

**ΑΚΑΔΗΜΙΑ ΕΜΠΟΡΙΚΟΥ ΝΑΥΤΙΚΟΥ
ΜΑΚΕΔΟΝΙΑΣ**

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ΕΠΙΒΛΕΠΟΥΣΑ ΚΑΘΗΓΗΤΡΙΑ: ΠΑΠΑΛΕΩΝΙΔΑ ΠΑΡΑΣΚΕΥΗ

ΘΕΜΑ: 10 BEST MARITIME MUSEUMS IN THE WORLD

**ΤΟΥ ΣΠΟΥΔΑΣΤΗ: ΒΑΓΙΩΝΑ ΒΛΑΔΙΜΗΡΟΥ
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Περιεχόμενα

Abstract.....	4
---------------	---

Κεφάλαιο 1

1.1 The National maritime museum.....	5
1.2 Captain James Cook.....	6
1.2.1 Admiral Horatio Nelson.....	7
1.2.2 The Battle of Trafalgar.....	8

Κεφάλαιο 2

2.1 Sydney Maritime Museum.....	10
2.2 The HM Bark Endeavour Replica.....	11
2.3 HMAS Vampire.....	12
2.4 HMAS Onslow.....	13

Κεφάλαιο 3

3.1 San Diego Maritime Museum.....	15
3.2 Star of India.....	15
3.3 Berkeley steam powered ferryboat.....	16
3.4 555 USS Dolphin.....	17

Κεφάλαιο 4

4.1 Liverpool Maritime Museum	19
4.2 Merchant Navy	20
4.3 RMS Titanic.....	21

Κεφάλαιο 5

5.1 Vancouver Maritime Museum	24
5.2 St. Roch	24
5.3 The Ben Franklin - Grumman/Piccard PX-15.....	25

Κεφάλαιο 6

6.1 Michigan Maritime Museum.....26

6.2 USCG 3646027

6.3 Bernida.....27

Κεφάλαιο 7

7.1 Maine Maritime Museum28

7.2 Wyoming.....29

7.3 Fresnel lens30

Κεφάλαιο 8

8.1 Voyager New Zealand Maritime Museum.....31

8.2 Polynesian navigation31

Κεφάλαιο 9

9.1 Kobe Maritime Museum.....33

9.2 HMS Rodney.....34

9.3 Yamato-1.....34

Κεφάλαιο 10

10.1 The Netherlands National Maritime Museum.....35

10.2 Ferdinand Magellan.....35

Sources.....37

ABSTRACT

This dissertation is about the ten best maritime museums in the world, namely (in order of presentation). NATIONAL MARITIME MUSEUM, SYDNEY MARITIME MUSEUM, SAN DIEGO MARITIME MUSEUM, LIVERPOOL MARITIME MUSEUM, VANCOUVER MARITIME MUSEUM, MICHIGAN MARITIME MUSEUM, MAINE MARITIME MUSEUM, VOYAGER NEW ZEALAND MARITIME MUSEUM, KOBE MARITIME MUSEUM, THE NETHERLANDS NATIONAL MARITIME MUSEUM. The most important “exhibits” from each museum are provided, including not only objects but also important past incidents as well as distinguished people.

1. The National Maritime Museum



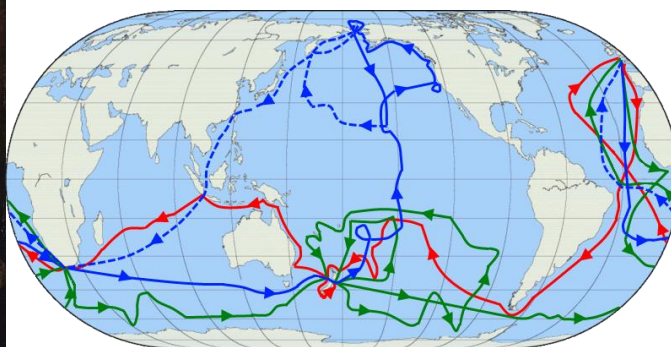
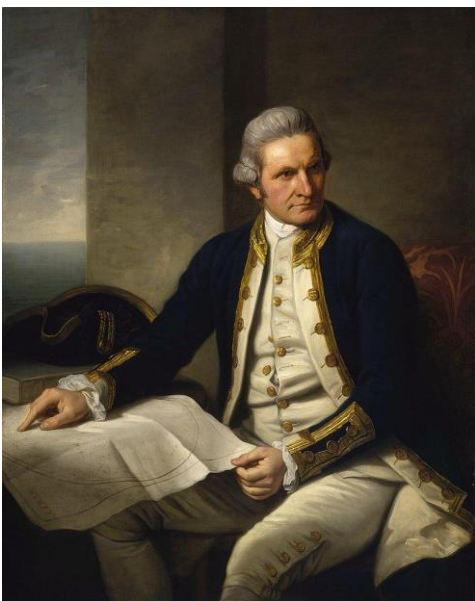
In Greenwich, London, the National Marine Museum (NMM) is a maritime museum. It's part of Royal Museums Greenwich, which is a collection of museums in the Maritime Greenwich World Heritage Site. It does not charge entry for most side-gallery temporary exhibitions, which are usually augmented by many borrowed works from other museums, just as other publicly funded national museums in the United Kingdom. The National Maritime Museum Act of 1934 established the museum, which is governed by a Board of Trustees nominated by HM Treasury. Sir James Caird (1864–1954) generously donated to it.

On April 27, 1937, King George VI formally opened the museum with his daughter Princess Elizabeth accompanying him on the Thames voyage from London. Sir Geoffrey Callender was the first Director. Greenwich has been associated with the water and seafaring since ancient times. The Romans landed here, Henry VIII lived here, the Navy had a presence on the waterfront, and Charles II established the Royal Observatory in 1675 for the purpose of "measuring the longitude of places."

Since 1884, Greenwich has been the home of Greenwich Mean Time and the Prime Meridian, and navigators all over the world have set their clocks to its time of day. More than two million items, including maritime art (both British and 17th-century Dutch), cartography, manuscripts including official public records, ship models and plans, scientific and navigational instruments, time-keeping

and astronomy instruments, and scientific and navigational instruments, are among the Museum's most important holdings on the history of Britain at sea (based at the Observatory). The National Maritime Museum's collection also includes some ship models, paintings, and flags that were taken from the German Naval Academy Mürwik following World War II. The institution has been chastised for having "looted art" on its premises. These cultural artifacts are regarded by the museum as "war trophies" that were removed in accordance with the Potsdam Declaration. The national maritime museum, however, stands out since it has the world's greatest collection of marine paintings. It is particularly well-stocked in the Dutch and English schools, with a remarkable collection of Van de Veldes works. These exhibits show how marine art in England evolved from seventeenth-century Dutch artists' celebration of ships, wars, and people who make up a maritime country.' Portraiture, battle art, seafaring and port sceneries are among the works in the collection. Outside of the National Portrait Gallery, the Museum's collection of portraits, which spans the centuries from 1500 to the present, is unrivaled. It includes both maritime and non-maritime sitters, naval and merchant service officers, scientists, British royalty, and non-British sitters. Many items in the collection are of exceptional artistic quality, significant in their own right as works of art, and they represent a cross-section of British portraiture. Portraits from the seventeenth and eighteenth centuries by some of the period's leading artists are particularly noteworthy. These include Lely's famous series of portraits, the 'flagmen' of the Battle of Lowestoft (1665), and portraits by Hogarth, Reynolds, and Gainsborough.

One of the most important exhibits for the Britain's naval history is Captain James Cook and his North-West Passage during the 1770s



The routes of Captain James Cook's voyages. The first voyage is shown in red, second voyage in green, and third voyage in blue. The route of Cook's crew following his death is shown as a dashed blue line.

Captain James Cook was a British explorer, cartographer, navigator, and captain in the British Royal Navy, famous for his three voyages between 1768 and 1779 in the Pacific Ocean and to Australia in particular. He made detailed maps of Newfoundland prior to making three voyages to the Pacific, during which he achieved the first recorded European contact with the eastern coastline of Australia and the Hawaiian Islands, and the first recorded circumnavigation of New Zealand. Cook traveled hundreds of kilometers over largely unexplored portions of the world on these journeys. He explored territories in the Pacific Ocean from New Zealand to Hawaii in greater detail and on a scale not previously recorded by Western explorers. For the first time, he surveyed and identified objects, and documented islands and coasts on European maps. He demonstrated seamanship, exceptional surveying and cartography abilities, physical courage, and the capacity to command troops in hazardous situations.

Another very important exhibit is Admiral Horatio Nelson and the Battle of Trafalgar.



Admiral Horatio Nelson was born into a middle-class Norfolk family and entered the military thanks to the encouragement of his uncle, high-ranking naval officer Maurice Suckling. Nelson progressed quickly through the ranks, serving with top naval commanders of the day before becoming command of his own ship in 1778, at the age of 20. He had a reputation for personal bravery and a good command of tactics, but he struggled with sickness and unemployment when the American Revolutionary War ended. Nelson was sent to the Baltic Sea in 1801, where he conquered neutral Denmark at the Battle of Copenhagen.

He oversaw the blockade of the French and Spanish ships at Toulon and, after they escaped, pursued them to the West Indies and returned, but failed to bring them to combat. The Franco-Spanish force emerged from port, and Nelson's fleet fought them in the Battle of Trafalgar. The fight became one of Britain's greatest naval victories, but Nelson, onboard HMS Victory, was severely wounded by a French sniper. His remains were sent to England, where he had a state funeral. Nelson's impact persisted even after his death, with recurrent revivals of interest,

particularly during times of crisis in Britain. In the 1860s, Poet Laureate Alfred Tennyson used Nelson's image and legacy to fight Prime Minister William Ewart Gladstone's defense cuts. During the early years of the twentieth century, First Sea Lord Jackie Fisher was a strong supporter of Nelson and frequently emphasized his legacy during his time of naval reform. During the Second World War, Winston Churchill felt Nelson to be an influence as well. Nelson has been featured repeatedly in art and literature, including works and biographies by John McArthur, James Stanier Clarke, and Robert Southey as well as paintings by Benjamin West and Arthur William Devis. Nelson is also acknowledged and memorialized in a number of songs written both during and after his death. The song "The Battle of the Nile: a Favorite Patriotic Song" commemorates Nelson's victory at the Battle of the Nile. Thomas Attwood's "Nelson's Tomb: A Favorite Song" commemorates Nelson's death in the Battle of Trafalgar. To honor his legacy and achievements, a variety of monuments and memorials have been built around the country and overseas. Nelson's Pillar, Dublin's Nelson monument, was demolished by Irish republicans in 1966. In Montreal, a statue was begun in 1808 and finished in 1809. Others followed suit across the world, with London's Trafalgar Square dedicated to him in 1835 and the centerpiece, Nelson's Column, completed in 1843. In 1876, a Royal Society of Arts blue plaque commemorating Nelson was installed at 147 New Bond Street. Sir Aston Webb, the architect of the Britannia Royal Naval College, Dartmouth, designed a window high in the chapel such that the light from it falls on the figure of Christ behind the altar every year on 21 October, the anniversary of Nelson's death.

The Battle of Trafalgar



During the Napoleonic Wars (1803–1815), the Battle of Trafalgar (21 October 1805) was a naval battle between the Royal Navy of the United Kingdom and the combined fleets of the French and Spanish Navies. Villeneuve commanded a combined fleet of thirty-

three line ships from France and Spain. Villeneuve was supposed to sail into the English Channel to cover a planned invasion of the United Kingdom by Napoleon. Napoleon was compelled to call off the invasion and move soldiers to Germany after Austria and Russia joined the war. Villeneuve was apprehensive about engaging the British, so Napoleon dispatched Vice-Admiral François Rosily to Cádiz to take command of the force. After that, Rosily was to sail it into the Mediterranean and embark troops in Naples before arriving at Toulon. Before his replacement arrived, Villeneuve chose to sail the fleet out. Patrolling British frigates spotted the fleet leaving port on the 20th of October 1805, and Nelson was informed that it looked to be going west.

Nelson was outmanned, with 27 British line ships compared to 33 allies, including the Spanish *Santisima Trinidad*, which was the biggest vessel in either fleet. To correct this imbalance, Nelson sailed his fleet straight at the flank of the allied battle line, aiming to shatter it. Villeneuve had been concerned that Nelson may use this technique, but had made no preparations for it for a variety of reasons. Almost everything went according to plan. Nelson's columns cut the Franco-Spanish fleet in three, isolating Villeneuve's flag onboard *Bucentaure* from the rear half. While attempting to turn back, the allied vanguard sailed away, giving the British fleet a momentary advantage over the rest of the fleet. The ferocious fight that followed resulted in the loss of 22 allied ships while the British suffered no losses. As the British forces neared the Franco-Spanish lines, the technique exposed the leading ships to intensive fire from numerous ships.

The other Admirals of the Campaign



Vice Admiral Cuthbert Collingwood



Pierre-Charles Villeneuve, the French Admiral



Federico Gravina, the Spanish Admiral

2.Sydney Maritime Museum



The Australian National Maritime Museum is a federally operated maritime museum in Darling Harbour, Sydney. Following consideration of the concept of constructing a maritime museum, the federal government stated that a national maritime museum would be built at Darling Harbour, as part of the New South Wales state government's renovation of the region for the Australian bicentennial in 1988. Although the museum building was planned by Philip Cox, it did not open until 1991 due to construction delays, cost overruns, and arguments between the state and federal governments about financing obligations.

<https://www.sea.museum/> is the official website of the museum where you can see the exhibits online and there some activities for the kids, tour of the submarine HMAS Onslow and stories.

Museum ships

The Australian National Maritime Museum's museum ship collection concentrates on three boats that are available to the public for inspection: the HM Bark Endeavour Replica, the destroyer HMAS Vampire, and the submarine HMAS Onslow. In addition, the 19th-century barque James Craig



1. The HM Bark Endeavour Replica is one of two copies of the HMS Endeavour, the ship commanded by Lieutenant James Cook during his mapping of New Zealand and Australia's east coast. The notion of replicating Endeavour for use as a museum ship arose during the 1980s when the Australian National Maritime Museum was being established; the vessel was to be financed by the Bond Corporation and given over to the

country once completed. The vessel's construction began in 1988, with the development of a specialized shipyard equipped with a public viewing platform and guided tours. Work was interrupted two years later due to financial issues at the Bond Corporation. A Japanese company, Yoshiya Corporation, stepped in, but was forced to withdraw its support owing to financial troubles. The finished vessel was maintained by volunteers until 1991, when the HM Bark Endeavour Foundation was established as a charity trust.

The Endeavour replica spent six months doing sea testing and operating off Fremantle before travelling through southern Australia to Sydney. After departing in October, the ship made multiple port calls along the southern and eastern coastlines before landing in December. She is now on exhibit at the Australian National Maritime Museum. From April to September 1995, the replica duplicated the original Endeavour's trip across Australia's east coast, followed by a three-month

visit to New Zealand from November 1995 to January 1996. Following that, the ship sailed to Fremantle via ports in Victoria and South Australia. The replica set sail for England via South Africa in October 1996, arriving in March 1997. After spending the remainder of the year touring British ports, the ship landed in Florida in March 1998 and visited 31 ports on both the east and west coasts of North America in 1998 and 1999. The replica Endeavour traveled from Vancouver to New Zealand via Hawaii, arriving in Wellington late December 1999 after circumnavigating the globe. The ship sailed to Sydney in May 2000 after spending five months in New Zealand waters. During the production of the documentary series *The Ship* in 2001, Endeavour hosted a BBC film team and replicated Cook's trip between Cairns and Jakarta. After undergoing extensive repairs in Fremantle in late 2001 and early 2002, the replica set sail in February for a second round-the-world journey. The ship proceeded to Whitby via Cape Horn, and wave video captured while crossing the cape was eventually utilized in digitally composited scenes in the 2003 film *Master and Commander: The Far Side of the World*. She was on exhibit for the most of the following two years, either at Whitby or at ports around the United Kingdom and Europe. The replica departed England in 2004 and returned to Australia via the Caribbean, Panama Canal, Galapagos, Tahiti, and New Zealand. She arrived at Sydney around night on April 17, 2005, after running aground a few hours earlier in Botany Bay. The ownership of the vessel was passed from the HM Bark Endeavour Foundation to the Australian National Maritime Museum upon arrival. Endeavour set sail from Sydney on her first tour of Australia in mid-April 2011. The counter-clockwise round of the continent concluded in May 2012, with fifteen ports visited and 13,300 nautical miles (24,600 km; 15,300 mi) sailed.



2.HMAS Vampire was the third of three Daring class destroyers built in Australia for the Royal Australian Navy (RAN). She was one of the first all-welded ships built in Australia, and she was commissioned into the RAN the day after she was completed at Cockatoo Island Dockyard between 1952 and 1959. The destroyer remained in service until 1986, when it was decommissioned and donated to the

Australian National Maritime Museum to be maintained as a museum ship; it is Australia's largest museum-owned vessel on display.

The primary armament of the Vampire comprised of six 4.5-inch (114-mm) Mark V guns positioned in three Mark 6 twin turrets, two front and one aft. Her anti-aircraft armament consisted of six 40 mm Bofors, two of which were mounted single on the front superstructure and two twin on the aft superstructure. For point defense, four .50 caliber (12.7 mm) Browning machine guns were carried. Five 21-inch (533 mm) torpedo tubes were mounted on the deck between the front and aft superstructures using a single Mark IV pentad mount. A Limbo anti-submarine mortar was kept on the aft deck, offset to port, for anti-submarine combat. Various refits included the removal of the twin Bofors, torpedo launcher, and Limbo mortar. Throughout her career, a Sea Cat missile system was deployed.

The Type 170 assault sonar, the Type 174 search sonar, and the Type 185 submarine detection sonar were all installed on Vampire. A Fly Plane 3 and an MRS 8 were the initial fire control directors. During the 1970–71 refurbishment, two M22 units were installed in their place. During the same refit, a LW-02 air search radar was fitted in place of the air warning radar, and an 8gr-301A surface search and navigation radar was added.



3.HMAS Onslow (SS 60/SSG 60) is one of six Oberon-class submarines, decommissioned in 1999 and previously operated by the Royal Australian Navy (RAN). The submarine was named after Onslow, Western Australia, and Sir Alexander Onslow, with the motto and insignia coming from Onslow's family background. Onslow was ordered in 1963, put down by Scotts Shipbuilding and Engineering Company

in Scotland at the end of 1967, launched almost a year later, and commissioned into the RAN at the end of 1969. During her service, Onslow was the first conventionally powered submarine to be outfitted with anti-ship missiles, and she was effective in wargames, "sinking" a seven-ship flotilla during Exercise Kangaroo 3 in 1980 and the United States supercarrier USS Carl Vinson during RIMPAC 1998. After being decommissioned in March 1999, Onslow was donated to the Australian National Maritime Museum in April, where she is now maintained as a museum ship. Onslow's primary armament consists of six 21-inch (53-cm) bow torpedo tubes capable of shooting torpedoes or dropping naval mines. The submarine initially carried the British Mark 8 torpedo, which was replaced with the wire-guided Mark 23. During a refurbishment from 1982 to 1984, Oberon became the world's first conventionally powered submarine to be outfitted with anti-ship missiles, especially the UGM-84 Sub Harpoon. At the same period, the Mark 23 torpedoes were replaced with the US Mark 48 wire-guided torpedo. As of 1996, the normal cargo of the Onslow was a combination of 20 Mark 48 Mod 4 torpedoes and Sub Harpoon missiles. Some or all of the torpedo payload might be replaced with Mark 5 Stonefish sea mines released through the torpedo tubes. The submarine's secondary armament consisted of two stern-mounted, short-length 21-inch (53 cm) torpedo tubes: these were intended for use against pursuing submarines, but the development of steerable wire-guided torpedoes shortly after the boat entered service made these redundant, and they were closed off during the 1982–84 refit. The aft tubes fired Mark 20 anti-submarine torpedoes. On March 30, 1999, Onslow was deactivated. Onslow traveled 358,068 nautical miles while in service (663,142 km - 412,057 mi). On the same day, sister ship Otama was permanently moved to the submarine base at HMAS Stirling in Western Australia, paving the door for HMAS Platypus to be decommissioned.

3.San Diego Maritime Museum



The Nautical Museum of San Diego, founded in 1948, includes one of the country's most extensive collections of ancient maritime boats. The Star of India, an 1863 iron bark, is the showpiece of the museum's collection, which is located in San Diego Bay. The MacMullen Library and Research Archives are housed in the museum's 1898 ferryboat Berkeley. The museum also publishes *Mains'l Haul: A Publication of Pacific Maritime History*, a quarterly peer-reviewed journal.

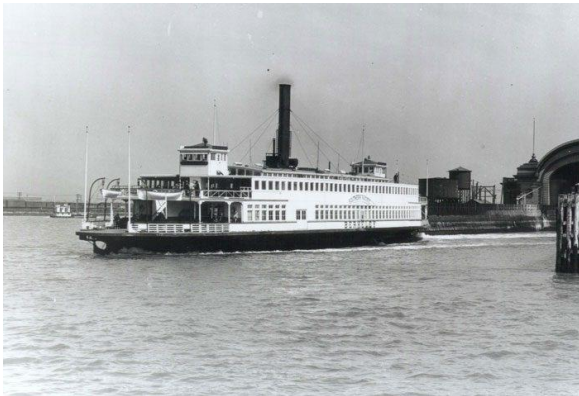


1.The star of India

She was a full-rigged ship (a ship with square-rigged masts on all three masts) constructed of iron in 1863 by Gibson, McDonald & Arnold of Ramsey, Isle of Man, for the Indian jute trade of Wakefield Nash & Company of Liverpool. She was launched on November 14, 1863, with the British registration number 47617 and the signal VPJK. The Star of India is an iron-hulled sailing ship that was built at Ramsey, Isle of Man, in 1863 as the full-rigged ship, *Euterpe*. She was renamed, re-rigged as a barque, and became a salmon transporter on the Alaska-California route after traveling from the United Kingdom to India and New Zealand. She was retired in 1926 and was reconstructed as a seaworthy museum ship in 1962–3 at the Maritime Museum of San Diego, California. She is the oldest ship currently sailing on a regular basis, as well as the oldest iron-hulled commerce ship still in operation. The ship is designated as a California Historical Landmark as well as a National Historic Landmark in the United States.

Euterpe's career got off to a shaky start. Captain William John Storry commanded her when she traveled from Liverpool to Calcutta on January 9, 1864. A collision with an unlit Spanish brig off the coast of Wales sank the jib-boom and damaged the other gear. The crew revolted, refusing to continue, and the ship was brought to Anglesey for repairs; 17 of the crew were imprisoned in the Beaumaris Jail and forced to work. Then, in 1865, amid a gale in the Bay of Bengal off Madras, Euterpe was compelled to cut her masts and limp to Trincomalee and Calcutta for repair. Captain Storry died and was buried at sea during the return journey to England.

2. Berkeley steam powered ferryboat



The Berkeley is a steam ferryboat built in 1898 that served San Francisco Bay for 60 years. The LOA is 279 feet (85 meters), and the engine is a steam-powered, triple expansion 1450 horsepower engine. Berkeley was one of numerous Southern Pacific Railroad ferryboats that operated on San Francisco Bay for sixty years between the Oakland Pier and the San Francisco Ferry Building. She was built in 1898

by the Union Iron Works of San Francisco and operated as a refugee ferry over the bay to Oakland following the 1906 earthquake. Berkeley was remarkable for being the West Coast's first propeller-driven ferry. With a passenger capacity of 1700 when she was launched on October 18, 1898, she became the largest commuter ferry boat in the United States. She was also notable for being one of the first ferries to be propelled by a triple-expansion steam engine.

Beginning in 1898, Berkeley was in regular service. Berkeley collided with the coastal passenger liner SS Columbia as she was leaving her port in San Francisco on October 3, 1900. As a result of signal misinterpretation While the latter ship was undergoing repairs, the ferry Newark took over for Berkeley. She was decommissioned for repairs in the spring of 1958. She was never used again since Southern Pacific chose to discontinue all ferry operations on July 29, 1958. Berkeley was placed up for sale and was acquired by the Golden Gate Fishing Company to be utilized as a whaling processing plant. However, before she was put to this use, she was sold to ferryboat enthusiast and businessman Bill Conover. Berkeley was docked at Sausalito, a little village on the Bay in Marin County, and was turned into a gift shop called "Trade Fair." Berkeley, on the other hand, was not well-maintained in

her gift store incarnation, and 12 years of major degradation took its toll. She was sold to the San Diego Maritime Museum in 1973. She was dragged out of San Francisco Bay by tug on May 31, 1973, and arrived three days later in San Diego, where she was eventually repaired. She is presently the primary "building" of the Maritime Museum in San Diego.



3.555 USS Dolphin

The USS Dolphin (AGSS-555) was a diesel-electric deep-diving research and development submarine in the United States Navy. She was commissioned in 1968 and retired in 2007. Her 38-year career was the longest in US Navy submarine history. She was the Navy's final

operational conventionally powered submarine. Dolphin was used for both civilian and military purposes, and it was outfitted with a sophisticated equipment suite that enabled tasks such as acoustic deep-water and littoral studies, near-bottom and ocean surveys, weapons launches, sensor testing, and engineering assessments. Dolphin was built as a test platform, so she could be changed both internally and externally to accommodate the installation of up to 12 tons of specialized research and testing equipment. She includes internal and exterior mounting points, several electrical hull connectors, and up to ten equipment racks for project usage. Dolphin was created as part of SCB 207. Her keel was laid on November 9, 1962, at the Portsmouth Navy Yard in Kittery, Maine. She was launched on June 8, 1968, sponsored by Mrs. Maggie Shinobu Inouye (née Awamura), wife of U.S. Senator Daniel K. Inouye, and commissioned on August 17, 1968, with Lieutenant Commander J.R. McDonnell in charge. Dolphin's hull number, "555," is remarkable in that it was taken out of order. At the time of her commissioning in 1968, the five other new Sturgeon class submarines commissioned that year had hull numbers ranging from 638 to 663. Dolphin's hull number was drawn from a pool of cancelled hull numbers from the World War II-era Tench class, the last of which was commissioned in 1951. It is unknown why "555" was chosen as Dolphin's hull number.

Dolphin underwent three and a half years of repairs and modifications at a cost of \$50 million, after which she completed sea trials in the summer of 2005 and returned to duty for one year. Dolphin was retired by the Navy in mid-2006, citing yearly operating costs of \$18 million. She was decommissioned and removed from the Naval Vessel Register on January 15, 2007, after being deactivated on September 22, 2006. Her 38-year service as a US Navy submarine was the longest in history.



4.Liverpool Maritime Museum



The Merseyside Maritime Museum is a museum in Liverpool, Merseyside, England, United Kingdom. It is a component of National Museums Liverpool and an anchor point of ERIH, The European Route of Industrial Heritage. It was opened for a trial season in 1980 before being fully operational in 1984 and expanded in 1986. The museum, together with the Piermasters House, Canning Half Tide Dock, and Canning Graving Docks, is housed in Warehouse Block D at the Albert Dock. The Merseyside Maritime Museum's collection was founded in 1862. Due to a lack of funding, the collection grew slowly over time, to the point where it was nothing more than "an ancient dug-out canoe and a few miniature ships" by 1924. Robert Gladstone (maritime historian and great-nephew of former Prime Minister William Gladstone) established the shipping gallery in 1931, which was largely damaged during the May Blitz in 1941. The History of the Ship gallery debuted in 1965, followed by the Port of Liverpool display (1971) and the New Shippers Exhibition (1975). The construction of a specialist maritime museum began in the late 1970s, with a trial season beginning in 1980. The city's maritime past is brought to life within the historic Albert Dock. The museum's displays highlight Liverpool's global significance as a gateway to the world, including the transatlantic slave trade and emigration, the merchant navy, and the RMS Titanic. 'Seized' at the National Museum of the United Kingdom Border Agency The exhibition 'The Border and Customs Uncovered' is housed in the building's basement gallery.

1. Merchant Navy



King George V bestowed the title of the "Merchant Navy" on the British merchant shipping fleets following their service in the First World War since then a number of other nations have also adopted use of that title or the similar "Merchant Marine". The following is a partial list of the merchant navies or merchant marines of various countries. In many countries the fleet's proper name is simply the capitalized version of the common noun ("Merchant Navy").

British Merchant Navy

The British Commercial Navy is made up of British merchant ships that transport merchandise and passengers throughout times of peace and conflict. For most of its existence, the merchant navy was the world's greatest commercial fleet, but with the loss of the British Empire in the mid-twentieth century, it dropped down the rankings. In 1939, the merchant fleet was the greatest in the world, accounting for 33% of total tonnage. By 2012, the merchant navy, which was still one of the largest in the world, accounted for barely 3% of total tonnage. As of the conclusion of the fiscal year 2012, British Merchant Marine holdings included 1,504 ships of 100 GT or more. This covers ships that are directly owned by the UK, owned by a parent firm, or managed by a British corporation. This equates to 75,265,000 DWT. This is according to yearly marine shipping data published by the British government and the Department for Transport.

Greek Merchant Marine

Today, the Greek marine fleet is involved in global trade and transportation of products and services. It comprises of commerce boats owned by Greek people and flying either the Greek flag or a flag of convenience. Greece is a maritime nation by tradition, as shipping is likely the Greeks' oldest type of occupation and has been a vital component of Greek economic activity from ancient times. According to Lloyd's List, the Greek Commercial Marine has the world's largest merchant fleet in terms of tonnage in 2015, with a total DWT of 334,649,089 tons and a fleet of 5,226 Greek-owned vessels. [6] Greece is also ranked highly for all sorts of ships, including first for tankers and

bulk carriers. Greece holds 23.2 percent of the world's entire commercial fleet, making it the world's largest.

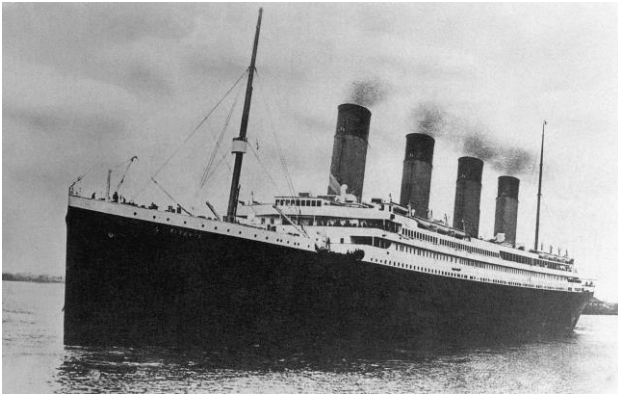
U.S. Merchant Marine

The United States Commercial Marine consists of civilian-owned merchant ships and government-owned ships (Military Sealift Command, NOAA, Army Corps of Engineers, Department of Homeland Security), as well as the men and women who staff them. During the day, the merchant marine ferries goods and passengers. During a conflict, the merchant marine serves as an auxiliary to the navy and can be called upon to provide personnel and supplies to the military. Merchant mariners are citizens except during times of war, when they are designated military troops under the Merchant Marine Act of 1936. In 2009, the US merchant fleet comprised 422 ships and nearly 69,000 personnel.

2.RMS Titanic

The name Titanic is derived from Greek mythology's Titans. The RMS Titanic was the second of three Olympic-class ocean liners built in Belfast, Ireland, in the United Kingdom of Great Britain and Ireland, the first being the RMS Olympic and the third being the HMHS Britannic. Titanic was propelled by three major engines: two four-cylinder triple-expansion steam engines and one low-pressure Parsons turbine in the middle, each of which drove a propeller. The two reciprocating engines produced a total of 30,000 horsepower (22,000 kW). The steam turbine produced 16,000 horsepower (12,000 kW). The White Star Line had previously used the identical engine combination on the SS Laurentic, which had been a major success. Fuel consumption and motive power might be reduced while using the same amount of steam if reciprocating engines and turbines are combined. It provided a good combination of performance and speed, as reciprocating engines alone were insufficient to propel an Olympic-class liner at the desired speeds, and turbines were powerful enough but caused uncomfortable vibrations, a problem that also affected the all-turbine Cunard liners Lusitania and Mauretania. They were by far the largest boats in the fleet of the British shipping business White Star Line, which had 29 steamers and tenders in 1912. The White Star Line's chairman, J. Bruce Ismay, and the American banker J. P. Morgan, who controlled the White Star Line's parent firm, the International Mercantile Marine Co., discussed the three ships in mid-1907. The RMS Titanic was the biggest ship afloat at the time she entered service, and she was built in Belfast by the Harland & Wolff shipyard. Thomas Andrews, the shipyard's principal naval architect at the time, was killed in the tragedy. The RMS Titanic sank in the North Atlantic Ocean

on 15 April 1912 after colliding with an iceberg during her first journey from Southampton, UK, to New York City. More than 1,500 of the estimated 2,224 passengers and crew aboard died, making



the disaster one of the bloodiest for a single ship at the time. It is still the worst peacetime sinking of a superliner or cruise ship. Captain Edward Smith, who perished with the ship, commanded the Titanic.

The ocean liner transported some of the world's wealthiest individuals, as well as hundreds of emigrants from the United Kingdom and Ireland,

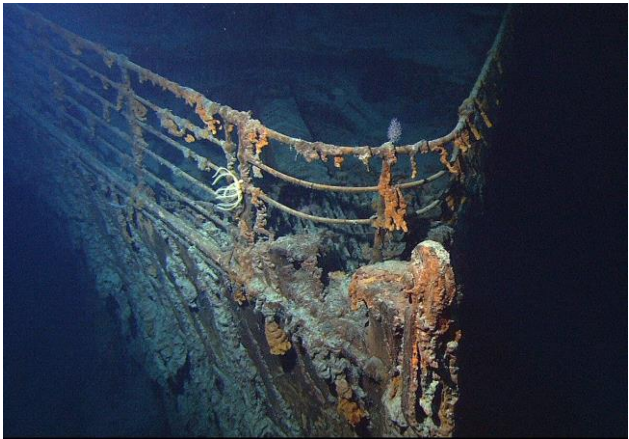
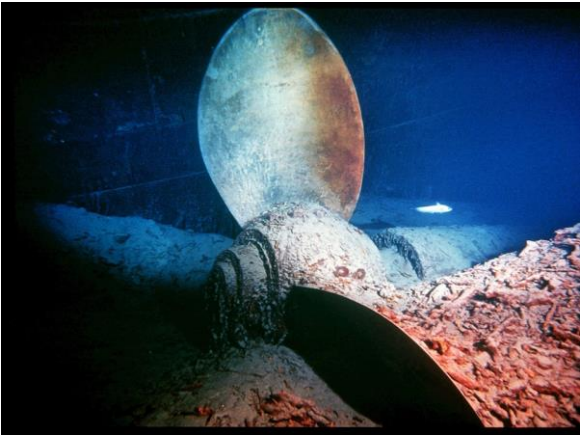
Scandinavia, and other parts of Europe looking for a better life in America. With a gymnasium, swimming pool, library, high-class restaurants, and lavish staterooms, the first-class accommodation was meant to be the peak of comfort and elegance. A powerful radiotelegraph transmitter was provided for sending "marconigrams" to passengers as well as for ship operations.

Watertight compartments and remotely actuated watertight doors were among the sophisticated safety systems of the Titanic. The ship had 16 lifeboat davits, each of which could lower three lifeboats for a total of 48 boats. Despite this, the Titanic only carried 20 lifeboats, four of which were collapsible and difficult to launch as the ship sank. The 20 lifeboats could accommodate a total of 1,178 people, which was less than half the number of passengers on board and one-third of the number of passengers that the ship could have transported at full capacity. (At the time, this was in accordance with marine safety laws.) Furthermore, as the ship sank, the lifeboats that had been lowered were only approximately half filled.

The accident sparked widespread shock and indignation, both for the massive loss of life and for the regulatory and procedural flaws that had led to it. In the United Kingdom and the United States, public inquiry resulted in significant changes in marine safety. The formation in 1914 of the International Convention for the Safety of Life at Sea (SOLAS), which still controls maritime safety today, was one of the most significant outcomes of the investigations. In addition, an effort was made to learn from the many mistakes in wireless communications that had increased the number of deaths, and as a consequence, various new wireless laws were implemented across the world.

The Titanic was long assumed to have sunk in one piece, and several proposals to raise the remains were proposed throughout the years. None came to fruition. The primary issue was the sheer difficulties of locating and accessing a wreck that is almost 3,700 m below the surface at a position where the water pressure is above 450 bar. A number of missions were launched to discover Titanic, but it wasn't until 1 September 1985 that a Franco-American team commanded by Jean-

Louis Michel and Robert Ballard succeeded. The researchers determined that the Titanic had torn apart, most likely at or at the surface, before sinking to the seabed. The divided bow and stern pieces are located about 0.6 kilometers apart in Titanic Canyon, off the coast of Newfoundland.



5. Vancouver Maritime Museum



The Vancouver Maritime Museum is a maritime museum dedicated to the presentation of the marine history of Vancouver, British Columbia, Canada, as well as the Canadian Arctic. It is located in Vanier Park, just west of False Creek on the Vancouver waterfront, and was built as part of the city's centennial celebrations in 1959. The museum is linked to the CMA, CHIN, and the Virtual Museum of Canada. The main attraction is the Royal Canadian Mounted Police ship St. Roch. It was the first ship to circumnavigate North America and the second to travel through the Northwest Passage. She was the first ship to transit the Northwest Passage from west to east, following in the footsteps of Amundsen's sailing ship Gja 38 years previously. St. Roch was constructed mostly of thick Douglas fir, with an exterior of very durable Australian "ironbark" eucalyptus and an internal hull reinforced with substantial beams to withstand ice pressure during her Arctic missions.



1. St. Roch was built in 1928 at the Burrard Dry Dock Shipyards in North Vancouver. Between 1929 and 1939, she supplied and patrolled Canada's Arctic. Between 1944 and 1948, she patrolled the Arctic seas once more. On May 29, 1950, she became the first vessel to circle North America, sailing from Halifax, Nova Scotia, to Vancouver through the Panama Canal. She completed three arctic

excursions in all.



2. The Ben Franklin - Grumman/Piccard PX-15

The Ben Franklin mesoscaphe, also known as the Grumman/Piccard PX-15, is a crewed underwater submersible that Piccard and the Grumman Aircraft Engineering Corporation, led by Donald B

Terrana, built between 1966 and 1968 at

the Giovanola fabrication plant in Monthey, Switzerland, then disassembled and shipped to Florida. The research vessel was designed to accommodate a six-person crew for up to 30 days of oceanographic study at the depths of the Gulf Stream. It was designed to float at neutral buoyancy at depths ranging from 180 to 610 meters, with a crush depth of 1,200 meters. The 130-ton spacecraft is outfitted with four external electric propulsion pods, which are mostly used for altitude trimming. Tons of lead batteries are kept outside the hull and power the ship. It is 14.86 meters long, 6.55 meters wide, and 6.1 meters tall. Piccard insisted on 29 observation portholes, despite engineers' concerns about the inclusion of potentially deadly weak spots.

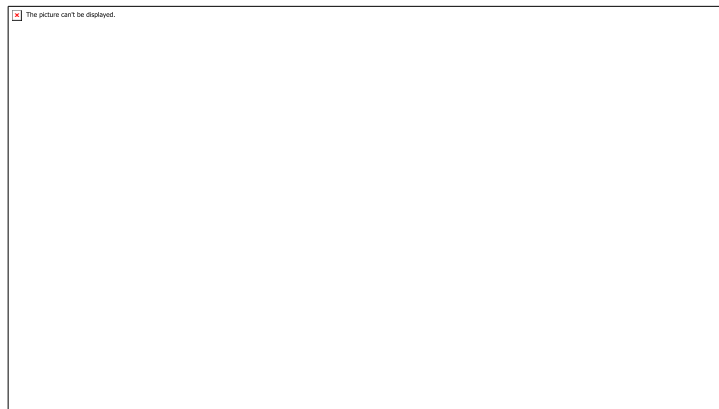
The scientific mission of the Ben Franklin began on July 14, 1969, off the coast of West Palm Beach, Florida. The mission's goal was to first examine the deep current of the Gulf Stream off the east coast of the United States, and then to spend several weeks living and working together as a team in a small and contained environment. Piccard also collaborated with NASA on the latter point, where vital discoveries for the building of space stations were anticipated for, as well as medical assessments of the application. Simultaneously, oceanographic data pertinent to the environment were measured and saved for further examination.

Two ships followed them on their journey: the mother ship *Privateer* and the research vessel *Kellar*, the PX -15. The mission came to a conclusion 30 days and eleven hours later, on 14 August 1969, when the Ben Franklin arrived around 500 kilometers south of Halifax (Nova Scotia). The boat had already sailed 2,400 kilometers at this point. The depth ranged from 200 to 600 meters. The team came to own data well with the circumstances of all tests and activities could be done on schedule, with just communication with the outside world needing improvement.

The yacht was extensively wrecked on a coral reef in the Bahamas on April 12, 1970. Horton Trading Ltd. purchased the yacht in 1971 with plans to repair and extend it in British Columbia. This plan was not carried out, and the yacht was instead stored at a Vancouver shipyard. Horton

Trading Ltd. gave the boat to the Vancouver Maritime Museum in 1999, where it was later refurbished. The yacht has been a museum ship since 2002.

6. Michigan Maritime Museum



The Michigan Maritime Museum is a museum and research library in South Haven, Michigan, in the United States. The harborfront museum is near to Lake Michigan and specializes on the nautical history of the state of Michigan and the lake of the same name. Lake Michigan is one of the five



Great Lakes. Friends Good Will, a replica of the original merchant square-rigged topsail sloop of 1811-1813, was built in 2004, at Scarano Boat Building, Inc. in Albany, New York, and was sailed by volunteers through Lakes Ontario, Erie, Huron, and Michigan to the Michigan Maritime Museum, in South Haven, Michigan, where she brings the area's history to life through educational tours, day sails, and school field trips. She may often be spotted

touring ports around the Great Lakes for maritime festivals and American Sail Training Association events.



USCG 36460 was a Coast Guard Motor Lifeboat constructed at Curtis Bay, Maryland in 1941. It is built with a laminated wood frame, cypress planking, copper sheathing, and a robust 2000lb bronze keel. These self-bailing and self-righting workhorses could withstand ice weather and waves up to 60 feet in height, and they had a waterproof survivors' cabin and engine room. The yacht served for 35

years before retiring and was restored numerous times by various owners.



Geo created this design. Bernida, owned and constructed by Lawley, giants within and during the golden years of American yachting, was launched in 1921 and sailed from the Corinthian Yacht Club in Marblehead, Massachusetts, itself an icon of yacht racing history. The inaugural race was placed in 1925, with the sloop Bernida, skippered by Russ Pouliot, winning against 12 boats. Bernida competed again in 2012, this time with

owner/skipper Al Declercq, who won the PHRF H and Overall for the Shore Course with his crew Matthew (son), Ken and Connor Flaska, and Fred and Ward Detwiler. They concluded at 11:30 a.m. on Monday. Several boat categories and classes have been added over the years.

7. Maine Maritime Museum



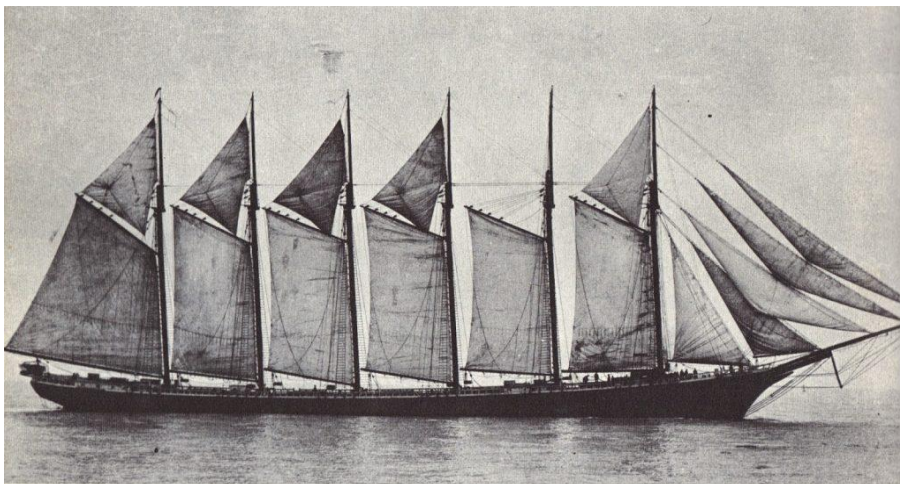
The Maine Maritime Museum, originally known as the Bath Marine Museum, has exhibits on Maine's nautical legacy, culture, and the role Maine has played in regional and worldwide maritime activities. The Maine Maritime Museum contains a wide and diversified collection that includes millions of papers, relics, and works of art, as well as an enormous research library.

History

In 1962 Seven Bath, Maine, citizens created the Marine Research Society of Bath, which operated as the Bath Marine Museum for many years. Maine Maritime Museum was renamed in 1975. Mr. and Mrs. L. M. C. Smith generously donated the Percy & Small Shipyard. Mrs. Smith also gave the adjacent Donnell House, a Victorian-era home of a shipyard owner, in 1981. In 1985, the P&S Shipyard was the only undamaged shipyard facility in the United States that constructed big wooden sailing vessels. The museum built a facility on the shipyard property to house its lobster display. Also in 1985, a relationship with the Grand Banks Schooner Trust permitted the schooner Sherman Zwicker to be a floating waterfront display at the museum each summer until she was sold in 2014. 1989 For the first time, the museum constructed its three-story climate-controlled Maritime History Building adjacent to the Percy & Small Shipyard, allowing all displays, collections storage, research library, gift shop, admissions desk, and administrative operations to be housed in one location. 1994 The Deering Pier was renovated by the museum to accommodate bigger visiting commercial and private vessels. 1995 The wreckage of the clipper ship Snow Squall was delivered to the museum, which is housed in its own structure at Deering Pier. 2001 Long Reach Hall, an unique event space, was added to the Maritime History Building by the museum. The Visiting

Yachtsmen's Building was erected the next year to provide facilities for tourists coming by boat. 2018 The fully repaired schooner Mary E is reintroduced into the Kennebec and spent her first summer in the water as a popular dockside display.

The museum's collection includes over 20,000 items as well as millions of rare papers and manuscripts relating to Maine's maritime legacy and its direct worldwide effect from prehistory to the present. The museum's collection of artefacts increased from 16,000 to 20,000 from 2001 to 2007, but the most spectacular of them is New England's greatest sculpture of the largest wooden sailing vessel ever built, the six-masted schooner Wyoming.



Wyoming was a six-masted timber schooner built and completed by Percy & Small in Bath, Maine in 1909. With a length of 140 m from jib-boom tip to spanker boom tip, her gross register tonnage (GRT) was 3730.54, equating to an interior capacity of 10,563.7 m³. cargo capacity of 8,597.6

m³, calculated by removing the volume used by the helm, crew quarters, and other sections not appropriate for freight from her GRT. She had a deadweight tonnage (DWT) of 6,004 long tons, which is the weight of the ship when fully laden, including the crew, cargo (6,000 tons), fuel, water, and supplies, minus the weight of the ship when completely empty (4,000 tons). It is capable of transporting 6,000 long tons of coal. Wyoming was outfitted with a Hyde anchor windlass and a donkey steam engine to raise and drop sails, haul lines, and do other chores. The steam engine did not power the ship, but it did allow it to sail with a reduced crew of only 11 men. She was named after Wyoming Governor Bryant Butler Brooks, who served from 1907 to 1921 and was one of the ship's backers. The ship cost \$175,000 in 1909 dollars. The five-masted Governor Brooks, another Percy & Small-built schooner, was named for Brooks. Wyoming was constructed of yellow wood with 6" planks and 90 diagonal iron cross-bracings on each side. Wyoming was the biggest wooden ship ever constructed. Wyoming flexed in severe waves because of her great length and wood

construction, causing the long planks to twist and bend, enabling sea water to penetrate into the hold (see hogging and sagging). Wyoming had to rely on pumps to keep her hold somewhat dry. In March 1924, she foundered in heavy seas and sank with the loss of all hands.

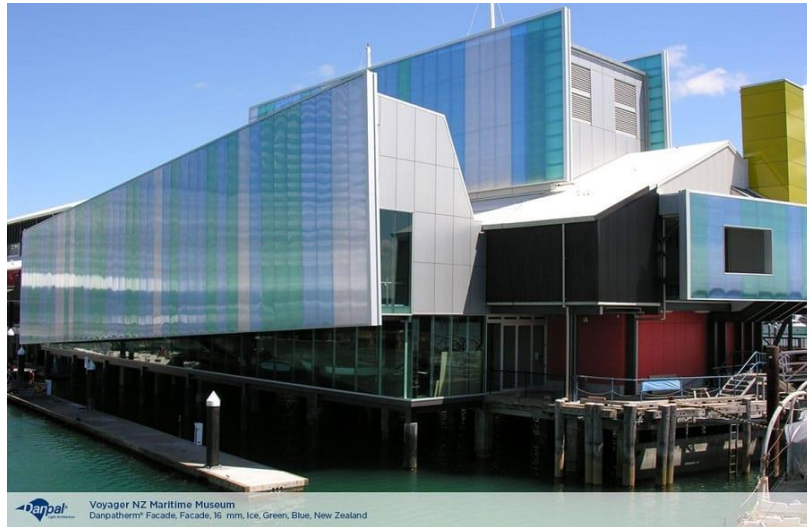


Fresnel lens

A lighthouse employs comparable science to a telescope, but in the exact opposite manner—with the use of a Fresnel lens. A telescope's glass lenses bend light beams from faraway objects, making them appear much closer. However, in a lighthouse, the Fresnel lens wrapped around the lamp focuses the light rays into a bright and parallel beam, allowing people to see it from up to 30 km (about 20 miles) away. The bulb of this lighthouse revolves, allowing it to cover a significantly larger area of the water. Because of the spinning, the light appears to flash every 10 seconds when you are far away from it.

This increases the lamp's visibility, and because various lighthouses flash at different speeds, mariners can timing the flashes to determine which lighthouse they're looking at and where they are.

8.Voyager New Zealand Maritime Museum



The Maritime Museum of New Zealand The marine museum Hui Te Ananui A Tangaroa is located in Auckland, New Zealand. It houses exhibitions spanning New Zealand's maritime history, from the first Polynesian explorers and settlers to modern day triumphs at the America's Cup. Its Maori name is '*Te Huiteanaui-A-Tangaroa*' – holder of the treasures of Tangaroa (the Sea God).



Polynesian navigation has been utilized for thousands of years to permit lengthy trips over thousands of kilometers of open Pacific Ocean. Using outrigger canoes or double-hulled boats, Polynesians made contact with practically every island in the huge Polynesian Triangle. The double-hulled canoes had two enormous hulls that were equal in length and lashed

side by side. When going on extended expeditions, the space between the paired boats provided for storage of food, hunting supplies, and nets. Polynesian navigators depended on a wide body of information from oral tradition and employed techniques like as star navigation and observations of birds, ocean swells, and wind patterns to find their path. Navigation is primarily reliant on regular observation and memory. Navigators relied on the sun as their primary guide since they could track

its exact position as it rose and set. They would utilize the rising and setting positions of the stars after the sun had set. A navigator would utilize the winds and swells as guidance when there were no stars due to a cloudy night or during daylight. Certain seabirds, such as the white tern and noddy tern, fly out to sea in the morning to search for fish before returning to shore at night. Navigators looking for land sail against the birds' course in the morning and with them at night, relying on big groups of birds and keeping variations in mind during nesting season in mind.

The positions of the stars aided in the navigation of Polynesian expeditions. Stars, as opposed to planets, maintain constant astronomical locations throughout the year, altering only their rising time with the seasons. Each star has a unique declination and can provide navigational bearings when it rises or sets. Polynesian sailors would determine their course based on a star near the horizon, switching to a different one when the first climbed too high. For each route, a certain sequence of stars would be memorized. The Polynesians also conducted stellar elevation observations to calculate their latitude. Specific island latitudes were also known, and the practice of "sailing down the latitude" was adopted. That is, Polynesians navigated by the stars by anticipating when specific stars, as they rotated through the night sky, would pass over the island to which the voyagers were sailing, as well as anticipating that the movement of stars over different islands followed a similar pattern (that is, all the islands had a similar relationship to the night sky), which provided the navigators with a sense of latitude, allowing them to sail with the prevailing wind before turning east or west. There is no indication of previous Polynesian navigators utilizing navigational equipment on board vessels at this time. The Micronesian inhabitants of the Marshall Islands, on the other hand, have a history of employing stick charts on land to act as spatial representations of islands and the circumstances around them. Micronesian navigators made charts out of ribs of coconut leaves affixed to a square frame, with the curvature and meeting places of the coconut ribs showing wave motion caused by islands in the course of the prevailing wind and the run of the waves.

Navigators used navigational skills and information passed down by oral tradition from master to apprentice, typically in the form of song, to get to tiny populated islands. In general, each island had a guild of navigators with great prestige who could trade for help or evacuate people to other islands during times of hunger or difficulties.

9.Kobe Maritime Museum



The Kobe Maritime Museum was established in 1987 to mark the 120th anniversary of Kobe's establishment as a foreign Treaty Port in 1868, towards the conclusion of Japan's Edo Period. The museum's outside architecture is intended to resemble the sails and rigging of a sailing ship.

Exhibits

The museum's entry hall has a scale replica of the British cruiser Rodney, which fired its guns to celebrate the inauguration of the Treaty Port. The lobby also introduces Kobe's sister and companion cities from across the world, such as Seattle, Tianjin, Rotterdam, Marseilles, Riga, Brisbane, Barcelona, and Marseilles.

The first-floor museum has exhibits on ship building, cruise ships (which now often land in Kobe), and municipal port infrastructure. Dioramas, model ships, rigging and navigation tools, as well as informative movies, are on display.

The museum's second floor depicts the history of Kobe port, as well as how the city has evolved through time and recovered from the Great Hanshin Earthquake of 1995. The 33-seat Maritime Theater displays a documentary depicting this often stormy history, which includes the consequences of WWII and the earthquake.

The outdoor display area at Meriken Park maintains a section of Meriken wharf that was destroyed in the Great Hanshin earthquake, as well as the Yamato-1, a ship built by Mitsubishi Heavy Industries in the 1990s that used magnetohydrodynamic drives (MHDs) for propulsion.



HMS Rodney was a two-deck 90-gun second-rate ship of the line of the Royal Navy. She was launched in 1833 and sunk in 1884. The majority of her commissions were in the Mediterranean Sea, but she also served in the Black Sea during the Crimean War (1853–1856), and after being converted to a steam and screw propelled vessel, she served in China as Vice-Admiral Henry Keppel's flagship, commanded by captain Algernon Heneage, beginning on 21

January 1867. Rodney was the ship on which William Hall began his naval career in 1852, subsequently becoming the first Black man and one of the first Canadians to be awarded the Victoria Cross. She got aground in the Dardanelles on October 29, 1853. She was refloated with the help of HMS Firebrand.



Yamato-1 is a ship built by Mitsubishi Heavy Industries, Ltd. in Wadasaki-cho Hyogo-ku, Kobe, in the early 1990s. It travels at 15 km/h using magnetohydrodynamic drives (MHDDs) powered by liquid helium-cooled superconductors (8 knots). Yamato-1 was the first functional prototype of its sort. It was finished in Japan in 1991 by the Ship & Ocean Foundation, afterwards known as the Ocean Policy Research

Foundation. The ship, which has two magnetohydrodynamic (MHD) thrusters with no moving parts, was successfully tested in Kobe harbor in June 1992. An MHDD operates by providing a magnetic field to an electrically conducting fluid. The electrically conductive fluid utilized in Yamato-1's MHD thrusters is seawater.

10.The Netherlands National Maritime Museum



The museum is housed in the Lands Zeemagazijn or Admiraliteits Magazijn, a historic naval storeroom designed by Dutch architect Daniel Stalpaert and built in 1656. In 1973, the museum relocated to this site. Het Scheepvaartmuseum reopened on October 2, 2011 after a major restoration from 2007 to 2011. The museum is devoted to maritime history and houses several artifacts related to shipping and sailing. Paintings, scale models, weaponry, and global maps are among the many items in the collection. The paintings portray Dutch naval leaders like Michiel de Ruyter, as well as real maritime conflicts. Willem Blaeu and his son Joan Blaeu, 17th-century cartographers, are represented in the map collection. The museum also houses a copy of the first publication of Maximilianus Transylvanus' book, *De Moluccis Insulis*, which was the first to recount Ferdinand Magellan's trip around the world.



Ferdinand Magellan was a Portuguese explorer and a subject of the Hispanic Monarchy from 1518. He is best known for organizing and leading the 1519 Spanish expedition to the East Indies across the Pacific Ocean in order to establish a maritime trade route, during which he discovered the interoceanic passage that bears his name and achieved the first European navigation from the Atlantic to Asia. Magellan was slain at the Battle of

Mactan in the present-day Philippines in 1521, but some of the expedition's surviving members completed the first circuit of the Earth when they returned to Spain in 1522, on one of the two remaining ships. Magellan, who was born on February 4, 1480, into a family of low Portuguese aristocracy, rose to become a skillful sailor and naval officer in the service of the Portuguese Crown in Asia. King Manuel I of Portugal declined to endorse Magellan's intention to sail westward across the American continent to reach the Maluku Islands (the "Spice Islands"). Faced with criminal charges, Magellan fled Portugal and proposed the same voyage to King Charles I of Spain, who approved it. As a result, many in Portugal considered him a traitor, and he never returned. He took the name Fernando de Magallanes and resided in Seville. There, he married, had two children, and organized the trip. Magellan was chosen admiral of the Spanish Fleet and granted leadership of the five-ship Armada of Molucca in 1518 in exchange for his fealty to the Hispanic Monarchy. He was also appointed Commander of the Order of Santiago, one of the Spanish Empire's highest military titles. Magellan is well-known for his nautical abilities and persistence. The first circumnavigation has been described as "the greatest sea expedition in the Age of Discovery," as well as "the most important nautical voyage ever done." The failure of successive expeditions attempting to follow Magellan's path, beginning with the Loasa mission in 1525 (which had Juan Sebastián Elcano as second-in-command), may have increased appreciation of Magellan's exploits over time. The next successful circumnavigation, headed by Francis Drake, would not take place until 1580, 58 years after the return of the Victoria.

Even though Magellan did not survive the voyage, he has gotten more credit for it than Elcano since Magellan initiated it, Portugal wanted to acknowledge a Portuguese explorer, and Spain feared Basque nationalism. To commemorate the 500th anniversary of Magellan's journey, Spain and Magellan's birthplace Portugal filed a fresh joint proposal to UNESCO in 2019.

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