



Californian Adventure Sails

Curator Guide

Revision 1

This Guide is intended to evolve with new ideas, observations, and insights aimed at best capturing the zest and excitement of a day under sail for our Museum visitors.

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Key Considerations

- **Shape our visitor's expectations throughout their sailing experience**
 - Educate them with a listing of the attractions they will see as soon as they enter our web page or buy a ticket
 - **Tell them when they first get aboard about the attractions they will see and the history we will tell them. Put things on a timeline so that they can instinctively understand at any point of the cruise what is still left to experience.**
- **Educate and inform;** our visitors expect that.
- **Push one-on-one interface** between individual crew members and visitors – they are great ambassadors
- **Brief all crewmembers** fully in advance on sail objectives, event orchestration, and jazzy things to emphasize.
- Highlight the uniqueness of *Californian* and of **sailing aboard such a 19th Century replica craft.**
- **Don't forget the kids** aboard and give them some attention and education that their parents will appreciate.
- Everyone has a camera; **specifically mention** at the beginning of the cruise what will be **the most photogenic sites** to zero in on.
- Make it clear to all visitors the difference between captain, mate, crewmember, and curator so they can put all this confusing activity around them into perspective.
- **Leave enough time for sightseeing, experiencing sea breezes, or just experiencing a unique event.**

Aircraft Carriers

- **The Navy's first aircraft carrier, *Langley*, was based at North Island beginning in 1924.**
 - *Langley* was converted from the collier *Jupiter* by installing a long flat landing deck over the top of the ship.
 - *Langley's* operations off Point Loma and with the Pacific Fleet led to the **invention of processes and procedures in operating aircraft at sea that are still in practice today**; things like: launching and landing routines, crew procedures on deck, and the use of colored jerseys to depict different crew specialties
 - Naval aviation tactics in launching airborne torpedoes and dive bombing (that would prove so crucial during World War II) were perfected off San Diego.
- **Carriers have operated from North Island for almost 90 years** first from a small pier across from the Maritime Museum, then from a long quay that was constructed during World War II and, most recently, from two new quays designed specifically for nuclear aircraft carriers.
- Today, three large (97,000 ton) nuclear aircraft carriers are assigned to San Diego and are regularly seen berthed at North Island: ***Ronald Reagan* (CVN-76), *Carl Vinson* (CVN-70) and *Nimitz* (CVN-68)**
 - Each carrier has a crew of about 3,200 and supports an airwing of 2,500 for a total complement of 5,700.
 - Each air wing is outfitted with 85 aircraft including fighter/attack jets, helicopters, airborne early warning aircraft and supply aircraft.

Ballast Point

- Ballast Point has been a prominent gateway to San Diego Bay since the Spanish era when it was named **Punta de los Gujarrros**, or “**Point of the Cobblestones**”.
- The Point received its current name from early **Yankee skippers who would gather cobblestones as ballast from the point or deposit excess ballast before loading cargo.**
- Until 1912 when the entrance to the harbor was dredged and straightened, **the channel into the bay was characterized by a sharp “S” turn at Ballast Point.** Outflow from San Diego River was unusually swift at this point, scouring a deep water channel (and helping to deposit stones from the river).
- **The Army established a gunnery position at Ballast Point before World War I** as part of Fort Rosecrans and many of the Post’s officer’s quarters are still used.
- **The Army transferred Ballast Point to the Navy in 1959 and the first nuclear submarine, *Scamp*, was homeported at Ballast Point in 1962.**
- Today Ballast Point is a **major Navy submarine base** and is homeport to Submarine Squadron 11, seven modern nuclear submarines and a floating drydock.

Battle of San Diego Bay 1803

- With increasing regularity beginning in 1800, small American trading ships in search of rich fur (sea otter) pelts along the West Coast visited San Diego. In March 1803, American brig *Lelia Byrd* (Captains William Shaler and Richard Cleveland) entered the harbor.
- Spanish law forbade any trading in California so sea captains entered port usually with stories of damage or lack of food or water. Once in port, Spanish laws were frequently ignored by local officials who could be swayed by profit
- Spanish authority in San Diego was enforced by the ramshackle Fort Guijarros at Ballast Point
 - Armed by several 9-pounder cannon but infrequently manned
- Five Spanish soldiers were placed aboard *Lelia Byrd* upon her arrival to discourage trading but several American crewmen were detained ashore after trying to buy some illicit furs.
- As *Lelia Byrd* attempted to escape (with her crewmen recovered and the Spanish guard as hostage) she was fired upon by the fort.
- *Lelia Byrd's* six 3-pounder swivel guns returned fire as the hostages dove for cover.
- Aim was bad on both sides with little to no damage and no recorded injuries and the wave of a hat between the participants ceased hostilities.

Cabrillo Lighthouse

- **Old Cabrillo Lighthouse was built 1854; light first activated in Nov 1855**
 - **One of the earliest lighthouses in California**, part of a system of eight lighthouses built by the US Coastal Survey shortly after California statehood.
 - Six of the eight lighthouses were built of similar iconic Cape Cod design and several can still be seen.
- **Five-foot tall, 3rd order Fresnel lens** ordered from France projected an oil wick light to over **25 miles at sea.**
 - At first a fixed white light but, with the growth of San Diego, its characteristic was changed to a alternating red and white light
- **Low clouds and fog often obscured the light from its high location on Point Loma's crest.**
- **Light extinguished March 1891** with completion of new sea-level light tower at end of Pt. Loma
- Site atop Point Loma was **designated a potential National Monument in 1906** with the **Monument formally designated in 1913**
 - Original goal was to demolish the decaying lighthouse and build a 150' statue of Juan Cabrillo in its place (luckily that never happened!).
 - **Third most visited national monument in the USA** (first is the Statue of Liberty)

Californian History

- **Californian was built at Spanish Landing in San Diego in 1984** as a replica of Revenue Cutter *CW Lawrence*, the first government ship stationed in California after statehood.
- **Californian is linked to the heritage of the Baltimore clipper topsail schooner**, a uniquely American contribution to the art of shipbuilding, deeply rooted in the maritime traditions of the Chesapeake Bay. These craft were long, lean, fast and more maneuverable than comparable European designs.
- **Californian** is 145 feet in length, weighs 130 tons and carries 7,000 square feet of canvas on masts that measure 101 feet. She is armed with four six-pounder deck guns.
- **Californian** was acquired by the Maritime Museum through a generous gift from the Hughes & Sheila Potiker Family Foundation in June 2002 and was overhauled with a grant from the California Coastal Conservancy.
- **In 2003, the governor designated Californian as the Official Tall Ship of the State of California.**

Coronado & Hotel del

- **Coronado is named for the Coronado Islands (Islas Coronados), four islands visible off the coast. Coronado became incorporated in 1890. Its population is 29,230 (2008).**
- Modern Coronado history began with the purchase of the entire “island” by Elisha Babcock and Hampton Story in 1885 and the establishment of the Coronado Beach Company to sell lots while the Hotel del Coronado was under construction.
- **The “Hotel del” seaside resort was the largest resort of its kind when it opened in 1888; and was the first to use electrical lighting**
 - Thomas Edison oversaw the installation of the nation’s first illuminated Christmas tree on the Del’s lawn in 1904.
 - It is said that writer L. Frank Baum, author of the “Wonderful Wizard of Oz” and who lived in Coronado and La Jolla, based the idea of the Emerald City on the hotel’s design.
 - Designated a National Historic Landmark in 1977
- Sugar baron John D. Spreckels became a major influence on Coronado beginning in 1890, building his mansion there and supplying the city with its first library.

C. W. Lawrence History

- **Revenue Cutter *CW Lawrence* was built at Foggy Bottom in Washington, DC and accepted into service in October 1848.**
 - Built to an improved Baltimore clipper design, she was made for speed and efficiency of operations
- ***CW Lawrence* was transferred to the West Coast upon the acquisition of the Oregon Territory and California.**
 - Sailed around Cape Horn arriving in San Francisco in October 1849. **First government assigned to California**
 - She found San Francisco in a state of near anarchy and nearly all her crew, including several officers, left the ship for higher paying positions or to seek their fortune in the gold fields.
 - San Francisco would grow from a population of 1,000 in 1848 to 25,000 in 1850 and public officers (like those aboard *CW Lawrence*) were few but had great responsibilities to enforce the peace.
- During 1850-1851 she was assigned to the ports of San Francisco and Puget Sound and made at least one cruise to Hawaii.
- In dark and stormy conditions on the night of **25 November 1851 *CW Lawrence* lost her track and foundered on the northern shore of San Francisco near the Golden Gate.**
 - Damaged beyond salvage and written off, her crew abandoned the ship with no loss of life.
- The *Campbell* class of revenue cutter began building in 1849 and the first of that class (renamed *Joseph Lane*) was sent westward to replace *CW Lawrence*

Early explorers to SD in Age of Sail

- **Juan Rodriguez Cabrillo**, a Spanish (or perhaps Portuguese sailing for Spain) explorer sailed from Navidad northward to become the first European to explore the California coast in San Salvador.
 - Landed in San Diego in September 1542, a port that he described accurately and named 'San Miguel'
 - Cabrillo continued northward up the coast probably beyond Monterey Bay before storms forced him back to the South to winter on the Channel Islands. There, after an accidental fall, Cabrillo died. His crew returned northward possibly reaching Oregon before returning to Mexico.
- **Sebastian Vizcaino stayed for ten days in 1602 renaming the bay San Diego**
 - His three-ship expedition (led by flagship *San Diego*) was to reconnoiter the California coast seeking safe harbors for Manila galleons returning from the Far East.
 - Calling San Diego Bay, "the best to be found in all the South Seas ..."
- **British explorer Captain George Vancouver visited and charted the bay and the Southern California coast in 1793.**
 - One of Britain's greatest navigators, his voyage along the coast of Spanish California was merely a sidelight of his 1791-1795 voyages in the Pacific that extensively explored the Pacific Northwest, Alaska and the Canadian coast.

Great White Fleet

- **In April 1906, Teddy Roosevelt's Great White Fleet stopped in San Diego during a sun-splashed weekend that changed San Diego's history forever**
- **The fleet number 16 powerful battleships, painted white with buff-painted superstructure and featuring 12-inch and 8-inch guns.**
 - On a two-year, round-the-world cruise to project American power into the Pacific and the Far East.
- **The Great White Fleet was originally not scheduled to stop in San Diego but the Navy succumbed to intense lobbying from San Diego city and chamber of commerce officials.**
- **20,000 San Diegans mobbed Coronado beaches to what the fleet's arrival. The fleet anchored off the Hotel del Coronado because the Bay was too shallow for their deep draught.**
- **The city "stopped" during the visit with a grand parade, speeches, balls, sports events, and thousands of sailors ashore.**
- **The Navy never forgot the tremendous outpouring of public good will they received and San Diegans never forgot how dashing and positive it was to have the Navy as part of the San Diego community.**

- During the Spanish and Mexican eras , **La Playa was the traditional anchorage for trading vessels visiting San Diego.**
 - **Literally “the beach” in Spanish**, La Playa featured a wide sandy beach that made boat landings convenient.
 - Beyond La Playa, San Diego Bay shallowed rapidly.
- During the early 1800’s clapboard **hide houses dotted the La Playa shore**, used for curing cattle hides for transport by ship.
 - Hides would be ruined by exposure to salt water that might occur transporting them from shore to ship in a rough swell, so the protected nature of the anchorage (inside Ballast Point and in the lee of Pt. Loma) was heralded by mariners.
- When US warship *Cyane* came to **San Diego to take the city at the commencement of the Mexican War**, she, too, anchored at La Playa and her landing party put ashore in boats and then took a dirt trail into Old Town.
- During the whaling period from 1850-1872, whales would be towed into San Diego Bay for processing at plants located at La Playa, Ballast Point and Whaler’s Bight on North Island.
- A coaling station, the first US Navy base in **San Diego, was established at La Playa in 1906**
 - Oil soon replace coal and La Playa has since been used by the Navy as their primary San Diego refueling and oil storage site.

La Playa

Naval Amphibious Base

- **Coronado's Naval Amphibious Base was created in 1943 from fill dredged from the bottom of San Diego Bay.**
 - The new tactics involving amphibious warfare in the Navy during World War II demanded a bevy of new specialty ships and a base to hone their use.
 - Beginning in 1944, the Naval Amphibious Base expanded rapidly with sailors and Marines practicing landing tactics on both the bay side and ocean side of the Silver Strand.
- **Today, the base is the Headquarters for the Navy's Surface Force (cruisers, destroyers, frigates, littoral combat ships, and amphibious ships)**
- The Naval Amphibious Base is also the Pacific center for Navy SEALs (the Navy's Special Warfare units)
 - SEAL = trained for Sea, Air, & Land warfare.
 - SEALs are an outgrowth of the Navy's Underwater Demolition Teams (UDT) of World War II that employed frogmen to clear enemy beaches of obstructions prior to amphibious landings
 - All Pacific Fleet SEAL Teams are based in Coronado
 - All Basic Training (BUD/S Training) for newly selected SEAL candidates is conducted at the Naval Amphibious Base and SEAL training is frequently seen on the beaches of the Silver Strand.

Naval Artillery

- **Naval guns are installed in gun carriages** that feature four small wheels and a breech rope and block-and-tackle arrangement to control recoil during firing. Guns are aimed by sight with elevation adjusted by a quoin under the breech.
- **Naval guns are generally classified by the weight of ball they fire.** In the early 1800's the largest guns were 42-pounders; frigates typically fired 32-pounders (but there were lots of variations. 6-pounder guns formed the auxiliary armament in frigates and the main armament of sloops and schooners.
- **Gun operation:**
 - The gun's sponger sponges out the cannon to remove any burning powder fragments in the barrel
 - The loader inserts a cartridge of powder (in a flannel or paper sack) using a ladle with a long handle
 - The sponger then rams a wad of rope yarn into the cannon to hold the cartridge in place and then rams a shot home with a second wad.
 - The gun captain then aims the gun while he inserts his priming iron through the touchhole to cut through the cartridge sack.
 - The gun captain finally inserts a thin priming tube filled with powder down the touchhole and then applies a slow match to the touchhole to fire the cannon.

Navy captures San Diego 1846

- **In the opening days of the Mexican War** the Navy dispatched **18-gun sloop-of-war *Cyane*** to take San Diego for the United States.
 - **Arrived 29 July 1846**, 3 days out of Monterey
 - First USN warship to visit San Diego
 - San Diego a dusty settlement of 500 centered around what is today Old Town
- ***Cyane* captained by Commander Samuel Francis DuPont of the famous DuPont family**
- Special Army detachment of 160 irregulars onboard *Cyane*.
 - Led by noted Western explorer Maj. John C. Fremont and including frontier scout Kit Carson and 8 Delaware Indians
- *Cyane* arrived at first light, carefully worked into the bay, anchored at La Playa, captured Mexican brig *Juanita* with war supplies
- **DuPont ordered a party of sailors and Marines ashore led by *Cyane's* First Lieutenant Stephen Rowan**
 - Fremont's men were still too seasick to go ashore
 - **Rowan took the dirt trail from La Playa to Old Town and in great ceremony raised the American flag in the town's plaza**
 - Fremont landed that evening and garrisoned the town
 - **Today, a large flagpole and a bronze plaque at Old Town commemorates this event.**
- Navy operated ships from San Diego for the Mexican War's duration; well received by San Diegans

North Island

- North Island is famed as the “**Birthplace of Naval Aviation**” .
 - The world’s first successful flight of a seaplane was conducted by inventor and entrepreneur Glenn Curtiss in San Diego Bay’s Spanish Bight in January 1911.
 - The first naval aviator, Lt. Theodore “Spuds” Ellyson, was trained by Curtiss at North Island
 - The first aircraft bought by the Navy and the first that was capable of operating from both land and water was designed and tested at North Island.
 - The Navy’s first squadron of three aircraft, four pilots, and seven enlisted mechanics was formed at North Island in 1912.
- From 1914 – 1934 **North Island was shared by both Army and Navy aviators** (the Army generally operating from the seaward side and the Navy from the bay side).
- North Island has also witnessed **several other aviation firsts**: first aerial refueling, first plane-to-plane radio transmission, first nonstop coast-to-coast flight, and numerous flight endurance records.
- In 1927 **Charles Lindbergh** departed North Island on the first leg of his historic flight.
- Today, North Island hosts numerous helicopter, supply and transport squadrons as well as three nuclear aircraft carriers.

Point Loma Natural History

- **Point Loma was once an offshore island (like the Coronados).**
- **Working slowly over the eons, silt and debris from the San Diego River built a wide fan of deposits seaward from the river's mouth in Mission Valley – protected from the erosion of offshore currents by the rocky outcroppings of Pt. Loma and La Jolla.**
 - These river deposits formed a wide flat plain between Old Town, Point Loma and Mount Soledad and leaving twin bays, one to the north in the shadows of Mount Soledad (Mission Bay) and one to the south (San Diego Bay).
- **The flow of the San Diego River varied, meandering right and left, sometimes flowing into San Diego Bay and sometimes into what would become known as Mission Bay.**
 - When Americans first came to San Diego the river emptied into San Diego Bay flowing past what is now the Navy's SPAWAR building and through the mudflats of Spanish Landing.
- **With the currents generally running southerly to seaward of Pt. Loma, a counterclockwise current eddy formed in the Point's lee, that, in turn, brought shore currents northward from Rosarito Beach and with them deposits of sand that ultimately formed the Silver Strand, Coronado and North Island.**

Richard Henry Dana

- Writer, lawyer, politician from Massachusetts (b. 1815 – d. 1882), **author of the classic *Two Years Before the Mast*, one of America's most famous accounts of life at sea.**
- *Two Years Before the Mast* is a memoir of Dana's voyage to the Pacific coast 1834-1836 aboard the brig *Pilgrim* and provides enticing views of early California and the role played by trading and merchant ships in the awakening of the United States to the promise of California.
- *Pilgrim* visited Monterey, San Pedro, San Diego, Santa Barbara, and San Francisco as she collected hides for shipment back to Boston.
- **Dana helped place San Diego on the map.** He portrayed San Diego's Old Town as it was in 1835 ("decidedly the best place in California"), described "the security and snugness of San Diego" harbor and the details of the "hide trade" (curing and trimming cattle hides for export) at Point Loma's La Playa.

Sail setting and dousing

- A **gaff rig** features a fore-and-aft four-corner sail secured to the mast on two of its corners . The sail stretches between a “head” that is raised by two halyards, and a “foot” .
 - Sheets on a fore-and-aft sail control the angle of the boom and the sail to the wind
 - The four-corner sail used in a gaff rig is an improvement over and allows for more sail area than a three-cornered fore-and-aft rig.
- **Headsails or jib sails are raised** by a halyard, are sheeted to tighten the sail, and then controlled by a jibsheet.
- **When setting square sails:**
 - Seamen first climb to the yardarm and walk out on footropes to unfurl the sails
 - Men on deck then haul on the sheets to extend the sail down to the tip of yard below and then bring the sail up to its working height
 - The sail is then “sheeted home” with the sheets pulled tight and then the braces adjusted to give the sail the optimum angle to the wind.
- **When dousing square sails:**
 - The yard is first lowered into its lifts by “clewing down”, leaving the sheets (lines securing the “clews” or lower corners) fast and hauling the clewlines.
 - Once the yard is down, the sheets are released and the sail is then “clewed up” and “bunted up” to the yard much as a theatre curtain is raised. Finally the crew lays aloft to furl the sail tightly to the yard.

San Diego – Coronado Bridge

- The San Diego – Coronado Bridge is a “prestressed concrete/steel” bridge, with the second-longest box girder (the center section over the shipping channel) in the world.
- 11,179 feet long. Construction began in 1967 and first opened to traffic in August 1969 – retiring the old Coronado ferries.
- The span reaches a maximum height of 200 feet, a height mandated by the Navy to allow its largest ships to sail beneath.
- The bridge is designed exclusively for motor vehicles with no pedestrian walkways, bike paths or shoulders.
- Winner of the “Most Beautiful Bridge in the World” Award in 1970 and slated for the installation of blue floodlights in the near future.
- Its caissons were drilled and blasted 100 feet into the bed of San Diego Bay and it has undergone two earthquake strengthening refurbishments.
- The bridge funnels traffic into Coronado along 3rd and 4th Streets, the second busiest surface streets in San Diego County (after Harbor Dr.)
 - It also holds the “distinction” as the third deadliest suicide bridge in the US with over 200 suicides between 1972 and 2000.
 - However the percentage of “successful” suicides is much less than the Golden Gate Bridge.

San Diego Naval Base

- **San Diego Naval Base is home to over 70 ships** of the Navy's Surface Force of the U. S. Pacific Fleet
 - High-tech Aegis cruisers and destroyers (many designed to shoot down intercontinental missiles), flat-deck helicopter carriers and large amphibious ships with stealthy masts are the most prominent on the waterfront.
- **Originally a World War I commercial ship-building site** for experimental merchant vessels made of poured concrete.
- With the **end of World War I**, San Diego talked the Navy into relocating their small ship repair operation to this "32nd Street" location to protect the city's investment in shipbuilding.
 - Commonly referred to as "32nd St." as, at first, that was the only way to the site across mud flats
- Navy used the site originally for the repair and **berthing of over a hundred mothballed four-piper destroyers** (the only Navy ships that could navigate the shallows of South Bay).
- Served as the West Coast's submarine base for a time before ultimately moving to Ballast Point.
- **Dramatic expansion during World War II** as the base served as a no-nonsense battle damage repair base and industrial center.
 - Over 5,000 ships repaired and returned to service between 1942 and 1945.
- Immediately after the war, half of the piers used for hundreds of mothballed ships

San Diego Shipbuilding Industry

- San Diego's major industrial shipbuilding activities are concentrated in South Bay growing from relatively inexpensive bay-side land and proximity to Navy activities.
- **The modern era of San Diego shipbuilding began in World War I** with the construction of *Cuyamaca* and *San Pasqual*, experimental merchant ships made of poured concrete at the current site of the San Diego Naval Base.
- **Largest San Diego shipbuilder is General Dynamics' National Steel and Shipbuilding Company (NASSCO).**
 - Largest new-construction shipyard on the West Coast specializing in medium-sized commercial ships and auxiliary and logistics ships for the Navy
 - Started as a foundry in 1905
 - First commercial ship built in 1959
 - Largest current project is for 14 large 41,000 ton dry cargo/ammunition ships of the *Lewis and Clark* class named for American explorers.
- Other local shipbuilders can be seen along the waterfront, including BAE Systems San Diego Ship Repair next door to NASSCO.

San Diego Tuna Industry

- **In 1980 San Diego held the distinction as the home port for the world's largest tuna fleet, with over a hundred tuna boats.**
 - Tuna seiners tied up principally at the Grape Street piers near the Maritime Museum and the mole near the current site of the USS Midway.
 - Canneries ashore included: Sun Harbor, Chicken-of-the-Sea and Star-Kist.
- Yellowfin tuna was the most prized catch for the San Diego tuna fleet, primarily from the eastern Pacific off Central and South America.
- Increasingly in the 1970's and 80's **environmentalists brought suits in U. S. courts against fishing interests.**
 - The tuna industry suffered by many reports of dolphins (swimming with tuna) killed when they were captured in large nets.
- Beginning in 1976, new U. S. regulations to help “save” porpoises drove tunaboat owners to reregister their craft in other countries.

Sea Lions

- **Sea lions are characterized by the presence of external ear flaps, long front flippers, the ability to walk on all four flippers on land, and the lack of dense underfur.**
- Seals, on the other hand, are earless and have streamlined back flippers that aid swimming but not walking.
- Occasionally Elephant seals will be seen on the coasts of San Diego. They are easily recognized as they are dramatically larger than seals and display typically bad temper.
- **Sea Lions are found from the arctic to tropical areas in both the North and South Pacific** but, notably, are not found in the Atlantic.
- Generally friendly toward humans (and a common star in circuses and Sea World shows), sea lions have also been trained by the Navy's Marine Mammal program in San Diego to provide underwater defensive duties like finding mines at sea and intercepting scuba divers

Silver Strand

- The Silver Strand is a **seven-mile long sandy isthmus** within the city of Coronado and just north of Imperial Beach.
- **The Strand owes its unique shape to a combination of natural forces.** The Otay Sweetwater Rivers (and at one time the San Diego and Tijuana Rivers) bring silt and debris to the bay and flow toward the bay's entrance at Ballast Point. In addition, Point Loma forms a barrier for north-to-south ocean currents and accentuates the natural northward shore current reaching toward San Diego from Mexico. This forms a gyre off the tip of Pt. Loma and encourages a northward travel of sand up along the Silver Strand where it is deposited.
- **The Strand is largely used as a Military Reservation and training site by the Navy.**
 - Coronado Heights at the southern end of the Silver Strand has been a military base since 1922 and the Naval Amphibious Base at the northern end of the Strand was established in 1943.
- **Silver Strand State Beach** straddles the isthmus and features recreation on both San Diego Bay and along the ocean.

Tacking and Maneuvers Under Sail

- **Tacking** is the process by which a sailing ship works its way to windward in a series of maneuvers, each by turning the bow through the eye of the wind, much as a road must ascend a steep hill through switchbacks. Every tack is an exercise in close timing as the Captain must use the sails even more than the rudder to force the ship into the wind and then over to the new tack.
- **Wearing** is the opposite of tacking, whereby a ship alters course to pass the stern through the wind. Unlike a tack, way (forward motion) continues through the maneuver but care must be taken in handling the powerful fore and aft sails as they will swing from one side of the ship to the other.
- A ship working her way to windward is said to be “**beating to windward**,” always sailing “**close hauled**” (as close to the wind as possible). Modern yachts may sail as close as 45* to the wind but square riggers (Californian) can sail no closer than six points – 67.5* (tacking through 135*). For every mile gained to windward, Californian must sail about 2.3 miles through the water!
- When the wind is coming from directly astern, the ship is said to be “**running downwind**”. The mainsail is eased out as far as it will go and the square sails braced square to the ship. This is the slowest point of sail as sails aft blanket sails forward and the force of the wind is diminished by the ship’s forward motion.

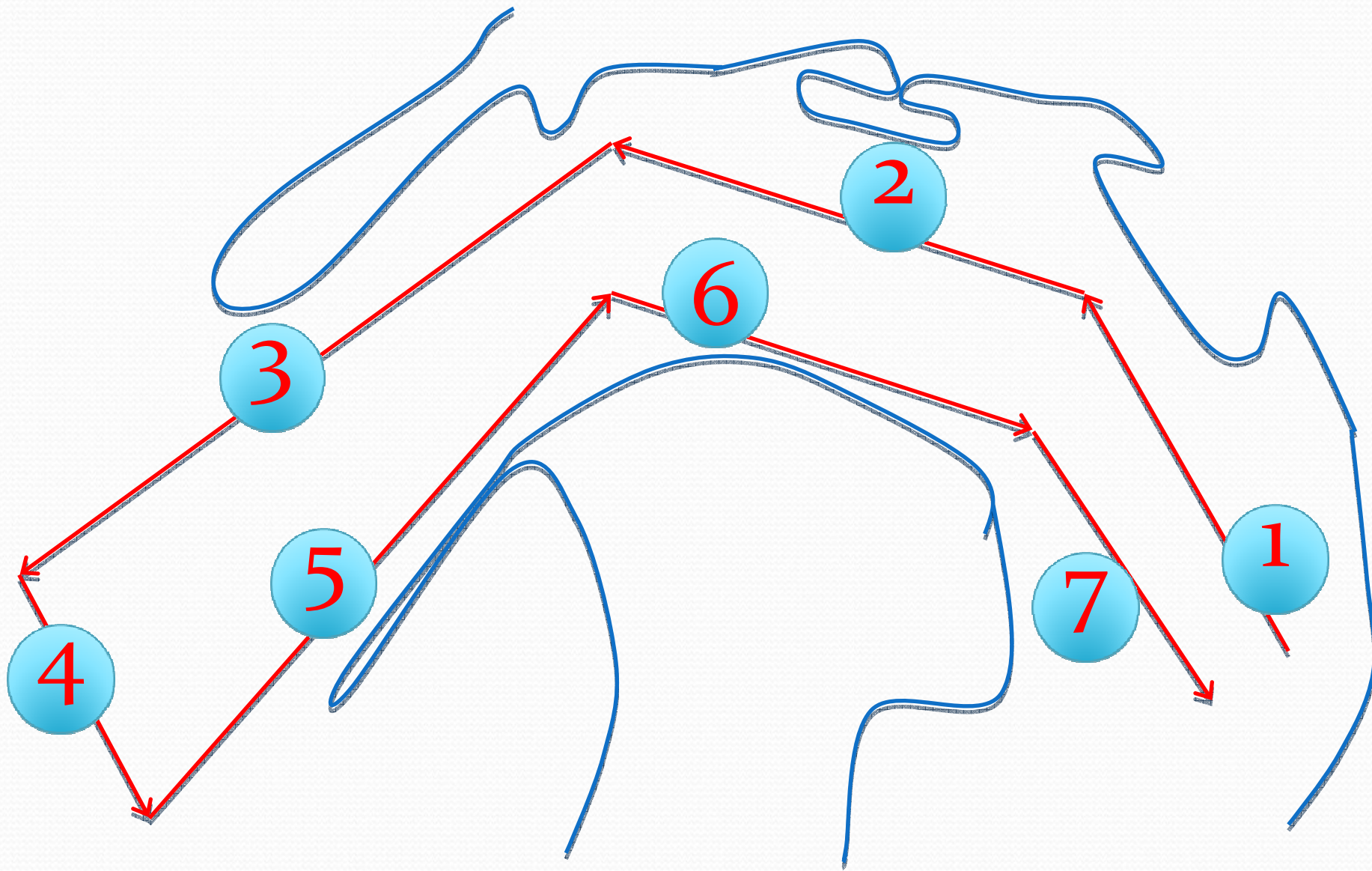
US Revenue Cutter Service

- **US Revenue Cutter Service was established in 1790** as an armed maritime law enforcement service – a precursor of today's US Coast Guard.
- In the days before income taxes, property taxes and corporate taxes, a large proportion of the federal government's operating income was derived from **customs duties and import tariffs** on commerce arriving into the United States by water.
 - Revenue cutters like *CW Lawrence* were built to enforce customs and tariff regulations and other statutes of maritime law and assist mariners in need.
 - Cutter captains were answerable to and received their sailing orders directly from the Customs Collector of the port to which they were assigned.
- The Revenue Cutter Service prized ships that were:
 - fast and maneuverable (to run down smugglers and others evading the proper payment of duties)
 - small and lightly manned (for efficiency and for less costly operations)
 - Armed. Revenue cutters were armed to enforce their missions with, typically, six to ten light guns.
- **Revenue Cutters were transferred to the West Coast with the acquisition of the Oregon Territory (including the state of Washington) in 1846 and California in 1848.**

Whaling

- **Gray whales** spend the summer months in the Bering and Chukchi Seas, and then leave for breeding lagoons in Baja California. They **follow one of the longest migrations route of any mammal on Earth, traveling 10,000 miles** round trip.
 - The southern migration begins in late September and by December the first whales begin to pass along the California coast usually passing within six miles of the coastline, with **peak numbers passing by San Diego in early January.**
 - After their stay in the lagoons of Baja California, the whales begin their northward passage, starting in February and usually ending in late March.
- **Beginning in 1858** (and lasting until about 1874), a **shore whaling operation operated in San Diego Bay** with ships and boats operating out of La Playa and a whale processing operation at Ballast Point and at Whaler's Bight on the shore of North Island near Zuniga Point.
- Small schooners or sloops would deploy several whale boats off Point Loma and attack passing whales with harpoons. Dead whales would then be towed into Ballast Point where they would be processed for their valuable whale oil.

Typical Adventure Sail Plan (Ocean)



Typical Adventure Sail Plan (Ocean)

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3

- Cabrillo Lighthouse
- Pt. Loma Natural History
- Sea Lions
- Whaling

4

- Early Explorers
- Great White Fleet
- Sail Setting & Dousing
- Tacking & Maneuvers

5

- Revenue Cutter Service
- *CW Lawrence* History
- Coronado / Hotel del
- Navy Captures San Diego

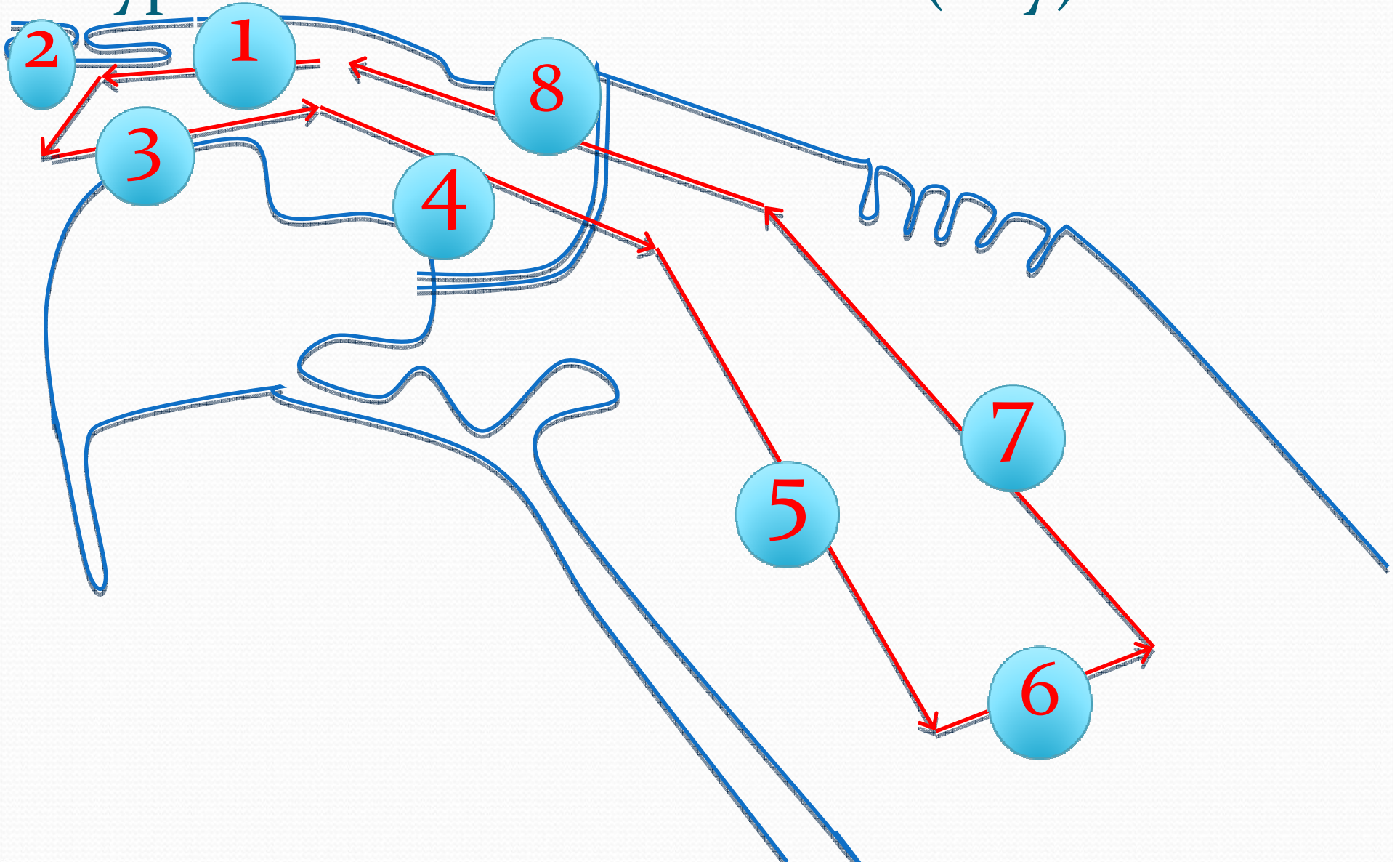
6

- North Island

7

- Naval Artillery
- Aircraft Carriers
- Gun firing
- Dousing sails & return

Typical Adventure Sail Plan (Bay)



Typical Adventure Sail Plan (Bay)

1

- Safety brief
- Raise sails

2

- Ballast Point
- Battle of San Diego Bay
- *Californian* History
- Early Explorers
- Pt. Loma Natural History

3

- Aircraft Carriers
- North Island
- Navy Captures San Diego

4

- Coronado & Hotel del
- Coronado Bridge
- Sea Lions

5

- Naval Amphibious Base
- Silver Strand
- *C. W. Lawrence* History
- Revenue Cutter Service

6

- Sail setting & Dousing
- Maneuvering & Tacking

7

- San Diego Naval Base

8

- Shipbuilding Industry
- Tuna Industry
- Naval Artillery
- Gun firing
- Dousing sails & return