

The Onrust Exhibition

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New Amsterdam History Center

Photos Taken by Courtney A. Haff
Project Director



Ship Archeology

The Onrust is being built using Dutch ship building techniques that have been rediscovered recently through extensive archeological research of ship wrecks in the Netherlands over the last few decades by Dutch naval architect Gerald de Weerdt, an international recognized expert on 17th Century Dutch ship building, and the Onrust's master shipwright and designer.

The archeological excavation of a 93 - foot Dutch merchantman from the reclaimed IJsselmeer polders proved to be an important milestone in the research process, shedding light on the obscure but very vital publication of 1671 of the very first detailed account of Dutch shipbuilding: "Aeloude en Hedendaegche Sheeps-bouw en Bestier" by NICOLAES WITSEN.



Gerald de Weerdt

Gerald is currently curator of the 't Behouden Huys Museum, Terschelling, the Netherlands.



Rebuilding The ONRUST In 17th Century Style



Revolutionary 17th Century Dutch Building-Method

Institute of Naval Archeology, the Netherlands



shipwreck 17th century Dutch merchantman

Reconstruction of the Onrust is taking place over a three year period at the well-known Mabee Farm Historic Site (of the Schenectady County Historical Society) located at Rotterdam Junction, NY.

The public can view the ship's most unique features during construction - the unusual, but most efficient building techniques developed by the Dutch. Dutch shipbuilders produced ships much faster and in a more efficient way than any other country in Western Europe during the 17th century and made the Dutch the undisputed market leaders in shipbuilding for many decades. These techniques have been rediscovered recently through extensive archaeological research of ship wrecks in the Netherlands over the last few decades by Dutch naval architect Gerald de Weerdt, an international recognized expert on 17th Century Dutch ship building, the Onrust's master shipwright and designer. They will be reapplied for the first time since being abandoned in the 18th century and will enable us to rebuild the Onrust exactly in the style with similar materials used in 17th century ship building.

The ship's completion is scheduled for 2009, the 400th anniversary of the first Dutch exploration of the river under command of Captain Henry Hudson.

With her smaller dimensions - 50 feet in length, 14 foot beam, and 4 1/2 foot draft - the Onrust will be perfect for use on coastal waterways and inland rivers and canal systems. The ship's hold and the spacious deck provide room for 25 passengers for day-tours.

The voyages of the Onrust will promote the study of the river valleys and waterways of the Northeast, will heighten awareness of the important role of river transportation, early exploration and settlement, and will promote regional heritage tourism.

The History Of The ONRUST - 1614

The Onrust was a Dutch ship built by captain and explorer Adriaen Block and the crew of his ship, the Tyger, which had been destroyed by fire in 1614 at the tip of Manhattan. The ship, called a yacht, was the first decked vessel to be built entirely in America. Its construction took place off the Manhattan shore during the winter of 1614. It was about 45 feet long, 12 foot beam and had a load capacity of 16 tons.

The Onrust was launched into Upper New York Bay in April 1614. It explored the New York coastal areas and rivers, sailed through the treacherous passage called Helle gat (Hell gate) in the East River, explored the harbours of Long Island and Connecticut discovering the Housatonic and Thames Rivers, and sailed up the Connecticut River (de Versche Rivier) past the site of Hartford. The Onrust continued on to Narragansett and Buzzard Bays, and Cape Cod.

In his honor, Block was immortalized with a small island, named Block Island. On the basis of this voyage, the Dutch laid claim to the territory of New Netherland, an area that included parts of what are now the states of New York, Connecticut, Delaware, New Jersey and Pennsylvania.

The last historical account of the Onrust describes her 1616 expeditions down the coast of New Jersey to explore the New River (Delaware River) under the command of Captain Cornelius Hendrickson. No one knows the final disposition of the ship since it was too small to travel by itself over the ocean. It is believed to have been abandoned after some years and perhaps is waiting for rediscovery some day by underwater archeologists.







York State 1614



Figurative Map based on
Adriaen Block's voyages of
the Northeast.



While both bronze and cast iron gun barrels were produced, cast iron gun barrels were still very complicated to make and were not forged in one piece but built out of iron rods held together by metal rings. They were breach-loaded or loaded at the back with canisters and were more dangerous to use.

Bronze cannons on the other hand were being cast in one piece and loaded in the front. The Orvust cannons are bronze cast from an original period artifact and housed in a three wheeled carriage.

Sixteenth and early seventeenth cannon carriages often had three wheels instead of four, which would become the common type later on.

Adriaen Block borrowed six cannons from the Amsterdam Admiralty, one of five navies of the Dutch Republic. The Admiralty was responsible for protecting the city, the Gooi region, the islands of Texel, Vlieland and Terschelling, the province of Utrecht and the Gelderland quarters of Arnhem and of the Graafschap (county) of Zutphen. Block was working for the Van Tweenhuysen Company and requested borrowing 6



to 8 cannons from the Admiralty which was granted. Each cannon had the seal of the Admiralty which consisted of the letters AA and variations of a theme of a lion and anchor. Our bronze cannons made by Lapan Foundry in Hudson Falls, NY are exact replicas of an Admiralty cannon. These guns could be carriage mounted (cannon) or deck mounted (swivel gun).



Amsterdam
Admiralty
made by
Lapan Foundry



*Students from
Rocking The Boat
and the Alplaus
Maritime Center
working on the
Onrust and its
Life boat.*



Cooperation with maritime school programs, Rocking the Boat, in the Bronx, NY and the Boces Maritime Program at the Maritime Center in Alplaus, NY, and other area schools, has exposed many young people to our early American Dutch history and 17th century ship building heritage. As a floating museum and classroom, the Onrust retraces the original ship's 1614-1616 voyages in the Northeastern river valleys and waterways of the region once called "New Netherland" (parts of New York, New Jersey, Delaware, Connecticut, and Pennsylvania).





America's First Yacht

The Jacht

The word "yacht" originates from the Dutch word "jacht", which is the noun derived from the verb "jagen", meaning "sailing fast". In the beginning of the 17th century, the "jacht" was a relatively small flat-trom ship measuring about 60 to 80 feet and grew longer during the first half of the 17th century.

The current meaning of "luxury vessel", was already implied in the 17th century, but the name especially applied to this vessel's unprecedented speed.

Whether it was used for battle, servicing of the troops, exploration (war yacht, reconnaissance yacht) or whether they were luxury yachts for transportation of higher officials, entertainment and racing (states yacht, admiralty yacht, pleasure yacht), technically their construction was the same on the level of







to use.

being cast in one piece
cannons are bronze cast
housed in a three wheeled
cannon carriages often had
would become the common

from the Dutch Republic. The
protecting the city, the town
region, the islands of Java, Sumatra
and Terakeling, the province of
of Amboina and the island of
(Canton) of Canton, the
company and the Dutch East India
company which was granted a
of the Dutch East India company
of an administrative center. The
and (cannon) or (cannon) (cannon)

17th Century Dutch Building Techniques



Fire Bending

Hull planks and wales are heated up by fire to make them pliable. When cooled, the oak retains its curves allowing for proper fitting to the ship's bilge and side futtocks. The most challenging parts of the ship to be fire bent were the two inch thick wales that hold together the skeletal framework of the ship.

Ninety five percent of all wood used on the Onrust is American White Oak (*Quercus Alba*) well known for its flexibility, water tightness, and rot-resistance. One of the many trees donated to the project was an exceptional 400 year old oak that grew on the Latham property of the Sisters of St. Joseph of Carondelet.



17th Century Rigging



Rigging was a very organized system that underwent few changes between the 17th and 19th century. All maritime nations followed the same basic system, but with national differences in techniques. Circumference of the rope was measured in duimen (inches) and the length in vadems of 1.6 meters (Fathom = 6 feet). In total 3,650 feet of rope are used for the Onrust.

Lines of the Onrust vary in diameter from $1\frac{1}{4}$ " to $1\frac{3}{4}$ " and are the same proportions as those that would have been used in Block's time. Instead of the natural hemp, the synthetic hempex is used, which is longer lasting and stronger than the traditional line but close to it in appearance and its composition lends itself nicely to the traditional rigging techniques of splicing and seizing. On the deadeyes our rigger used Dutch style seizings, which were typically longer than those of other European maritime countries of the time.

The lines are divided into two main classes. Standing rigging helps keep the mast upright and stable. Running rigging are all the lines used in handling and maneuvering the sails and boom.

Master rigger of the Onrust is Courtney Anderson, who has worked with rigging traditional ships since 1987, here in America as well as in the Netherlands. Some of the vessels he has worked on include Half Moon, Bounty, all of the Pirates of the Caribbean movie ships, Providence, St. Peter, and currently, the Onrust at the San Francisco Maritime National Park.

Blocks and deadeyes are made out of ash by Onrust volunteer Dave Wolf.

17th Century Sail Making

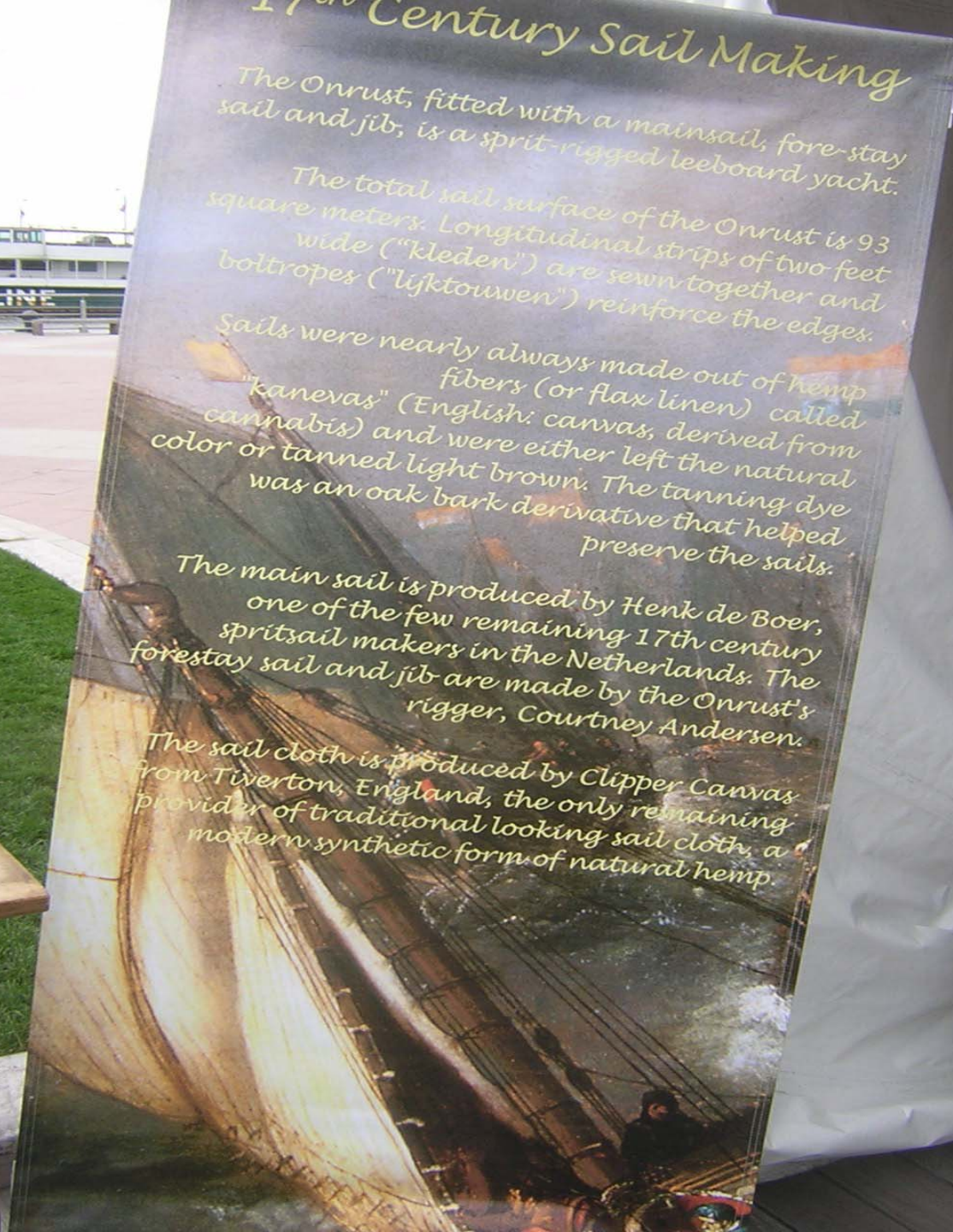
The Onrust, fitted with a mainsail, fore-stay sail and jib, is a sprit-rigged leeboard yacht.

The total sail surface of the Onrust is 93 square meters. Longitudinal strips of two feet wide ("kleden") are sewn together and boltropes ("lyktouwen") reinforce the edges.

Sails were nearly always made out of hemp fibers (or flax linen) called "kanevas" (English: canvas, derived from cannabis) and were either left the natural color or tanned light brown. The tanning dye was an oak bark derivative that helped preserve the sails.

The main sail is produced by Henk de Boer, one of the few remaining 17th century spritsail makers in the Netherlands. The fore-stay sail and jib are made by the Onrust's rigger, Courtney Andersen.

The sail cloth is produced by Clipper Canvas from Tiverton, England, the only remaining provider of traditional looking sail cloth, a modern synthetic form of natural hemp.



Dutch Building Techniques



Trunnel fasteners

The Onrust planks are attached to the frames by over 4000 trunnels or treenails (in Dutch "houten pen"), wooden pegs of $7/8$ " diameter and 8 to 10 inches long, made out of Black Locust (*Robinia pseudoacacia*). Once inserted into a pre-drilled hole, the trunnel is secured by means of a flat wedge ("ark") on the inside of the ship and a sharp pointed wooden nail ("deutel") on the outside to prevent the water from entering. Each of the 4000+ trunnels was hand made by retired GE engineer extraordinaire Bob Fearing.











1616 Cornelius Hendrickson Map
Based on the Voyages of the Onrust



