



Integrated geophysical research of Bourbonic shipwrecks sunk in the Gulf of Naples in 1799

Gaia Mattei ^{*}, Francesco Giordano

Dip. di Scienze e Tecnologie, Università Parthenope di Napoli, Napoli, Italy



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ABSTRACT

In 1798, Ferdinand IV of Bourbon, King of Naples, lost the battle with the French for control of the Papal States and was obliged to escape from Naples. On January 9, 1799, Admiral Campbell sank the ships that remained in the port due to a lack of crews, by setting them on fire on the orders of Admiral Nelson. This action was taken to prevent the remaining ships from falling into the hands of the French, who were about to enter the city.

This article describes the results of an integrated geophysical survey undertaken to detect the warships sunk in 1799. The initial study area was broadly defined by reference to a historical map of 1828, which purported to show the position of the shipwrecks.

The geophysical methods employed consisted of the seismic-stratigraphic method (sub-bottom profiler), the morphologic method (acoustic image—side-scan sonar) and the magnetometric method. The objectives of the surveys were to accurately locate the shipwrecks and to characterize the seabed sediments and wrecks themselves in order to understand the process of the sinking of the vessels.

Two of the shipwrecks, the St.Gioacchino and the Pallade vessels, were located using these non-invasive methods, partially buried within soft seabed sediments. Future research of the sites will be undertaken by appropriately qualified underwater archaeologists who will collect field data that can build on and verify the results of these surveys.

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1. Introduction

In November 1798, Ferdinand IV of Bourbon, King of Naples, ordered the French to clear the Papal State and, with his Army, entered Rome as a liberator. The French, under the command of General Jean Étienne Championnet, won Rome back and moved towards Naples. Admiral Nelson, an ally of the Bourbons, sailing his flagship Vanguard, organized the escape of Ferdinand and his family to Sicily. They left on December 26, 1798, escorted by part of the Neapolitan fleet (Colletta, 1861). Most of the fleet, due to the lack of crew members, remained in Naples under the command of Marquis de Nisa, Admiral of the Portuguese fleet and ally of the English. He received from Nelson the order to sink those ships that could not sail in case the French entered Naples. On December 28, the Frigate Pallade was scuttled by enlarging existing leaks. On January 1, 1799, Portuguese Admiral de Nisa left and ordered the English Admiral Campbell, working for the Portuguese, to set fire to the ships. On the night between January 8 and 9, 1799, even though the French were still far from Naples, orders were given to set fire and sink all the remaining vessels: “Tancredi,” “Guiscardo” and “St. Gioacchino,” the corvette “Flora” and the gabarra “Lampreda” (Radogna, 1978).

The purpose of this research is to accurately locate, for the first time, the warships sunk in 1799 off the port of Naples and to distinguish them from other objects, such as naval cannons and hulls, fragments that have accumulated in almost three thousand years and now partially covered by mud on the seabed. For this study, we have used geophysical methods (Quinn et al., 2002; Quinn, 2006; Arnott et al., 2005). According to Duck (1993), Blake (1995) and Giordano (2010), the side-scan sonar is a powerful system for archaeological investigation because it can image structures and artifacts elevated from the seabed. Side-scan sonar, sub-bottom profiler (Quinn et al., 1997, 2002; Bull et al., 1998), single- and multi-beam echo sounder and magnetometer (Arnold, 1981, 1996; Passaro et al., 2009) are frequently used today for the localization and characterization of shipwrecks (Breen and Barton, 1998; Quinn et al., 2002; Plets et al., 2008).

Until this work, the only documentation of the position of the shipwrecks of the Bourbonic fleet in the Port of Naples was an old map (scale 1:5000), dated to 1828 and entitled “Plant of the City of Naples and its surroundings delineated and engraved in the Royal Topographic Factory of War” (Carola, 1999).

The aims of the integrated seismic-stratigraphic (SBP), morphologic (SSS) and magnetometric (MAG) surveys have been to locate the precise position of two Bourbonic shipwrecks, approximately located from the ancient map, and to characterize, the lithology and morphology of the

^{*} Corresponding author at: Centro Direzionale Isola, C4, 80143 Napoli, Italy. Tel.: +39 0815476635; fax: +39 3471231700.

E-mail address: gaia.mattei@uniparthenope.it (G. Mattei).

seabed study area, in order to understand taphonomic processes associated with the wrecking of the vessels.

2. The study area

The positions of the shipwrecks according to the historic map are shown in Fig. 1A. The depth of the sea in the research area is between 30 and 40 m (Fig. 1B). Using the results from previous studies (Milia et al., 1998; Sbrana et al., 2007) and through surveys carried out with a powerful sub-bottom profiler, EG&G Uniboom and Dseismic acquisition platform (Corradi et al., 2003), the acoustic signals of the superficial facies were identified in the area around the shipwrecks (Fig. 1C). This facies is

typical of the sediment cover and is made up of fine soft sediments, with low reflectivity (Fig. 1C).

3. The localized shipwrecks

The shipwrecks identified in this study are the San Gioacchino and the Pallade, and their precise position has been corrected with respect to the location recorded on the historic map (Fig. 1A).

The vessel San Gioacchino was purchased by the Bourbon Navy in Malta in 1784 (Carola, 1999; Radogna, 1978). It was armed with 64 weapons, of which 26 were 24-caliber guns, 28 were 12-caliber guns and 10 were 6-caliber guns. According to Carola (1999), these guns

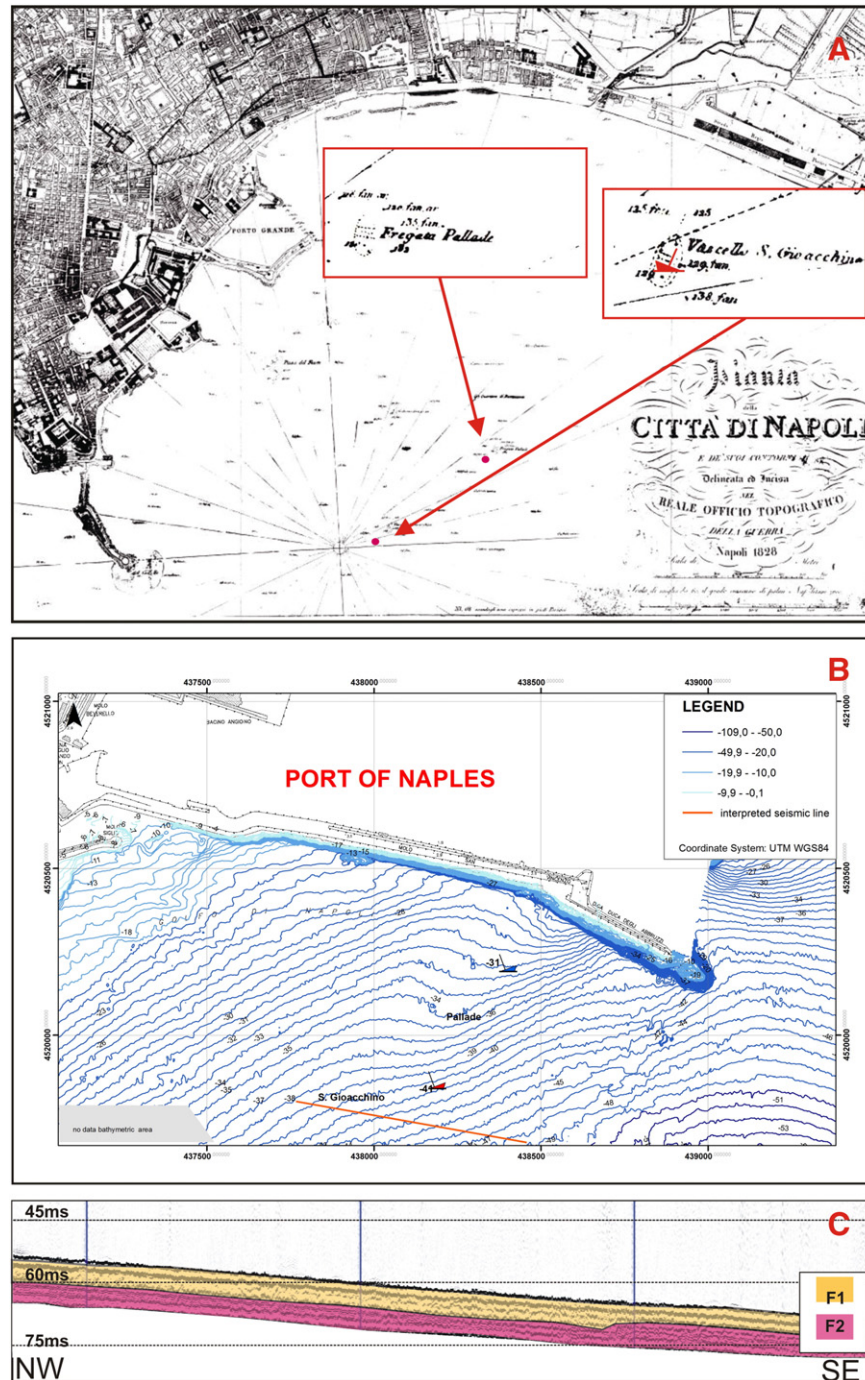


Fig. 1. (A) Historical chart for the year 1828, indicating the approximate locations of the San Gioacchino and Pallade wrecks. (B) Study area chart with the precise position of shipwrecks located by geophysical surveys: T12 is Pallade Fregate and T06 is S. Gioacchino Vassel. (C) Seismic interpreted profile: F1 showing chaotic sediments with low reflectivity; F2 sediments with regular stratification and high reflectivity, are representative of more compact deposits, which are probably of volcanic origin.

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