Review Essay

Excellence in marine archeology

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Carl Olaf Cederlund. (F. Hocker, ed.) with contributions by George Hafström and Per Wender. *VASA 1;The Archaeology of a Swedish Warship of 1628*. Stockholm, Sweden: National Maritime Museums of Sweden, www.sjohistoriska.se, 2006. 491 pp., illustrations, maps, plans, glossary, bibliography, indices of persons and ships. UK £40, US $ 80.00, cloth; ISBN 91974659-0-9 / ISBN 978914159-0-8. (Distributed in North America by the David Brown Book Company.)

Vasa I is the first of a planned series of scientific studies about the history, salvage and conservation of a seventeenth-century Swedish warship. It is dedicated to the memories of five individuals who were the original discoverers, salvagers and archaeologists of the ship. Tragically, only two men survived to see the magnificent museum opened in 1990.

The opening chapter, “Explanations," resolves the spelling of the ship's name - "*Vasa.*" It also includes information about money in 1628, Swedish naval officer ranks and terminology. The Royal Swedish Navy played a vital part in the discovery and salvage operations and the author, Carl Olaf Cederlund, was one of the first archeologists employed on the project.

Chapter 1 introduces the *Vasa* in the context of the seventeenth-century political situation in Sweden that called for the construction of a powerful fleet. Between 1624 and1628, Sweden's King Gustaf II Adolph ordered construction of five large, two-decked ships with heavy armament of which *Vasa* was one. The Crown shipyards that built *Vasa* operated on the “arrende” system. An entrepreneur got dockyard control and received an annual payment for the construction of ships. Hybertson & Associates of Holland were among those entrepreneurs that tendered for the construction. Ship specifications, including *Vasa*'s construction, decoration, sails and rigging are reviewed. Her armament consisted of 56 guns of varying weight for a total hull weight of about seventy tons.

A short stability test, involving 36 seamen running from one side of the ship to the other, proved *Vasa* was unstable. Nonetheless, Captain Hansson set sail on 10 August 1624, for Älvsnabben. A southwest breeze caused the ship to heel and because the lower gun ports had not been shut, water poured in and *Vasa* sank. Who was to blame - the builder Hybertson and King Gustaf Adolph? One suggestion is "poor seamanship." Captain Hansson left the lower gun-deck gun ports open, despite being aware of the ship's instability.

In Chapter 2, co-author Hocker outlines the physical environment of the wreck and includes a sketch showing the hull's decks covered by mud finds, glacial clay and ballast bedrock (fig.2-5). Seventeenth-century attempts to salvage *Vasa*

included Bulmer's efforts which pulled *Vasa* into an upright position. Diving bells were used by later salvors to raise 39 of the original 56 guns, but they damaged the hull, particularly the stern castle. Sketches of salvage equipment make an interesting chapter but no salvor acquired riches from his efforts.

Chapter 4 mentions the *Vasa* in historical literature published between 1734 and1920, as well as a describing the Fahnehjelms diving dress and its trials on the wreck site. The Stockholm Harbours Board granted permits to two companies to salvage wrecks in the area in the 1920s but neither found *Vasa*. Then Anders Franzén, an engineer employed by the Navy Board, became interested in ships lost in Sweden's great power period and decided to attempt to fix the positions of certain ships lost since 1524.

The next chapter describes how *Vasa*'s wood, iron, hemp and other materials succumbed to human, biological and chemical activity and formed a wreck site. No fewer than five thousand wrought iron nails had disappeared, but cast iron nails survived. Deterioration of the stern and damage by present-day ships' anchors are illustrated in figs. 5.21 and 5.22.

Determined to find the *Vasa*, Anders Franzén researched all sixteenth- and seventeenth-century wrecks in the Baltic, spending countless hours in archives. He was convinced that *Vasa* lay in Stockholm harbour's main shipping fairway at a depth of 32 metres. In 1954, using a grapnel and a special coring device, he began his search of the area, joined in 1956 by P. E. Fälting, a civilian diver. The Navy loaned a motor launch and thus became involved in the project. Franzén's devices brought up evidence of a wreck and Falting and navy divers proved the wreck to be a large warship. Finds from later dives and archival research proved the wreck to be the *Vasa*.

Once the possibility of raising the whole ship took hold, the Royal Navy and the Maritime Museum became involved, joined later by the Neptune Salvage Company. The whole project, from discovery to the opening of the present fine museum, took 27 years to complete.

Chapter 7 records the creation, responsibilities and operation of the *Vasa* Committee and its successor, the *Vasa* Board. The archives contain the reports and memoranda of Commodore Edward Clason, who was the first Chairman and Project Manager until the ship was brought to the surface in 1961. After he retired from the Navy he was engaged to advise the Board. Chief diver, Per Edvin Fälting, published his account of the activities in two publications. Both men were placed in charge of the technical plans for the initial lifts. The Board was responsible for checking salvage methods, administration, organization and planning for a floating dock. *Vasa*'s initial salvage operations involved 29 engineers and archaeologists and 25 divers.

The preparations and activities for the first lift to remove *Vasa* from the main shipping fairway in 1957 under the direction of Axel Hedberg of the Neptune Salvage Company are well described. The company provided two pontoons, *Oden* and *Frigg*, for the lift. Each was able to raise 600 tons. Navy divers, using special hose nozzles and airlifts, bored six tunnels beneath the hull for the lifting cables since the estimate of the total weight to be lifted was 600-700 tons. All those involved in the tunneling received silver medals and Chief Diver Fälting received one in gold.

Figure 8-33 shows the progress of the first lift from 20 August to 16 September,

1957. Once the ship lay in roughly 17 metres of water, diving times increased from 60 minutes to three hours and divers recovered 700 artifacts, including a man-sized sculpture of a knight and parts of the coat of arms from the stern. *Vasa* remained in her new anchorage for about 18 months. During this time the hull was accurately measured and assessed. All gun ports were open, planking on the upper sides was intact and the worst damage was to the stern castle. The *Vasa* Board discussed various proposals for the final lift, but since the Neptune Company was providing pontoons, a salvage vessel and other equipment free of charge, its plans were accepted.

In the fall of 1960, the Board ordered a submersible pontoon to be constructed, on which *Vasa* would be placed after the final lift. The hull still stands on it in the museum. Navy divers were to clear much debris on the upper deck, plug gun ports and scuppers, rebuild the stern and the bow sections, insert new bolts to replace those rusted away, and complete caulking in order to make the hull as watertight as possible.

On 17 April, the jacks on the two pontoons raised *Vasa* four metres. Finally, in the presence of TV cameras and large crowds, a stanchion broke the surface. Franzén and Fälting were soon able to clamber aboard. Search of the original resting place and the salvage of the long boat continued by naval and commercial divers, while the National Maritime Museum and its archeological team took over from the navy and salvors.

Part III details the excavation of *Vasa*'s interior by the National Maritime Museum personnel under Per Lundstrom. The next seven chapters detailing this archaeological activity were written by Carl Olof Cederlund and F. Hocker. Beginning as a student, Cederlund later joined the original team of eleven archaeologists.

The chapter on "Methodology & Preparation" describes the measures developed to remove roughly a foot of mud on each deck. The upper gun deck comprised four compartments and had 13 hatchways. Excavation of the lower gun deck is recorded by one archaeologist who documented and photographed his work over two months. The hold's nine compartments were emptied of 110 tons of stone ballast by suction pumps. The orlop deck is sketched in its as-found state then tracked day-by-day, from 7 July to 27 September, when excavation on board ended. Among the most unusual finds were two sails. Their conservation fell to Captain Sam Svensson, a retired Master Mariner and expert. The total number of objects excavated was 28,000 and about half, 14,034, were given find numbers.

Chapter 15 describes the investigation and cataloging of chests, boxes and barrels excavated intact. These contained crew members' clothing and personal effects, including tools, and a pewter flask contained a rum-based spirit. The excavated remains of crew members were interred in a crypt in the naval cemetery.

In their conclusions, authors Cederlund and Hocker stress that the *Vasa* was the first time that archaeological methods had been applied to a marine object, and that in all, 16,000 recovered objects became property of the Maritime Museum Conservation Branch under Lars Barkman. (He came to Ottawa in 1970 to advise Parks Canada). They stress that the excavation took place before stratigraphic modelling, and that interpretation of finds is still incomplete. Some comparison is made with the *Mary Rose* and the *Kronan*. Although interest exists in raising the Dutch *V Maria*, they

believe that support for a similar *Vasa*-style project is unlikely.

Part IV discusses “Post-Recovery” and the organization created to showcase the *Vasa* which became part of the National Maritime Museum. Planning, organization, preparation, cleaning, conservation and dimensional stabilization were required to restore the ship to its original condition. Buildings were built to house the ship and conservation facilities which included spraying with polyethylene glycol (PEG) for 27 years!

Diving continued from 1963 to1967 by both civilian and regular navy divers who found two-thirds of the life-sized sculptures of two warriors in Roman armour and sculptures from the transom including the coat of arms. Since the ship's long boat was raised in 1967, no identifiable material has been recovered.

Fred Hocker, now employed by the museum, argues that *Vasa* demonstrated maritime archaeology to the world. He refers to Denmark’s Viking ships, the Bremen cog and two Turkish wrecks but seems unaware of maritime archaeological work in Canada such as the sixteenth–century Basque whaling ship in Red Bay, the eighteenth-century French fleets off Louisboug and a site in Campbell River.

The fine *Vasa* Museum attracts about 900,000 visitors annually. Fate prevented three of the pioneers, Commodore Clason, Commander E. Hamilton and Per Lundstrom, from seeing the results of their foresight, enthusiasm and work. This book will appeal to those interested in marine archaeology, in seventeenth-century naval history, and in ships of the period. It is a magnificent record of the persistence of Anders Franzén who was finally recognized by the Swedish parliament with the "Professor's Title" award.

I look forward to the second volume.

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