ARTICLE 14

Some visuals of the complexities of conventional longshore work in the ports of San Francisco Bay - c 1965 . . .

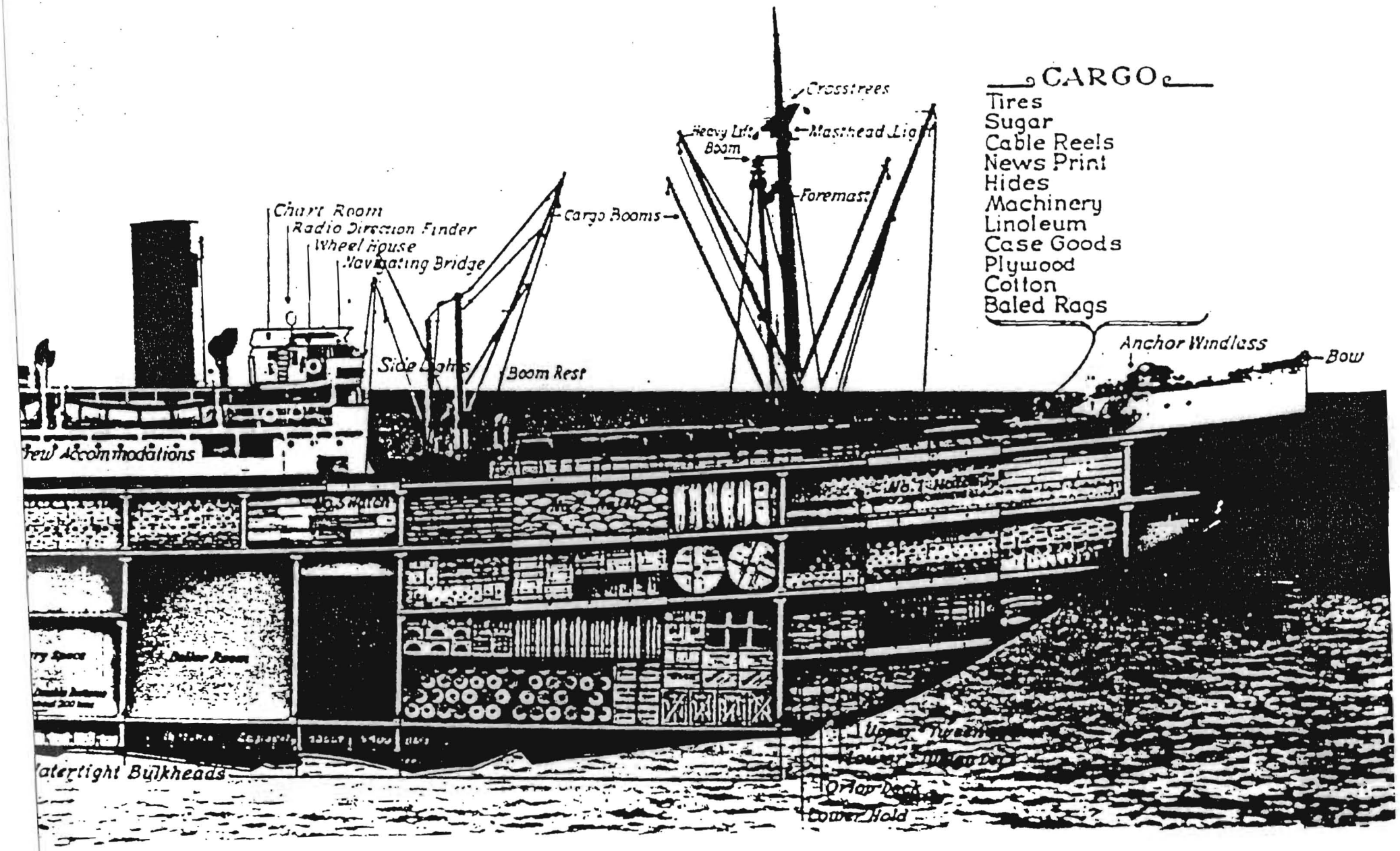
. . . and of some of the ways container technology had by 1979 "routinized" all dimensions of longshore work as it also "atomized" the on-the-job workforce.

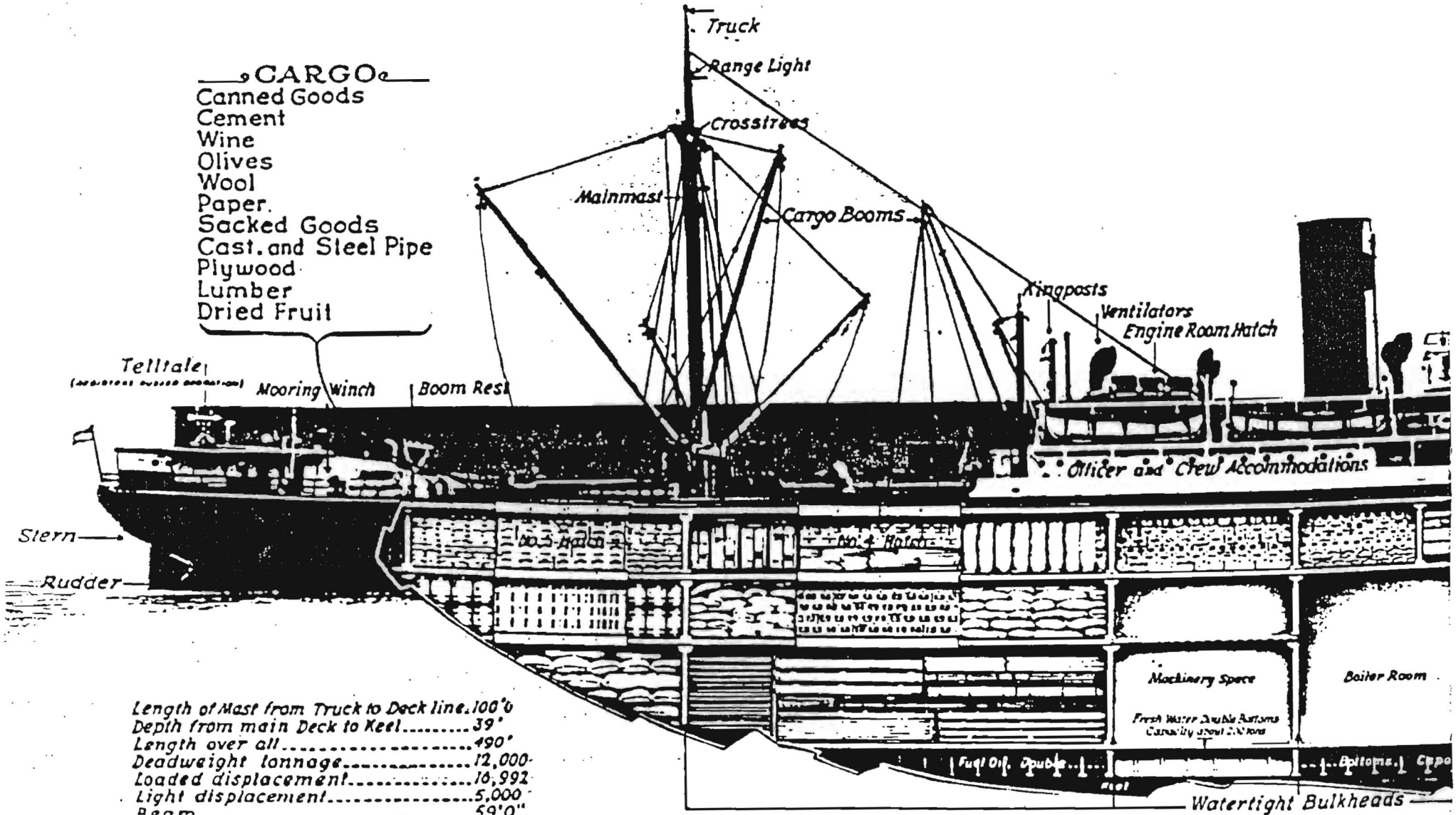
by

Herb Mills

Secretary - Treasurer
ILWU - Local 10

1980

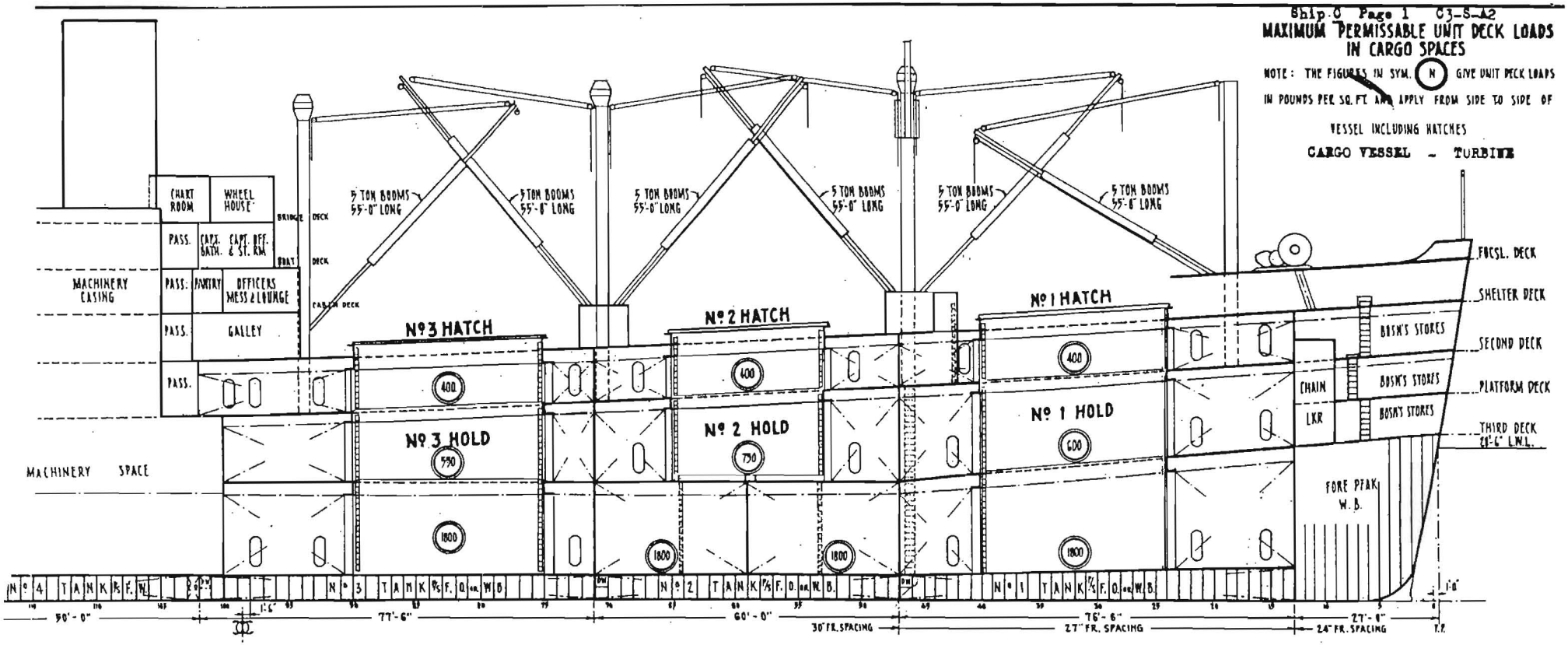

CARGO
Tires
Sugar
Cable Reels
News Print
Hides
Machinery
Linoleum
Case Goods
Plywood
Cotton
Baled Rags
Crosstrees
Heavy Lift Boom
Masthead Light
Foremast
Cargo Booms
Chart Room
Radio Direction Finder
Wheel House
Navigating Bridge
Side Lights
Boom Rest
Anchor Windlass
Bow
Crew Accommodations
Watertight Bulkheads
Lower Hold


CARGO
Canned Goods
Cement
Wine
Olives
Wool
Paper.
Sacked Goods
Cast. and Steel Pipe
Plywood
Lumber
Dried Fruit
Truck
Range Light
Crosstrees
Mainmast
Cargo Booms
Kingposts
Ventilators
Engine Room Hatch
Telltale
Mooring Winch
Boom Rest
Officer and Crew Accommodations
Stern
Rudder
No. 3 Hatch
No. 4 Hatch
Machinery Space
Boiler Room
Fuel Oil
Bottoms
Watertight Bulkheads
Length of Mast from Truck to Deck line..100'0
Depth from main Deck to Keel.....39'
Length over all.....490'
Deadweight tonnage.....12,000
Loaded displacement.....16,992
Light displacement.....5,000
Beam.....59'0"
Gross tonnage.....8,403
Net tonnage.....5,345

MAXIMUM PERMISSABLE UNIT DECK LOADS IN CARGO SPACES

NOTE: THE FIGURES IN SYM. (N) GIVE UNIT DECK LOADS IN POUNDS PER SQ. FT. AND APPLY FROM SIDE TO SIDE OF VESSEL INCLUDING HATCHES

CARGO VESSEL - TURBINE



TRIM TABLE

+0.6	+0.3	+1.2	+1.6	+1.8	+2.2	+2.6	+2.9	+3.2	+3.6	+3.9	+4.2	+4.5	+4.9	+5.2	+5.5	+5.9	+6.2	+6.5	+6.9	+7.2	+7.5	+7.8	+8.2	+8.5	+8.8	-9.2	+9.5	FWD	27'-6"
+2.5	+2.2	+1.9	+1.6	+1.2	+0.5	+0.6	+1.3	+0.0	-0.3	-0.6	-1.8	-1.3	-1.6	-1.9	-2.2	-2.5	-2.8	-3.2	-3.5	-3.8	-4.1	-4.4	-4.7	-5.0	-5.4	-5.7	-6.0	AFT	DRAFT
+0.8	+0.4	+0.8	+1.2	+1.65	+2.1	+2.5	+2.9	+3.3	+3.7	+4.1	+4.5	+4.9	+5.3	+5.7	+6.1	+6.5	+6.9	+7.3	+7.8	+8.2	+8.6	+9.0	+9.4	+9.8	+10.2	+10.6	+11.0	FWD	17'-0"
+3.8	+3.4	+2.9	+2.5	+2.1	+1.6	+1.2	+0.8	+0.3	-0.1	-0.5	-1.0	-1.4	-1.8	-2.2	-2.7	-3.1	-3.5	-4.0	-4.4	-4.8	-5.3	-5.7	-6.1	-6.5	-7.0	-7.4	-7.8	AFT	DRAFT

MISCELLANEOUS STORES

SPACE	DECK	FRS.	SIDE	CUBIC FEET
IN'S STORES	THIRD	ST.-13	P & S	1350
-- --	PLATFORM	--	--	1408
-- --	SECOND	--	--	2850
CK LOCKER	SHELTER	8-13	S	708
RE GEAR	SECOND	102-107	S	1510
Y STORES	--	107-113	S	1925
FRIGERATED STORES				
VEGETABLES	SHELTER	104-111	P	649
FISH	--	104-108	P	153
DAIRY	--	108-111	P	267
THAW	--	111-113½	P	492
MEAT	--	113½-117	P	621
ORES	STORES FLAT 102-STERN		P & S	9220.

FRESH WATER

Nº	TANK		FRS.	L.C.G.	V.C.G.	GALLONS	TONS
4	DOUBLE BOTTOM	P	103-122	30.0A	2.2	42470	157.7
4	-- --	S	103-122			42370	157.3
	FRESH WATER	P	116-121	49.3A	38.0	9940	36.9
	-- --	S	116-121			9940	36.9
	DISTILLED WATER		122-124	61.8A	14.5	4980	18.5
	TOTAL					109700	407.3

LUBRICATING OIL

Nº	TANK	LOCATION	GALLONS	BARRELS
1	STORAGE	ENG. ROOM	1500	35.7
1	SETTLING	--	1500	35.7
1	SERVICE	--	75 EA.	1.8 EA.
1	SUMP	--	1500	35.7
2	GRAVITY FEED	--	1200 EA.	28.6 EA.
1	KEROSENE	--	75	1.8

FUEL OIL & WATER BALLAST

Nº	TANK		FRS.	L.C.G	V.C.G.	GALLONS 100% FULL	BARRELS 98% FULL	TONS F.W. 98% FULL	TONS S.W. 100% FULL
1	DOUBLE BOTTOM	P	13-47	160.6F	2.9	24210	769	87.2	92.5
1	-- --	S	13-47			24210	569	85.2	92.5
2	-- --	P	47-71	96.3F	2.4	35350	825	124.4	135.8
2	-- --	S	47-71			44490	1037	156.4	169.8
3	-- --	P	71-102	29.8F	2.3	63730	1487	224.2	243.4
3	-- --	S	71-102			76030	1774	267.5	290.4
5	-- --	P	123-149	89.7A	2.3	49860	1070	161.3	175.2
5	-- --	S	123-149			49860	1070	161.3	175.2
6	-- --	P	149-173	149.8A	2.4	19860	370	55.8	60.6
6	-- --	S	149-173			19860	378	55.8	60.6
5A	DEEP TANK	P	161-171	166.5A	10.5	10300	427	64.4	69.9
5A	DEEP TANK	S	161-171			13700	320	48.2	52.3
	TOTAL					423420	9880	1489.7	1617.4
	FORE PEAK		13-FWD.	214.3F	22.9				120.4
	AFT PEAK		182 AFT.	216.3A	26.2				75.6
	F.O. SETTLING	P	102-109	12.3A	20.1	19200	448	67.6	
	F.O SETTLING	S	102-109			19200	448	67.6	
	TOTAL F.O. OR S.W. BALLAST					461820	10776	1624.9	1813.4

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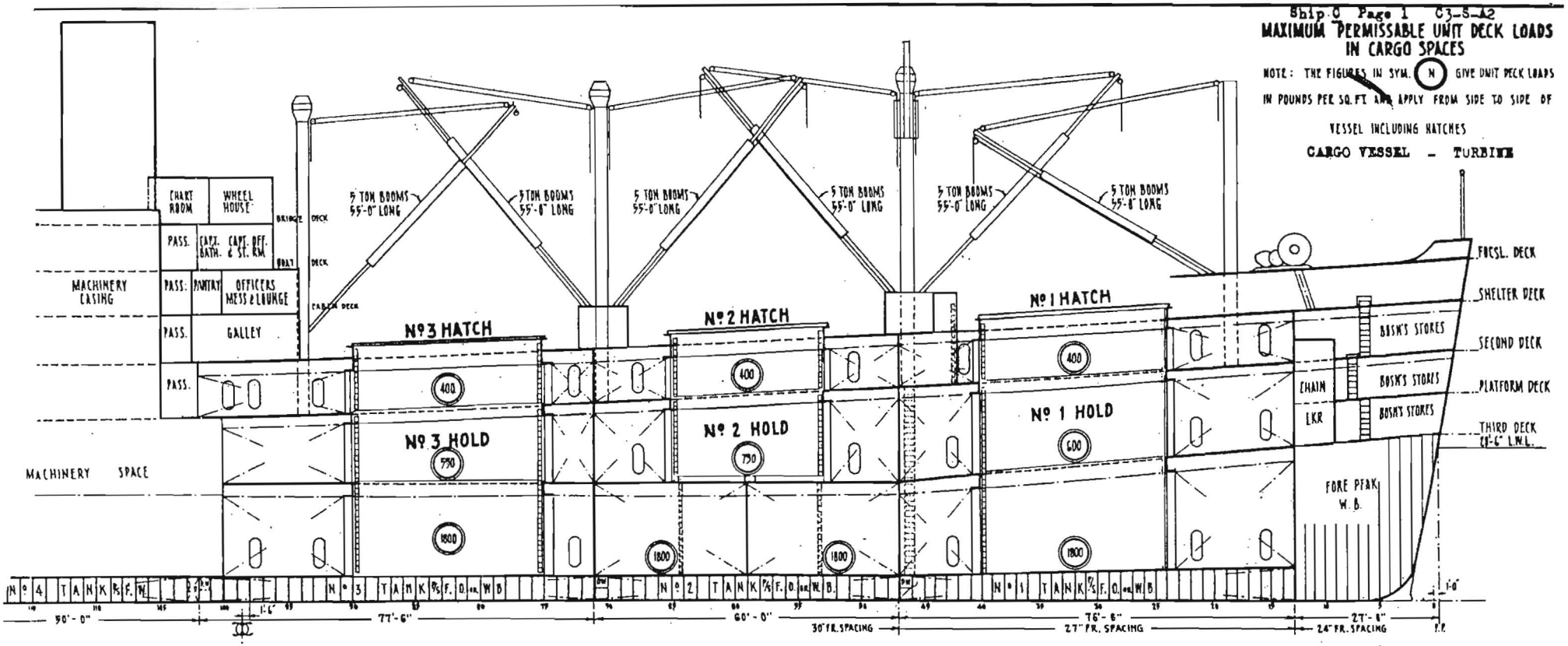

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+0.8	+1.4	+0.8	+1.2	+1.6½	+2.1	+2.5	+2.9	+3.3	+3.7	+4.1	+4.5	+4.9	+5.3	+5.7	+6.1	+6.5	+6.9	+7.3	+7.8	+8.2	+8.6	+9.0	+9.4	+9.8	+10.2	+10.6	+11.0	FND	17'-6"
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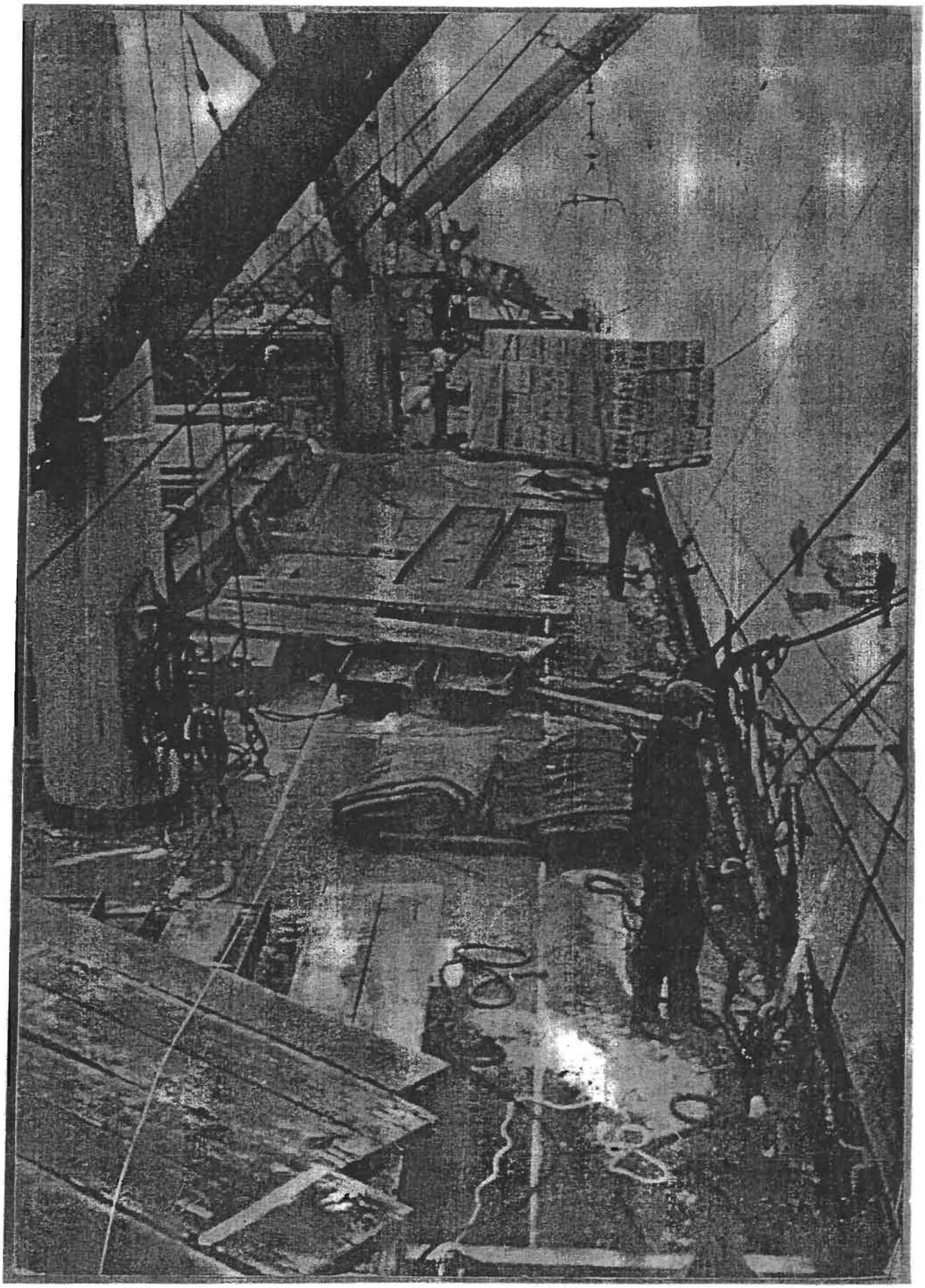
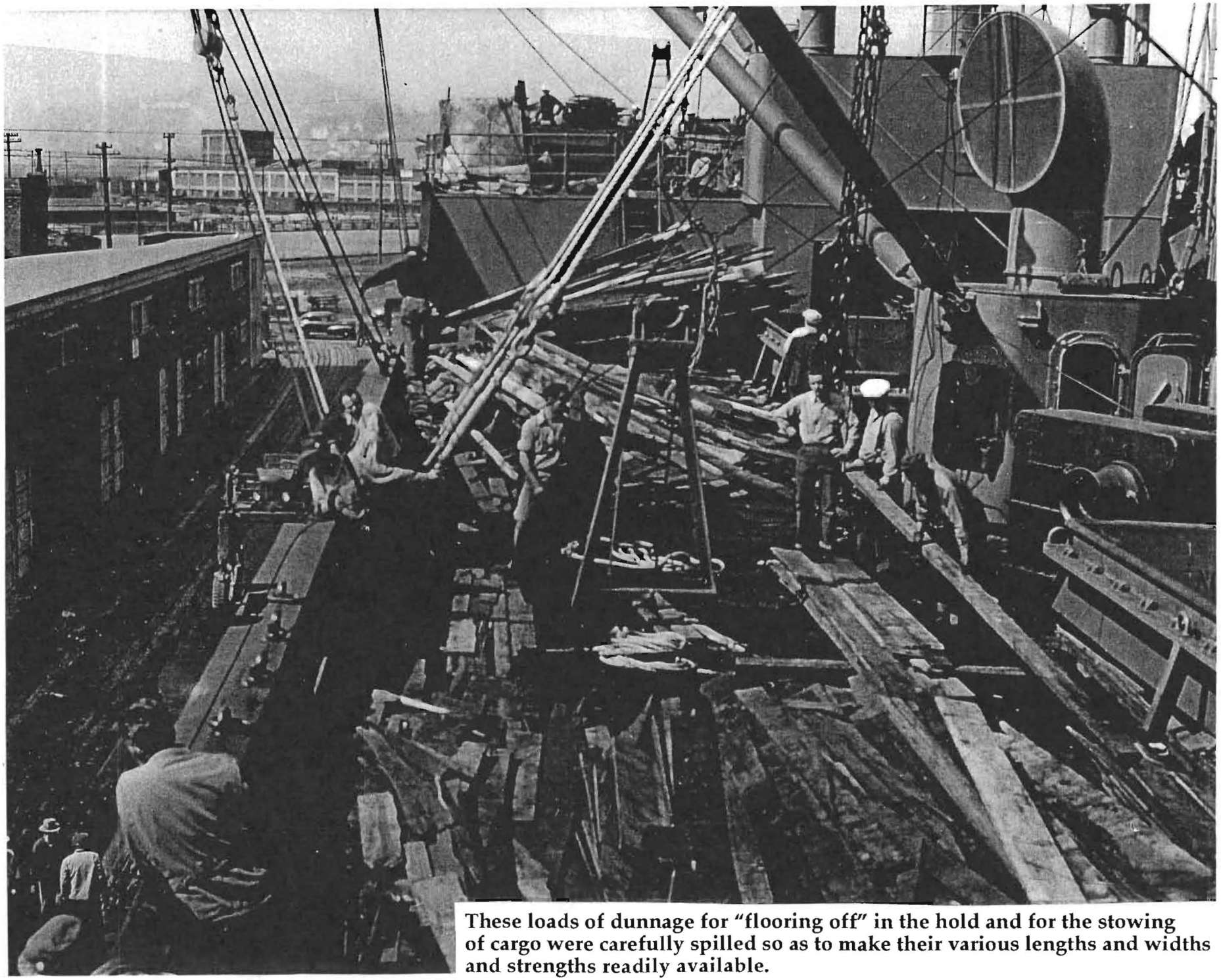


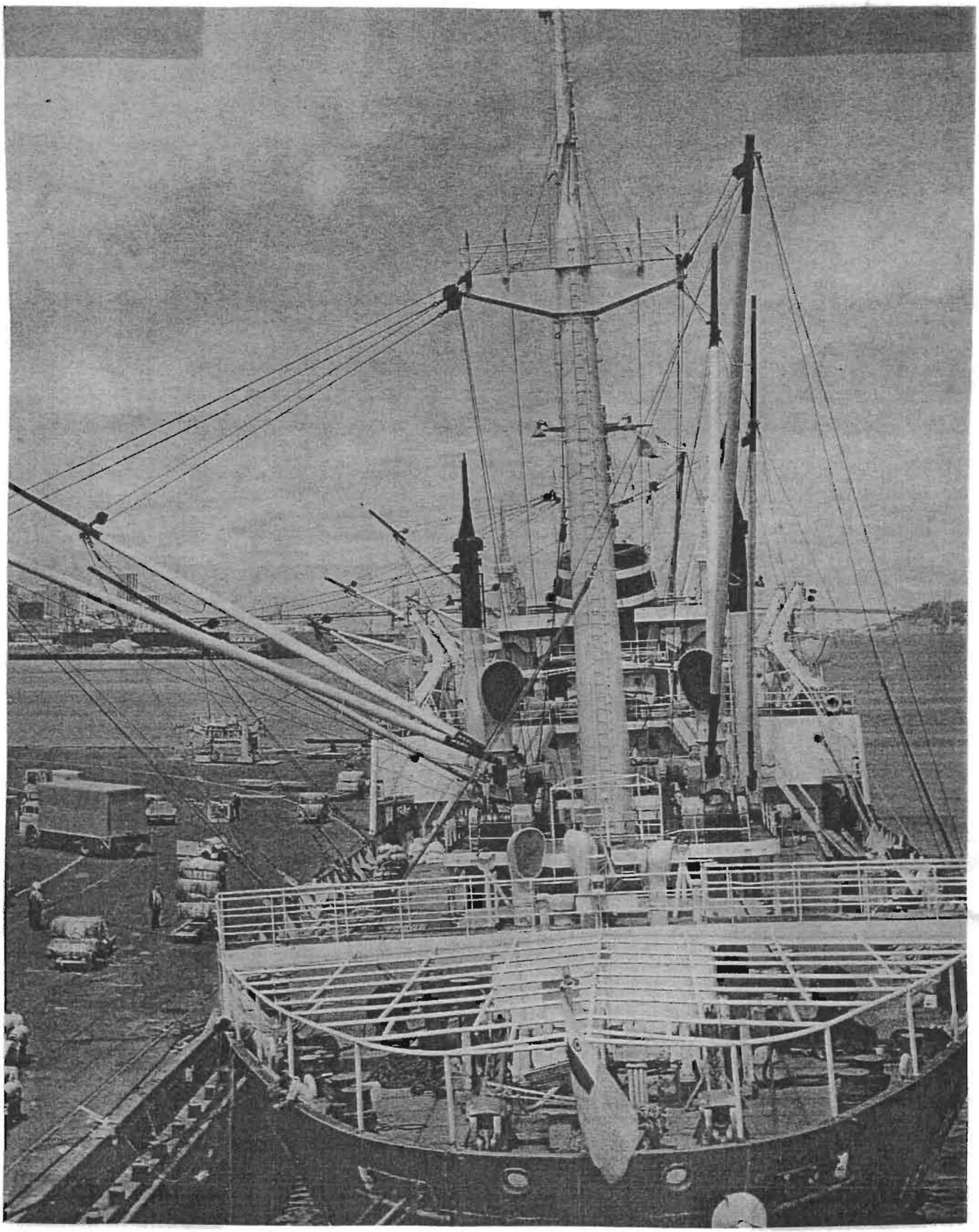
Three long-ago snaps of a weather deck.



These loads of dunnage for "flooring off" in the hold and for the stowing of cargo were carefully spilled so as to make their various lengths and widths and strengths readily available.

Rain tents were also being rigged . . .

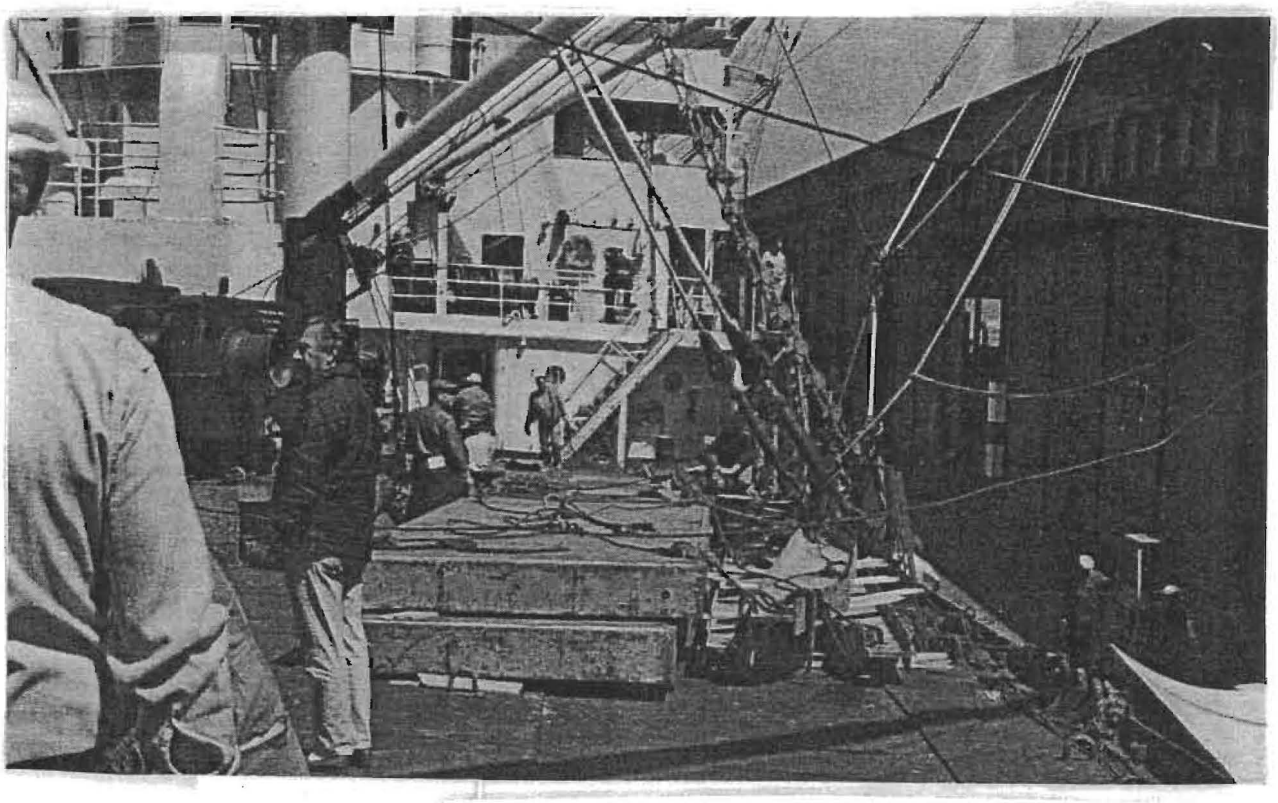
"The hooks are all moving."



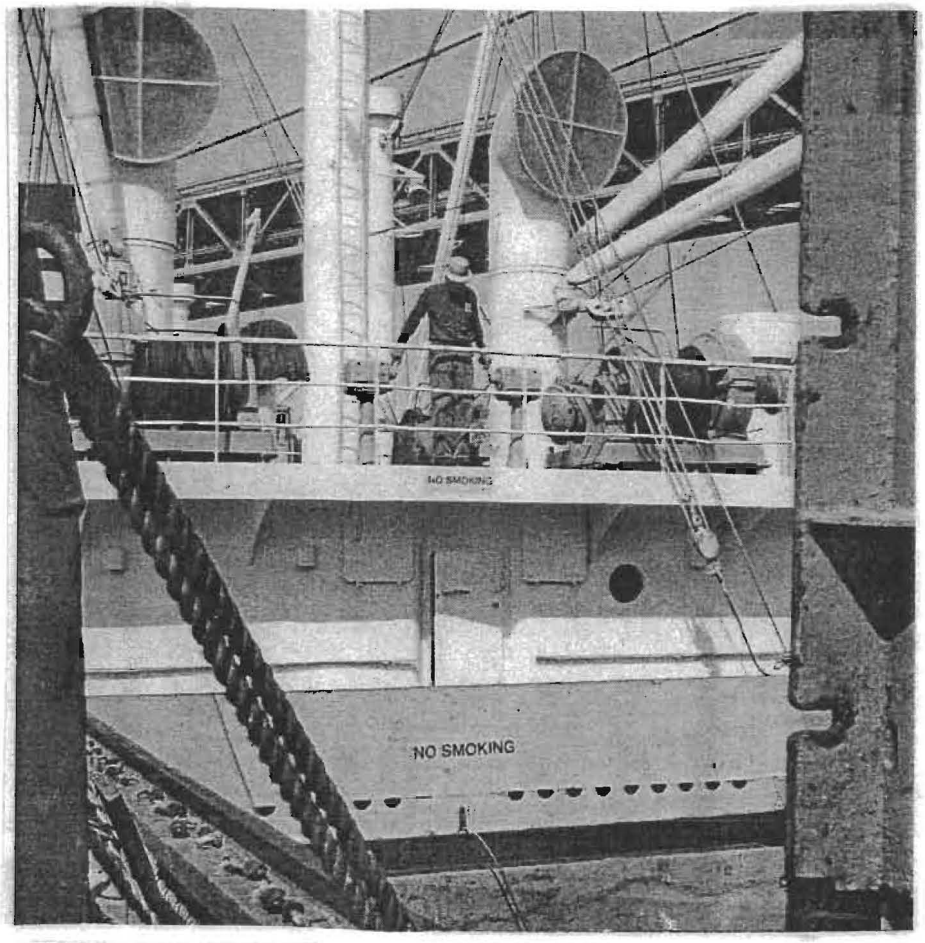
And these were all working cotton bales.

. . . and note the hatch ladder and jumbo gear

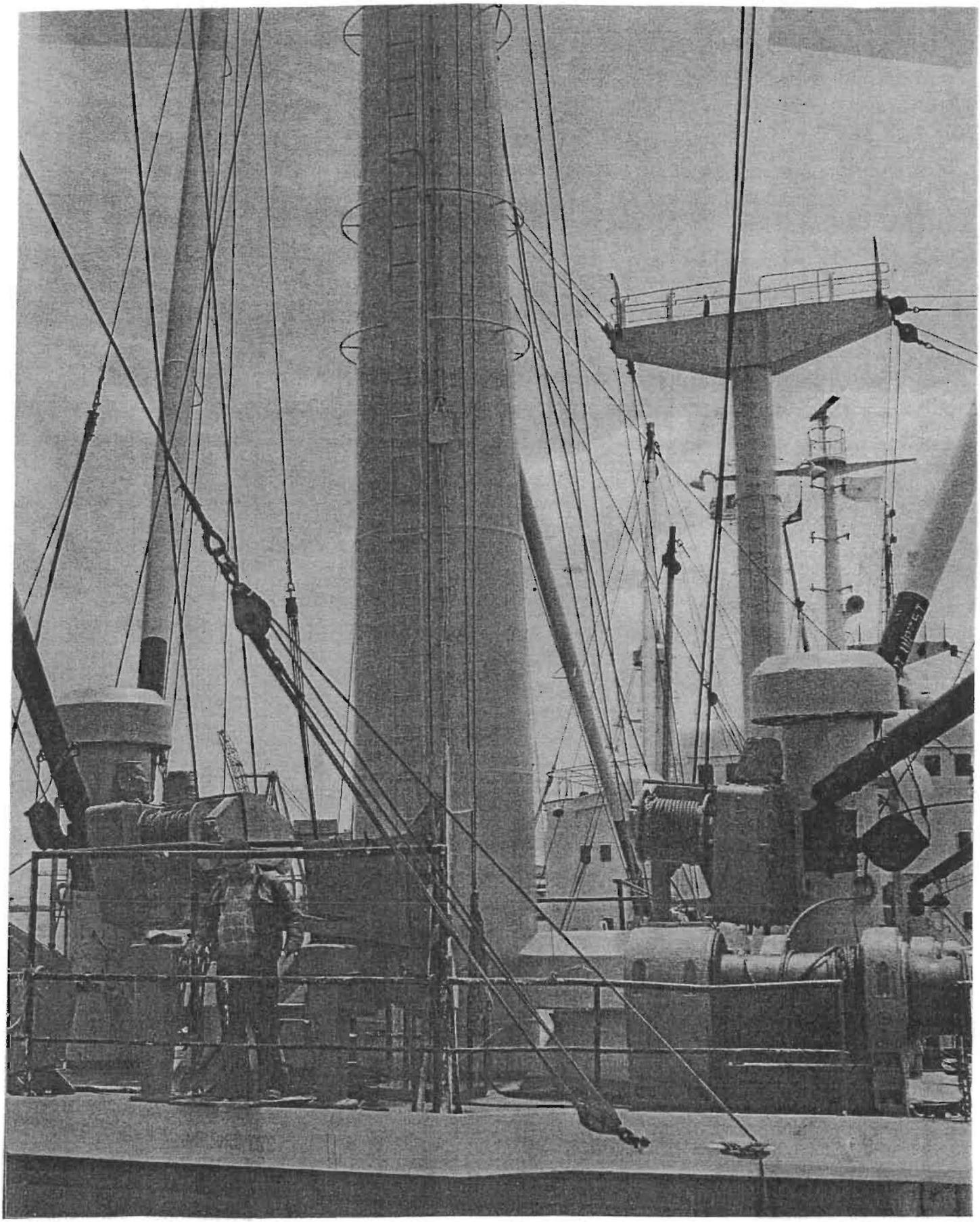
. . . and a seating arrangement, too

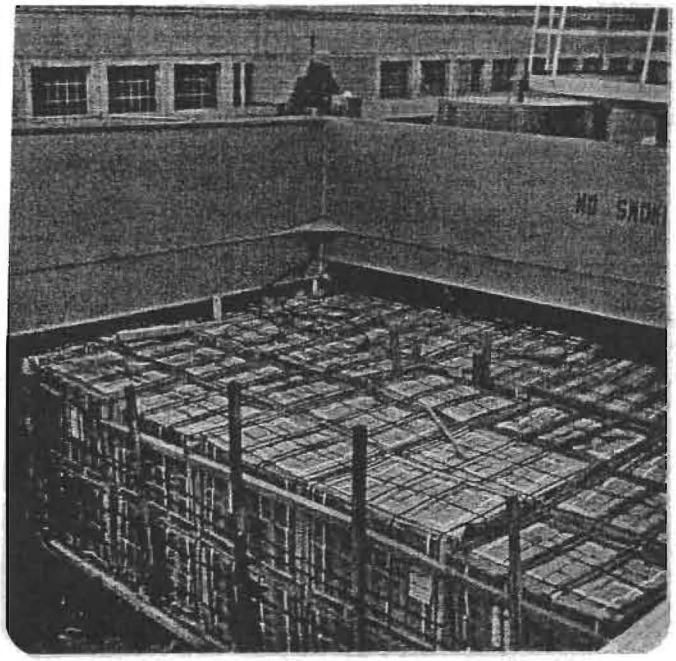


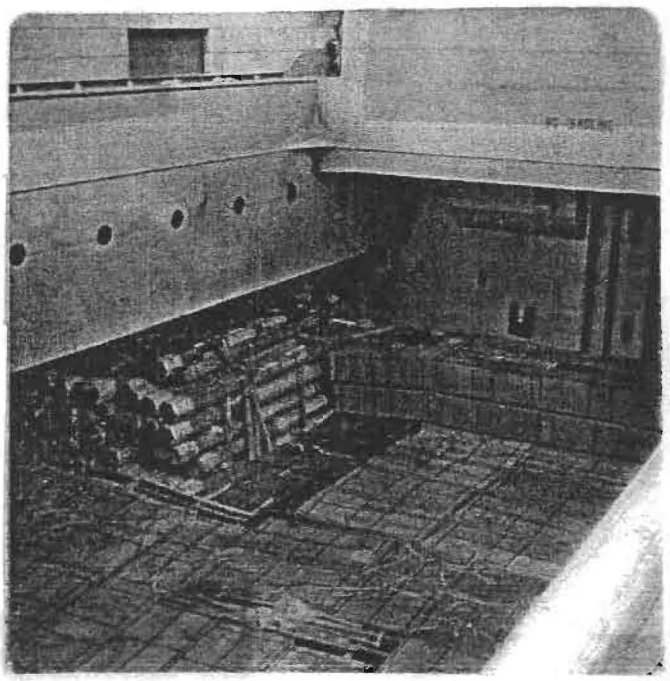
Two hatch covers stowed on the inshore weather deck.

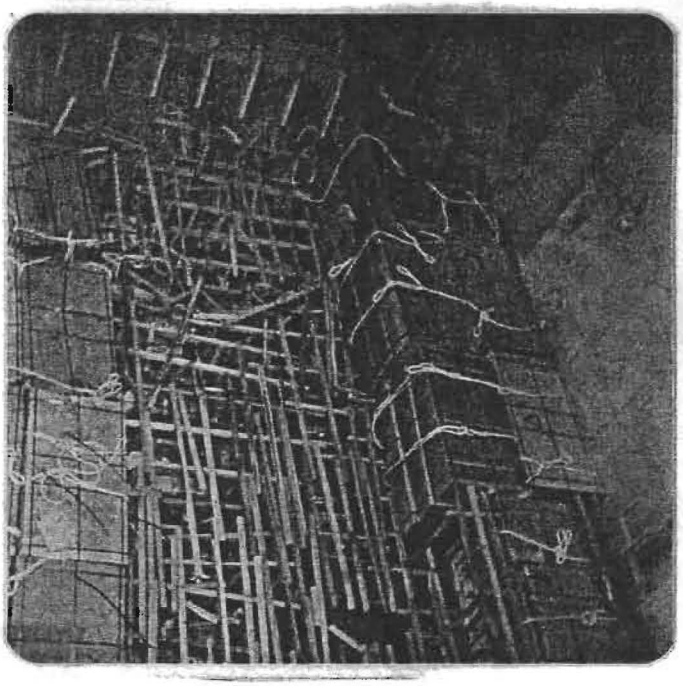


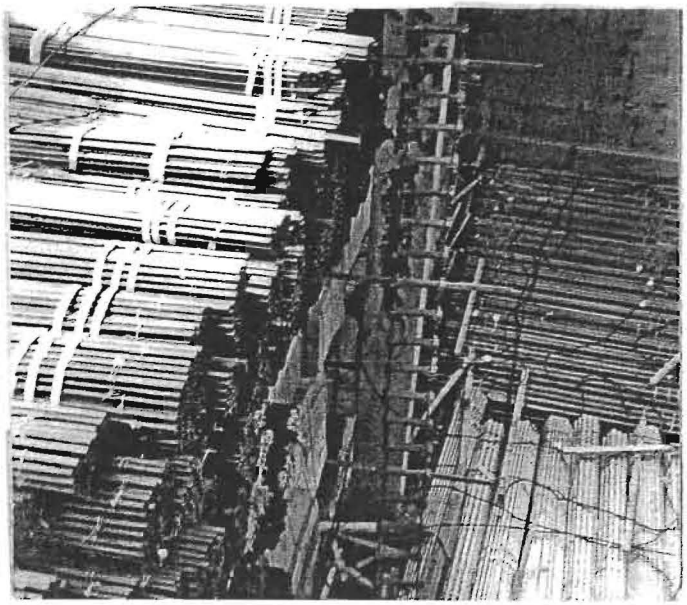
A hatch uncovered by hydraulically raising and folding hindged hatch covers to an upright position to which they are then are secured as here on the right.



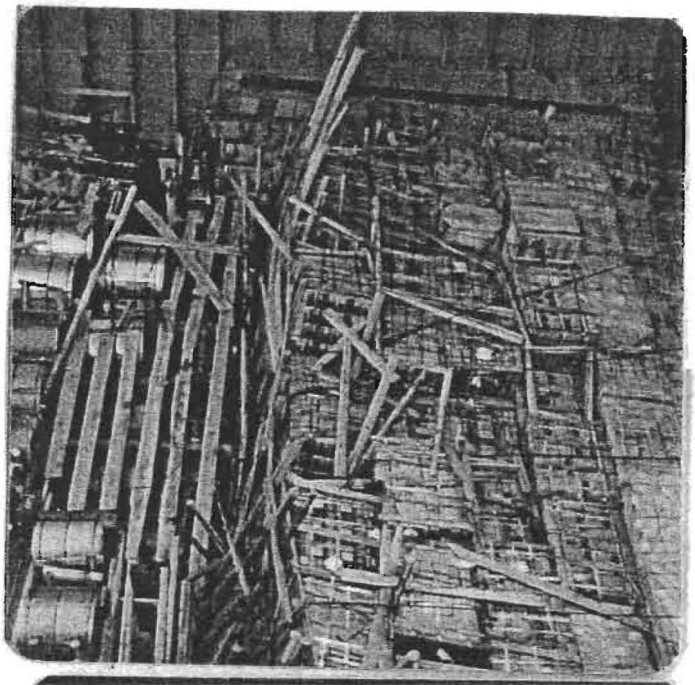




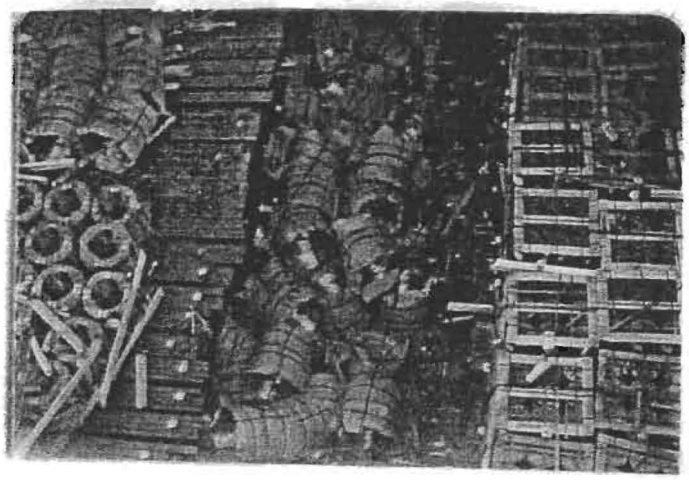


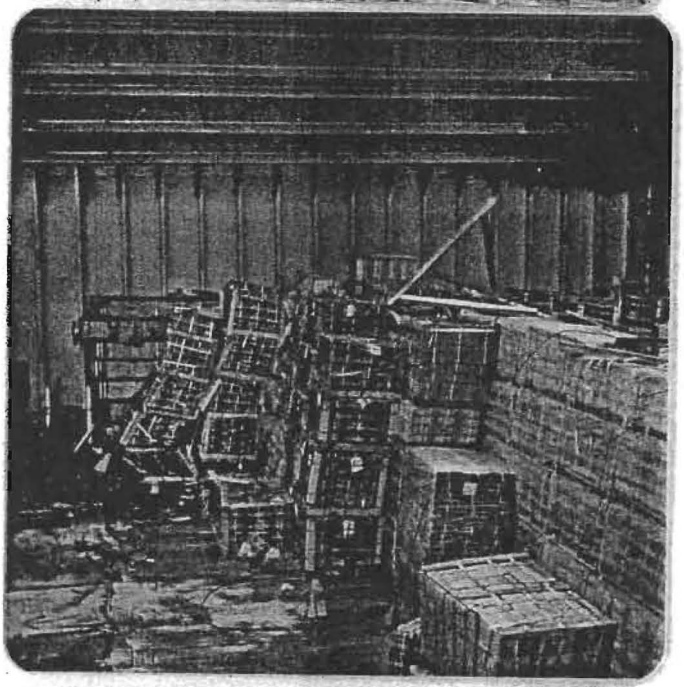


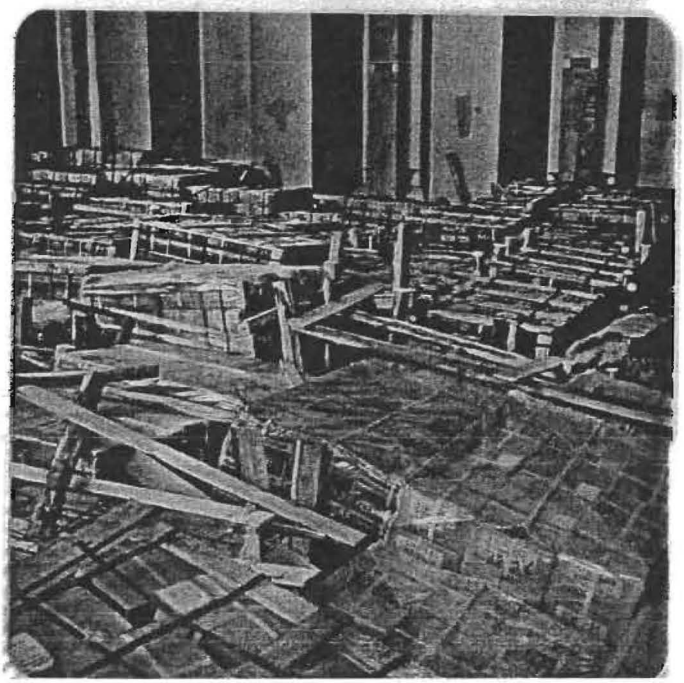
And having uncovered – nails and steel pipe from Japan . . .

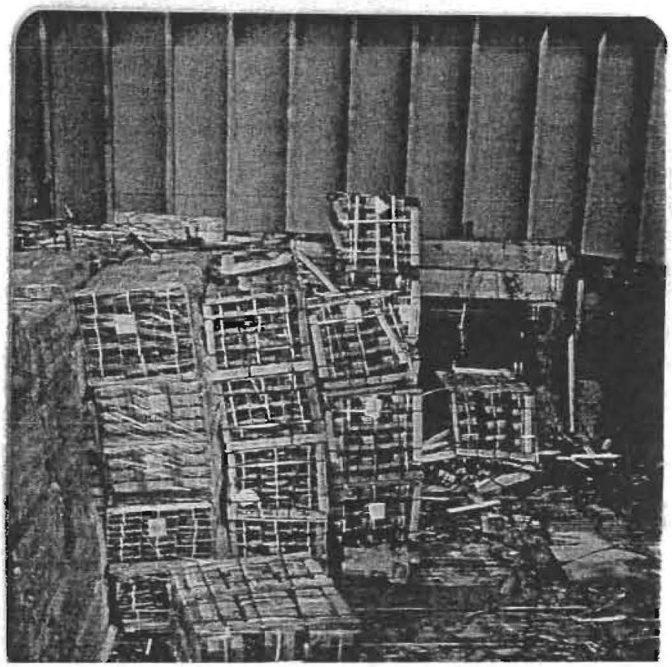


. . . and again such cargo plus coils of steel, but very badly shifted due to a storm at sea.









MAXIMUM LOADS for STANDARD COMMODITIES
PACIFIC COAST PORTS

EFFECTIVE JULY 26, 1937

1. On and after July 26, 1937, at 8 o'clock in the morning, the maximum loads hereinafter specified shall be adopted for the commodities hereinafter referred to in all ports coming under the provisions of said agreement of February 4, 1937. After the effective date of this agreement all loads for commodities covered herein handled by longshoremen shall be of such size as the employer shall direct, within the maximum limits hereinafter specified, and no employer after such date shall direct and no longshoremen shall be required to handle loads in excess of those hereinafter stated. The following standard maximum sling loads are hereby adopted:

(1) CANNED GOODS

24-2½ talls, 6-12s tall and 48-1 talls (including salmon)	35 cases to sling load
or when loads are built of	
3 tiers of 12	36 cases to sling load
24-1 talls	60 cases to sling load
24-2's talls	50 cases to sling load
6-10s talls	40 cases to sling load
Miscellaneous cans and jars	Maximum 2100 lbs.

(2) DRIED FRUITS AND RAISINS—(GROSS WEIGHT)

22 to 31 lbs.	72 cases to sling load
32 to 39 lbs.	60 cases to sling load
40 to 50 lbs.	40 cases to sling load
24-2 lbs.	35 cases to sling load
48-15 oz.	40 cases to sling load

(3) FRESH FRUIT—Standard Boxes

Oranges	Standard, 27 boxes to sling load
Oranges	Maximum, 28 boxes to sling load
Apples and Pears	40 boxes to sling load

(4) MISCELLANEOUS PRODUCTS

Case oil—2 5-gal. cans (Hand hauled to or from ship's tackle)	18 cases to sling load
(Power hauled to or from ship's tackle)	24 cases to sling load
Cocoanut	12 cases to sling load
Tea—standard	12 cases to sling load
Tea—small	16 cases to sling load
Copper (Large)	5 slabs to sling load
Copper (Small)	6 slabs to sling load
Copper (Bars)	9 bars to sling load
Cotton, under standard conditions	3 bales to sling load
Rubber (1 tier on sling) maximum of	10 bales to sling load
Gunnies, large	2 bales to sling load
Gunnies, medium	3 bales to sling load
Gunnies, small	4 bales to sling load
Rags, large (Above 700 #)	2 bales to sling load
Rags, medium (500 to 700 #)	3 bales to sling load
Rags, small (below 500 #)	4 bales to sling load
Sisal, large	3 bales to sling load
Hemp, ordinary	5 bales to sling load
Jute (400 # bales)	5 bales to sling load
Pulp, bales weighing 350 # or more	6 bales to sling load
Pulp, bales weighing 349 # or less	8 bales to sling load

Note: With respect to loading where the loads have been built by other than longshoremen, the employers will make arrangements for the application of this rule as soon as possible and in any event within 60 days from the date of this agreement).

Steel drums, containing Asphalt, Oil, etc., weighing 500 # or less	4 to the sling load (When using Chine Hooks)
Steel drums, containing Asphalt, Oil, etc., weighing 500 # or less on board (capacity of board—1 tier) maximum of	5 drums to sling load
Barrels, wood, heavy, containing wine, lard, etc., maximum of	4 bbls. to sling load (When using Chine Hooks)
Barrels, wood, heavy, containing wine, lard, etc. (capacity of board 1 tier) on board—Maximum of	4 bbls. to sling load
Barrels, wood, containing Dry Milk, Sugar, etc.	6 bbls. to sling load

(Present port practice or gear in handling drums of asphalt or barrels shall not be changed in order to increase the load).

Newsprint, rolls	2 rolls to sling load
Newsprint, rolls	1 when wgt. 1800 # or over

(5) SACKS

Flour—140 lbs.	15 sacks to sling load
Flour— 98 lbs.	20 sacks to sling load
Flour— 49 lbs.	40 sacks to sling load
Flour—49 lbs. (in balloon sling)	50 sacks to sling load
Cement	22 sacks to sling load
Wheat	15 sacks to sling load
Coffee—Power haul from and to ship's tackle	12 sacks to sling load
Coffee—Hand haul from and to ship's tackle	8 sacks to sling load
Other sacks—maximum	2100 # to sling load

(6) When flat trucks are pulled by hand between ship's tackle and place of rest on dock, load not to exceed 1400 #.

(7) Number of loaded trailers (4 wheelers)—to be hauled by jitney as follows: Within the limits of the ordinary berthing space of the vessel—2 trailers.

Long hauls to bulkhead warehouse or to adjoining docks or berths—3 trailers.

Extra long haul to separate docks or across streets—4 trailers, providing that four (4) trailers shall be used only where it is now the port practice.

(8) When cargo is transported to or from the point of stowage by power equipment, the following loads shall apply:

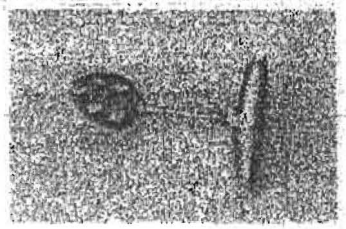
48—1 talls	40
24—1 talls	60
24—2's talls	48
24—2½'s talls	40
6—10's talls	50
6—12's talls	50

(9) This agreement is supplemental to said agreement of February 4, 1937, and is hereby made a part thereof.

The purpose of the parties in negotiating this scale of maximum loads for standard commodities, is to establish a reasonable loading and discharging rate under the working conditions applicable to the operation, including the number of men used. It is agreed that the employers will not use the maximum loads herein set forth as a subterfuge to establish unreasonable speed-ups; nor will the I. L. A. resort to subterfuges to curtail production.

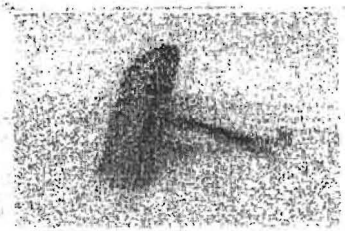
Cargo hooks

Cargo hooks were the indispensable tools of traditional longshoremen. The hook extended their reach and allowed them to snag a sack, bale, bundle, or box and lift it to a pallet or sling. Longshoremen used different styles of hooks for different kinds of cargo and even customized the handles to fit their hands.



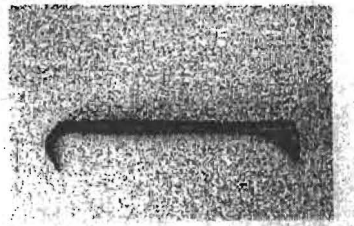
Cargo hook

A longshoreman used this style of hook for handling burlap sacks of cargo. The dull tips could grab a sack without tearing it.



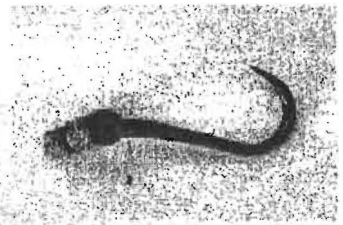
Small cargo hook

Used for moving sacks of coffee, this small hook's handle has been whittled to fit the left hand. With the hook extending between the third and fourth fingers, the thumb rests comfortably over the sloping part of the handle.



"Japanese" cargo hook

Called a "Japanese" hook by West Coast longshoremen, this style of cargo hook was especially good for reaching boxes packed in the far corners of a ship's hold.



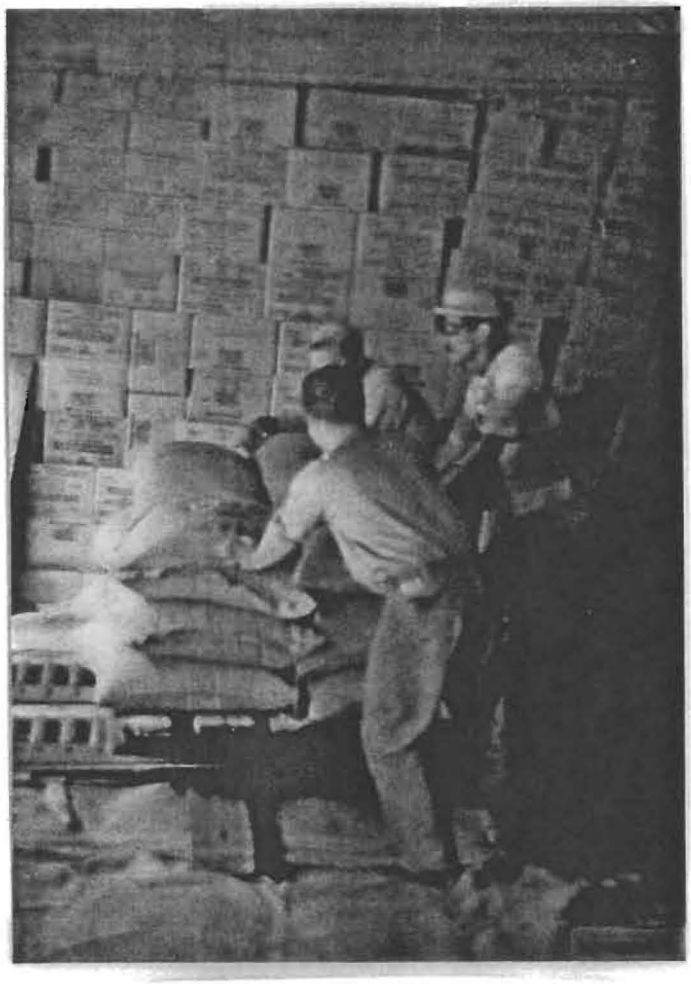
Cargo hook for lumber

This hook was used for handling general cargo in boxes, cartons, bales, and sacks.

These cargo hooks are now on display at the National Museum of American History of the Smithsonian Institute. They are in that museum's exhibit "America on the Move" and also appear as here shown at this web-site address: Smithsonian Institute – National Museum of American History – America on the Move – Explore Transportation – Work and Industry – Container Back Story.

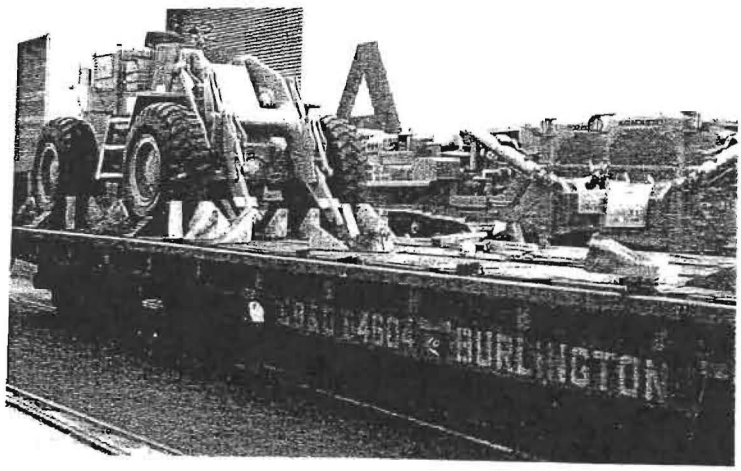
Coffee discharge: digging-down on the upper 'tween deck . . .

. . . and using gravity rollers to move the load to the square of the hatch.

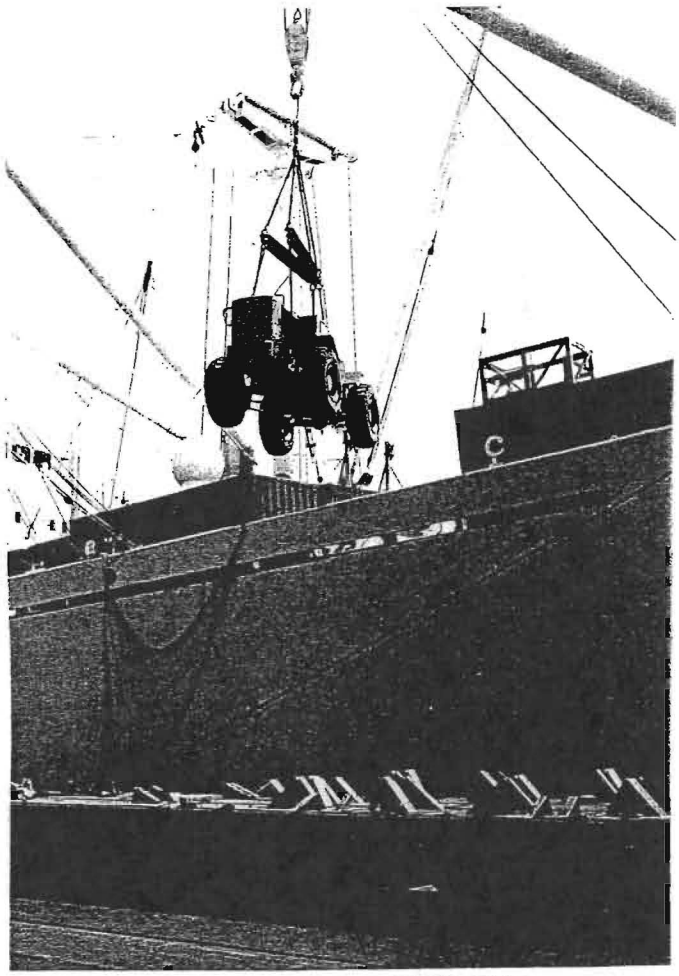


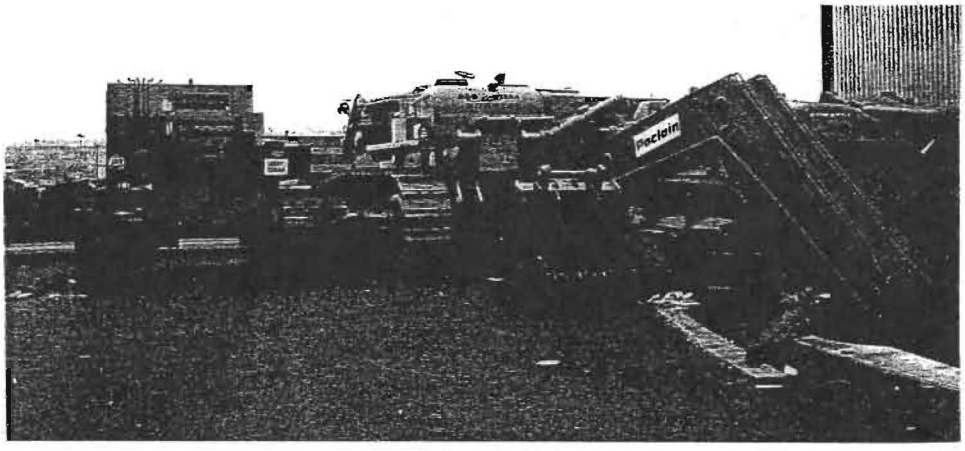
. . . and note the gravity rollers, again.

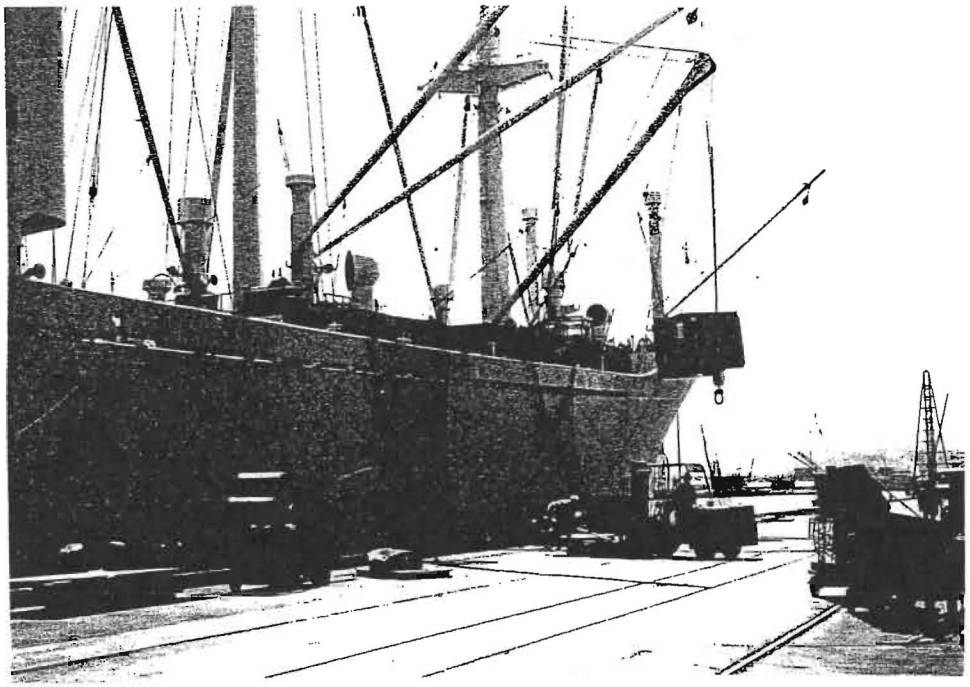
. . . note that the dock lift driver has two pallet loads on his blades.



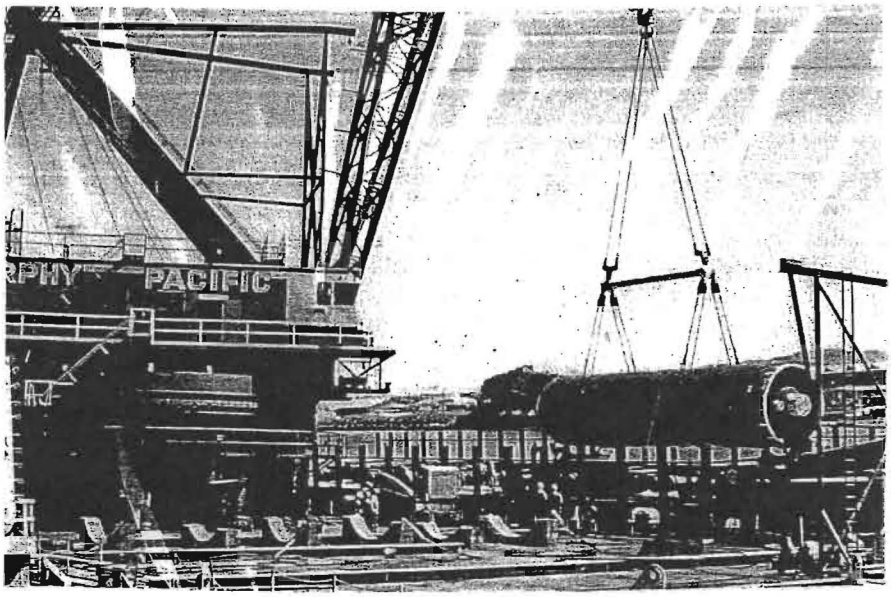
Heavy lifts
for the ship's jumbo gear.



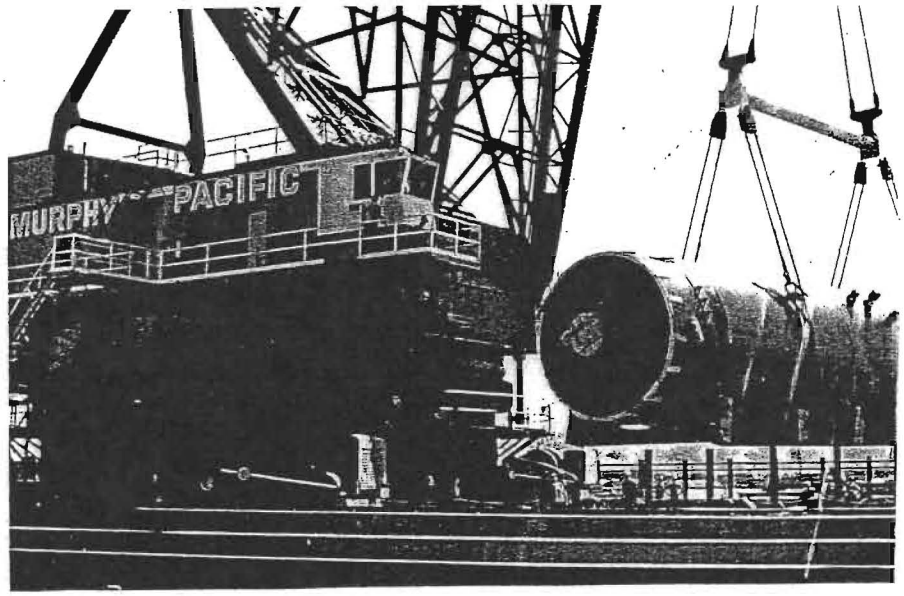




Another such lift . . .

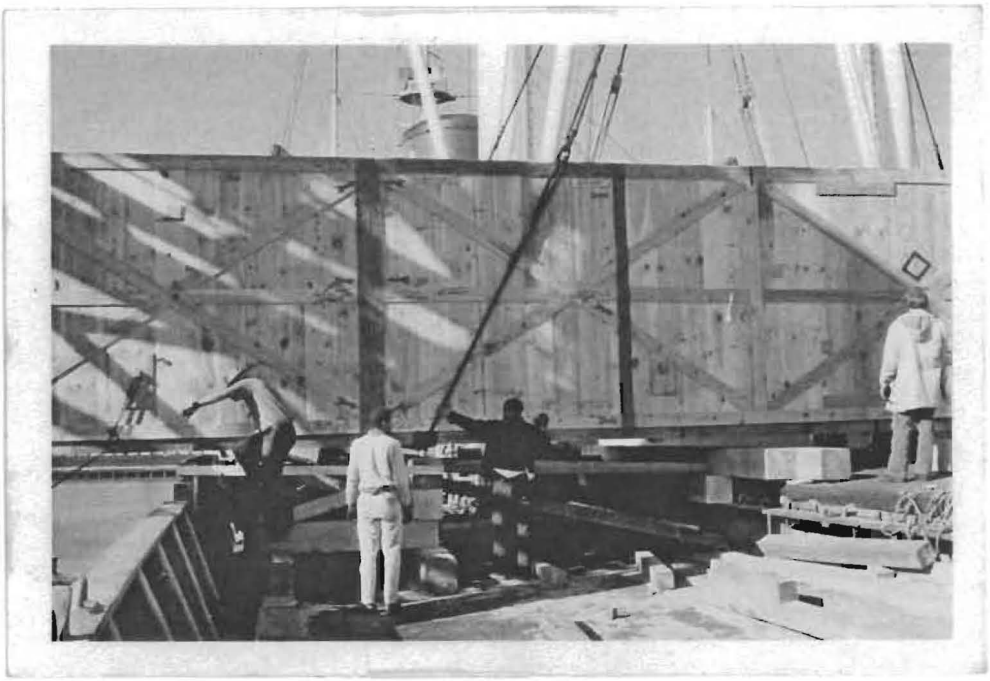


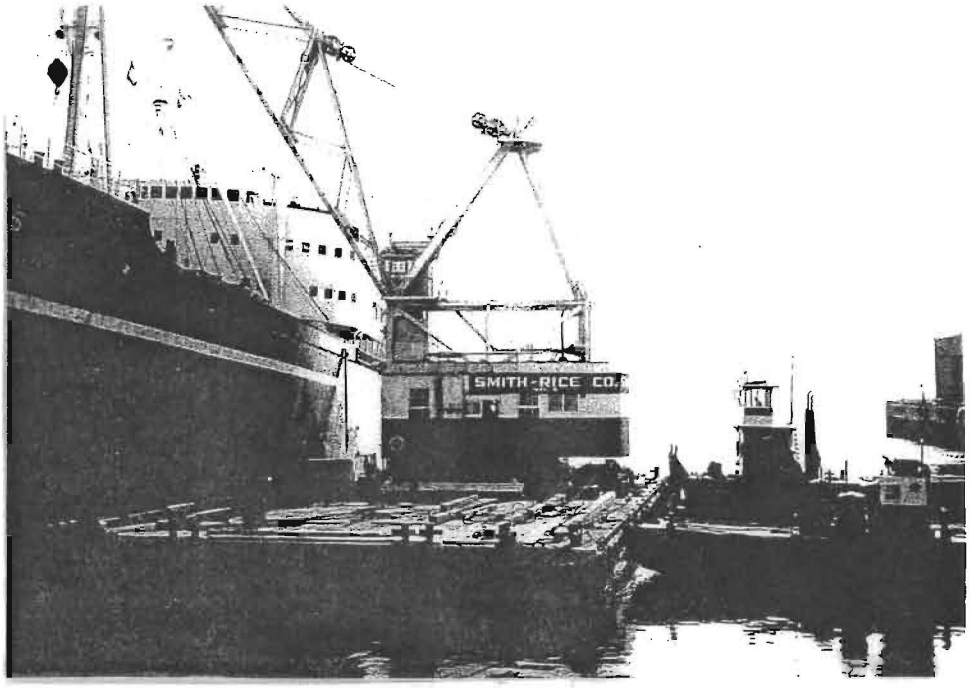
And a heavy lift from an offshore barge mounted crane . . .



Such barge cranes were operated by members of Local 3 of the Operating Engineers, but members of ILWU Local 10 often made up the on-deck crew.

Another such lift

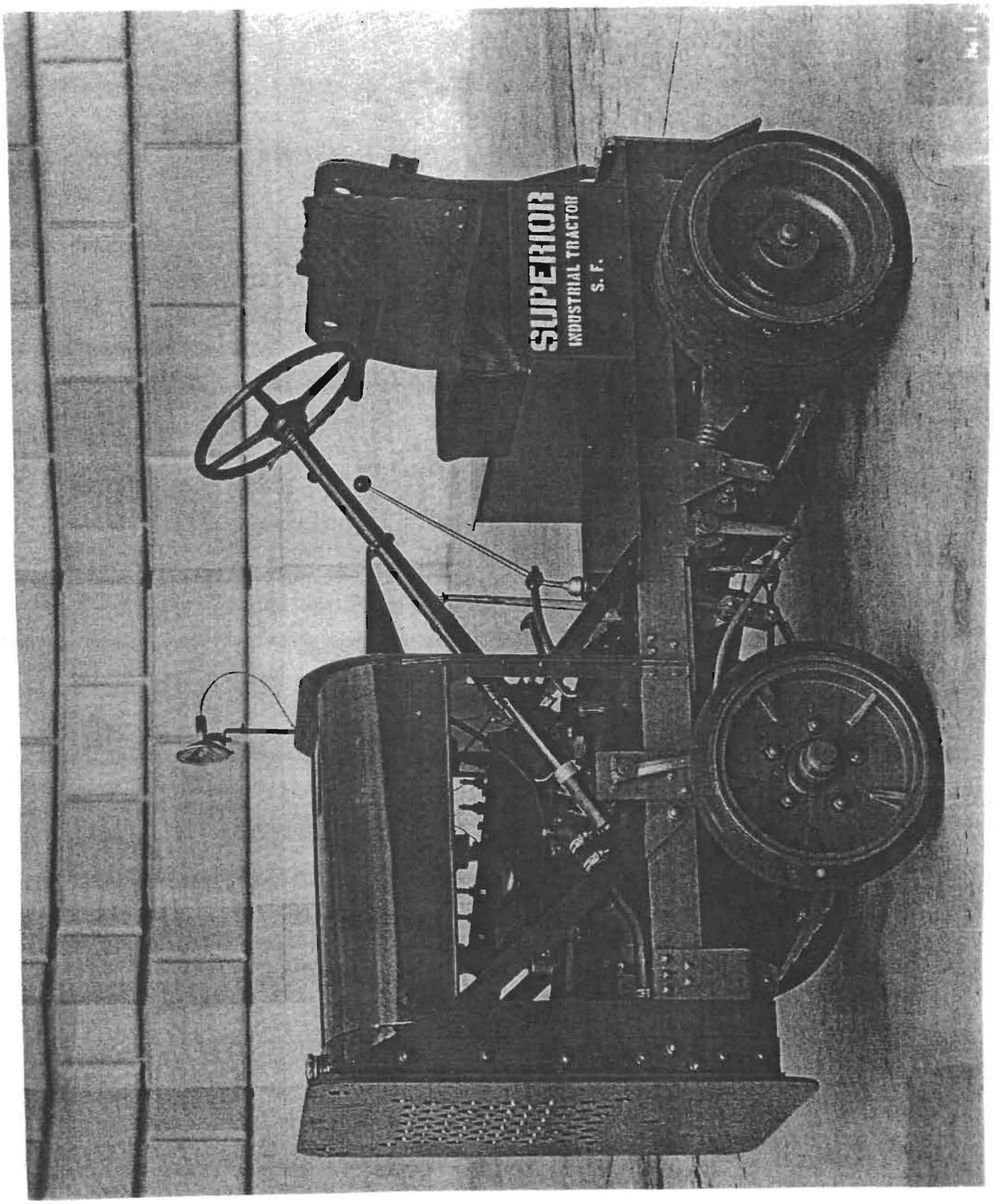


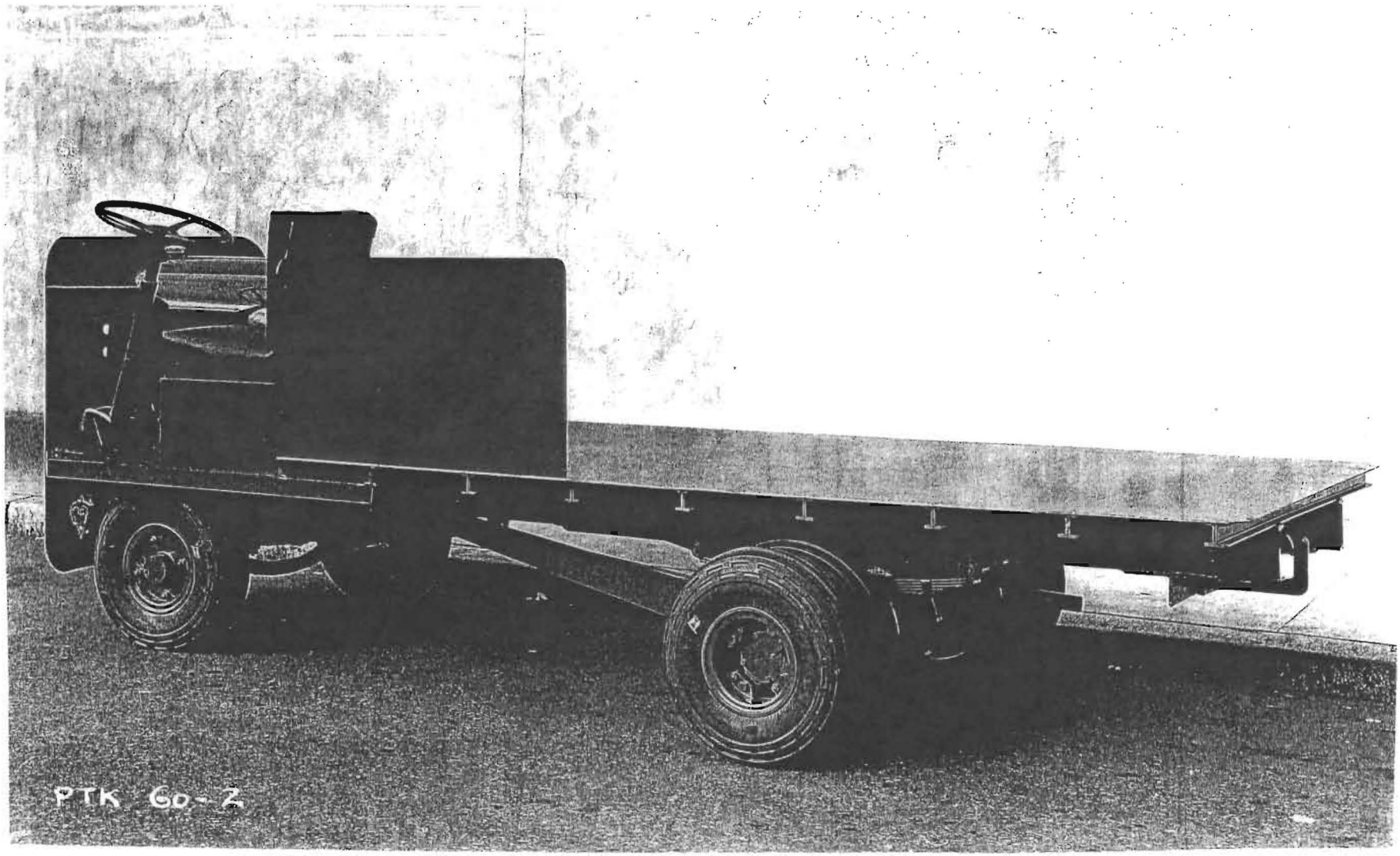


Another look at such a crane.

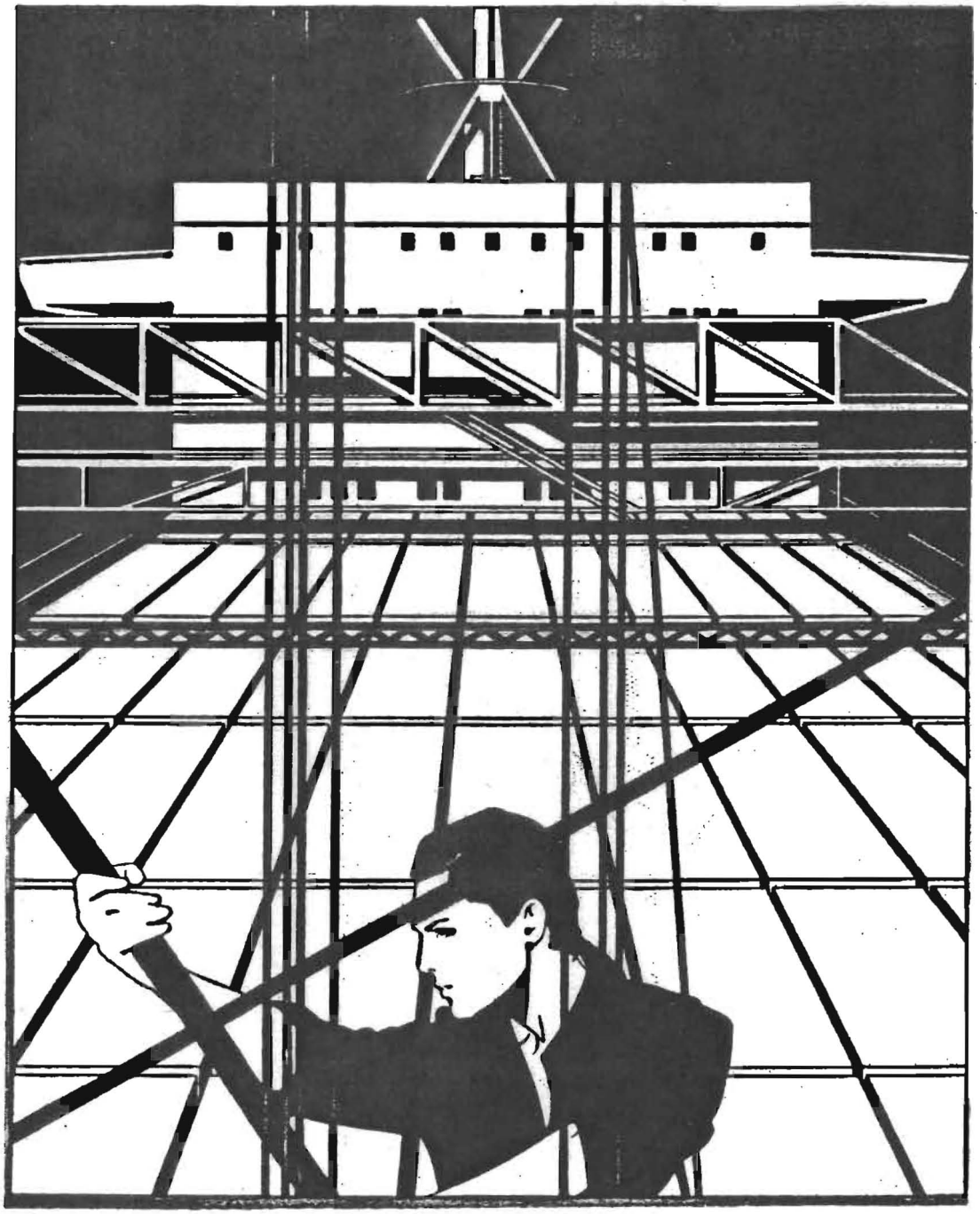
And meanwhile, too, four-wheelers at-the-ready.

Two types of "mules" which long were used dockside.

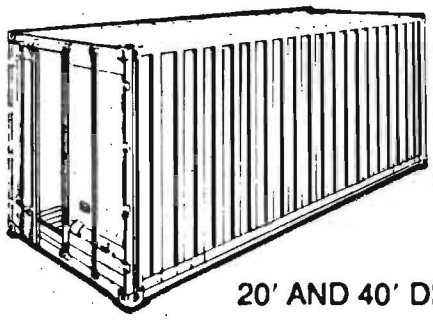



PTK GO-2

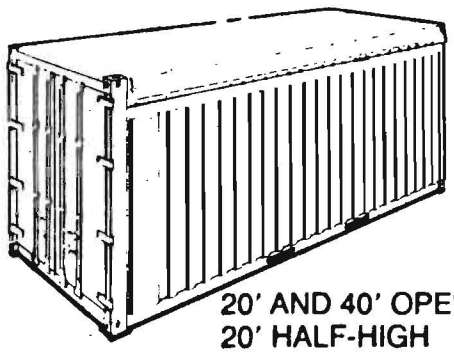
Modern Times



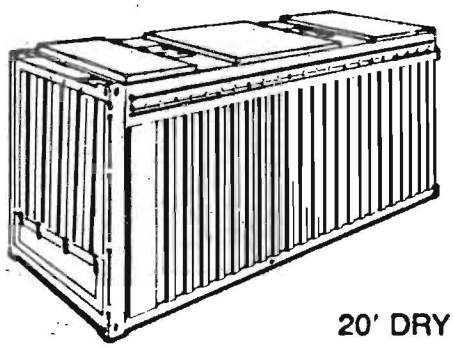
Courtesy of Columbus Line



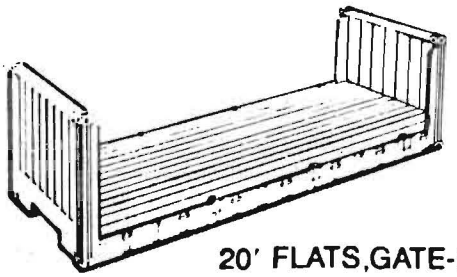
20' AND 40' DRY CARGO



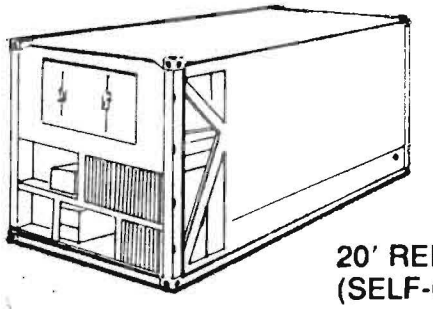
20' AND 40' OPEN TOP
20' HALF-HIGH



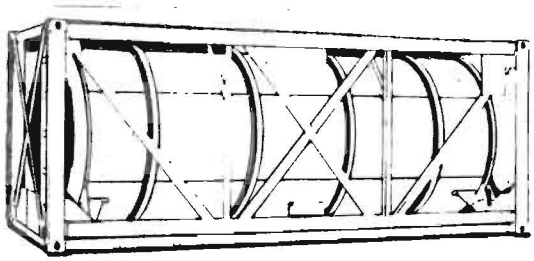
20' DRY BULK



20' FLATS,GATE-SIDE
FLATS AND BOLSTERS

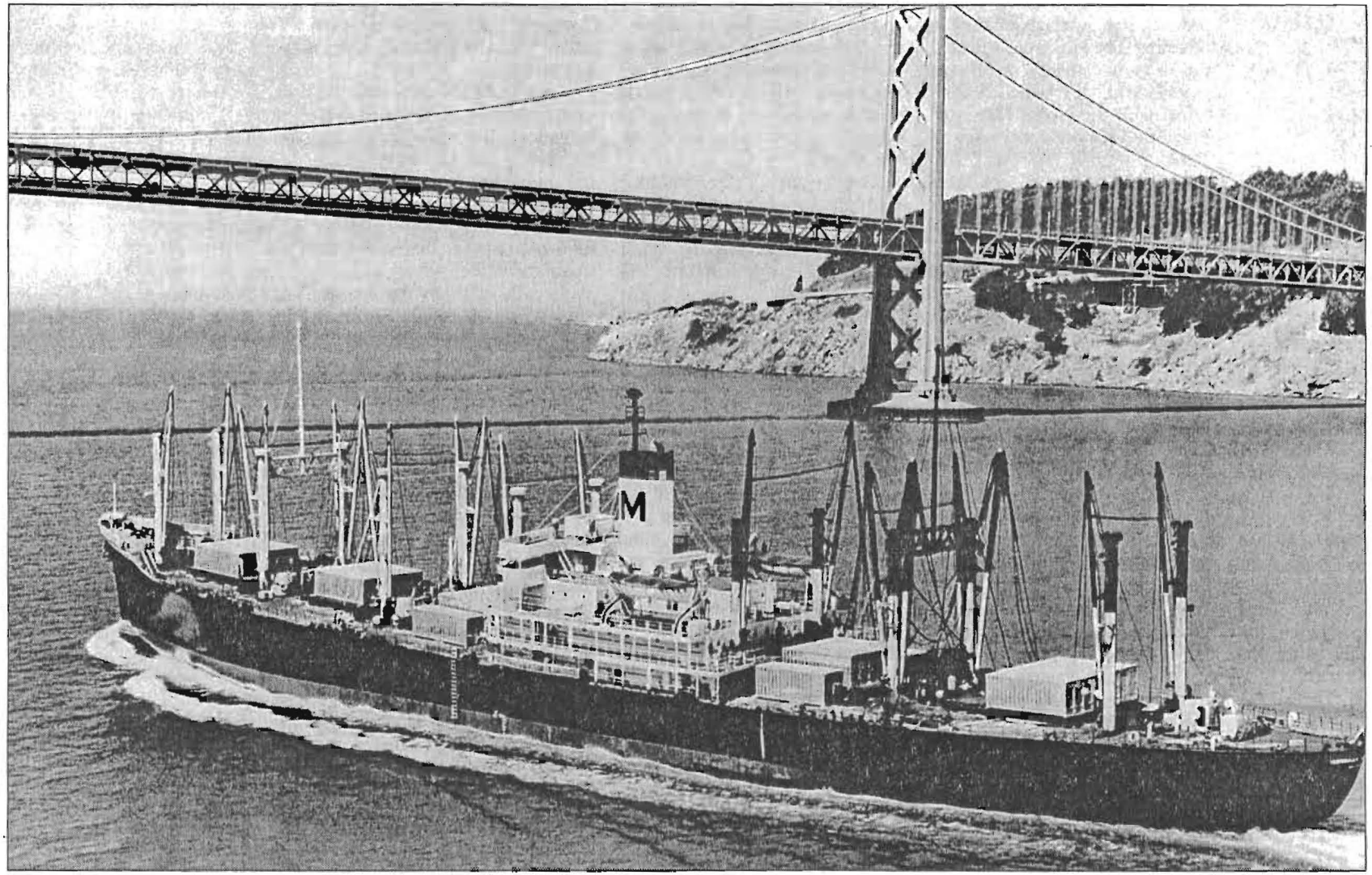


20' REEFERS
(SELF-CONTAINED)



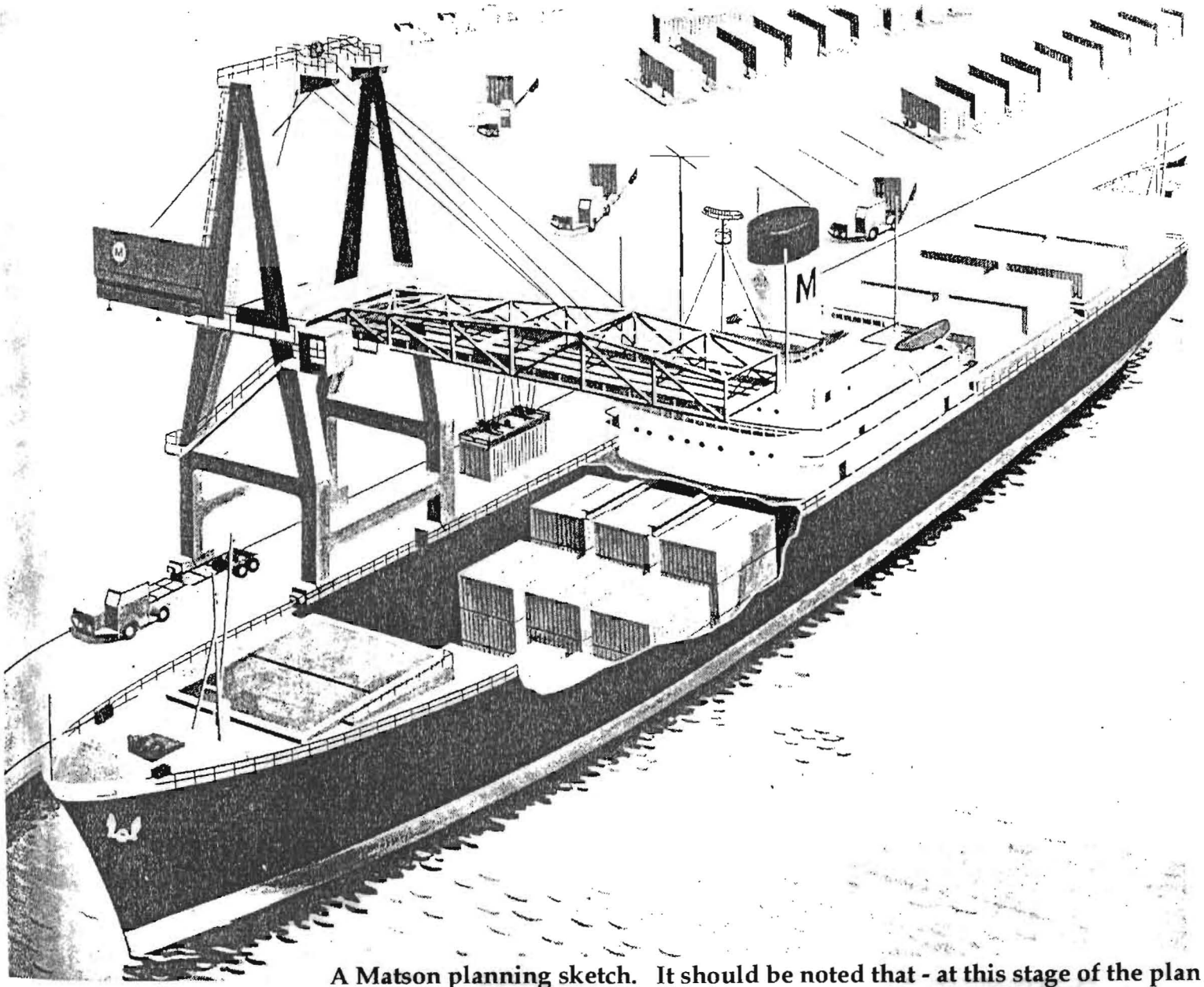
20' TANKS

Courtesy of Pacific Australia Direct Line (PAD).

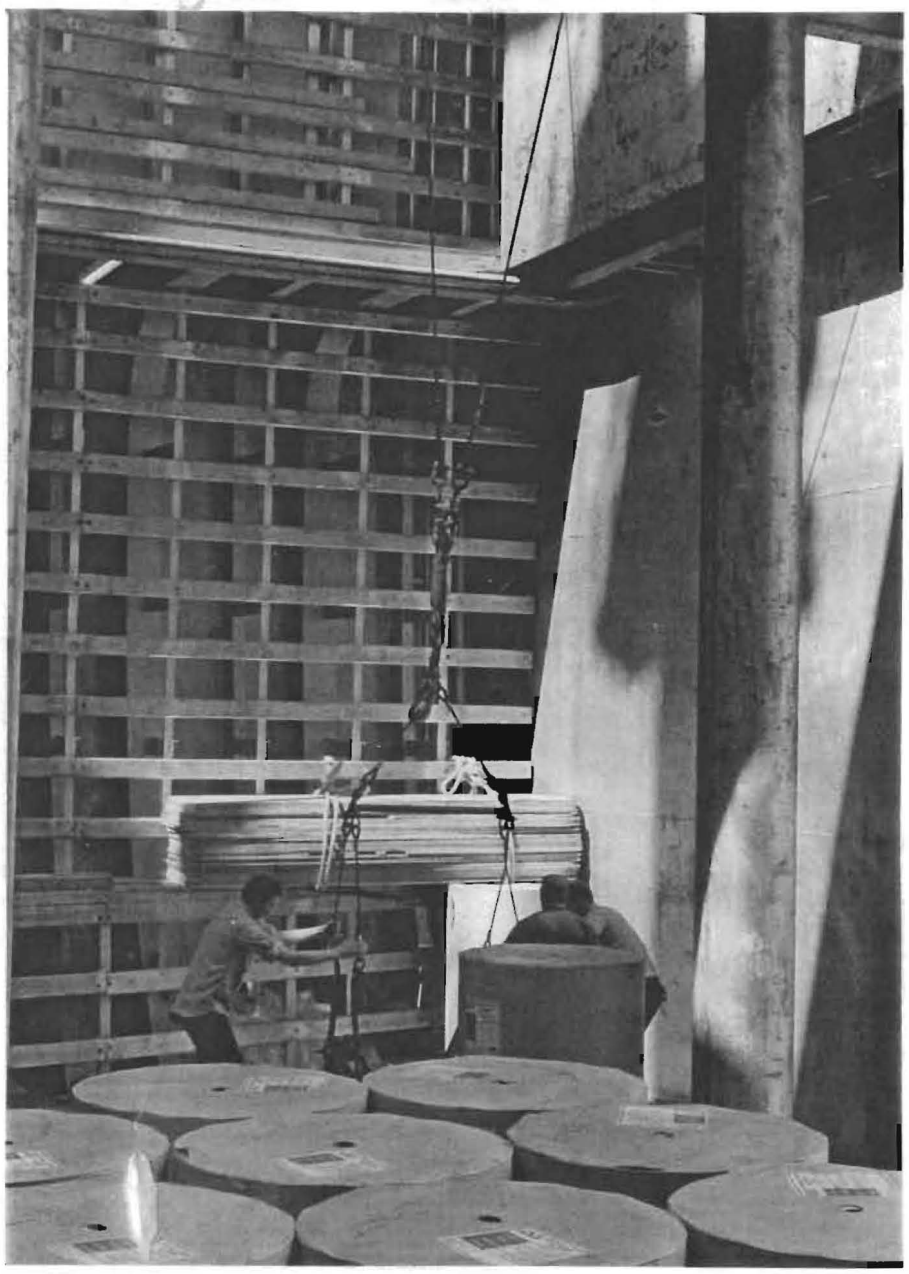


Matson Navigation Co. photos

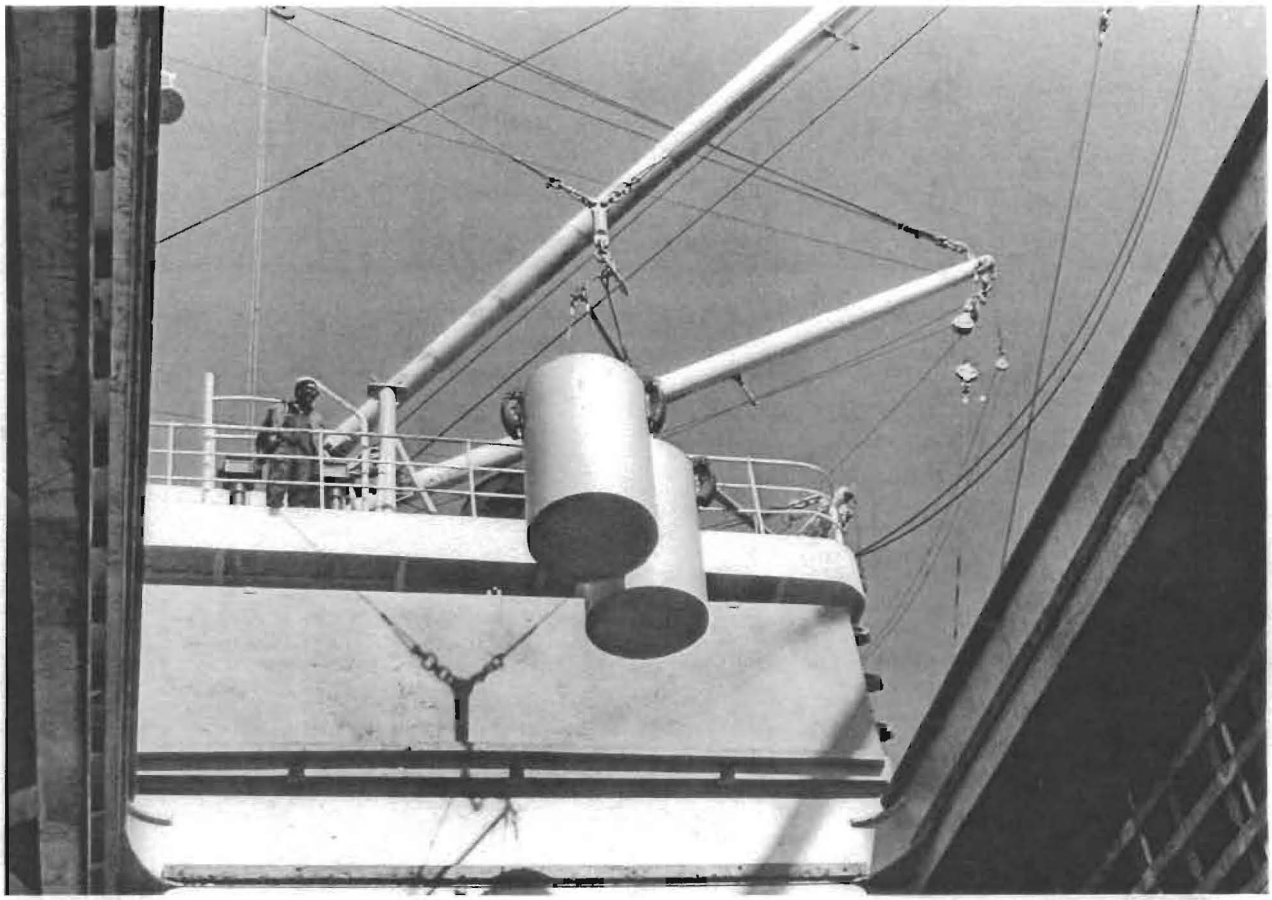
The Hawaiian Merchant leaves San Francisco Bay on Aug. 31, 1958, with 20 24-foot containers on its deck. The Matson ship inaugurated container shipping in the Pacific.

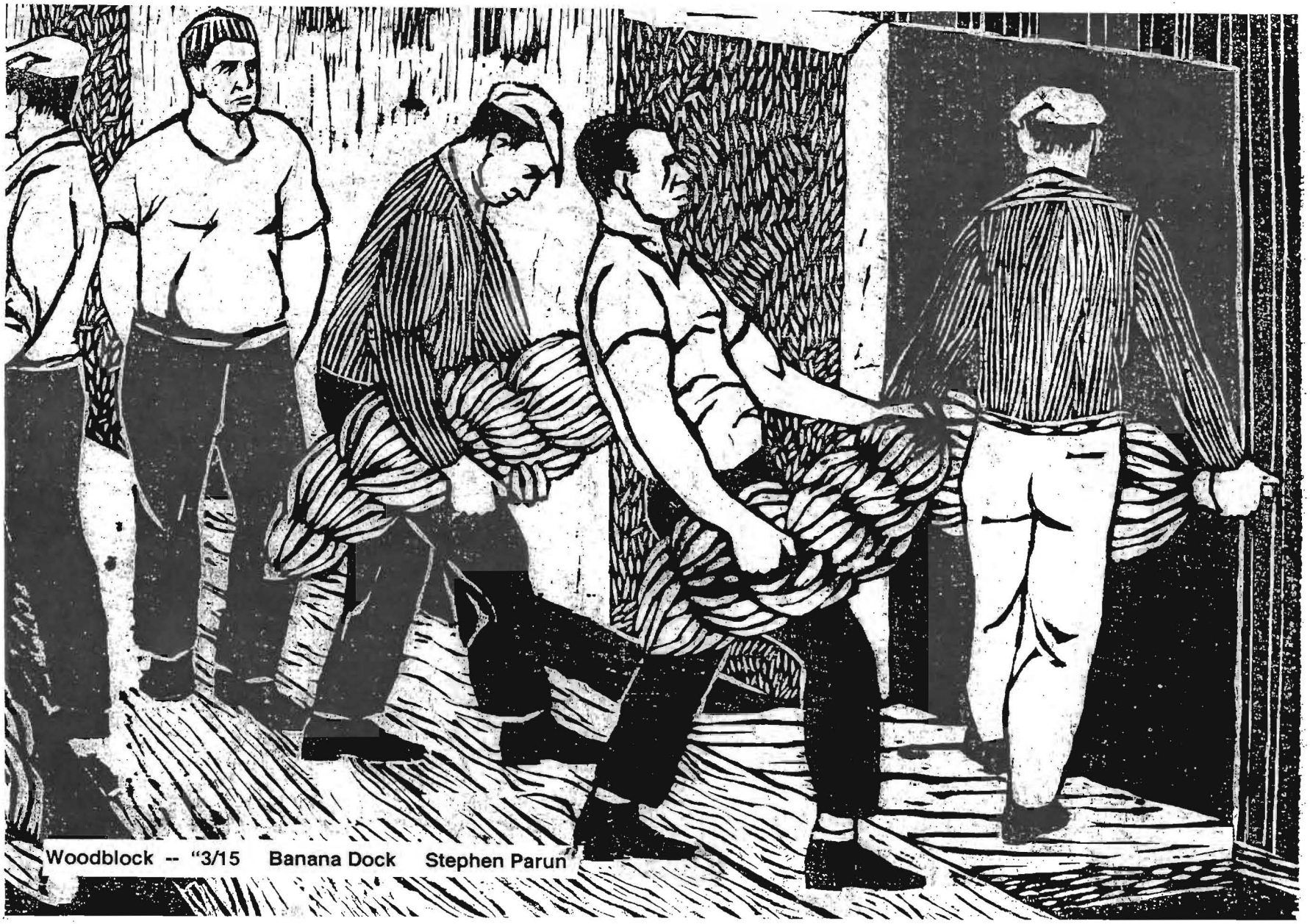


A Matson planning sketch. It should be noted that - at this stage of the plan - the containers in the storage yard would stay on their tractor-drawn chassis. As it turned out, Matson - unlike Sea-Land - decided to "deck and stack" them in its container yards.



Discharging newsprint . . .

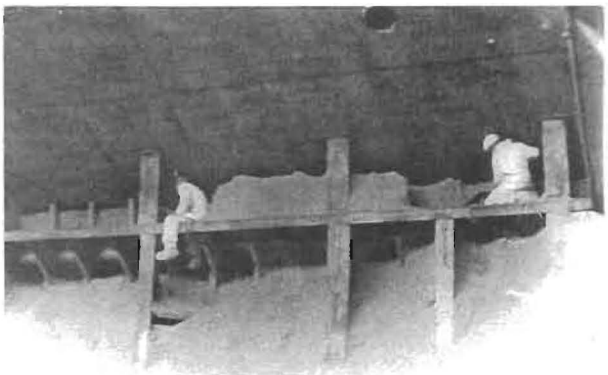


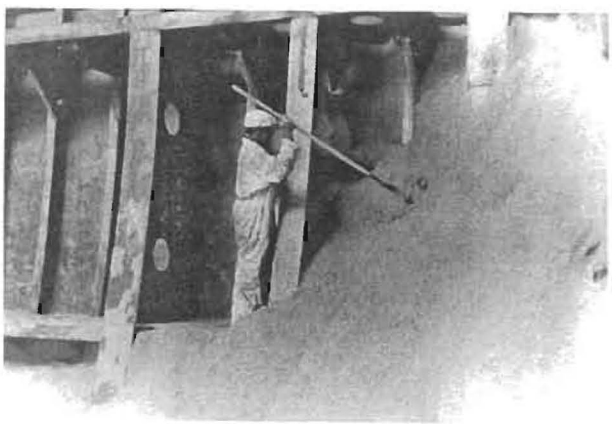


Woodblock -- "3/15 Banana Dock Stephen Parun"

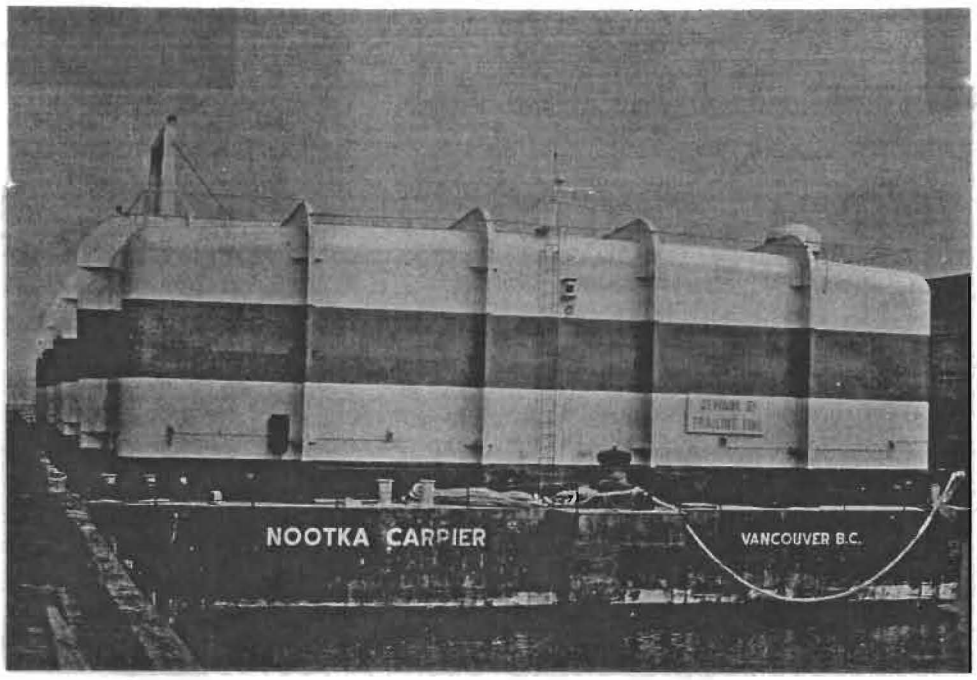
Woodblock -- "Artist's Proof Fish Handler Steve Parun"

The author under a "west coast stetson"- a white cap worn by the striking dockers of 1934 - and his partner Ted "Whitey" Kelm.

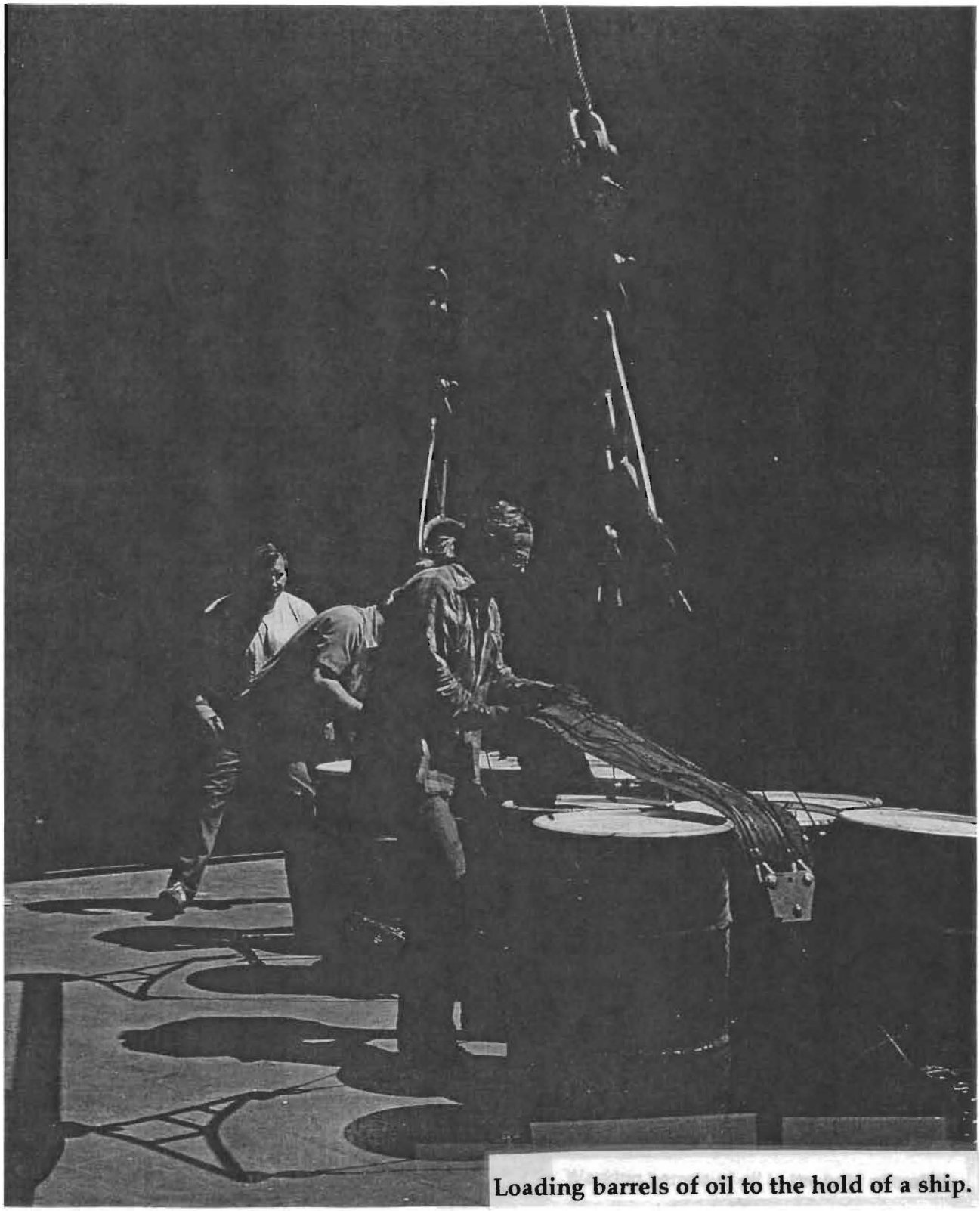




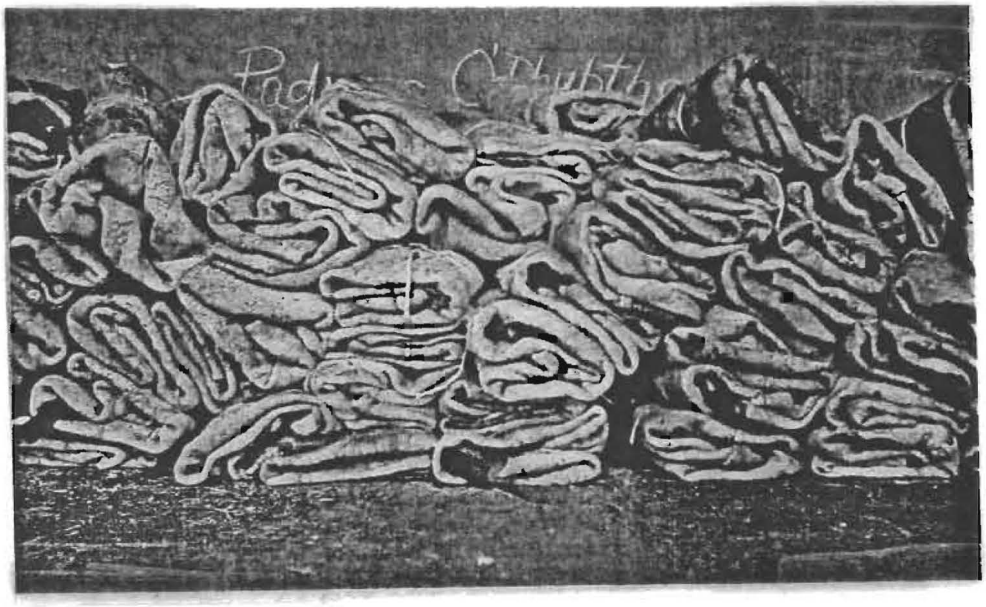
Discharge of raw sugar at C & H Sugar - Crockett, CA



During a morning coffee break on a discharge of the Port of San Francisco's weekly "paper barge".



Loading barrels of oil to the hold of a ship.

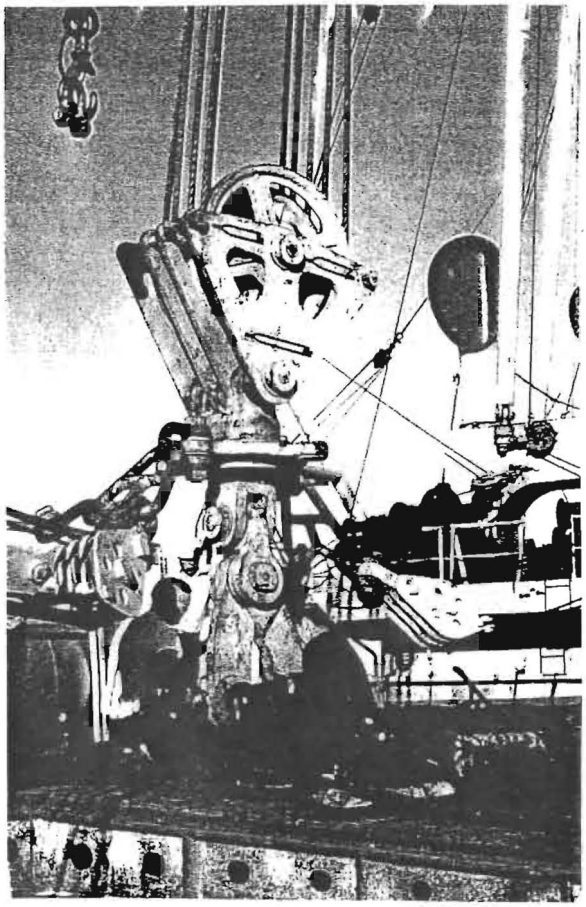


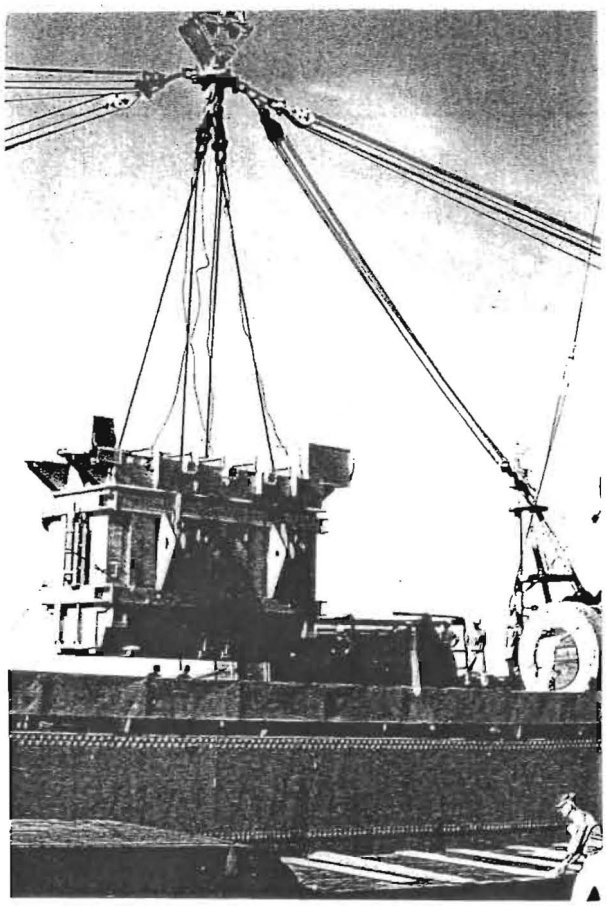
Beef hides:

Having been palletized and hoisted to a ship, these would be de-palleitized so as to then be placed in stow for the leather workers of Japan.

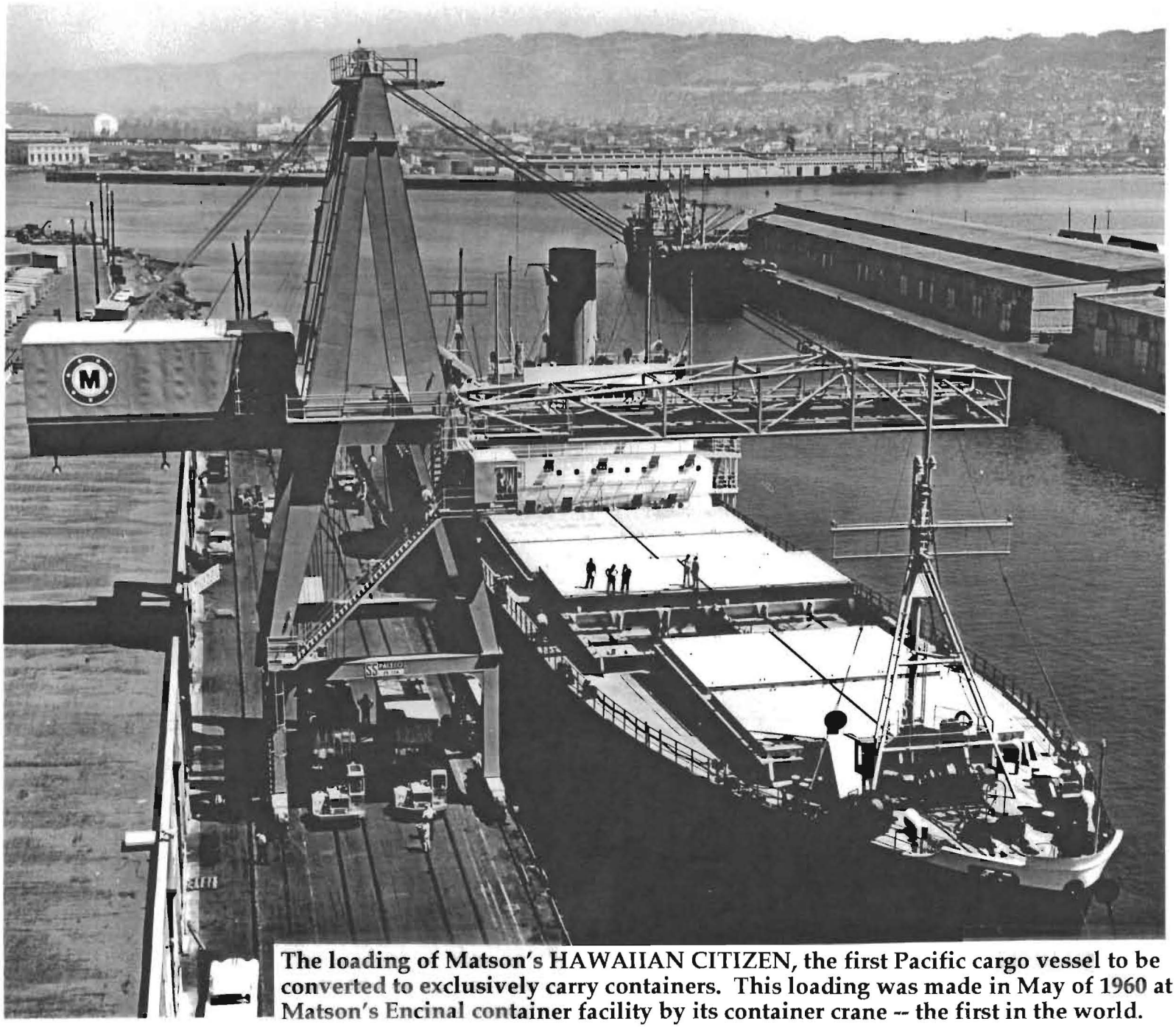
Discharged cargoes waiting for further transport.

Cargoes coming and going.

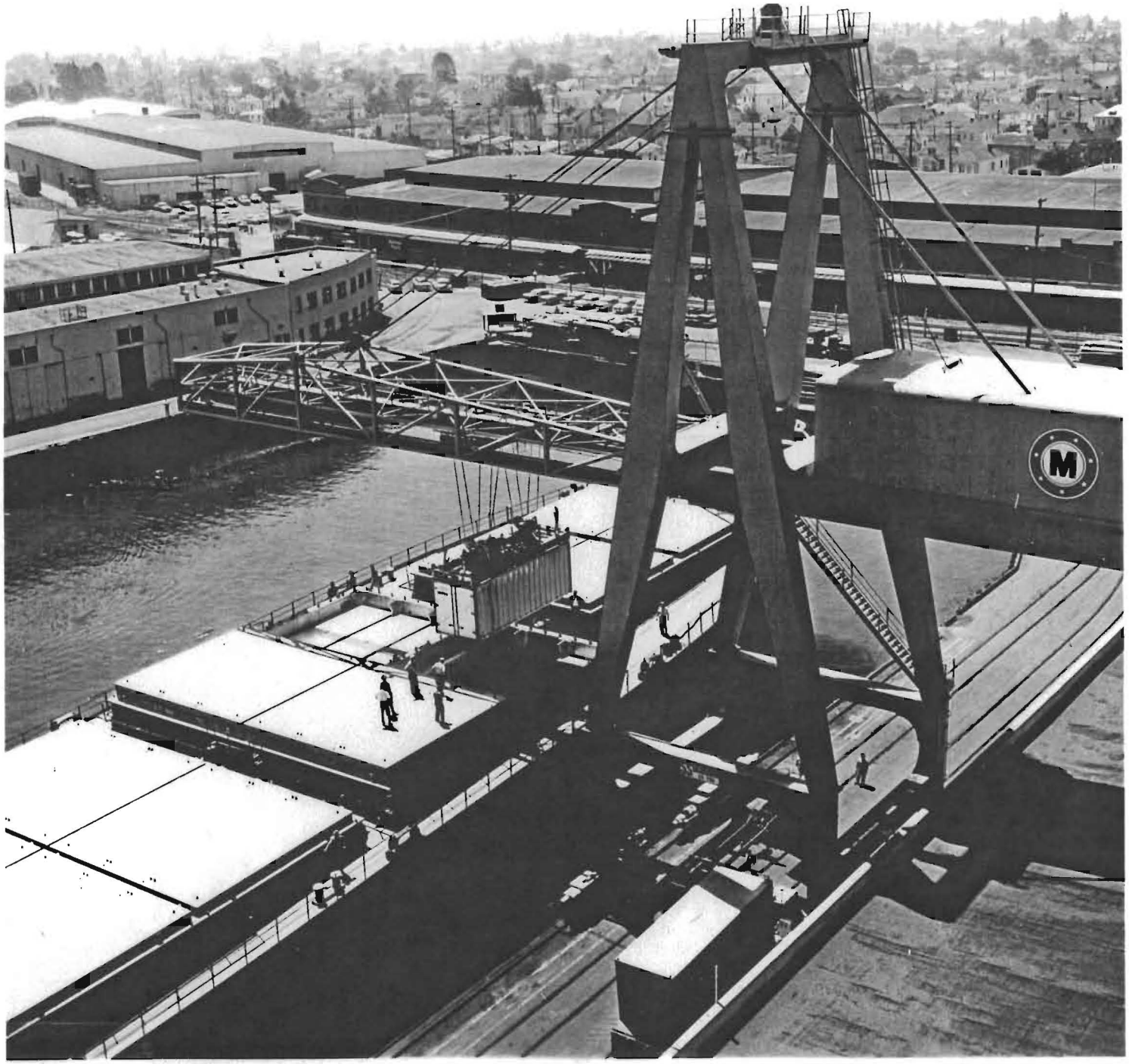




Heavy lift with ship jumbo gear



The loading of Matson's HAWAIIAN CITIZEN, the first Pacific cargo vessel to be converted to exclusively carry containers. This loading was made in May of 1960 at Matson's Encinal container facility by its container crane -- the first in the world.



Matson® NAVIGATION COMPANY

PRESS RELEASE

June 9, 1960

FOR IMMEDIATE RELEASE

SAN FRANCISCO—The first cargo ship in the Pacific to be devoted exclusively to carrying containers—Matson Lines' SS Hawaiian Citizen—has made a successful debut in Pacific Coast-Hawaii freight service.

The Hawaiian Citizen made her maiden voyage as a full container carrier on May 19, sailing from San Francisco for Honolulu with 211 dry cargo containers and 26 refrigerated containers aboard.

Conversion of the vessel from a standard C-3 cargo ship was completed at Willamette Iron and Steel Company shipyard in Portland, Ore., on April 29.

Her entry into Matson's service between the West Coast and Hawaii turned into reality the vision of Matson's planning and operating departments. The Hawaiian Citizen was the result of more than 3½ years of teamwork by researchers, draftsmen, architects and engineers, and marked a major step forward in modern cargo handling and sea transportation in the Pacific. Matson's containerization program was launched in 1956 with a thorough study designed to determine the most efficient freight handling system for the Hawaiian trade.

Containerization—the idea of the door-to-door movement of goods without repeated handling operations at intermediate points—was the answer. It promised improved service for the shipper, in effect giving him his own pipeline to his customers.

Matson's fleet of six deck-carrying C-3 type container ships launched Phase I in this pipeline system. The Hawaiian Citizen, the seventh ship in the Sealift Service, is the start of Phase II—the stowage of containers within "cells" of specially-constructed full-container ships.

(more)

The Hawaiian Citizen, a converted C-3 freighter, has a capacity for 296 aluminum containers below her weather deck and 60 more on it for a total of 356. If future conditions warrant, she will carry an additional 52 containers on her weather deck, or a total container capacity of 408.

Each container, 24 feet long, 8 feet wide, and 8½ feet high, has a capacity of more than 40,000 pounds or 1,400 cubic feet.

The key components ashore in Matson's system are the A-shaped mammoth gantry cranes that can each lift a 25-ton payload.

The cranes are at the three ports which the Hawaiian Citizen will continuously serve in its triangular route--Los Angeles, Alameda in San Francisco Bay, and Honolulu.

Each crane, incidentally, permits an inbound container to be lifted off the ship and an outbound container to be lifted on in one continuous cycle.

There are accompanying benefits to this streamlined cargo handling system that can cut as much as three days off the intransit time of cargo from the shipper to the consignee.

The full-container ship is the first to carry refrigerated containers on a regular basis--up to 72--which provide a store-door service for perishable foods.

The store-door concept of through movement of goods with the minimum of handling and loss or damage and the maximum speed and protection has already won wide acclaim.

Further, the container service tariff provides store-door pickup and delivery rates from mainland port areas to Honolulu. These rates include cargo insurance and wharfage.

In addition to the Hawaiian Citizen and the six deck-carrying container ships in the service, Matson has purchased two C-4 type vessels, now being converted by the Alabama Drydock and Shipbuilding Company in Mobile, Ala., for use as bulk sugar

(more)

and container carriers in the Hawaiian trade. These ships, the SS Californian and SS Hawaiian, are both expected to be in service by July.

The vessels are being outfitted to carry 180 containers each on deck and 10 more in their holds, where about 16,000 tons of bulk sugar will also be carried.

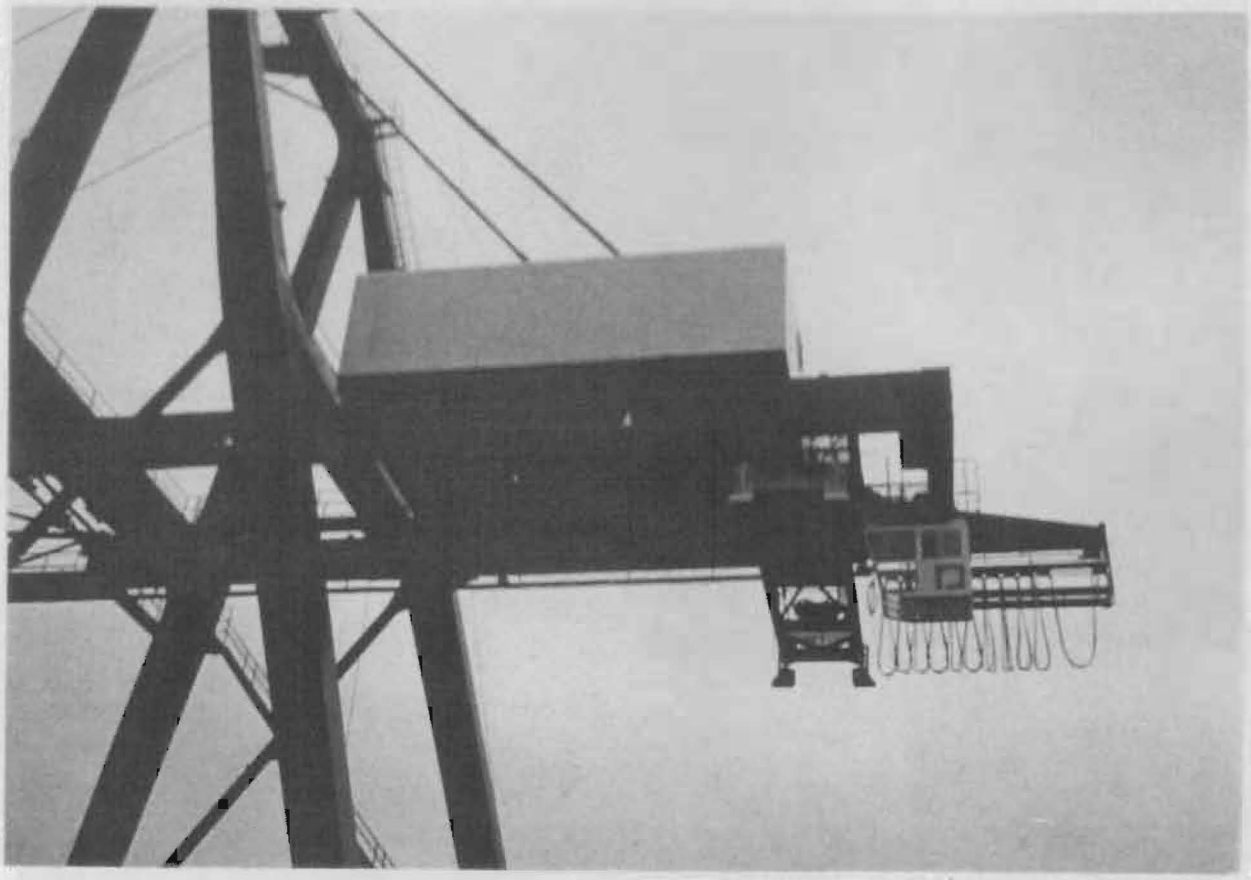
With these two ships and the Hawaiian Citizen, Matson's container fleet by mid-1960 will have a collective container-carrying capacity of more than 1,100 units at one time.

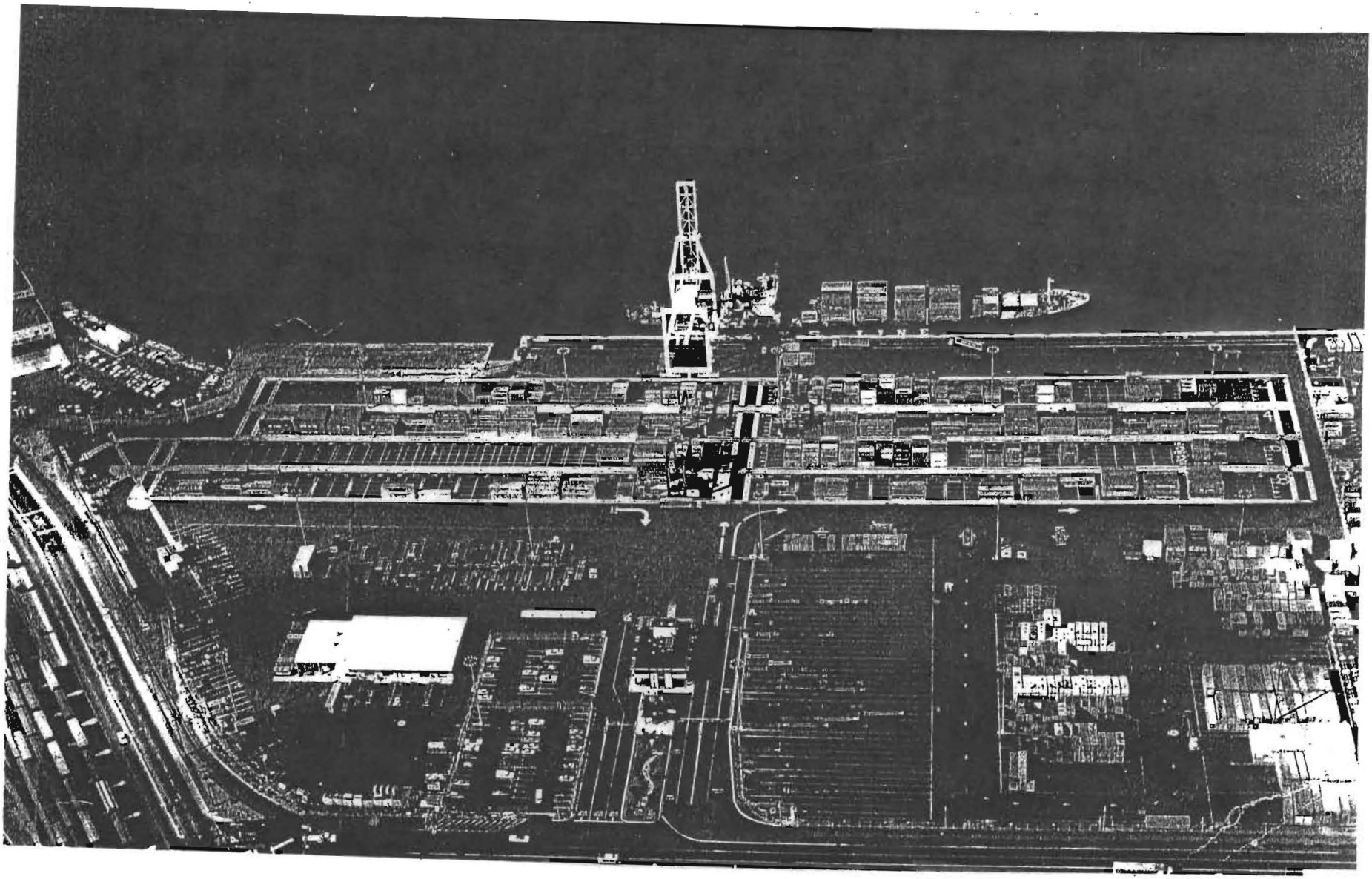
Yet containerization is still in its infancy, Matson Director of Research Foster L. Weldon predicts, however, that it "has a tremendous future as an almost revolutionary factor in the improvement of transportation economics."

The extent to which containerization achieves this future, says Mr. Weldon, "will depend on the cooperation of the whole shipping community in actively developing the basic concepts of the service."

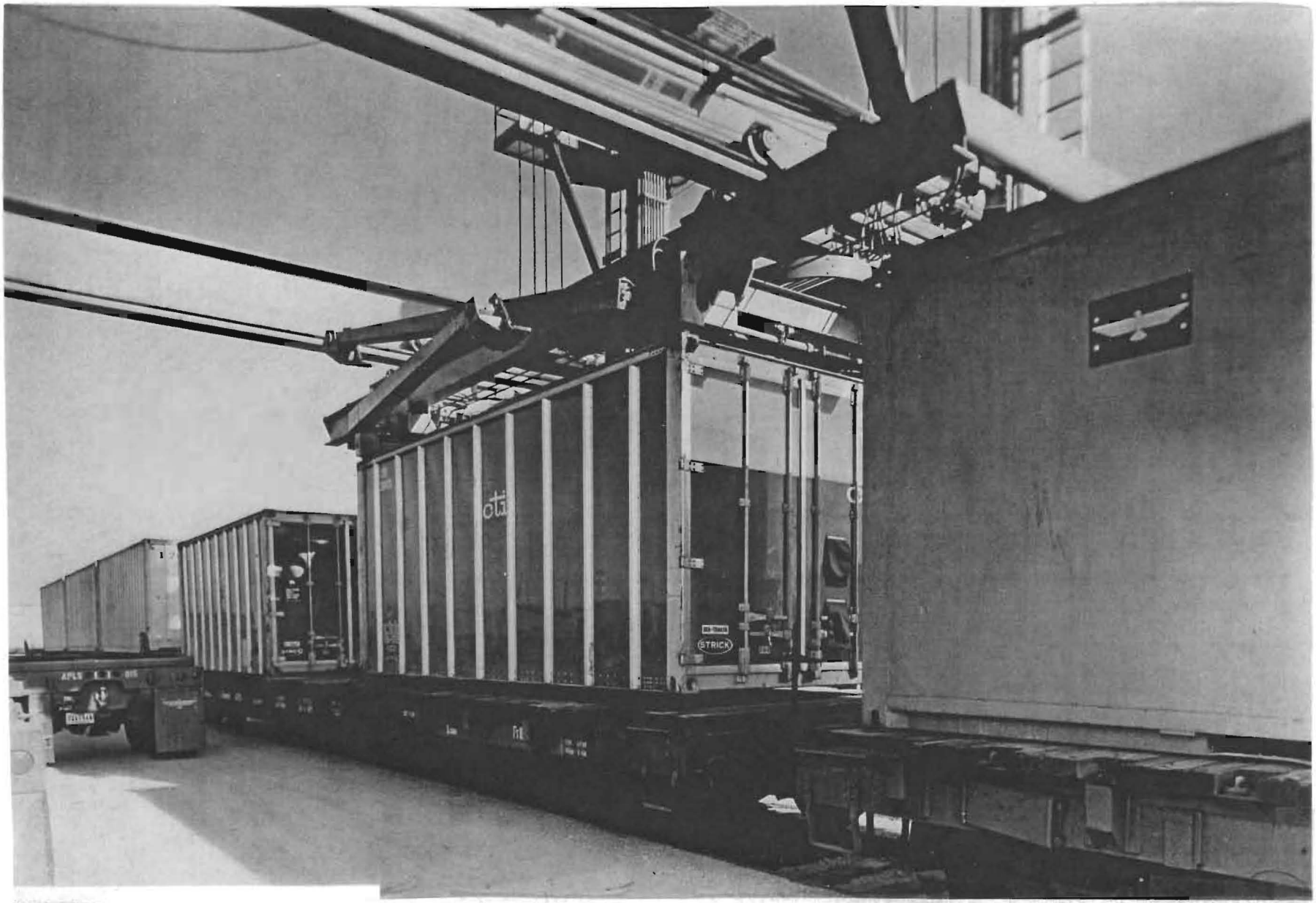
Matson's HAWAIIAN ENTERPRISE as it departed San Francisco for Honolulu on its 1969 maiden voyage.

Sea-Land's container facility in the Port of Oakland - 1969.

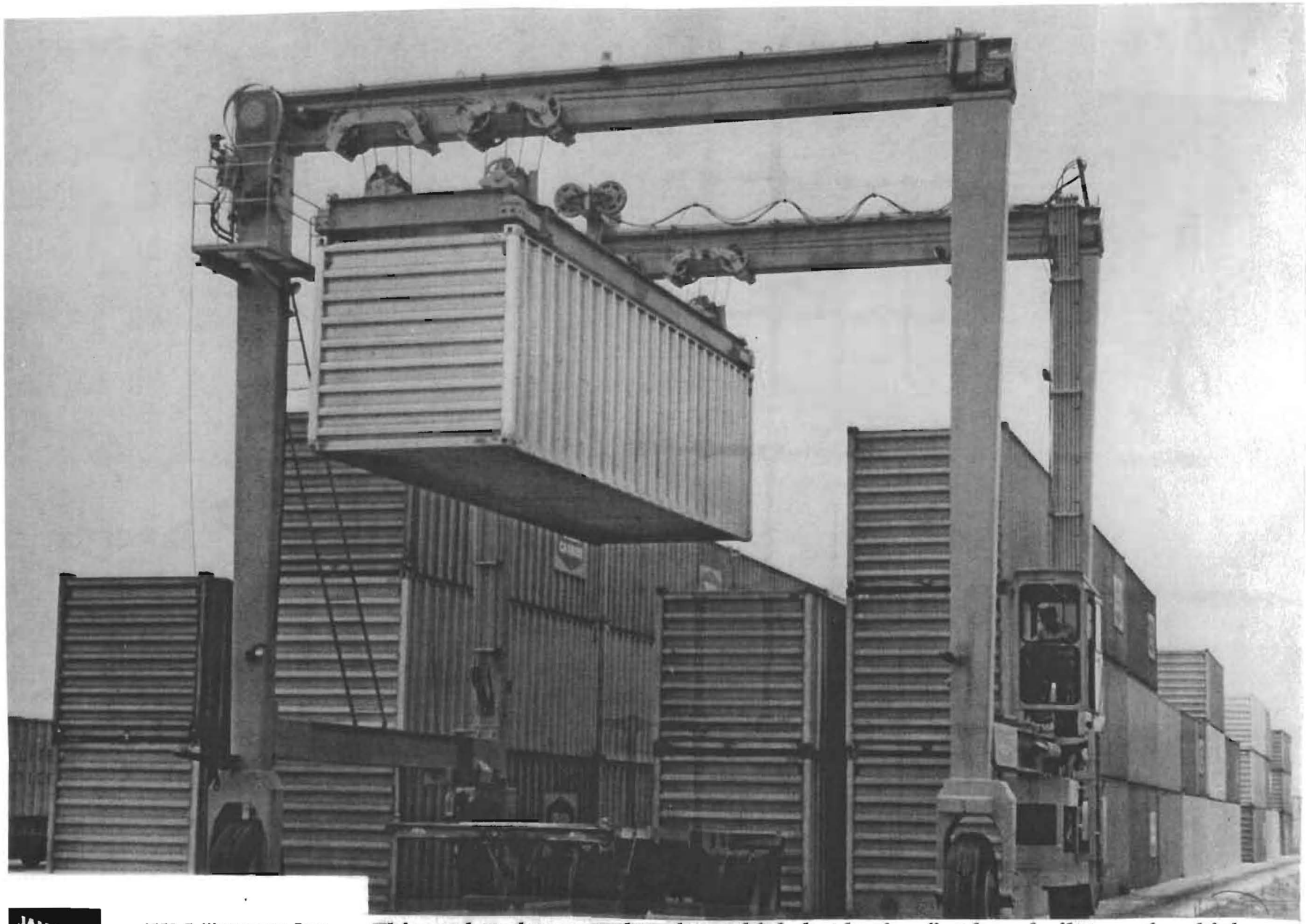




The "K" Line container facility in Oakland's "Outer Harbor" - 1974



The first container trains were assembled one container high, but west of Chicago and New Orleans -- and with some tunnels heightened- - their containers have long been two high. But because of tunnel heights, such trains in the east remained one high for a much longer time.



This yard stacker went three boxes high, but having first been built to go four high and then to go five, most such stackers have long gone six high and some today go eight high. It has been said, however, that because of the added weight thus put on the box on the ground, the limit will be nine high.

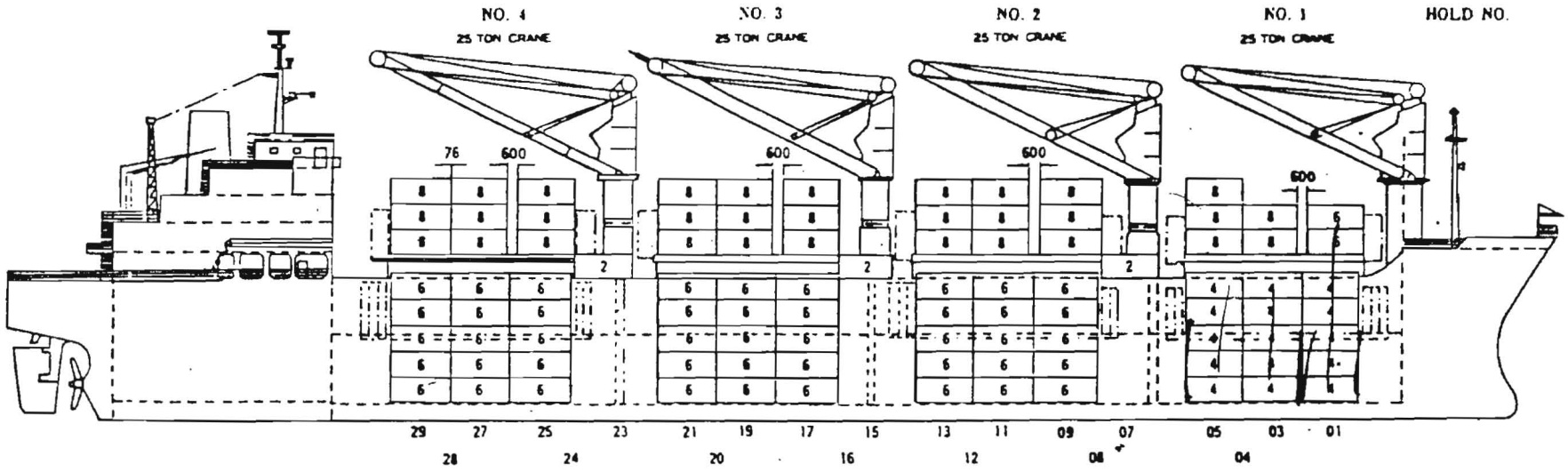
GENERAL STOWAGE PLAN

"A" LINE
ASIA MERCHANT MARINE CO., LTD.

MV HYUNDAI CON SEVEN

VOY NO. 15E PORT YOKOHAMA BERTH HPC-4

ARR. TIME DEP. TIME



■ 40 FT CTNR TO BE LOADED AT BAY 04, 12, 20, 28.

DEPARTURE CONDITION

DRAFT : F.		METER
	A.	METER
	M.	METER
G. M.		METER
ROLLING PERIOD :		SECOND
F. O.		K. TONS
D. O.		K. TONS
F. W.		K. TONS
BALLAST		K. TONS
CARGO WEIGHT		K. TONS

SHIPS PARTICULARS

• PORT OF REGISTRY : ULSAN, KOREA.
LOA : 157.93m LBP : 150.0m, BREADTH : 26.0m DEPTH : 14.0m LIGHTSHIP : 7,373.3 KT

LOADLINE	SUMMER	TROPICAL	WINTER	FRES
DRAFT.	10.017	10.225	9.809	10.236
DEADWEIGHT	23476.9 (23503.0)	24210.2 (24236.3)	22747.2 (22773.3)	23477.4 (23503.2)
DISPLACEMENT	30850.2	31583.5	30120.5	30850.7

A vessel designed and built especially to call at ports with limited or no container cranes dockside or other dockside cranes which can handle containers.

PACESETTER – PREPLAN

PRESIDENT _____

ETA _____ ETD _____

DISCHARGE PORT