

Technology and Empire:
A Comparative Analysis of British and Dutch Maritime
Technologies during the Napoleonic Era

Bato (1806) and *Brunswick* (1805) Shipwreck Project
Summer Study Abroad
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Introduction

The Program in Maritime Studies at East Carolina University, North Carolina USA proposes an educational and research project mapping two early 19th century two shipwrecks in Simons Bay as part of a Summer Study Abroad educational initiative for post-graduate students specializing in maritime archaeology and history. The project will be conducted over a 5-day period from 27 July to 31 July, 2014. Further documentation will continue sporadically through August as part of Master's thesis research for a student, Ivor Mollema, interning with the Maritime Unit at Iziko Museum. The research team will conduct pre-disturbance mapping, photography, and videography, plus collect and analyze wood samples from the hulls in partnership with a research laboratory at Witwatersrand University in South Africa. The objective is to investigate ship construction choices, industrial limitations and environmental trends associated with Dutch and British shipbuilding during this period.

The Shipwrecks

A study of the Dutch vessel *Bato* (1806) and British vessel *Brunswick* (1805) wrecked in Simons Bay, South Africa presents a unique opportunity to compare and analyze the maritime shipbuilding technologies available to these two powerful seafaring nations during the Napoleonic Era (1792-1815). Preliminary research of the material culture record yields data about British and Dutch access and utilization of specific shipbuilding timbers, iron knees, metal sheathings, and variety of fastenings. Primary source documents like the log books, journals, ledgers, naval treatises and eye witness accounts contain pertinent information about the history of *Bato* and its role as a Dutch warship at the end of the Golden Age, an under-represented historical and archaeological theme.

As *Bato* and *Brunswick* wrecked within six months of each other, the ship's hull remnants provide the perfect opportunity to juxtapose the technologies available to British and Dutch naval forces and analyse the role that disparity played in the success of the British in empire building and the loss of most of the Dutch colonial possessions. Little archaeological work has been undertaken on Dutch naval shipwrecks to date. Most archaeological work focuses on VOC ships or coastal and fishing vessels from the Dutch golden age in the seventeenth century. The majority of these wrecks are located in Australia, the Netherlands, South Africa, and the United Kingdom. An in-depth study of *Bato* will investigate not only a Dutch naval

vessel, but also one with dating to the early 19th century. This time period is understudied in Dutch maritime archaeology. While some line drawings are available for Dutch ships of the line of the early 19th century, no such plans exist for *Bato*.

Much has been written about maritime technology in the latter half of the 19th century. Little is known, however, about the shipbuilding technology available during the Napoleonic Era. A juxtaposition of the technology used for the *Bato* and *Brunswick* provides an opportunity to compare the maritime and naval technologies of the time. Such a comparison will allow archaeologists and historians to gain a fuller perspective of the relative technological weight and advantages of nations in the early nineteenth century.

Beyond the gains in knowledge on the industrial trends in ship construction, this study will explore the naval landscape and mindscape of Simons Town as it relates to these two shipwrecks. The wrecks are well known to the diving community and serve as recreational dive sites. Preliminary research has revealed that *Bato*'s guns are exhibited in front of the Simons Town Post Office (Lindeque 2012). The Iziko Maritime Centre conserved *Brunswick*'s rudder (Harding 2013). It is now on display outside their museum. Both shipwrecks are located in Simons Town, the main base for the South African Navy (SAN) since the transfer of the base from the British Royal Navy in 1955. The area was used as a base by the British Royal Navy since its capture in 1806 (Rippon 1970). A continued naval presence for the past 200 years has had a profound impact on the cultural formation of Simons Town's built heritage and cultural traditions such as festivals, monuments and museums. This could facilitate an insight into community behaviour shaped by the unique historic naval role of the town.

Specific research questions for this project include:

Primary

- What shipbuilding technologies and timber types were utilized by British and Dutch naval forces in the early 1800s and did any of these technologies or wood choices provide an imperial advantage to either nation?
- How does the archaeological record of the two shipwreck case studies, *Bato* and *Brunswick*, and associated primary source documents reflect these advantages or disadvantages?

Secondary

- Why did nations develop, or not develop, different technologies when timber or specific timbers became scarce?
- To what extent was the technology of copper sheathing and iron knees used by the Dutch and British?

Tertiary

- How do the residents of Simons Town and the diving community perceive the shipwrecks and could the educational and recreational value of these sites be further enhanced with recommendations for responsible and sustainable public showcasing?
- What are the options to showcase and manage the shipwreck sites of *Bato* and *Brunswick* taking into consideration their historical context as sea power icons, the archaeological integrity on the seabed, and their place within the naval landscape today?
- How did the presence of European naval forces, in addition to African sailors and dock workers serve to shape the maritime landscape of Simons Town?

Literature Review

Primary Sources

A number of primaries of sources deal with *Bato*. Foremost amongst these are the journals in the National Archives of Netherlands. James John Melville, second in command of *Bato*, maintained a journal from 9 July 1802 to 12 May 1804. J. Harteke, first pilot, recorded events from 21 July 1802 to 8 January 1806. Daily notes on wind direction, weather, and distance travelled are recorded in these journals. The journals provide detailed information about certain historic events that took place the role of the ships. This is especially true of the burning of *Bato* described in Harteke's journal. These documents will provide historical background to the shipwreck that would otherwise have been unattainable.

The Dutch National Archive contains several documents relating to the Battle of Blaauberg. An entire officer's journal was discovered along with several maps. Examinations of these documents reveal that *Bato*'s crew was ordered to burn the vessel and retreat to the Hottentots-Holland Mountains. Further examination of these documents will undoubtedly provide a more complete historical background to the local warfare, power struggles, and events surrounding the destruction of *Bato*.

The Cape Town Gazette and African Advertiser was published in Cape Town from 1800 – 1826. The conditions of the capitulation of the Cape Province signed by the governor of the Cape, Governor-General Jan Willem Janssens, were published in its issue on 18 January 1806. Examination of other issues might reveal information about the days preceding the second occupation of Cape Town by the British. Copies of old issues are available in the National Library of South Africa.

Primary sources for *Brunswick* are located at the India Office Records administered by the British Library. Several ledgers, paybooks, and journals of *Brunswick* are available for viewing by the public. Analysis of these documents will help create a full account of *Brunswick*'s history.

Secondary Sources

Jeremy Black's *The British Seaborne Empire* (2004) and C. R. Boxer's *The Dutch Seaborne Empire* (1965) provide the basis of information required to analyse the colonial efforts

of both nations. While the later work only covers history up to 1800, this is not a strict limit and some information about later years is available. Black (2004) has an entire chapter dedicated to the rise of the British Empire during the Napoleonic Era. In both cases, the motives of each nation are thoroughly examined. There is little information, however, on the technological means each power had at their disposal.

Many scholars have focused their research on naval activity during the Napoleonic Era. Efforts of the British Royal Navy take centre stage in these narratives. Roy Adkins' and Lesley Adkins' *The War for All the Oceans* (2006) is an example. Occasionally, they discussed features of life unique to the British Royal Navy to provide a complete historical picture. Yet, no archaeological data is used to verify their claims. Primary documentation and secondary sources form the entirety of their references. While this provides a good historical overview, it is not specific enough to apply to Simons Town or the Cape Peninsula.

Robert Albion's (2000) *Forest and Sea Power* outlined the logistical issues faced by the British Royal Navy during the wars with Revolutionary and Napoleonic France. The author details the challenges of a global search for shipbuilding timbers. Albion focuses on Canada, the Baltic, and Asia as possible sources of timber. During the search for timber, Dutch markets were considered and approached several times, but this supply was soon cut off by the spread of Napoleon's influence. Dutch wood was sourced from the interior of north western Europe.

Archaeological research facilitated several typologies for ship's fasteners, iron knees, and copper sheathing. Bingeman et al. (2000) describes the history of copper and other sheathing methods in the Royal Navy and the Dutch navy. Information from this article will be useful for a dating purposes and a preliminary analysis of the copper sheathing remains of *Bato*. Michael Stammers (2001) created a typology of iron knees in wooden vessels which provides illustrations of various types, and dates them to the late eighteenth or early nineteenth centuries. The iron knees on *Brunswick* can be identified using these illustrations and archaeological measurements. Finally, McCarthy (1996) has expanded upon a typology of various fasteners used in wooden ships. Many fastenings are reported to be present and visible on both *Bato* and *Brunswick* and can be identified. How shipbuilders supplemented and complemented wooden ship construction with metal components may yield insights into composite design and industrial trends related to timber shortage or new innovations.

Study Area

Shipwrecks

Both sites are located within 200 m off Long Beach in Simons Town, South Africa. The respective locations are S34°10.998' E018°25.560' and S34°10.880' E018°25.607' (Wikitravel 2012a, 2012b). The sites can be accessed from the shore. In both cases, the bottom is made up of fine sand and some scattered rocks. The maximum depth for both sites is 5 m (Lindeque 2012).

Bato's remains cover an area about 50 m long and 8 m wide. The total site area is about 400 m². The debris field is centered along a North/South line and extends from S34°11.012' E018°25.558' to S34°10.985' E018°25.561'. The remains are orientated parallel to shore. A large quantity of corroded iron is located in the southern region of the site. Copper sheathing can

be seen in the northern portion of the shipwreck. The best dive conditions occur during winter. A shore entry to the site is recommended if the swell is low. The remains lie in a shallow and protected area of Simons Bay (Wikitravel 2012a).

Conditions on *Brunswick* are fairly similar. The debris field is about 58 m long and 17 m wide. Its area is about 800 m². It extends from S34°10.859' E018°25.625' to S34°10.884' E018°25.603'. The shipwreck is orientated away from the shoreline at a 45° with centerline at a heading of 215°. The ship's structure is broken apart and mostly buried (Wikitravel 2012)

Further Study Areas

Further areas of investigation include the cannons in front of the Simons Town Post Office. These were reportedly salvaged from *Bato* at some point after the wrecking event. The guns have been treated and are preserved for display in an outdoor environment.

The Iziko Maritime Center houses a number of artifacts that are related to either *Brunswick* or *Bato* (Jaco Boshoff 2014, elec. comm.). The most obvious of these is the rudder located at the Iziko Museum. A thorough archeo-metallurgical study confirmed that this rudder was once part of *Brunswick* (Harding 2013). The rudder's recorded measurements will be checked and the rudder analyzed for diagnostic features that may be used to compare it to examples of Dutch rudders at the time. In 1996, a general amnesty for the illegal salvage of artifacts was declared in South Africa (Jaco Boshoff 2014, elec. comm.). Many objects were handed in to the Iziko Maritime Center and are now stored there without sufficient documentation. In some cases, the provenance of the artifacts is known and may be useful in archaeological reconstruction of activities aboard these vessels.

Previous Work

Both *Bato* and *Brunswick* shipwrecks were subject to previous archaeological exploration. South African Heritage Resource Agency (SAHRA) researchers investigated *Brunswick* in 1994. The volumes are not available digitally and will be consulted upon arrival in Cape Town in mid-July. From 1996 – 1998, the Hungarian company Octopus Maritime Archaeology Research Association completed a detailed survey of *Bato*'s remains. An area of 47 m x 7 m was surveyed using the baseline offset method. A photomosaic and a detailed site map were also produced (Octopus 2000). Unfortunately, none of these results were published. The company was contacted, but no response was received. Alternative avenues are currently being explored to gain a copy of this report.

Brunswick was investigated during Project Sandalwood in 1994 and 1995 and as part of a Nautical Archaeology Society (NAS) training course. During this project, the identity of the shipwreck was confirmed. A combination of grid recordings, triangulation, and baseline offset measurements were used to create an accurate site plan of the remains. Chains, iron knees, construction, fasteners, dimensions, musket balls, glass, and ceramics were all used to confirm the identity of *Brunswick* (Harding 2013). Chris Kruyshaar, one of the principal investigators of Project Sandalwood provided a copy of the unpublished report on *Brunswick* (Kruyshaar 2014, elec. comm.).

In 2013, Jake Harding (2013) completed a Bachelor's Thesis at the University of Cape Town on the maritime environment surrounding *Brunswick*. Harding's work revealed that while the metal objects located within the shipwreck were stable, timber remains were damaged by mussels and starfish. Harding created a list of flora and fauna species found on *Brunswick* and crafted measures to continue monitoring the effects of natural processes on shipwrecks.

Relevance to Research Questions

Bato and *Brunswick* are perfectly suited to the research questions addressed in this study. *Brunswick* was constructed in 1792 in London as a 1,244 ton East Indiaman with 30 guns on board. As such, the ship was built to strict government and insurance standards to ensure a long life for the ship. The ship was on its sixth voyage to the Far East when it was captured by a French frigate and brought into Cape Town in August 1805. It wrecked while at anchor on 2 September 1805 (Harding 2013).

Bato was a 74-gun Dutch ship of the line built in 1784 in the Rotterdam shipyards. Its tonnage is unknown. *Bato* served as part of the East India squadron and travelled between Cape Town and the Dutch colonial capital Batavia, situated in modern Indonesia (Octopus 2000). Deemed unseaworthy, the hulk was used as a floating battery to defend Simons Town. The crew was ordered to burn it when the Dutch lost the Battle of Blaauwberg to the British and a new occupation became inevitable. *Bato* burned on 8 January 1806 (Clowes 1997).

Both vessels are contemporary to one another in construction and wrecking dates. As such, they provide a platform for the comparison of British and Dutch maritime technology of the Napoleonic Era. The wrecking events occurred within six months of each other, meaning that any newly retrofitted parts would be of the same time period. Both vessels were under complete or partial government control and will highlight the technologies each government chose to use when constructing its ships.

The other site locations will allow for a complete analysis of the ships' structures and their armament. *Bato*'s cannons will provide information on ordnance for the time period and the vessel's complement. The rudder at Iziko Maritime Center has potential to provide information not only on rudder technology, but also on *Brunswick*'s stern features. The collection of amnesty artifacts will also reveal diagnostic features about the ships.

Fieldwork Methodology

A project team comprised-of ECU students and faculty will conduct pre-disturbance mapping and data gathering on the shipwreck sites once a permit is issued by the South African Heritage agency (SAHRA). A local dive store, *Pisces*, located in proximity to the dive sites will assist with project logistics like boats and scuba tanks. The project will be conducted over a 5-day period from 27 July to 31 July 31, 2014. The team will comprise five divers who will participate in three tank dives per day. Further documentation will continue sporadically through August as part of a Master's thesis research for a student, Ivor Mollema, interning with the Maritime Unit at Iziko Museum. The research team will conduct pre-disturbance mapping,

photography, and videography, plus collect wood samples (1cmx1cm x1cm) from the hulls. Associate Professor Marion Bamford at University of Witwatersrand research laboratory in South Africa will analyze the samples.

The project will include tasks such as:

Tagging timbers temporarily for organizational mapping purposes with cable ties or small push pins
Photography and videography of specific construction components
Close examination of diagnostic features like copper sheathing, fasteners, and iron knees.
Compiling general scantlings of all visible timbers
Creating a preliminary reconnaissance map
Using a combination of baseline offset and trilateration to document the location of construction features and create either a full site plan or partial site plan of strategic portions of the site that answer research questions
Collecting wood samples of the keel, keelson, frames, outer and inner hull planking to identify wood species. All sample locations will be recorded, mapped and photographed.
Locating <i>Bato</i> 's rudder to compare with that of <i>Brunswick</i>

Another important task of the study is to photograph, inventory and analyze artifacts located at Iziko Maritime Center listed as originating from *Bato* or *Brunswick*. If this is established, the team will photograph and document the artifacts. Drawings will be completed if extra detail is needed for diagnostic purposes.

Analysis of Wood Samples and Publication

The results of the project will be written up as a MA thesis in Maritime Studies by ECU candidate, Ivor Mollema, a Dutch citizen. Dr. Lynn Harris, a faculty professor and formerly from Cape Town, South Africa will lead the project with Ivor Mollema as an assistant principal investigator. The team will actively seek opportunities to engage and share information about the project with local recreational divers, Simon's Town Museum, and Simon's Town Historical Society. Additionally, the entire team plans to deliver papers on the project at the Society for Historical Archaeology Conference in Seattle, WA in January 2015. This is an internationally conference well attended by maritime archaeologists from around the world. Articles on the shipwreck study will be submitted to academic refereed journals for publication. Dr. Marion Bamford, University of Witwatersrand archaeological botanist, has also been invited to co-publish with the team.

References

Albion, Robert Greenhalgh

2000 *Forests and Sea Power the Timber Problem of the Royal Navy, 1652 – 1862*. Naval Institute Press, Annapolis, MD.

Adkins, Roy and Lesley Adkins

2006 *The War for All the Oceans from Nelson at the Nile to Napoleon at Waterloo*. Abacus, London, UK.

Bamford, Marion

Associate Professor, Witwatersrand University,

<<http://www.wits.ac.za/academic/science/geosciences/staff/6412/bamford.html>> Accessed June 8, 2014.

Black, Jeremy

2004 *The British Seaborne Empire*. Yale University Press, New Haven, CT.

Boxer, C. R.

1965 *The Dutch Seaborne Empire: 1600 – 1800*. Alfred A. Knopf, New York, NY.

Bruijn, Jaap R.

1993 *The Dutch Navy of the Seventeenth and Eighteenth Centuries*. University of South Carolina Press, Columbia, SC.

Clowes, William Laird.

1997 *The Royal Navy, A History from the Earliest Times to 1900, Vol. 5*. Chatham Publishing, London, UK.

Davenport, T. R. H.

1977 *South Africa: A Modern History*, 2nd edition. MacMillan South Africa, Johannesburg, South Africa.

Harding, Jake

2013 *The Brunswick: An archaeological assessment of the wreck and its surrounding context*. Honors Thesis, Department of Archaeology, University of Cape Town, Cape Town, RSA.

Lindeque, Clare

2012 Dive Sites: HNMS Bato. <<http://www.learntodivetoday.co.za/blog/2012/12/12/dive-sites-hnms-bato/>> Accessed April 6, 2014.

Marcus, G. J.

1971 *A Naval History of England, Vol. 2, The Age of Nelson*. George Allen & Unwin Ltd., London, UK.

Octopus

2000 Bato Dutch Warship Exploration. <<http://deepresearch.hu/hu/project/bato.asp>> Accessed March 10, 2014.

Pisces Divers

Goods Shed, Main Road, Simon's Town, Cape Town, Ph: +27 21 786 3799
<<http://www.piscesdivers.co.za/dives/diving-in-false-bay>> Accessed March 10, 2014.

Program in Maritime Studies,

East Carolina University <<http://www.ecu.edu/cs-cas/maritime/>> Accessed March 10, 2014.

Rippon, Rt. Hon. Geoffrey Rippon

1970 South Africa and naval strategy. *The Round Table: The Commonwealth Journal of International Affairs* 60(239):303–309.

Turner, L. C. F.

1966 The Cape of Good Hope and Anglo-French rivalry 1778–1796. *Historical Studies: Australia and New Zealand* 12(46):166–185.

Wikitravel2012a Diving the Cape Peninsula and False Bay/HNMS Bato.

<http://wikitravel.org/en/Diving_the_Cape_Peninsula_and_False_Bay/HNMS_Bato> Accessed April 5, 2014.

2012b Diving the Cape Peninsula and False Bay/Brunswick.

<http://wikitravel.org/en/Diving_the_Cape_Peninsula_and_False_Bay/Brunswick> Accessed April 5, 2014.