

Queen Anne's Revenge
Shipwreck Project



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**Bronze Bell Recovered Upon Discovery from
Shipwreck 31CR314, *Queen Anne's Revenge* Site**

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Introduction

A bronze bell was among the first artifacts recovered from 31CR314 and was hoped to be the ship's bell from which a positive identification of the shipwreck could be made. When cleaned, the bell revealed an inscription "IHS MARIA" and an apparent date "ANO DE 1709" (later corrected to 1705). Further research was begun by Christopher Lange, a project intern during the summer of 2000, and continued by Joseph Wilde-Ramsing. Collectively, Lange and Wilde-Ramsing, working on behalf of the *Queen Anne's Revenge* Shipwreck Project, contacted Spain's leading bell experts to enhance our understanding of the bell's origin and function. Those who responded were:

- Joaquin Diaz, Fundacion, Joaquin Diaz of Valladolid, Spain
- Francesc Llop i Bayo, Gremi de Comaners Valencians, Valencia, Spain
- Felix A. Lopez and Antonio Martin Costea, Spanish National Center for Metallurgical Research, Madrid, Spain
- Campanas Quitana, Palencia, Spain (anonymous)

In 2006 this author corresponded with French bell expert Alain Jouffray, Campanologist /Director of the Institut Europeen d'Art Campanaire.

Connie Mason, collections manager at the North Carolina Maritime Museum, assisted in recording the true tone of the bell's ring which was then analyzed (Table 1) by Francesc Llop I Alvaro (2006). Dr. James Craig analyzed samples recovered from a small boring drilled into the bell's interior. Collectively, this information was reported by Wilde-Ramsing and Wilde-Ramsing (2002) and portions of that report are used verbatim in this report.

Artifact Description

Weight:	21 lbs (9.54 kg)
Base diameter:	8.27 in (21 cm)
Base height:	8.66 in (22 cm)
Handle height:	4.13 in (10.5 cm)
Crown diameter:	4.37 in (11.1 cm)
Rim width:	.87 in (2.2 cm)
Body composition:	81% copper, 19% tin alloy
Clapper:	iron (epoxy cast taken due to corrosion)
Upper Inscription:	IHS MARIA
Lower Inscription:	ANO DE 1705
Tone:	G sharp

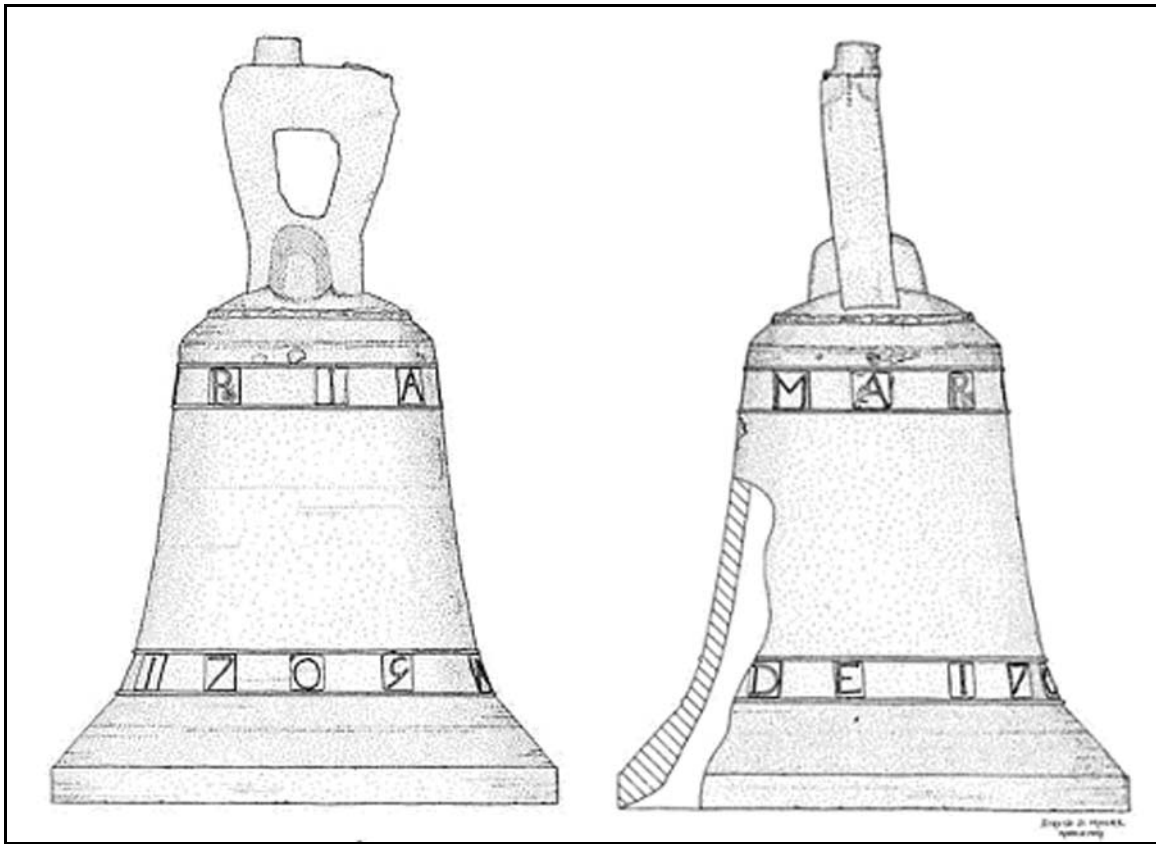


Figure 1. Front and Side view of Bell (David D. Moore illustrator)

Bell	Note	Frequency
Prime	G3 -48	1525
Tierce	C4 +5	2100
Quinte	F4 -25	2753
Nominal or Octave	A4 -25	3469
Hum (under octave)	C3 -30	1028

Table 1. Analysis of bell sound (Alvaro 2006)

Historical Context

Bells represent one of the most symbolic and socially important artifacts man has ever made. From the earliest days of metallurgy, bells have been among the most prized personal possessions, and were carried as cargo in Phoenician, Greek, and Roman ships. Romans brought about the wide distribution of bells, first as a call to baths, and then after Constantine adopted the faith in the early fourth century, as a symbol of Christianity (Spear 1978:14).

The spread and use of bells continued throughout Europe, tied to the hierarchy of parishes and later to each community. Bells regulated the life of entire villages, for they not only announced

routine daily activities, they tolled for weddings, deaths, and most importantly, alarms threatening the community. The function of bells for landsmen would imply their similar value aboard ships. Mariners were faced with the same ideological and social needs. The first references to “ships belles” came out of England and the first account is from the inventory of Henry VII’s *Henri Grace a Dieu* (1485) (Oppenheim 1896: 36-39). The site of the *Mary Rose*, built in 1510 and lost in 1545, produced a ship’s bell (The Mary Rose Trust 2007), which appears to be one of the earliest examples from an archaeological shipwreck site. By the seventeenth century, bells were well represented in historic documents, paintings and ships’ models.

Generally, a ship’s bell was carried on the forecandle where they were hung on special brackets called galleys or belfries. While this location showcased the bell, more practically it was well positioned to warn approaching ships in times of fog or distress. A smaller bell often hung in the stern near the helmsman where it was in a more advantageous position to serve shipboard functions by signaling watches, prayers, meals, and at times, alarms of danger. Protocol for bell signals has been a tradition since at least the seventeenth century when, “The hourly or half hourly glasses used on board were turned by the sentry, who struck the ship’s bell at every half hour just as on shipboard today” (Chatterton 1918:215).

Little information exists about where ship’s bells were made and by whom, and it is uncertain whether those who made bells for ships followed the general practice of on-site production or cast them in established foundries. It is possible that bells cast for government purposes were done at Royal armories as a by-product of weapons production. Regardless of their casting location, bells were nearly always cast with an inscription, usually around the rim (Camp 1988:30). Ship’s bells recovered from shipwrecks dating to the sixteenth through mid-eighteenth century are often inscribed with vessel name and date of bell casting, which normally coincides with vessel construction. This is not always the case: the 1668 bell from the English warship *Dartmouth* (1655-1690) may represent a major refit (Martin 1978), while it is uncertain why *Henrietta Marie* (1697 –1700) carried a bell dated 1699 (Moore 2005 personal communication).

A cursory review of archaeological recoveries and historical references suggest that ships’ bells inscribed with a vessel name was an English practice at the time the bell from 31CR314 was cast. While bells may have been carried aboard most naval and merchant vessels throughout Europe to regulate shipboard life, it does not appear that non-British ship’s bells were normally inscribed with the ship’s name prior to the nineteenth century (Wede 1972; La Flour 2004)

In what may be coincidental, a bell similar in size and shape as the IHS MARIA bell was recovered from one of the 1715 Spanish fleet shipwrecks off the coast of Florida. It was inscribed with another typical religious inscription for bells of the period “Soli Deo Gloria” and dated of “1705” (David D. Moore personal communication 2003). Interesting enough, another bell displayed

in Sweden's Statens Sjöhistoriska Museum reportedly taken from an admiralty vessel was inscribed "Soli Deo Gloria. Anno 1667. Me Fundebat Johan Meyer. Holmiae." The caster, Johan Meyer, was a Swedish bell maker from Stockholm (Wede 1972:56). While associated with ships, it is uncertain whether either of these were ship's bell, or perhaps miscellaneous cargo or a personal possession.

Discussion of IHS MARIA bell

The bell recovered from 31CR314 is a common "cow bell" type with a single handle or argent, called a "git top" or "peg argent" which is typical for small stationary bells (Joaquin Diaz, personal communication 2000 and 2002; Felix A. Lopez and Antonio Martin Costea, personal communication 2002). The iron clapper was lost due to galvanic action. An epoxy casting made of the concretion cavity provides an approximation of the original size and shape of the clapper. The casting measures of 4.3 in (11cm) and a width of 1.2 in (3 cm) tapering to .67 in (1.7 cm) near where it was attached. A small channel at the top of the inner portion of the bell served to secure the clapper.

Consisting of 81% copper and 19% tin alloy, the bell was made of a bronze alloy characteristic of "bell metal" commonly used during the eighteenth century in Spain. While the bell may have been cast at an arms (*barquebus*) factory, it more likely was made at a small, independent bell casting operation located in the Cantabria region of northern Spain (Felix A. Lopez and Antonio Martin Costea, personal communication 2002). An interesting feature of the IHS MARIA bell is the presence of a casting sprue or pour hole still attached to the handle. This suggests an unfinished or poorly crafted product, although it is not an uncommon occurrence on historic bells since this part of the handle was concealed by its hanger (Diaz 2004).

The single block lettering of the inscription can be classified as Capital Humanistic, which was common in the eighteenth century. The inscription IHS MARIA is Spanish and translated "Jesus and the Virgin Mary", was often used on bells cast during the seventeenth and eighteenth centuries in Spain. There is a possibility that the bell is Portuguese. The uneven spacing of the letters, particularly the "IHS" and "ANO" can be attributed to the caster's difficulty in getting the letters straight or carelessness. It may also indicate illiterate bell makers where economics not art is the driving force during production. The numeral "5" in the inscription "1705" production date represents a writing form that was common in Spain at the beginning of the eighteenth century (Llop I Bayo, personal communication 2002; Joaquin Diaz, personal communication 2002; Alain Jouffray, personal communication 2006). Considering the bell's inscription, size and shape it most likely represents a small Spanish bell typical of the seventeenth and eighteenth century.

Archaeological Context

The bronze bell, QAR 017.000, was collected from 31CR314 during the initial dive when it was discovered on November 22, 1996. While its exact position was not recorded, it can be assumed to have come from the central portion of the site near the exposed mound giving no clue as to whether it was in use or carried as cargo. While the presence of the bell raises more questions than can presently be answered, its recovery and cleaning provided an early indication of the period of vessel service for the remains at 31CR314. Eventually with additional archaeological and historical research, the place this unique artifact held as the vessel sailed the Atlantic seaboard may come to light and thus provide additional clues concerning the nature and behavior of those who sailed the ship.

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