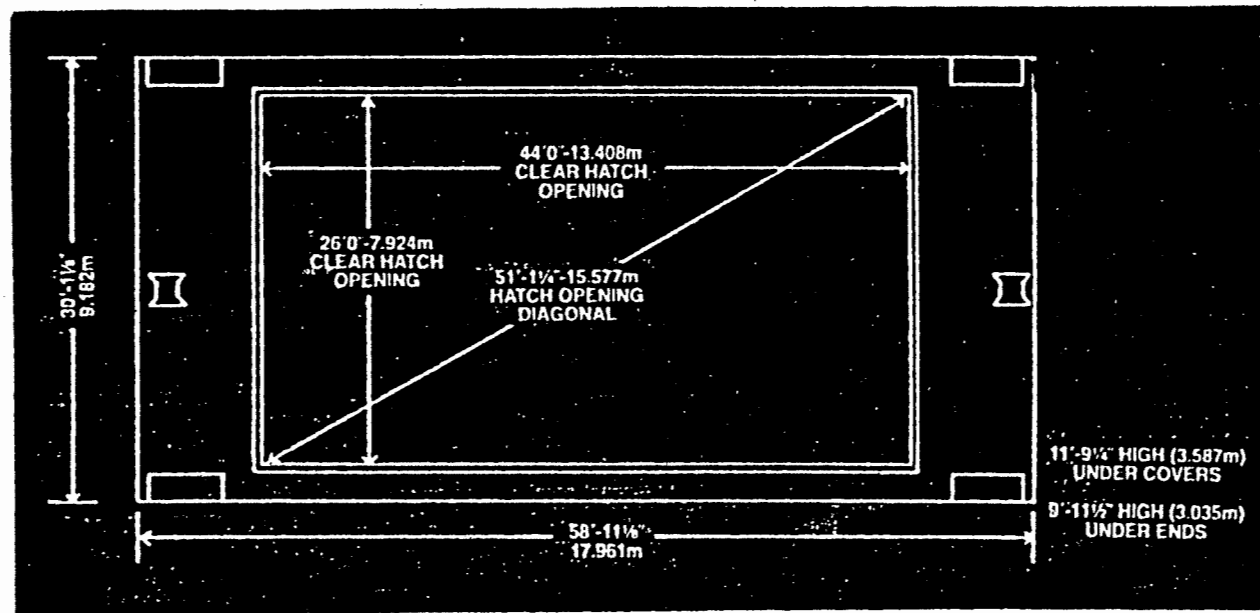
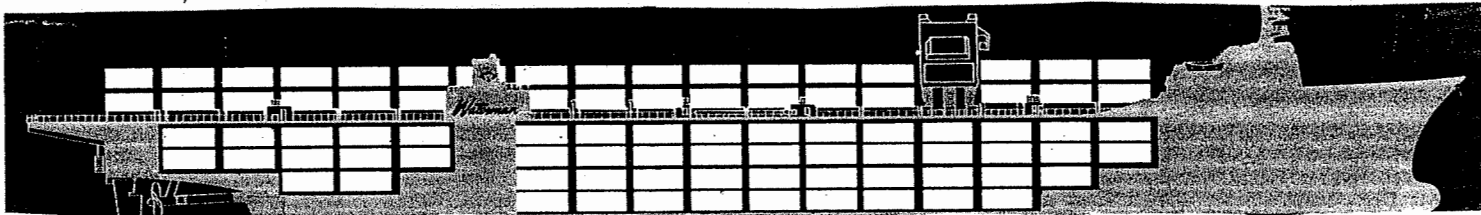


Drive right in.

We've 30 acres of blacktop for your parking. Drive out Third Street—south from Market, or north from Bayshore. Immediately south of Islais Creek Bridge, turn toward the bay, on Arthur Ave. Then follow our signs.

Or take the Muni.

Get to Army and Third Street, via Muni Bus No. 15, 42, or 35 (ask your Muni driver). Our shuttle bus will give you a free ride from Army and Third to and from Lashport. Admission is free.



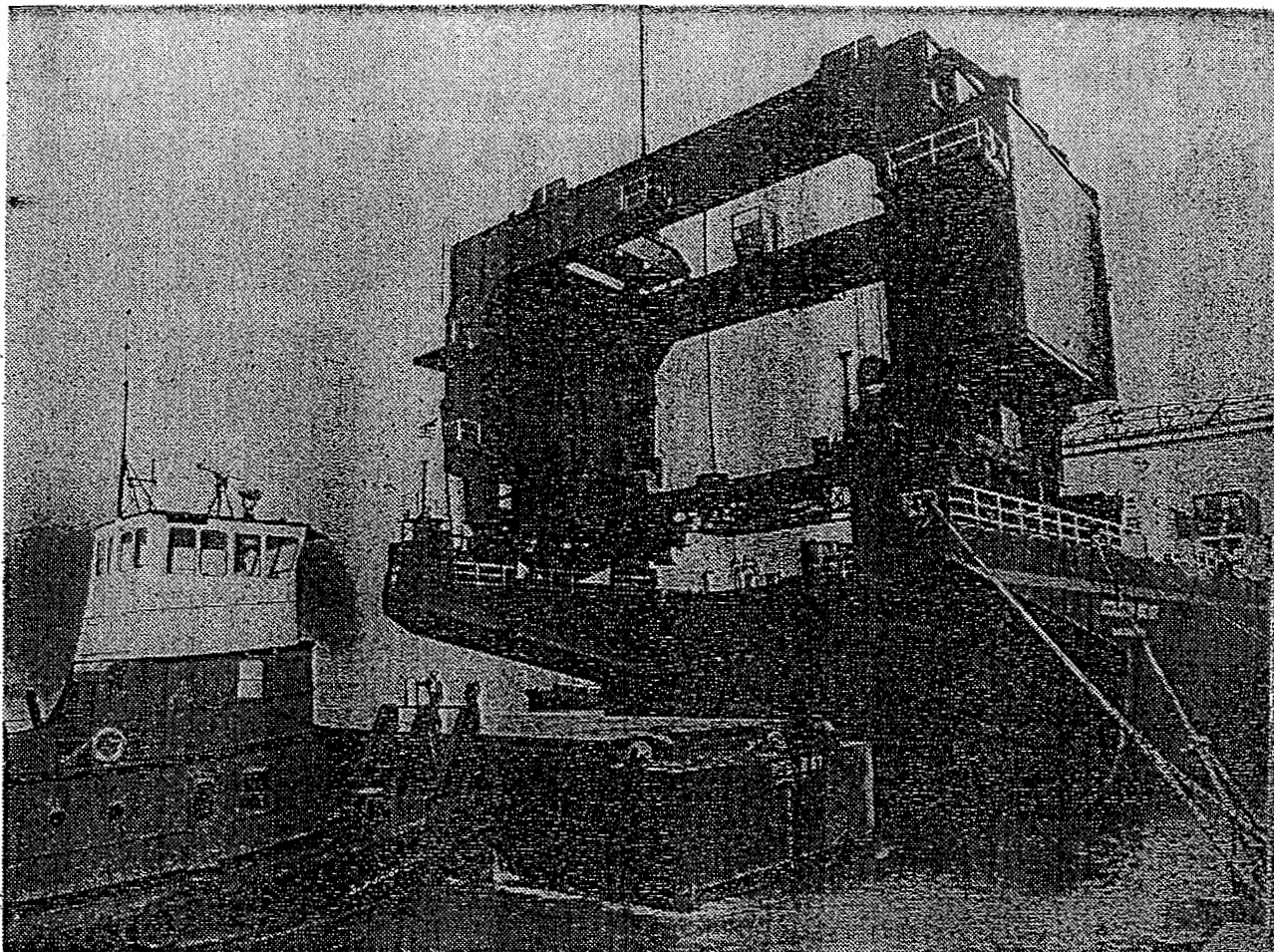
Courtesy of Pacific Far East Lines

Vessel Capacity: 49 Barges / 334 Containers *

Barge Capacity: 410 tons

Container Capacity: 30 tons

* The vessel could also be configured
for 54 barges and 286 containers.



LASH Terminal Open to Public

What its operators call the finest marine terminal anywhere in the world, the new \$22 million LASH terminal at India Basin will be open for public inspection on Sunday. Here is a 500-ton crane on the stern of the LASH (lighter aboard ship) vessel

Golden Bear after unloading a 60-foot long, 30-foot wide and 12-foot deep barge full of cargo. A push-type tug then secures to the barge and pushes it to a freight station adjacent to the terminal.

—Examiner photo by Gordon Stone

S.F. Port Losing \$2 Million a Year

The Port of San Francisco will lose at least \$20 million in the next decade because of poor management, former chairman Richard Goldman of the Citizen's Waterfront Committee said yesterday.

Goldman made the charge in testimony before the Mayor's Port Committee at City Hall.

The committee is studying waterfront development and will make recommendations to Mayor Alioto this summer.

"Based on its own projections, the port contemplates a net loss in operation of \$2 million per year for the next 10 years," said Goldman.

Development

"This explains the indiscriminate effort to develop the northern waterfront to

avoid the obvious alternative of placing the Port on the tax rolls.

"The surplus of the port has already been reduced from over \$15 million to \$3 million as it struggles to meet its current obligations," he said.

Goldman said the CWC raised \$20,000 to pay for a study on waterfront development.

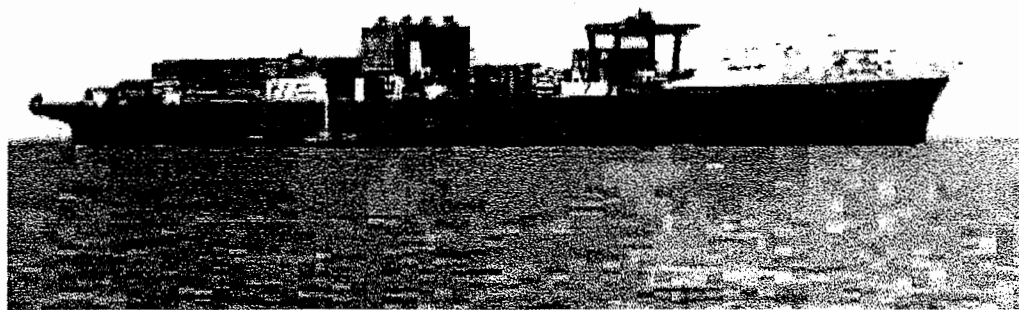
The study contends the port can be made self-supporting if one-third of its surplus land is developed commercially and the other two-thirds dedicated for public use.

Darkened area reads:

long, 30
of cargo
and push-
terminal.

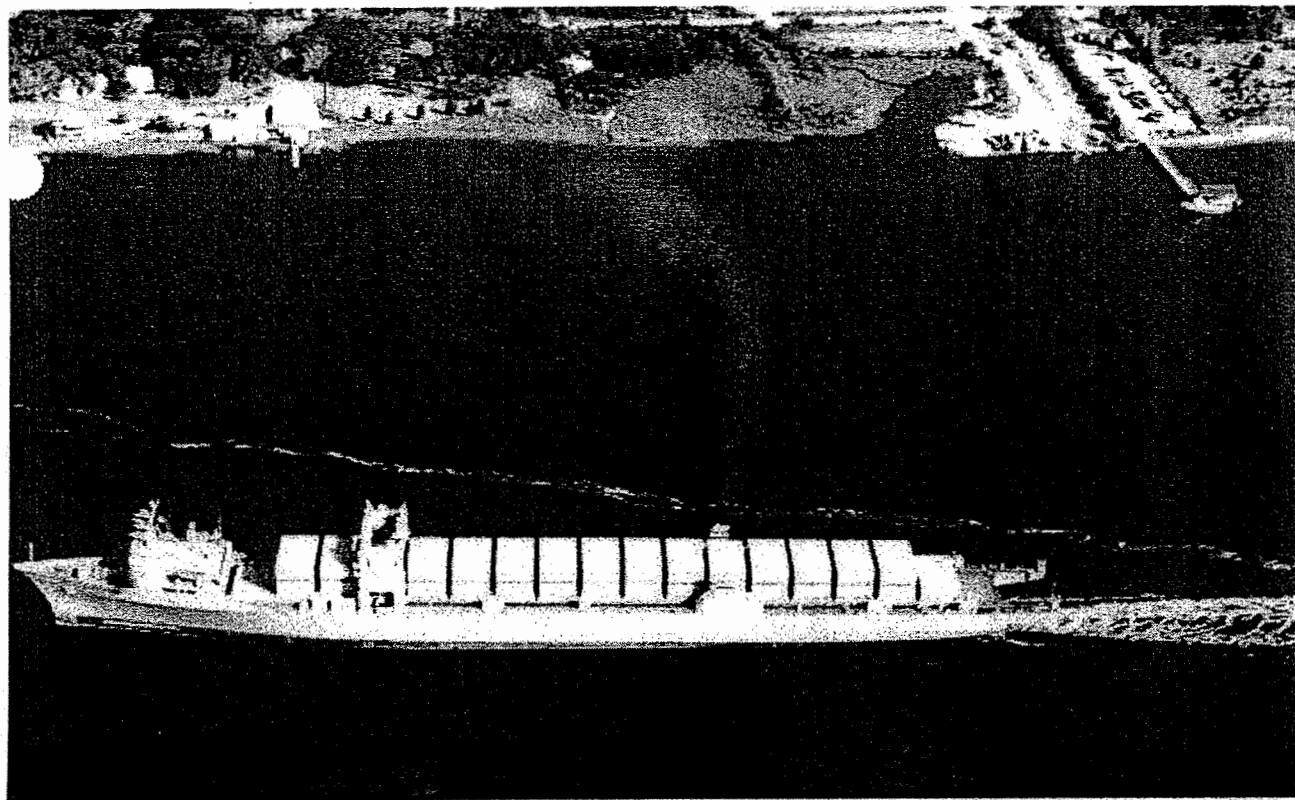
by Gordon Stone

From the author's photo collection.



The C-8 Thomas E. Cuffe, of the Pacific Far East Lines. Also known as LASH ships (Lighter Aboard Ship), the C-8's were designed to anchor offshore and load and unload floating barges off the stern. The idea was not commercially feasible and eventually they were converted into container ships. This one was sold to American President Lines and renamed the President Hoover, and subsequently sold to Matson Navigation Co. and renamed the Lihue. The Lihue is still in service today. *

photo from SUP archives**



- Length: 893 feet
- Beam: 100 feet
- Draft: 38 feet
- Displacement: 32,543 long tons
- Speed: 18.7 knots
- Civilian: FOS 31
- Time to Activate: 10 days
- Owner/Operator: Government-owned, Contractor-operated

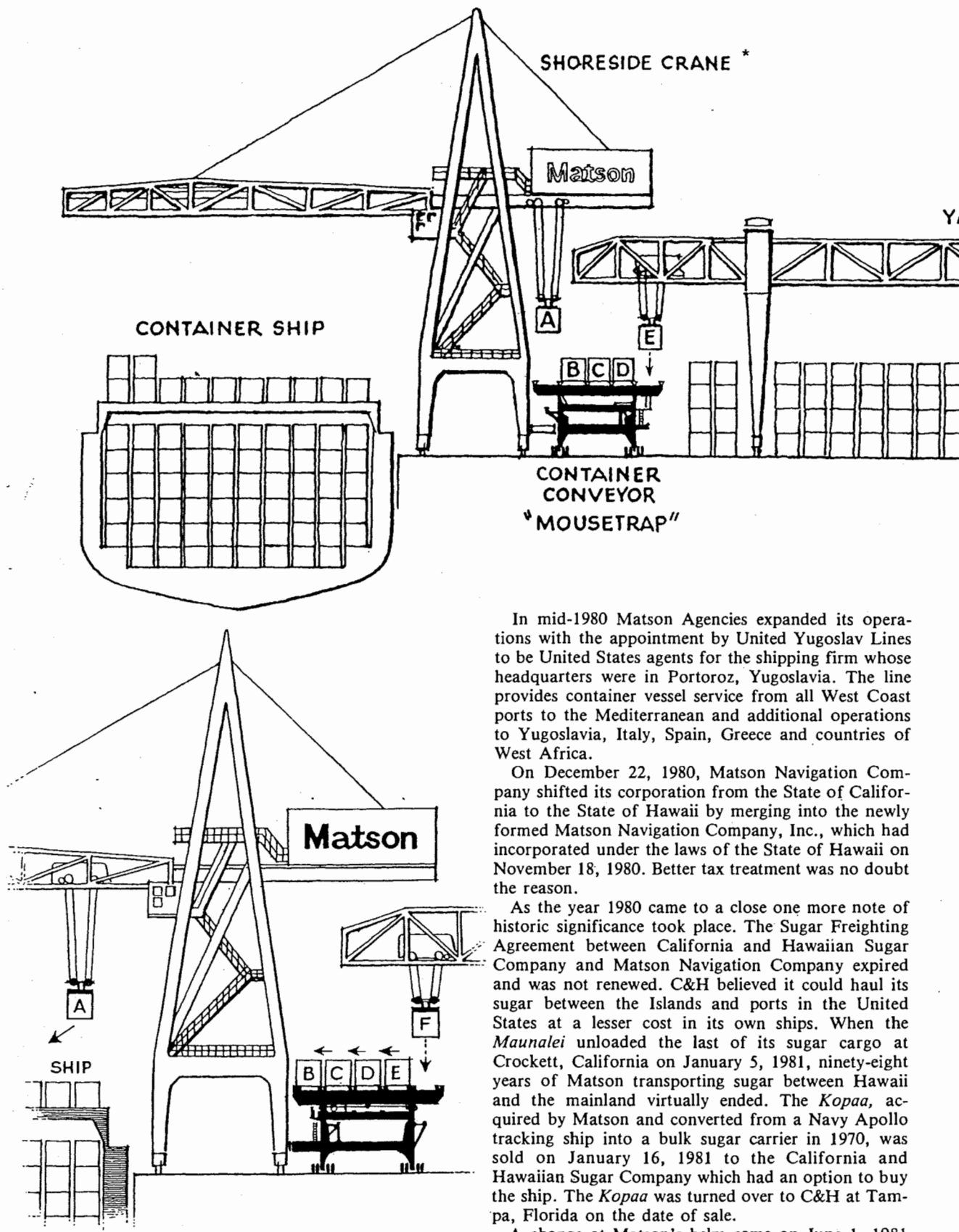
SS CAPE FAREWELL

* **Matson now has the Lihue in reserve and moored at Pier 27 in San Francisco. With its barge crane having been long removed, it now is configured for 20 and 40-foot containers.**

** **SUP indicates Sailors' Union of the Pacific.**

ADDENDUM 4

**Matson Navigation: the "Mouse Trap" Container Conveyor
-- a patented device introduced during the second M & M.**



In mid-1980 Matson Agencies expanded its operations with the appointment by United Yugoslav Lines to be United States agents for the shipping firm whose headquarters were in Portoroz, Yugoslavia. The line provides container vessel service from all West Coast ports to the Mediterranean and additional operations to Yugoslavia, Italy, Spain, Greece and countries of West Africa.

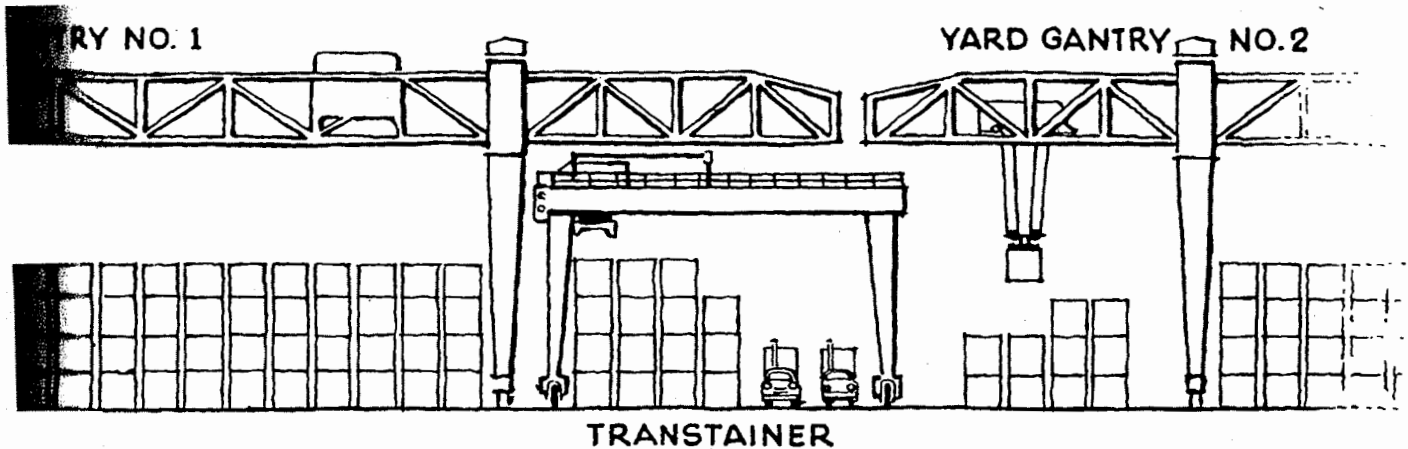
On December 22, 1980, Matson Navigation Company shifted its corporation from the State of California to the State of Hawaii by merging into the newly formed Matson Navigation Company, Inc., which had incorporated under the laws of the State of Hawaii on November 18, 1980. Better tax treatment was no doubt the reason.

As the year 1980 came to a close one more note of historic significance took place. The Sugar Freight Agreement between California and Hawaiian Sugar Company and Matson Navigation Company expired and was not renewed. C&H believed it could haul its sugar between the Islands and ports in the United States at a lesser cost in its own ships. When the *Maunalei* unloaded the last of its sugar cargo at Crockett, California on January 5, 1981, ninety-eight years of Matson transporting sugar between Hawaii and the mainland virtually ended. The *Kopaa*, acquired by Matson and converted from a Navy Apollo tracking ship into a bulk sugar carrier in 1970, was sold on January 16, 1981 to the California and Hawaiian Sugar Company which had an option to buy the ship. The *Kopaa* was turned over to C&H at Tampa, Florida on the date of sale.

A change at Matson's helm came on June 1, 1981

After a three year study, Matson Terminals produced the innovative overhead container handling system sketched below. While shoreside crane picks up container (A), yard gantry stockpiles containers (B, C, D, E) on container conveyor ("mousetrap"). Straddle carriers are eliminated from wharf area and containers never touch ground at

dockside. LOWER LEFT: While shoreside crane loads container (A) on ship, "mousetrap" moves B. C. D. E successfully into pick-up position, and yard gantry can add (F). Shoreside crane thus has "work bank" of containers. Both cranes are kept fully occupied, eliminating idle time.

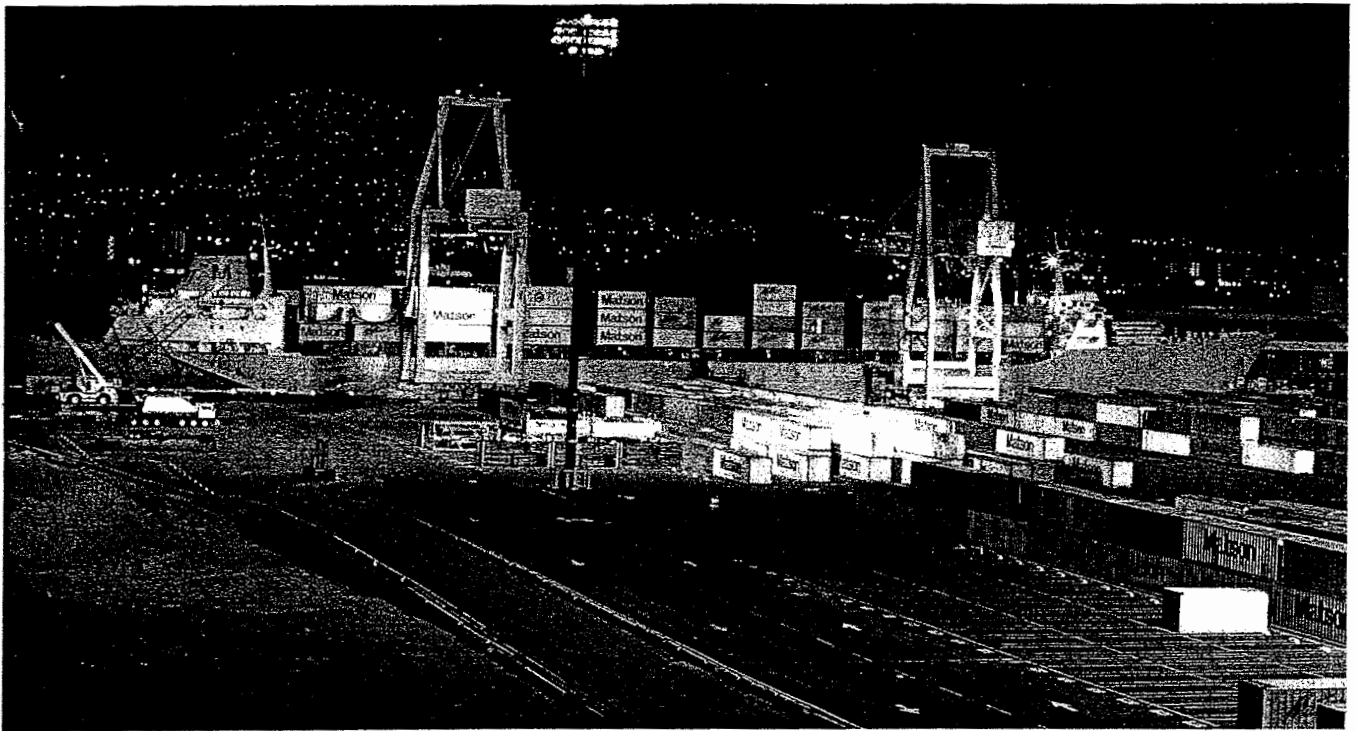


when Michael S. Wasacz became Matson's thirteenth president replacing James P. Gray, who retired after 45 years of service. Wasacz joined Matson in 1959 as a freight clerk in the New York office. He worked his way up through the ranks, serving in virtually all areas in which Matson maintains offices. He was appointed executive vice president in November, 1980. Before that, he served as president of Matson Terminals, Inc., and as a senior vice president of Matson Navigation Company in addition to area manager assignments in Hawaii, Southern California and Northern California.

In 1977, after a three year study, Matson Terminals Inc. came up with an innovative overhead container handling system which in effect would replace the straddle carrier. The function of the straddle carrier is to take a container from a truck, trailer or rail car in the terminal yard and store it until vessel arrival. Upon ship arrival the container is brought to shipside by the straddle carrier for loading by dock gantry. The straddle carrier was becoming expensive to maintain; and new ones had gone to four times the original cost. Design work began for the new terminal system at Los Angeles and the development of a smaller operation for the Port of Richmond, California. The Port of Los Angeles cooperated with the installation of the new overhead container handling system and allotted an additional 17 acres of land to make a total of 85 acres for the massive terminal. The work of reconstructing the huge facility started in August 1979.

Basically, under the new overhead system, the route of a container from arrival at the yard to ship would be as follows; arriving at the terminal the container would be lifted off the truck, trailer or rail car by a Transtainer, which in effect is a large four-wheel mobile crane. The Transtainer would move the container to the Yard Gantry. This 550-ton device,

336-feet long, mounted on rails parallel to the wharf would place the containers in rows up to four high. Upon arrival of the ship, the Yard Gantry with its 37-ton lift capacity would again be used to lift the container from the stacked row and bring it to a mobile container conveyor invented and patented by Matson. The "mousetrap," as it is affectionately known, has a capacity of five containers (see sketch). The dockside gantry would then lift and place the container on the ship. Meanwhile, the "mousetrap" would automatically put another container in its place for the dockside gantry. Four yard gantries, each costing \$2 million, were constructed at the Los Angeles terminal along with a fourth dockside gantry also costing \$2 million. Several Transtainers, which totaled over \$2 million were also purchased. The Los Angeles wharf was extended so that three ships could load or unload at one time. Finally, the entire operation is tracked by computer, which means that each container at the terminal can be located and identified in seconds. With the elimination of the straddle carriers, the new system relieves yard congestion, reduces container damage, provides cleaner working atmosphere and is a more economical operation. The first of the new four massive yard gantries along with the "mousetrap" operation went into service on February 27, 1981 working the *Pacific Express*, operated by the Korea Marine Transport Company, Ltd., a customer of Matson Terminals, Inc. The first Matson vessel using the new overhead container handling system was the *Manukai* on August 17, 1981. When the entire operation of four huge yard gantries and four dockside gantries are in full operation in early 1982, the facility, at a cost of \$32 million, is expected to be acclaimed as one of the most efficient and advanced terminals in the world.



Meanwhile, the smaller version at Richmond, California, was dedicated on September 13, 1979. This operation consists of one shoreside crane, one 336-foot yard gantry and a transfer container conveyor. The facility, operated by Matson Terminals Inc. for the Port of Richmond, started with an area of 16 acres.

After a period of testing the new overhead system at Los Angeles, if it is found to be as efficient as preliminary studies have indicated, the system will be installed at other ports in the future.

Longshoremen unload the *Manukai*, first ship to tie up at Matson's new Sand Island terminal, the evening of September 6, 1981, exactly 23 years after the first container arrived in Hawaii. The new terminal will greatly assist with Matson's cargo movements. In 1980 121,117 containers of cargo were transported to Hawaii along with 32,594 autos plus some conventional cargo totalling 1,912,500 revenue tons. In the background are lights of Honolulu's Kamehameha Heights.
— MATSON COLLECTION



Courtesy of Matson Lines.
Print No. 467 - Richmond Terminal - December, 1979.

Supplement to

MEN and MACHINES

A Summary of
New Provisions in the
Mechanization and
Modernization
Agreement

between the

**International Longshoremen's &
Warehousemen's Union**

and the

Pacific Maritime Association

July 1, 1966

THE 1960 Mechanization and Modernization Agreement which terminated on June 30, 1966, was extended for five years to run from July 1, 1966, to June 30, 1971. It was apparent at the negotiations that the Plan had proved of great benefit to both parties. The Pacific Maritime Association reported sharply-increased productivity, and the Union was pleased with the early retirement and vesting provisions.

Under the new Agreement, as under the original Agreement, the shipowners and stevedoring contractors are freed of restrictions on the introduction of labor-saving devices, relieved of the use of unnecessary men and assured of the elimination of work practices which impede the free flow of cargo or ship turnaround. These guarantees to industry are in exchange for a series of benefits for the workers, designed to protect them against the impact of the machine on their daily work or on their job security.

The new Agreement is essentially an extension of the 1960 Agreement, but contains some significant modifications:

1. The annual contribution by the PMA was increased from \$5 million to \$6.9 million.
2. The entire fund is to be used for early retirement and vesting, since the wage guarantee provision has been eliminated.
3. Further changes were made in working rules, particularly with regard to manning scales. At the same time, the procedure for handling protests that the workload is "onerous" was strengthened in order to facilitate quick disposal of these cases.
4. The use of new or improved machines and methods was made mandatory where "economically feasible and practical."

Changes in Benefits

1. The vesting and disability benefits were increased from \$7,920 to \$13,000.
2. The wage guarantee feature of the 1960 Agreement was eliminated.
3. In addition, under the regular pension agreement, the basic pension, for men retiring after July 1, 1966, was increased to \$235 per month and the normal retirement age was reduced from 65 to 63.

The early retirement and vesting benefit was improved by raising the vesting amount from \$7,920 to \$13,000. To be eligible a man must, as before, have 25 or more years in the industry. The \$13,000 is payable at retirement at any time between ages 62 and 65, but since the normal retirement age has now been reduced from 65 to 63, it is anticipated that many more men will choose to retire before age 65.

Payments will be made in a lump sum with the approval of the Trustees, or in monthly install-

ments, as follows: \$216.67 per month for 5 years; or \$270.83 per month for 4 years. These amounts are on top of the regular pension, now increased to \$235 per month for all men retiring after July 1, 1966.

A new feature was introduced which provides that after age 65 the \$13,000 vesting benefit is reduced at the rate of \$1,000 per year by monthly amounts of \$83.33 for each month that retirement is delayed beyond age 65. This provision is intended as an inducement to leave the industry before reaching age 68 when retirement is mandatory.

Mandatory retirement may be invoked by joint action of the parties. It was never necessary to utilize the mandatory early retirement feature of the original Plan, and the parties do not anticipate any need for mandatory retirement during the life of the new Agreement.

No change was made in the disability provision, except that the total amount payable to 25-year men was increased to \$13,000. Men with service of 15 to 25 years receive a pro-rated disability benefit, as under the previous Agreement. The death benefit was not changed, the maximum amount remaining at \$5,000.

At the suggestion of the Union, the wage guarantee feature of the old Agreement was dropped. Because tonnage had increased beyond all expectations, the wage guarantee had never been used. Work never dropped to the point that the men earned less than 35 straight-time hours' pay. Indeed, together with the increased attrition rate, the rise in tonnage handled made it necessary to add some 2,000 men to the work force.

Over the five and a half years during which the original Agreement was in effect, approximately \$13 million had accumulated in the Wage Guarantee Fund. This money was distributed equally

among the registered work force. Each man who was on the fully-registered list on July 1, 1960, and June 30, 1966, received slightly more than \$1,200.

The no-layoff provision was also dropped. The parties are convinced, on the basis of the experience of the past five years, that they can control the size of the work force so that no layoffs will be necessary. It must be pointed out that both the no-layoff provision and the wage guarantee were limited to reductions in work opportunity occasioned by increased productivity, and neither was applicable in the event of curtailment of work opportunity attributable to general economic recession or depression.

Changes in Work Rules

The principal work rule changes concern the organization of gangs, gang sizes and manning, the objective being greater efficiency of operation and greater flexibility in the use of skilled men. The principal change in the "basic gang" is the requirement that two of the four holdmen must be skilled, i.e., able to drive a fork lift. The composition of the "basic gang" is fixed for the life of the Agreement.

In the main, except for the "basic gang," manning scales are subject to change at the initiative of either party through the established grievance machinery. The guiding rule, so far as reductions in manning are concerned, is that there shall be no "unnecessary men." The guiding rule, so far as the men are concerned, is that the workload shall not be "onerous."

If a man or a gang decides that the way the work is being done is onerous, he (or the gang) may stop work. This has long been the privilege of the men if they believe the work to be unsafe. The safety provision has now been extended to cover complaints of an onerous workload.

If the employer and the men are in disagreement, the area arbitrator, who is on call night and day, is brought down to the job to render an immediate decision as to how work shall proceed. If he decides that the work is onerous, the men are paid for the time they stood by. If he rules the work is not onerous, the employer may require the men to work to make up the stand-by time, provided this does not exceed two hours. Or, rather than having the men stand by, the employer may, if he chooses, assign them to other work, pending a decision.

Mandatory Use of Machines

The most unusual feature of the new Agreement is the provision, adopted at the Union's insistence, that machines—labor-saving devices—be used wherever possible. The actual language is as follows:

"The Employers agree that it is desirable from the standpoint of both parties to mechanize and/or improve methods of operation where such is economically feasible and practical."

In order to implement this last phrase, the parties are negotiating "ground rules" on the basis of which it will be possible to judge in a particular case whether the use of a machine or method is "economically feasible and practical."

The entire collective bargaining agreement between ILWU and the PMA was subject to renegotiation in 1966. Besides the changes in the Mechanization and Modernization Agreement (technically a supplement to the Pacific Coast Longshore Agreement), there were changes in the regular pension plan, as already indicated, and improvements in wage rates and other fringe benefits. The basic straight-time wage rate was increased by 50 cents an hour, from \$3.38 to \$3.88 and will be further increased by 20 cents in 1969 and again in 1970. The Mechanization and Modernization Agreement is not subject to change during its five-year period, except by mutual agreement.

CHANGES IN PENSION AND M&M BENEFITS

	1961-1966	1966-1971
Regular Industry Pension		
Normal retirement age	65	63
Normal monthly retirement benefit	\$115 until 6/15/65. \$165 effective 6/15/65.	\$235 for men retired 7/1/66 or after. \$165 for men retired before 7/1/66.
Disability retirement benefit after 13 to 25 years of service	\$59.80 - \$115.00 \$85.80 - \$165.00 effective 6/15/65.	\$122.20 - \$235.00 for men retired after 7/1/66. \$85.80 - \$165.00 for men retired before 7/1/66.
M&M Benefits		
Early retirement age	62	62
Total Vesting Benefit at retirement	\$7,920	\$13,000
Monthly Benefit (payable in addition to industry pension)	\$220 for 36 months	\$270.83 for 48 months or \$216.67 for 60 months
Disability Benefit	\$2,640 to \$7,920 after 15 to 25 years.	\$4,333.33 to \$13,000.00 after 15 to 25 years.
Death Benefit	Range from \$2,640 to \$5,000	Same as before.
Wage Guarantee	Up to equivalent of 35 hours pay per week.	No guarantee.

MEN AND MACHINES may be obtained from ILWU, 150 Golden Gate Avenue, San Francisco, California 94102 for \$1.95.

