STRATON PROJECT. THE ANCIENT SHIPWRECK AT CAPE LETAVICA, ISLAND OF PAG, CROATIA

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ABSTRACT

In 2018, at a depth of 37 meters, a shipwreck containing hundreds of Lamboglia 2 amphorae from the 1st century BC was found at the edge of the rocky and sandy seabed. The discovery of this site initiated a new approach to underwater archaeological sites in Croatia. A large number of institutions for underwater archaeology participated in the research. Since the site is located directly in front of the diving centre, ideal conditions have been created for constant monitoring and use of the site for tourist purposes. Unlike the previously used ways of protection (setting up metal cages), the new approach was protection through information, primarily for local communities, but also on the larger scale. Our wish was for as many people as possible to know as much as possible about this site, and to increase awareness of the need to preserve such sites. During the excavations new discoveries were regularly presented to the public through social networks, and this site is the first one to have its own website, on Facebook and Instagram. We achieved a synergy between the scientific work and the economic use of the site, and the results were visible both in the preparation of the research and during the research, as well as in the increased tourist interest in the site.

Keywords: protection through information, local communities, increase awareness, social networks, tourist visits.

About the site in general

The site lies at a depth of 37 to 39 m, on the border of the rocky and sandy slope of the seabed, at a distance of about 130 m from the seashore (fig. 1).
It consists of a group of about 400 clearly visible amphorae of several variants of the Lamboglia 2 type. Judging by the basic shape characteristics, amphorae can be dated to the 1st century BC i.e. during the late Roman RepublicThe amphorae are mostly covered with marine growths and have fused together into a compact whole, with only a few of them detached from the main concentration of finds.(fig. 2).

At a distance of about 38 m in the northeast direction, there is a lead ancor stock of an ancient lead-wooden anchor, 1.6 m long, which probably belonged to the same ship. In the immediate vicinity of the ancor stock lies the bottom of a larger ceramic vessel, of unknown date (fig. 3).

The location of the find on the seabed points to the fact that it was not a cargo that was shaken out of the ship's

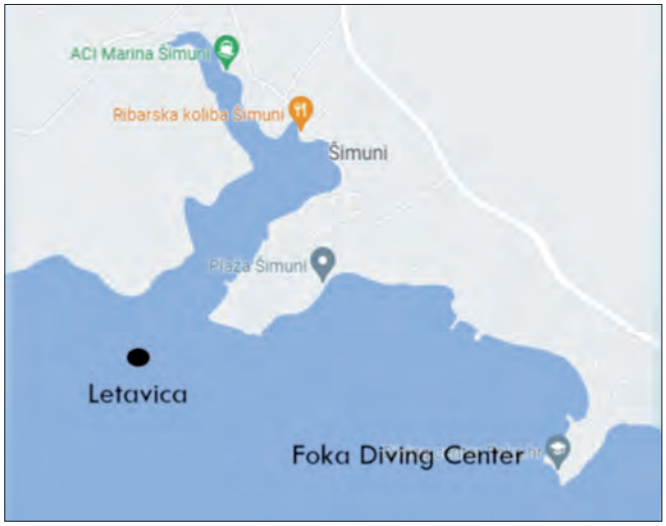

Fig. 1 - ***Position of the site.***

Fig. 2. - ***Amphorae (ph. D. Frka).***

Fig. 3. - ***Lead stock of an ancient wooden anchor (ph. D. Frka).***

lower deck during the accident, but sank to the seabed with the entire ship.

The length of the main concentration of amphorae is about 23-24 m, which indicates that the ship was 25-30 m long.

1. Discovery

In the summer of 2018, during a standard tourist dive at the Mandre location, a group of divers led by Vedran Dorušić found a lead bar of an ancient anchor stock with an inscription. Later it was understood that on one side it was written *STRATON*, and on the other side only *T S* was visible. After making negatives and positives by use of clay, we assumed that it said OFIDI◦T◦S.

Less than a month after the discovery of the anchor, due to bad weather conditions, a group of divers, again led by V. Dorušić, followed the standard route to the south-east, and started diving to the northwest. At a depth of slightly over 30 meters, a handful of experienced divers saw a large pile of amphorae which have been forgotten for more than 2000 years.

2. Protection

Until now, such sites have been protected by use of metal cages, at least for the last 30 years or so.

In the beginning (1980s) it proved to be a good practice, but only in the short termIn less than a year, the metal cages are overgrown with algae that slowly fall on the site. Metal corrodes under the sea and disintegrates over time. It quickly became clear that metal cages under the sea are a danger, primarily to the site, marine flora and fauna, and ultimately to divers. They are not at all attractive as a diving location, and after a few months they are extremely dangerous due to fouling and corrosion.

3. Vlaška Mala

In 2004, also on the island of Pag, but on the other side of the island, a similar site was found that was initially very well promoted. At the time of the discovery, research was done, the first monograph was published, and the cage was installed not long after. The robbers broke the cage very easily and caused damage to the cultural heritage by looting.

To prevent a repeat of such a scenario on our site, we proposed a new way of protection: protection through education and constant supervision! Given that Letavica is located in the immediate vicinity of the diving centre Foka, we have excellent prerequisites for this type of protection.

4. Research

Already in the autumn of the year the site was discovered (2018), the first archaeological survey was held under the leadership of Irena Radić Rossi from the Department of Archaeology of the University of Zadar. We must mention that this is one of the rare sites researched by most of the leading institutions for underwater archaeology in Croatia, namely the Archaeological Museum in Zadar, the International Centre for Underwater Archaeology (ICUA) and the Croatian Conservation Institute

In that first campaign, a detailed documentation of the found state was made. All measurements were taken, all visible amphorae were marked (fig. 4), a photogrammetric model was made, and only one amphora was taken out and sent for further processing to the ICUA (fig. 5).

The first public lecture about the site was held in the city of Pag already in the spring of 2019 (fig. 6). The above mentioned method of protection (protection through education and constant supervision) is totally useless if the local community is not familiar with the treasures in their vicinity. That is why the first lecture about the site presenting the first results was held in Pag,, and only after that in other cities. In the summer of the same year, the Foka Diving Center received a concession over the site, which means throughout the year, the site is under constant surveillance from the center. Tourists (with a certain category in terms the depth) are allowed to dive on the site only after a considerably more detailed briefing.

Fig. 4. - ***Marking amphorae (ph. M. Brzac).***

Fig. 6. - ***Donations (ph. M. Martinčak).***

Fig. 5. - ***Taking out amphorae (ph. M. Brzac).***

Fig. 7. - ***Lead stock of ancient anchor, with inscription*** **STRATON** ***(ph. M. Brzac).***

Unfortunately, in 2019 we did not receive money for the research campaign, but we invested all our time and donations in promoting the site in all the ways known to us at the time, especially among the diving community. For easier communication with a wider audience, a website was created *https://www.discover-pag.com/en/opis-lokacije.html*. All scientific information and all noteworthy details are available to everyone in 9 languages at any time. We believe that it is extremely important that everyone (especially the locals) knows the importance of the site (and what benefits it brings to the local community) and its location in order to help preserve it. From the very first campaign, we were open to cooperation with anyone who showed interest.

The Straton 2020 research is almost entirely funded by private donors. Namely, since we did not receive enough funds from the Ministry of Culture, we decided to do a "Donor Diving".

A month before the research, a dive at the site was organized so that divers (Advanced Open Water Diver +) were allowed to dive on the site, for a price they set themselves and all the money collected was used exclusively

Fig. 8. - ***Lead stock of ancient anchor, with inscription*** **A OFIDI** ***(ph. M. Brzac).***

Fig. 9. - ***DLRG Team and Vedran (ph. B. Vukičević).***

for the research. In this way, enough was collected for a week of research.

As we assumed that the first anchor was connected with the shipwreck, we named the whole campaign Straton (according to the inscription on the anchor).

There is a saying that fortune follows the brave, and so luck smiled on us because it was during that campaign in 2020 that we found 2 more ancient lead anchor stocks located in the south-eastern part of the site along the edge of the amphorae covered with about 40 cm of sediment. One anchor has four astragals in Iactus Veneris position and an inscription A ◦ OFIDI, while the other one (found the very next day) has inscriptions STRATON and OFIDI◦T◦S◦ perfectly preserved, proving that these three discovered anchors are a part of an ancient shipwreck (figs. 7-8)!

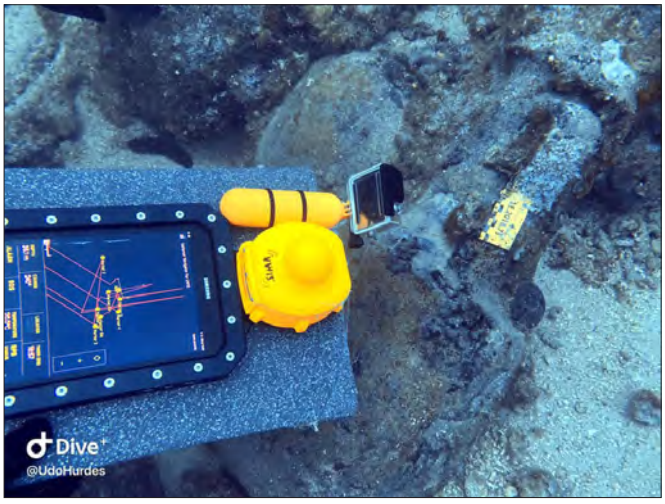

Fig. 10. - ***Equipment for underwater locating (ph. B. Vukičević).***

5. Straton Project

Although the name of the location where the amphorae were found is Letavica (according to the nearby cape of the same name), the entire project dealing with research, protection and promotion of the site is named STRATON PROJECT, after to the inscription on the anchor. The main goals of the STRATON project are:

1. Research, protection and promotion of the site;
2. Connecting with people who want to help;
3. Collecting funds for research.

Already during the research, all new information was presented directly to the public. We try to invite all the media and present to the public everything that we learn about the site.

We were looking for alternative ways of financing. We did not rely only on funding from the Ministry of Culture, so we provided the opportunity for all interested parties to participate in any way they can and want. This is how the 2020 campaign was financed (by donor diving).

The following year (2021), due to the strong earthquakes that occurred in the spring, most of the funds were diverted to the reconstruction of the destroyed areas, so we did not receive any funds for research. That did not discourage us, on the contrary.

Exactly because of that openness to cooperation, we had the opportunity to host DLRG – a humanitarian organization for saving lives – from Germany (fig. 9). They wanted to test their equipment for underwater locating (fig. 10), more accurately positioning objects under water on a general GPS map. The cooperation was excellent, so the DLRG team successfully tested their equipment, we positioned the site, and financed several days of research

Fig. 11. - ***Stamp on amphora (ph. V. Dorušić).***

with their funding. Unfortunately, the fall of 2021 was merciless, so due to bad weather conditions, we did not stay long at the site. Sometime before the collaboration with DLRG, the location was filmed with multibeam echosounder for the History channel

The amphora, which was recovered in 2018 during the first research, successfully and deftly went through the restoration process, during which a stamp was noted on the neck. (fig. 11).

Our practice has shown that science and tourism support each other.

6. How does tourism help research?

Most of the funding comes from private donors, including divers who are our regular guests. Most of them are owners of successful companies, and they are extremely happy about the possibility of diving in such a specific location, and they are interested in long-term plans and results. The funds they donate are not only for research, but for work on the website and publication of the latest results. Thus, the scientific report from the 2020 research campaign was made in the form of a booklet that is available in all libraries (primarily) in Pag, Zadar, etc. (fig. 12).

7. How does research help tourism?

Past practice has shown successful cooperation with all interested parties. Sometimes it seems that big institutions are not ready to cooperate, we are trying to break that stigma. We don't want divers or archaeologists to be seen as those who come and take from the locals something of theirs. In fact, everyone can in some way

Fig. 12. - ***Booklet in library of Pag (ph. V. Dorušić).***

Fig. 13. - ***Transfering from an underwater camera to a laptop (ph. M. Brzac).***

participate in the research on this site (directly or indirectly, as confirmed by previous campaigns).

Because of its constant presence in the media, many people are already familiar with or have at least heard of Letavica and the Straton project. The biggest advantage is that new information, new pictures and videos are available to everyone through social networks and at the same speed as it takes to transfer from an underwater camera to a laptop (fig. 13). That's how people get a sense of importance. They feel part of the research team because they are almost as knowledgeable about the situation on the ground as everyone who is diving on the research at that moment.

What we constantly emphasize is that it is our treasure! Locals like to brag that they have something special, so they guard that special something. In the event that any other boat (except for the two from the Foka diving center) are at the site, someone from a nearby town will see it and report it to the local police and the diving center.

Fig. 14. - ***Team 2022 (ph. M. Brzac).***

8. A special dive

Before the dive, an e-mail is sent to the Ministry of Culture with a list of divers going to the site (fig. 14). Instead of a standard briefing of about 15 minutes, the lecture for this dive lasts between 45-60 minutes. During that period, the importance of the site and the historical geographical context are explained to tourists as well as the rules of diving, since Letavica is not only an archaeological site but also an artificial reef, because numerous animals are hiding in and between the amphorae, including a large eel named Caesar. While the price of a dive is double the standard dive price, everyone gets a small model of the Lamboglia 2 (fig. 15) amphora and a booklet about the site as a souvenir.

Straton 2022 was launched primarily by participating in the conference in Lecce, where we had the opportunity to present everything we do as well as our future plans. After Italy, we held a lecture on the same topic (virtually) in Volos (Greece).

The campaign was financed by private donors, but mostly by Japanese television, which filmed the life of underwater archaeologist Kotaro Yamafune. We got funding for research, and they got 24/7 access to living on and researching a site like this. Luck smiled on us again with fantastic finds such as entirely preserved ceramic vessels, ceramic cups, a ceramic lamp... In addition to the remains of the ship's galley, a fragment of wood was found that proves the existence of the remains of the ship's structure under the amphorae. This time another amphora was recovered and sent to the ICUA for further processing.

Fig. 15. - ***Souvenir: model of the Lamboglia 2 amphora (ph. V. Dorušić).***

Small finds, evidence of the existence of the ship's galley, were sent to the Art Academy of the University of Split, where, under the guidance and supervision of Miona Miliša, students of the restoration and conservation department took them under their care.

9. Conclusion

Another way of preservation would be the so-called *A smart buoy*. A buoy with a camera with a 360-degree view would be placed above the site, a hydrophone below it, and at the very bottom, next to the site, two more underwater cameras. With the aforementioned method (monitoring from the center), robbing the site would be almost impossible. Unfortunately, this is (for now) beyond our financial means, but we have hopes for the future. If we give science and tourism the opportunity to complement each other, and not exclude each other, good results are guaranteed. It was our example that proved to be a good practice not only in Croatia but also beyond.

For all those who cannot dive or are still too young, for all future generations of divers we want to show on land what treasures are hidden 30 meters below the surface. The ideal option is a museum, but the first thing we plan to do next is the interpretation center, because it can be completely made of models, projections, copies, etc.

Each new campaign, each new result increases the attractiveness of the site! Many, especially regular guests ask every season what's new and what are the plans for the next season. They want to be part of the story, part of the research, i.e. part of a large team of people who support the research, preservation and presentation of the site. In this way, we could explore the work for the next 10 years, but one day we would still like to have a museum on land. Needless to say we do not plan to recover all the amphorae from the seabed since their home is down there on the seabed, in the peace and quiet of the deep blue, where Caesar guards them.