A second-hand shipwreck market: Salvage auctions in mid-eighteenth-century Helsinki

Huhtamies, Mikko

2021-11


http://hdl.handle.net/10138/341626
https://doi.org/10.1177/08438714211061761

acceptedVersion

This is an electronic reprint of the original article. Please cite the original version.
A second-hand shipwreck market: salvage auctions in mid-eighteenth century Helsinki

Mikko Huhtamies

Abstract
When a merchant ship was wrecked in the Gulf of Finland in the eighteenth century it was salvaged (mainly its running rigging) together with its cargo. In 18th century Sweden salvage was the monopoly of Northern Diving and Salvage Company (1729–1802). In Helsinki several salvage auctions were held yearly. Salvage documents are useful sources not only for investigating the demand of ship parts but also for identifying ships and explaining past marine accidents. Detailed technical knowledge provided by auction protocols gives us insight to ships and their equipment in early modern Baltic. Many ships were on their way to St. Petersburg (est. 1703), the homeport of European naval stores, but a great amount of them wrecked at the rocky coasts of Helsinki. This gave rise to a strange kind of shipping based on random import and use of recycled cordage, sails and anchors from the shores blessed by unfortunate ships.

Keywords
eighteenth-century Helsinki, Gulf of Finland, shipwrecks, salvage, auctions

Diving monopoly and its sources
Since time immemorial, the sea has blessed the inhabitants of the coastlands. Swedish waters, which up until 1809 included the waters off the coast of Finland dotted with numerous skerries and treacherous underwater rocks, were exceptionally difficult to navigate, making shipwrecks more likely. Unlike elsewhere, salvage operations were incorporated and centralized monopolies, starting from 1729, when the Northern Diving and Salvage Company was established by inventor and a member of Royal Society, Mårten Triewald, covering Sweden’s coast from Blekinge to Lovisa on Finland’s eastern border. The company retained its monopoly on salvage operations of shipwrecked vessels in Sweden until 1802. One of its local departments operated in Helsinki. It was headed by a diving commissioner and its district extended from the Russian border to the Hanko peninsula, where Turku’s remit started. The Helsinki department of the company operated in the Gulf of Finland, which had experienced heavy traffic since the foundation of St. Petersburg in 1703. The maritime powers of Europe used this route to transport their naval stores such as tar, pitch, timber, iron, mastwood (mainly from Riga), hemp and sailcloth.


3 Christian Ahlström, Aspects of commercial shipping between St. Petersburg and Western Europe 1750–1790, in J. W. Wieringa ed., The Interactions of Amsterdam and Antwerp with the Baltic Region 1400–1800 (Leiden 1983). Harder,
After the salvage operation, a wreck, including its cargo or rigging (tacklage), was sold at public auctions organized by the auction house of the nearest city, usually in Helsinki (Helsingfors auktionskammare) but sometimes in a nearby town such as Tammisaari. Auctions were announced in churches over an extensive area, as the auction chamber sought to attract as many lucrative customers as possible. According to Juha-Matti Granqvist, the dissemination of information about auctions was effective and targeted. In general, regular attendees at auctions, such as those in Helsinki, were the burghers from nearby towns, who already owned ships or planned to do so.4

In the capital-poor, war-ravaged Helsinki, constructing a completely new vessel was almost impossible.5 Helsinki shipowners invested in used vessels, or in entire salvaged wrecks, or parts of them, which were then renovated. Wreck auctions were an opportunity to find a bargain. Ships were fitted with the salvage bought from auctions, continuing an old coastal tradition, but in a new organized way.6 Salvage was early modern recycling, and an important part of shipping in 18th century Helsinki.

Due to the monopoly of the diving company, a unique series of sources is available: the quarterly diving reports (dykerirapporter) for the period 1745–1802, and their accompanying auction protocols (auktionsprotokoll).7 These salvage documents are the main sources of this article. Diving reports tell us the name of the captain, the ports of both departure and destination, the cargo, and the wreck date and whether the accident happened at night or during the day. A short description of the accident attested by the captain, including the name of the vessel, is normally included. By contrast, the site of the wreck is described so vaguely that it is not easy to find it based on the description. Auction protocols provide details about running rigging and other equipment, including their country (or city) of manufacture, condition, dimensions, weight, demand and prices. The cargo was another crucial and clear indicator of where the ship was headed.8 Naval goods were always westbound, luxury items eastbound.


5 Much-needed capital gradually started moving to Helsinki from Russia via Hamina with sawmill owners who originated from the Baltic countries. They included Carl Clayhills and Jacob Tesche, both regular customers at wreck auctions. Markku Kuisma, Helsingin pitäjän historia III. Isostavihasta maalaiskunnan syntyn 1713–1865 (Jyväskylä 1991), 36–37.


7 Amiralitetskollegium, Lotskontoret, Inkomna skrivelser serie VI, Dykerihandlingar 1745–1766 (~1802), Krigsarkivet, Stockholm. There are even some sporadic reports from the 1730s among them Frihetstidens utskottshandlingar, militieutskottets sjömilitielededputation (vol. 48 nro. 2789). Helsingin kaupunginarkisto. Maistraatti huutokauppakamarin pöytäkirja (Helsinki City Archive: magistrate auction protocols) Ca:1. The diving reports were part of the statistical policy of the state, Karin Johannisson, Det mätbara samhället. Statistik och samhällsdöm i 1700-talets Europa (Stockholm 1988). Due to the nature of the operations at sea the diving reports might be better called salvage reports, but I will use the more literal translation diving reports. No actual diving was done in normal salvage operations of merchant ships. A diving bell was used for lifting cannons from warships.

8 Ahlström 1997, 166.
The analysis concerns shipwrecks and their auctions in the Helsinki region from 1744 to 1754. The focus is on the shipwrecks and auctions of five vessels of various countries or cities which are compared to some other cases. I consider the following topics:

1) Demand of cordage, sails, anchors and ships’ movables at Helsinki salvage auctions 1744–1754
2) Detailed technical knowledge of ships and equipment provided by auction protocols
3) What do salvage documents reveal indirectly about shipwrecks?

Previous research and thematic hierarchy
The thematic hierarchy of the article is the following: from shipwrecks – a sub theme of global trade and seafaring – to auction records: 1) shipwrecks, 2) salvage operations, 3) salvage auctions 4) the information they give on ships and shipwrecks. There are several studies on shipwrecks, some about case studies on salvage operations but much fewer investigations on salvage auctions. The context is maritime, that is, other kind of auctions are not investigated. The focus of this article is on 3 and 4. I keep this partly methodological article descriptive and empirical due to the lack of suitable theoretical framework and parallel studies.

Shipwrecks have been studied and popularized in two main ways. Firstly, some well-known wrecks, particularly of warships (in Sweden, *Mars*, *Vasa* and *Kronan*, in England *Mary Rose*) and the related salvage operations, have been investigated, often from a museology or maritime archaeology perspective. Secondly, maritime museums have generated extensive wreck databases using geographic information systems (GIS). In these, salvage auctions are sometimes mentioned but never studied. Thus, it is not really possible to draw comparisons with previous studies.

At the University Helsinki, our project on has systematically studied shipwrecks in the Baltic in the seventeenth and eighteenth centuries, and related auctions. This research project is the first to investigate shipwrecks broadly as a large group. I have compiled a database of 1,300 wrecks, which covers the Northern Diving and Salvage Company’s district. The cases discussed in this article are from that database. As part of our project, Ph.D Juha-Matti Granqvist has studied wreck auctions in Helsinki and Gotland.

Our project focuses on the second half of the eighteenth century because this period has been carefully documented by diving reports. We have looked at shipwrecks in the Baltic Sea, especially in the Gulf of Finland, regardless of how well preserved the wreck is or how untouched its cargo is. Wrecks were very seldom untouched. Along with archaeologists from the Finnish Heritage Agency, we worked on two summer field studies in 2016 and 2017 on the island of Jussarö and in 2018 at Juktenskobben we tried to connect the seabed wreck with salvage documents. This is difficult because at dangerous sites, wrecks are often mixed together, as the surface of the seabed has shifted. Pack ice also breaks up the wrecks. In its own way, although it created a good series of sources, the diving company complicated the situation by demolishing vessels during its salvage operations.

This article is partly indebted to an archival pioneer in the field, Dr. Christian Ahlström. In the 1990s he used document sources to identify wrecks in Finland and Sweden. Ahlström’s book *Looking for Leads: Shipwrecks*  

---

11 [https://www.abc.se/~pa/uwa/wreckbas.htm](https://www.abc.se/~pa/uwa/wreckbas.htm)  
of the Past Revealed by Contemporary Documents and the Archaeological Record (1997) drew on diving reports and auction protocols. Professor Yrjö Kaukiainen has investigated strand robbery in the Eastern Gulf of Finland. He has continued the works of Ahlström by conducting research on diving company and the famous 18th-century treasure ships in the Turku outer archipelago, the St Mikael and the Vrouw Maria. The Baltic and the Gulf of Finland is an underwater treasury of shipwrecks, and because of the low saline content there are no shipworms (Teredo navalis).

Salvage auctions
Participation in salvage auctions was limited only by affluence and the ability to travel to the auction site, which could be far away on the outer skerries or peninsulas. Auctions were usually held near the wreck site, somewhat with suitable connections by boat, where the entire contents of the vessel could be laid out for inspection. The site gives us leads on the wreck site. Sales venues mentioned in Uusimaa, Southern Finland included villages mostly on the Porkkala peninsula and its nearby islands. If necessary, the auction chamber travelled to the skerry where a vessel had run aground, as it did in 1746 to the island of Smålandsgrund, where a yacht called Patriarch Jacob with a cargo of rye was stranded. The ship came from Russia, and the captain was Thomas Loman, probably a Swede.

The Baltic and the Gulf of Finland is an underwater treasure of shipwrecks, and because of the low saline content there are no shipworms (Teredo navalis). Participation in salvage auctions was limited only by affluence and the ability to travel to the auction site, which could be far away on the outer skerries or peninsulas. Auctions were usually held near the wreck site, somewhere with suitable connections by boat, where the entire contents of the vessel could be laid out for inspection. The site gives us leads on the wreck site. Sales venues mentioned in Uusimaa, Southern Finland included villages mostly on the Porkkala peninsula and its nearby islands. If necessary, the auction chamber travelled to the skerry where a vessel had run aground, as it did in 1746 to the island of Smålandsgrund, where a yacht called Patriarch Jacob with a cargo of rye was stranded. The ship came from Russia, and the captain was Thomas Loman, probably a Swede.

The auction date was usually as fast as possible but sometimes weeks or even months after the wreck, so the diving company was also responsible for properly preserving the goods (conserving). The date of the auction helps us in timing the shipwreck. It was, of course, in the auction house’s interest that the goods went on sale in the best possible condition, so they could be given a decent starting price and fetch the highest hammer price. Shipwrecks were frequent, so the diving company must have had considerable warehouse and storage facilities in different places. Sails, hemp, ropes, vine and grain all had to be stored to prevent them rotting.

A numbered list of items and their starting prices was drawn up for the auction. The valuers set the starting prices. Typically, the following components of the ship were listed in the protocols: ropes, sails, anchors, and other movable property. Auction protocols included the final prices and the bidders. These protocols show which goods were in greatest demand.

The diving company’s own staff were regular attendees, but insider dealing was not a problem. Stakeholders, both sellers and buyers, the Crown and local community, merged without any clear distinction.

Only rarely was a whole ship auctioned off to the same person or consortium for an agreed price. This was based on the offer made, but we do not know what kind of bidding process this involved. The cargo was sold classified by quality, such as wet and dry hemp, or bales of Russian leather hides in different sizes. At best, auctions were attended by dozens of participants. Most of the participants were wealthy burghers from Helsinki.

Usually only the basic bulk cargo – hemp, timber, grain, leather, textiles – was auctioned. One might ask what happened to such valuable goods as spices, exotic fruits, alcohol, coffee, sugar, ivory, musical instruments, money, etc. that were mentioned in the sound tolls but not in the salvage protocols. All these desirable goods were missing in the auctions. This indicates that there was a thriving black market.

---


Salvage operations and auctions were profit-oriented commercial procedures, but also a sort of insurance for the shipowner. The diving company charged a salvage fee on the auctioned goods (approx. 10–50% depending on the case) and the auction house operating in partnership with the diving company charged a fee (3%) based on the total hammer price. For example, from a final price of 7,000 copper dalers, the auctioneer received 210 dalers, as well as various small payments. It was not a lot, but auctions were frequent, since one vessel could yield three or four different auctions; besides, we do not know how much was not auctioned or was sold on the black market. As compensation for their losses, the shipowners received the remainder of the auction proceeds. Otherwise, the shipowner would have received nothing at all.

Autumn dangers, springtime auctions
The vast majority of shipwrecks occurred in autumn, in September, October and November before the coming of ice. About 25 percent of the total amount of shipwrecks (n=1208) reported by the Northern Diving ans Salvage Company in 1746–1802 occurred at night. The main auction season was in late autumn and spring, when shipping operations were literally on ice. The darkness made it difficult to navigate, as in this period, there was only one lighthouse (fyrbåk) in the entire Gulf of Finland, at Köpu on Dagö Island (Hiiumaa), and one at Utö in the Turku archipelago. The insurance premiums rose towards autumn for ships sailing in the Gulf of Finland. The autumn winds were harsh and the waves, for example at Hiiumaa, high. The wreck sites (and even dates) had largely remained the same since the Middle Ages – and even, in a sense, until today: the Estonia passenger ferry tragedy in September 1994 occurred off the island of Hiiumaa. The wreck sites reported by the company are shown in MAP 2.

The most dangerous hubs in the Baltic Sea were Öland and, especially, Gotland. In the Gulf of Finland ships were very often wrecked in Porkkala, Jussarö, or Hanko. The average was about 20–35 shipwrecks per year in its district (from Blekinge to Loviisa) (insert MAP 2). The diving company in Helsinki benefited from being responsible for the rocky ‘trap’ at the tip of the Porkkala peninsula in the middle of the Gulf of Finland. Its outer shoals were not marked in any way at sea; maps simply contained a written warning about the breakers (bränningar), and they were only visible in daylight. In an effort to improve the situation, the Director General of the Swedish Pilotage Jonas Hahn, surveyed the sea around Porkkala in 1750. His maps are very accurate, even modern, but they were not circulated in print or as copies. They were only used by the central administration.

Five unfortunate vessels
I focus here on five vessels from different countries that were wrecked near Helsinki, within a coastal strip about 20 nautical miles wide. These shipwrecks occurred between 1744 and 1754. The sample enables a comparison based on the nationality and vessel type. I will also consider how the direction of the ship and

---

15 Huhtamies, 45-47.
16 Presumably, the full moon helped and phases of the moon can be determined conveniently from the table, but we do not know what the cloud situation was. When the time of the wreck is known, it is possible to determine the phases of the moon. See http://astropixels.com/ephemeris/phasescat/phasescat.html.
19 Hahns maps, in Ehrensvärd and Ziliachus, ‘Fahrlederna berättar’.
cargo were related. The vessels in question are the Dutch Caspar et Georg, the English Providence, Junge Gottfried (1752) from Danzig, the German De Hoffnung and the Danish-Norwegian Concordia.20

Besides, the following ships will be treated as reference examples: Danzig’s St Georg, Helsinki’s St Johannes and Captain Collin’s St Johannes, the Danish Enigheten, the German Wind Hunden and two Russian ships Patriarch Jacob and St Alexander. Since they are not all the same size, it has not been possible to analyse them in the same figures. 21

The Dutch vessel Casper and Georg ran aground in an unknown date in late autumn 1743. The auction was held on 17 April 1744. 22 The captain was Johan Paulus. The ship’s name probably refers to two shipowners. We do not know much about the captain; he is not in the sound toll register of ships passing through the Øresund strait, which contain several captains with the surname Paulus. These captains were specialized in Baltic seafaring. 23 There is no record of the wrecked vessel passing through the Øresund. Perhaps Johan Paulus worked for his family business on voyages within the Baltic Sea, and thus was not entered in the sound toll registers. The vessel type, which is referred to as a ship (skepp), is not described in detail. I will return to the ship type and wreck site later.

The diving company had to hurry, because the following autumn 1744 The Providence, an English huckert ship (a ship with two or three masts), captained by Ezekiel Hubbard from London, ran aground at Kallbåda in Porkkala on his way to London. 24 The captain and crew survived. The Øresund sound toll registers state that Captain Hubbard’s ship had visited Riga (1717), Narva (1736) and St Petersburg (1737) before the wreck. He passed through the sound for the last time after the 1744 shipwreck, in 1747 on his way from London to Stockholm. After that, he does not appear in these registers again. Based on his travel history, he did not have much experience of sailing to St Petersburg and especially little of the north side of the Gulf of Finland. 25 The exact date of the wreck is not known, but since the first auction was held on 22 October 1744, it probably occurred in early October. 26 The vessel was carrying hemp, which was still wet when it was auctioned off, so the wreck was recent. The hemp was sold throughout the spring. No sea protest of the shipwreck has been preserved, but it is most likely that the ship was tacking westwards and, like many others, veered too far off course. Lloyds News described the incident in its characteristic laconic way: “Providence Hubbard, from Petersburg for London, stranded near Helsingfors in Finland”. 27 In this case partial destruction is suggested, even though the ship’s hull was lost. There were strong winds in 1744 and 1745 around Porkkala.

20 Junge Gottfried, Helsinki magistrate auction chamber 25.22.1751, De Hoffnung 20.6.1754, Concordia 22.7.1754.
21 St. Georg, Helsinki magistrate auction chamber 24.4.1744, Finska Post 12.10.1745, St Johannes (Collin) 23.7.1754, Enigheten 24.3.1750, St Alexander 18.10.1756, Wind Hunden 12.7.1757, St. Johannes (Sederholms) 24.6.1759.
23 Sound Toll Registers Online (STR), Shipmaster “Paulus”.
24 The Providence, Helsinki magistrate auction chamber 22.10.1744. It is very possible at the same time and place another British ship sailing together with The Providence, The Charming Molly commanded by Christian Johnson and carrying hemp, was also wrecked. Nothing could be salvaged from this vessel and there is nothing about it in the salvage documents.
25 STR. Shipmaster “Hubbard”.
26 Helsingin kaupunginarkisto. Maistraatti, huutokauppakamarin pöytäkirja (Helsinki City Archive: magistrate auction protocols) 22 October 1744. Ca:1.
27 Lloyds List, No. 932, Friday, 26 October 1744, Ship News.
The German galliot *Junge Gottfried* was wrecked off the island of Isosaari (Mjölö) near Helsinki and the auction was held on 25 November 1751.\(^{28}\) The vessel’s home port was Stettin and it was captained by Christian Berndt. Since we do not know the cargo, we also do not know where it was headed. The wreck site, Isosaari, was off the international shipping route, so the ship may have been going to or coming from Helsinki. Isosaari was also a roadstead.

The galliot *De Hoffnung*, skippered by a German, Albert Siemens, had its first auction on 15 November 1753 in the village of Porkkala, followed by two more on 2 March and 31 May 1754. As in the case of the *Providence*, the hemp was in batches of five or ten pounds (Swe. lispund = 8.5 kg). The stated wreck site was in the Porkkala archipelago. The stranding had occurred sometime in the autumn of 1753. Judging by the cargo, the vessel was coming from the east. Several auctions were held in this case too, over time as the hemp dried. This indicates that the storage facilities were not ideal; at the auction in May the hemp still was not fully dry.

Shipwrecked in the autumn of 1753 in Porkkala possibly at a skerry called Bergensgrund, the *Concordia* from Bergen, Norway become the most expensive vessel auctioned in Helsinki.\(^{29}\) The captain was Peter Mommeson and his ship was new and in good condition. It was the most important vessel for both the diving company and the city of Helsinki, because it could be restored for their use. What made it particularly attractive was the fact that domestic carvel built (planks laid edge to edge) ships over a certain length were granted tax relief. The ship was renamed *Augustin Ehrensvard* after the Commandant of Sveaborg. The cargo comprised beams and planks, which floated and could be easily removed and recovered. Based on the cargo, the vessel was probably coming from Loviisa, the Russian side of Hamina, or from Vyborg.

**Cordage, the most wanted component**

Without ropes, a ship was nothing but a useless hull. The amount of cordage in a ship was huge. Cordage was needed because it had a short life span. No suitable eighteenth-century examples are available, but Jan Glete calculated that a Swedish warship dating back to 1574 (900 tonnes displacement) needed 17.5 tonnes of rope, or two percent of the displacement.\(^{30}\) Ropes became stronger and thinner from the sixteenth century onwards, reducing weight, but the increasing complexity of the rigging and the rising number of cannons increased the amount of rope required (cable pulleys were needed to move cannons and for recoil compensation).

Almost as much rope was needed on merchant ships, and they fetched the most at auctions. The large number and total length of the ropes from wrecks made rigging the single largest expenditure for shipowners at the Helsinki auctions. There was a shortage of cordage and ropewalks in Helsinki as late as 1749, when a German rope maker Martin Manne moved to the city.\(^{31}\) Ropes were the most valuable part of the ship, apart from the cargo. The most valuable rope on merchant ships was the anchor rope, but these varied. The longest, thickest, most important rope was the main anchor (pliktankare, livankare) rope. In ships on the Baltic Sea, this was about 170–200 metres long and 10 inches in circumference. With such a rope the vessel could be anchored in deep water, with the rope at a sufficiently low angle. Naturally, cast-

---


\(^{29}\) Sometimes a skerry was named after the cargo of the wrecked vessel, e.g. Juktenskobben (after its cargo of jucht, Russian leather) or after the homeport, Lübeckshällarna, Engelsmangrund.


iron anchors with wooden stocks did not have as good a durability and grip as more modern ones, although their shape and the way they were used were the same. The thickness of the rope, as Glete has demonstrated, was directly proportional to the size of the vessel, and often the only indicator of the size in the absence of other sources.32

At auctions, rope wear was estimated in fractions (such as half to a quarter worn), which naturally affected the starting price. In addition, the ropes were given an estimated price/weight. The exact description indicates the value, use history and the expected usage time of the rope. A new anchor rope, 100 fathoms in length, cost about 750 dalers, but this could increase to 1,000 or more. If the rope was thicker, like Concordia’s 17-inch rope, a good hammer price could be nearly 2,000 dalers.33 This is a significant sum, the price of a burgher house in Helsinki. The Herttoniemi manor was sold in 1750 for 20,000 and in 1762 for 66,000 copperdalers. A average price of a barrel of grain in Helsinki between years 1744–1760 was 19 copper dalers.34 Concordia’s heavy-duty anchor rope clearly indicates that the ship was larger than average. In addition, it was coming from the North Sea, where the rope needed to be stronger. (Insert Table 1).

Another vessel (also called a skepp) was roughly the same size based on the anchor rope. The ‘heaviest’ anchor rope on the Russian three-masted St Alexander was 15 inches thick, 110 fathoms long, and half worn. The rope was already far into its life cycle. It weighed 14 pounds (119 kg) and cost 60 dalers a pound. The total starting price was thus 840 dalers. The vessel had an ‘everyday anchor’ rope (daglig ankartåg) of the same length which was 10 inches thick. Besides the main mooring rope, ships had spare cable, cables for towing and kedging – not to mention the flag lines and the dozens of other ropes that made up the rest of the running rigging (running backstays, stays, shrouds, etc.). Vessels were moved by kedging and towing, for instance in ports.

The ropes tell us how well the ship was equipped, how wealthy the owner was, the degree of risk he or she was prepared to take and their desire to invest in a particular ship sailing for a particular area. The anchor rope of The Providence was in two parts. Based on the ropes and some other equipment, the vessel was rather poorly equipped. Twenty-one items of its cordage were auctioned. The most expensive were the two anchor ropes, at a starting price of 225 dalers and a hammer price of 340 dalers, and the cheapest pile of various lengths of rope (diverse stumpper) went for two dalers. There was something for everyone at this auction, so both the wealthy townsfolk and the lower orders attended. Nevertheless, the ropes from The Providence were desirable, since the total price nearly doubled, rising from 544 to 1,057 dalers (Insert Figure Y). Ships of this size were common in Helsinki and the Gulf of Finland, so there was high demand for their equipment.

Based on the above, all sorts of ropes were in short supply in Helsinki around the middle of the century. They were not only needed onboard ship; mechanical pulleys were used everywhere, such as in port equipment. The stone construction sites at Sveaborg and Svartholm also generated great demand, as did the galley shipyard being built in the fortress. The site was supplied by its supply deputation (upphandlingsdeputation), whose members were regular customers at auctions, although individualburghers also had commercial relations with the Sveaborg construction works. They all participated in the salvage auctions, too.35

**Sails came second**

32 Glete, Swedish, 455.
33 The following information on cordage, sails, anchors, ship’s boats and movables are from auction protocols.
34 Kuisma, Helsingin pitäjän historia III, 122.
35 Gustafsson, Leverantörer, 103-117.
Sails were the second most sought after item at Helsinki auctions. Their combined total price per vessel was the second largest. (Insert Figure 1) is based on the auction of three ships. The larger the triangle, the greater the total return. Three auctions of the cordage raised the highest hammer prices; sails and anchors, in that order, were worth less. A ship’s sails needed to be in sufficiently good condition, because if they tore, this was likely to cause a shipwreck which anchors alone could not prevent. However, repaired sails were used in Helsinki, as well. All vessels, especially long-distance ones, had to have spare sails on board. This was especially important in Helsinki in the 1750s, when voyages to the salt ports of Spain and Portugal were beginning. Spare sails were a small outlay compared to losing a ship in a storm. So Helsinki shipowners bought all types of sails at auction to keep in reserve. Three-masted, full-rigged vessels were introduced towards the end of the century and riggings became more complex, which increased the need for sails. Dutch, Russian and Pomeranian sailcloth (segelduk) was sold at Helsinki auctions; each was a ‘brand’ of its own. Dutch sailcloth was the most common in the auction catalogues, followed by Russian. For a long time, the best and only sails were Dutch.

Dutch sailmaking was concentrated in Zaandam, sail canvas being woven on a loom from selected raw materials, to produce white sails of consistent quality. The trade employed thousands.36 There were also several huge sailcloth manufactures e.g. with 1,000 workers in Russia.37 Sails were also made in Sweden. The nearest producer to Helsinki was the Barnhus workhouse on Drottningatan in Stockholm; orphans and homeless women made sails there. When we do not know where the sail was made, it could well be a Swedish product. Table 1.

Sails from various countries were sometimes found in the same ship, as they were replaced and reused. There are no mentions of English sailcloth at the Helsinki auctions for the cases studied. This is because production of English sailcloth had been dependent on imports from the Netherlands until the mid-1750s. England only began its own large-scale sailcloth production then, at Warrington, near Liverpool.38

The three-masted ship Concordia had 19 different sails of Dutch or Russian cloth. The St George’s mainsail and jib were Pomeranian cloth. The ship was from Danzig. A new foresail (15 duk wide, 11.5 ells deep) made of Dutch cloth cost 258 dalers (starting price) but a half-worn similar one cost 172 dalers. Sails depreciated in value. Price fell with use, unlike the value of anchors. Like ropes, sails were carefully classified. Size was not defined as it is today, according to the sail surface area, but in terms of breadth and depth, which explains how the sails were examined. Their size was stated as the entire width of the sailcloth (duk) and the depth (djup). Sails and rigging were examined like three-dimensional scale models, not like two-dimensional drawings. Besides sails, auctions also sold flags and pennants. The width of flags was similarly measured in duk, but the word lång was used to describe the length. For example, the Concordia’s red-and-white Danish flag was 11 duk wide and 15 cubits long (Swe. Aln ca. 0,60 m). The flag was viewed as two-dimensional, unlike the sail, which is three-dimensional and aerodynamic in shape.

One may well ask what a Helsinki shipowner would do with Danish and Dutch flags. These purchases at auction may have been used for outflagging, so payment could be circumvented by masquerading as a foreign vessel.

Based on the sails, it can be confirmed that the Casper and Georg really was a three-masted ship. It had a mizen, fore and main topsail. They were Dutch fabric, imported by the owner. De Hofffnung also had a


mizzen besides the mainmast, that is, it was a two-mast ship. The sails of the Junge Gottfried imply that it had two masts, including a mizzen. Other sails included bonnet sails, or extra sails attached to the basic sails with extension booms, used in a tailwind. They were made of Russian cloth.

**Anchors – long-time investments, in principle**
A ship usually had four or five anchors for different purposes. In descending order of size, these were the pliktankare, daglig ankare, töjankare and varpankare. The daglig ankare was on the port side at the bow and the töjankare on the starboard side. These names were already being used in the sixteenth century. Already the Vaasa had a pliktankare, two daglig ankare and two two-fluked kedge anchors. As the name suggests the daglig ankare was for daily use, while the pliktankare was the severe-weather anchor – the last straw for the ship to clutch at. In the eighteenth century, the anchor shank, which was important for how well the anchor held, was still often made of wood. If it broke, the anchor did not hold. An anchor was an investment and its life span could be decades.

Anchors were valuable and the key safety feature for ship in a storm. The heavier the anchor, the more expensive it was. Auctions stated the anchor weight and its price per pounds. Wear was not that important for anchors, since, apart from the shank, they did not wear out, though they did become rusty on surface. An anchor did not lose its value, unlike sails and ropes, provided that it was not lost – which happened frequently. Large anchors for three-masted vessels were in especially short supply in the Helsinki region. There were no large ships in Helsinki, so the appropriate anchors were not stored there. Out of reach on the seabed near Helsinki there are likely to have been several, but lifting anchors from the deep was difficult. Demand was also depressed by the fact that anchors were not expensive imported goods, but produced in workshops in ore-rich Sweden, such as Söderfors in the county of Uppsala. Helsinki’s advantage was that the Western Uusimaa ironworks was close, and anchors were produced there. The admiralty made their own naval anchors. (Insert Figure 2)

Auction protocols do not distinguish anchors by their country of origin. Anchors made in the Dutch way, were the best. However, ‘Dutch’ anchors could be made in Sweden at an ironworks with a Dutch owner, such as Hendrik Tripp’s Julitabruk in Södermanland. In this case too, the country of origin is of little use as a concept. Trade in used ship parts was international and could be carried out because of the standardization in shipbuilding.

As with rope, the anchor weight indicated the size of the ship. (Insert Figure W) Figure (w) shows that the four uppermost vessels were clearly larger; all were three-masted vessels. The difference in weight was significant, for example compared to Johan Sederholm’s St Johannes.

Anchors fetched lower hammer prices than ropes and sails, and so they also generated the lowest commissions for the auction house. The well-equipped Casper and Georg had six anchors: a livankare, a daglig ankare, a kedge anchor, a smaller kedge anchor and two drag anchors (dragankare, a four-fluked grapnel anchor). Based on the anchor weight, the ship was of medium size. The St Georg had five anchors: a pliktankare, a daglig ankare, a töjankare, and a larger and a smaller warp ankare. The Providence had only three anchors: a daglig ankare, a kedge anchor and a small drag anchor. The auction protocols state that these were “very rusty”, another indication of how poorly equipped The Providence was. Based on the anchor weight, the Junge Gottfried was a small vessel. There were three anchors with their shafts, a larger and a smaller anchor, and a smaller kedge anchor. The Providence, the Wind Hunden, the St Johannes, and the Junge Gottfried were similarly sized small vessels. The Concordia was fitted with the standard anchors: a pliktankare, a daglig ankare, a töjankare, a varpankare and a dragg ankare. The Russian ship the St Aleksander, was equipped with the same anchors as the Concordia.

**Standing rigging seldom auctioned**
There is only one instance of masts from a wreck being auctioned. Masts, yards and bowsprits are not mentioned in any other case. The masts of Johan Sederholm’s St Johannes, which was wrecked at
Mathiesengrun (named after its captain Mathiesen) near Helsinki, were sold at auction. They went cheap; the price was just 36 dalers. The ship had spruce masts. This was the normal domestic spruce, not the high-quality tough larch from the Baltic, particularly Riga, which was very popular for shipbuilding, not least with the British.

Removing the masts from the wreck and transporting them away was often impossible. Furthermore, it was very common for masts to be felled in a storm, in order to prevent the vessel from capsizing. The auction protocols indicate that axes, mainly used for felling masts, were standard equipment on these vessels. In contrast, there are several instances of the diving company finding a stranded mast or other fixed parts of the rigging. These provided information about the ship, but not where it had been wrecked. There was not the same kind of demand for masts in Sweden as in the Netherlands or in England, for scarcity was not an issue in Sweden. Due to the lack of sources it is not possible to say, for example, how much of the mast wood England was supplied with from Riga or elsewhere was salvaged and recycled by a diving company. In principle it was possible that the Dutch and the British bought old masts.

**Ship’s boats of different quality**

Vessels were usually equipped with a ship’s boat. If the ship’s boat was not auctioned, the crew had left it and come ashore on their own. In this kind of case, the ship’s boat was not part of the movable property from the shipwrecked vessel. If it had been used to get from ship to shore, it was no longer salvage. If the ship’s boat itself was wrecked, then it became salvage.

Auction prices varied greatly, from 12 to 250 dalers. The *St Georg*’s ship’s boat, made of oak fetched a measly 12 dalers. It was reportedly somewhat damaged but “the captain had fixed it himself”. Johan Sederholm’s *St Johannes* did not have a boat at the auction but it was a part of the ship, because the men left the ship with a ship’s boat. Albert Siemens’s *De Hoffnung* had an “old oak ship’s boat with a rudder” valued at 24 dalers. It attracted little interest at the auction and went for the starting price. The price differences between ship’s boats were as great as those of the vessels themselves or their hulls. The *Concordia* had a ship’s boat worth 200 dalers, with a mainsail and foresail of thick Dutch cloth. Something special was up for auction when a Norwegian *jolla*, which had a half-worn mainsail and foresail of Dutch cloth, went for 120 dalers. At the auction of Sederholm’s *St Johannes*, an old pine ship’s boat with a rudder and a pair of oars went for 36 dalers. Often the ship’s boats were old and probably recycled. They were easy to move from one boat to another and were also found unmanned on shore. They were stored on deck and so were washed into the sea in a storm. The crew used them to leave the ship, after which they were either shipwrecked or made it to shore. Sometimes a crewless ship’s boat was the only sign of a wreck.

**Navigation, cabin and galley equipment as odds and ends**

Navigation equipment was auctioned at low prices. These included compasses, lead weights for depth sounding, hourglasses, and horns. Flags were also sold in this category. However, I found no references to maps, rulers, telescopes, barometers or route guides. Either these were not yet used on board, or more probably, such equipment belonged to the captain. If he died, it is unclear where they ended up. There were a few mentions of books on board such as prayer books. The *Providence* was also carrying handguns. It had to travel some distance in the English Channel, where there was a risk of capture. Weapons were also needed for defence against Hiiumaa strand robbers.

Compasses were simple and inexpensive. The *St Georg*’s six compasses were sold for a combined price of 18 dalers, and four compasses including their cases from the *Finska Post* went for 12 dalers in all. The number of compasses in a ship indicate that their quality and reliability was low and that they were oversupplied. One compass model mentioned was the *hängkompas*, which had a light and a case (*nakterhus*). This was sold at the auction of the *Casper et Georg*. The starting price for the *Providence*’s *nakterhus* was just three copper dalers, and it fetched eight. Tables, chairs and tablecloths from the ship’s cabins were sold at auction. One detail worth mentioning is the tablecloth from the *St Georg*’s cabin, which
was red and white, the colour of the flag of its home port, Danzig. What was not auctioned were the crew’s personal belongings. These are never mentioned in the auctions.

Hourglasses came in four-, two- and half-hour models. They were used to measure the distance which the vessel had travelled, while the captain estimated the speed by feel. The plumbs on the St Georg weighed 20 and 8 pounds respectively. The heavier one sank faster, as the ship gathered speed. On entering the Baltic from the North Sea, the Concordia had a 25-pound sounding lead with a line (djup lodlina) 100 fathoms (170 m) long. Sounding lines were the same length as the anchor ropes. The vessel also had a hand lead weighing 10 pounds, with a 16-fathom (27.2 m) line.

The carpenter’s tools and kitchen utensils were in a category of their own. They included iron and copper pots and pans. The St Georg had a very well-equipped kitchen: a number of copper pans, a butter pan, frying pans, a brass fish kettle, a copper butter and fish ladle, an iron meat fork, a poker, a tripod, an axe, iron water buckets and an iron meat dish. Other moveables sold included a tin teapot and six plates, so one may conclude that the ship had a crew of six. Galley stoves were not auctioned, for they were heavy and practically impossible to remove. Coffee pans are not yet mentioned, but tea kettles were. The crew drank green tea on the Providence.

Conclusion
Wreckage was a welcome random import and windfall revenue for the Helsinki burghers. The geographical and natural conditions of the Gulf of Finland favoured the salvage business. It is evident from this sample alone that especially Porkkala peninsula was a dangerous place for ships.

The auction protocols reveal that there was a substantial shortage of ship parts in mid-seventeenth century Helsinki. There was no domestic canvas or rope manufacturing and, at least no ropewalks which were long enough. The production was replaced by recycled parts from the wrecks. Besides cargo, the diving company salvaged cordage, sails, anchors and moveables from the wrecks. Masts were not auctioned as their salvage was too difficult in the open sea. Masts were assembled from components and the company found stranded parts of masts on the shores. When the documents mention rigging, it means the running rigging. The hulls were seldom auctioned. Strandings were devastating, and the salvage operation often completed the destruction by demolishing the wreck. The tax policy favoured large ships, which is confirmed by the auction protocols. Especially heavy anchors and long ropes were wanted.

Only in a few cases did the company manage to salvage a whole ship and repair it. There were huge differences in the hammer prices of the auctioned hulls of ships and ship’s boats. No effective impregnation was available and the life span of a hull was somewhat over 20 years. In principle Swedish ships had a cutting edge for expanding the life span due to their production of tar and copperplates. Furthermore, there was no inspection in shipping and recycling lowered the quality of the ship. The quality of Helsinki ships was lower and more based on recycling than elsewhere. The history of recycling economies goes back in the case Helsinki to the 18th century. The second half of the century was a kind of culmination of second hand shipping.

Due to the yearly shipwrecks there was an abundance of ship parts in Helsinki. However, not all wreckage was needed for the city’s own fleet of trading vessels. A substantial part of the auctioned parts was sold to Sea Fortress Sveaborg, the biggest construction works (started 1747) of its time in the Baltic.

It is possible to judge the type, condition and size of the ships by the salvage documents. This can be done by the technical data given by the auction protocols. Furthermore, the documents reveal something about the accident itself. The date and place of the auction gives us information on the wreck site. The auctions

39 Koivikko, ‘Recycling’, 149.
were as near and as soon as possible after the shipwreck. The condition of sails, ropes and other items gives us leads on the seaworthiness of the ship. Recycled ships had old sails, ropes and masts, as was the case with Johan Sederholm’s *St. Johannes*, which never managed to sail from Helsinki to Stralsund. The names of the skerries sometimes give us the locations of wrecks which are not specifically announced in the documents. The cargo and the name of the captain reveals in some cases the exact wreck site. This information from the wrecks in the archives can be used as a method of identifying wrecks on the seabed.

Mikko Huhtamies is Adjunct Professor at the University of Helsinki, specializing in early modern maritime history in the Baltic. His main focus has been shipwrecks and salvage from the Middle Ages to the 19th century.