

A WONDER AT THE ISLAND OF PAG

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A miracle happened last year at the island of Pag, when two divers, Vedran Dorušić and Igor Savić, discovered an intact archaeological site from over 2000 years ago. It was a windy morning in July 2018 and they were planning their morning dive location. Vedran Dorušić is the owner of the Diving Centre Foka in Šimuni and has great experience diving the waters of Pag. Igor Savić, his friend, is a passionate diver from Ljubljana, Slovenia.

After the decision was made to visit the position of a recently discovered Roman anchor, found just in front of the Diving Centre, they went for their dive. It somehow happened that the dive proceeded in an unplanned direction, and after a while, they saw a mound of amphorae. The discovery was really great! About 400 amphorae lay quietly on the sea bottom, undisturbed since the shipwreck occurred. At first glance it seemed a joke, or a hallucination, but it turned out to be a wonderful discovery. It was quite amazing that the shipwreck occurred in such proximity to the port, and that in all those years nobody ever saw it. The amphorae were confined to an area about 25 m long and about 8 m wide, clearly marking the outline of the sunken ship.

The site was chosen as a test bed to gather all the institutions interested in the discovery around a common documentation campaign. The University of Zadar, the Archaeological Museum of Zadar and the Croatian Conservation Institute from Zagreb united their forces in completing the initial documentation. The team spent four days in the field to perform the essential documentation. The amphorae were determined to be of the Lamboglia 2 type, commonly used to transport wine in the 1st century BC. The site was explored in detail, including documentation via photogrammetry. Processing of the pictures resulted in a 3D model and orthographic drawing of the site, which captured a lot of attention. The amphorae were marked with proper tags, and analysis began regarding the position of the ship based on the distribution of the cargo.

After the initial documentation campaign aimed at presenting the find to the legally responsible institutions, the discoverers were not satisfied with the usual way of protecting ancient shipwrecks on the ocean floor. The site was considered for protection in an iron cage, which would isolate it from potential looters and contribute to its long-term preservation on the seabed. Iron cages, already placed over similar sites, seemed to

be a good solution twenty years ago. Nowadays, their use is problematic due to several issues. First of all, they only last an average of ten years, and after that their decay actually presents a real threat to the site. Newly designed cages are better, stronger and nicely shaped, but the investment in such structures is huge. Cages are typically placed over sites without any management plan; without maintenance, the biofouling of the cages increases over time and the amphorae become less and less visible. These are just some of the negative effects of using cages, which turn out to be an expensive and inefficient solution.

As a test case, the proposal was made to install cameras near the site, which would monitor the situation, and send an alarm if necessary. The limitations of optical signals, which would be useless in the dark, inspired an additional underwater solution. A side-scan sonar was tested in order to detect the presence of divers, and it worked efficiently. Kongsberg, a leading global technology corporation from Norway, provided prototype equipment to be tested, and after one day of trials it was decided to proceed with developing the new technological system. It would be connected to a buoy at the site and would transmit an alarm should an unknown diver be detected in the water nearby. The deadline of October 15th, 2019 was established; by that time the system should be operative, monitoring the amphorae.

Apparently, the ship rests on its starboard side, and the shape of the amphorae pile reveals the presence of the bow and stern deck. The vessels in the middle spilled out of the ship's hold, but the cargo obviously remains intact from the moment of sinking. The hull is gone, but there is the hope that some wooden ship remains are preserved under the sand and finds. To the east the lead anchor stock, bearing the inscription STRATON on one side and an unreadable inscription on the other, likely indicates where the bow was. It was obviously thrown in the sea in attempt to stop the unfortunate ship but did not manage to save it. During the documentation campaign one amphora was recovered in order to be studied in detail; after desalination, cleaning and measurement at the International Centre for Underwater Archaeology in Zadar, it is now on display at the Diving Centre.

Such a nicely preserved site deserves proper presentation to the general public, and great effort was put into obtaining permission to organize diving tours. After some discussion with the Ministry of Culture, the idea became reality and site diving tours started. To prepare scuba divers for their ancient wreck experience, the whole story was packed in one introductory presentation given to divers before their dive. The response was great, and people loved it! Moreover, small amphorae were produced as souvenirs in order to memorialize divers' visits. The position of the site certainly helps in the organization of the diving tours, and the technological method of site protection is a promising solution for long winter months when nobody dives for touristic purposes.

The question remains if there is still something to do onsite that would attract divers. An idea that was put forward was to organize underwater excavation at the site, inviting

amateur divers to help archaeologists in the delicate operation of exploring the content of the wreck. In this manner, amateurs could be directly involved in all the activities in the field. Wreck enthusiasts would be interested to learn more about the position of the hull, about the small objects belonging to the ship's equipment that are still buried in the sand and about any other matters that could possibly be recovered during such an operation. Therefore, the intention remains to propose a field school in which everybody could participate, which would be organized out of the touristic season, where all participants could learn how to respect and fulfill the requirements of an archaeological excavation performed underwater. This plan would certainly contribute to the income that the site could generate, which could be re-invested into protection, management and research.

This short story about a modern-day great discovery shows that the seabed of the Eastern Adriatic is still insufficiently explored, and that many sites available to sport divers still lie around. When discovered, if managed with care, they could greatly increase the touristic potential of the area and generate income at significant level, while preserving their archaeological information. Therefore, it is up to the local community to demonstrate interest in these ancient sites, and to recognize that the maintenance and conservation of these site is not only the task of responsible institutions, but would also benefit all the stakeholders.











