Ships and cities in maritime archaeology. The VOC-ship Amsterdam and a biographical archaeology of eighteenth-century Amsterdam

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MARITIME ARCHAEOLOGY

SYMPOSIUM TER GELEGENHEID VAN HET 75-JARIG BESTAAN VAN
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J.H.G. GAWRONSKI

SHIPS AND CITIES IN MARITIME ARCHAEOLOGY.

THE VOC SHIP AMSTERDAM AND A BIOGRAPHICAL ARCHAEOLOGY OF EIGHTEENTH-CENTURY AMSTERDAM

It is only some fifty years ago that shipwrecks were included for the first time in the archaeological record for scientific study. In current archaeology their material remains are now recognized as vital sources for our understanding of the past (Gibbins and Adams 2001). It can be stated that water transport is crucial for the developmental process of societies, regardless of their historical or even pre-historical period or cultural affiliation, as long as their geographical situation allowed contact with water. As the surface of the globe consists of more than 70% of water, this scenario is almost inevitable. Ships enabled long distance and efficient transport and therefore contributed to the spread of knowledge, human interaction, material and cultural exchange, to systems of warfare and trade and the development of advanced technology. These contextual qualities were for the first time defined and elaborated with the development of maritime archaeology. As this specialized archaeological discipline is of relatively recent date, only now do ships or watercraft in general start to determine the archaeological research agenda and become more accepted in the general heritage management systems.

DIVING TECHNOLOGY

From the 1960s into the 1980s mainstream archaeology went

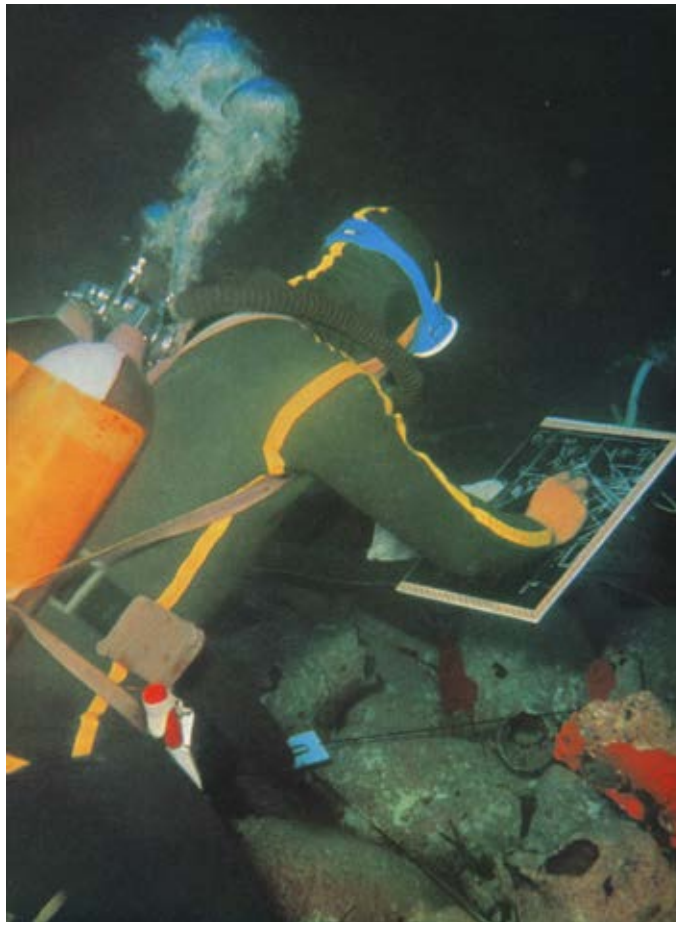


Fig.1. Pioneering Italian underwater archaeologists on the site of the roman Spargi wreck in 1957-1958 (Corsica/Sardinia, 100 BC).

through a period of intensive theoretical debate on its scope and goals, on the paradigms and methods of the profession. New directions in analysis and interpretation were examined, like New Archaeology, (post) processual archaeology and contextual archaeology. New fields of study emerged, such as medieval,

post-medieval archaeology or historical archaeology. In that time maritime archaeology was a nascent discipline which primarily aimed at conquering a new physical environment for scientific fieldwork underwater. The direct cause for the extension of archaeological activities into the wet world of seas, lakes and rivers, where archaeological sites were located, were not academic scientific ambitions but post-war innovations in diving technology (Gawronski 1992). Man's performance and working capacities underwater were definitively enhanced through the invention of scuba diving equipment in the 1940s and from the 1950s this diving equipment became standardized and available to the general public. As the technological perfection of the new gear continued, not only did sport diving and leisure activities increase, but also the applications in science, industry, mining, salvage and the military sector multiplied.

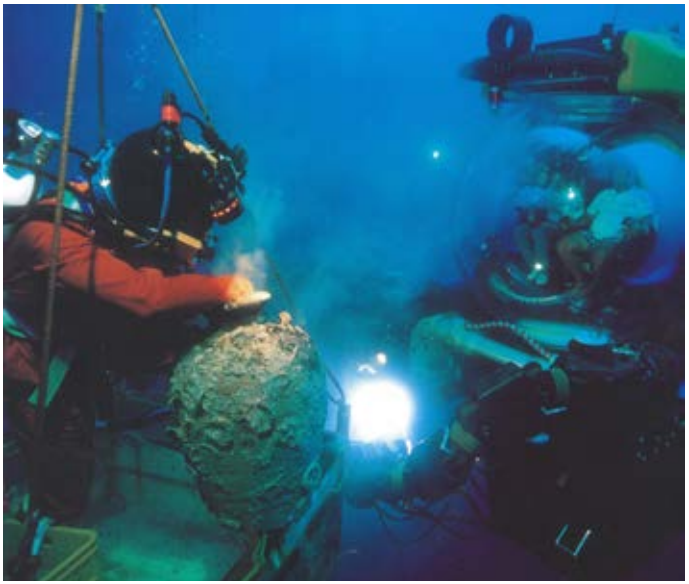


Fig. 2. Deep water site of the Brunei Junk off Brunei in 1998: for the fieldwork by divers (breathing Heliox mixture) also submersibles and ROV's were deployed (DRASSM, Marseille).

UNDERWATER ARCHAEOLOGY

The large-scale exploration of that still unknown underwater world resulted in the discovery of numerous archaeological sites underwater, in a variety of marine, riverine and lacustrine environments. And this number is only increasing, as the present day advancement of diving technology allows access to deep water environments, with robots and submarines, applying sophisticated remote sensing and digital visualization. The archaeological discipline which emerged in those early days was tagged underwater archaeology. Its scientific focus in the 1960s and 1970s was on methodological issues related to archaeological research underwater, aimed at the development of new techniques and adaptations to exercise fieldwork according to standards of terrestrial excavations. Subsequently, the scientific scope of this new field of archaeology was to understand (the meaning of) the new types of sites. Underwater archaeology became, and still is, an extremely heterogeneous field of study, encompassing any imaginable relict, not only shipwrecks, which are sites related to water transport

Fig. 3. Archaeological research on the site of the VOC-ship Mauritius (1609) in 1986, Gabon, West Africa (DRASSM, Marseille).

and could be expected in a water environment, but also sunken remains from land-based activities, such as settlements, harbours, burials, sacrificial sites and any type of building or random finds from any culture or time period. In view of this diversity it became necessary to develop differentiated research strategies for each specific category of material remains. A historical shipwreck obviously demands different research criteria than a Neolithic settlement. Therefore, from the 1970s onwards independent fields of study were distinguished within underwater archaeology, with their own specific analytical tools and strategies. In other words, not the environment but the subject itself determined the archaeology of an underwater site.

MARITIME ARCHAEOLOGY

For the study of shipwrecks maritime archaeology was defined, a new discipline which dominated the field of underwater archaeology, as most of the sites discovered underwater consisted of sunken ships. Keith Muckelroy's definition, in his 1978 handbook, still marks clearly the scope of this emerging scientific ambition: 'the scientific study, through the surviving material evidence, of all aspects of seafaring: ships, boats, and their equipment; cargoes, catches, or passengers carried on them, and the economic systems within which they were operating; their officers and crew, especially utensils and other possessions reflecting their specialized lifestyle' (Muckelroy 1978, 6). This was the starting point for an essentially multidisciplinary approach and theoretical framework which allowed interpretation of the material culture of shipwrecks in a context which reaches beyond the narrow limits of the underwater world or the mere physical technological properties of a shipwreck site. The study of ships was not new, but had an already existing tradition in maritime history outside the archaeological field. Here issues were addressed which were related to the technology of ship construction and on nautical qualities, on life on board and the science of navigation through historical sources, such as archival, iconographical and

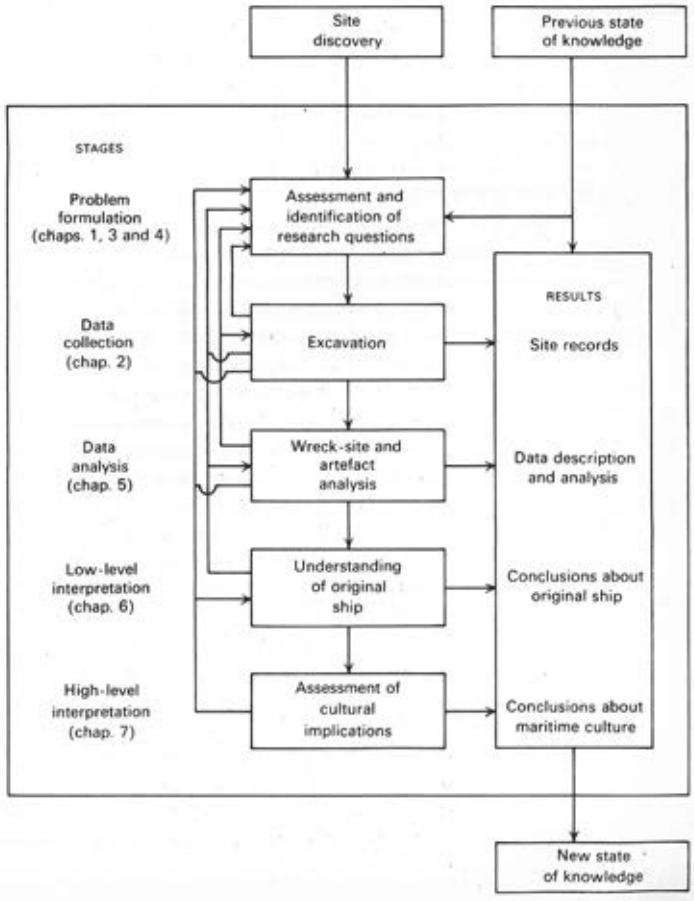


Fig. 4. System model of the maritime archaeological research process (Muckelroy 1978, p. 249).

also material records like three-dimensional ship models. Shipwreck archaeology provided an extension of the available sources with the material entities of ships.

MARITIME CULTURAL LANDSCAPE

The ongoing fieldwork on shipwreck sites resulted in a vast and varied set of maritime data based on the real life ship remains. After three decades of technological and methodological progression, the 1990s marked a next phase of maturity, in which maritime archaeology developed a broader perspective and the intricate information value of ships was more fully explored. New approaches were formulated to understand and apply maritime data, by connecting to theoretical developments in symbolic or contextual archaeology (Flatman 2003. Gibbins and Adams 2001). The notion of the maritime cultural landscape, derived from landscape archaeology, allowed a more coherent contextual approach, in which the boundaries between underwater and land-based sites were less distinct (Westerdahl 1992). Within this wider spatial context shipwrecks are not to be considered as isolated material entities but as exponents of complex patterns of production, communication within and between communities and societies, on a local, regional or global level simultaneously.

SHIPS

In discussing the current state of maritime archaeology, one of the focus points is the meaning of ships for our understanding of the functioning of human societies. The theoretical debate which already started in the early days of maritime archaeology was progressively aimed at defining the metaphysical qualities of the archaeological data from shipwrecks rather than discussing the research's physical requirements. In general terms, sailing ships, especially for long distance, can be considered as the most complicated artefacts people manufactured until the era of industrialization and the invention of steam and subsequently combustion engines in the nineteenth century. One of the first contextual observations of the qualities of ships and shipwrecks was Muckelroy's early definition in 1978 stating that: 'in any pre-industrial society, from the upper Palaeolithic to the nineteenth

century AD, a boat or (later) a ship was the largest and most complex machine produced' (Muckelroy 1978: 3). Being machines for long distance travel, sailing ships can be compared with space shuttles, reflecting an equal notion of advanced technology. Even now in the current space age, ships are still by far the largest travelling machines.

COMPLEX MEANING

Ships are multifunctional tools, which could be used for transport, warfare, communication, discoveries, operations, trade or a combination of these (or more) functions. This complexity is reflected in the material appearance, in the sunken remains which archaeologists study on the seabed. As ships were mobile material complexes which were designed to function autonomously in the open space of water (oceans, lakes, rivers), they represent dense and varied material entities. Functional organization models have been developed in maritime archaeology to record the meaning of each separate component within the (spatial) context of the ship (Adams 2001. Gawronski 1992). Ships reflect in a microcosmic way the societies or systems from which they originated or in which they functioned. The process of designing, building and using ships was a complex social activity and therefore ships are closely connected to the economic, social, political and cultural mechanisms of a given human society. Compared with the average archaeological land-based sites ships represent a separate category of archaeological datasets with clear contextual properties. The material entity of a ship embraces the whole spectrum of metaphysical features of past societies which are not present in the record of land sites or other sources. It is exactly this wider context which makes ships so relevant for research questions and topics, the impact of which reaches beyond the maritime world, touching upon the cities, economies, exchange systems, political events, technological inventions, social developments, cultural processes, in given societies in given countries, areas or periods.

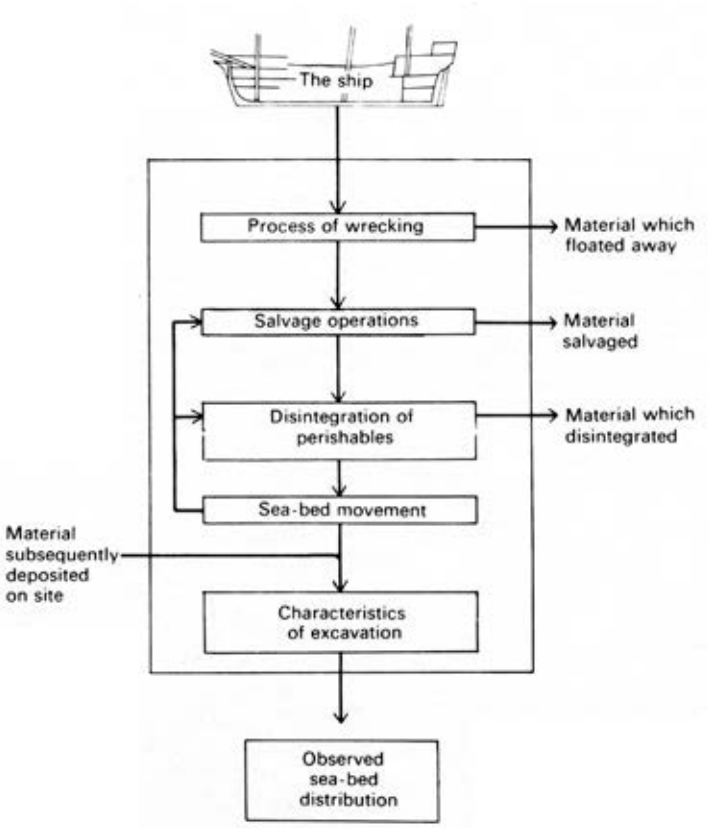


Fig. 5. Flow diagram representing the formation process of a shipwreck (Muckelroy 1978, p. 158).

CLOSED FIND

Also, a shipwreck is often referred to as a closed find, or time capsule, as the cause of site formation is usually a shock event in terms of shipwrecking, by which the functioning of a vessel comes to a sudden standstill, because of sinking or wrecking. The definition distinguishes ships fundamentally from classic land sites, which generally reflect periods of functioning over long stretches

of time and contain data on diachronic processes. However, the synchronic aspect of a shipwreck site is only partially valid, and related to the moment of wrecking itself (Adams 2001, 296-297. Gawronski 1992, 22). The ship itself, or each object in the material assemblage of artefacts on board has a history of long-term use, which can be related to previous voyages or to alterations in the composition or purpose of the vessel or the shipboard assemblage. The present research agenda within maritime archaeology shifts gradually from individual vessels and the composition of the material assemblage to the wider social contexts in which ship's remains can be interpreted.

MARITIME DATA

In these respects the question arises to what extent finds from maritime contexts can be considered representative for mainstream processes within (land-based) societies. Archaeological objects from a wreck site context belong to a certain degree to specialized maritime material culture, as they reflect the choices which were made to create a material assemblage needed for shipboard life and work and oversea travelling. On the other hand shipwreck finds are also directly connected with general items and aspects of everyday life of a past society. For example, the diversified finds from the material entities of historic shipwrecks which belonged to the European shipping companies to the East or the West Indies are a precise reflection of the complex material culture which is representative of the societies in the post-medieval period. Recently several theoretical directions have come under discussion which were inspired by the rich and varied body of maritime archaeological data. There are new issues which focus on the nature of shipboard societies and their relation to mainstream society, relating ships to the context of social interaction (Flatman 2003). Another theme provided by maritime archaeology is that of shipbuilding technology as an expression of the complex patterns of behaviour in a past society and the extent to which the study of change and innovation of the construction of late-

medieval and post-medieval ships enables to monitor social and political changes in society (Adams 2003, 2013 and this volume).

MULTILEVEL AND BIOGRAPHICAL CONTEXT

Another direction in the contextual and post-processual archaeology of shipwrecks which needs further exploration is the multilevel contextual analysis of material culture from historic ships. This approach is based on the principle that a given ship can belong to different social or economic contexts simultaneously. This means that a ship represents different levels of organizational complexity, for example the given institution to which the ship belonged (e.g. admiralty, East India company) or the topographical or geographical context (e.g. city, country) from which it originated (Gawronski 1992, 20-21). Further development of this approach was triggered by the availability of a vast body of historical sources linking the material entity of the ship to these contexts. Systematic use of historical data in connection with the

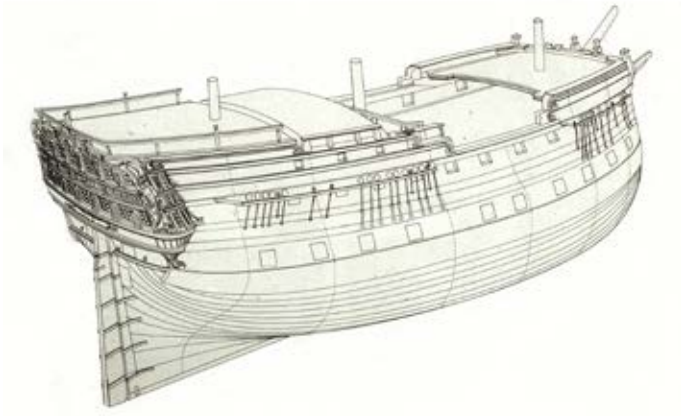


Fig. 6. Perspective drawing of the hull a VOC-ship of the 150 feet class from the 1740s, based on the contemporary design (drawing R. van Silfhout, Stichting VOC schip Amsterdam).

material record provided options to refine the functional context reference for the interpretation of the archaeological finds. More importantly, this approach provided the development of a biographical quality of shipwreck research. From archival sources the identity of historical persons who participated in the production process of the ship could be retrieved and added to the inboard contexts of the archaeological finds. The finely structured functional context of a ship enables us to identify close links between material remains and historical individuals within their spatial context of place of production. This biographical level of context allows that the archaeological shipwreck finds provide meaning to the wider economic and social processes of the city or region where the ship was produced.

INTEGRATED HISTORICAL ARCHAEOLOGICAL RESEARCH OF VOC SHIPS

The research on wrecks of ships of the Dutch East India Company (VOC) in the 1980s and 1990s provided case studies to test the potential of this approach. These shipwrecks drew international attention because of their close link with East India trade and Dutch maritime history. They also represented all the allure of exotic tales involving shipwreck and disaster, possible hidden treasure and its financial rewards, the museum potential of material remains and rich sources of archaeological information. In nearly forty years some fifty sites have been discovered, triggering numerous commercial salvage enterprises and scientific projects (Gawronski 1992, 14. Gawronski 1996, 14). VOC ships are material and historical sources which combine a special material assemblage under water with a specific Company's archive. Historical-archaeological research provided the key to integrate the rich variety of data. This approach facilitates the development of meaningful discussion regarding the interpretation of the individual sites within a more broad and social context and thus providing the outline of a more in depth research field. This analytical process led to functional modelling of VOC ships as 'pars

pro toto' components of the Company, each individual ship theoretically comprising a microcosm of the different features of the whole enterprise in Europe and Asia. A number of VOC ship projects, especially the *Hollandia* (1743) and the *Amsterdam* (1749), contributed to the development of such historical archaeology theory of VOC ships (Gawronski et al.1992. Gawronski 1996). This also created greater consciousness regarding the meaning of the shipyard as a similar source of the VOC policy and its material implications. In particular, the study of one particular site, of the *Amsterdam*, a VOC ship from 1749, illustrates to what extent this integrated historical-archaeological research contributes to the understanding of the functioning of the VOC and the wider socio-economical context of the city of Amsterdam where this VOC ship was produced.

Fig. 7. Site of the Amsterdam (1749) at Hastings, during low tide, in 1996 (Stichting VOC schip Amsterdam).

VOC SHIP AMSTERDAM (1749)

The *Amsterdam* was built and equipped in the Amsterdam yard of the VOC on the eastern harbour island Oostenburg, in 1748. The vessel beached in 1749 on its maiden voyage on the south

coast of England, near Hastings, and the complete hull sank over 7 m deep in the sand. This site is still one of the best preserved of the known sites of sunken Dutch East Indiamen. Because of its quality and integrity, the wreck site of the *Amsterdam* clearly exemplifies the material complexity of this class of vessels and also played a key role in the awareness process on the potential of maritime archaeology in museum, university and heritage management circles in the Netherlands. In 1969 a first dry land survey was done by the British archaeologist Peter Marsden during low spring tides when the site is exposed. In 1973 the *Amsterdam* was designated as the first protected historic wreck site in the UK and by 1975 a foundation (Stichting VOC-schip Amsterdam) was set up in the Netherlands under the auspices of the Dutch ministry of Culture (CRM) and the city of Amsterdam to initiate plans for the research and salvage of this relict of the Dutch global shipping period. Three underwater excavations of the stern area were organized by the foundation under the supervision of the University of Amsterdam in 1984-1986 and executed by an Anglo Dutch underwater archaeological team of professional archaeologist and amateur divers (Gawronski 1990, 1992, 1996). By providing educational facilities the Amsterdam project had a vital function as a field school. Simultaneously the scientific programme of the Amsterdam project enabled further elaboration of the theoretical principles of historic shipwreck research.

MATERIAL MICROCOSM

In a simplified way, the material assemblage of a ship like the *Amsterdam* is a three-dimensional wooden shell, which is coherently subdivided into separate spaces and is filled with thousands, even ten thousands of components, artefacts, semi-manufactured products and raw materials. Apart from cultural materials, such a ship also contains ecofacts - parasites, animals, plants, seeds - related to the environment or food on board. The composition of all these material elements is defined by the multi functionality of the vessel, developed by the VOC. An East Indiaman was

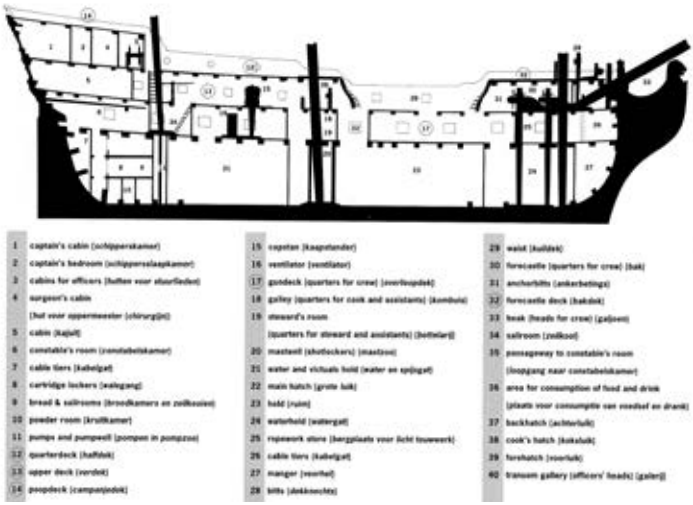


Fig. 8. Interior arrangement of the East Indiaman of 150 feet, 1750 (drawing G. Hoekstra).

the VOC's means of transport between Europe and Asia, as their Dutch contemporary name retourschepen indicates, and was the most important instrument to carry out the Company's trade policy during the seventeenth and eighteenth centuries. As these ships were designed, built and equipped by the VOC, they can be regarded as a direct product of the Company's organization, both materially and conceptually. The entity of a ship is a material microcosm which reflects where the vessel came from and what its destination was. Each individual object on board was a carrier of several meanings, related to its place of origin, its use for a specific craft of application, its own precise location and function within the closed capsule of the ship.

FUNCTIONAL MODEL

According to a basic system analysis six functionalities can be defined which determine and influence in interaction the physi-

cal assemblage of a VOC ship and its varied contents:

1 Sailing machine, for the transatlantic journey of 15,000 sea miles between the homeland and VOC overseas settlements. The nautical properties are critical for the general character and structure as a machine.
2 Part of the economic trading network, as these ships provided for the import and export of merchandise, as well as the supply of the overseas settlements.
3 Military platform, with inboard armament for the protection of the ship itself. It also played a practical part in the Company's power politics, as the ships were employed for the defence of the overseas settlements and spheres of influence against competitors or enemy powers. Besides this, they carried military supplies including soldiers and equipment.
4 Company's floating office and bank transporting correspondence and currencies.
5 Working community. A multifunctional crew was needed for nautical tasks to navigate and maintain the vessel and to provide for themselves, with facilities for storage and preparation of food and health care
6 Social element, composed of a community of over 300 persons, coming from all parts of Europe (and the world), which was tightly organized and had its own rules of life and conventions. The social order on board was based on a strongly hierarchical system. The crew consisted of officers, seamen, craftsmen, soldiers and some passengers.

SHIPYARD OOSTENBURG

In addition to this functionalistic analysis, the material assemblage of the *Amsterdam* has other contextual levels of meaning providing information which reaches further than the construction and content of the ship itself. They are linked to the activities of the technical staff and the workmen of the *Amsterdam* shipyard. The Amsterdam reflects both conceptually and materially the industrial processes of the office and yard of the VOC. The shipyard on

the eastern harbour island of Oostenburg was a centre stage for intensive ship production and distribution activity (Gawronski 1996, 2002). In some 200 years approximately 720 VOC ships were built in Amsterdam, of which the greater part (about 500) was on Oostenburg. The process of building and equipping was large-scale and standardized, with an annual production of three ships, and around 1750 even five. With at least fifteen vessels leaving Amsterdam annually, the yard was the starting point (or end point, depending on the direction of the journey) of the intercontinental bridge of ships, which supported the company's overseas administrative and communication system and transport and trade lines. Upon arrival from Asia, the imported goods were stored and processed on the harbour island of Oostenburg: spices, stimulants, porcelain, textiles, monopoly goods and exotics, bulk articles and rare products. The yard physically consisted of several

Fig. 9. The shipyard of the VOC (Dutch East India Company) on Oostenburg in Amsterdam; on the background the large East Indian Sea Warehouse and slipways on the foreground (print J. Mulder, 1694, from Commelin 1694).

units, divided into three separate islands which housed separate sections of the production process. The main infrastructural unit was the warehouse of 215 x 25 m, which served as the centre of the storage and distribution system, where all incoming goods and all the materials needed to equip a ship were stocked.

LABOUR ORGANIZATION

The labour organization of the shipyard and the logistics of its working floor were equally large-scale and intricately woven. In 1750, 1,200 employees manned this section of the VOC: some 80 supervisors and 1,100 workmen. The organization consisted of six main sections: administrative staff, artisanal departments, storage, transport, vessels and barges, and a security system. The structure of the organization was pyramidal with a small staff of three bookkeepers at the top, while the broad base consisted of a finely crystallized network of subdivisions and separate working units. Some fifteen main artisanal labour units can be distinguished next to an administrative staff of 65 specialized functions. In fact, the yard consisted of a series of independent and specialized sections as can be seen by the division and allocation of tasks. This horizontally organized labour contrasts with the general image of the VOC organization, symbolized by the hierarchical structure of the board of 'Seventeen' (Directors). While the oligarchic bureaucracy of seventeen regents seems archaic, a functional analysis of the daily work indicates that the organization of the yard was almost modern, in view of the standardized and efficient assemblage of mass products in wood. The nineteenth-century industrial technology of steam and steel would have integrated well with the eighteenth-century production system of the VOC yard, instead of the traditional energy sources of wind, man and animal power. The functioning of the VOC is typical of premodern Dutch ship production. This phase started at the end of the sixteenth century with the birth of the maritime expansion period and ends at the threshold of the industrial revolution at the end of the eighteenth century.

Fig. 10. Plan of the city of Amsterdam, with the semicircular city wall of 26 bastions, the canal zone and the harbour island on either side of the harbour IJ, end seventeenth century (Plan Gerrit de Broen 1732).

SUPPLY NETWORK IN AMSTERDAM

Simultaneously the shipyard was not an isolated production centre, but was the focus point of hundreds of supply lines of manufacturers and suppliers in the city of Amsterdam which the VOC engaged to execute the construction and the equipment of its sailing vessels. As a self-generating machine, the production complex had to be fed by its surroundings: the city of Amsterdam. This international trading metropolis was a gathering point for thousands of products, not only from regions throughout Europe, but from the entire world. This was the VOC's source for building and equipping ships. Trading houses, shops, artisans, workshops and factories, in short, several hundred people were engaged in supplying the Oostenburg yard. In the mid-

eighteenth century, more than 600 suppliers were contributing annually to the yard's production system. Oostenburg as receiver and transmitter is a basic yet essential metaphor, mirroring the VOC itself. Here, within the confines of the yard, was the core of the Dutch branch of the global enterprise, operating within a distinctive European context. As the focus of the Amsterdam trading system, the yard attracted products from all neighbouring European regions. A brief list of supplies clearly illustrates its international scope (excluding the local and regional Dutch products): timber from Scandinavia, Poland and Germany, tar from Russia, hemp from Riga, iron nails and fittings from Liège, glass from Bohemia, quicksilver from Austria, copperware from Nuremberg, wine and liquor from France, Germany, Spain and Portugal, iron guns from Sweden, trumpets from Leipzig, pewter spoons from London, cantharidum ("Spanish fly") from Spain, octants from England, oxen from Denmark, butter from Ireland,

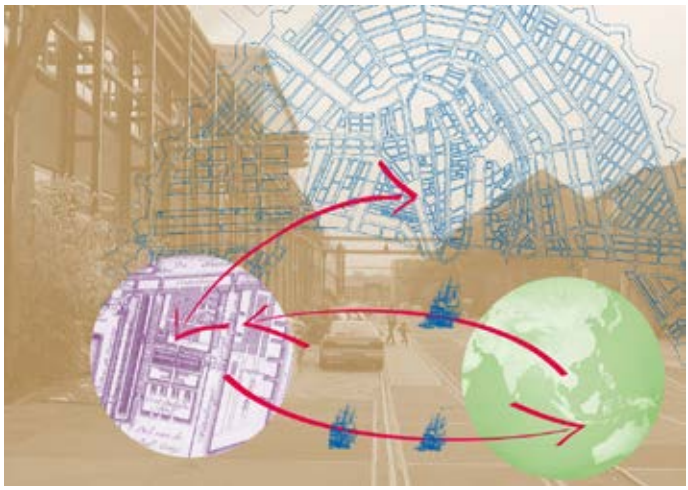


Fig. 11. The archaeology of the material assemblage of a VOC-ship such as the Amsterdam is related to three contextual levels: the ship itself, the yard were the vessel was produced and the city of Amsterdam as source of the material supplies for the construction and equipment of the ship.

grain from Prussia and Poland, prunes from France, fish from Norway. All this material was transformed on Oostenburg into loaded ships, which sustained the overseas branch of the VOC.

THREE CONTEXTUAL LEVELS: SHIP, COMPANY, CITY

Therefore, the material components of a VOC ship like the *Amsterdam* represent three information levels: the ship and its crew, the VOC yard and its personnel and Amsterdam city and its system of shops, workshops and markets. Following this information model the *Amsterdam* offered a case study of integrating archaeological finds and historical information on the production and equipment of the vessel. Historic shipwrecks like the *Amsterdam* offer challenging options to extend the interpretation of each archaeological find of a shipwreck beyond the level of the individual ship because of the availability of archival sources on material purchases for the yard, like in this case VOC bookkeeping documents, or on the identity and professions of suppliers for the Amsterdam yard, like residential tax registers. This three-levelled analysis based on historical and archaeological data can be applied to each individual find, creating a link between the ship and the urban socio-economic context of Amsterdam. In interaction with historical data the archaeological relics from the *Amsterdam* can be taken from anonymity and can be linked to the historical persons in Amsterdam with whom the VOC did business in those days. Such an integrated approach has yielded some interesting case studies on the direct material relation between the maritime business and the socio-economy of Amsterdam and on the involvement of individual entrepreneurs from all levels of the Amsterdam economy in the materialization of this VOC ship.

TAMARIND

A case study of such biographical archaeology from the *Amsterdam* research is the find of a stoneware jar, located on the orlop

Fig. 12. A stoneware jar on the orlop deck of the Amsterdam, 1984 (Stichting VOC schip Amsterdam).

deck, which contained a vegetal mass, identified as tamarind (Gawronski 1996, 213). The presence of bugs of the *(Sitophilus linearis)* species indicated that the fruit was not refined, as these insects only live in the tropical place of origin. Tamarind was one of the tropical products which the VOC imported from Asia. After its arrival in Amsterdam and storage in the warehouse on the yard, the plants changed from a trading commodity into a part of the ship's equipment. Tamarind was taken on board an outgoing vessel because of its medical properties and appears on the ship's medicine list as a laxative or fever remedy under the Latin apothecary term *fructus Tamarindorum*. The archaeological reality proved that behind this eighteenth-century medical terminology a raw material was hidden, fruit with insects, with which the ship's doctor had to prepare his own medicine. As the VOC imported this raw material itself, tamarind does not appear on the specified purchase list of medical herbs which in the 1740s were standard, supplied to the company by three or four shops in the city, like pharmacist Roeland Willem van Homrigh and drugstores Joost Krudop and Pieter Ploos van Amstel.

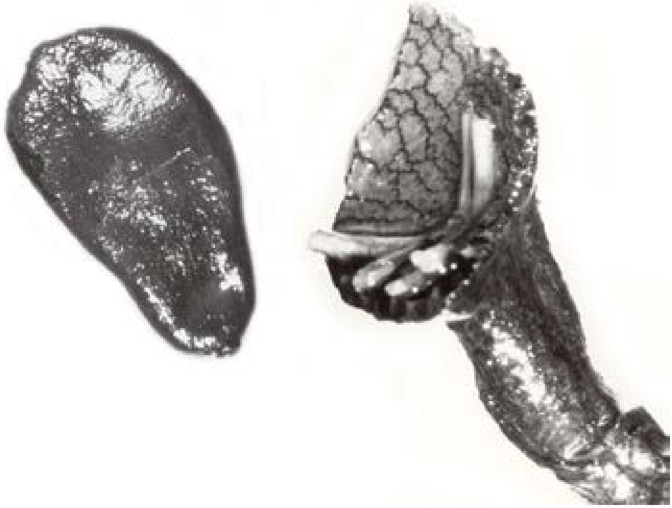
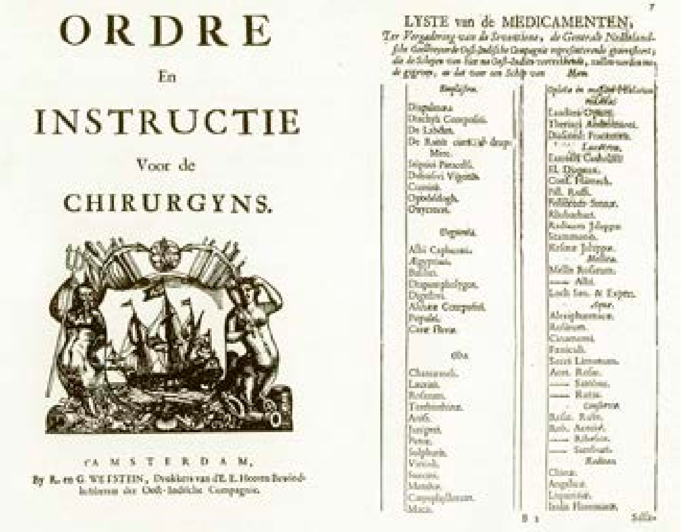


Fig. 13. Tamarind fruit inside the jar (Stichting VOC schip Amsterdam)



ORDRE

En

INSTRUCTIE

Voor de

CHIRURGYNS.

't AMSTERDAM,

By R. en G. WETSTEIN, Drukkers van d'E. E. Heeren Bewindhebberen der Oost-Indische Compagnie.

7

LYSTE van de MEDICAMENTEN,

Fig. 14. Title page of the instructions of the ship's surgeon of the VOC: tamarind appears under the herbal medicines.

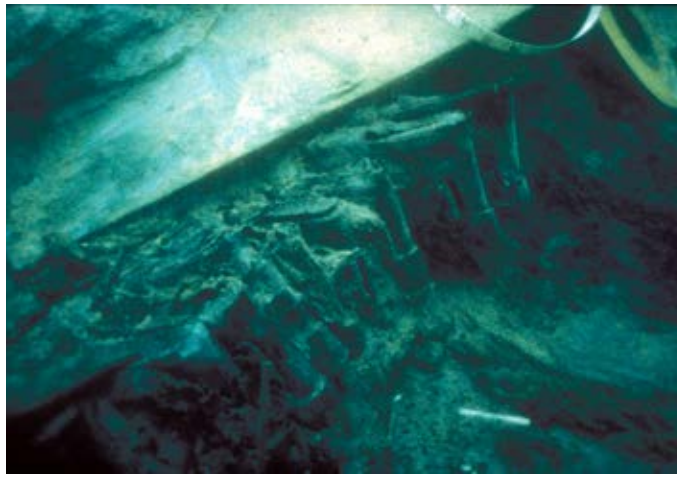


Fig. 15. A pack of twelve new cartridge cases, excavated in the Amsterdam, 1984 (Stichting VOC schip Amsterdam).

CARTRIDGE CASES

Another example offers a series of twelve cartridge cases in the constable room of the *Amsterdam*, brand new, unused, the leather belt diagonally wound around (Gawronski 1996, 190-191). These items belonged to the standard equipment of the company's musketeers; among the 333 people on board were 128 soldiers, in transit to Batavia. The cartridge cases for the *Amsterdam* were supplied by Dirck Hanius, a broker on the Oudezijds Achterburgwal, for 32 stivers apiece, who was paid in November 1748 for the delivery of 1700 items. According to the VOC bookkeeping the purchase of these soldiers' equipment was reorganized in the 1740s, because five years earlier – in 1742 – cartridge cases were still made by four separate firms in the old commercial district of Amsterdam, among which two female entrepreneurs: the widows Jan Deldijm and Arent ten Elshof, who each had a button shop – one in the Warmoesstraat and the other in the Halsteeg. The other two suppliers were Joost van Wijck, a shoulder belt manufacturer in the Warmoesstraat, and a man named Jan Haijingh without specified

Fig. 16. One cartridge case after conservation, with the belt tied round, consisting of a copper case and a leather covering (Stichting VOC schip Amsterdam).

Fig. 17. An account in the VOC bookkeepers journal of October 1743 under the heading 'Geschut en Amunitie van Oorlogh' (Military Armament and Ammunition), with the delivery of 218 cartridge cases by the shop of widow Jan Deldijm.

profession. These shopkeepers supplied limited quantities several times per year, altogether the number as in the one delivery by Hanius, but for 40 stivers apiece. The archaeological discovery of the cartridge case is like a snapshot in time of the efforts of the staff of the VOC shipyard to achieve more efficiency in its operational management, by restructuring the purchase through small businesses into a delivery by only one agent. Simultaneously,

Fig. 18. The distribution of suppliers to the VOC shipyard (red) in Amsterdam:

Four shops where the VOC shipyard ordered its cartridge cases in 1743:
1. Wed. J. Deldijn, buttonshop, Warmoesstraat
2. Herm. Elshoff, buttonshop, Halsteeg,
3. D. Hanius, broker, OZ Achterburgwal
4. Joost v. Wijk, shoulder belt manufacturer, Warmoesstraat

Three shops which supplied medical herbs in 1743
I Js. v. Homring, pharmacist, Leidsestraat
II Joost Krudop, drugstore, Het Water,
III P. Ploos v. Amstel, drugstore, Nieuwendijk

the finds allow us a glimpse behind the counter and a view of the product assortment of ordinary artisan shops in eighteenth-century Amsterdam. They also shed light on the actual labour of the five suppliers. A cartridge case consisted basically of an oblong copper case with copper tubes inside for the cartridges, soldered together, and a leather covering with a belt. The copper case itself was undoubtedly not produced by the suppliers themselves as they had workshops or stores in clothing accessories (buttons) or leather manufacturing. Their work consisted merely of assembling the different parts, while the copper cases were produced somewhere else and were made available by the VOC to the suppliers for the final assembly. According to the information in the bookkeeping journal, one would assume the five shopkeepers had these cartridge cases in their regular assortment, but linked with the archaeological information on the real material composition these suppliers participated in a multistep production line, for which final stage they were selected by the VOC. This explains the presence of the broker in the accounts, who was probably hired to coordinate the logistics of this assembly process.

EPILOGUE

These finds belong to the hundreds of stories on the intricate relations between a ship and the broad context of urban economy and production which a shipwreck like the *Amsterdam* can offer. They illustrate the fundamental fact that a ship is a complex carrier of information, not only literally saved in its material remnants, but also metaphorically present, turning a ship into an accumulation of messages, on material reality and on historical persons. Each individual ship is a junction of information as an element of a wider (regional, global) communication system. In analogy with present digital cyber systems, a ship can be represented as a floating flash drive, loaded with data: a container of hundreds of stories, locked in the material remains and documents. The *Amsterdam* offers an intricate case study on the relations between the physical elements of a ship, produced by archaeological research

of the wreck site, and the historical context of the production of the vessel in the city of Amsterdam. Through the availability of archival records from the VOC's business administration and the city of Amsterdam's demographic registers, the personal identity of the historical actors involved in the physical realization of the *Amsterdam*, can be linked to the archaeological dataset on the contextual and physical features of the artefacts from the ship and the ship itself. Although archaeology is a science which studies the past of societies and people, the data which generally are deducted from archaeological sites are often anonymous. Archaeological research basically results in abstractions of spatial or historical reality, like soil features, foundations, refuse dumps, structures, burials, fragmented artefacts or ecological and human remains. These data enable reconstructions of landscapes, buildings, the material culture of a society or, with current DNA and physical anthropological techniques, also the faces of individuals from the past. On the basis of these reconstructions and datasets of the tangible reality, archaeologists aim at concepts about the contextual qualities of the past society, on the social, cultural, economic and administrative systems of people. The case of the *Amsterdam* illustrates the capacity of maritime archaeology to go beyond the common level of anonymous archaeological data and to reach a level of biographical reality through the research of historic shipwrecks.

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