

# VESSEL

**Montebello**Official Number 221100Hull Number 21Name (former) N/ACall Sign K D P RName (subsequent) N/AAge 20Power or Sail PowerMasts 3Value 1,200,000Decks 3Nationality USFunnels 1Home Port CA, Los AngelesHull material Steel (riveted hull) Isherwood longitudinal systemType Shelter Deck TankerStern EllipticUse CommercialHead Straight

## DIMENSIONS

			REGISTERED	MOULDED	OVERALL
Tonnage (gross)	<span style="border: 1px solid black; padding: 0 20px;">8272</span>	Length (ft)	<span style="border: 1px solid black; padding: 0 20px;">440.0</span>	<span style="border: 1px solid black; padding: 0 20px;">440.0</span>	<span style="border: 1px solid black; padding: 0 20px;">457.0</span>
Tonnage (net)	<span style="border: 1px solid black; padding: 0 20px;">5107</span>	Beam	<span style="border: 1px solid black; padding: 0 20px;">58.2</span>	<span style="border: 1px solid black; padding: 0 20px;">58.0</span>	m (Meters)
Tonnage	<span style="border: 1px solid black; padding: 0 20px;">6010 underdeck</span>	Depth in ft	<span style="border: 1px solid black; padding: 0 20px;">32.8</span>	<span style="border: 1px solid black; padding: 0 20px;">41.0 shelter</span>	ext (extreme)
Displacement	<span style="border: 1px solid black; padding: 0 20px;">17415</span>	Draft	<span style="border: 1px solid black; padding: 0 20px;">29' 3 1/16" *</span>	Freeboard	<span style="border: 1px solid black; padding: 0 20px;">11' 4 1/2"</span>
Deadweight	<span style="border: 1px solid black; padding: 0 20px;">12000</span>	Draft fwd	<span style="border: 1px solid black; padding: 0 20px;"> </span>	Poop Deck	<span style="border: 1px solid black; padding: 0 20px;"> </span>
Deadrise	<span style="border: 1px solid black; padding: 0 20px;"> </span>	Draft aft	<span style="border: 1px solid black; padding: 0 20px;"> </span>	Forecastle	<span style="border: 1px solid black; padding: 0 20px;"> </span>

## CONSTRUCTION

Built Year	<span style="border: 1px solid black; padding: 0 20px;">1921</span>	Keel Laid	<span style="border: 1px solid black; padding: 0 20px;">04-20-1920</span>
Built Where	<span style="border: 1px solid black; padding: 0 20px;">CA, East San Pedro</span>	Launched	<span style="border: 1px solid black; padding: 0 20px;">01-24-1921</span>
Builder	<span style="border: 1px solid black; padding: 0 20px;">Southwestern Shipbuilding Company</span>	Sea Trail	<span style="border: 1px solid black; padding: 0 20px;">03-02-1921</span>
		Sponsored	<span style="border: 1px solid black; padding: 0 20px;">Miss Adelaide Stewart</span>
Built For	<span style="border: 1px solid black; padding: 0 20px;">Union Oil Company</span>	Classification	<span style="border: 1px solid black; padding: 0 20px;"> </span>
		Christened	<span style="border: 1px solid black; padding: 0 20px;"> </span>

## COMMENTS

Direction Finder, Radio Telephone  
 Speed: Loaded - 11 knots, Light - 11.5 knots  
 Equipment Number 39  
 Cruising Radius: 6,100 miles at 11 knots  
 Class: American Bureau A.I (E)  
 Panama Canal Tonnage - Gross - 8440 Net: 5157 Suez Canal Tonnage - Gross: 8684 Net: 6255  
 \* Draft: 29' 10 1/2" [at time of attack] Draft Light: 9' 10 1/2" - Dry Dock Draft: Fwd - 11' 6 " aft - 16' 6"  
 Sister Ship: LA PLACENTIA  
Surveys: *American Bureau of Shipping 1935*  
 Highest Classification of Hull; Built under Special Survey and Supervision  
 Equipment Tested and In Accordance with the Requirements of the Rules  
 With Freeboard Oil Carrier 10-34  
 Special Survey No. 2 San Pedro 5-30 - Annual Survey 10-34; Dry-docked 10-34  
 Highest Classification of Machinery 10-34 - Machinery Survey 5-30  
 Boiler Survey 10-34 - New Tailshaft 10-30 - Tailshaft Drawn 09-33  
 Auxiliary Electric Installation Surveyed and Certified In Accordance with the Rule

## Vessel Construction Page 2

## A NEW CARGO PUMP

We illustrate herewith a steam cargo oil pump of the horizontal duplex displacement type built at the Joshua Hendy Iron Works, Sunnyvale, California, for the Southwestern Shipbuilding Company. This pump, with others of identical dimensions, is to be used in the 12,000-ton tankers Montebello and La Placentia now being built at the Southwestern Shipbuilding Company for the Union Oil Company of California. They were redesigned from a type in use in Los Angeles by O. B. Kibele, works manager of the Southwestern Shipbuilding Company, with the idea of easy accessibility for repairs and increasing the ruggedness and reliability of the design. The cylinders, both steam and oil, on this pump are of very dense gray cast iron. They were designed and built for a discharge pressure of 200 pounds per square inch and were tested successfully to 250 pounds. The normal working condition of the pumps will be with a steam pressure of 100 pounds and a discharge pressure of 125 pounds. The steam cylinders are 14 inches and 20 inches in diameter, and the oil cylinders 14 inches in diameter with a common stroke for all 18 inches. The oil suction of the pump is 12 inches in diameter and the discharge 10 inches in diameter. Under normal conditions the capacity of each pump is 2500 barrels per hour, and it is figured that with these pumps the entire cargo of these big tankers, 80,000 barrels, can be discharged in twenty hours. Crane's semi-metallic packing is used on the rods, and Crane flat gasket packing on the flanges of these pumps. The illustration shows the arrangement of two of these pumps in the cargo pump room of the steamship Montebello. A complete description of this fine tank steamer and of her propelling machinery and auxiliary arrangements will be published in the April issue of Pacific Marine Review. Pacific Marine Review March 1921

## TWO "SOUTHWESTERN" TANKERS

The Southwestern Shipbuilding Company, East San Pedro, California, has recently delivered to Union Oil Company the 12,000 tanker Montebello after very successful trials. The Montebello is first of two duplicate tankers building at this yard. The second ship, the La Placentia, will be delivered in April. These vessels have a over-all length of 457 feet, length between perpendiculars of 440 feet, and beam molded of 58 feet. They are of the shelter deck type with a depth molded to shelter deck of 41 feet and a deadweight capacity of 12,000 tons, with 29 feet 2 inches draft. The gross tonnage 5300 tons. The ships are built on the Isherwood longitudinal system to the highest class of the American Bureau of Shipping for carrying petroleum in bulk. The cargo space is dived into 18 main cargo tanks, 10 summer tanks, 2 fuel oil tanks, and 2 deep ballast tanks forward. Very commodious quarters have been provided for both crew and officers, rooms being comfortable, well lighted and ventilated, and the commissary and sanitary arrangement perfect in every detail. Through the courtesy of the Southwestern Company, we are reproducing herewith the piping plans for steam, oil and water on these ships and a general arrangement drawing of the main engines. The power plant is composed of three Scotch type marine boilers built by the Willamette Iron & Steel works of Portland. These boilers are 15 feet 6 inches diameter by 12 feet long with a combined heating surface of 10,000 square feet and are fitted with Howden forced draft system and designed to give a working pressure of 220 pounds gauge. Fuel oil is burned under these boilers by the Bethlehem-Dahl system, two No. 8 heaters being used and two 6 X 4 by 6 Dean horizontal duplex fuel pumps. Pacific Marine Review April 1921

# SHIPWRECK DATABASE SUMMARY

## Montebello

Name (former)	N/A		
Propulsion	Steam	Decks	3
Masts	3		
Type	Shelter Deck Tanker		
Use	Commercial		
Tonnage (gross)	8272	(net)	5107
Tonnage	6010 underdeck		
Displacement	17415	Hull material	
Length (ft)	440.0	Steel (riveted hull)	
Beam	58.2	Isherwood longitudinal system	
Depth in ft	32.8		
<b>Where</b>	Cambria, Off		
<b>Year</b>	1941	Latitude	see location comments
<b>Month</b>	12	Longitude	see location comments
<b>Day</b>	23	GPS	
<b>Time</b>	0540	Depth Feet	885

### CASUALTY

Number	221100
Nationality	US
Age	20
Value	1,200,000
Call Sign	K D P R
Home Port	CA, Los Angeles
Built when	1921
Built where	CA, East San Pedro
Built by	Southwestern Shipbuilding Company
Cargo	CA Crude Oil 73,570.99 barrel 21.81 gravity**/ 2477 (bunkers)
Owner	Union Oil Company of California
State	CA
POB	38
Fatalities	0
Cause	Torpedoed

### NATURE OF CASUALTY

Vessel was struck by torpedo on the starboard bow, entering the hull where it exploded blowing away deck house, radio room, all upper works, and the forward main, and blowing water in the air causing vessel to settle forward quickly and sink at 0645. Japanese submarine I-21 also delivered shell fire. Crew abandoned vessel at 0555 in lifeboats and picked up 4-5 hours later. [Report On US Merchant Tanker War Action Casualty \[In Part\]](#)

When the vessel was torpedoed she settled down almost immediately on the fore part, and then she settled gradually more and more, and by the time she went down, the after end of the vessel came up 150 feet in the air, and then she went straight down. [Testimony by Captain Olof W. Ekstrom.](#)

#### [Report On US Merchant Tanker War Action Casualty Notes](#)

Submarine was sighted before, during and after attack  
 Navigation lights were off at time of attack, 0540  
 Vessel Abandoned 0555 Vessel Sank 0645  
 Number of lookouts: 2  
 Number on engineering watch below: 3  
 Vessel Carried 4 lifeboats and 4 were used to abandon ship  
 Draft loaded ( maximum allowed): 29' 10 1/2 "  
 Draft when attacked: 29' 10 "

# CARGO

**Montebello**Number Cargo Deck Load  Overloaded Weight in tons Gallons Value 

## COMMENTS

### Cargo Heating Coils - 2" -

TANK	Fore Deep	#1 and #2	#3 to #9	Fuel Oil	Total
Lin. Ft.	372	840	4200	440	5852
Sq. Ft.	232	520	2618	274	3644

### Main Cargo "Tanks One Side Only" 42Gals =BBL (2% allowed for expansion)

Tanks	Frames	CU.FT.	Gals.	Gals. x2	BBLS	BBLS x 2	Summer Tanks	Frame	BBLS x 2
No. 9	22-25	24469	183027	366054	4358	8716			
No. 8	25-28	24269	181532	363064	4322	8644			
No. 7	28-31	24158	180704	361408	4302	8604			
No. 6	31-34	24082	180134	360268	4289	8578			
No. 5	34-37	24299	181755	363510	4327	8654	22-25		1108
No. 4	37-40	24677	184581	369162	4395	8790	25-31		2214
No. 3	40-43	25277	189074	378148	4502	9004	31-37		2214
No. 2	43-45	16883	126288	252576	3007	6014	37-43		2212
No. 1	45-47	16434	122923	245846	2927	5854	43-47		1444
<b>Totals</b>		<b>204548</b>	<b>1530018</b>	<b>3060036</b>	<b>36429</b>	<b>72858</b>			<b>9192</b>

### Main Cargo + Summer Tanks = 82050 BBLS

### Dry Cargo Space

Both Sides

Compartment	Frames	Cu. Ft. Gr.	Cu. Ft. Ba.
Cargo Hold No. 3	19-34	57142	55681
Cargo Hold No. 2	34-47	50834	49515
No. 1 Above Deck	47-52	13707	13270
No. 1 Above Main Deck	47-52	13619	13160
No. 1 Above Lower Deck	47-52	12352	11894
<b>Totals</b>		<b>147654</b>	<b>143525</b>

80,000 barrel capacity Average Cargo Loaded 76,500 BBLS

Cargo Average Time Loading 10 hours - Cargo Average Time Discharging 27 hours

Fitted For Fuel Oil 1454 ton capacity

Number of Hatches &amp; Holds: 3 Watertight to Freeboard, 1 Watertight to 2nd Deck, 10 Oil-Tight Long Bulkheads, 1 Hatch 9' 6" x 10', 9 Cargo Tanks 28' 6"

\*\* Northern District Court trial transcript states 73,570.99 barrels CA crude oil of 21.81 gravity

# MACHINERY

**Montebello**

 Number 221100
**Main Engine[s]**
**Boiler[s]**

Type	Quadruple Expansion Engine	3 single end Scotch Marine
Built	1921	1921
Builder	Llewellyn Iron Works Yarrow, Shlick & Tweedy	Willamette Iron & Steel Company
Built Where	CA, Los Angeles	OR, Portland
Propulsion	Steam	Boiler Size <span style="border: 1px solid black; padding: 0 10px;">Dia 15' 6" Len 12' 1"</span>
Cylinders	4 <span style="border: 1px solid black; padding: 0 10px;"> </span> Sizes <span style="border: 1px solid black; padding: 0 10px;">24" x 34" x 51" &amp; 74"</span>	Stroke <span style="border: 1px solid black; padding: 0 10px;">54"</span>
Propeller[s]	1 each 4 blade Manganese Bronze-Pitch 16' 6" to 17' 6" -Dia. 18' Tail Shaft: length: 19' 5" Dia. 1' 4"	
Horsepower	3300 Indicated	

**Comments**

Machinery Aft -- Longitudinal Framing -- Water Ballast

At time of sinking reported 2477 barrels of bunker fuel oil (104,034 gallons)

**Tanks Available for Fuel Oil**

Tanks	Frames	CU.FT.	Gals.	BBLS	One Side	Both Sides
Fuel Oil	19-21	16426	122871	2925	430	860
Summer	19-22	2587	19351	461	68	136
Coffer Dam	21-22	4095	30629	729	107	214
Deep Tank	49-52	8242	61649	1468	216	432
Totals		31350	234500	5583	821	1642

Anchors and Chain: No. 5 2 Bowers 8160, 9320 #, 1 Spare 9300 #, 1 Stream 3490 #, 1 Kedge 1530 # /

Chain - Stud Link Weight - 318 # per fathom - Windlass; Type - Joshua Hendy - Size 10 x 16

Masts and Booms; 12 each 3 Tons Capacity - Capstans: No. 4 Size 8" x 10" Type - Helser

Cargo Pumps: Type Horizontal Compound Duplex

H. P. 14" L.P. 20" Oil End 14"

Stroke 18"

Made by - Joshua Hendy, San Francisco

Union Oil Co. Steam End

Strokes Per Min - 30 to 35

Dia. of Suction - 12" Dia. of Discharge - 10"

Winches - Helser 8 OFF. - Size 9" x 9"

**NOAA Office of National Marine Sanctuaries: West Coast Region**

 Robert Schwemmer  
West Coast Region  
Maritime Heritage Coordinator

 Last Modified. Day 9/23/2009

**Notes Page 13****TWO "SOUTHWESTERN" TANKERS**

The Southwestern Shipbuilding Company, East San Pedro, California, has recently delivered to Union Oil Company the 12,000 tanker Montebello after very successful trials. The Montebello is first of two duplicate tankers building at this yard. The second ship, the La Placentia, will be delivered in April.

These vessels have a over-all length of 457 feet, length between perpendiculars of 440 feet, and beam molded of 58 feet. They are of the shelter deck type with a depth molded to shelter deck of 41 feet and a deadweight capacity of 12,000 tons, with 29 feet 2 inches draft. The gross tonnage 5300 tons. The ships are built on the Isherwood longitudinal system to the highest class of the American Bureau of Shipping for carrying petroleum in bulk. The cargo space is divided into 18 main cargo tanks, 10 summer tanks, 2 fuel oil tanks, and 2 deep ballast tanks forward.

Very commodious quarters have been provided for both crew and officers, rooms being comfortable, well lighted and ventilated, and the commissary and sanitary arrangement perfect in every detail.

Through the courtesy of the Southwestern Company, we are reproducing herewith the piping plans for steam, oil and water on these ships and a general arrangement drawing of the main engines.

The power plant is composed of three Scotch type marine boilers built by the Willamette Iron & Steel works of Portland. These boilers are 15 feet 6 inches diameter by 12 feet long with a combined heating surface of 10,000 square feet and are fitted with Howden forced draft system and designed to give a working pressure of 220 pounds gauge. Fuel oil is burned under these boilers by the Bethlehem-Dahl system, two No. 8 heaters being used and two 6 X 4 by 6 Dean horizontal duplex fuel pumps.

The main propelling engine was designed by the Southwestern Shipbuilding Company and built by the Llewellyn Iron Works, Los Angeles. It is the four-cylinder quadruple expansion vertical reciprocating type with cylinder diameter of 24 - 34 - 51 - 74 inches and stroke of 54 inches. This engine is completely balanced on the Yarrow-Schlick - Tweedy system and develops 3300 horsepower at 80 r.p.m.

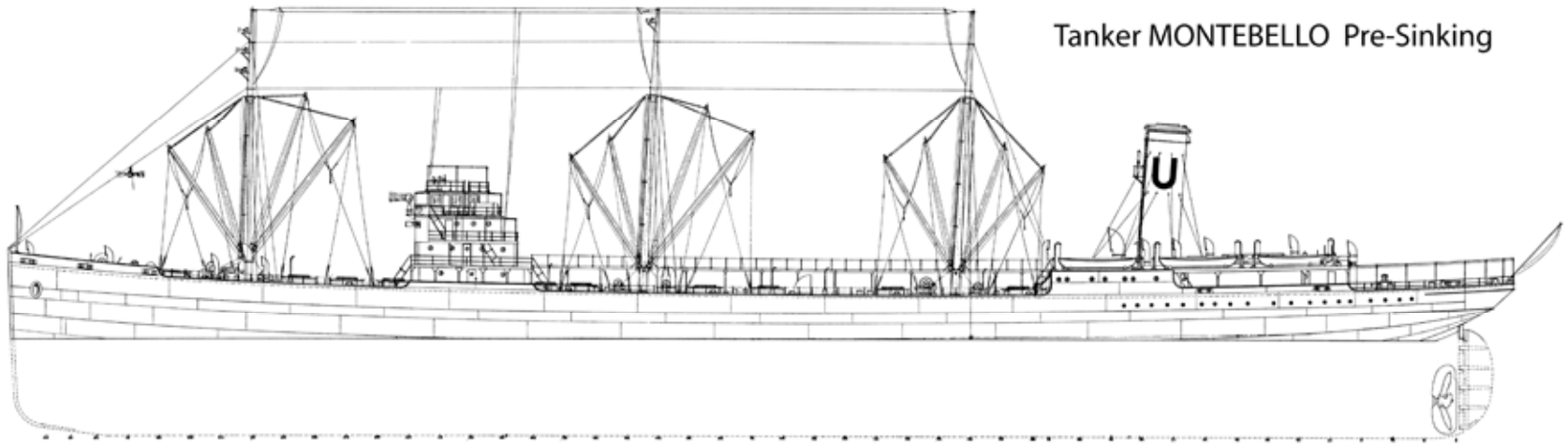
The following auxiliaries are installed in the engine room: Two 14 by 10 by 24 vertical simplex Dean feed pumps; one 7 by 6 by 10 horizontal duplex Dean sanitary pump; one 6 by 3 3/4 by 6 horizontal duplex Dean fresh water pump; one 16 by 10 by 14 horizontal duplex Dean fire pump; one 10 by 10 by 12 horizontal duplex Dean ballast and bilge pump; one 3 by 3 by 4 horizontal duplex Dean evaporator feed pump; one 10 by 18 by 12 vertical twin beam Dow auxiliary air pump; one 16-inch centrifugal circulating pump with 10 by 10 engine, built by the Taylor Foundry and Engineering Company; one 25-ton Braun evaporator; one 2000-gallon Braun distiller; one Braun feed water heater; one Braun grease extractor; one 2 1/2-ton Audiffren-Singrun refrigerating machine; two 15 kilowatt General Electric generators.

**Notes Page 14**

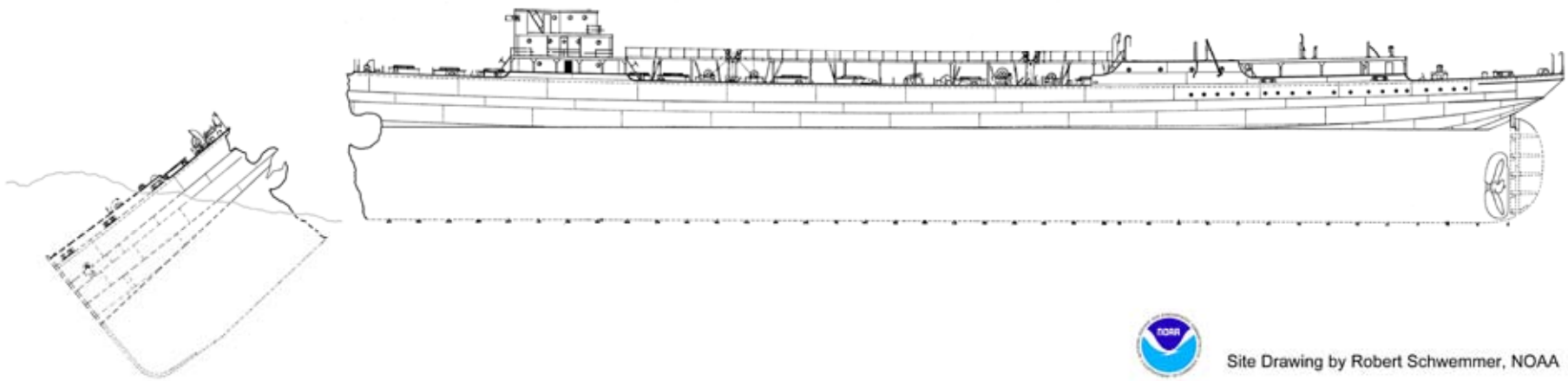
The main cargo pumps, which were described in detail in the March issue of Pacific Marine Review, were designed by the Southwestern Shipbuilding Company and built by the Joshua Hendy Iron Works of Sunnyvale, California. These pumps have sufficient capacity to discharge the entire cargo of 80,000 barrels in twenty hours.

The Joshua Hendy Iron Works also built for these ships a 10 by 16 inch windlass designed and placed on the vessels by the Southwestern Shipbuilding Company with a special reference to the handling of lines on deck when anchored in open roadsteads. The balance of the deck machinery was designed by the Southwestern Shipbuilding Company and built by the Helser Machine Works of Portland, Oregon. This machinery includes four 8 by 10 inch heavy duty steam capstans, two fitted on the forecastle and two on the poop; two heavy duty double friction drum warping winches with extension shafts and large gypsies, one fitted forward of the bridge and one between the bridge and the poop; eight 9 by 9 inch Helser throttle reversing steam winches for handling cargo to and from shelter deck spaces. Pacific Marine Review April 1921

Tanker MONTEBELLO Pre-Sinking



Tanker MONTEBELLO Underwater 2003



Site Drawing by Robert Schwemmer, NOAA  
Office of National Marine Sanctuaries – West Coast Region