Special Reports

Training in Underwater Archaeology in France

by Norman C. Nicolas

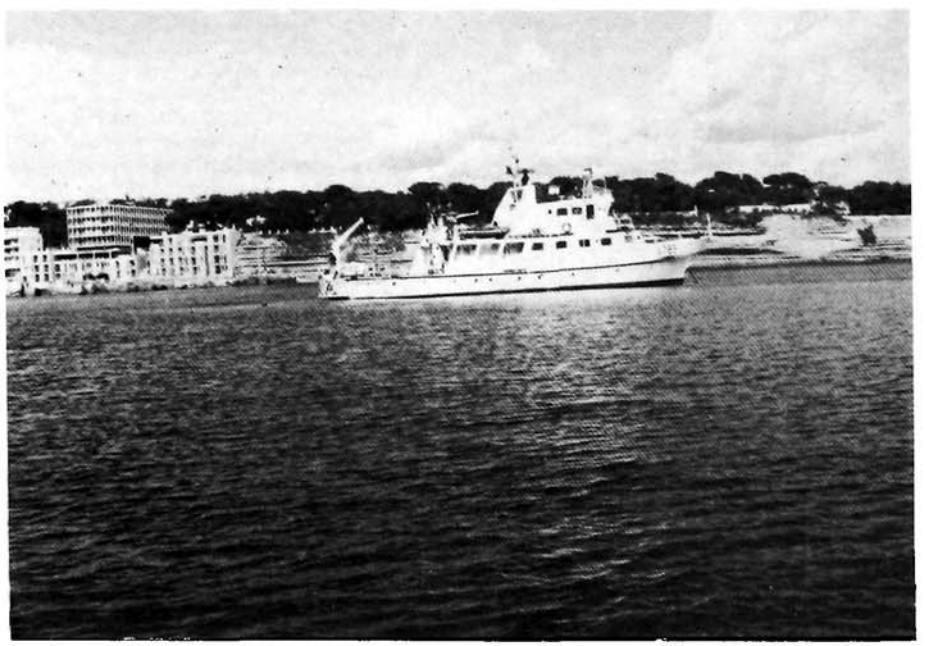
On the 27th of May 1984, this writer boarded the research vessel "L' Archeonaute" to participate in the archaeological excavation of ancient shipwreck sites submerged in the coastal waters of France. For a period of four months, while benefiting from a scholarship granted by the French government, this writer took part in the excavations under the supervision of the "Direction des Recherches Archeologiques Sous-Marines" (D.R.A.S.M.) of the Ministry of Culture. Such participation in turn served as a form of training in underwater archaeological research. Although much of the attention was focused on the technical aspects, there were not a few instances when the foundations of the methodologies applied and prehistorical background were vigorously discussed in order to get a better comprehension of what the study of marine archaeology necessitated.

Several sites were visited. Among the more significant ones were Plage d'Arles, Grand Ribaud D, Malban and Carry-le-Rouet. Their specific characteristics and the manner by which they were studied will be discussed in this report.

At the forefront of DRASM's operations is Director Patrice Pomey who specializes in naval architecture. Assisting him are two other archaeologists, Mssrs. Luc Long and Michel L'Hour. Providing the much needed technical support are Mssrs. Andre Vincente and Guy Dauphin, Chief diver of operations. Aside from this five-man team, other private individuals and government agencies like the "Marine Nationale" are designated by the Ministry of Culture to help in the excavation. Collectively, the diversity of the people involved in the researches plus the complexities presented by the physical condition of the wreck-sites provided an atmosphere that was conducive to learning the basics of the discipline.

L' Archeonaute

The research vessel "L' Archeonaute" is a 30 m boat which has been in the service of the DRASM



The research vessel L' Archeonaute at the Carry-le-Rouet site. Underneath the orange bouys lies the wreckage estimated to date back to the 2nd Century A.D.

Norman C. Nicolas underwent a four-month training on underwater archaeology in France mid of 1984. He is a staff member of the National Museum, Philippines.

for most of its projects for the past seventeen years. The vessel has five cabins which can accomodate 16 persons including the crew from the "Marine Nationale" who are in charge of navigating and maintaining the boat. It holds a photo laboratory, divers quarters, a decompression chamber and a large storage capacity on its lower deck for keeping the dredging devices and other equipment. On every mission, the boat carries with it two inflatable boats each powered by an outboard motor.

The trainee is taught how to operate a motorized inflatable rubber boat.

The Sites

Plage D' Arles. The site of Plage D'Arles is located some 100 kms northwest of Marseilles' central district (at Vieux Port where the L' Archeonaute docks) and lies at a depth of about 10 meters. More often than not, visibility in the area is very poor apparently caused by its proximity to the mouth of the Rhine river.

The shipwreck is believed to be of Dutch origin and is assumed to have sunk sometime in the early 18th century. This assumption was based on the number "1713" inscribed on some of the lead ingots found on the site. Other finds included wooden barrels containing iron bars of excellent quality; iron plates; cannon and musket balls; pieces of ceramics in the form of pipes and probably plates.

The trainee (left) is being instructed by Mr. Guy Dauphin on the manner of cleaning and maintaining diving gear and dredging equipment after a dive.

Work on the site consisted mainly of dredging the rear section of the wreck. For two weeks, archaeologists cleaned sand and mud off the cavity of what was believed to be a portion of a bilge pump. With the use of a water dredge, the cavity was worked on to have a better idea of the manner of construction of the pump. But owing to poor visibility, (ave. of 10 - 15 cm) clearing that section was practically done by feeling with the fingers. However, there were a few instances when visibility permitted the photographers to take clear shots of the entire surface of the wreck.

Grand Ribaud D. According to Antoinette Hesnard, chief of the mission, the finds in the wreck at Grand Ribaud D indicate that the vessel could have been a Roman ship which sank during the 1st or the 2nd century A.D. The site is located near the coast of the Province of Toulon and under 21 m of water. Here researchers found large pieces of "Dolia" and broken amphorae of Pompeian clay among the rocks about 100 m from a small craggy island.

So much had to be done here on a span of six weeks that on any given day as many as 20 individuals (archaeologists, professional underwater photographers and divers, and student-apprentices) pulled their resources together in working on the site. The mission chief had certainly a difficult time getting the group excavation organized. However, it was not only she who was presented with a problem. The cook also had his hands full preparing for the whole assembly in addition to the crew. Likewise, the divers had not found the work easy either. While dredging or recording data, it was required of a diver to keep his or her feet pointing towards the surface with only the hands touching any part of the wreck so as to avoid unnecessary disturbance of the site.

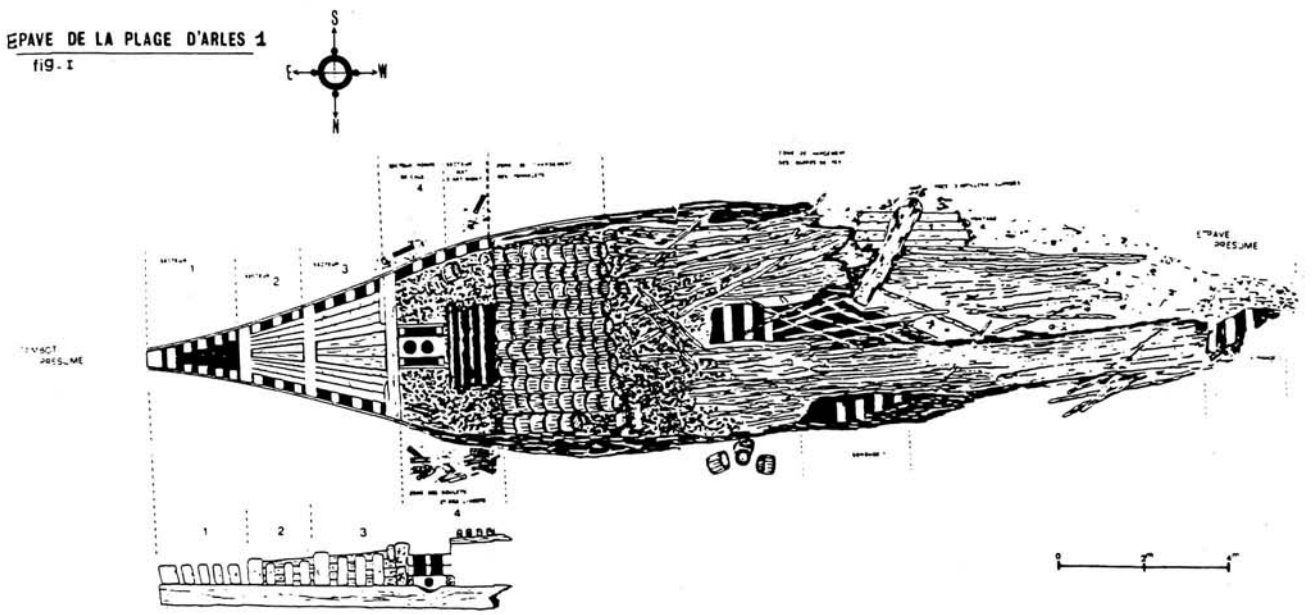
Unlike the wrecksite at Plage d' Arles, Grand Ribaud D had better working conditions as the visibility (18 m) and the temperature (20 C) were relatively fair. Even the current was almost negligible. However, there were days when operations had to be postponed because of strong winds coming from the north.

Two types of dredging equipment were used here: the water dredge and the airlift. Both have their distinct advantages arising from the difference in the principles by which they operate. The water dredge which is easy to maneuver sucks up the overburden through displacement of sea water effected by a pump mounted on the boat. The airlift operates by forcing air down into the water and into a long tube thereby creating a sucking force as the air bubbles rush back to the surface. Although the airlift has more dredging capacity than the water dredge, it is rather difficult to manage and could be dangerous at times. In one occasion, an archaeology student apprentice had to be hospitalized after his arm had got caught into the intake tube. This happened as the student tried to intercept a specimen being sucked by the airlift and in the process got his arm caught by the suction effect. Fortunately, he suffered no serious injuries.

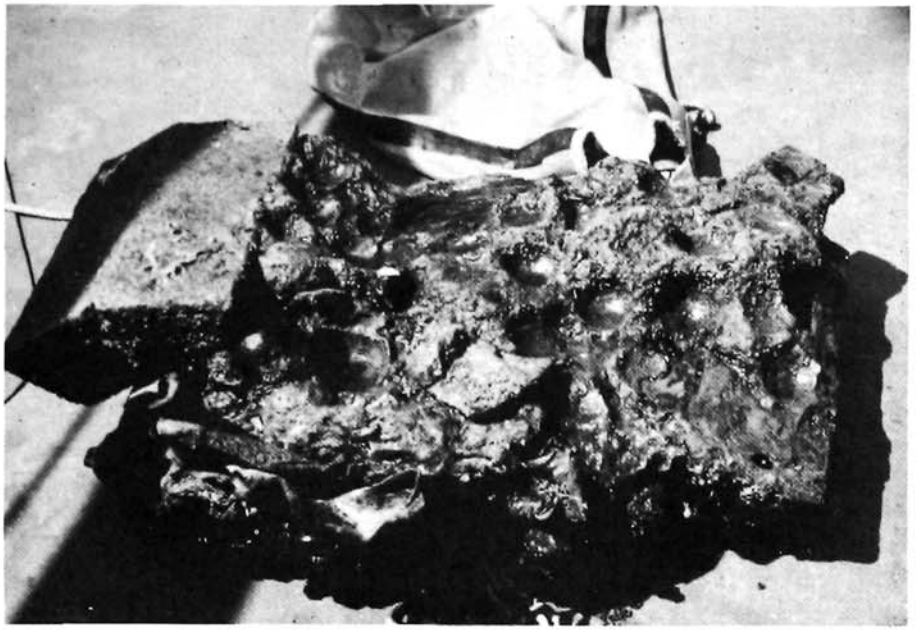
The usual routine in excavating a site comprises a number of phases. First, a certain area was cleaned. After this, all prominent artifacts were numbered and then photographed in situ. When the photography was completed, every specimen was placed on a plastic bag together with a slip of waterproof paper indicating its exact location. At the end of the dive, all the bags were collected and placed in an iron basket that was then bouyed up to the surface by lift bags. To haul the artifacts from the water and then on to the board, a power crane was used.

Analysis of the finds was done by a combined team of archaeologists using a computer to facilitate retrieval of information. Prior to this the data had first to be sorted out, identified, and given a code for feeding into the computer. In this particular mission,the chief of the mission adjudged the results satisfactory although much still had to be uncovered.

Malban. The site of Malban is located at the northwestern coast of the country where the temperature of the water is about 15° C during summer. Here, archaeologists Michel L'Hour and Luc Long investigated a wreck strewn with tons of cold metal-lead. Incribed on the lead ingots were Roman numerals which were found to be the weight of each piece. On some ingots were other inscriptions which were believed to be the names of the manufacturers. Recovery of the lead materials proved to be a diffi-



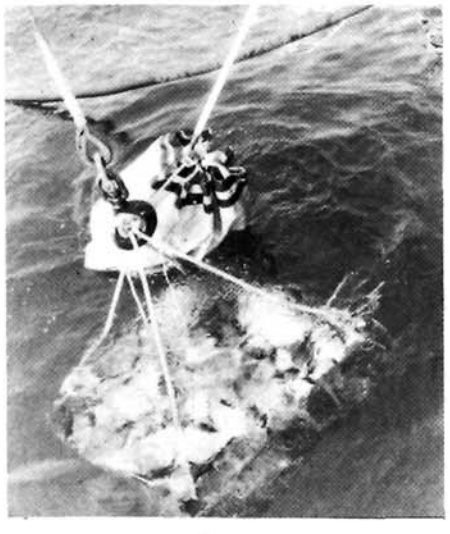
Plage d' Arles Wreck. Antibes 1984 Objects Metalliques sur les epaves antiques.



A mass of iron and stone retrieved from "Plage d' Arles" site. The circular depressions measuring about 10 cm. were formed by cannon balls.

The trainee at the, Carry-le-Rouet' site. On the bottom left is an iron mesh basket where finds are collected.

cult task as each weighed an average of 80 kgs. One piece tipped the scale at 142 kgs. Aside from the lead ingots, no other archaeological materials have been discovered so far. As the investigation also was still in its primary stages, very little historical conclusions could be drawn.



Artifacts being brought up at the 'Grand Ribaud D' site. A power crane is used to mount heavy materials on to the boat.

To reach the site, the research team traveled some 5 kms from the shore on three inflatable boats. On this project, the service of the L'Archeonaute could not be utilized for several reasons. First, the site was relatively distant and to deploy the ship and its crew to the area required a fair number of logistics preparations. Secondly, the site was located on shallow water peppered with huge rocks that presented a navigational hazzard for a vessel of that size. Finally, and evidently the most important factor at the time, the crew had gone on vacation.

The team commenced the research by clearing the wreck of tall sea grass and sand. When the first layer of ingots had been made visible enough for photography, numbers were assigned on every specimen. A different set of numbers were attached to the newly exposed ingots as each layer was removed. Following this process, the heavy chunks of metal were brought to the campsite where each of them was examined and the extracted information recorded. Supplementing the records for future reference were plaster casts made of the inscriptions on each ingot.

Carry-le-Rouet. The materials at Carry-le-Rouet, a site near a small port west of Marseille, were mainly composed of large blocks of stone and pottery sherds. Until the termination of the training period, the work on the area consisted of clearing the wreck with the use of a water dredge and photographing sections of the cleared portion. At the moment, the archaeologists are still trying to find a definite answer to the origin and intended destination of the stone blocks. One assumption of their function was for building fortifications in certain places in ancient Marseille.

Summary

Several decades ago, the study of marine archaeology was a discipline known only to a handful of individuals who regarded the vastness of the sea as an excellent source of valuable information of man's unrecorded past of adven-

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