



The Maritime News

Celebrating 20 Years As a National Park

Located along the city's commercial waterfront, and abutting a military installation, the land area of what is now San Francisco Maritime National Historical Park once contained a woolen mill and a smelting plant. But in the early 1900s, open space activists rescued the shoreline, and in 1939 a Works Progress Administration (WPA) project built today's maritime amphitheater and spectacular bathhouse artworks.

In the late 1940s, a senior center occupied a portion of the structure; in the 1950s, a maritime museum was established in the bathhouse, and a state maritime park was created at Hyde Street Pier. In the 1970s, the National Park Service (NPS) gathered together the maritime cultural resources along the western waterfront as part of the Golden Gate National Recreation Area. By the late 1980s, these resources had garnered seven National Historic Landmark designations, and in 1988, a new National Park was created to preserve, interpret and protect them.

In the Park's early years, staff focused on preservation planning – identifying resource needs and developing implementation strategies. That effort was folded into the Park's 1997 General Management Plan (GMP). It's interesting to re-read the Park's GMP today, and compare the 1997 goals with 2008 reality.

The GMP treats development of the then-neglected (and seismically unsound) Haslett Warehouse, and recommends finding an investor to rehabilitate the classic brick waterfront building, and provide space inside for park visitors and exhibits. Eleven years on, that idea has blossomed into a successful partnership with the Argonaut Hotel, with a state-of-the art Visitor Center located at the corner of Hyde and Jefferson Streets.

Another GMP goal was the rehabilitation of the Park's 1895 West Coast lumber schooner *C.A. Thayer*. Once on a list of America's 11 most endangered landmarks, *Thayer* has now returned to Hyde Street Pier after an extensive rehabilitation with a hull and superstructure capable of sailing through another 113 years.

Also during the last twenty years, the Park earned accreditation by the American Association of Museums for professionalism in the preservation and management of its extensive archive and artifact collections.

But, as always, what's most exciting is the next twenty years of opportunities: completion of the Aquatic Park bathhouse and reopening of the maritime museum, the creation of a Maritime Heritage and Learning Center, completion of the *C. A. Thayer* rehabilitation, and discovering exciting new ways to teach our visitors about America's rich maritime heritage.

1 San Francisco Maritime National Historical Park is 20 Years Old!

We reach the 20 year mark on June 27, 2008. Much has been accomplished in the last 20 years, with lots of plans and ideas afloat for the future.



2 The Union Diesel Engine Company

The first successful gasoline engines were produced right here in San Francisco beginning in the 1890s.

4 Float or Sink? Fun Page for Kids

Samuel Plimsoll lived in England in the early 1800s, but his memory lives on because of lines painted on the sides of huge ships. Who was he?

Welcome

When the maritime unit of the Golden Gate National Recreation Area was designated a National Park in 1988, it faced some daunting opportunities: Preserving a museum, a fleet of historic vessels, a historic district, and discovering its resources most significant stories, and finding the best ways to tell them.

Today, *Balclutha* has a new main deck. *Alma* sails regularly. *Eureka*'s hull has been re-sheathed in copper, and *C.A. Thayer* has been saved for future generations.

With our partner, the San Francisco Maritime National Park Association, the Park has grown an award-winning experiential education program for elementary school children, and offers boatbuilding, sailing, and traditional craft classes for kids of all ages.

The park has earned accreditation from the American Association of Museums, built state-of-the-art exhibits, opened a visitor center, negotiated a lease that saved an historic waterfront warehouse, and touched 1000s of schoolchildren's lives with ranger-led programs, tours and demonstrations.

The Aquatic Park bathhouse is being repaired, and will re-open with a new elevator that provides access to the second floor.

I am proud of what this National Park has accomplished. And I look forward to guiding her through the next twenty years of opportunities, lying just beyond the horizon.

Kate Richardson
Superintendent



Photos: Top, the Aquatic Park area (looking west toward Black Point) around 1910; Left, the exterior of the historic Haslett Warehouse, now the park Visitor Center and Argonaut Hotel; Right, children learning about radio communication in the Sparks, Waves, and Wizards exhibit in the maritime museum; Lower, the 1895 lumber schooner *C. A. Thayer* at Hyde Street Pier today, where visitors can go aboard and learn about the continuing rehabilitation work. Photos: NPS

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National Park Service
U.S. Department of the Interior

San Francisco Maritime National Historical Park

Established in 1988, San Francisco Maritime National Historical Park encompasses only 34 acres, but contains the most national historic landmarks of any unit in the National Park Service. In addition to the fleet of ships at Hyde Street Pier, the park includes the Aquatic Park Historic Landmark District (Bathhouse building, urban beach, lawn area and bocce ball courts), a Visitor Center and a research library (in Fort Mason Center).

Superintendent

Kate Richardson

Chief of Interpretation

Marc Hayman

Public Affairs Officer

Lynn Cullinan

Editor

Christine Baird

Mailing Address

Building E, Fort Mason Center
San Francisco, CA 94123

Fax Number

415-556-1624

Park Information

415-447-5000

Contributors to Volume 21: Tim Campbell, Stephen Canright, Lynn Cullinan, Kathryn Daskal, Elizabeth Evans, and Amy Hosa.

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Collections Corner: Union Gas Engine Co.

Over the past two years the park has taken in two groups of archival materials relating to the Union Diesel Engine Company of San Francisco. The photographs, catalogs, and company records were generously donated by Sarinda Newell, granddaughter of the long-time company President, Otto Fischer.

Formed in 1892 as the Union Gas Engine Company following a merger of the Regan Vapor Engine Company and the Pacific Gas Engine Company, it was the first successful manufacturer of gasoline engines in this country.

Daniel S. Regan was the true pioneer of the American gasoline engine business, receiving the first U.S. patent for a practical internal combustion engine in 1885. His engine, a four-stroke cycle type with a single vertical cylinder and a make-and-break type mechanical ignition system, was the prototype for tens of thousands of engines that would be built in the Bay Area, not only by the Regan and Union Companies, but by some two dozen independent manufacturers who took their design lead from Regan.

Bay Area engines were notable in the 1890s and the early 20th century for being four-strokes, at a time when two-strokes were the norm elsewhere in the country. The Hicks and the Frisco Standard models were the last survivors of these locally-built gasoline engines, remaining the preferred power for Monterey fishing boats into the 1930s.

A Hicks engine, in working condition, is on display at Hyde Street Pier. Also, moored at the end of the pier is a Monterey fishing boat. To learn more about this boat and its engine, check page three for the dates of a ranger-led tour about the small craft berthed at the pier.

The Union Gas Engine Company was located on Howard Street, in the South of



Market neighborhood of San Francisco. The company was burned out in the 1906 Earthquake and Fire and then relocated across the Bay to Oakland.

After developing their first diesel engine in the early 1920s, they became the Union Diesel Engine Company and remained in business until the early 1970s. Otto Fischer was the president from about 1910 until his death in 1967, and was succeeded by his daughter, Harriet Fischer Newell.

By Stephen Canright, Park Curator, Maritime History

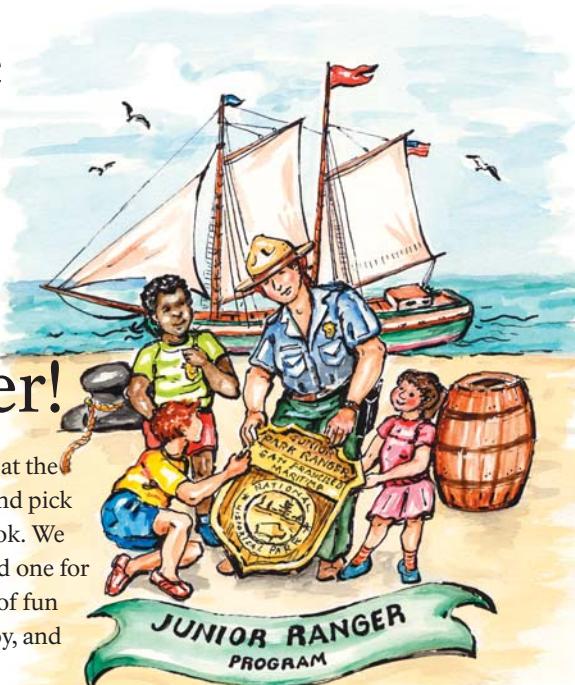
Photos: Top, company building on Howard Street in San Francisco in the 1890s; Left, the drawing office of Union's San Francisco shop; Right, The Smithsonian Institution recognized the significance of the Regan Vapor engine by taking the 1885 prototype into its collection in 1950, a precious relic sent off with a wistful smile by Otto Fischer. NPS photos, P05-077. The Union Diesel Engine Co. collections are available for research. Call the park library for information, 415-561-7080.

Join the Friends!

The Friends of the San Francisco Maritime Museum Library cooperate with the National Park Service to support the J. Porter Shaw Library at San Francisco Maritime National Historical Park. The work of the Friends is done by volunteers, and dues and donations serve to advance the Library. The organization welcomes members who are interested in maritime books, manuscripts, photos, oral histories and maritime lore in general. Membership includes reduced admission to Friends' events, free admission to Hyde Street Pier, and a discount on the purchase of books, photos, and vessel plans at the Library and the Maritime Store. To contact the Library Friends, call 415-561-7040.

Try out the new Junior Ranger program this summer!

Come by the visitor center, or stop at the ticket booth on Hyde Street Pier, and pick up a free Junior Ranger activity book. We have a book for kids ages 5 to 8, and one for the older set, 9 to 12. They are full of fun activities the whole family will enjoy, and are available in Spanish.



Visitor Information

Dates and Hours of Operation for June through September, 2008

Hyde Street Pier, located at Hyde and Jefferson Streets: June 1-21: 9:30AM to 5:30PM (Last Pier entry at 5PM.) June 22-August 16: 9:30AM to 6:30PM (Last Pier entry at 6PM.) August 17-September 30: 9:30AM to 5:30PM (Last Pier entry at 5PM.)

Visitor Center, located at the corner of Hyde and Jefferson Streets: June 1-21: 9:30AM to 5:30PM; June 22-August 16: 9:30AM to 6:30PM; August 17-September 30: 9:30AM to 5:30PM.

Aquatic Park Bathhouse Building, located on Beach Street at the foot of Polk Street. The building was closed in July 2006 for major renovation. The Senior Center, located in the building, remains open. For information, call the Visitor Center, 415-447-5000.

Maritime Library, on the third floor of Bldg. E in Fort Mason Center (auto entrance at Buchanan Street and Marina Blvd), is open to the public by making an appointment: Monday-Friday (1PM-4PM), and the 3rd Saturday of the month (10AM-4PM). Call 415-561-7030.

No-Fee Areas

Visitor Center, Hyde Street Pier, Aquatic Park Historic District and the Maritime Library (Fort Mason Center).

Boarding Pass (Entrance Fee For Historic Vessels): \$5.00

Free for supervised children under 16. Free with Federal Interagency Annual, Senior, and Access Passes, and San Francisco Maritime NHP Pass.

Reservations/Permits

Reservations for school groups and other educational groups must be made at least two weeks prior to your visit. At least one month's notice and application for Special Use Permits is required. Filming permits are arranged on an individual basis.

Contact Information

General Park Information: 415-447-5000
Maritime Store: 415-775-2665
Maritime Library: 415-561-7030

USS Pampanito: 415-775-1943
Park Website: www.nps.gov/safr
Association Website: www.maritime.org



Relive the golden Age of Sail as we welcome Tall Ships from all over the world to the Park, and along the waterfront, July 23rd to July 27th. These awe-inspiring vessels will parade under the Golden Gate Bridge, and will be berthed at three "villages," where the public may board them for tours, or go sailing and learn to hand, reef and steer! The centerpiece will be the Marine Education Village at the Park where a host of nautical activities are planned. Learn more at www.festivalofsail.org

Music, Tours, Events, Classes and Living History

MUSIC

CHANTEY SING

Saturdays, June 7, July 5 and August 2, 8PM-MIDNIGHT. Free. Aboard a historic vessel at Hyde Street Pier. Reservations required: call 415-561-7171 or email peter_kasin@nps.gov. Sing traditional working songs aboard a historic floating vessel. Bring a mug for hot cider served from the ship's galley.

MUSIC OF THE SEA FOR KIDS

Saturdays, June 21, July 19 and August 16, 3PM. Aboard Balclutha at Hyde Street Pier. Vessel admission (under 16 free). History comes alive for kids in this special program, where the songs are geared for younger ears and chosen especially for fun. Ages 7 and up. ☺

20TH SEA MUSIC CONCERT SERIES

COMING THIS FALL

Saturdays, September 27 and October 18, 8PM. Free. Aboard a historic vessel at Hyde Street Pier. For ticket information call 415-561-6662 ext. 33.

In September Geoff Kaufman brings his passion for maritime history and sea music to the pier and the group Ida Red will perform their a capella harmonies in October. More at www.nps.gov/safr/planyourvisit/concertseries2008.htm

MORE PROGRAMS

THE WORK WAS HARD AND THE WAGES LOW: A SINGING TOUR OF BALCLUTHA

Sundays, June 15 and August 3, 3PM. Aboard Balclutha at Hyde Street Pier. Vessel admission (under 16 free).

Find out how sailing ship crews sang their way through their days during this tour of *Balclutha*. Join in on the singing if it suits your fancy! ☺

CRAFTS FOR KIDS

Saturdays, June 28, July 26 and August 23, 3PM. Meet at the entrance to Hyde Street Pier. Free.

Hey kids, want to learn a little about life at sea and make a cool maritime craft? Come on down to the pier and join us! ☺



Hyde Street Pier, 1931.

HISTORIC WATERFRONT WALKING TOUR: FROM GOLD RUSH TO NATIONAL PARK

Saturdays and Sundays, June, July, and August, 10:30AM. Meet in the Argonaut Hotel lobby (495 Jefferson St.), adjacent to the Visitor Center. Free.

Over the last 160 years, industrial and recreational uses changed the environment of San Francisco's northern waterfront. Stroll with a Park Ranger to discover the history of this vibrant area on a walking tour through the Aquatic Park Historic District, the Cannery, Hyde Street Pier, and "Fish Alley" at Fisherman's Wharf. The tour is one hour and covers approximately one mile, with some gently sloping and uneven terrain. Dress in layers, wear sunscreen, and walking shoes. ☺

FUN FOR FAMILIES PROGRAM

GUIDED TOURS OF THE AQUATIC PARK BATHHOUSE BUILDING

Thursdays and Saturdays during August. Tour begins at 11:00AM. Meet at the entrance to the Bathhouse Building (maritime museum), 900 Beach Street, at the foot of Polk Street. Free.

Join a Park Ranger for a tour of the first floor of this newly restored Works Progress Administration-era building. Learn about the unique architecture, the stunning murals and artwork, and the recently completed renovation work.

BOOK TALK: "THAR SHE BLOWS"

Sunday, June 8, 1:30PM to 1:45PM. At the Sailor's Den in the Visitor Center. Free. Join a librarian for a whale of a tale about great books to read about whaling. She'll be spouting about Yankee whaling, the Eskimo boy Neeluk, and more. ☺

ADVENTURES AT SEA: LIFE ABOARD A 19TH CENTURY SAILING SHIP

Daily, June, July and August, 2:15PM. Aboard Balclutha at Hyde Street Pier. Vessel admission (under 16 free).

Join in on a guided tour of the historic ship *Balclutha*. Discover the hardships and rewards of the sailors who fought for survival during the treacherous Cape Horn passage. ☺

CAULKING A SEAM

Saturday, June 7, Sunday, July 6, and Sunday, August 24, 3PM. Aboard Balclutha at Hyde Street Pier. Vessel admission (under 16 free).

Watertight seams are essential on wooden sailing ships. Park Ranger Carol Kiser demonstrates the steps involved in caulking a deck seam. ☺



EUREKA ENGINE ROOM TOUR

Sunday, June 8, Saturday, July 12, and Sunday, August 10, 3PM. Meet on Eureka's gangway. Vessel admission (under 16 free). Take a special tour of the ferryboat *Eureka*'s engine room and get a close-up look at what makes a steam ferry run.

STAND BY TO ANSWER BELLS

Saturdays, June 21 and August 2, 1PM. Meet at Hercules's gangway on the Pier. Vessel admission (under 16 free). Tour includes climbing steep ladders.

Park Rangers will demonstrate how the captain atop the ship in the pilothouse communicated with the crew down below in the engine room. Help them use the voice tubes, bell and jingle system, and engine order telegraph. ☺

HERCULES ENGINEERING TOUR

Saturdays, June 14, July 26 and August 9, 1PM. Meet at the gangway on the Pier. Vessel admission (under 16 free). Tour includes climbing moderately steep ladders and entering cramped spaces.

Explore the major engineering spaces and learn about steam engine technology and its effects on the working environment of the marine steam engineer.

RESTORING THE C. A. THAYER

Sundays, June 22, July 27, and August 17, 3PM. In the Visitor Center theater. Free. This illustrated presentation will describe the recent restoration of the lumber schooner *C. A. Thayer* and the unique way she returned to Hyde Street Pier.

HERE COMES THE GREAT WHITE FLEET!

Saturday, June 14, Sunday, July 20, and Sunday, August 31, 3PM. In the Visitor Center theater. Free.

The Great White Fleet (16 battleships, all painted white) was sent around the world by President Theodore Roosevelt in 1907. This program will commemorate the 100th anniversary of the fleet's arrival in San Francisco Bay in May, 1908.

BIRDS OF THE BAY

Sundays, June 29, July 20, and August 17, 9:30AM-11:30AM. Meet at the Hyde Street Pier entrance. No fee.

View shore, migratory, citified and resident birds on this easy stroll. Bring binoculars, bird books and dress in layers. ☺

SMALL CRAFT ON HYDE STREET PIER

Sunday, June 1, Sunday, July 13, and Saturday, August 30, 3:00PM. Meet at the Small Boat Shop. Free.

Join a Park Ranger for a special tour of the unique collection of small craft berthed at Hyde Street Pier's floating docks.

SMALL CRAFT COLLECTION TOUR

Saturday, August 2, 9:30AM-2:30PM. Meet at the Small Boat Shop. Free. Reservations required; call the Boat Shop at 415-556-4031. Bring a bag lunch and ride with us over to our small craft warehouse in Alameda. We'll tour the collection of nearly 100 local historic boats, discussing interesting elements of their history, design and construction.

USS PAMPANITO: A PACIFIC ODYSSEY OF CRISIS

Friday, July 18, 11:00AM-12:30PM. Meet at the Pampanito ticket booth at Pier 45.

Adults: \$9, Kids (6-12): \$4. Space on tour is limited; reservations required; call 415-556-5787. Tour includes climbing steep ladders and entering cramped spaces.

This park ranger-guided program is a tour of the national landmark World War II submarine USS *Pampanito*. It will cover WWII submarine history, emphasizing *Pampanito*'s story of near constant crisis.

MODELMAKING

MODELERS' WORKSHOP

Saturdays, open throughout the summer, 9:30AM-4:30PM. On the car deck of the *Eureka*. Vessel admission.

The Hyde Street Pier Model Shipwrights is a club comprised of members interested in building ship models. Membership is open to anyone willing to learn these skills. Members are engaged in building their own models and also a unique model of the *Freda*, the oldest active sloop on the West Coast, which is presently being restored in Sausalito. Modeling techniques are available through demonstration and display. For information, contact Leo Kane at kanebulota@sbcglobal.net or Paul Reck at stoddardNH@comcast.net or call the Volunteer Office, 415-556-1613.

Accessibility Information

Programs in the Visitor Center, on Hyde Street Pier, and in the library are accessible. Accessibility to programs on the ships varies. Some areas of *Balclutha* and *Eureka* are accessible. *Thayer* and *Hercules* are not accessible. For detailed information, please call the Visitor Center, 415-447-5000.



COSTUMED LIVING HISTORY

A DAY IN THE LIFE: 1901

Saturdays, June 14, July 12 and August 9, 10AM-4PM. Aboard the historic vessels at Hyde Street Pier. Vessel admission.

Step into the past as you board our historic ships. Help the sailors on *Balclutha* raise the staysail in the morning and return for musical fun during the afternoon dog-watch. Visit the ship's cook in the galley, learn about life in 1901 from the ferryboat passengers on *Eureka*, or join Mrs. Galan on the *Ark* houseboat for afternoon tea to discuss issues of the day. Witness a period shipboard wedding in June; the July program will feature a dramatic re-creation of the 1901 labor strike that shook the San Francisco waterfront; in August join picnickers in period swimsuits frolicking on the beach. ☺



SAILING ON SAN FRANCISCO BAY

Thursdays and Saturdays, June 7, 26, 28; July 3, 5, 17; and August 7, 14, 16, and 21, 1-4:00PM. Adults: \$35; Seniors: \$30; Kids (6-15): \$20. Aboard the historic Alma.

Departs from Hyde Street Pier. Information and reservations: 415-447-5000.

Sail San Francisco Bay aboard the 1891 National Landmark schooner *Alma*. Take in dazzling views while park rangers tell stories about waterfront history—Native Americans, Spanish explorers, Gold Rush, Barbary Coast, Fisherman's Wharf, earthquakes, shipbuilding, and much more. ☺

IN THE LIBRARY

MARITIME HISTORY CLASS OFFERED TO THE PUBLIC

Mondays, June 23, 30 and July 7, 9AM to NOON. In the Maritime Library. Free.

Come join this free class on maritime history taught by park employees. Park historians, rangers, and librarians will transport you to the 18th and 19th centuries. Topics include the Gold Rush, ships sailing in the grain and lumber trades, and whaling. For reservations and info: Mark_Goldstein@nps.gov or 415-561-7035.

Today In The Park

JUNE

- 1 *Balclutha* Ship Tour (daily)
- Historic Waterfront Walking Tour (every Sunday)
- Small Craft on Hyde Street Pier
- 7 Historic Waterfront Walking Tour (every Saturday)
- Sailing on *Alma*
- Modelmaking Workshop open on Saturdays
- Caulking a Seam
- Chantey Sing
- 8 Book Talk in the Visitor Center
- Eureka* Engine Room Tour
- 14 Costumed Living History: A Day in the Life 1901
- Hercules* Engineering Tour
- Here Comes the Fleet!
- 15 Singing Tour of *Balclutha*
- 16-20 Gunkhole Trip on Sacramento Delta, for reservations call 415-561-6662 x30
- 21 Stand By To Answer Bells

Music of the Sea for Kids

- 22 Restoring the C. A. Thayer
- 23 Maritime History Class begins
- 26 Sailing on *Alma*
- 27 Park is 20 Years Old Today
- 28 Sailing on *Alma*
- Crafts For Kids
- 29 Birds of the Bay
- 30 Maritime History Class

JULY

- 1 *Balclutha* Ship Tour (daily)
- 3 Sailing on *Alma*
- 5 Historic Waterfront Walking Tour (every Saturday)
- Sailing on *Alma*
- Modelmaking Workshop open on Saturdays
- Chantey Sing
- 6 Historic Waterfront Walking Tour (every Sunday)
- Caulking a Seam
- 7 Maritime History Class
- 12 Costumed Living History:

A Day in the Life 1901

- Eureka* Engine Room Tour
- 13 Small Craft on Hyde Street Pier
- 17 Sailing on *Alma*
- 18 *USS Pampanito* Tour
- 19 Music of the Sea for Kids
- 20 Birds of the Bay
- Here Comes the Fleet!
- 26 *Hercules* Engineering Tour
- Crafts For Kids
- 27 Singing Tour of *Balclutha*
- Restoring the C. A. Thayer

AUGUST

- 1 *Balclutha* Ship Tour (daily)
- 2 Historic Waterfront Walking Tour (every Saturday)
- Bathhouse Building Tour (every Saturday)
- Small Boat Shop Collection Tour
- Stand By To Answer Bells
- Chantey Sing
- Modelmaking Workshop open on Saturdays

- 3 Historic Waterfront Walking Tour (every Sunday)

Singing Tour of *Balclutha*

- 7 Bathhouse Building Tour (every Thursday)

Sailing on *Alma*

- 9 Costumed Living History: A Day in the Life 1901

Hercules Engineering Tour

- 10 *Eureka* Engine Room Tour

14 Sailing on *Alma*

- 16 Sailing on *Alma*

Music of the Sea for Kids

- 17 Birds of the Bay

Restoring the C. A. Thayer

- 21 Sailing on *Alma*

23 Crafts For Kids

- 24 Caulking a Seam

30 Small Craft on Hyde Street Pier

- 31 Here Comes the Fleet!

The *Maritime News* is printed on recycled paper using soy-based inks. Please recycle it again.

Kids Fun Page

Float or Sink?

How do captains know how to safely load their ships?

Have you ever tried floating in the ocean? In your bathtub? Which was easier? You might have noticed it is easier to float in saltwater than freshwater.

It is easier for ships to float in saltwater, too. Two properties of water -- temperature and salinity (saltiness) -- affect how deep a ship's hull will float below the water's surface. Warm, salty water is easiest to float in, but not all ships stay in warm, salty water as they move cargo around the world. How do captains know their ships will stay afloat from one port to the next?

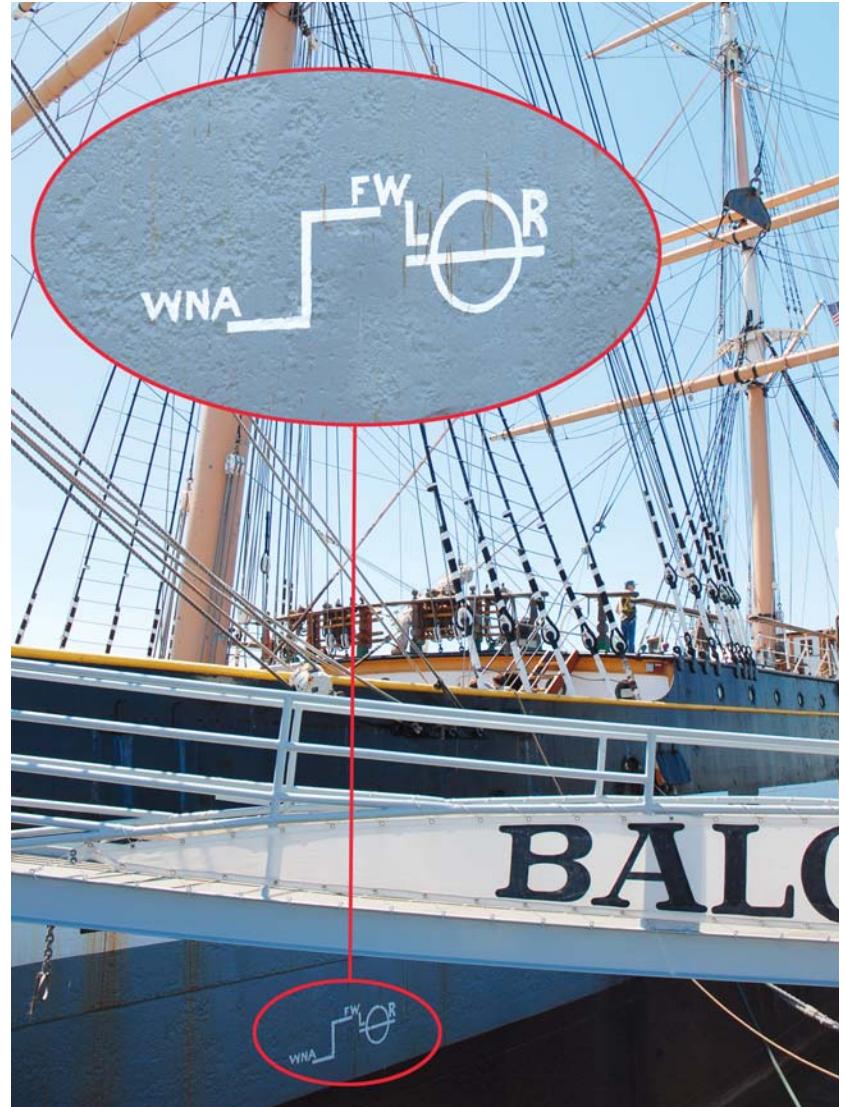
Imagine you are the captain of a gigantic cargo ship. You loaded your ship in a saltwater port in Japan, traveled across the entire Pacific Ocean, and are heading to a freshwater port in the San Francisco Bay to unload.

As you travel from saltwater to freshwater, your ship's hull will sink deeper into the water. Your ship could be in danger if the load is too heavy. It could run aground, break a hole in the hull

and, worst of all, leak fuel and oil into the water. In the 1860s, overloading was a big problem. Some ship owners filled their ships with more cargo than they could safely carry. Over and over again these "coffin ships" sank. Many sailors died and the cargo sank to the bottom of the sea. Some ship owners did not care if they lost a ship or two.

Samuel Plimsoll (1824-1898) did care, and was troubled by this thoughtless disrespect for sailors' lives. He devised a simple line to mark on the side of a ship to show the lowest level it should sit in the water. Owners could safely load a ship until it reached this line, but no further.

The idea of load lines dates back to ancient Greece and Rome, but there were no laws in Plimsoll's time requiring them to be on ships. Plimsoll fought for years to pass a law, the Merchant Shipping Act of 1876, requiring ships owners to put load lines on ships and to use them. Plimsoll's idea, known as the Plimsoll Mark, is still used all over the world.



Next time you see a container or cargo ship up close, look for the Plimsoll Mark on its side. Is the ship in freshwater or saltwater? Is it safely loaded? Now you know how to tell!

Photo: This is the Plimsoll Mark on the port (left) side of *Balclutha*. The horizontal lines show how deep a ship can be loaded with cargo in different waters. If the ship was in fresh water (FW), she could be loaded (sinking down lower) until the water was even with the line below FW. If she was in salt water, then she could be loaded to the line below WNA (Winter North Atlantic).

