



1. *Stacks of shell-edged earthenware plates, soup plates, and platters in situ on the Jacksonville Blue China wreck.*

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Cultural Artefacts and Trade Goods: the Odyssey Model

ELLEN C. GERTH

Enormous costs are amassed in the quest to conduct deep-sea archaeological field work, followed by additional costs for post-excavation conservation, research, curation, and publication of the results. With governments and public institutions around the world now facing a dire economic outlook, it is necessary to ask where will the funding come from to excavate and document shipwreck discoveries before they are entirely destroyed by natural and human forces? As exemplified by the Jacksonville Blue China shipwreck – the object of rescue archaeology – many wrecks are in imminent danger because of damage from fishing trawlers, dredging, and even Mother Nature [fig. 1]. Clearly, leaving these significant historical time capsules on the ocean floor is not the solution.

To help finance marine archaeology projects, Odyssey has proposed a model whereby rigorous science and commerce are compatible with the paramount goal of preserving underwater cultural heritage. According to this model, culturally significant artefacts are retained in a permanent study collection, regardless of monetary or aesthetic value. “Trade goods” on the other hand – mass-produced, duplicate artefacts – can be considered for sale only after thorough conservation, documentation, and study. Representative examples of these are housed in the

permanent study collection and made available for exhibit and further research.

In light of the growing economic challenges confronting museums today, a central question is whether a museum really needs or can afford to maintain large collections of similar items, as in the case of the over 14,000 artefacts recovered from the *SS Republic*, many of which represent hugely repetitive types. Where are the institutions to put all of these objects, and who is to pay for their continued care and maintenance? Few museums have the resources to assume such collections, and some, in fact, are deaccessioning multiple examples of the same or substantially similar objects in their collections.

Viable models for funding exploration include developing workable partnerships between both the commercial and public sectors – an approach that Odyssey has fully embraced and, more important, one that promotes sustainability in view of the larger and more central issue of saving our threatened cultural heritage.

High-tech deep-sea archaeology

Odyssey's investment in the development of deep-sea technology permits archaeologically tooled robotics to descend to depths of over 2000 metres to locate and record shipwrecks. The company's research vessel, *Odyssey Explorer*, is equipped with highly sophisticated computer technology, magnetometre and dual frequency side-scan sonar systems, and data recording capabilities. Essential to Odyssey's operations is the Remotely Operated Vehicle (ROV) used to assist in highly complex archaeological excavation and survey work. *ZEUS*, a 400 horsepower, eight-ton, advanced ROV, is configured for deep-ocean archaeological survey and recovery operations including inspections, photographic and video documentation, and artefact recovery [See fig. 1, Kingsley essay]. The most sophisticated ROV of its kind in the world, *ZEUS* is equipped with acoustic positioning gear, lights and video cameras, and two dexterous manipulator arms, which can carefully lift objects weighing over 250 kilograms. Also fitted with a silicone limpet suction-cup device, the ROV's manipulator can delicately retrieve artefacts as small as a coin without causing harm to the object.

Before excavation begins, Odyssey uses *ZEUS*'s high-resolution cameras to map the entire wreck site in detail, and stitches together thousands of photos to make a photomosaic [fig. 2]. The archaeologist then consults the photomosaic to plan and execute excavation steps. The photomosaic also serves as an invaluable tool for future study of the wreck site. During excavation work, which is supervised by a project archaeologist, the ROV employs transponders planted on the wreck site to identify precisely from where in three dimensions every artefact is recovered. Meanwhile, video cameras document the entire process. Shipboard technicians observe the events taking place hundreds of metres below on video screens, and document the ROV dive activities in a computer database that permits the comprehensive recording of the entire archaeological excavation [fig. 3].

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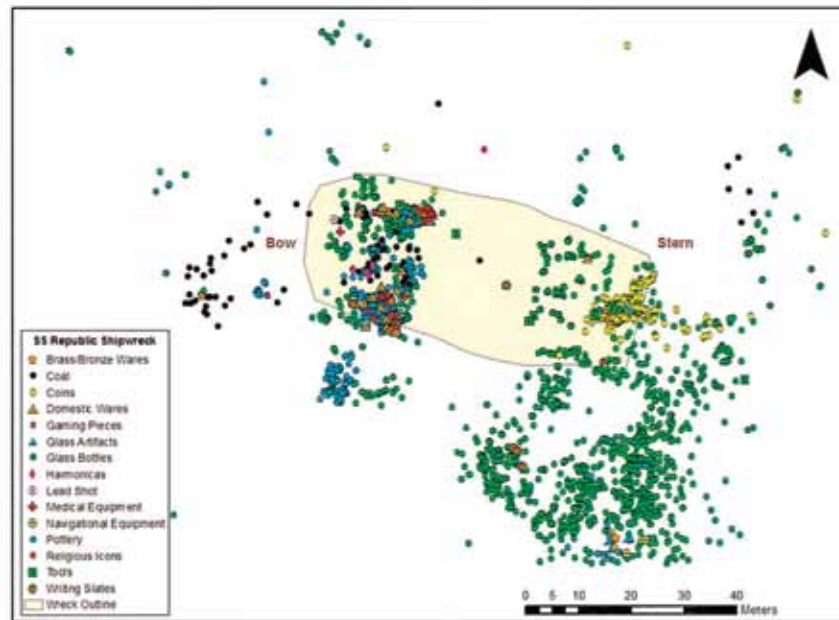
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2. Photomosaic displaying survey and excavation areas, and prominent archaeological contexts of the wreck of the *SS Republic*.



3. Example of a virtual grid imposed over a wreck site for contextual recording during excavation.



4. Site plan for the SS Republic excavation, showing distribution of recovered cargo. Post-excavation work entails the compilation of artefact statistics as documented in this site map.

Post-excavation protocols

To ensure optimal data procurement and retention, post-excavation planning begins from the start of the project and is as equally as important as the excavation. As soon as the artefacts are brought to the surface, first-aid conservation begins in the ship's conservation lab. The artefacts are stabilised to prevent corrosion and decay and undergo detailed documentation and photography. The artefacts remain in this stable shipboard environment until they can be brought to Odyssey's fully equipped, land-based conservation facility, where they will receive the attention of Odyssey's professional conservation staff or, in some cases, be sent to a specialised conservation facility. Depending on the material involved, and condition, the conservation team will apply more extensive conservation treatments. The entire conservation process may require weeks, months, or even years depending on the artefact's material composition, the salinity of the water from where it was recovered, and the length of time the object remained in the saltwater environment.

Upon recovery and throughout the conservation process, the artefacts are documented in comprehensive detail, and this information is maintained in a proprietary company database, which also contains the data and photos logged during the excavation work. The information in the database documents the entire history of the artefact, from in situ discovery through recovery, conservation, and study. The objects in the lab are analyzed, researched, and recorded by

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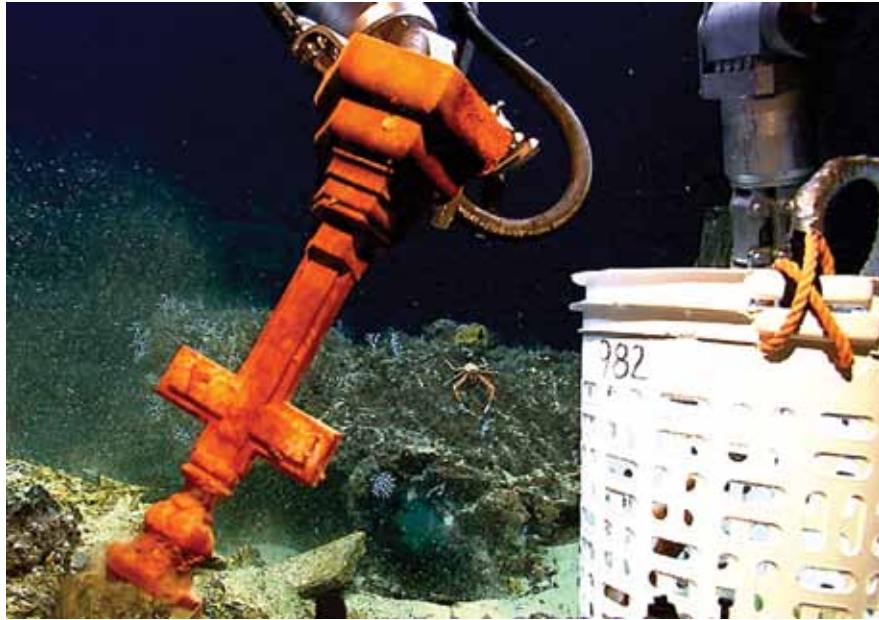
5. Travelling exhibition mounted by Odyssey Marine Explorations.

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archaeologists and researchers, and by other scholars with relevant expertise. Statistics are compiled and detailed site plans developed, which are later presented in scientific papers and presentations [fig. 4].

Disseminating information

Following conservation and study, the findings are disseminated to the broader public, and added to the current scientific, historical, and archeological record. Information is made public through a number of channels, for both academic and lay audiences. Odyssey's shipwreck discoveries are showcased in the company's travelling exhibition, which, at the time of this writing, features over 500 artefacts accompanied by high-resolution graphics, interactive programs, and interpretative displays [fig. 5]. The exhibition has traveled to seven museums and science centres around the United States and has been viewed by nearly one million visitors. Odyssey has also supported the development of smaller exhibitions presented in museums and institutions both within and outside the United States. In addition, the company has developed an online virtual museum, which presents images of its finds, on the seafloor and through recovery and conservation, via high-resolution photographs and catalogued data. Direct access to artefacts and other relevant materials is made available to bona fide researchers, scientists, archaeologists, and curators.



6. One of 18 pressed glass crucifix candlesticks recovered from the *SS Republic*. They will remain in *Odyssey's Permanent Study Collection* as "cultural artefacts".

Another avenue through which *Odyssey* shares its findings is educational enrichment, during and after student visits to the travelling shipwreck exhibition. Through museum workshops, conservation lab tours, school presentations, and other educational activities, *Odyssey* has made community outreach a priority. With continued interest in deep-ocean shipwreck exploration and marine archaeology, a number of teachers and professors across the country have worked with *Odyssey* to develop hands-on, project-based lesson plans designed to integrate with core subject areas including math, science, history, geography, language arts, and technology. The results of these initiatives are significant; they have engaged and motivated previously uninterested students, and promoted teamwork and collaboration essential to learning and improving test scores among disadvantaged populations. Additionally, plans are underway to launch a series of lesson plans on *Odyssey's* website. The opportunities derived from *Odyssey's* work in the deep ocean continue to grow with ongoing interest voiced by active participants in the educational community.

Cultural artefacts and trade goods

The stages essential to best-practice collecting and sharing of data are part of a dynamic and time-consuming process that requires extensive resources and, in *Odyssey's* case, the application of a robust and realistic commercial model. In the absence of government money or an academic budget to support its projects,

Odyssey employs a commercial model that distinguishes cultural artefacts from trade goods. "Cultural artefacts" are parts of the ship itself, which document naval architecture, ship design and construction, as well as life aboard the ship, defence of the ship, and navigation. These typically represent unique artefacts that are not necessarily duplicative or fungible.¹ "Trade goods" are things that were being transported on the ship as cargo or freight, or carried within the luggage of passengers for trade: these may be considered eligible for sale, based on scientific-value-based criteria.

Relevant to this distinction is the number of artefacts recovered from a wreck site. For example, the excavation of the *SS Republic* by *Odyssey* during 2003 and 2004 produced over 14,000 artefacts, including one crate of 96 religious objects.² The crate contained seven duplicate examples of French porcelain kneeling angels, low-value products both in 1865 when the ship foundered and today on the antique collectors' market. However, given how few existed at the site and their religious significance, these objects were defined as "cultural artefacts" and will remain in *Odyssey's* permanent study collection [fig. 6].

Trade goods, items carried on board as freight, whether in the form of specie, bullion, bottles, or ceramic wares, are typically characterised by large quantities of machine or handmade objects that are nearly identical. These often reflect items that are already widely collected by the private sector, and are well-documented and published.³ In determining whether sale of the duplicate objects is appropriate, *Odyssey* considers the number of similar objects found on the wreck site, and the number of similar pieces available in collections throughout the world. If the item is ubiquitous and virtually identical pieces can be easily found for study, it may be of little scientific value to keep the entire collection together.

An example is the excavation of the *SS Republic*, which yielded largely mass-produced cargo items intended to help stimulate the American South's post-Civil War economy, 8000 of which were relatively common and well-documented glass and stoneware bottles. Amongst the assemblage, which included patent medicines, bitters, inks, and condiments, hundreds existed in multiple and repetitive quantities [fig. 7].⁴ Similar repetition was evident in the over 51,000 American coins recovered from the wreck site [fig. 8].⁵ There are countless similar coins already in United States museums (and often in storage); very little can be learned about mid-nineteenth-century American culture from these recovered coins that has not already been extracted from similar coins already in public collections. Therefore, the historical value of keeping the entire collection together would not equal the scientific and cultural value gained from the future deep-ocean archaeological projects that *Odyssey* could fund from the sale of the coins.

With the *Odyssey* model, such sales strictly conform to standards described above, and occur only after the detailed publication of all coins, which would include data detailing coin subtypes, die forms, dates, and mints.⁶ Furthermore, as historical archaeologist Ivor Noel Hume astutely observes, "the sale of duplicate artefacts



7. Drake's Plantation Bitters bottles. The 150 Drake's bottles recovered from the SS Republic wreck site are defined as "trade goods".



8. Gold coins in the stern area of the wreck of the SS Republic. Over 51,000 American coins were recovered from the site.

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generates historical and archaeological awareness in the minds of the new owners and is far more constructive than storing everything away in a museum basement".⁷ Of particular importance in the current debate is the understanding that, as outlined above, trade goods will only be considered for sale after extensive documentation and recording is completed. Representative samples of each type are retained in perpetuity in Odyssey's permanent study collection and made available to scholars and the public through research opportunities and exhibit programs.

Public-private partnerships

Significantly, Odyssey's cultural artefacts and trade goods model has opened opportunities for the company to partner with governments to recover their underwater cultural heritage. Many nations of the world realise the challenges of managing underwater heritage, and they share Odyssey's interest in managing this heritage. With this in mind, Odyssey invites governments that may have a cultural interest in its projects to become involved. This benefits governments and institutions that may be unwilling or unable to invest the necessary funding and resources on such projects. In some cases, as with the exclusive partnering agreement between the United Kingdom and Odyssey for the archaeological excavation of HMS *Sussex*, the company is in partnership with the government for the preservation and study of its cultural heritage.⁸

In this model, Odyssey undertakes the financial risk in funding the shipwreck search, archaeological excavation, and post-excavation conservation. If the project is successful, the partnering government receives the cultural heritage artefacts, with the stipulation that Odyssey may display some of the artefacts. The government can also receive income from the project by choosing to deaccession the trade goods. Odyssey is subsequently paid by the partnering government through trade goods revenue, or as a private contractor. In addition to current agreements with the United Kingdom, the company is in discussions on initiatives with other governments, and hopes that new parties will recognise that Odyssey provides a real, workable solution to protecting their underwater cultural heritage.

In situ preservation versus excavation

A major argument in favor of preserving shipwrecks in situ – an ideal of cultural resource management promoted by some archaeologists – is the notion that deep-ocean sites below seventy-five metres will achieve a state of relative equilibrium in the depths unaffected by wave action and other forces of nature.⁹ However, the Jacksonville Blue China wreck presents a striking example of how in many cases in situ preservation is not an appropriate management option, and in fact, would lead to accelerated site destruction in heavily fished areas such as off the southeast of the United States in the Atlantic Ocean's Gulf Stream.

During the survey for the wreck of the sidewheel steamer *SS Republic*, Odyssey Marine Exploration discovered the remains of a merchant vessel, Site BA02, located at a depth of nearly 370 metres, 70 nautical miles off Jacksonville, Florida. The wreck was brought to Odyssey's attention by fishermen, whose nets had been snagging ceramic wares over the last forty years. A small selection of artefacts was recovered in 2003 and Odyssey brought the wreck into the jurisdiction of the U.S. Federal Court with an Admiralty "arrest" to allow any legitimate claimants to make a claim. Odyssey revisited the site in 2005 and discovered fresh damage from dragging of trawl nets; it recorded the current context and collected some objects in order to identify and date the site before the wreck became even more extensively disturbed and data lost [fig. 9].¹⁰



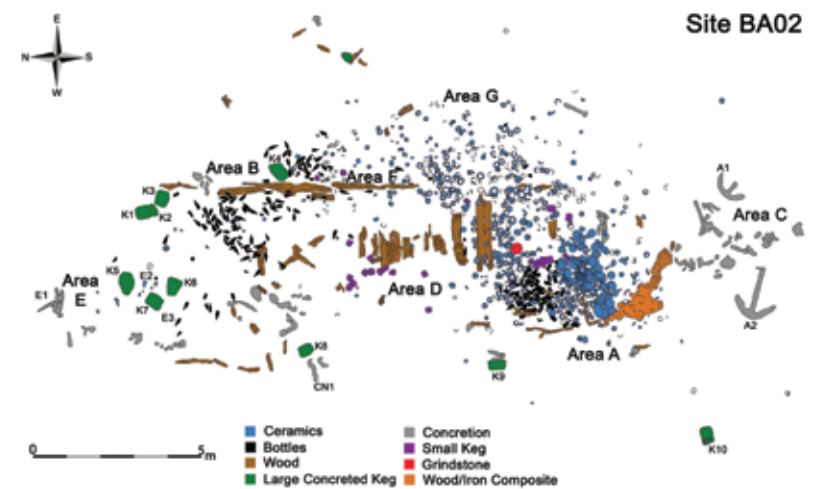
9. Photomosaic detail from the Jacksonville Blue China wreck showing lines of ceramics apparently cleared by fishing trawler doors running north to south across the site.

As a result of these investigations by Odyssey, and subsequent research undertaken by the company, much has been learned about the Jacksonville Blue China wreck. It is thought to represent the remains of a small American coastal schooner that was transporting a consignment of British ceramics manufactured in Staffordshire in the 1850s alongside American glassware and building materials. The most plausible theory based on artefact analysis is that the ship was lost in a hurricane, with the storms of September 1854 the most likely culprit. Additionally, research suggests the vessel was a two-masted schooner typical of the East Coast's thriving regional maritime trade based in New York.¹¹ Consisting largely of British ceramic wares including shell-edged and dipped wares, underglaze painted wares, and

ironstone china, this rare discovery, which otherwise would have been lost to the abyss, presents valuable primary data [figs. 10, 11]. No comparable assemblage has been found on the wreck of any other merchant vessel off America. The ultimate research value of the collection lies in its contextual relationship as a closed single deposit of mid-nineteenth-century Staffordshire imports that reflect purchasing and manufacturing patterns as well as cultural tastes and consumer habits of middle-class America within a very narrow timeframe.¹²



10. Photomosaic detail of the bow end of the Jacksonville Blue China wreck. Structural remains of the ship helped protect ceramics and bottles in this part of the wreck from trawler damage.



11. Site plan of the Jacksonville Blue China wreck site showing concentrations of ceramics (Area A) and extensive pottery scatters (Area G).

A proposal

A central question in the debate about the value of commercial archaeology is whether a museum really needs, wants, or has the resources to care for large duplicative collections such as the 8000 bottles or 51,000 American coins recovered from *SS Republic*.¹³ As succinctly noted by one museum professional, “if a hoard of 100 coins dates a stratum in an archaeological section, how many of these coins are needed to act as proof, and how many for the purpose of public communication?”¹⁴ A similar argument could be applied to other collections consisting of multiple, similar objects whose sheer quantities often exceed what is necessary or germane to the museum’s purpose or to furthering knowledge that would benefit the public.¹⁵

As exemplified by the Jacksonville *Blue China* Shipwreck, in situ preservation is not always a viable strategy. In many areas, the heavily trawled Gulf Stream for instance, this may, in fact, guarantee a site’s destruction. Clearly, the longer a ship remains below the sea, the greater the threat of its deterioration, and ultimately, the wreck will offer little historical and archaeological value. The archaeological community does not have the resources to keep up with the shipwreck discoveries that are being made regularly in both shallow and deep waters by divers, fisherman, and other marine-related operations. One solution is to encourage the efforts of commercial shipwreck exploration to operate in a manner that is consistent with best practice archaeological and scientific principles. Of equal importance is the support and implementation of commercial and public partnerships, as presented in the working model Odyssey has established with the United Kingdom. This partnering approach offers a sustainable paradigm for ensuring that our quest for knowledge about the past and the preservation of that knowledge for future generations is made possible.

Given the enormous costs involved in shipwreck archaeology, particularly in the deep ocean, including post-excavation conservation, documentation, and publication, permitting the sale of multiple recovered similar artefacts – trade goods – via well-defined guidelines is one viable model to ensure that archaeological efforts continue unhampered by funding constraints. In light of the growing economic challenges confronting museums today, understanding the current conditions driving museums, including deaccessioning efforts and refined collecting policies, provides a logical backdrop for proposing Odyssey’s Cultural Artefacts and Trade Goods model. Future initiatives should strive to unite seemingly disparate parties with the underlying mission to best save our underwater cultural heritage while serving the good of the broader public.

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1. Stemm and Bederman 2011, p. 31.
2. Cunningham Dobson et al. 2010b; Tolson and Gerth 2010.
3. Stemm and Bederman, 2011, p. 31.
4. Cunningham Dobson et al. 2010b; Gerth 2006.
5. Bowers 2010.
6. Ibid.
7. Ivor Noël Hume, personal communication, 14 July 2011.
8. The *Sussex* was a British warship of historic significance that sank off Gibraltar in 1694. See essay by Sean Kingsley in this volume, and HMS *Sussex* Deep-Ocean Marine Archaeological Project Plan <http://www.shipwreck.net/AbridgedSussexProjectPlan.pdf>
9. Tolson 2010.
10. Gerth et al. 2011.
11. Ibid.
12. Ibid.; Tolson et al. 2008.
13. Bowers 2010; Cunningham Dobson et al. 2010b.
14. Simon J. Knell, “Altered Values: Searching for a New Collecting” in *Museums and the Future of Collecting*, edited by S. J. Knell (Aldershot, Hampshire, 2004), p. 26.
15. Ibid., p. 28.