



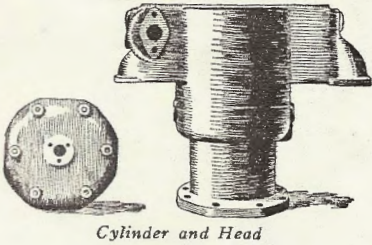
The First Marine Gas Engine

The Union Gas Engine Company has now been engaged in the manufacture of internal combustion engines for twenty-eight consecutive years. The first commercially successful marine gasoline engine was made by this company. The first reversible marine installation was a UNION. The first make and break ignition system was a UNION invention. The open crosshead cylinder and piston were first brought out by the UNION. The UNION was the first to adopt the column construction now used by practically every firm building heavy duty engines. UNION engines have always been up to date but at the same time conservative.

DESIGN

CYLINDER:

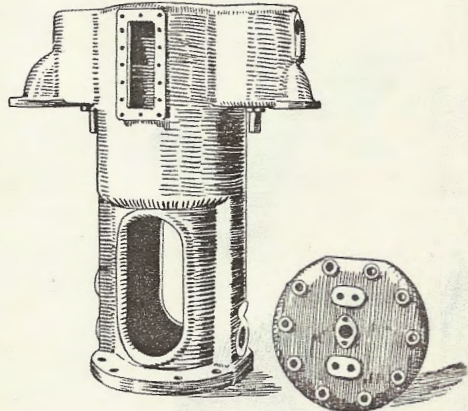
With the exception of the single and double cylinder engines, all UNION cylinders are of the "T" head type. Each cylinder is fitted with a removable head and removable valve covers. To remove a valve it is not necessary to lift a heavy cylinder head. One man can remove a UNION valve in a few minutes. Valves which are difficult to remove are seldom inspected until absolutely necessary, with the result that the engine's efficiency is greatly reduced.



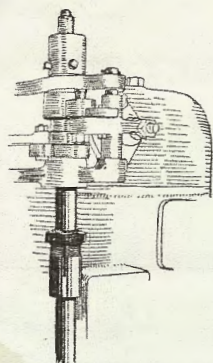
Cylinder and Head

Both cylinders and heads are thoroughly water-jacketed, the larger cylinders being provided with a by-pass to carry circulating water from the head to the cylinder jacket without passing through the gasket.

UNION engines of 80 H.P. and above are fitted with the UNION "Open Crosshead" cylinders and pistons. This construction allows a direct and visible method of lubricating the piston pin from the force feed oiler; it also allows easy and quick adjustment of the piston pin brasses without removing the cylinder head and piston. Hot piston pin brasses are unknown in these engines, due to the fact that the piston pin is removed from the heat of the piston head, and also because cool air is constantly being drawn through the sides of the cylinder and piston. That part of the cylinder which acts as a crosshead guide is water jacketed. This jacket serves a double purpose—cooling the lower walls



Open Crosshead Cylinder



Camshaft Coupling

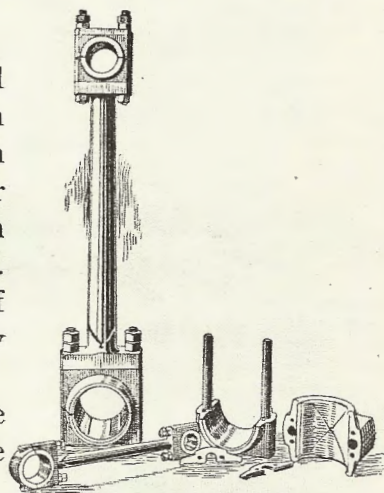
of the cylinder, and also collecting mud and sediment from the main water-jacket. Hand holes and plates for the removal of this sediment are provided.

To facilitate the removal of cylinder heads on our double cylinder engines the vertical camshafts are fitted with one-way couplings, so that it is not necessary to disturb any of the ignition or valve gear in order to remove a cylinder head. In re-assembling, the coupling can be put together only one way, making it impossible to set the valves and ignition wrong.

CONNECTING RODS:

UNION connecting rods are turned from the best quality of forged open hearth steel. Each end is fitted with a marine type bronze box, the upper half of the lower box being lined with the best obtainable anti-friction metal. Both brasses are fitted with shims of varying thicknesses, to provide for easy adjustment.

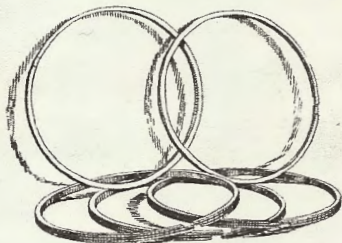
Engines of 7 H.P. and below are equipped with heavy "I" beam bronze rods.



Large and Small Connecting Rods

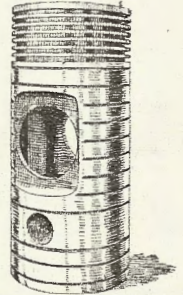
PISTONS:

All UNION pistons are unusually long, and are accurately fitted to their respective cylinders. They are provided with oil rings which distribute the oil evenly, and in the smaller engines not using the "open crosshead" piston special oil rings and grooves pick up the oil from the cylinder walls and carry it direct to the piston pin brasses.



Piston Rings

UNION piston rings are made a perfect fit in the cylinder by being turned a second time to the exact cylinder diameter after having been split at the joint and compressed. Rings split after being turned naturally are not perfectly round when compressed to fit the cylinder bore and consequently they are not gas-tight. Our rings are made with step joints and oil grooves.



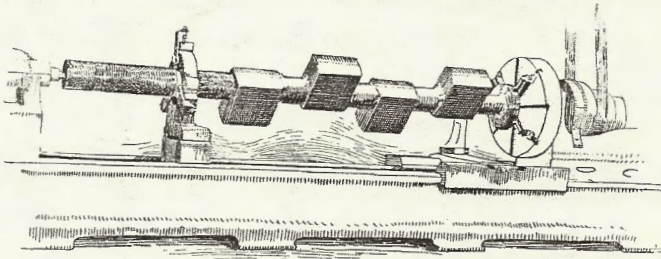
*Open Crosshead
Piston*

BEARINGS:

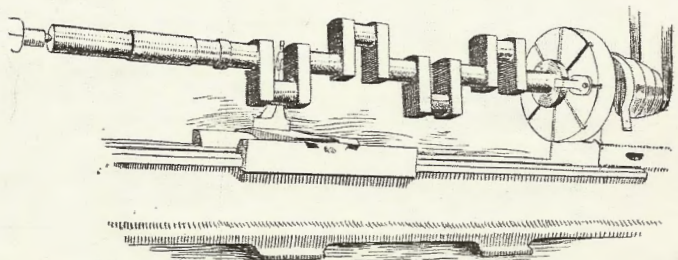
Our connecting rod and main bearings are lined with the highest grade of anti-friction metal, scraped to a true and smooth surface. Oil grooves are provided to insure an even distribution of oil.

CRANK SHAFTS:

All UNION crank shafts are cut from solid billets of high tensile strength. Each billet must be tested by Lloyd's, and must bear their test mark before being accepted by us. Our crank shafts are exceptionally heavy, with very large bearing surfaces.



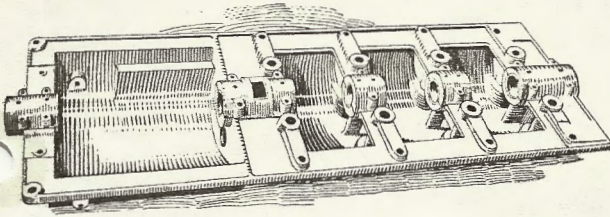
Crank Shaft (first stage)



Crank Shaft (finished)

BASE:

UNION engines are of the "open crank case" type. This design allows easy access to all working parts for inspection and adjustments. A gas engine must have a certain number of working parts, and to hide some of these parts in an enclosed crank case with small hand holes makes them inaccessible, and does not in any way simplify



Base

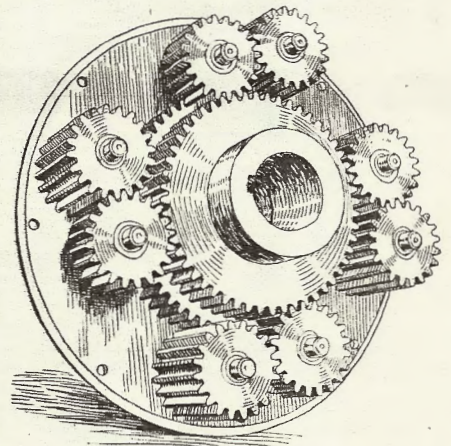
the engine. Parts hidden in this way seldom receive attention until a breakage occurs.

UNION crank cases are fitted with light splash plates which can be removed in a moment, leaving all working parts exposed to view. A flange running around the base collects and drains all surplus oil into a pit under the reverse gear, where it may be removed from time to time.

REVERSE GEAR AND CLUTCH:

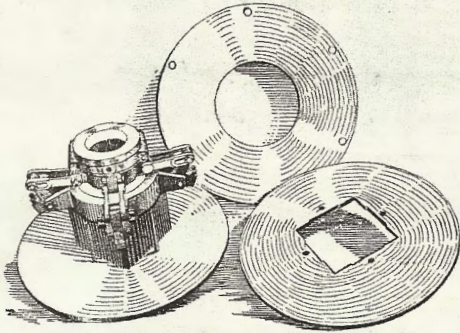
One of the most important parts of a marine gas engine is the reversing clutch and reversing clutch mechanism. A failure of the reverse or clutch might be the cause of very serious damage. All UNION gear pots are of the spur gear type. When going ahead the engine is coupled through the gear pot direct to the propeller shaft, the gears being used only when reversing. The gears are forged of high carbon steel, with bronze bushings, the entire set running in a bath of oil.

On the smaller engines up to and including 35 H.P., we use a clutch



Reverse Gears

of the one dog expanding ring type. The friction surface is exceptionally large, reducing wear to a minimum. Adjustment for wear can be made with an ordinary monkey wrench, no special tools being required.

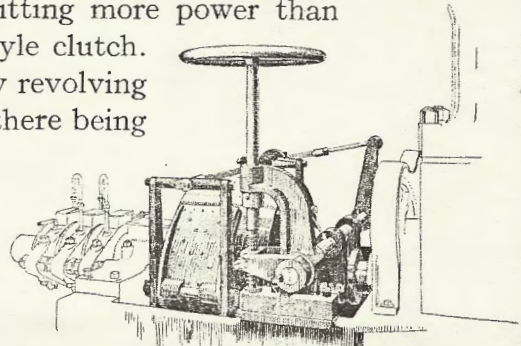


Clutch (disc type)

Engines of 50 H.P. and over are fitted with the UNION multiple disc clutch. This type of clutch is very gradual in its engagement, is extremely simple, and is capable of transmitting more power than the old style clutch.

Adjustment is made by simply revolving a ring on a threaded sleeve, there being no individual dogs requiring delicate adjustment.

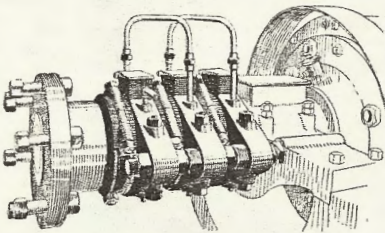
The "ahead" and "astern" motions are controlled by a lever or a wheel, according to the engine size.



Clutch and Reverse Control

THRUST BEARINGS:

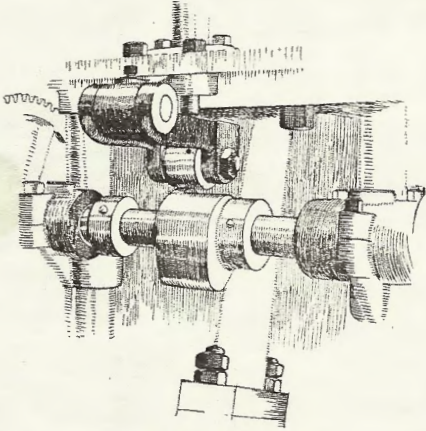
The forward and astern thrusts of the propeller are taken care of by a thrust bearing located at the after end of the gear pot bearing. The small engines use a ball thrust, the medium sizes use a roller thrust, and the large sizes use a hollow water-cooled type such as has been used for years in marine steam engine practice. We have found from experience that, due to its larger bearing surfaces, the roller thrust is better suited for the medium powered engines than the ball thrust.



Thrust Bearing (water cooled)

VALVES:

UNION engines are fitted with exceptionally large valves, allowing easy passage of the gases entering and leaving the cylinder. The valves are returned to their seats by springs of large diameter and ample length. Each valve stem works in a removable bushing, which, when worn, may be easily replaced. The side thrust of the cam is taken care of by a valve lifter lever and roller, absolutely no side thrust being transmitted to either valve lifter guide or to the valve stem. This feature, combined with the above mentioned bushing, is found on very few engines. On engines having a cylinder bore of fifteen inches or over, water-cooled exhaust valves are used.

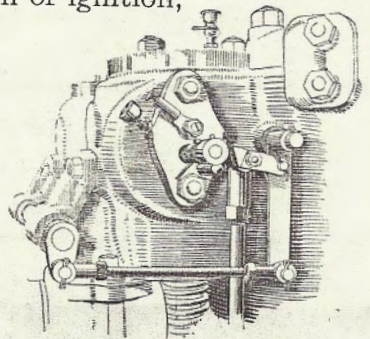


Valve Lifter Lever

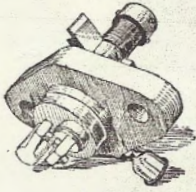
IGNITION:

Except upon special order, UNION engines are equipped with the make and break system of ignition, current being supplied by a battery of Edison primary cells for starting, and by a magneto for steady running.

The ignitor is of very heavy and substantial design. The number of parts is reduced to a minimum, and the spring adjustments are very simple. The insulation used is an imported stone composition which is not subject to short-circuiting as is mica when used with the present low grades of fuel. Unless intentionally broken, this insulation should last indefinitely. The contact points are made of special hard heat-resisting metal.



Ignitor and Advance Lever



Ignitor

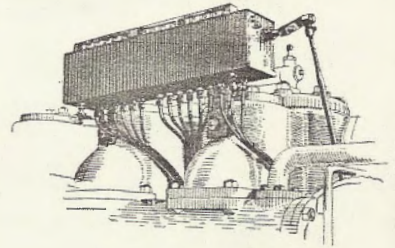
The ignitors are accessibly located for easy removal. Being in the path of the incoming gas, they are kept comparatively cool and are always well supplied with fresh gas.

GOVERNORS:

UNION governors are of simple design, mechanically driven and direct-connected to a balanced throttle valve. The clutch and reverse may be thrown in and out at will, without affecting the engine speed. On our stationary engines the regulation is very close, the variation in speed being about two per cent from no load to full load.

LUBRICATION:

Except on the smaller sizes, UNION engines are lubricated by means of a mechanical force feed oiler. This oiler is positively driven, thus doing away with slipping and broken belts. Separate oil pipes lead to each cylinder and to all of the principal bearings, delivering oil under pressure. The lubricator will continue forcing oil into a clogged oil pipe until a pressure of about eighty pounds is reached, this pressure being sufficient to dislodge all dirt or other obstructions. The UNION system of lubrication is entirely automatic; when the engine starts the oiler starts; when the engine stops the oiler stops; and at full load when more oil is needed the oiler automatically increases the supply.



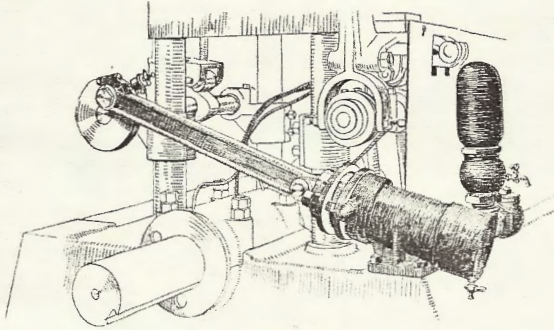
Positive Drive Lubricator

The crank-pin bearings are lubricated by means of centrifugal oil rings, cut in the crank-web, connecting with oil holes leading out to the center of the crank-pin. In addition, as a safeguard, oil collecting grooves are cut on the connecting rods, which catch oil coming down the rod and lead it to the crank-pin.

CIRCULATING PUMP:

Water for cooling is furnished by a large plunger type of pump. This pump is positively driven from the camshaft at half engine speed. Due to the low speed, wear and noise are greatly reduced. Check valves of extra large diameter and small lift are fitted, eliminating valve hammer.

Our early experience taught us that centrifugal pumps were not dependable for small boats. In heavy weather the pump suction is often out of water



Circulating Pump

and sucking air. A centrifugal pump under these conditions loses its priming, and consequently will not pump until primed again. A plunger pump will pick up its water regardless of weather conditions. Another objectionable feature of the centrifugal pump is, that in order to secure the

proper speed, a friction drive from the flywheel must be employed. This drive is not positive, a small amount of water or oil on the flywheel causing slipping of the friction pulley.

INLET MANIFOLD:

All of our multi-cylinder engines are now equipped with our new universal inlet manifold, allowing the engine to run on gasoline, benzine, naphtha, kerosene, and lower grades of distillate. An engine running on any one of the above mentioned fuels may be switched over to any one of the other fuels without even stopping. In some territories the price of kerosene is comparatively stable, while gasoline and distillate may fluctuate above and below the price of kerosene.



In such localities an engine fitted with our manifold can always operate on the fuel having the lowest market value.

Another advantage of this manifold is its ability to furnish a uniformly perfect mixture regardless of engine speed. Our engines can be run at a speed of from sixty to eighty-five revolutions per minute with or without load, for an hour or more, and then suddenly speeded up without missing, choking or belching out clouds of black smoke. We do not believe that there is another gas engine made that can be controlled so perfectly under all conditions, regardless of speed or load, as the present type of UNION.

STARTING:

Large UNION engines are fitted with a self-starter of the compressed air type. To simplify manual starting means are provided for relieving the compression, so that with the aid of the hand starting bar it is a very simple operation to start even our large engines.

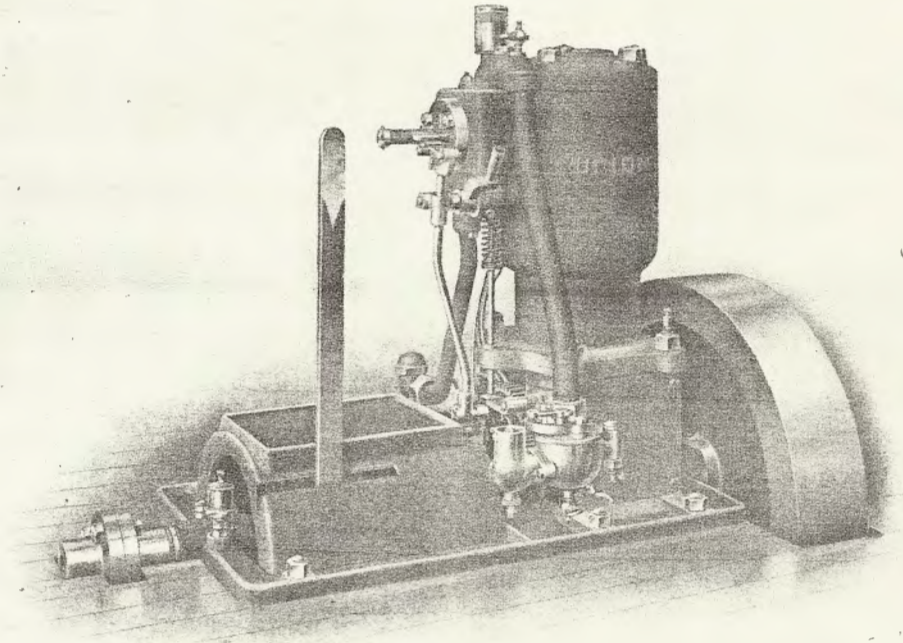
POWER RATING:

It must be borne in mind when comparing the UNION power ratings and weights with those of other engines that the UNION is under-rated, or, in other words, the purchaser of a UNION engine receives a larger, more powerful and longer lived piece of machinery than he would if buying an engine with no margin of power over its regular rating.

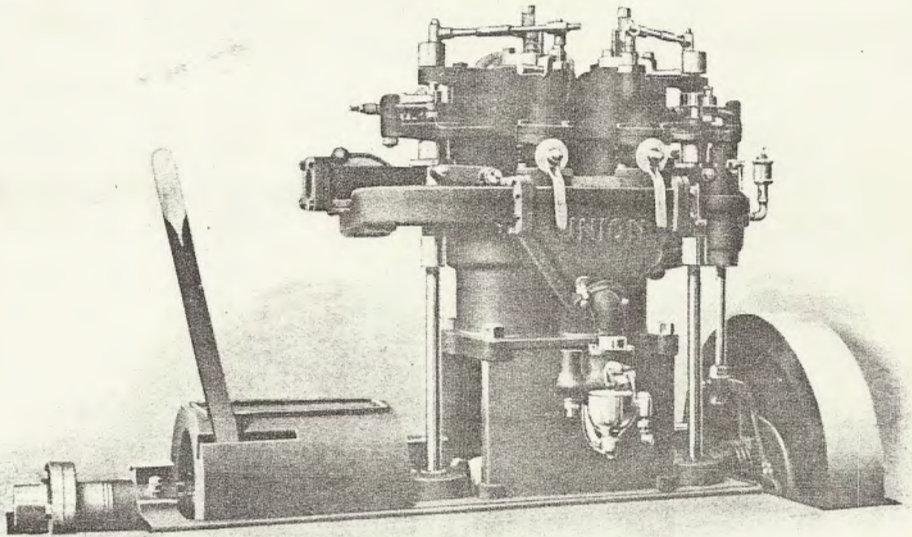
SPECIAL EQUIPMENT:

When so ordered, we are prepared to supply engines equipped to suit special requirements, provided that in our opinion the necessary changes will in no way impair the engine's efficiency.

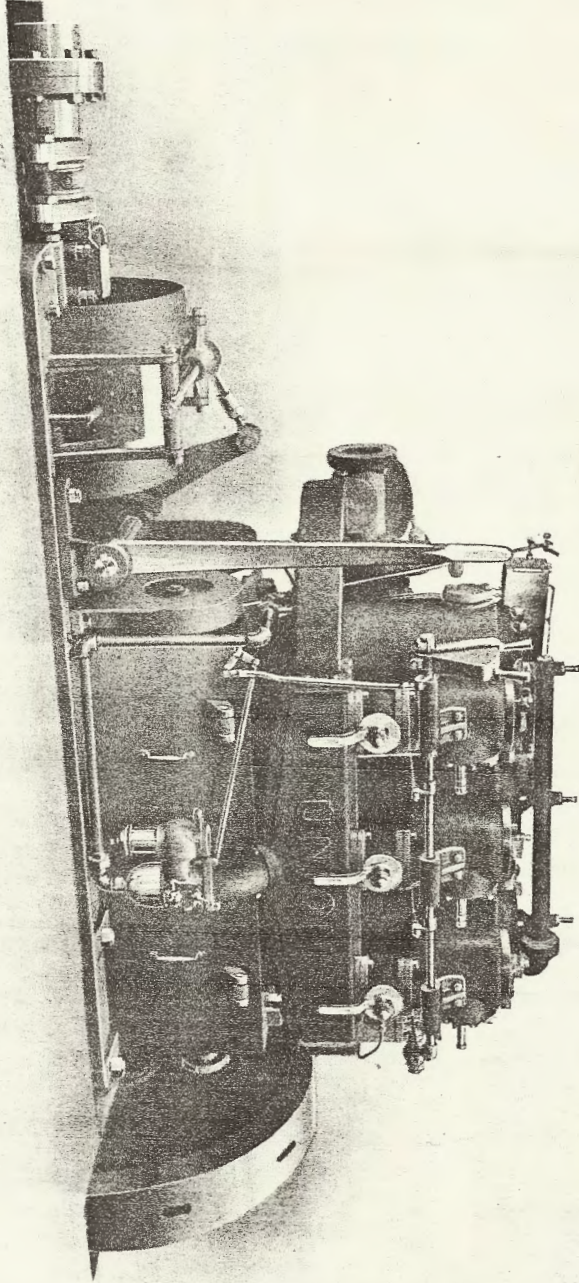
UNION
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SINGLE CYLINDER — 4 and 5 H. P.

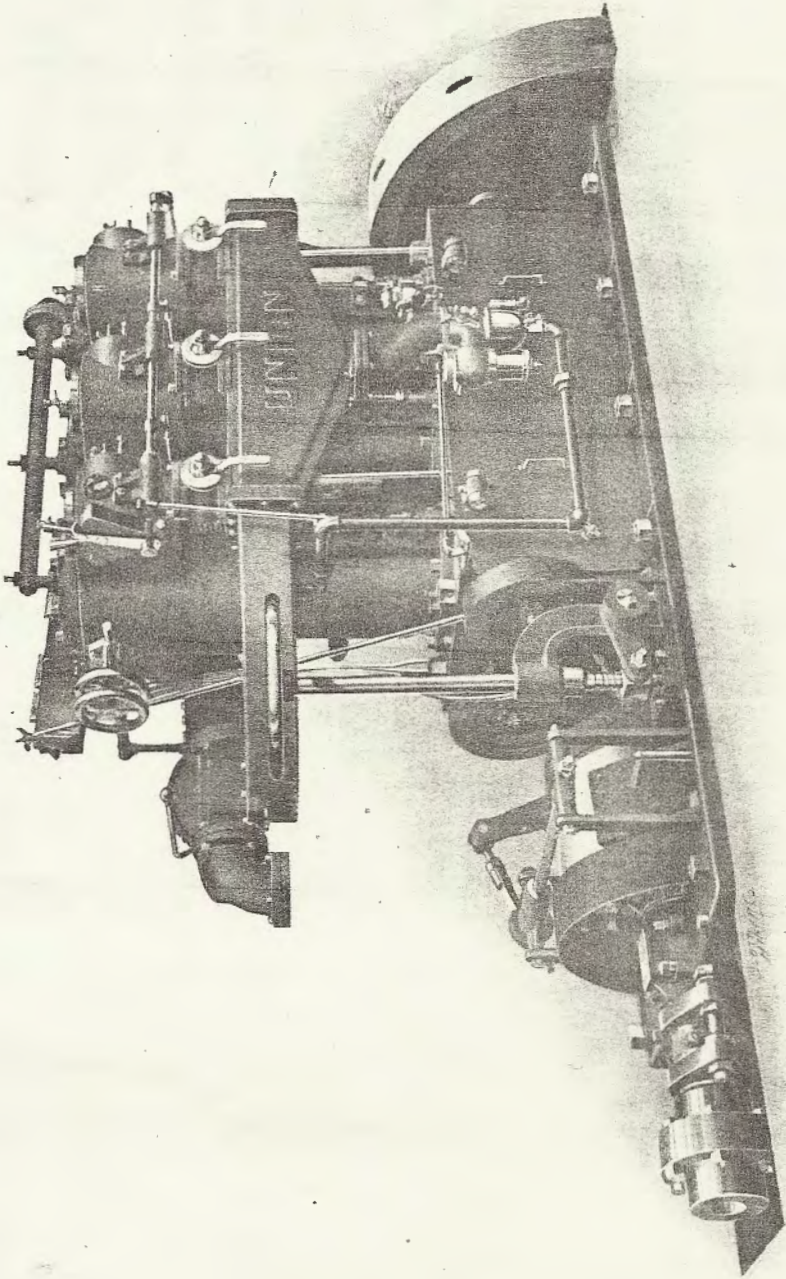


DOUBLE CYLINDER — 12 to 40 H. P.



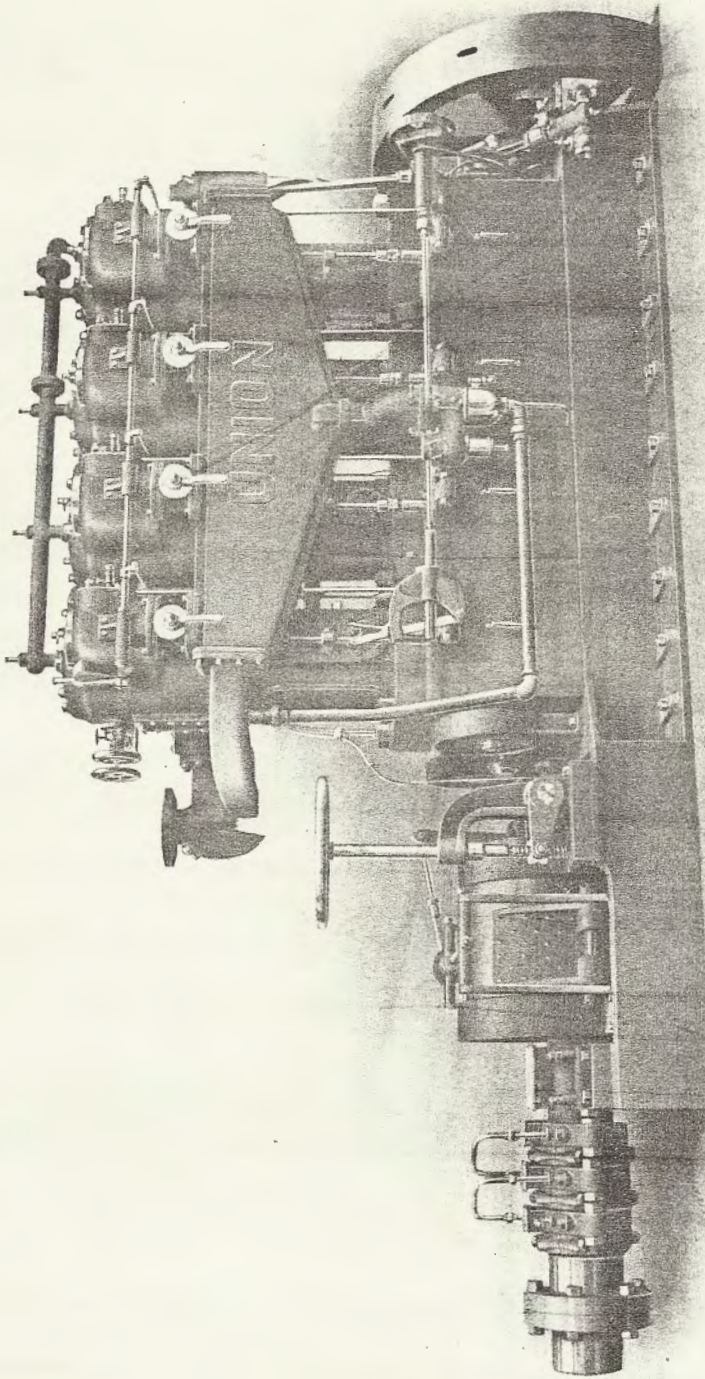
THREE CYLINDER — 25 to 60 H. P.

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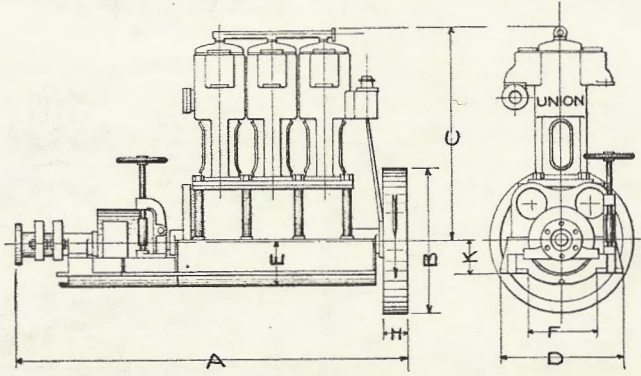
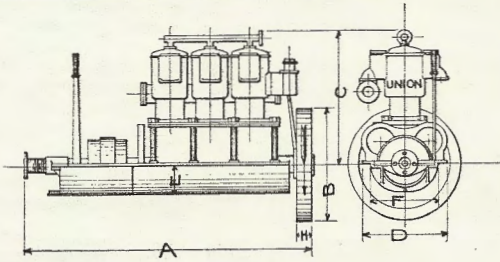
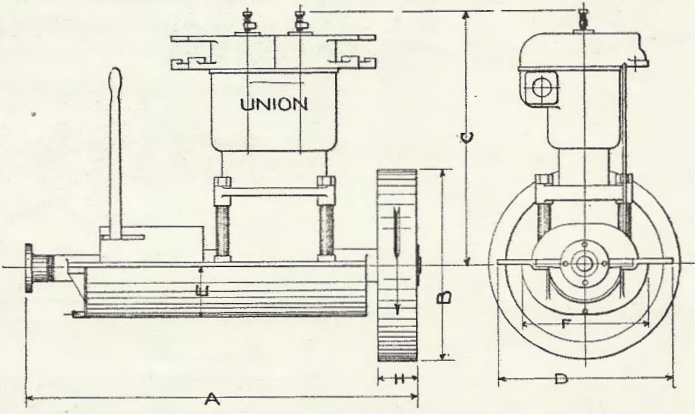
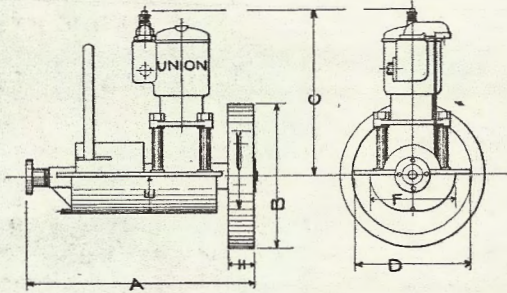
THREE CYLINDER HEAVY DUTY OPEN CROSSHEAD TYPE — 80 to 150 H. P.

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FOUR CYLINDER HEAVY DUTY OPEN CROSSHEAD TYPE — 100 to 250 H. P.

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GENERAL DIMENSIONS OF UNION MARINE ENGINES

H. P.	Cyls.	A	B	C	D	E	F	H	K
4	1	2'-11 $\frac{1}{8}$ "	20 "	2'- 0 $\frac{7}{8}$ "	16 $\frac{1}{2}$ "	5 "	12 "	4 "	*
5	1	3'- 0 "	22 "	2'- 1 $\frac{3}{4}$ "	17 "	5 $\frac{3}{8}$ "	12 "	4 $\frac{1}{2}$ "	
7	2	3'- 5 $\frac{3}{8}$ "	17 "	20 $\frac{1}{2}$ "	16 "	5 "	12 "	2 $\frac{3}{4}$ "	*
8	2	3'-11 $\frac{1}{2}$ "	22 "	2'- 4 $\frac{7}{8}$ "	20 "	6 "	10 "	4 "	4 $\frac{1}{2}$ "
10	2	4'- 1 "	20 "	2'- 2 "	18 "	5 $\frac{3}{4}$ "	14 "	4 "	*
12	2	4'- 8 "	2'- 0 "	2'- 9 "	22 "	6 "	12 "	4 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "
16	2	5'- 1 $\frac{3}{4}$ "	2'- 3 "	3'- 2 $\frac{1}{2}$ "	2'- 0 "	7 "	16 $\frac{1}{2}$ "	5 "	*
20	2	5'-11 $\frac{1}{8}$ "	2'-10 "	3'- 6 "	2'- 2 "	7 $\frac{1}{2}$ "	18 "	6 $\frac{1}{2}$ "	*
30	2	6'-10 $\frac{3}{4}$ "	3'- 6 "	4'- 0 "	2'-10 "	8 $\frac{7}{8}$ "	18 "	7 "	6 $\frac{1}{2}$ "
40	2	7'-10 "	3'- 4 "	4'- 3 "	3'- 4 "			9 "	12 "
25	3	5'-11 $\frac{1}{2}$ "	2'- 4 "	2'- 7 $\frac{1}{2}$ "	21 "	7 "	16 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "	*
35	3	6'-11 $\frac{1}{4}$ "	2'- 8 "	3'- 0 $\frac{1}{2}$ "	2'- 0 "	8 $\frac{1}{2}$ "	20 $\frac{1}{2}$ "	4 "	*
50	3	8'- 9 $\frac{1}{4}$ "	3'- 4 "	3'-10 "	2'-10 "	11 $\frac{1}{2}$ "	28 "	7 "	*
60	3	8'- 9 $\frac{1}{4}$ "	3'- 6 "	4'- 1 $\frac{1}{2}$ "	2'-10 "	11 $\frac{1}{2}$ "	28 "	7 "	*
80	3	9'- 3 $\frac{1}{4}$ "	3'-10 "	5'- 0 $\frac{1}{4}$ "	3'- 0 "	12 "	29 $\frac{1}{2}$ "	8 "	*
100	3	12'- 2 $\frac{3}{4}$ "	4'- 6 "	6'- 5 "	3'-10 "	16 "	2'- 0 "	9 "	12 "
125	3	13'- 1 $\frac{1}{4}$ "	4'- 8 "	6'- 7 $\frac{1}{4}$ "	4'- 2 "	18 $\frac{1}{4}$ "	3'- 6 $\frac{1}{2}$ "	8 "	*
150	3	14'- 8 "	5'- 4 "	7'-10 "	4'- 7 "	18 "	22 "	11 "	16 "

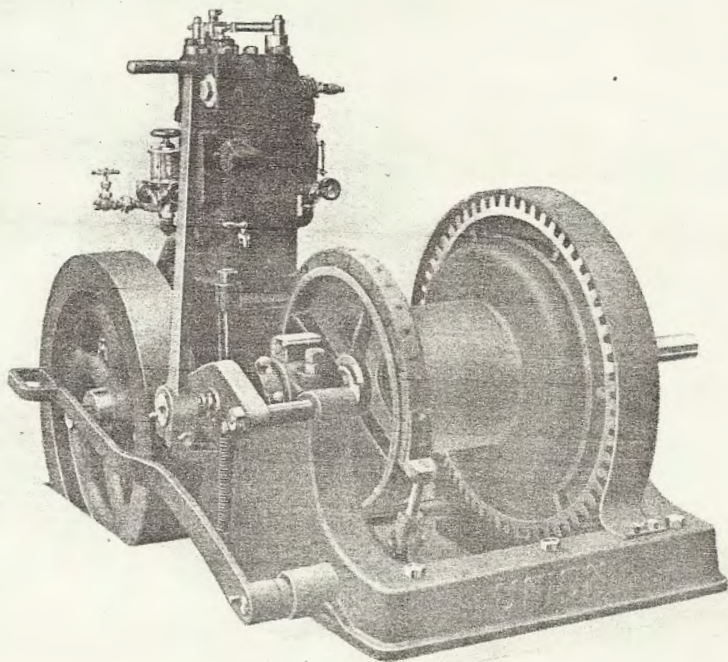
Data for engines over 150 H.P. furnished on application.

DETAILS

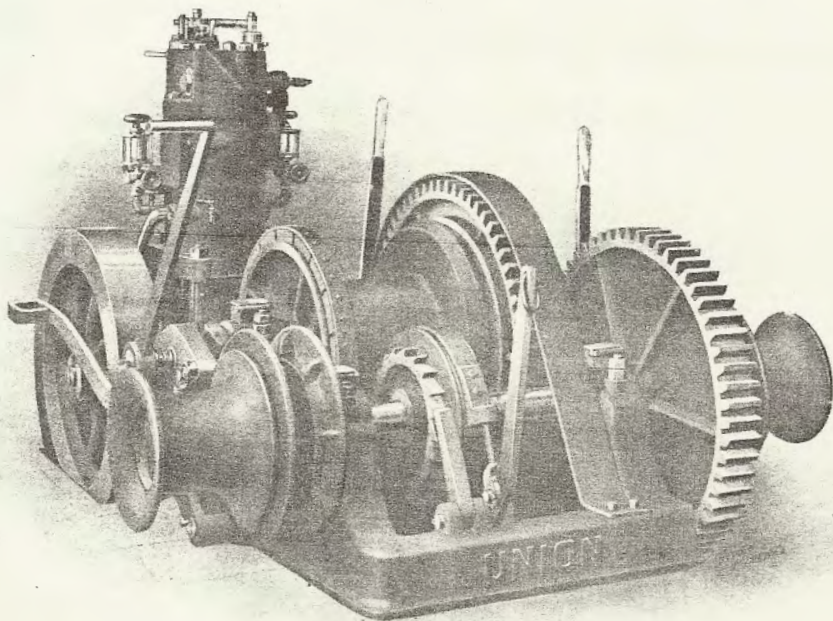
Horse Power	No. of Cyls.	Rev. per Min.	Diameter Propeller	Diameter Bronze Propeller Shaft	Diameter Steel Prop. Shaft over Bronze Bushing	Length Prop. Shaft	Length Inter. Shaft	Approx. Net Weight	Approx. Shipping Weight	Approx. Shipping Measurement, Cu. Ft.
4	1	400	18"	1 "		8'-0"	None	530	910	30'
5	1	400	21"	1 $\frac{1}{4}$ "		8'-0"	"	640	1070	31'
7*	2	600	21"	1 $\frac{1}{4}$ "		8'-0"	"	500	850	30'
8	2	500	22"	1 $\frac{1}{4}$ "		8'-0"	6'-0"	1150	1610	52'
10*	2	450	24"	1 $\frac{1}{4}$ "		8'-0"		850	1310	43'
12	2	400	26"	1 $\frac{1}{2}$ "		8'-0"	6'-0"	1290	1700	64'
16	2	400	28"	1 $\frac{1}{2}$ "		8'-0"	6'-0"	1750	2400	69'
20	2	360	34"		2 $\frac{1}{2}$ "	8'-0"	6'-0"	2400	3000	98'
30	2	300	36"		3 "	8'-0"	8'-0"	4265	5400	144'
40	2	290	40"		3 $\frac{1}{4}$ "	12'-0"	12'-0"	5800	7700	231'
25	3	500	30"	1 $\frac{3}{4}$ "		8'-0"	8'-0"	1925	2800	83'
35	3	450	38"		2 $\frac{1}{2}$ "	10'-0"	10'-0"	3250	4100	112'
50	3	325	44"		3 $\frac{1}{2}$ "	12'-0"	10'-0"	7000	8500	206'
60	3	320	46"		3 $\frac{1}{2}$ "	12'-0"	10'-0"	7400	8900	220'
80	3	310	48"		3 $\frac{3}{4}$ "	12'-0"	10'-0"	9500	11475	266'
100	3	280	To suit		4 $\frac{1}{2}$ "	To suit	To suit	17000	19600	388'
125	3	260	"		5 $\frac{1}{4}$ "	"	"	23200	30000	557'
150	3	225	"		5 $\frac{3}{4}$ "	"	"	28000	35500	651'

*Medium weight.

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UNION HOIST



UNION WINDLASS

HOIST DETAILS

Horse Power.....	3	6	9	16	25	30
Number of Cylinders.....	1	1	1	2	2	2
Revolutions per Minute.....	600	400	400	400	280	280
Capacity of Hoist in pounds, direct lift.....	500	1200	1600	2400	3000	3600
Max. Number of Feet of Cable Drum will hold...	400	375	675	1250	1400	1400
Diameter of Cable.....	3/8"	1/2"	1/2"	5/8"	3/4"	3/4"
Cable Speed in Feet per Minute.....	100	100	130	150	185	185
Drum—Diameter and Face.	5'x11 1/2"	10'x9 1/2"	12'x14"	20'x17 1/2"	22'x19"	22'x19"
Drum—Rev. per Min.....	80	38	32	25	26	26
Net Weight.....	725	1675	2905	3758	8000	8600
Shipping Weight.....	995	2075	3408	4200	8550	9200
Weight of Heaviest Piece...	230	360	1000	528	1020	1068
Floor Space.....	3'-5"x2'-3"	3'-6"x3'-9"	4'-6"x4'-8"	5'-3"x5'-8"	6'-9"x7'-0"	6'-9"x7'-6"

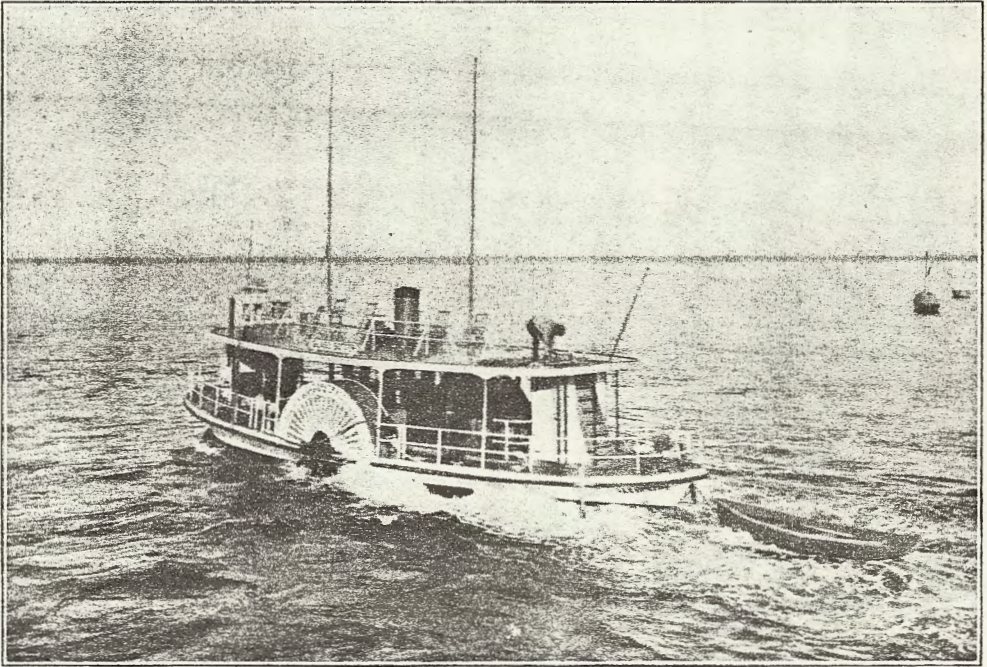
Data for Hoists over 30 H.P., on application.

WINDLASS DETAILS

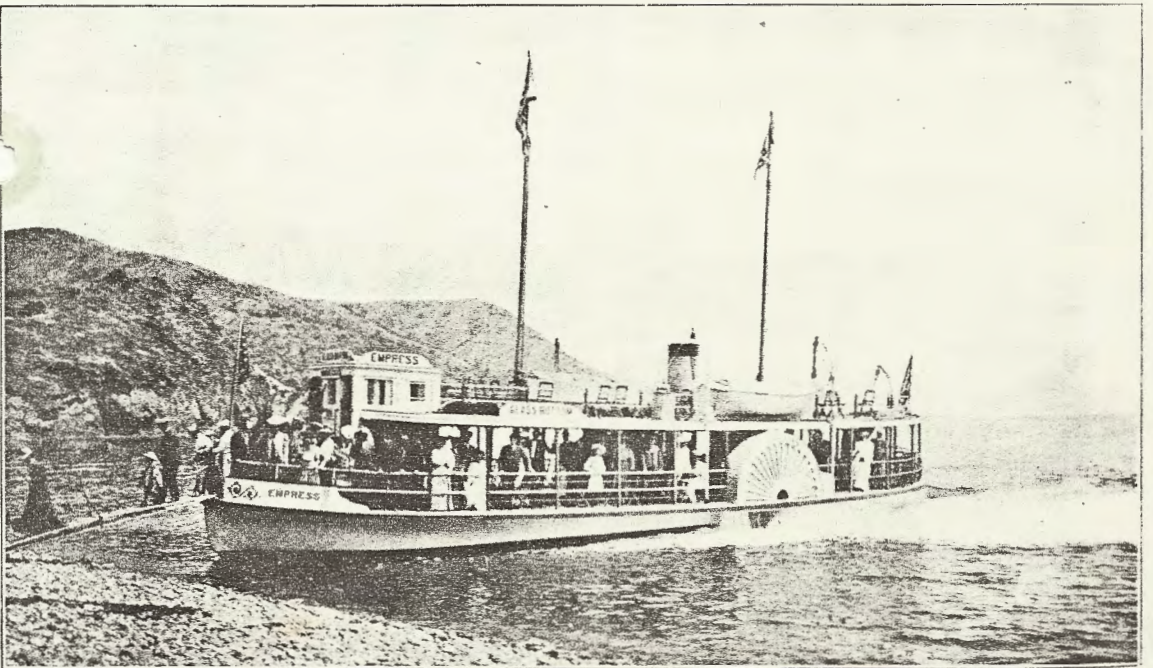
Horse Power.....	6	9
Number of Cylinders.....	1	1
Revolutions per Minute.....	400	400
Capacity Cargo Drum in Pounds—direct lift.....	1200	1600
Capacity Cargo Drum in Feet of Cable.....	400	675
Diameter of Cable—Cargo Drum.....	3/8"	1/2"
Speed of Cable—Cargo Drum—Feet per Minute.....	100	130
Rev. per Minute—Cargo Drum.....	38	32
Diameter and Face—Cargo Drum.....	10'x9 1/2"	12'x14"
Speed of Cable—Wildcat Drum—Feet per Minute.....	13	16
Capacity Wildcat Drum in Pounds—direct lift.....	8000	10000
Net Weight.....	2450	4433
Shipping Weight.....	2826	5000
Floor Space.....	3'-6"x4'-9"	5'-4"x4'-3"

Note.—Above lifting capacities may be doubled by using a double fall. With this arrangement the rope speed will, of course, be reduced one-half.

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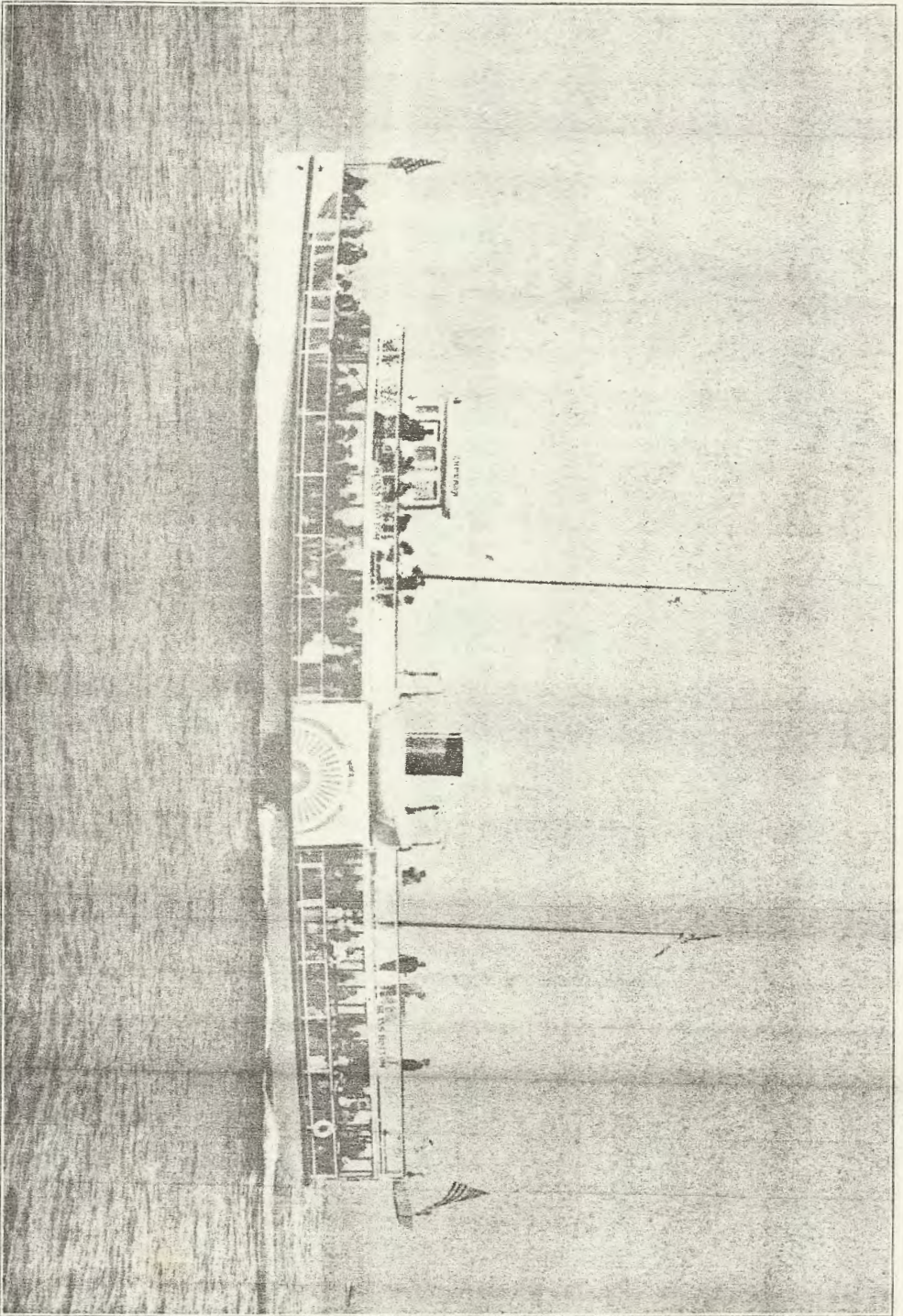


CLEOPATRA — 20 H. P. UNION
Meteor Boat Company, Los Angeles.



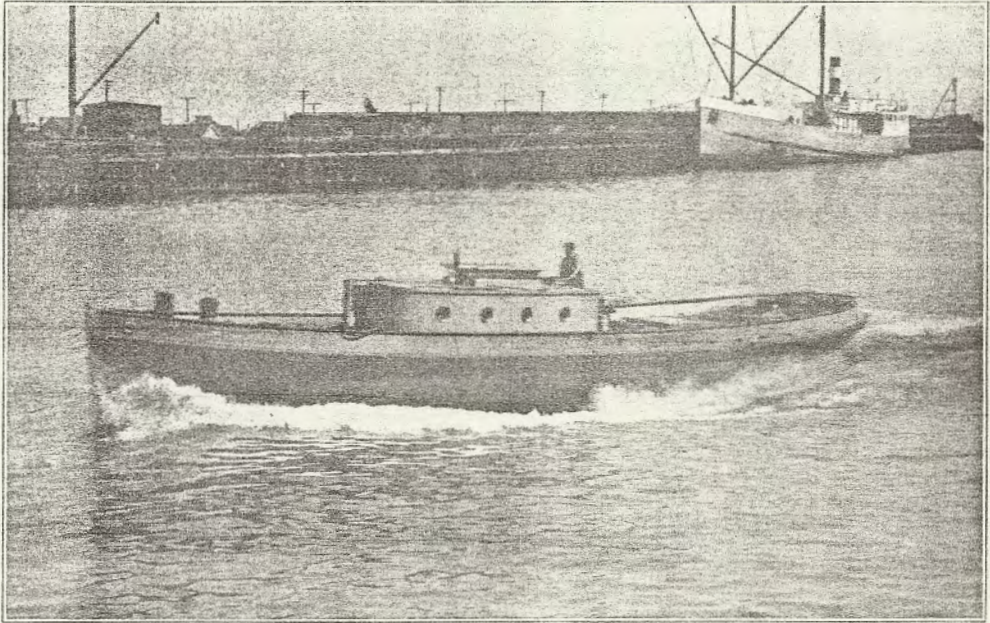
EMPRESS — 65 H. P. UNION
Meteor Boat Company, Los Angeles.

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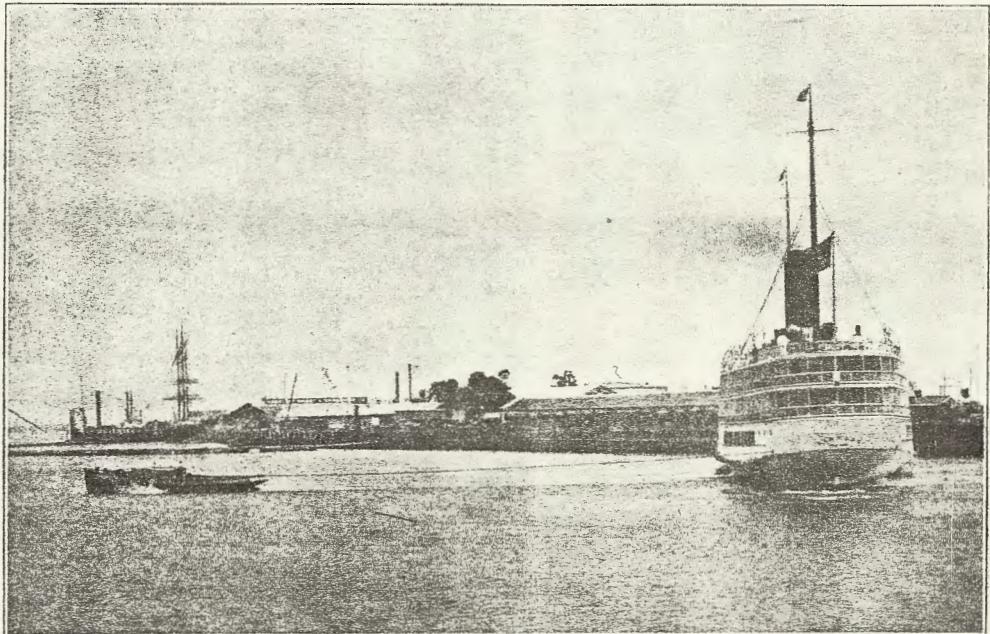


EMPEROR — TWIN PADDLE 200 H. P. UNION — OPEN CROSSHEAD TYPE
The Motor Boat Company operates a large fleet of glass-bottom boats, used to carry excursionists to the submarine gardens of Santa Catalina Island, situated thirty miles off the coast of Southern California.

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ENGINEERING SUCCESS

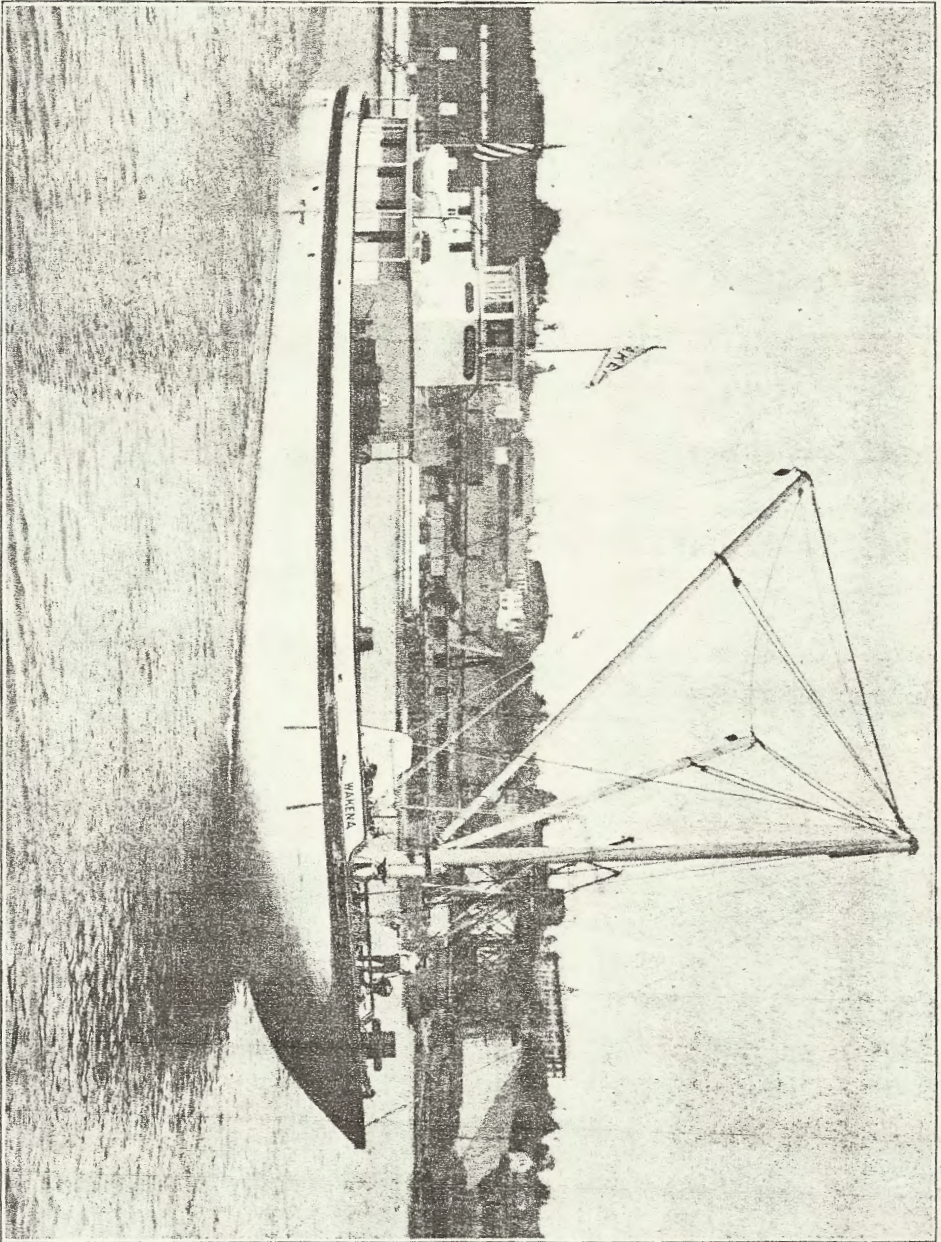


LISTO — 125 H. P. UNION — OPEN CROSSHEAD TYPE
Banning Company, San Pedro, Cal. The Banning Company has purchased twenty-two Union Engines, beginning in 1890.



LISTO — 125 H. P. UNION — OPEN CROSSHEAD TYPE
Upon arrival at San Pedro, the steamers "Yale" and "Harvard" are handled by the "Listo."
This work was formerly done by a large steam tug.

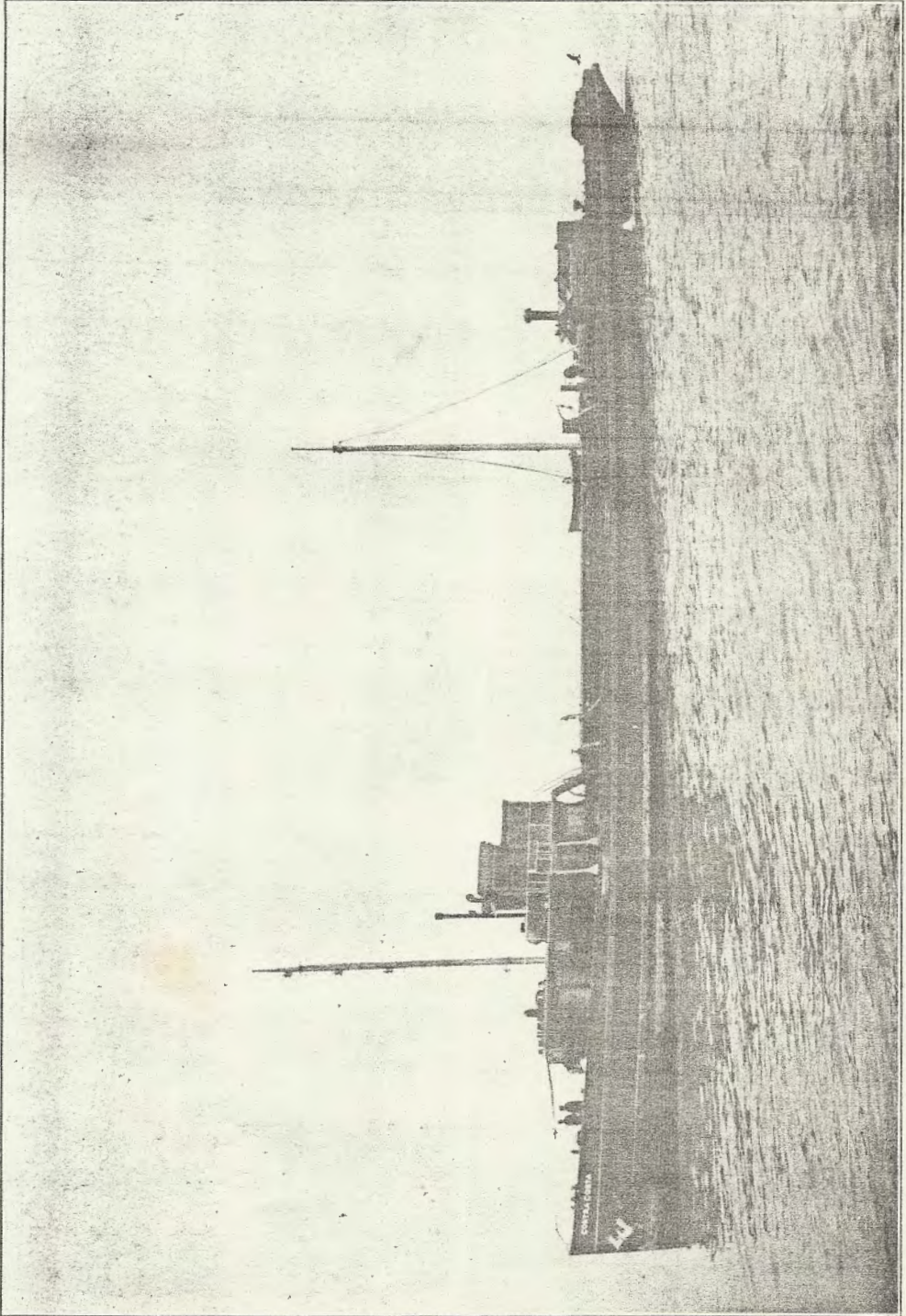
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WAKENA — TWIN SCREW 200 H. P. UNION — OPEN CROSSHEAD TYPE

In addition to main engines, "Wakena" is equipped with a 20 H. P. Union hoist and an 8 H. P. Union electric lighting engine.

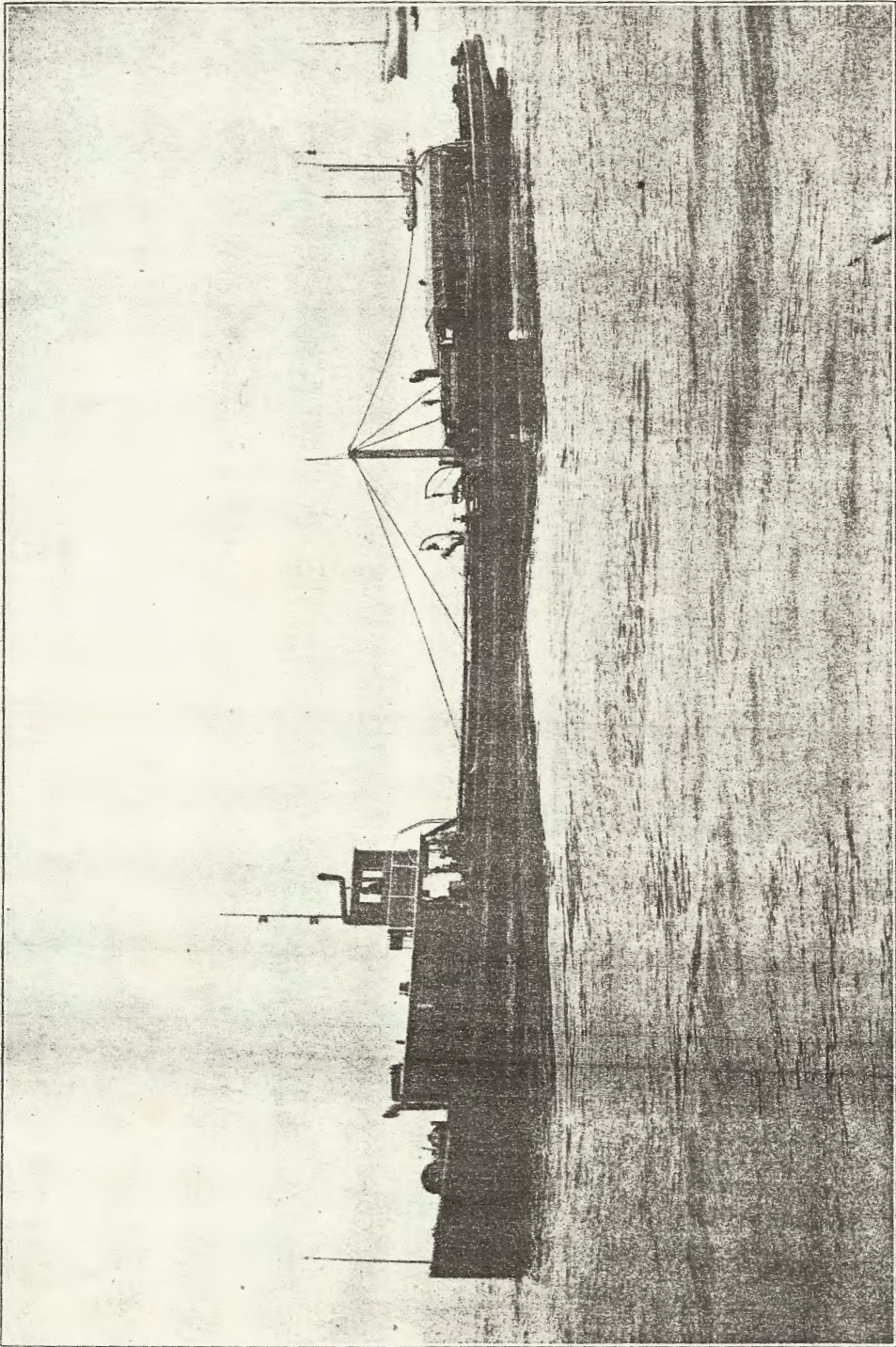
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CONTRA COSTA — TWIN SCREW 500 H. P. UNION — OPEN CROSSHEAD TYPE

Standard Oil Company, San Francisco.
"Contra Costa," in addition, is equipped with a 100 H. P. Union (open crosshead) pumping engine and 30 H. P. Union electric lighting engine.

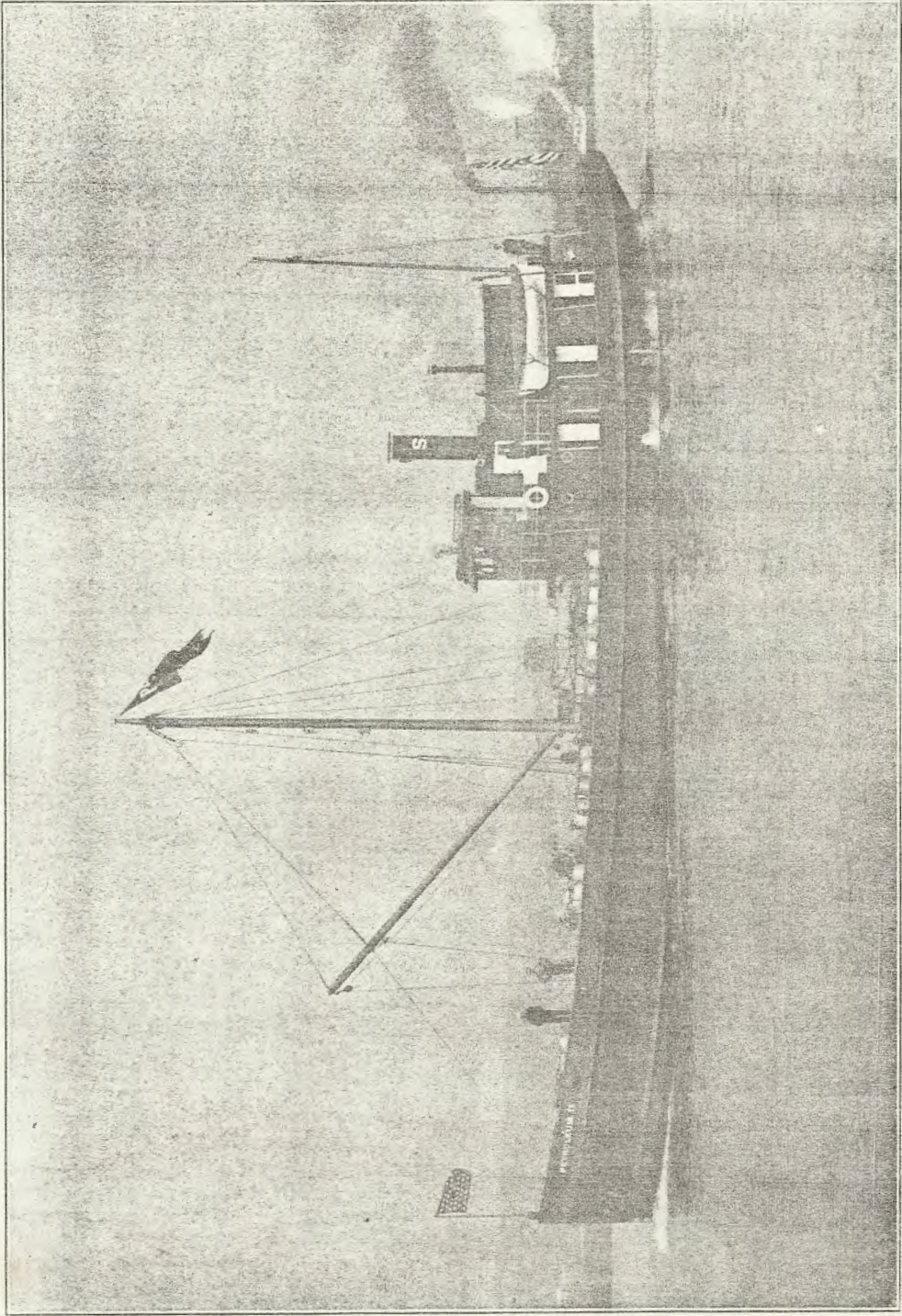
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BENICIA — TWIN SCREW 250 H. P. UNION
Standard Oil Company.

"Benicia" carries a 30 H. P. Union combined pumping and electric lighting engine.

UNION
28 YEARS OF
ENGINEERING SUCCESS



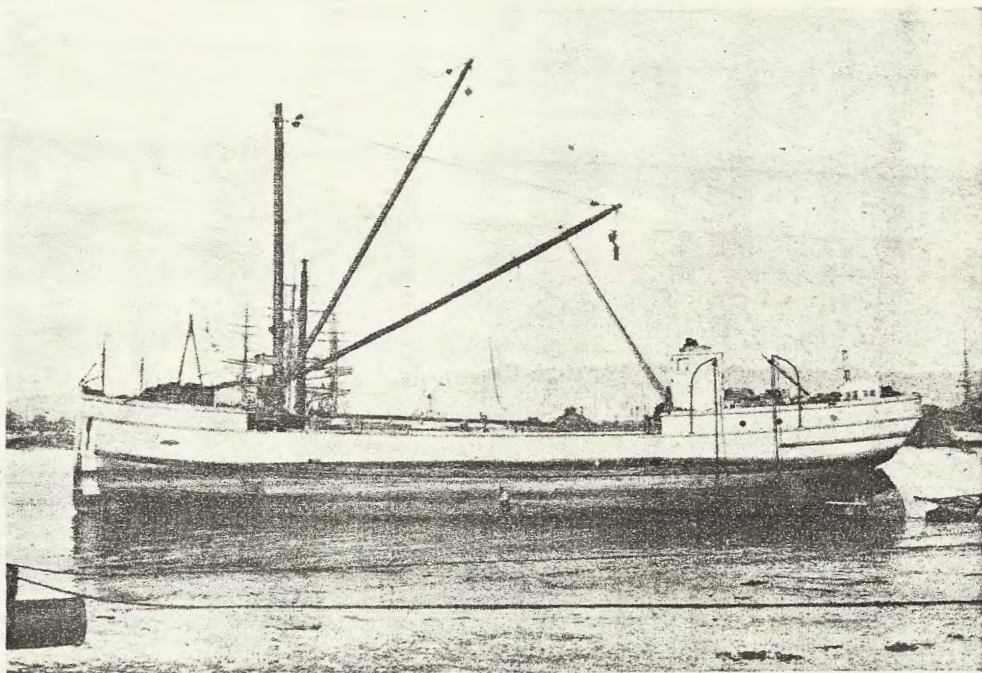
PETROLEUM No. 2 — 250 H. P. UNION OPEN CROSSHEAD TYPE
Standard Oil Company.
"Petroleum No. 2" also carries a 20 H. P. Union electric lighting engine and one 12 H. P. Union hoist.

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ENGINEERING SUCCESS



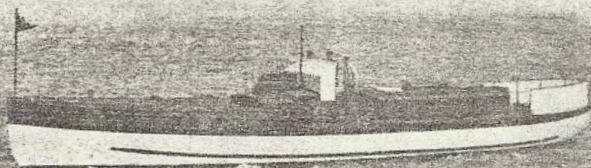
FLYER — 50 H. P. UNION

Union Iron Works, San Francisco. Owners also of launch "Francis," 40 H. P. Union.

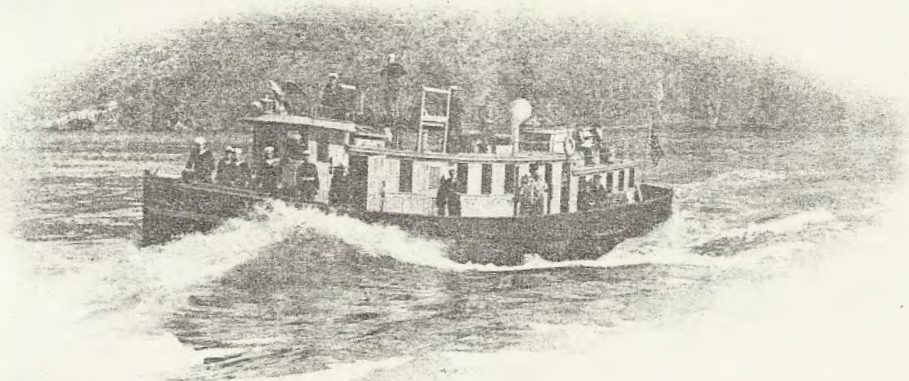


TOPO — TWIN SCREW 130 H. P. UNION
Bay Development Company, San Francisco.

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ENGINEERING SUCCESS



U. S. S. ALBATROSS — 60 H. P. UNION
Property of United States Government. Used on San Francisco Bay.

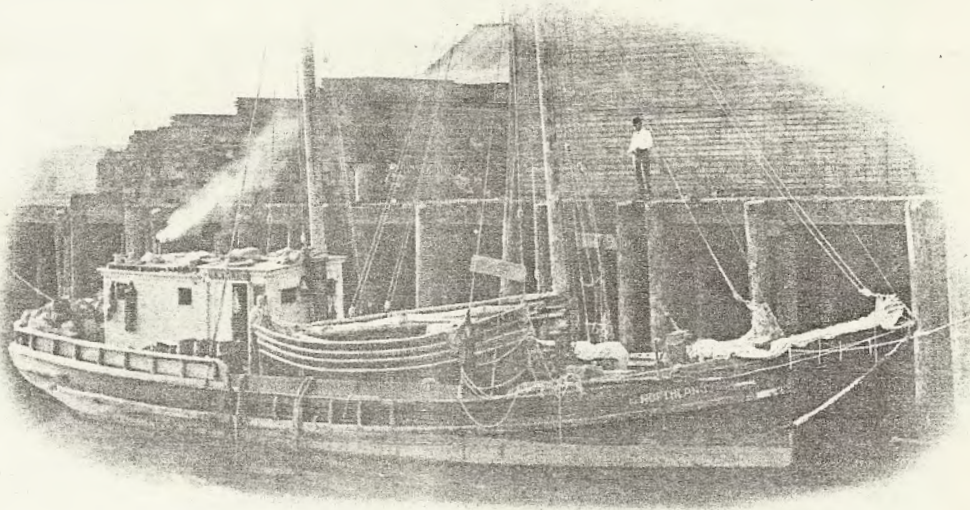


U. S. S. CASTRO — 250 H. P. UNION — OPEN CROSSHEAD TYPE
Used as ferry on San Francisco Bay. Power for lighting and pumping furnished by 15 H. P. Union.
Property of United States Government.

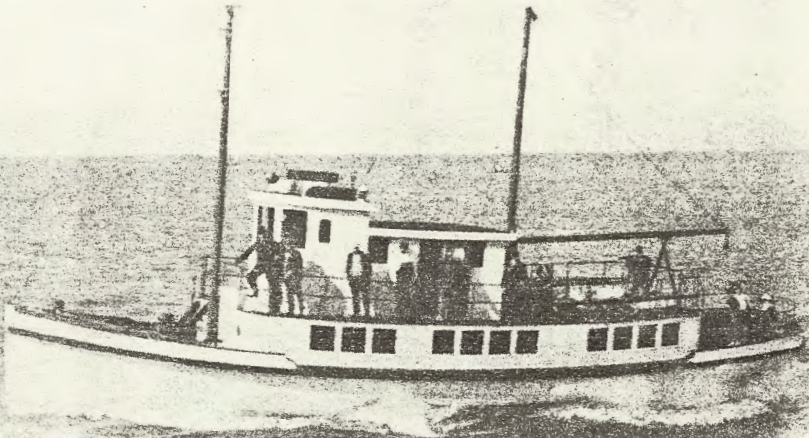


ONE OF SIX MOTOR DORIES EQUIPPED WITH UNION ENGINES
Property of U. S. Navy Department. Used by Pacific Torpedo Boat Fleet.

UNION
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ENGINEERING SUCCESS

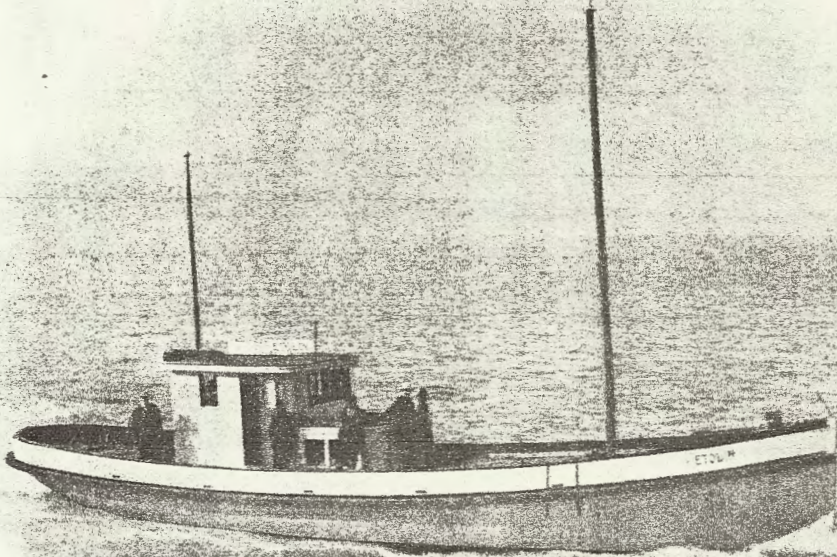


NORTHLAND — 50 H. P. TWIN SCREW UNION
Over 100,000 miles without repairs.

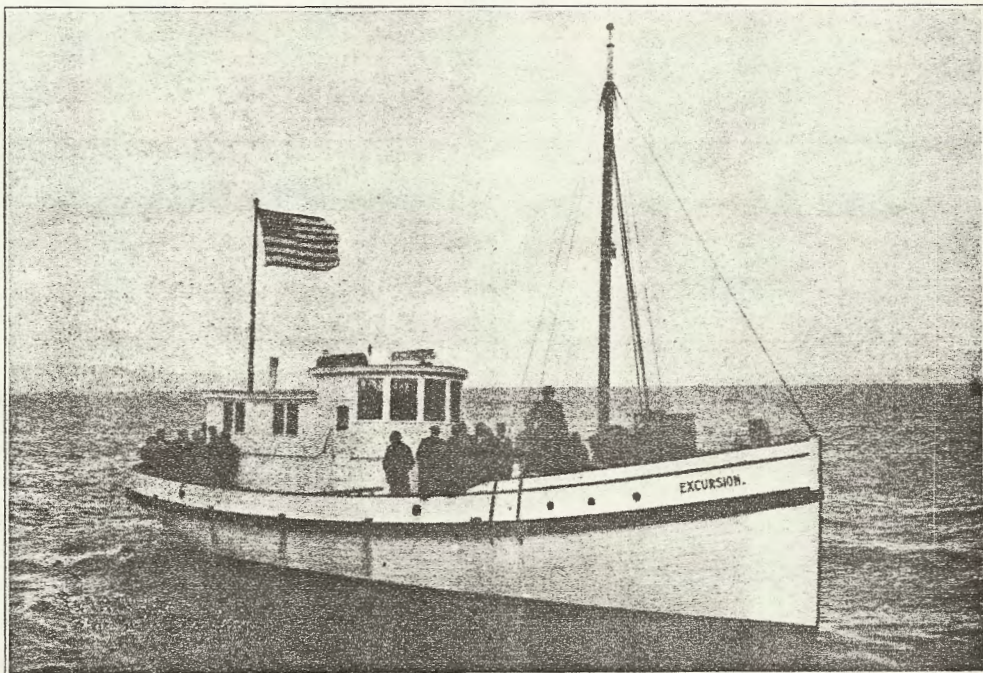


WILSON — 80 H. P. UNION OPEN CROSSHEAD — 6 H. P. UNION HOIST

UNION
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ENGINEERING SUCCESS

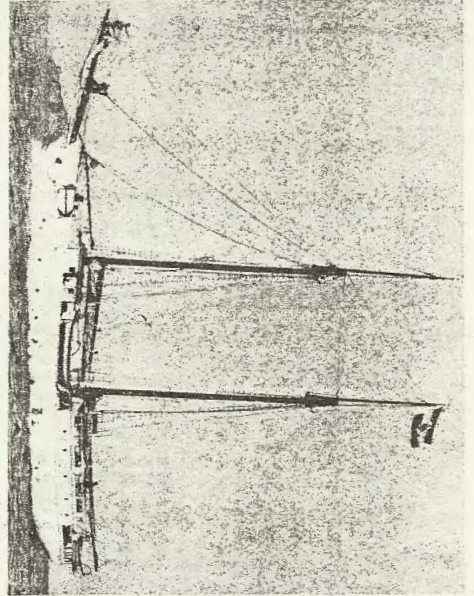


ETOLIN — 60 H. P. UNION

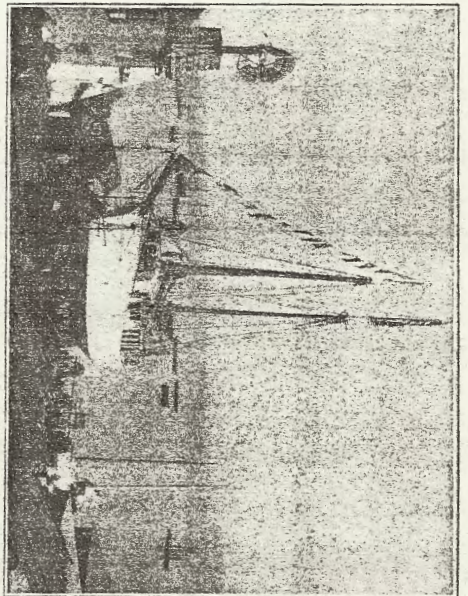


EXCURSION — 80 H. P. UNION — OPEN CROSSHEAD

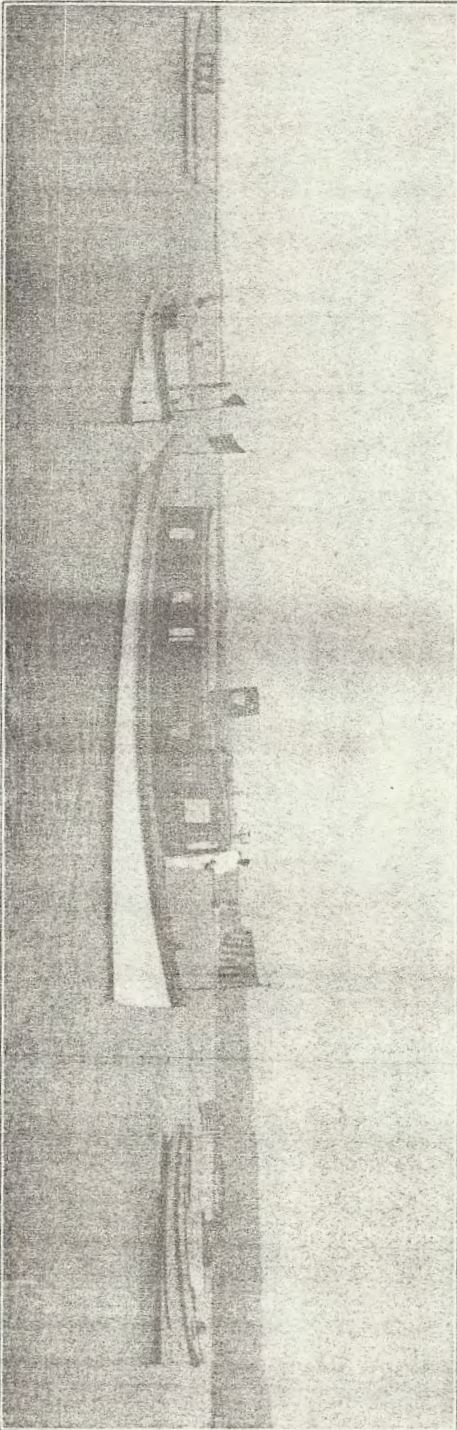
UNION
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ENGINEERING SUCCESS



PONAPE — 125 H. P. UNION
Property of German Government.

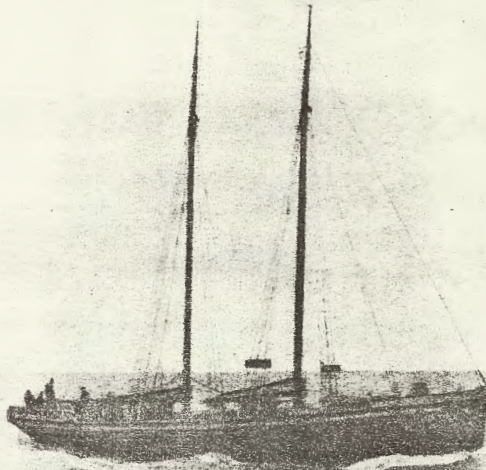


MANUA — 50 H. P. UNION
Owned by natives of Samoa. Built under supervision of U. S. Government.

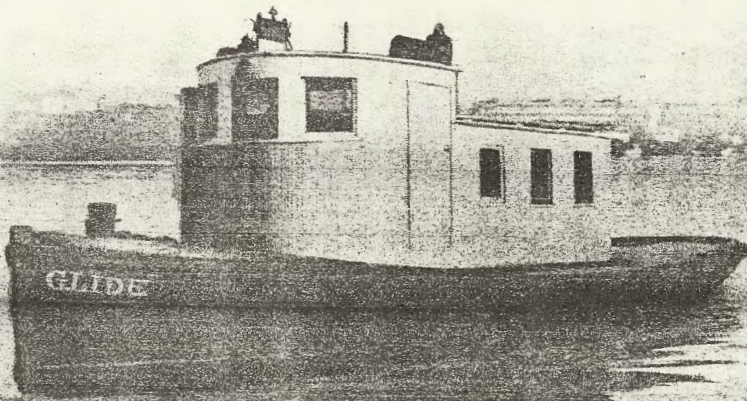


FLEET OF YOUNG BROTHERS — UNION ENGINES
Honolulu, Hawaiian Islands.

UNION
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ENGINEERING SUCCESS

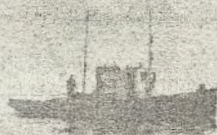


UNION JACK — 80 H. P. UNION — OPEN CROSSHEAD
Property Union Fish Company.



GLIDE — 60 H. P. UNION

UNION
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ENGINEERING SUCCESS

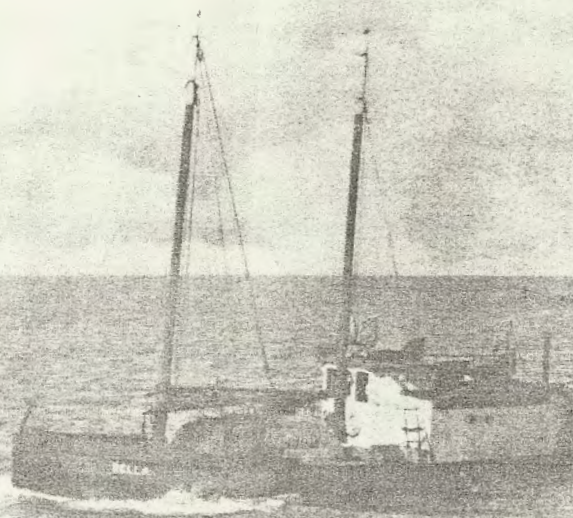


SKOOKUM — 60 H. P. UNION

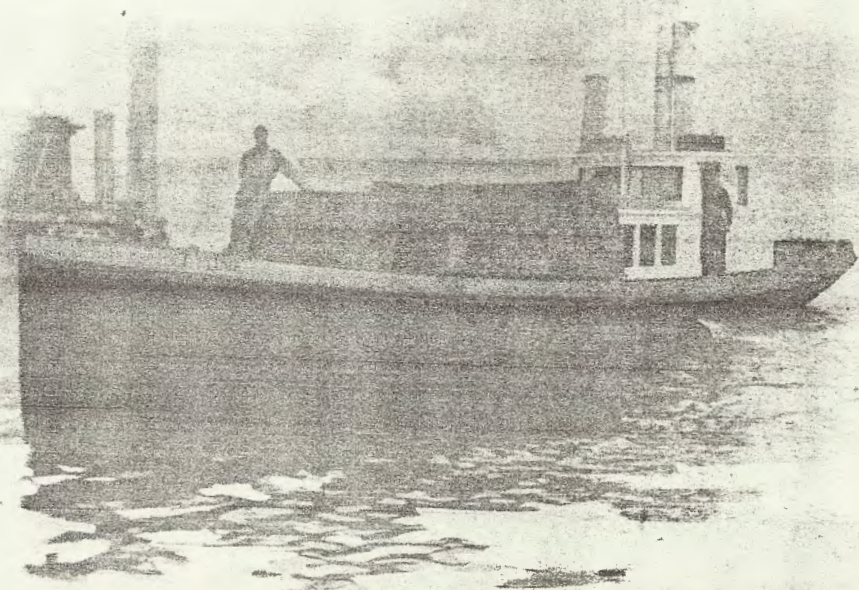


ROSE — 35 H. P. UNION

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ENGINEERING SUCCESS

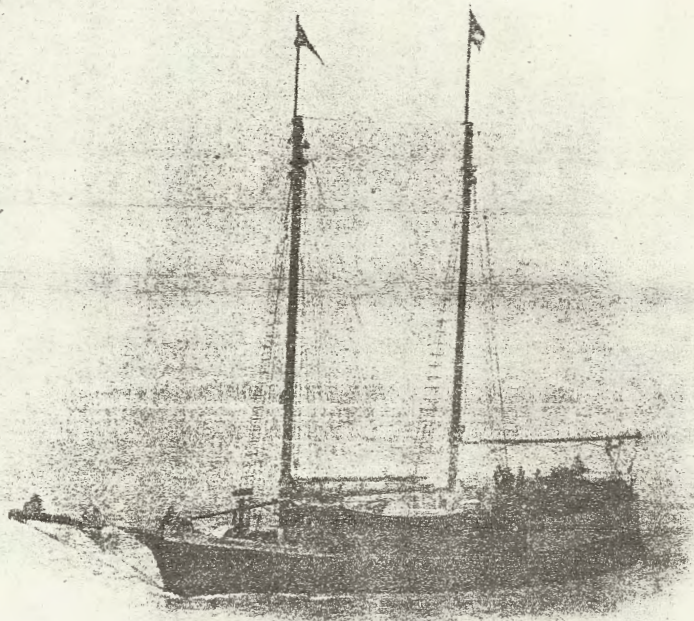


DELLA — 30 H. P. UNION

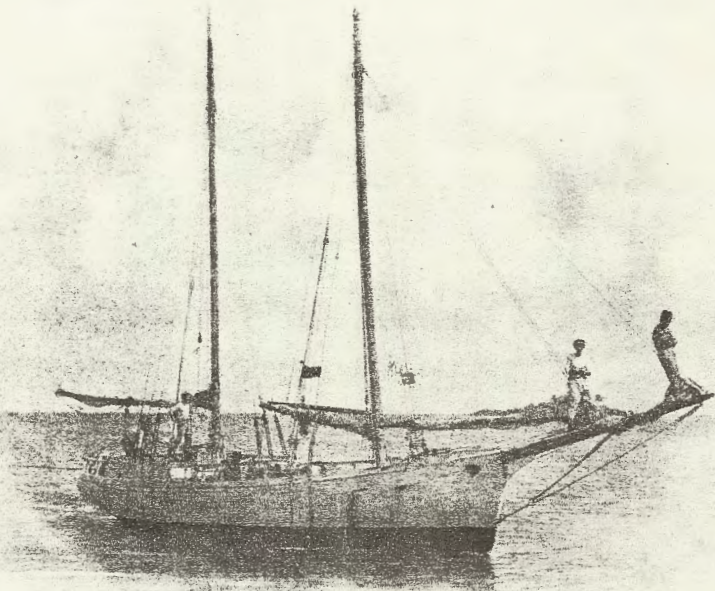


TYONE — 40 H. P. UNION

UNION
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ENGINEERING SUCCESS

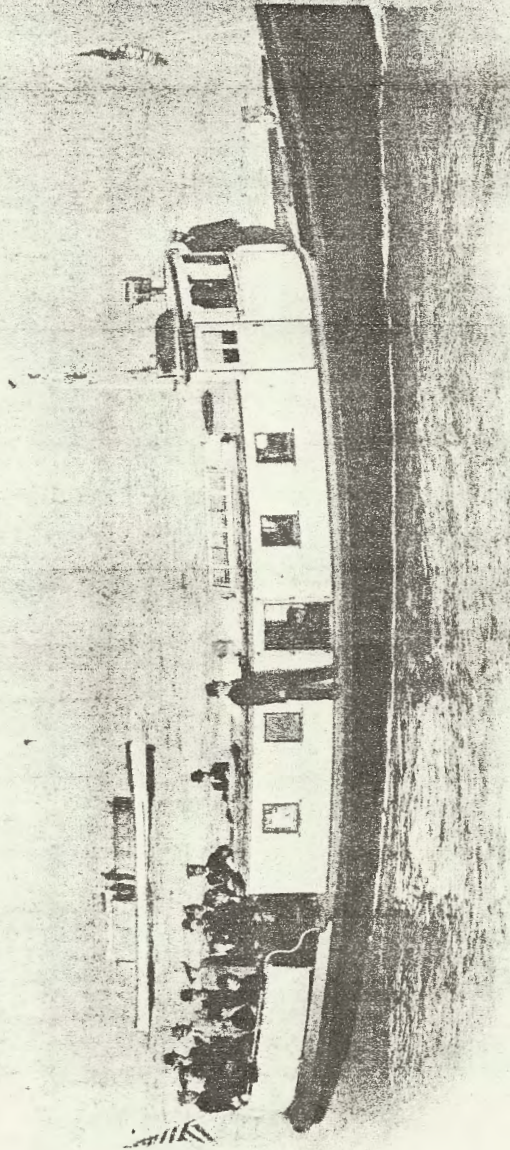


BENDER BROTHERS — 80 H. P. UNION — OPEN CROSSHEAD TYPE



TIURA — 30 H. P. UNION
Owned in Tahiti.

UNION
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ENGINEERING SUCCESS



SHIMA MARU — 80 H. P. UNION — OPEN CROSSHEAD TYPE
Owned by Mr. Geo. Shima.

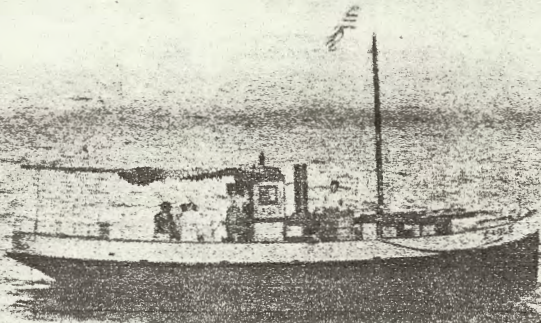
UNION
28 YEARS OF
ENGINEERING SUCCESS



OWNED BY MR. M. FURFIORD—4 H. P. UNION

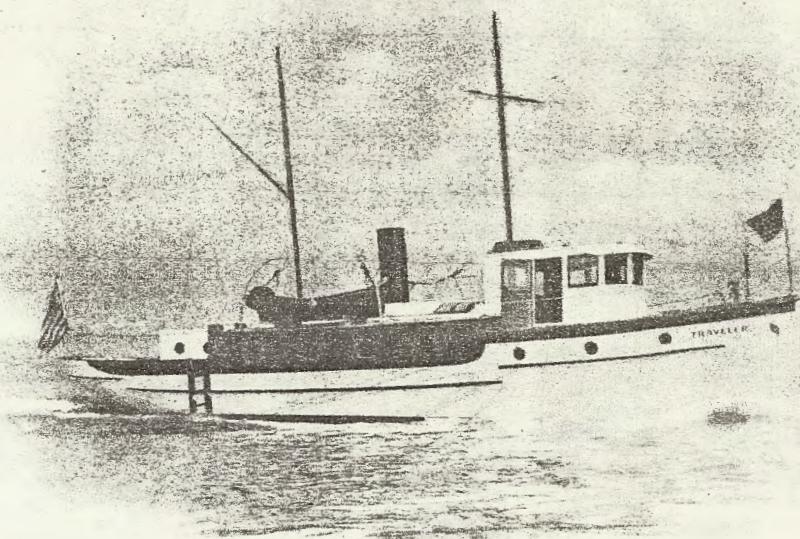


RONCABOR—5 H. P. UNION

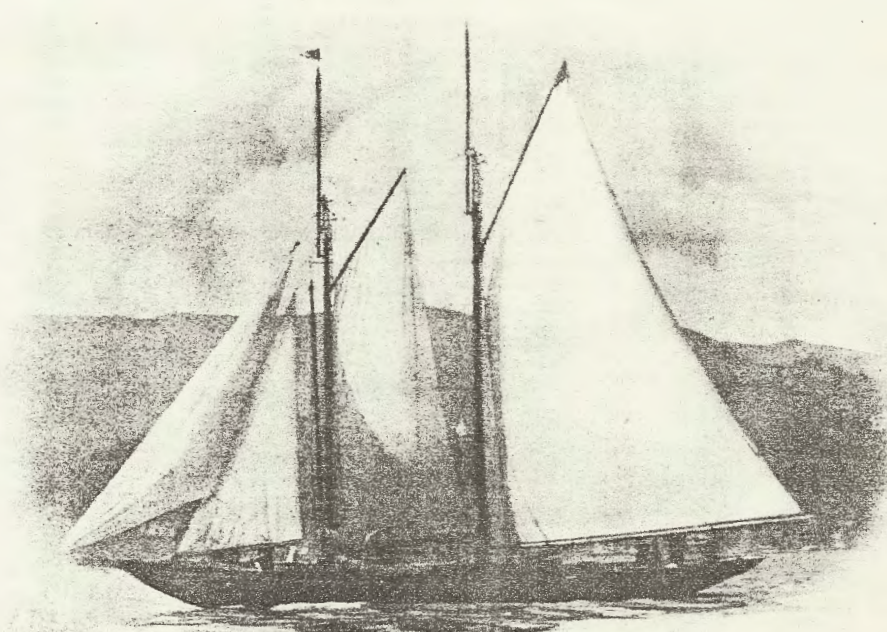


EAGLE—35 H. P. UNION

UNION
25 YEARS OF
ENGINEERING SUCCESS



TRAVELER — 35 H. P. UNION
Property of United States Government.



SEAFARER — 35 H. P. UNION
3 H. P. Union in tender.