



# THE *KALMAR NYCKEL*

A Guide to the Ship and Her History



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## Guide to the Re-creation of the Tall Ship

# *KALMAR NYCKEL*

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### The Kalmar Nyckel Foundation

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Cover photograph: The present day *Kalmar Nyckel* cruising on the Patuxent river on the Chesapeake during a visit to Solomon's Island, MD in 2008. *Photographer – Alistair Gillanders.*

### ***“Become Something Great”***

***America’s original promise and enduring challenge.***

Excerpt from a letter by Peter Minuit to  
Swedish Chancellor Axel Oxenstierna

*As navigation makes kingdoms and countries thrive and in the West-Indies [North America] many places gradually come to be occupied by the English, Dutch, and French, I think the Swedish Crown ought not to stand back and refrain from having her name spread widely, also in foreign countries; and to that end **I the undersigned, wish** to offer my services to the Swedish Crown **to set out modestly on what might, by God’s grace, *become something great* within a short time** [emphasis added].*

*Firstly, I have suggested to Mr. Pieter Spiering [Spiring, Swedish Ambassador to the Hague] to make a journey to the Virginias, New Netherland and other places, in which regions certain places are well known to me, with a very good climate, which could be named Nova Sweediae [New Sweden]....*

*Your Excellency’s faithful servant,  
Pieter Minuit*

*Amsterdam, 15 June 1636*

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## 1 Introduction

The *Kalmar Nyckel* is a full-scale re-creation of the original 17<sup>th</sup>-century ship, whose historic significance rivals that of the *Mayflower*. The present day *Kalmar Nyckel* serves as the Delaware region's floating Academy and Goodwill Ambassador. The ship provides a unique platform for the Foundation's educational programs, offering the best in recent scholarship and experiential learning. Students get to experience the "Age of Sail" first-hand during the *Kalmar Nyckel's* floating classroom programs, helping to set sails, heave cannons, steer the ship, navigate with 17<sup>th</sup>-century instruments, and learn about America's maritime and colonial history.

The *Kalmar Nyckel* also serves as a catalyst for social and economic development, hosting diplomatic, recreational, governmental, and commemorative functions.

Thousands of students of all ages participate in the *Kalmar Nyckel's* superb educational programs each year. From her homeport at the Foundation's shipyard on the Christina River in Wilmington, adjoining historic Ft. Christina and the original landing site at "the Rocks," the *Kalmar Nyckel* sails from April to November, making regular visits up and down the Atlantic seaboard, from Massachusetts to Virginia. She also sails regularly from her second home in Lewes, Delaware.

The *Kalmar Nyckel* is served by a crew of 300 active volunteers and led by three USCG certified officers, a Captain, First Mate/Relief Captain, and Second Mate. In addition to sailing and maintaining the ship, officers and crew teach during the on-board and dockside educational programs.



**Figure 1 - The *Kalmar Nyckel* provides hands-on educational programs and life-long lessons to thousands of students and visitors.**  
*Photographer - Alistair Gillanders.*

## 2 The *Kalmar Nyckel* – A Brief History

### 2.1 Dutch Birth

The original *Kalmar Nyckel* was built by the Dutch in or about 1625 as a “Pinnace” – a class of vessels that could operate either as small warships or as armed merchantmen. This was the “Golden Age” of Dutch naval power and seaborne world trade, and the Dutch were the most advanced naval architects and shipbuilders of the 17<sup>th</sup> century. Measuring 93 feet on deck and with a sparred length of 141 feet, she was stoutly built and remarkably seaworthy, characteristics that would serve her well throughout her long and remarkable career. Her original armament probably consisted of 12 six-pounder cast iron cannon, with two smaller swivel guns attached to the quarterdeck rails.

### 2.2 Swedish Re-Christening

The *Kalmar Nyckel* was purchased from the Dutch in 1629 by the Swedish cities of Kalmar and Jönköping and given her new name. The name means the “Key of Kalmar,” which derives from the 12<sup>th</sup>-century castle that guarded Kalmar harbor, a fortress defense the ship was meant to honor and augment.

The Swedish Empire reached its zenith under King Gustavus II Adolphus (1611-1632), the greatest war leader of his age, known as the “father of modern warfare,” whose

battles are still studied in military schools. Gustavus wanted to enhance Sweden’s position as a Great Power and to secure his recent territorial additions around the Baltic. This would require the building of a navy to match his powerful army.



Figure 2 - Gustavus II Adolphus is killed during the battle of Lützen on 6 November 1632. Historical painting by Carl Wahlbom, 1855.

The *Kalmar Nyckel* was one of several Dutch warships purchased by Swedish cities as part of the Skeppskompaniet (or “Ships’ Company”), which was designed by Gustavus as a way to raise a navy in quick order. The cities purchased 16 ships, 100 to 150 feet long, armed with 12 to 16 cannon each – Stockholm provided

four; Gothenburg two; and the smaller cities, arranged in groups to pool their money, provided the remaining ten. In the event of war, the ships were to be used to protect the country from enemy attacks. Otherwise, the ships could be used for commercial voyages, either by the cities themselves or by the Crown, with the income from the freight returning to the cities' coffers.



Figure 3 – Kalmar Castle, Sweden, for which the original *Kalmar Nyckel* was re-named after her purchase by the cities of Kalmar and Jönköping. *Photographer – Anders Johansson.*



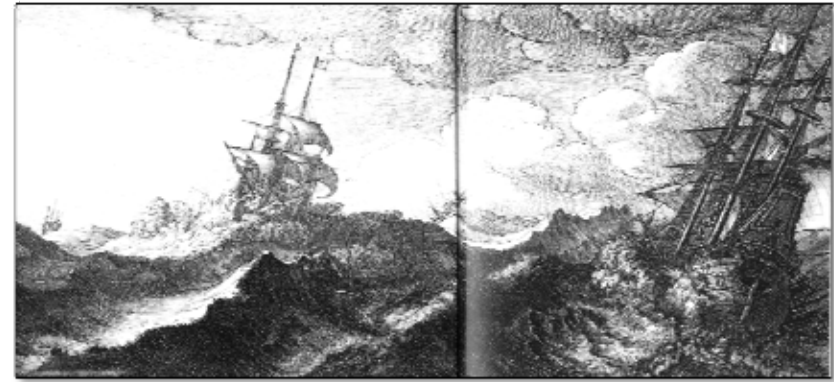
Figure 4 – The *Kalmar Nyckel*'s historic significance rivals that of the *Mayflower*. In 1638 she brought Peter Minuit and the first permanent settlers to the Delaware Valley. The *Kalmar Nyckel* also made four documented round-trip crossings of the Atlantic – more than any other ship of the era. *Photographer – Herb Conner.*

The *Kalmar Nyckel* may have served now and then as a merchant vessel, but in 1634 she was drafted full-time into the Swedish navy. In an Admiralty list of the period, the *Kalmar Nyckel* is shown as carrying 40 sailors, 28 soldiers, and 12 cannon – probably typical of her wartime strength.

### 2.3 New Sweden’s Flagship

In 1637 the New Sweden Company acquired the *Kalmar Nyckel*, and a smaller vessel, the *Fogel Grip* (*Flying Griffen*), a Dutch-built yacht, from the navy for use in establishing a commercial colony in North America. The New Sweden Company, a private commercial enterprise patterned after the Dutch West India Company and chartered by the Swedish government, was led by Peter Minuit and backed by a group of Dutch and Swedish investors.

Delays ensued, but by September of 1637 Peter Minuit had gathered his expedition in Gothenburg harbor. Captain Jan Hindricksen van der Water of the *Kalmar Nyckel* and Captain Adrian Jöransen of the *Fogel Grip* were ready with their ships and with their crews of about forty to fifty Dutch sailors combined. The Swedish government provided twenty-three soldiers under Captain Nilssen Kling and thirty muskets with one and a half tons of gunpowder. Also provided for the colony’s use were hoes, shovels, peas, beans, cabbages, two barrels of wheat, two barrels of barley, oats, and rye.



**Figure 5 - Hollar’s “Vast and Furious Ocean” (1665) captures the difficulties encountered as 17<sup>th</sup>-century ships attempted to sail from Europe to America across three thousand miles of storm-tossed North Atlantic Ocean. The scene is reminiscent of the storm that smashed the *Kalmar Nyckel* and *Fogel Grip* as they left Gothenburg harbor. Courtesy of the Huntington Library, San Marino, CA.**

Minuit supervised the purchasing and loading of the cargo himself. Minuit had previously been Director of New Netherland, and he was precise about the kinds of trade goods and other necessities that would make for a successful North American venture. He insisted on bringing 500 bricks, for instance, purchased from a Gothenburg brick maker and used as ballast on the trip over, because he knew what it was like to be in America without bricks for fireplaces and chimneys. He was likewise careful about selecting the color and quality of the duffel (from the town of Duffel, outside Antwerp, where the cloth originated), knowing how competitive the fur trade had become amongst the English, Dutch, and French, knowing also the increasingly sophisticated demands of the

Indians. So, too, the iron axes and knives, the tobacco pipes, mirrors, gilded chains and rings, were selected based on Minuit's specific knowledge about the kinds of items the native peoples wanted.

Minuit's expedition finally got underway in late November 1637, leaving Gothenburg, Sweden, just in time to encounter an unusually destructive North Sea storm. The two ships became separated and almost foundered, the *Kalmar Nyckel* limping into Texel, Holland, dismasted, leaking, and badly in need of repairs. The *Fogel Grip* turned into Texel a few days later. Extensive repairs were made and the two ships put out to sea on the last day of December 1637.

#### 2.4 First Crossing – 1638

The Atlantic crossing took the *Kalmar Nyckel* and *Fogel Grip* a further two-and-a-half storm-tossed winter months. Figuring a winter crossing of the Northern Atlantic too dangerous, Minuit opted for the longer but safer southern route: first heading south from Holland to the Canary Islands, which lie about 300 miles to the west of tropical Africa; then west across the Atlantic with the favoring NE trade winds which are typically at latitudes of 2°N - 25°N at this time of year; then north up the North American coast. Landfall was made in early March 1638 as the ships reached Cape Henlopen at the opening to the Delaware estuary. Minuit proceeded cautiously up the Delaware, heading the *Kalmar Nyckel* for the Minquas Kill (today's

Christina River), a major tributary which flowed from the west. Minuit headed the ships about two miles up the Minquas Kill, where from prior knowledge he knew there existed a shelf of protruding rocks ("the Rocks"). These rocks would make an ideal natural landing site. It was mid-March 1638, springtime in the Delaware Valley, with weather blissfully warm.

#### **The *Kalmar Nyckel* and *Fogel Grip* Enter Delaware Bay, March 1638**

*The freshness of March was in the air as the two vessels flying Swedish colors rounded the capes under full sail and entered Delaware Bay from the Atlantic Ocean. The estuary did not then have its present name but was known as Godyn's Bay, after a Dutch patroon, but the Dutch often referred to it as South Bay. The ships turned upstream to enter the mouth of South River emptying into the Bay. This majestic stream is now known as the Delaware River. The crews furled the top sails allowing the main courses to carry the vessels cautiously northward.*

C.A. Weslager, *A Man and His Ship* (1990)

Minuit wasted little time scouting and acquiring the land, building a fort, and establishing a small settlement in quick succession. After confirming that no Dutch or English settlements existed in the vicinity, he called a gathering of five chiefs from the local Lenape (sometimes called



Delaware) and Minqua (Susquehannock) tribes. With great fanfare, including the firing of signal cannon, Minit invited the chiefs aboard the *Kalmar Nyckel* and into the Captain's Great Cabin for a special meeting to discuss a Swedish land purchase.

Minit made the case for Swedish acquisition\* of all the territory draining into the Minquas Kill and for permission to establish a Swedish colony to be sited on the western banks of the Delaware. Minit's experience negotiating deals for the Dutch as their Governor of New Netherland helped him make a persuasive case, and the deeds of exchange were signed all around. The sequence is suggestive of Minit's respect for the natives and their prior ownership of the land. Only after the papers were signed did Minit claim the land for Queen Christina and begin to build the little fort and trading post that bore her name.

Minit supervised the building of Fort Christina, which included two log cabins† within its ramparts, one a

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\* European understanding of property rights, which include the concepts of private ownership and alienability, differed greatly from Native American ideas of shared usage. Native American concepts of landed property rights, however, are not as alien to us as is sometimes suggested, for they resemble Western concepts of how we share the air and international waters.

† These icons of the American frontier were the first log cabins built in the Western Hemisphere, designs and techniques brought by Sweden's "forest Finns" to the New World.

barracks and the other a storage facility, and the planting of crops for the fall harvest. His initial mission complete, Minit headed the *Kalmar Nyckel* back for Sweden, leaving "the Rocks" on or about 15 June 1638. He was anxious to make a report to the Company Directors and to bring back a second, larger party of settlers, this time including women and children, all designed to promote the colony's future. He left 24 men to hold the fort and protect New Sweden's legal claim to the territory.

## 2.5 Hurricane Storm-Wind

Homeward bound, Minit again chose a southern route, expecting to stop in the West Indies, where he could exchange wine for tobacco, the "foul weed" whose phenomenal demand had reached Sweden. Thus it was that the *Kalmar Nyckel* found itself anchored in the Caribbean side of St. Christopher's Island (today's St. Kitts).

There on the 5th of August 1638 fortuity found Minit happening upon an old, Dutch friend, the Captain of the sloop *Flying Deer*. He and Captain Jan Hindricksen van der Water were invited to dine aboard the *Flying Deer*. They were still dining when an unexpected storm of unusual ferocity, later called a "hurricane storm-wind," hit St. Christopher's, the anchorage, and all 20 ships in the harbor. The *Kalmar Nyckel* rode out the hurricane, hardly bruised. The *Flying Deer* was one of several ships pushed

out to sea and never seen again. She vanished with all hands, including Minit and Captain van der Water.

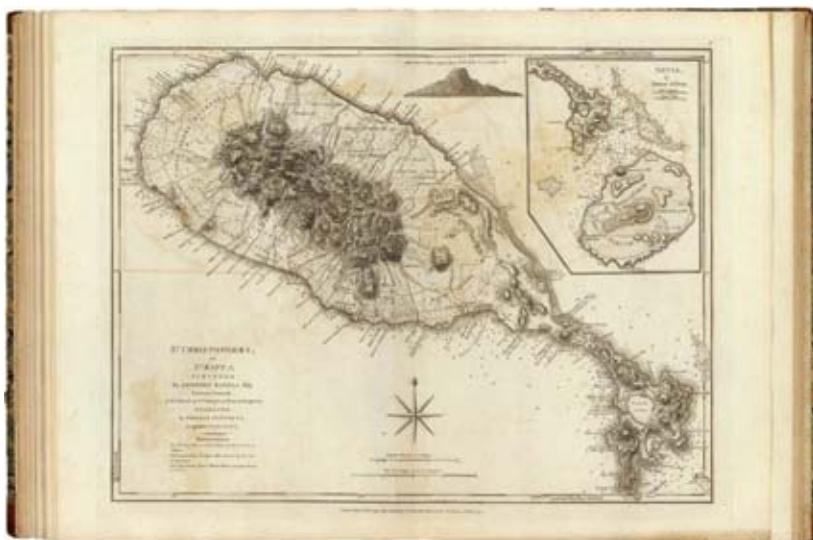


Figure 6 – St. Christophers, or St. Kitts, surveyed by Anthony Ravell Esqr., Surveyor General of the islands of St. Christopher, Nevis & Montserrat. Engraved by Thomas Jefferys, Geographer to the King. London, printed for Robt. Sayer, Map & Printseller, no. 53 in Fleet Street, as the Act directs 20th Feby. 1775. Courtesy of the David Rumsey Map Collection.

With Minit and the Captain gone, First Mate Michel Symonssen assumed command of the *Kalmar Nyckel*. Symonssen searched in vain for the *Flying Deer*, waiting nearly two months before following his emergency instructions, which called for him to bring the *Kalmar Nyckel* home to Sweden. The crossing proved difficult, with Symonssen encountering another major storm, which the ship barely survived, before eventually finding emergency

relief in the Dutch West Frisian Islands. After a layover for repairs and further delays in Holland caused by a dispute over import duties, the *Kalmar Nyckel* reached Gothenburg in early 1639. The round-trip had taken her nearly sixteen months, and she had survived two dangerously destructive ocean storms and a Caribbean hurricane. But she made it, and would be ready to sail again.

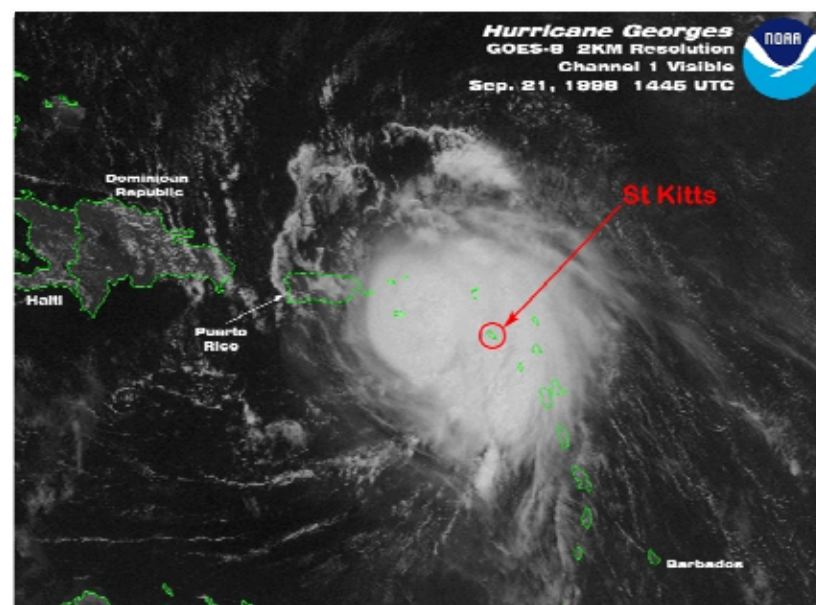


Figure 7 – Satellite image of Hurricane Georges shortly after it passed St. Kitts in September 1998. With modern technology we now get early warning of the approach of these major storms. In the 17<sup>th</sup>-century it was common to be taken by surprise as they can be very fast moving. Image from the NOAA Web site.

## 2.6 Record Voyages Two, Three, and Four

The *Kalmar Nyckel* made three more round-trip crossings of the Atlantic, from 1640 to 1644, in the service of the New Sweden Company. Her total of four round-trip trans-atlantic crossings remains the most on record for any ship of the colonial era, a testament to her sound design and sturdy construction, to the skill of her captains and crew.

On her second crossing, in the spring of 1640, she brought women and children to New Sweden for the first time as well as much needed supplies for the 25\* hardy men holding onto Fort Christina. The *Kalmar Nyckel* was accompanied by the *Charitas (Charity)*, a larger freight vessel, on voyage number three in 1641-42 and by the *Fama (Fame)* on the fourth and final voyage in 1634-44, each time bringing more supplies and settlers for an expanding New Sweden.

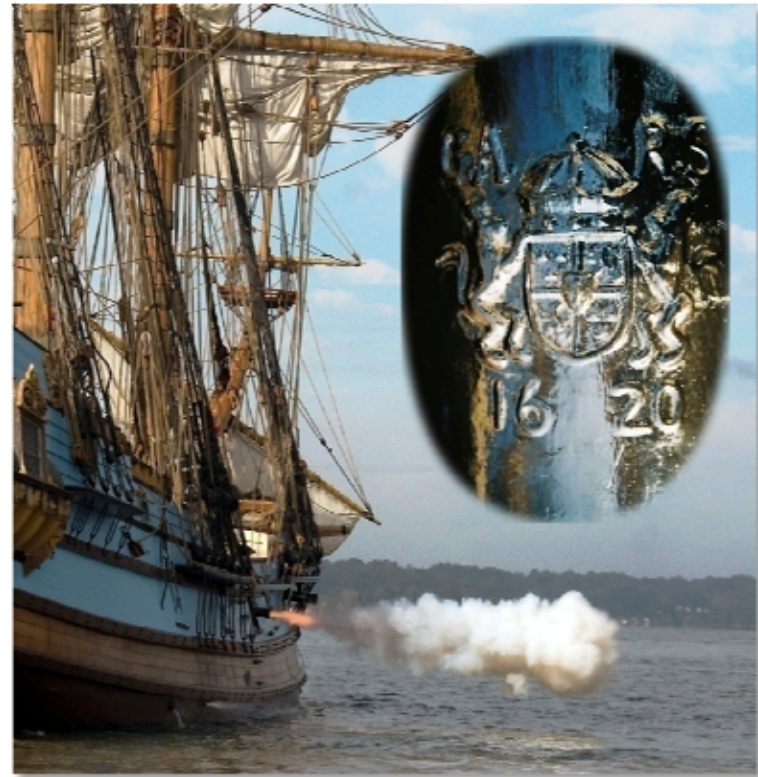
## 2.7 Swedish Warship *Kalmar Nyckel*

Upon her safe return to Sweden in 1644, the *Kalmar Nyckel* was commissioned immediately to serve in the Swedish-Danish War (1643-45), one in a series of conflicts between the rival kingdoms for seizure of territory and control of the Baltic Sea.

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\* Anthony joined the original 24 settlers in early 1639 (see §9.5).

Outfitted for naval warfare by May of 1645, the *Kalmar Nyckel* took part in a number of engagements and saw bloody action. With her reputation as a swift and seaworthy vessel, the *Kalmar Nyckel* was used primarily as a scout ship by Admiral Ancharheim, commander of the Swedish western fleet based in Gothenberg.



**Figure 8 – The modern day *Kalmar Nyckel* firing one of her 3 lb cannon. Inset is the seal of King Gustavus II Adolphus that is on today’s cannon; it was copied from cannon recovered from his flagship the *Vasa* when she was refloated from the sea bed. Photographer – Alistair Gillanders.**

She saw her first action while shadowing the enemy fleet outside Gothenberg, eventually engaging four pursuing Danish ships in a running gun battle that lasted several hours in the Great Baelt Strait. After more picket and intelligence-gathering duty, the *Kalmar Nyckel* engaged the larger *St. Peter* (abbreviated as *St. Peer* in most reports) in a bloody close-action ship-to-ship mêlée on 8 August 1645.

The *St. Peter*, a Dutch flöjten (flute), with its significantly heavier firepower of 22 larger-caliber guns and a sizably bigger crew, was boarded and taken by the *Kalmar Nyckel's* men, with help from other Swedish ships. A surviving letter from a member of the crew who was crippled in the battle, one Michell Johansson, states that only 12 officers and men of the *Kalmar Nyckel* survived the action which resulted in the seizure of the *St. Peter*.

The crew must have suffered heavy casualties, and we know from later reports that the damage to the ship was extensive. Five days later, on 13 August 1645, the Danes signed an armistice and agreed to negotiate a peace favorable to the Swedish.

## 2.8 Silent End for a Noble Ship

With the Swedes victorious in the Danish War, the New Sweden Company requested that the government re-equip the *Kalmar Nyckel* and outfit her with soldiers and provisions so assistance could be sent to New Sweden. Governor Johan Printz had been pleading for desperately

needed supplies and reinforcements to stave off the Dutch West India Company as it made a number of encroachments on Swedish territory along the Delaware. The request was forwarded directly to Queen Christina, and she gave her personal approval. An ensuing inspection by the Navy, however, determined that the *Kalmar Nyckel's* condition was so poor that she would not likely survive another transatlantic voyage. A replacement ship, the *Katt (Cat)*, was sent to New Sweden instead.

On 19 June 1651, Queen Christina authorized the sale of the *Kalmar Nyckel*, officially decommissioning her after some 22 years of service to the Sweden government. The ship was sold to Cornelius Rolofsson, believed to be a Dutch merchant, after which she glides silently from the pages of recorded history.

Two competing stories exist about the *Kalmar Nyckel's* demise, neither one verified to any degree of historical satisfaction. On one hand, there is a record in the Dutch archives of a vessel believed to be the *Kalmar Nyckel* making an appearance in Holland. This vessel was eventually sunk by the English in a North Sea battle during the First Anglo-Dutch War (1652-54).

On the other hand, there is another story, also unconfirmed, that the *Kalmar Nyckel* finished out her days as a merchant ship in the Baltic and sank in Kalmar harbor, where she lies to this day. We have no direct evidence of what Rolofsson,

the buyer, did with the *Kalmar Nyckel* after purchasing her from the Swedish navy in 1651, and she disappears from the written records.

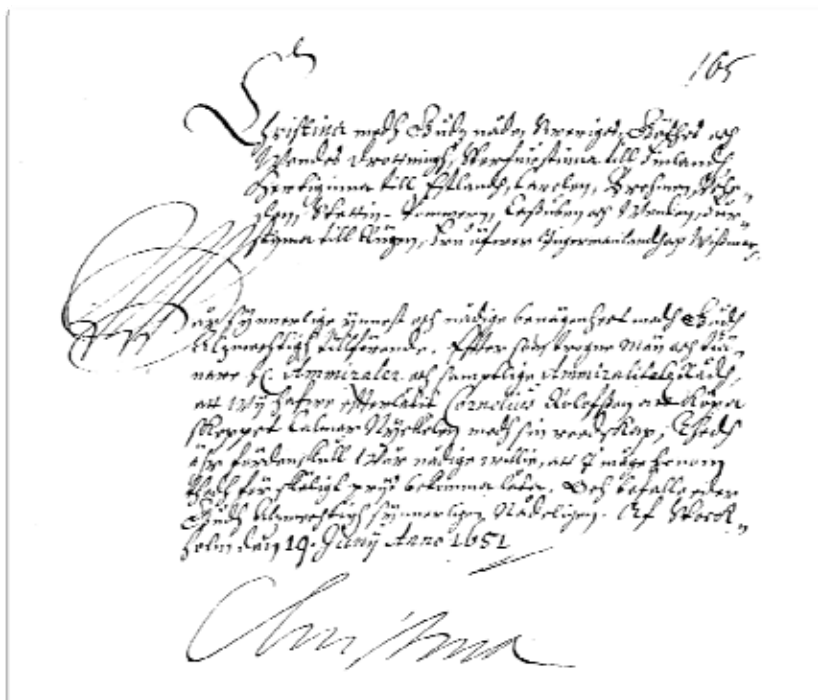


Figure 9 - A copy of the official document, in Swedish, signed by Queen Christina authorizing the sale of the *Kalmar Nyckel*; the date of 19 June 1651 can be clearly seen at the bottom. A translation is provided opposite.  
 Courtesy Swedish Royal Archives, Stockholm.

It remains equally likely that she served out her time in the Baltic as a humble freighter, even as a floating, dismantled, warehouse, as it is that she ended her days a Dutch warship, guns blazing as she went down. History is full of

mystery, and some things we just do not know, likely will never know.

### Decommissioning and Sale of the *Kalmar Nyckel* by Order of Queen Christina

*Christina by the Grace of God, Queen of Sweden, of the Goths and Wends, Grand Duchess of Finland, Duchess of Estonia, Karelia, Bremen, Verden, Stettin-Pomerania, Kashubia and Wenden, Princess of Ruegen, Dame of Ingermanland and Wismar.*

*Conveying Our particular favor and gracious disposition, in God almighty. Inasmuch as We, with faithful men and servants the Lords Admiral and the whole Council of the Admiralty, have granted Cornelius Rolofsson indulgence to buy the ship the Kalmar Nyckel with its tackle; It is in accord with Our gracious will, that you may permit him to receive it for a reasonable price. And may God almighty commend you with particular grace. From Stockholm the 19th June in the year 1651.*

*[signed] CHRISTINA*

Either ending fits her workmanlike career – dual role as an armed merchantman and small warship – and her years of unpretentious service. Gone but not forgotten, she is

lovingly remembered today for being one of a handful of the most important ships in American maritime and colonial history. Her memory lives on in the reconstructed *Kalmar Nyckel* and in the hearts of the women and men of the Kalmar Nyckel Foundation who are honored to serve and sail her namesake. Her original significance as Peter Minuit's flagship continues to echo across the Foundation's shipyard, quietly reverberating off "the Rocks" next door and out across the hills of our beloved Delaware Valley.



Figure 10 - Queen Christina of Sweden in 1650, the year in which she was crowned. Portrait by David Beck.

### 3 *Kalmar Nyckel* Historic Dates

- circa 1625 Built by the Dutch
- 1629 Purchased by the Swedish cities of Kalmar and Jönköping.
- 1637 The first voyage to New Sweden leaves Gothenburg...
- 1638 ...the first voyage arrives at "the Rocks" on the Christina River in present day Wilmington, DE.
- 1638 On March 29<sup>th</sup> 1638 Minuit met with local chiefs of the Lenape tribe in the great cabin of the *Kalmar Nyckel* and secured the land deal he wanted.
- 1638 The *Kalmar Nyckel* begins the return voyage, surviving a Caribbean hurricane in which Peter Minuit dies...
- 1639 ...and arrives back in Gothenburg.
- 1640 – 41 Second round-trip voyage; bringing the first women and children to New Sweden.
- 1641 – 42 Third round-trip voyage to New Sweden.
- 1643 – 44 Fourth round-trip voyage to New Sweden.
- 1645 Outfitted for naval duty and takes part in the Sweden-Danish War (1643-45); she helps seize the *St. Peter*.
- 1651 Decommissioned by order of Queen Christina after 22 years of service.
- 1651 Sold to Cornelius Rolofsson, believed to be a Dutch merchant.
- 1650's Uncertain end, perhaps in the North Sea or the Baltic

## 4 Ship Specifications (*Kalmar Nyckel*, 1997)

The *Kalmar Nyckel* is a United States Coast Guard certified small Passenger Vessel, approved to take the public sailing on protected waters of the United States.

### 4.1 Builders and Captains

Type	1625 Dutch Pinnace
Shipbuilder	Allen Rawl
Naval Architects	Thomas C. Gillmer Melbourne Smith
First Captain 1997 – 2006	David W. Hiott IV
Current Captain	Lauren Morgens

### 4.2 Dimensions

Sparred Length	141 feet
Length on Deck	93 feet
Length at Waterline	89 feet
Draft	12 feet 5 inches
Beam	25 feet
Height of Rig	105 feet – waterline to main flagstaff 65 feet – with topmasts down-rigged
Sail Area	7600 square feet
Displacement	298 tons
Registered Tonnage	168 I.T.C.

### 4.3 Materials of Construction

Framing	Purpleheart
Planking	South American Locust
Decking	Douglas Fir
Spars	Douglas Fir
Knees	Hackmatack
Fastenings	Galvanized Steel
External Ballast	Lead
Internal Ballast	Lead

### 4.4 Other Details

Engines	2 Caterpillar diesel 3208's @ 180 HP each
Nominal Top Speed	Sail: 12.5 knots Power: 9.25 knots
Fuel Consumption	13 US gallons/hour @ 2200 rpm
Passenger Capacity	49 persons (day sails) 90 persons (dockside)
Crew	24 (voyages) 8 (day sails)
Certification	USCG sub-chapter T
Launched	28 September 1997
Commissioned	9 May 1998



Figure 11 – Originally designed as a Dutch warship, the *Kalmar Nyckel* was extremely fast, nimble, and seaworthy for her day. She remains uniquely attractive and flexible among present-day tall ships, capable of carrying 49 passengers for day trips. *Photographer – Alistair Gillanders.*



Figure 12 – In these two pictures (this and previous one) we see the modern day *Kalmar Nyckel* during a day sail on the Chesapeake Bay near Solomon's Island, MD in the late summer of 2008. *Photographer – Alistair Gillanders.*



## 5 Peter Minuit (circa 1580 – 1638)

### 5.1 Early American Dreamer

Peter Minuit\* was a man of the modern world, German by birth, Huguenot French by descent, Dutch and then Swedish by adoption and allegiance, American by choice. Born in or about 1580 along the German Rhine in the town of Wesel, within the Duchy of Cleves, a Protestant enclave of the Germanic Holy Roman Empire, Minuit was the son of expatriate Walloons who fled Spanish religious persecution.

A leader all his life, Minuit started out an upwardly-mobile entrepreneur with an eye on the future. He lacked military training, but he was a quick study, combining a take-charge personality with sensible judgment. And he always had a keen eye for land and its potential. In the end, he proved to be one of America's first great empire builders, with the vision, the energy, and the risk-taking emblematic of all those who would follow in his footsteps.

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\* Note on pronunciation and spelling: The Minuit family used the French pronunciation "Min-wee," meaning "midnight." Germans and Dutch of the time articulated the "t." Americans then and now generally say "min-u-et," as in the dance. Although a surprising number of partisans remain dogmatic on this subject, either pronunciation is acceptable, reminding us of Minuit's complex heritage. Consistent spelling was not a priority in 17<sup>th</sup>-century Europe. Archival records show Minuit's name spelled variously as "Minnewit," "Myniewit," "Minuyt," "Mynnuit," "Minuet," "Minnewe," sometimes with several variants in the same document

Records of his life are spotty, but we know Minuit was well-respected within the Wesel business community, that he married the daughter of the mayor from neighboring Cleve, and that he served as deacon in the local Dutch Reformed Church. In 1624 Minuit and his wife fled to Holland, seeking refuge from Spanish troops then occupying Wesel, one tiny but important dislocation produced by the collective horrors known to history as the Thirty Years' War (1618-1648).

### 5.2 Third Director of New Netherland (1626-31)

Minuit's move to Holland put him in touch with the Directors of the Dutch West India Company, a newly formed enterprise designed to exploit the vast resources of what at the time seemed a limitless North American wilderness. Minuit would make two voyages to New Netherland (a territory stretching in the north from present-day Albany, New York, to Cape Henlopen and the opening of Delaware Bay in the south, encompassing all or parts of what became New York, Connecticut, New Jersey, Pennsylvania, and Delaware) on behalf of the Dutch Company, the second time serving as Director (i.e. Governor) of the Colony from 1626 to 1631.



Figure 13 – New Amsterdam in the 1650’s, from a watercolor by an unknown artist. Courtesy of the National Archives of the Netherlands.

Manhattan Island became the center of the Dutch colony and flourished under Minuit’s leadership. Minuit did actually “purchase” Manhattan, as well as Staten Island, from local “Indian” tribes, completing what has become the most famous real estate transaction in history. Exactly what it was the Indians conveyed and how much Minuit paid in return remains a topic of much debate. We know that Minuit moved the Company’s capital and main settlement from Nut (today’s Governor) Island to Manhattan, built a fort at the island’s southern tip, Fort Amsterdam, and improved Dutch relations with local tribes, which resulted in a substantial increase in the fur trade and prosperity for the colony. He ended a bloody conflict with

the Mohawks to the north, forging an alliance that would last through the colony’s whole existence, purchased extensive lands along the Hudson River and the Delaware Bay, and opened diplomatic and commercial relations with the Pilgrim settlement in New England.

### Peter Minuit’s Document List

#### Planning the New Sweden Expedition of 1637-38

- *Conditions Upon which the Company Shall Be Formed*
- *Draft of the Conditions: What the Very Laudable Government of Sweden Shall Be Pleased to Do for the Company*
- *Instructions to Serve Peter Minuit on the Voyage*
- *Instructions for the Marine Council on the Voyage*
- *Ration List*
- *Plan for Distributing Food*
- *List for Wet and Dry Foodstuffs for 36 men for 15 Months*
- *Memorandum of How the Commissaries and Other Officials Shall Prepare Their Reports*
- *List of Munitions*
- *Instructions for Peter Minuit on his Voyage to Sweden*
- *Mariner’s Chart of the entire West Indies and Florida*
- *Tally of all the Casks Needed Aboard Ship for a Long Voyage*
- *Salt License that is to be Given to Chartered Ships for Transshipment*
- *Regulations*
- *Extract from Commissaries’ Instructions*
- *Bill of Lading Form*
- *Two Letters from Samuel Blommaert to Admiral Fleming*
- *One Letter from Peter Spiring to Admiral Fleming*

These documents were used to get Swedish Governmental approval for the formation of New Sweden Company Charter and Expedition.

Before becoming embroiled in a nasty dispute between Company directors, which resulted in his being recalled to Holland and discharged from the Company, Minuit could look with pride at the peace and prosperity he brought to the burgeoning colony, the one with the magnificent harbor at the center of the New World that he secured. That he would be angry at the faction of Company directors who so badly treated him, with the underhanded aid of his New Amsterdam rival, the Rev. Jonas Michaelius, helps explain Minuit's next foray in the empire-building business – this time on the banks of the Delaware River.

### 5.3 First Governor of New Sweden (1638)

F. Scott Fitzgerald's commentary notwithstanding, there are some notable second acts in American history. Minuit was brought out of retirement in 1635 by a Dutch businessman with international investments and a global reach, one Samuel Blommaert. Blommaert was a Director and original investor in the Dutch West India Company, but he had soured on the Company's prospects following Minuit's firing. Blommaert also happened to have investments and connections in Sweden, and he was eager to enlist Minuit to try another commercial venture in North America, this time on behalf of the Swedish government.

Together Blommaert and Minuit worked with Chancellor Oxenstierna and the Swedish government to establish a New Sweden Company. Like the Dutch West India Company after which it was patterned, the New Sweden

Company was a private commercial enterprise sponsored by and with a charter from the Swedish government. The Company's primary purpose was economic, but the motivations of the individual Swedish and Dutch investors and directors, some of whom were also Swedish crown officials, varied widely. We know from Minuit's surviving letters, for instance, that he hoped to use New Sweden as a haven for his fellow Rhinelanders displaced by the ravages of the Thirty Years' War.

After countless delays – logistical, bureaucratic, diplomatic, Minuit's ill health – the expedition finally launched in November 1637. Minuit was there on the quarterdeck of his *Kalmar Nyckel* as she sailed from Gothenburg harbor, Sweden, joyful to be well again and finally underway, the yacht *Fogel Grip* alongside.

"The Rocks," Minuit's planned objective from the beginning, came into view nearly five months later, mid-March 1638. The crossing had been difficult and tempestuous, requiring an emergency layover and refit in Texel, Holland, but springtime warmth and greenery greeted the expedition as it dropped anchor.

Here at “the Rocks” (present day Wilmington, Delaware), about two miles up the Minquas Kill (later renamed the Christina River\*), on a major western tributary of the Delaware River, Minuit located what would become the

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\* The history and derivation of place names is an interesting field of study all its own. The name of the Christina River follows the imperial fortunes and cultural sensibilities of the political entities which controlled it. From the time of New Netherland, the Dutch called it the Minquas Kill, *kill* being the Dutch term for river or creek, Minquas describing the river as the access way to the interior lands controlled by the Minqua tribe along the Susquehanna River Valley.

In 1638, Peter Minuit renamed it the Elbe, although the name never stuck. The Elbe seems an odd choice to us today, but perhaps not so much when we consider Minuit’s German birth and commitment to German war refugees.

With Minuit’s death, the Swedes as early as 1639 began to refer to it as the Christina River, honoring both Queen Christina and the Fort which bore her name. The Dutch, having never formally recognized New Sweden, continued to refer to it as the Minquas Kill, which prevailed on Dutch maps and in Dutch correspondence until at least 1664.

With the English conquest of New Netherland in 1664, the Christina was Anglicized to Christiana. It stayed that way through the American Revolution and Delaware Statehood until 1938 and the tercentenary visit of the Swedish Royal family, when Delaware returned the name to its Swedish form – “Christina.” Matters are further confused because the colonial port village of Christiana, Delaware, which Anglicized its name from Christina following the English takeover in 1664, rejected a reversion to “Christina” in the 1930s. Delawareans thus have a Christiana, famous for its modern shopping Mall, located on the Christina River.

Finally, that we do not know the original name given to the River by the local Lenape People remains a suggestive commentary on our cultural and historical sensibilities.

first permanent European settlement in the entire Delaware Valley watershed.



Figure 14 – Stanley Arthurs’ “Landing of the Swedes, 1638”  
University of Delaware, Mitchell Hall.

Minuit picked “the Rocks” because he knew where he was going and what he wanted to accomplish once he got there.

From his time as Director of New Netherland, no European knew more about the Delaware Valley, Dutch land claims and operations in the region, or the local native tribes. He had chosen his site well:

1. It was off the main channel of the Delaware and hidden from prying Dutch and English eyes;
2. It had a huge outcropping of rocks (“the Rocks”) that made for an easy landing site, allowing for the direct offloading of cargo from ship to shore;
3. It was defensible ground on a narrow peninsula formed between the Brandywine and Christina Rivers, with marsh lands as buffers;
4. It was on a major Indian thoroughfare connected to the interior, especially important and convenient for future fur trading considerations; and
5. Most importantly, Minit knew it was on land to which the Dutch had never acquired legal title from the native tribes.

The Dutch had acquired deeds for lands east of the Delaware (present-day New Jersey) from the local tribes, but they had neglected to secure title from the tribes on the western boundary of the River and Bay (present-day Delaware and Pennsylvania).

Reading Minit’s motives from the distance of almost 400 years is a chancy business, but we can safely speculate that

he enjoyed the opportunity to use the Dutch legal system to his advantage while striking a blow at the West India Company Directors who had once wronged him so unfairly.

### Purchase Treaty of 1638

*The parties were therefore agreed with one another, and thereupon, on the twenty-ninth of March [1638,] appeared and present themselves before the abovementioned ship’s council, in the name of their nations or people, five sachems or princes, by the name of Mattahorn, Mitot Schemingh [Mitasemint], Eru Packen [Elupacken], Mahamen, and Chiton ... and in the presence of the whole ship’s council ...ceded, transported, and transferred all the land, as many day’s journeys on all places and parts of the river [Minquas Kill] as they [the Swedes] requested; upwards and on both sides.*

– Deposition made in Amsterdam by Four Sailors who accompanied Minit’s New Sweden expedition of 1638 and survived the return voyage.

*Note: The original deeds signed by the Indian chiefs have been lost to history, along with Minit’s accompanying sketch of Fort Christina. These papers were with Minit’s missing log book, and the last record of them was a letter from Samuel Blommaert stating he had sent them to Admiral Klas Fleming.*

After spending a short time scouting the headwaters of the Minquas Kill and the reaches of the lower Brandywine to

confirm that no Dutch or English had settled in the area, Minuit called a conference of local chiefs and sachems. Displaying the uncommon regard and courtesy to the tribes for which he was known, Minuit fired cannons in salute and held the meeting in the *Kalmar Nyckel's* Great Cabin. Five leaders, including Chief Mattahorn, were present from the Lenape and Minqua tribes. On 29 March 1638 Minuit was successful in making the case that it would be in the Indians' best interest to allow Sweden to acquire land and build a trading post within a small fort. Gifts were given, deeds were signed. A full tributary fanfare ensued, complete with ceremonial trumpeters and drummers, by which Minuit raised the standard of twelve-year-old Queen Christina and took official possession of the land.

Thereafter, Minuit oversaw the building of Fort Christina and the planting of barley, wheat, and corn. With his settlement established, and leaving 24 rugged souls to man the fort and occupy the land claim, Minuit headed back to Sweden for a second, larger expedition of settlers. He decided a detour to the Caribbean for the purchase of West Indian tobacco would be necessary to augment the enterprise's profits. The *Kalmar Nyckel* made its way south to the island of St. Christopher (St. Kitt's today), where Minuit ran into an old friend, the captain of the Dutch sloop the *Flying Deer*. On 5 August, 1638, he was invited aboard for dinner and an exchange of news and gossip. Amidst the wining and dining, a freakishly sudden and violent storm,

later described by Blommaert as "the hurricane, an extraordinary storm-wind," caught the *Flying Deer* and blew her out to sea. The ship vanished, with all hands, including Minuit.

The *Kalmar Nyckel* survived the hurricane and made it back to Sweden. The tiny settlement at Fort Christina also survived. New Sweden would last until 1655, when it would be seized by the Dutch under Peter (Petrus) Stuyvesant's leadership. The English in turn would take the territory from the Dutch in 1664. Delaware would become a separate English colony under William Penn, and it would still be there as a State in 1787 when it was the first to ratify the Constitution that formed the United States of America.

#### 5.4 Legacy and Meaning

Peter Minuit's mysterious and untimely death in a Caribbean hurricane reminds us of the happenstance that drives history and the dangers of Atlantic voyages in the age of sail. His legacy as an empire builder in the Americas, the founder of what would become New York City along the Hudson and Wilmington, Delaware, along the Christina, makes him an historical figure of enduring importance. His multiethnic and multinational life story, his energetic entrepreneurial drive, his astute comprehension of and reliance on an emerging body of international law, his humane dealings with the native tribes, his vision of

America as a haven for down-on-their-luck European refugees, together mark Minuit as a man of a new, global, modern world. Minuit was one of the first of the hyphenated Americans, one of the first to lead the way west across the Atlantic, one of the first to realize that the world's center of power, wealth, and imagination lay increasingly along the shores of North America. The curious case of Peter Minuit and the Swedish invasion launched from the *Kalmar Nyckel* reinforces in our minds the extent to which American history did not just happen. Real people, with real lives, real motivations, and real vision, made it happen.



Figure 15 - Plaque in Wesel, Germany, in Peter Minuit's honor. Freely translated this reads, "Peter Minuit, the son of our city who founded the metropolis of New York in 1626, and in 1638 the American city of Wilmington." *Photographer - Allen C. Rawl.*



Figure 16 - This is Fort Christina State Park which is at the site of "the Rocks" in Wilmington. The people of Sweden erected this monument to the memory of the first Swedish settlement on American soil and gave it in custody of the State of Delaware. *Photographer - Alistair Gillanders.*

## 6 Voyagers Aboard the *Kalmar Nyckel*, 1638

### 6.1 National Origins of the Crew and Colonists

We know the names and something about many of the people who voyaged with Peter Minuit aboard the *Kalmar Nyckel* on the 1638 expedition that established the first permanent settlement in the Delaware Valley. No complete muster book from the original voyage survives, but some of the papers and logs belonging to Peter Minuit exist, ones that were carried back to Sweden by First Mate Michel Symonssen following Minuit's death in the hurricane on that fateful 5 day of August, 1638.

Estimates suggest that 20 to 30 sailors manned the *Kalmar Nyckel* when she sailed for America in 1638, and that she carried about 24 soldiers. Most of the sailors were Dutch and most of the soldiers were Swedish or Finnish. Names alone cannot be used to determine nationality, because many people bearing Dutch names were Scandinavian and vice versa. Inconsistent and careless spelling by both Dutch and Swedes compounds the confusion.

Rank / Role	Name	Place of Origin
Leader and Governor	Peter Minuit	German, Huguenot parents, French by descent
Captain	Jan Hindricksen van der Water	Dutch
First Mate	Michel Symonssen	Dutch
Second Mate	Jacob Evertssen Sandelin	Scottish
Gunner	Johan Jochimssen	Danish or German, Coppel in Schleswig-Holstein
Boatswain	Peter Johanssend	Dutch, Bernster in Holland
Indian Interpreter	Andress Lucassen	Dutch
Commander	Måns Nilsson Kling	Swedish or Finnish
Soldiers	Twenty three not named	Mostly Swedish or Finnish
Commissary	Hendrick Huygen	German, Minuit's nephew from Wesel
Apprentice	Gotfried Harmer	German boy, Huygen's cousin
Seaman	Numbers and names unknown	Mostly Dutch
Seaman	Herman Andersson	Swedish
Seaman	John Swensson	Swedish
Seaman	Sander Clerck	Swedish
Freeman	Klas Jansson	Swedish or Finnish
Barber-Surgeon	Hans Janecke	German, Konigsberg in Prussia
Barber-Surgeon	Timen Stiddem	Swedish



## 6.2 Roles of the Crew and Colonists

**Leader, Governor:** Expedition's officer commanding; governor in charge of all major decisions concerning the establishment of the colony; chief administrative officer, directly responsible to New Sweden Company Investors and Swedish Governmental Councilors.

**Captain:** The *Kalmar Nyckel's* commanding officer, responsible for welfare and direction of the ship and its sailing crew.

**First Officer:** The Chief Mate was the senior of two watch-standing officers. He was responsible for the correct execution of the Captain's commands. He would have sufficient experience to take command of the ship if the Captain should become incapacitated.

**Second Officer:** The Second Mate was the watch-standing officer of less seniority and generally less experience than the Chief Mate. In standing watch, the Mates alternated leading their 'watch,' or half of their men, in shifts throughout the 24-hour day.

**Gunner:** The Gunner or gunner's mate oversaw the care and operation of the *Kalmar Nyckel's* guns (believed to be about twelve cannon, a mix of six-pounders and three-pounders, with two additional small swivel guns) as well as all of the muskets, pistols, and gunpowder aboard.

**Boatswain:** The boatswain (bosun) was responsible for the condition of the ship's rig, and kept the crew busy with constant maintenance and repair projects.

**Seaman:** The seamen worked under the direction of the *Kalmar Nyckel's* officers and crew, completing all the tasks necessary to sail and maintain the ship; these sailors were often illiterate and poor men who risked their lives regularly as part of their duties.

**Commissary:** A most important colonial official or army officer, the commissary was responsible for providing the colonists and soldiers with food and other supplies; in European colonial settlements of the period, the commissary was charged also with storing and overseeing the trade goods used to bargain with the native peoples and with safeguarding the furs and



Figure 17 - A model of a Swedish seaman dressed in clothes found in the *Vasa*. Courtesy of the Swedish Maritime Museum.

other materials acquired from any exchange.

**Apprentice:** Generally any young assistant, in this case a boy who helped the commissary.

**Commander:** A commissioned army officer in charge of leading and overseeing the colony's soldiers; once on land, he took direction from the Governor but not the ship's captain.

**Soldiers:** Men enlisted for service in the army; usually denotes a level of professionalism and proficiency, but training, experience, and pay varied widely; in New Sweden, soldiers were often pensioned criminals and others forced into service by hard luck and poverty.

**Barber-Surgeon:** A person experienced in the matters of cutting and dressing hair and beards as well as in the treatment of wounds and illnesses; dual role suggests the level of medical and surgical competency before the advent of modern medicine in the latter half of the 19th century.

**Freeman:** An adult male colonist not employed by the New Sweden Company or the Swedish government, qualifications unspecified.

**Indian Interpreter:** A person with specific language qualifications, here denoting experience with the

translation of various native Indian languages; an important position in North American colonies generally, where the vast variety of Indian languages and dialects and the subtleties of idiomatic expression required tremendous skill and experience.

## 7 A Self-Guided Tour of the *Kalmar Nyckel*

### 7.1 Weather Decks

*Note – Please begin your tour from the bow (front) of the ship and work your way aft toward the stern (back).*

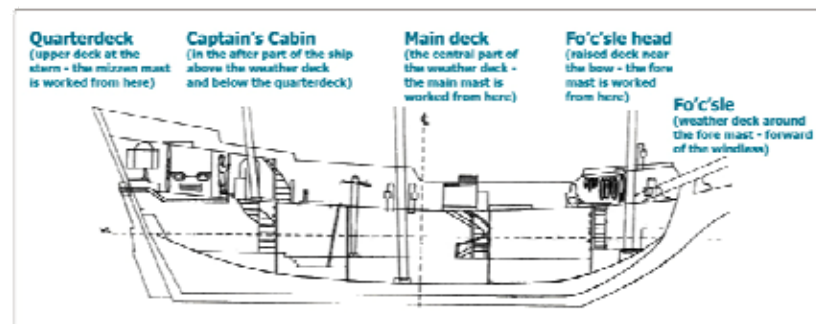


Figure 18 - The layout of the weather deck and decks above. The weather deck runs all the way from bow to stern and seals out the “weather” from getting below; think of it as the “roof” on the hull that forms the “floor” for the sailors to sail the ship. The other decks above this only run part of the length of the ship (the fo’c’sle head and the quarterdeck).

#### 7.1.1 The Forecastle (Fo’c’sle) Head and Its Features:

**The Anchors:** *Kalmar Nyckel* has two traditional wooden-stocked bower anchors, each weighing 900 pounds. They are raised by hand using the windlass on the main deck.

**The Bell:** A sailor’s life aboard ship is divided into ‘watches,’ or periods of work and rest. Sailors take turns standing watch, so that the ship is manned at all times throughout the day and night. Traditionally, the bell was rung every half-hour to announce the time and keep track of the changes of the watch. A typical watch lasted 4 hours, or 8 bells, and they would start again from 1 bell after that.

**The Chimney Hatch:** The original *Kalmar Nyckel* would have had a wood-burning stove in the forecabin (fo’c’sle) for cooking. On the modern ship, we have opted to save storage space and do without a stove, but the fo’c’sle head is fitted with a hatch through which smoke could be vented.

### 7.1.2 The Forecabin (Fo’c’sle) and Its Features:

**The Hawse Holes:** These large holes forward allow anchor cables and mooring lines to pass out of the fo’c’sle, and, in bad weather, allow seawater to travel in. Sailors living in the fo’c’sle would probably have gone to considerable lengths to plug the hawse holes when offshore, but they still likely contributed to the discomfort of life in the fo’c’sle.

**The Foremast:** Ships in the 17th Century had their foremasts mounted or “stepped” far forward compared to later designs. The *Kalmar Nyckel*’s foremast passes right through the fo’c’sle. Later, sailors would invent the expression “before the mast,” referring to later fo’c’sle’s, which were forward of the foremast.

### 7.1.3 The Main Deck and Its Features:

**The Windlass:** One of the most important simple machines onboard the *Kalmar Nyckel*, the windlass is a human-powered winch offering a mechanical advantage of approximately 10:1. The crewmembers wrap a line to be hauled around the windlass, and then up to eight hands use the long bars as leverage to turn it. A versatile device, the windlass is used for hauling back anchors, trimming sails, hoisting topmasts and yards, and any other use the crew might need it for.

**The Forward Hatch:** This is an example of a traditionally designed cargo hatch. Its expansive size and removable gratings made loading convenient. Once filled, the hatch would have been covered with layers of waterproofed canvas secured in place by a system of wedged wooden battens – a process known as “battening down the hatches.”

**The Main Hatch:** This hatch system, known as a “Doghouse,” is less traditional than the open gratings of the Fore hatch; nevertheless, it provides safer, more user-friendly access to crew spaces—it admits a staircase and, unlike a battened hatch, it can be opened from below. Traditionally, the main hatch would have been identical to the fore hatch.

**Deck Guns:** The original *Kalmar Nyckel* was armed to varying extent throughout her life, whether as a merchant

vessel, a warship, or a colonial ship. The modern ship is built with fittings for ten deck guns. Because of space constraints, we carry two six-pound cannons (forward) and two three-pound cannons (amidships). Guns were described in terms of the weight of the shot fired; our six-pounders themselves weigh about 1,000 pounds.

**The Main Mast:** This is the largest mast on the ship. Like the foremast, it was made from several vertical sections fitted together like pieces of a pie. Ropes called woodings are wrapped tightly around the mast to hold the pieces together. Today, we also made use of modern epoxy resin for this purpose.

**The Capstan:** A human-powered winch, the capstan is an important example of the many simple machines onboard the *Kalmar Nyckel*. Up to sixteen crewmembers can haul tight a line wrapped around the drum of the capstan by marching around the capstan and pushing on the bars fitted through it with their chests. At the end of each bar, the capstan provides a mechanical advantage of 5:1. The capstan is a useful device for long pulls, as crew can march indefinitely without stopping to reset the bars. It can be used for handling docklines, hoisting masts and yards, setting sail, and anything else the crew needs.

**The Whipstaff:** Because the *Kalmar Nyckel* predates the invention of the steering wheel, the helmsman controls the

ship with the whipstaff, a large stick that is used to push the ship's tiller (below) back and forth. The whipstaff and the tiller are both levers that work together to move the 3,200 pound rudder that controls the ship. The crew knows that this device earned the name 'whipstaff' with good reason; steering the *Kalmar Nyckel* can be a physically demanding task, especially in rough weather.

**The "Nav" Station:** This area is home to the navigational equipment that provides *Kalmar Nyckel's* officers with the information they need to keep the ship safe and on course. *Kalmar Nyckel* is equipped with all manner of navigational materials from the time honored paper charts and sextants to modern radars and state-of-the-art chart plotter.

#### 7.1.4 The Captain's Cabin and Its Features

**Opulent decor:** The Great Cabin of the original *Kalmar Nyckel* was probably very ornately decorated in hopes of providing an impressive venue for a Dutch merchant captain to do business. The modern ship's décor represents a combination of symbols of the State of Delaware with designs of carvings and paint recovered from the wreck of the Swedish warship *Vasa*, which sank in Stockholm harbor in 1628. Intricate details of the *Vasa* survived to be refloated in the 20th Century and provide a remarkable example of the decorative style of the period.

**Captain's bunk:** Now, as then, the Captain's living space doubles as the ship's office, which accounts for the modern 'office' equipment that is often visible.

**Stern gallery doors:** Provide access to the small balcony known as the stern gallery. The crew uses this space to handle stern lines when docking and undocking, and to launch *Kalmar Nyckel's* small boat.

### 7.1.5 The Quarter Deck and Its Features:

**Engine Controls:** The Officers of the modern *Kalmar Nyckel* can control the ship's two engines from the quarterdeck. They cannot steer the ship from here, however, but must rely on a helmsman at the whipstaff to carry out their commands.

**Mizzen Mast:** The aftermost mast of the *Kalmar Nyckel* is significantly more angled or 'raked' than the other two masts. Ships of this period were rigged with a fanned effect, with the mizzen mast having more rake than the main and the fore mast being entirely vertical.

## 7.2 Below Decks

*Note – This tour begins in the ward rooms in the stern (back) of the ship and proceeds forward toward the bow (front).*

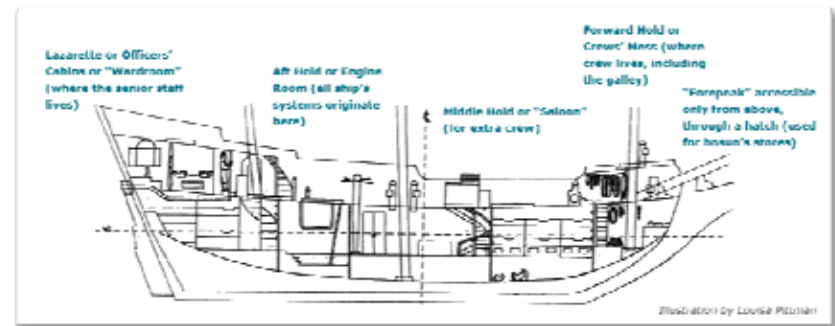


Figure 19 - Layout of cabins and features below deck.

**The Wardroom:** Now as traditionally, the Wardroom is the home of the *Kalmar Nyckel's* officers, who live in small cabins. Taller Wardroom inhabitants need to watch their heads, because the tiller lives here as well, moving back and forth overhead as helmsmen on deck steer the ship.

**The Engine Room:** Behind the scenes, the *Kalmar Nyckel* is a very modern vessel, and the engine room is the heart of the ship's systems. In addition to two 180-horsepower Caterpillar diesel engines, the engine room is home to generators, battery banks, bilge and fire pumps, and all the tools that the ship's crew needs to keep everything running smoothly.

**The Saloon:** Home to the ship's dining table, the Saloon is the common space where the crew of the *Kalmar Nyckel* can eat, relax and socialize when not working. Courtesy to shipmates is important, though, as crewmembers' bunks line both sides of the space. Both the main mast and the capstan pass through the dining table, making it impossible for hungry crew to see all their shipmates seated for a meal.

**The Galley:** The Galley is the ship's kitchen, where the most anticipated part of a sailor's day—meals—are born. Cooking at sea can be a real challenge, so the *Kalmar Nyckel's* gas range is outfitted with adjustable railings or 'fiddles' that keep pots and pans in place over their burners. Like the saloon, the galley is full of bunks for the crew, who can look forward to waking up to smells of hot food cooking.

**The Forepeak:** This small compartment at the bow of the ship is home to the boatswain's (bosuns) stores: all manner of things are stored here – e.g., spare rope, wood, extra blocks, tackles, sandpaper, rags, paint brushes. If a sailor needs it, then it's probably in the forepeak. Keeping this tiny space organized when it is full of ship's stores is a continual challenge.

**Crew Bunks:** Crewmembers are issued bunks in the galley or the saloon, where they sleep and where they store all of

their belongings. This is the extent of their personal space onboard, and most learn quickly to pack light.



Figure 20 – Volunteer steward, Rick Bayard, preparing lunch in the galley of the current *Kalmar Nyckel* during a voyage to Provincetown, MA. Photographer – Alistair Gillanders.

**The Holds:** The holds are the areas below decks, or strictly, below the lower deck, where cargo is stored. On the modern *Kalmar Nyckel*, the holds are home to water and fuel tanks, ship's systems, and extra gear.

## 7.3 Looking Aloft

### 7.3.1 The Anatomy of a Mast

Tall ship masts before the 20<sup>th</sup> century were wooden and originally started as a single piece of timber, typically the trunk of a fir tree. However, from the 16<sup>th</sup> century onwards ships grew large enough to need masts that were taller and wider than could be made from a single trunk. This led to the use of multiple sections of mast, confusingly also called masts. Eventually, on the largest ships, this could be up to four sections; named from the deck and moving upwards they would be the lower, top, top gallant and royal masts.

On the early 17<sup>th</sup>-century *Kalmar Nyckel*, and therefore our modern recreation, the masts are in two sections – lower and topmast (plus a flagpole above that). In the special case of the bow sprit the sprit itself forms the lower mast.

Finally each mast was provided with a working platform, usually where the lower mast and topmast joined; this platform is called a top. On warships and armed merchantmen the tops were also important during battle as a platform for marine sharpshooters and their loaders. Because of this the tops were also known as “fighting” tops on these vessels.

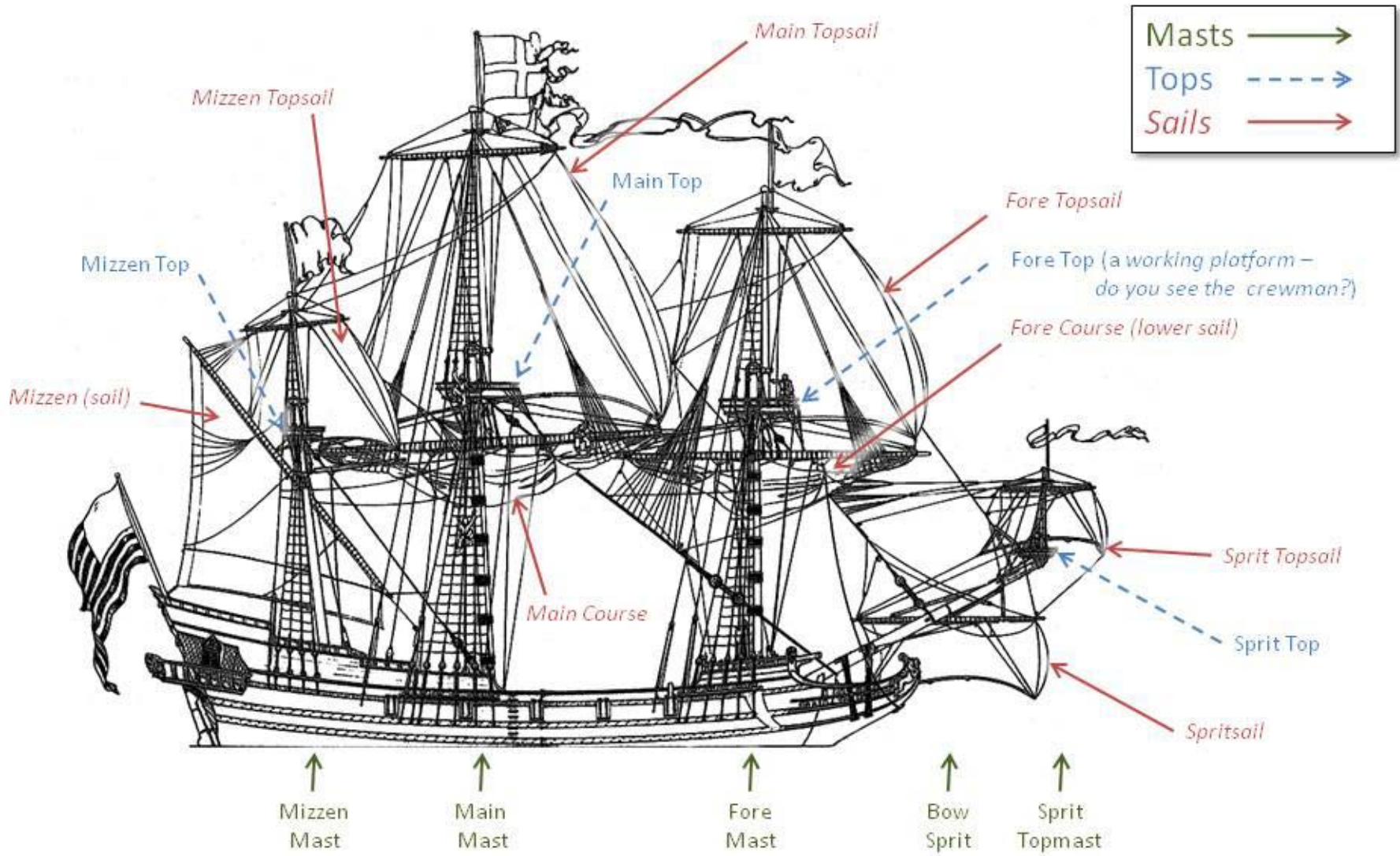
So the *Kalmar Nyckel* has four “masts” each made up of three parts as follows (from bow to stern):

Mast	Mast Section / Top
Bow Sprit	Sprit, sprit top, and sprit topmast
Fore Mast	Fore lower mast, fore top, and fore topmast
Main Mast	Main lower mast, main top, and main topmast
Mizzen Mast	Mizzen lower mast, mizzen top, and mizzen topmast



**Figure 21 – Crew volunteers Maggie Brenner and Van Wells are working in the fore top...above the lower mast and below the topmast...preparing the fore topsail for use. Also visible is the fore top yard which is the horizontal spar the sail is attached to. Photographer – Alistair Gillanders.**

### 7.3.2 The Kalmar Nyckel – Masts and Sails





## 8 Kalmar Nyckel's Reconstruction

### 8.1 Building and Launch

The *Kalmar Nyckel's* keel was laid in April 1995 at the Kalmar Nyckel Foundation's shipyard on the Christina River, adjacent to Fort Christina and "the Rocks."



Figure 22 – Deep in the South American jungle, Shipwright Allen Rawl found the purpleheart wood needed. Harvested under the direction of the Guyanese government and the guidelines of the Rainforest Alliance, more than 50,000 board feet were delivered to the shipyard in 1995.  
*Photographer – Allen Rawl.*

The new *Kalmar Nyckel* was designed and built by Naval Architect Thomas C. Gilmer and Master Shipwright Allen C. Rawl. King Carl and Queen Silvia of Sweden were among the thousands of sightseers who visited the shipyard during the construction.



Figure 23 - In this view, aft looking forward, Patrick Flynn is smoothing the frames into fair curves, a process known as "fairing" the frames.  
*Photographer – Jim Durborow*

The reconstruction teams used a combination of traditional tools and modern equipment. Pain-staking research, including trips to Holland and Sweden, ensured that the new *Kalmar Nyckel* would be faithful to the specifications of the original, a Dutch Pinnace from 1625. Elaborate Swedish-specific ornamental carvings were essential to the exacting reconstruction efforts. Modern equipment was added to make the ship safe and functional, including two diesel engines, a modern galley and bathrooms, modern electronics and navigation instruments, and some synthetic materials in the rigging and sails.



**Figure 24 - An ornamental knee to support the port gallery. Here Ted Ireland finishes the feathers of the powerful bird fashioned of Douglas fir.**  
*Photographer – Chris Queeney.*



**Figure 25 - As the tide reached its highest level, the band played “Anchors Aweigh!” and the second *Kalmar Nyckel* lifted free of her cradle to float in her Christina River home.** *Photographer – Fred Comegys.*

On 29 September 1997, after two-and-a-half years of construction, the *Kalmar Nyckel* was launched into the Christina River. Twenty thousand spectators, including Governor Carper (now U.S. Senator) and Senator Biden (now U.S. Vice President), were on hand to celebrate a dream that had been ten years in the making.

Several additional months were needed to “step” the three giant masts and complete the rigging. Dignitaries from Sweden, Finland, the Netherlands, and the United States were on hand for the formal Commissioning 9 May 1998



**Figure 26 - The framed, octagonal opening through the quarterdeck waits to receive the mizzen mast. The mizzen was the first of the *Kalmar Nyckel's* three masts to be stepped in the day-long process which moved from aft to fore. Photographer – Chris Queeney.**

### **Builder’s Log – 12 April 1998**

*The ship Kalmar Nyckel lives. She has flourished, and she will improve and refine with age. She will run with the wind, then pause and pose for all to admire, educating and exciting old and young alike. A report from her working, cast iron cannon will hail and summon the most unenlightened spectator. She will carry with her the dreams, sweat, blood, and victory of her creators, conservators, and crew. She exemplifies and perhaps redefines the meaning of confidence, pride, and fortitude.*

*Kalmar Nyckel has earned the right of “Fair Winds and Friendly Tides.”*

Allen C. Rawl, Shipbuilder

### **8.2 Ornamental Wood Carvings**

The *Kalmar Nyckel* is famous for its ornamental carvings. Ships of the 17th-century were very ornate, and the *Kalmar Nyckel's* exacting reconstruction efforts produced perhaps the most impressive collection of carvings that exist on any tall ship sailing today. Ten wood carvers, mostly local volunteers, worked from drawings of 17th-century ship decorations to create lions, griffins, angel faces, wind gods, mermaids, mermen, dolphins, birds, sea monsters, emblems, keys, crowns, and more – all representative of the types of ceremonial carvings that would have graced the original *Kalmar Nyckel*.



Figure 27 - One of the *Kalmar Nyckel's* many carvings, this Wind God on the starboard quarter is also a capital for the stern gallery caprail.  
Photographer - Alistair Gillanders.

Volunteer carvers – notably Charles “Ted” Ireland, Roger Hone, Jim Knowles, and Lyt Patterson – used “mallets, chisels, and skill,” as Charles Ireland, Jr., put it so well in his book on the building of the *Kalmar Nyckel*. The carvers used the same types of mallets, chisels, planes, handsaws, and scrapers that were used by Dutch and Swedish woodworkers during the first half of the 17th century.

The *Vasa*, ill-fated flagship of the Swedish navy which sank on its maiden voyage in 1628, served as inspiration and guide for many of the ornamental carvings. Raised and preserved since 1961, the *Vasa* remains the most important example of 17<sup>th</sup>-century ceremonial ship carving in the world today.

With the emergence of Dutch and English naval power in the 17th century came a change in the manner of ship decoration. The pious paintings and gilded carvings of religious significance that had prevailed among Spanish and Portuguese ships switched to the striking colors and patterns of secular and mythological figures of the kind found on the reconstructed *Kalmar Nyckel*.



Figure 28 - Leo...the two-tailed, red lion figurehead at the bow, a full eight feet long, took Roger Hone over a year to carve.  
*Photographers – Chris Queeney and J.N. Peters.*

In particular the Captain's Great Cabin has four carved knees, each of a different mythological figure, and other ornate decorations befitting the master of a great ship.

In fact the *Vasa*-style griffins, carved in mahogany, which adorn the Captain's settee, are reputed to be the first such beasts carved for a wooden tall ship since the 1620s.



Figure 29 – The *Kalmar Nyckel's* ornate carvings are perhaps at their most spectacular on the highly decorated stern.  
*Photographer – Alistair Gillanders.*



Figure 30 – “Angel Faces” on the starboard side of the ship in 2005; some of these have been retired recently but Allen Rawl is wearing the sunglasses! *Photographer – Alistair Gillanders.*

### Angel Faces – Port Side

- The Hon. Russell Peterson – former Governor
- Robert Harra, Jr.
- Malcolm Mackenzie
- George Hering, III
- H. Hunter Lott, III – Chairman, Board of Trustees
- Francis I. “Nick” Dupont
- Wind God
- Peg Tigie
- Hugh Miller
- The Hon. Jack Markell, Governor
- Lion

### Angel Faces – Starboard Side

- Allen Rawl – Master Builder
- David W. Hiott, IV – First Captain
- Earl Seppala
- Richard Julian
- Hugh Mahaffy
- Marty McDonough
- Wind God
- The Hon. James M. Baker, Mayor of Wilmington
- Lion

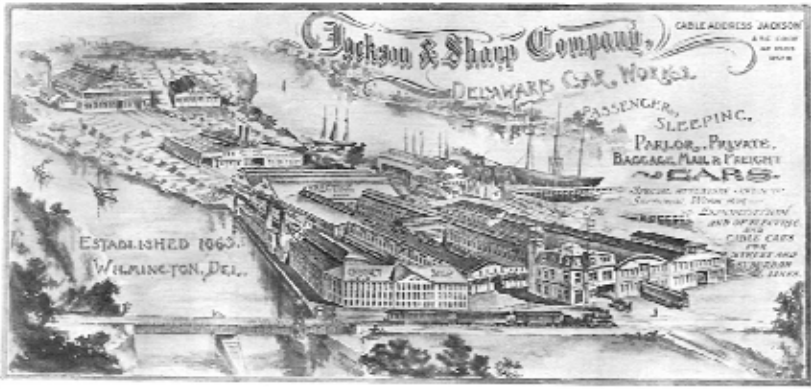
### Retired Angel Faces – Office Gallery Hall of Fame

- The Hon. Thomas Carper – U.S. Senator and former Governor
- Maria Cabrera
- Elizabeth Foster
- The Hon. Ruth Ann Minner, former Governor
- Michael Purzycki
- Elizabeth Rawl
- The Hon. James Sills – former Mayor of Wilmington
- Andrew Turezyn
- Georgeanna Windley

## 9 Shipyard and State Park

### 9.1 The Kalmar Nyckel Foundation Shipyard

The Kalmar Nyckel Foundation shipyard, adjoining “the Rocks” and Fort Christina, occupies some of the most historic acreage in the Delaware Valley. The reconstructed *Kalmar Nyckel* was built and launched from the Foundation’s four acre shipyard, an area that has been building boats since 1644 and the days of Governor Johan Printz’s New Sweden. The shipyard also sits on part of the early Swedish settlement that grew up around Fort Christina.



**Figure 31 - Bird's-eye view of the Jackson & Sharp Company from "The Jackson and Sharp Co.: Delaware Works."**  
*Courtesy of the Historical Society of Delaware.*

The Foundation’s shipyard, as part of the Seventh Street Peninsula between the Brandywine and Christina Rivers, was once the busiest industrial site in Wilmington. Jackson

& Sharp Company dominated the site since the height of the Civil War, where it constructed railroad cars for the Union Army. When Jackson and Sharp added ship building in 1875, it became one of the largest manufacturing firms in Wilmington, with the largest lumber mill in the city, turning out more wooden ships than any other yard in Delaware. American Car & Foundry bought Jackson & Sharp in 1901. American Car continued to operate the shipyard as the Jackson Plant, where it built hundreds of ships for the US Navy in World Wars One and Two, from minesweepers to landing craft (the famous “Higgins Boat,” or LCVP), from specialty barges for smokescreens to aluminum pontoons for temporary bridges. After the Second World War, American Car & Foundry returned exclusively to railroad car production. During the 1950s and 1960s, City Investing Corporation of New York acquired the shipyard and used it to convert the obsolete Wilson Line Ferry boats into sightseeing vessels. The shipyard was noted in 1962 for building the first American hydrofoil certified for passenger service.

Today, the Kalmar Nyckel Foundation shipyard provides a Center for educating students of all ages about Delaware’s maritime and colonial history and growth. It also houses the Foundation’s offices, the sail loft, carpentry and blacksmith shops, where the ship is meticulously maintained.



**Figure 32 - Dave Lawrence, a crew volunteer and blacksmith, in the blacksmith's forge at the Kalmar Nyckel Shipyard.**  
*Photographer - Alistair Gillanders.*

The Challenge Program, with its new Construction Training & Education Center for at-risk youth, which began in 1995 with help from Foundation members, continues to share shipyard space and serve the Delaware community.

## 9.2 New Sweden Centre

The New Sweden Centre, located at the Kalmar Nyckel Foundation shipyard, offers “hands-on-history” interpretations of the colonial history of the Delaware Valley. The Centre includes artifacts from the prehistoric era to the American War for Independence, with a special focus on Native Americans and the New Sweden Colony.

## 9.3 Fort Christina State Park

Delaware’s Fort Christina State Park commemorates the *Kalmar Nyckel*’s first voyage in 1638 and the founding of the colony of New Sweden, the first permanent European settlement in the Delaware Valley. Adjoining the Foundation’s shipyard, the Park is located at “the Rocks” along the Christina River. It includes land where Peter Minit built the original Fort as a commercial and administrative center for the colony of New Sweden.

The park features the monument by Carl Milles conceived as a gift of friendship from the people of Sweden to the people of the United States commemorating the 300th anniversary of Peter Minit’s landing from aboard the *Kalmar Nyckel*. The Milles monument is constructed of black Swedish granite and surmounted by a stylized representation of the *Kalmar Nyckel*. The ship is under full sail and her prow points toward the west. Milles trained with Rodin in Paris, became a U.S. citizen in 1945, and remains one of Sweden’s most celebrated sculptors. Gothenburg, Sweden, hosts a companion Milles monument, signifying the *Kalmar Nyckel*’s departure.



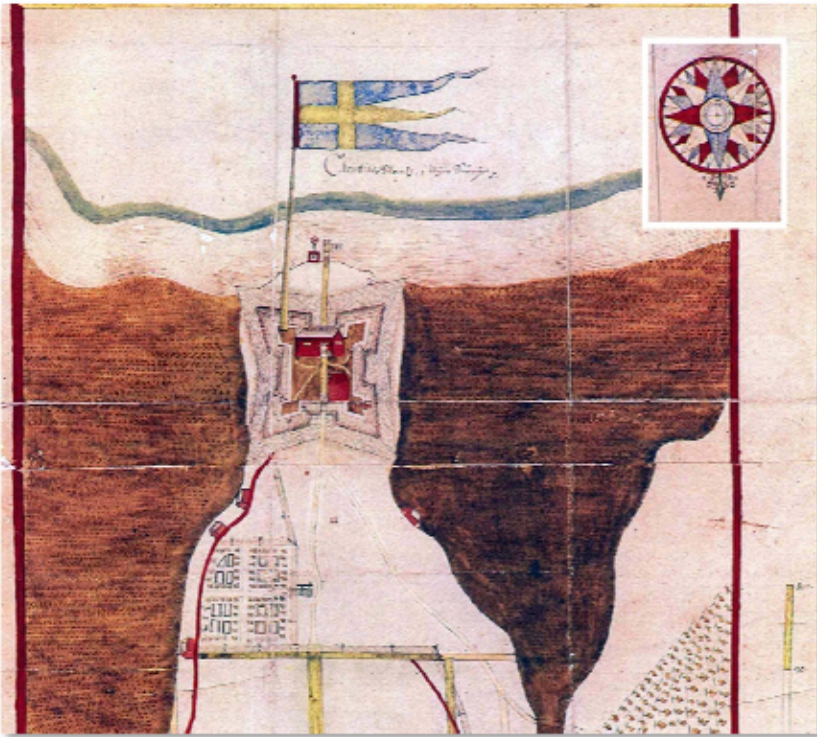


Figure 33 - A 1654 map showing the original Fort Christina at “the Rocks” and the nearby Swedish settlement. The map is oriented “south up” as shown on the inset compass rose.



Figure 34 - Sam Heed, Senior Historian and Director of Education at the Kalmar Nyckel Foundation, surveying “the Rocks” as they remain today.  
*Photographer – Alistair Gillanders.*



Figure 35 - Two of the monuments in the Park: the Carl Milles sculpture (also see Figure 16); and an engraved portion of “the Rocks” mounted near to the site of the remaining “Rocks” (see Figure 34).  
*Photographer – Alistair Gillanders.*



Figure 36 – Map of Delaware Bay, detail of Pieter Goos Map of Nieuw Nederland, 1667. The Minques [sic] Kill (original name for the Christina River) and Fort Christina are clearly marked.

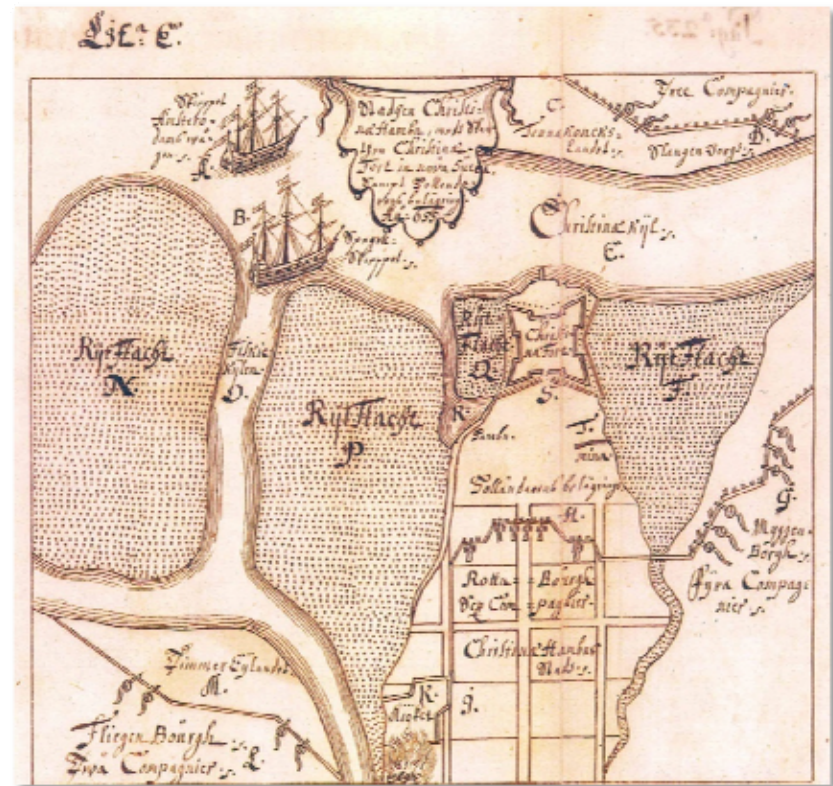


Figure 37 – Map of the Dutch siege of Fort Christina, 1655. On 15 September 1655, Governor Johan Rising signed the “Articles of Capitulation,” officially surrendering New Sweden to the Dutch. The peace terms were negotiated and the Articles signed from inside Peter Stuyvesant’s campaign tent, located just beyond the walls of Fort Christina. Stuyvesant, Director-General of New Netherland, accepted the surrender on behalf of the Dutch.



Figure 38 - Photo of “the Rocks” taken in 1898, with a three-masted schooner tied up alongside. Images of “the Rocks” prior to the building of Fort Christina Park in 1938 are rare. This image shows “the Rocks” after they were significantly reduced in the 19<sup>th</sup> century, which was done in an effort to widen the navigability of the Christina River.  
*Courtesy of the Delaware Public Archives, Dover, Delaware.*

#### 9.4 FDR Tercentenary Dedication Ceremony, 27 June 1938

President Franklin Delano Roosevelt officially received the monument in Christina State Park and gave the dedicatory speech. The keynote address was delivered by Secretary of State Cordell Hull. Prince Bertil and his wife Princess Louise headed the Swedish delegation. Swedish Crown Prince Gustav Adolf was forced to listen to a radio broadcast of the ceremony from his stateroom aboard the Swedish ocean liner *Kungsholm*, after falling ill with kidney problems on the ten day transatlantic voyage from Stockholm.



Figure 39 - President Franklin Delano Roosevelt is seen here delivering the dedicatory speech, 27 June 1938, opening Fort Christina State Park and honoring the tercentenary of the Swedish landing. Front row, from left to right: Princess Louisa and Prince Bertil of Sweden, U.S. Secretary of State Cordell Hull, holding his keynote address; Carl Milles, sculptor, in fedora hat; U.S. Navy and U.S. Army aides, respectively, in dress white uniforms; FDR at podium. *Kalmar Nyckel Foundation Archives.*

### 9.5 Anthony – Delaware’s First Known Black Settler

Anthony “the Swede” was among the first permanent settlers of New Sweden, joining the original 24 men left by Peter Minuit to hold Fort Christina. Anthony was a black man who arrived in early 1639 aboard the *Fogel Grip* (*Flying Griffen*) from the West Indies. As such he is Delaware’s first known black settler.

Delaware honors his memory with an historical marker at Fort Christina Park (Figure 40) which recognizes that he became a farmer and also sailed Governor Printz’s sloop during the 1640’s and 1650’s.

Not much is known or can be verified about Anthony’s background prior to joining the crew of the *Fogel Grip*. Speculation includes that he was a former slave brought from West Africa to the West Indies, where the Swedes showed interest in him because he was thought to have some knowledge of how to plant and grow tobacco. An alternative theory holds that he was an experienced sailor from the Azores and valued as such when he joined the crew of *Fogel Grip*.

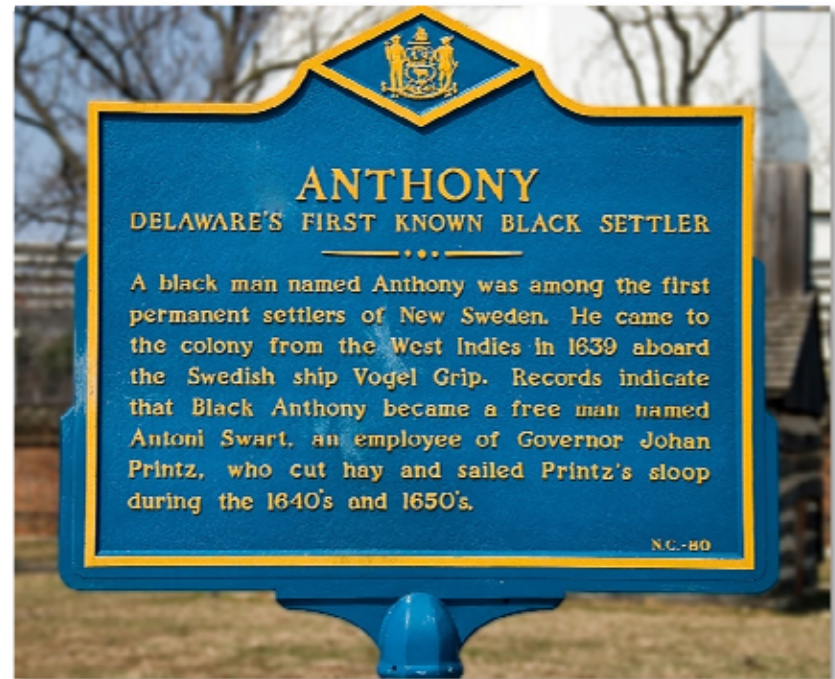


Figure 40 - Historical marker to honor Anthony in Fort Christina State Park. Photographer – Alistair Gillanders.

## 10 The Kalmar Nyckel Foundation

### 10.1 Mission



**KALMAR NYCKEL**

*The Tall Ship of*  
**DELAWARE**

The Kalmar Nyckel Foundation preserves and promotes Delaware's unique cultural and maritime heritage for the education and enrichment of all. Based on the best of recent scholarship, we create and implement experiential educational programs inspired by the tall ship *Kalmar Nyckel*, exploring the area's rich maritime and colonial history and growth.

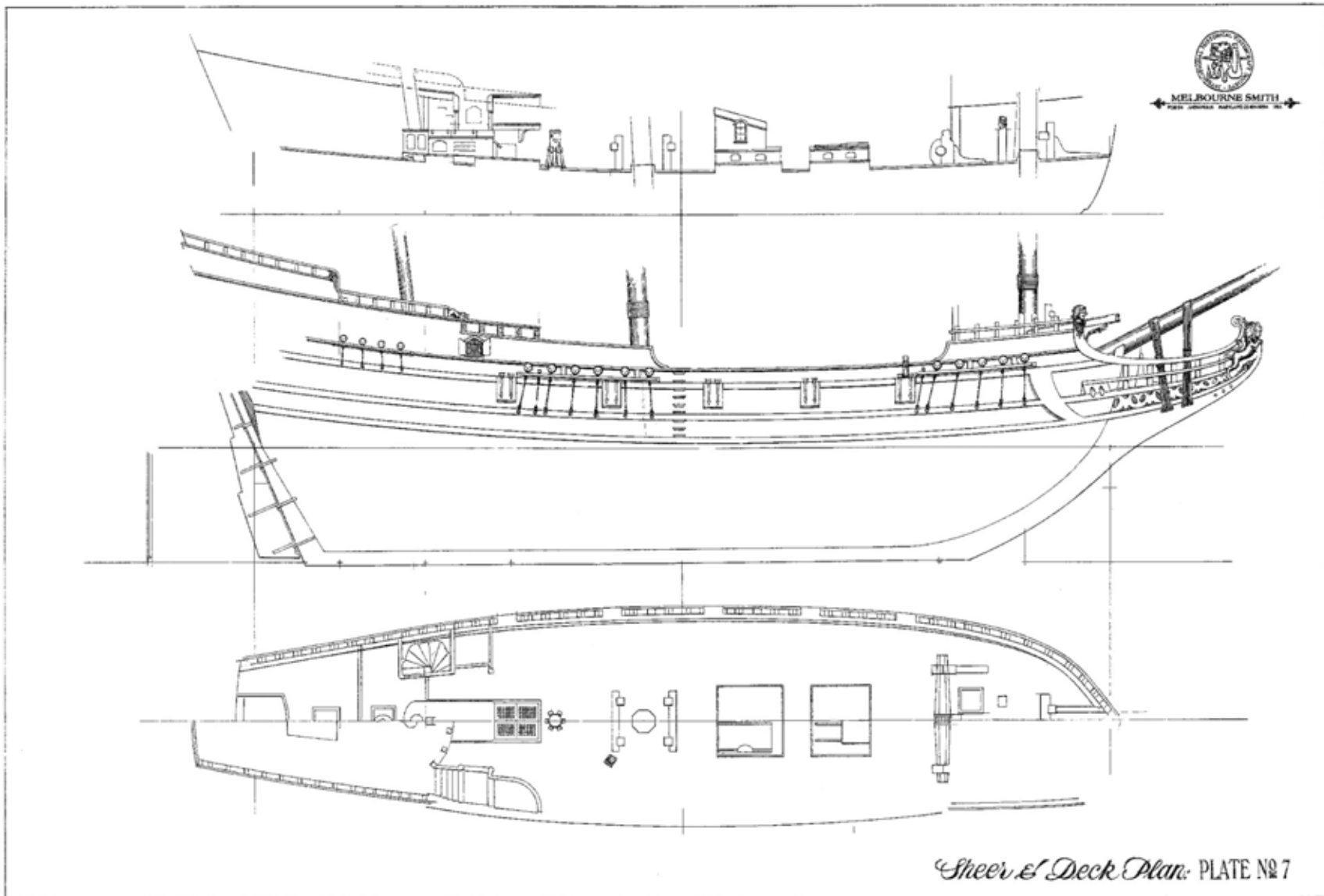
### 10.2 Support the Foundation and the History of Delaware

The Kalmar Nyckel Foundation relies on the support of its members to help fulfill its mission to provide the best in scholarship and experiential learning about Delaware's maritime and cultural history for students of all ages.

Appendix C is a membership form if you wish to become involved. In addition we run training courses every year for ages 18 and up (or 14 and up with a parent) to allow volunteers to qualify to sail as crew on the ship. Contact us for more details about crewing opportunities.

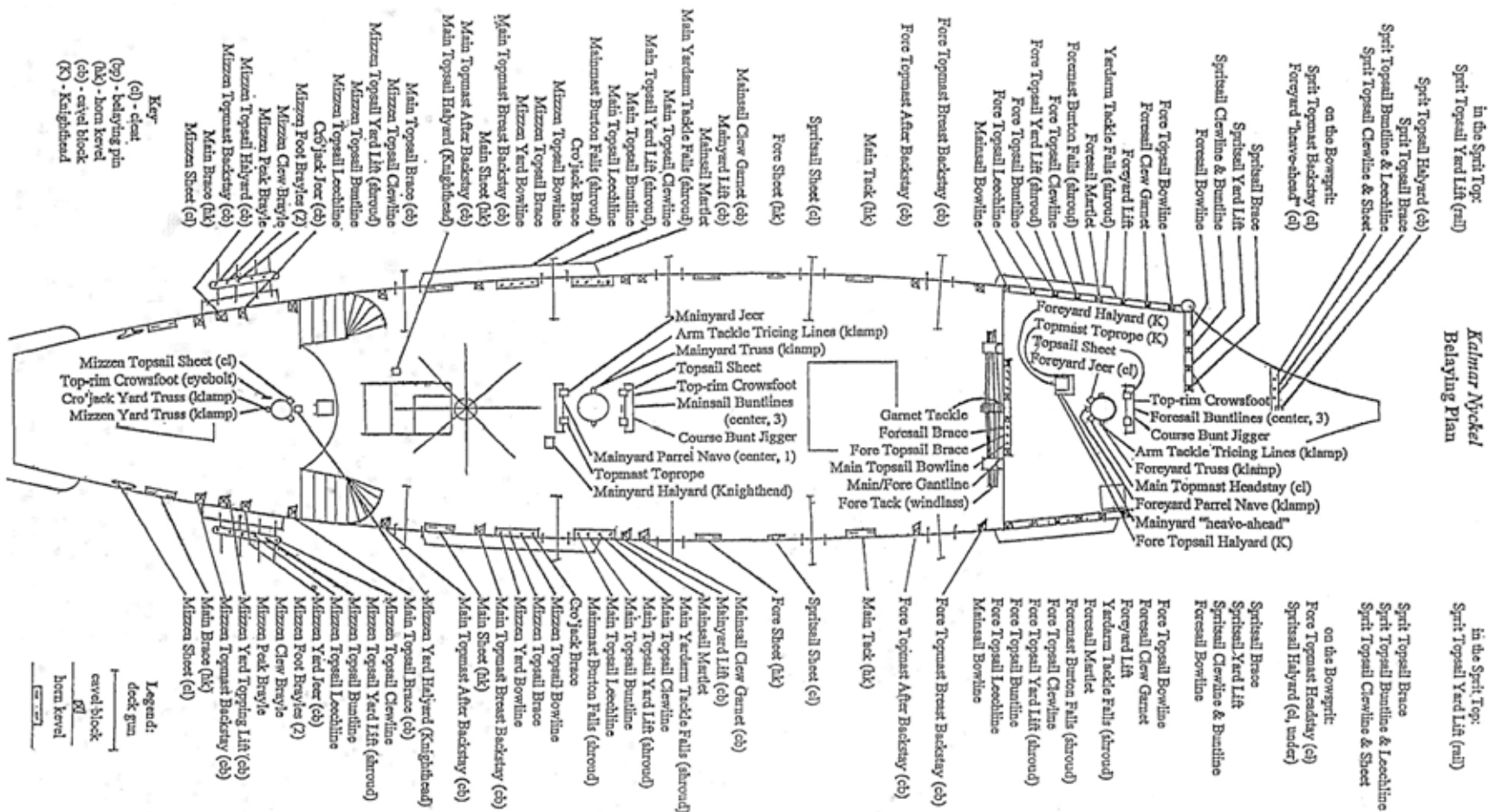
## Appendix A: The *Kalmar Nyckel* – Sheer & Deck Plan

This is Plate No. 7, one of the master drawings from the reconstruction showing a “big picture” view of the design.



## Appendix B: Learning the Ropes

A major part of any seaman’s training is “learning the ropes” and is the etymology of the modern usage of that phrase. This is the detailed belaying diagram for the current *Kalmar Nyckel* to give you an idea of what this means. As a trainee you start by learning the essential lines you need to help sail the ship and then you add more as your knowledge grows.



## Appendix C: Foundation Membership Form



Kalmar Nyckel Foundation  
 1124 E. 7<sup>th</sup> Street  
 Wilmington DE 19801  
 (302) 429-7447

Yes, I would like to become a member of the Kalmar Nyckel Foundation.

Student/Volunteer/Senior (\$35)    Individual (\$50)    Family (\$100)    Supporting (\$250)    Patron (\$500)

Check enclosed

Member Name: \_\_\_\_\_

Please charge my

Address: \_\_\_\_\_

Visa       Mastercard

Discover    American Express

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

E-mail: \_\_\_\_\_

Card #: \_\_\_\_\_

Exp. Date: \_\_\_\_\_ / \_\_\_\_\_ (MM/YY)

I would like to make an estate gift through a bequest, retirement plan or life insurance.  
 Please have someone contact me.

Cardholder name (print): \_\_\_\_\_

*Thank you for your support!*

Signature: \_\_\_\_\_

4/12/09