

The four-masted barque PEKING

Four-masted barque PEKING - History and restoration - Status of end of June 2019

From 1902 to 1926, the still existing, Hamburg-based shipping company F. Laeisz built eight four-masted steel barques. The shipyard Blohm & Voss in Hamburg built PETSCHILI (1902), PAMIR (1905), PEKING (1910 - 1911), PASSAT (1911), POLA (1916) and PRIWALL (1917-1920), the shipyard Joh. C. Tecklenborg in Geestemünde (today Bremerhaven) built PANGANI (1902 - 1903) and PADUA (1926). Of these, PEKING and PASSAT and POLA and PRIWALL were real sister ships, built from the same set of drawings. The four-masted barques had three-island-type hulls - forecastle, 'Liverpool house' midships and poop.

Since their regular and fast voyages came close to those of a steamer used in scheduled service, regardless of the weather, these cargo sailing ships were respectfully called "Flying P-Liners" by the seamen. Of the originally 64 cargo ships, whose names began with the letter „P“, the four-masted barques POMMERN ex MNEME (Mariehamn, Åland Islands), PASSAT (Travemünde) and PEKING (currently Peters-Werft, Wewelsfleth) are still preserved, and the PADUA is still in service worldwide as sailing training ship KRUZENSHTERN.



PEKING, photo source: Stiftung Hamburg Maritim

On June 22nd, 1911 the four-masted barque PEKING left the port of Hamburg for its maiden voyage, which took her around Cape Horn to the west coast of Chile, to transport nitrate in bags from there to Europe. On her fifth voyage, the PEKING reached Valparaíso in Chile on August 28th 1914, and got caught up in the war, which had broken out a month earlier.

Of the about 130 large square-riggers registered in Germany before the First World War, 57 were in Chile during the war. This also included the PEKING, which, interned by the local port authority, anchored on the

PEKING	PASSAT
Construction contract: 1909	Construction contract: December 30th, 1909
Keel laying: 1910	Keel laying: March 2nd, 1911
Launched: February 25th, 1911	Launch: September 20th, 1911
Construction number: 205	Construction number: 206
Length: 115.00 m (Loa)	Length: 115,00 m (Loa)
	96.01 m (Lpp)
Width: 14.40 m	Width: 14.40 m
Side height : 8,60 m	Side height: 8.53 m
Draught: max. 7.24 m	Draught: max. 7.24 m
Displacement: 6,280 t	Displacement: 6,280 t
Surveying: 3,100 GRT , 2,883 NRT	Surveying: 3,091 GRT
from 1926: 3,191 GRT / 2,851 NRT	
Construction costs: 680,000 marks	Construction costs: 680,000 marks
Handover to shipping company: May 16th, 1911	Commissioning: December 24th, 1911
Loa: Length overall	
Lpp: length between perpendiculars	
GRT: Gross registered tonnage (until July 18th, 1994) is a volume unit in which the total converted tonnage is measured, minus crew and engine rooms (1 GRT = 100 cubic feet = 2.83 cubic meters)	
NRT: Net registered tonnage (until July 18th, 1994) is the actual space available for the cargo load (goods, passengers) of a ship.	

roads, with its crew staying on board.

The sails were taken down and stowed in the sail locker. As long as there were sufficient supplies of paint, oil and tar on board, the necessary conservation work was carried out. How long a ship could be kept ready to sail depended on the shipowner's finances. If the shipowner ran out of money, the German Reich provided for provisions and advances on wages. Since about a thousand sailors had left their ships by the end of the war on November 11th, 1918, only about a third of the crews ne-



PEKING on June 28th, 2019 at the Peters-Werft, Wewelsfleth

cessary to repatriate the ships were still on board. The four-masted barque PRIWALL and the steamer LUCIE WOERMANN brought fresh crews to Chile. By the end of 1920, the majority of the 47 remaining ships had left Chile, loaded with saltpetre, setting course around Cape Horn for Europe, where, after unloading their cargo, they had to be handed over to the Allied Powers as war reparations. The PEKING was handed over to Italy on May 10th, 1921, after arrival at London from Caleta Coloso. However, the Italians had no idea what to do with the ship.



The new yards are stored in a hall in front of the tall ship



Two of the old yards have been preserved and have been restored

The shipping company F. Laeisz managed to buy back their ship in January 1923 for 8,500 Pounds Sterling. By 1927, PEKING had again carried several loads of saltpetre from Chile to Europe. In 1927, the poop was extended by ten metres at Blohm & Voss in order to be able to use the cargo ship also for sail training. This was good business, because until 1952 several months on a sailing ship were a condition for admission to the training course for a mate's certificate. This extension allowed up to 31 crew members and 43 cadets to be accommodated on board.

The PEKING then sailed for another five years in the nitrate trade between Chile and Europe.

As a result of the Great Depression in the late 1920s and early 1930s, the F. Laeisz shipping company sold PEKING to Shaftesbury Homes and Arethusa Training Ship Co. in England on September 9th 1932 for 6,250 Pounds Sterling.

On October 10th, 1932 she was towed to Greenhithe on the Thames, where she arrived on October 19, and anchored beside the aged wooden frigate ARETHUSA (I). After her arrival the PEKING was renamed ARETHUSA (II). At the naval shipyard in Chatham the ARETHUSA (II) was converted into a training ship and anchored on 4 July 1933 off Lower Upnor, Kent, in the River Medway opposite



View on deck of PEKING

the Chatham shipyard. Already at Blohm & Voss in Hamburg the holes for the numerous portholes had been cut into the ship's hull to provide daylight in the former holds. For better use, a wooden deck was laid in the upper deck of the lower hold. During the reconstruction, the sand ballast was replaced by concrete in order to use the area gained as storage space for equipment. The ship was equipped with two new boiler systems for heating and hot water. During this reconstruction, the ARETHUSA's black hull was also decorated with a

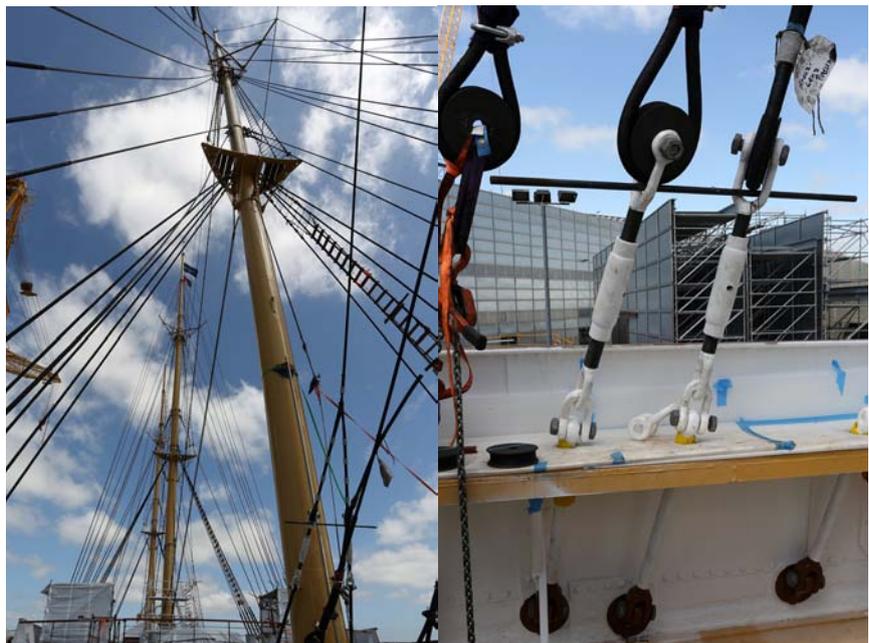
black and white stripe.

The naval-oriented maritime education for disadvantaged boys was officially opened on July 25th, 1933 by Prince George, Duke of Kent. The outbreak of World War II forced the ship to close in 1940. The ship was requisitioned by the British Admiralty, called HMS PEKIN (actually without a „G“!) and brought to Chatham to be used by the Navy. During this time the rig was reduced. After the end of the war, the ship, now called ARETHUSA again, was handed back to the Shaftesbury Homes and Arethusa Training Ship Co. and was moored at a pier built in the meantime.

Rising maintenance costs and probably the new captain, who had been developing his training more towards schooling since 1969, led to the final decision to part with the ship.

For 70,000 Pounds Sterling the ARETHUSA was bought by American patrons, first and foremost the New York coffee and precious metal dealer Jack R. Aron, at an auction in 1974, and brought into a foundation. Aron, a lieutenant captain in the American Navy during the Second World War, had the ship restored more cost-efficiently than true to the original. For example, the missing yards were reconstructed from assembled lantern posts. In July 1975 the ARETHUSA came to New York in tow of the Dutch tug UTRECHT. In the East River, at the foot of the famous Brooklyn Bridge, at a new berth at Pier 16 in the South Street Seaport Museum, it got back its former name PEKING.

Over time, the condition of the PEKING worsened more and more due to the lack of necessary maintenance work. From 2002, negotiations were held with the South Street Seaport Museum to return the PEKING to its old home port of Hamburg, but this failed due to the high purchase price demanded. In March 2013, the South Street Seaport Museum was prepared to hand over the ship almost free of charge due to economic difficulties.



Working on the standing rigging of PEKING

In the spring of 2015 the situation deteriorated as the evacuation of the PEKING berth was announced for the end of June of the same year. It became more and more probable that the old four-masted barque would be scrapped, also because the usual co-financing of 50% of a reconstruction quote for PEKING submitted in the meantime was decisively rejected by the officials of the City of Hamburg.

On November 12th, 2015, the Budget Committee of the German Bundestag decided to provide funding of 120 million Euros for a German Port Museum with PEKING as the largest exhibit. Of this sum, 26 million Euros were to be used to restore PEKING.

The Federal Government commissioned the Hamburg Cultural Authority to retrieve and restore the PEKING, and the Hamburg Maritime Foundation to carry this out. The foundation bought the PEKING for the symbolic price of 100 US dollars.

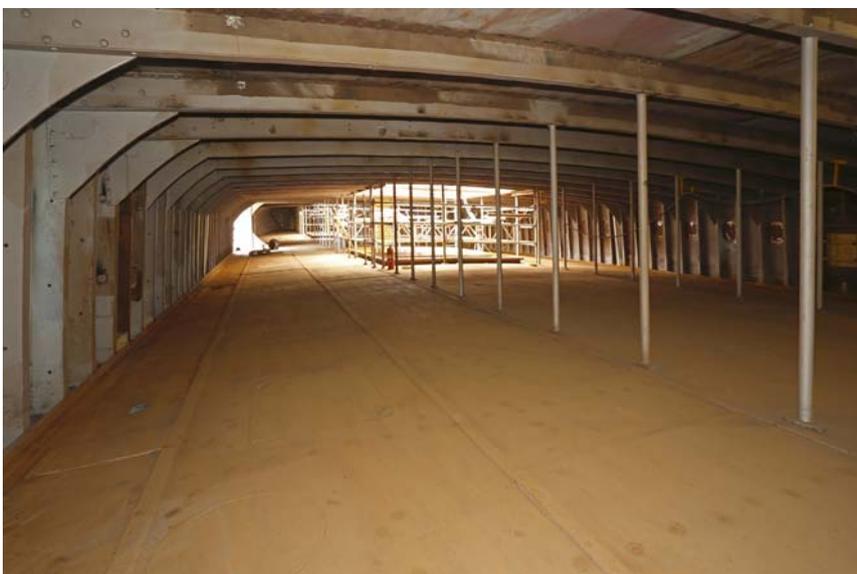


Working on the hatch 2

On September 7th, 2016, the ship was towed from Pier 16 a few nautical miles to Caddell Dry Dock & Repair Co. on Staten Island to be prepared for the transatlantic transport.

After the PEKING was picked up by the Bremen heavy-lift cargo ship COMBI DOCK III, the voyage to Europe began on July 19th, 2017, where it arrived at the River Elbe port of Brunsbüttel shortly before 6 p.m. on July 30th, 2017. On August 2nd, 2017 the PEKING was floated out of the semi-submerged heavy lift ship and towed by two tugs to the Peters-Werft in Wewelsfleth at the mouth of the small river Stör into the River Elbe near Glückstadt.

Around four weeks later the masts were pulled and the ship was moved to the covered dry dock. Approximately 35 percent of the wire ropes of PEKING turned out to be worth preserving. As early as March 2018, 14 riggers (half of them from Denmark) began restoring the „standing rigging“ at the Hamburg



The huge tween deck of the PEKING

Harbour Museum (Shed No. 50 at Bremerkai). Thereafter, the riggers concentrated on the PEKING's running rigging. After the concrete ballast had been removed at specified points, the Norwegian ship classification society DNVGL (Det Norske Veritas Germanischer Lloyd) confirmed that the thickness of all the steel plates of the riveted underwater body was 6 to 14 mm, even above the specified minimum value. This meant that less than one fifth of the steel plates in the hull, which could no longer be restored, had to be replaced. The waterways



Frames and riveted hull in the stern of the ship at tweendeck level

on deck, which had been filled with concrete, were also uncovered again.

At the Peters-Werft, the PEKING will be restored as close as possible to its original condition around 1927/1928.

At the beginning of the work, the paint, applied in many layers in New York was found to contain asbestos. Further the originally used anti-fouling paint was found to be red lead, which is classified as very toxic and carcinogenic. To complete the job, the ship's hull was divided vertically into six floors and horizontally into four sections, which

one after the other were blasted, using a total of 80 tons of steel grit, then repaired and painted. Expensive occupational safety and disposal measures increased the restoration cost to an estimated 35 million Euros. When replacing any rusted steel plates, the overlapping seams were simulated in welded construction. The old rivets were collected, welded onto the frame at the appropriate points and then ground over. This ensures that the rivet structure is retained from the inside. In addition, the ARETHUSA portholes were removed from the tween decks and closed.

After the hull repair had been completed, the PEKING was towed out of the dry dock on September 7th, 2018 and shifted to the shipyard pier.

When removing the old rusty steel deck, the rivet shanks were topped off and then welded onto the new plates. When viewed from below the new main deck's 30 to 40 welded plates thus still gave the impression of being riveted.

On the Liverpool house, called 'Hochdeck' or bridge deck, the deck planks had been laid directly on the steel girders and were bolted to them. Since the new wooden deck is completely glued, the Peters-Werft manufactured new square bolts and welded them to the original fixing points of the deck planks, so that here, too, the historical appearance from below is maintained. The work on the chart house, skylights and steering wheels was proceeding according to the plan.

Docking for further work took place on February 6th, 2019. Then the final coat of paint was applied, in the Laeisz's shipping company's colours - red for the underwater hull, white for the streak between minimum and maximum load waterlines and superstructure, as well as black for the hull above the waterline.

In order to avoid uncontrollable ship movements, all four masts were set and stayed in the dock. The bowsprit also sits firmly in its position again.

With the morning flood the ship was undocked on June 24th, 2019 and towed to the dock pier. PEKING will remain there until next year for further interior work and completion of the rig. The interior painting in the crew spaces and cargo holds is progressing nicely.

The new metal yards - except the two original yards still available - are stored in a large shed near the ship until they will be put in place at the masts after completion of the deck planking-work.



Gearpill mechanism in the forepeak in the bow of the PEKING



Precisely prefabricated deck plank elements are laid on the forecastle deck

with two manholes with screw covers, and simple shelves on the walls. Other such drums were located in the provisions room in the midships superstructure under the bridge deck.

Wolz Nautic had already started laying the wooden deck of Oregon Pine on the forecastle on June 28th, 2019.

These decks are constructed of a waterproof and weather-resistant HPL (High Pressure Laminate) carrier board instead of a plywood substructure. The individual wood panels have already been produced in the Wolz Nautic production halls, i.e. the Oregon Pine planks have been pressed under vacuum with the HPL, then grouted and sanded.

For the main deck, a 3D laser tracker is used to measure the contour of the ship's deck with millimetre accuracy. By laser measurement, the exact shape of the deck - including all bumps - is milled into a special PU-soaked marine cork and connected to the steel deck by means of a vacuum bonding process. To process the cork, Wolz Nautic uses a CNC machine that can process up to 15 x 6 metres in one piece.

Old photos show, that contrary to the classic white paint applied outside, the metal surfaces of the superstructure bulkheads on deck look like having been painted in a technique imitating wood grain.

At the end of the 19th century, Siemens-Martin steel was used more and more as a shipbuilding material for big ships. At the same time, some masters probably wanted to transfer the traditional wooden look to the steel elements that were new at the time. For example, the masts, yards and the jib boom were painted in yellow, ochre or light brown.

Also the ship's superstructure bulkheads should look on the outside and inside probably as usual - in an imitated wood grain. From the 19th century until after the First World War the imitation of wood and marble was widespread and almost every journeyman or master painter mastered the necessary techniques of graining. Having grown up together in village community, many a seaman on home leave may have got one or the other tip in dealing with brush, comb and paint.

The crews of the P-Liners seem to have competed in painting their ship superstructures beautifully inside and outside. The deck houses on a sailing ship were usually made of oak, sometimes even of fine

The yards were reconstructed according to the original plans by a Dutch specialist company. The riggers already fitted them with all the numerous straps, bands, etc. In the shed also the davits are stored which suspended the lifeboats lost long ago. Behind the aft bulkhead in the tween deck there was a large storage room for provisions, accessible by a ladder from a hatch on the poop deck and probably a sliding door in the bulkhead on the tween deck. Further, this provision storage room contained three riveted drums for pulses (Huelsenfruechte / siehe Baubeschreibung S. 26/27), each



Colour sample on the port side of the Poop of the PEKING

teak. These rather dark brown shades formed a beautiful contrast to the ship decks from Darien Pitch Pine (Georgia, USA) or Oregon Pine, scrubbed until they were almost white. In order to achieve a similar look, the midships superstructure's steel bulkheads were divided into individual plank widths and each painted with a wood grain. Each plank was painted differently, starting with narrow annual rings, then continuing outwards and also with knotholes, lights and shadows. The wood imitation was then probably set off at the top and bottom and at the edges with a dark brown colour. The future will show whether we will be able to see such paint-work on the PEKING's superstructure bulkheads. In spring 2020, PEKING will return to its home port Hamburg, towed by a tug as in the old days.

Interested persons who would like to support the association Freunde der Viermastbark PEKING e.V. through voluntary work and/or as members are always welcome. You will find the necessary forms under „The Association“, „Downloads“ on our website www.peking-freunde.de/en.



The PEKING at the Peters-Werft, shipyard pier



Dietrich Peter Kleine, Collaborating Member C-034 of the Brotherhood of Captains of Cape Horn of Chile, German Section, Member 10072 of Freunde der Viermastbark PEKING e.V.; Author and photos 2019