



SUSTAVNO ISTRAŽIVANJE OSTATAKA ANTIČKOG BRODOLOMA IZ 2. ST. PO KR. KOD OTOKA ILOVIKA

Systematic excavation of the remains of a 2nd-century AD Roman shipwreck off the island of Ilovik

Otok Ilovik nalazi se na jugozapadnom kraju Kvarnerskog zaljeva, a s otocima Lošinjem, Kozjakom i Sv. Petrom definira prostor Ilovičkih vrata. Kanal koji se proteže između otoka Sv. Petra i Ilovika, dug 2,5 km i širok oko 300 m, popularno je sidrište koje pruža zaklon od gotovo svih vjetrova. Na važnost plovidbene rute koja je od antičkih vremena prolazila ovim prostorom višestruko je ukazano u stručnoj literaturi (usp. npr. Serventi 2012, gdje je navedena ostala literatura).

Godine 1962. na sjevernom ulazu u kanal, uz otok Sv. Petar, otkriven je odlično očuvan teret potonulog rimskog broda. Do 1970. godine površina nalazišta bila je temeljito opljačkana, ali se tijekom zaštitnih istraživanja, provedenih od 1978. do 1980. godine pod vodstvom Marijana Orlića, ipak ušlo u trag mnogim zanimljivim nalazima (Orlić 1986). Brodski teret sastojao se od nekoliko tipova amfora, među kojima

The island of Ilovik is located at the southwestern end of Kvarner Bay, and with the islands of Lošinj, Kozjak and Sv. Petar it defines the space of Ilovička vrata. The channel that extends between the island of Sv. Petar and Ilovik, 2.5 km long and about 300 m wide, is a popular anchorage that provides shelter from almost all winds. The importance of the navigation route that has passed through this area since ancient times has been emphasized repeatedly in the professional literature (e.g. Serventi 2012, where other literature is listed).

In 1962, well-preserved cargo of a sunken Roman ship was discovered at the northern entrance to the channel, off the island of Sv. Petar. Until 1970, the surface of the site was thoroughly looted, but many interesting finds were recovered during the rescue excavations conducted from 1978 to 1980 under the leadership of Marijan Orlić (Orlić 1986). The ship's cargo consisted of several ampho-


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Istraživački brod usidren nad nalazištem kraj otoka Sv. Petra (foto: D. Kalogjera)
Research ship anchored over the site off the island of Sv. Petar (photo: D. Kalogjera)



Čišćenje drvenih elemenata brodske konstrukcije (foto: M. Brzac)
Cleaning of wooden elements of the ship's structure (photo: M. Brzac)



Uzorkovanje drvene građe (foto: M. Brzac)
Sampling of timber (photo: M. Brzac)





su najbrojnije bile jadranske amfore ravnog dna, u literaturi poznate kao tip Forlimpopoli, proizvedene tijekom 1. i 2. st. po Kr. Neobični luksuzni nalazi, poput cjelovitog staklenog posuđa, brončanog vrča za vino (enochoja) ukrašenog glavom Satira i plitice (patera) na dugoj dršci ukrašenoj lavljom protomom, sugerirali su prisutnost bogatih putnika, tj. pripadnika viših društvenih slojeva, a pronalazak sestercija cara Trajana ukazao je na datiranje brodoloma u početak 2. st. po Kr.

Godine 1999. potpuno očuvan helenistički brončani kip grčkog atleta izvađen je iz mora kod južnog rta otoka Velih Orjula, udaljenog manje od 2 NM sjeveroistočno od Ilovičkih vrata (Karniše et alii. 2008). Kako u blizini kipa nije pronađena olupina antičkog broda, Marijan Orlić na osnovi nekih je činjenica pretpostavio njegovu povezanost s brodolomom kod otoka Ilovika (Karniše et al. 2008: 28; Radić Rossi, Buxton 2022).

Njegova je pretpostavka poslužila kao jedan od poticaja za pokretanje sustavnog istraživanja prethodno zaštitno istraženog nalazišta.

Prva sustavna istraživačka kampanja provedena je u vremenu od 2. do 30. listopada 2022. godine u suradnji Sveučilišta u Zadru i Sveučilišta Rhode Island. U njoj su sudjelovali stručnjaci i studenti iz Hrvatske, Sjedinjenih Američkih Država, Novog Zelanda, Egipta i Japana, a istraživačkoj ekipi pridružila se i skupina studenata iz Njemačke, Španjolske, Grčke i Rumunjske, koja je u okviru studijskog programa EU-Conexus odabrala izborni kolegij *Introduction to underwater archaeology*. Financijska sredstva potrebna za realizaciju istraživanja donirao je američki poduzetnik Alfred Hagen, koji je tijekom dva tjedna i sam sudjelovao u istraživačkim aktivnostima na terenu.

Nalazište je smješteno na prosječnoj dubini od 24 m, na gotovo ravnom morskom dnu. Površina

ra types, among which the most numerous were flat-bottomed Adriatic amphorae, known in the literature as the Forlimpopoli type, produced during the 1st and 2nd centuries AD. Unusual luxury finds, such as complete glassware, a bronze wine jug (oinochoe) decorated with the head of a satyr and a long-handled platter (patera) decorated with a lion protome, suggested the presence of wealthy and high-status individuals, and the discovery of a sestertius of the emperor Trajan indicating a *terminus post quem* for the wreck in early 2nd century AD.

In 1999, a fully preserved Hellenistic bronze statue of a Greek athlete was taken out of the sea near the southern cape of the island of Vele Orjule, less than 2

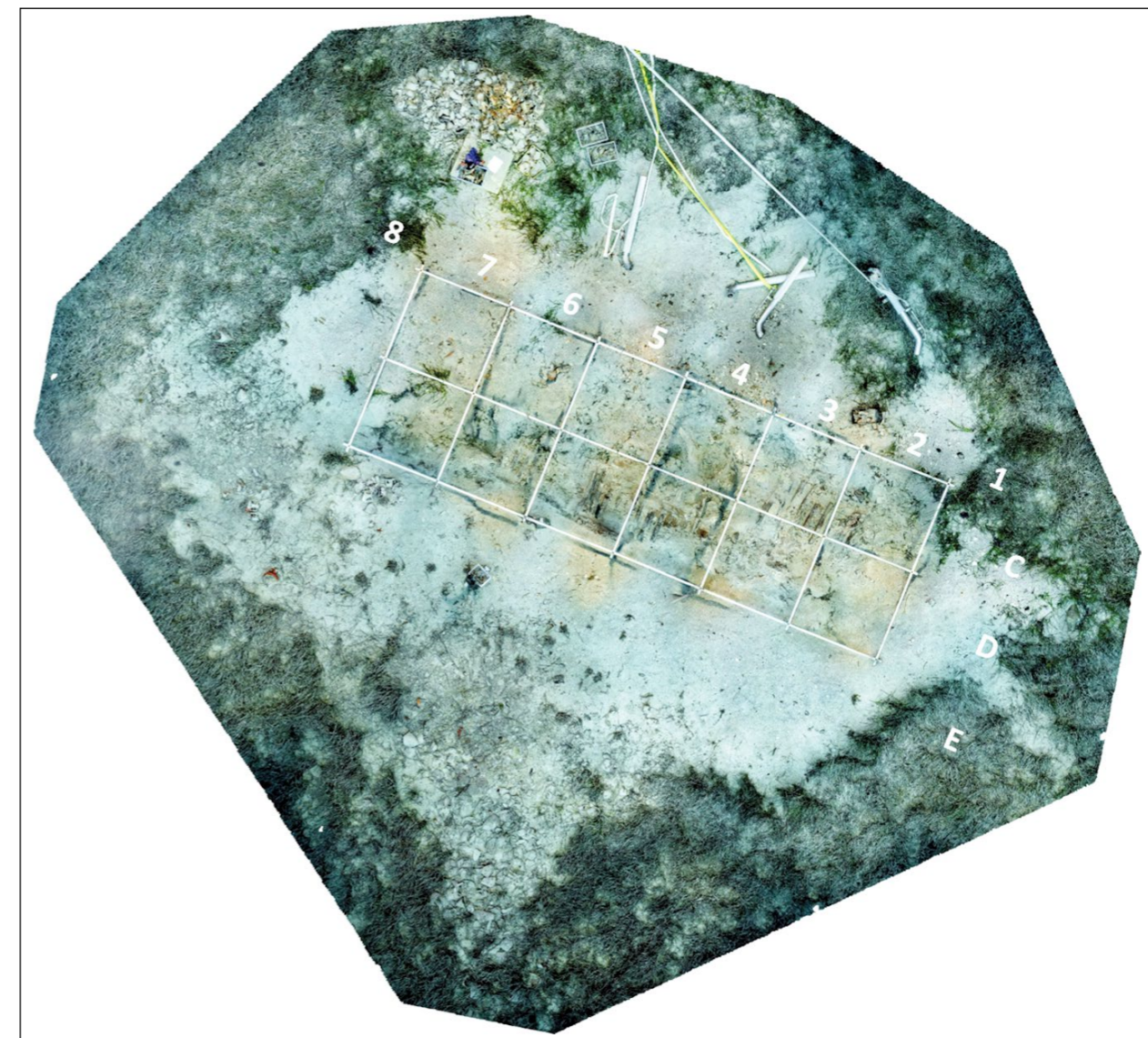
nautical miles northeast of Ilovička vrata (Karniše et al. 2008). Since no wreck of an ancient ship was found near the statue, Marijan Orlić assumed its connection with the shipwreck off the island of Ilovik based on certain facts (Karniše et alii. 2008: 28; Radić Rossi, Buxton 2022). His assumption served as one of the incentives for starting a systematic investigation of the site previously subjected to rescue excavations.

The first systematic research campaign was conducted between October 2 and 30, 2022, in cooperation between the University of Zadar and the University of Rhode Island. Experts

and students from Croatia, the United States of America, New Zealand, Egypt and Japan participated in it, and the research team was joined by a group of students from Germany, Spain, Greece and Romania, who chose an elective course *Introduction to underwater archaeology* as part of the EU-Conexus study program. The financial resources needed for the realization of the research were donated by the American businessman Alfred Hagen, who himself participated in research activities at the site for two weeks.



Alfred Hagen s amforom pronađenom istočno od mrežišta (foto: I. Radić Rossi)
Alfred Hagen with the amphora found east of the grid (photo: I. Radić Rossi)



Ortogonalni plan nalazišta iz virtualnog 3D modela, s položajem pomoćnog metalnog mrežišta (model: K. Yamafune)
Orthogonal plan of the site from the virtual 3D model, with the position of the auxiliary metal grid (model: K. Yamafune)

na kojoj leže arheološki nalazi prekrivena je pijeskom, a okolni prostor prekriven je poljima posidonije (lat. *Posidonia oceanica*). Prije istraživanja na lokaciju su postavljena četiri betonska bloka, iskorištena za privez istraživačkog broda, dok je manjim betonskim blokom označen točan položaj glavne koncentracije nalaza. Prva skupina ronilaca započela je s prikupljanjem i podizanjem dijagnostičkih ulomaka amfora te uklanjanjem nedijagnostičkih ulomaka sa središnje površine nalazišta. Taj se posao nastavio tijekom čitave istraživačke kampanje jer su ulomci amfora u velikim količinama pronađeni tijekom iskopa. Za sada je u inventar dijagnostičkih ulomaka uneseno 395 predmeta koji su pohranjeni u jutene vreće i vraćeni na nalazište, a na morskom je dnu ostavljena skupina ulomaka koje je potrebno dokumentirati tijekom sljedeće istraživačke kampanje.

The site is located at an average depth of 24 m, on an almost flat seabed. The surface on which the archaeological finds lie is covered with sand, and the surrounding area is covered with meadows of *Posidonia oceanica* seagrass. Before the research, four concrete blocks were placed on the location, used for the mooring of the research ship, while a smaller concrete block marked the exact position of the main concentration of finds. The first group of divers started collecting and raising diagnostic amphora fragments and removing non-diagnostic fragments from the central surface of the site. This work continued throughout the entire research campaign, as amphora fragments were found in large quantities during the excavation. For now, 395 objects have been entered into the inventory of diagnostic fragments, which have been stored in jute bags and returned to the site, and some fragments have been





Istraživačka ekipa tijekom prvog dijela istraživanja (foto: D. Kalogjera)
 Research team during the first part of the research (photo: D. Kalogjera)

Prvog radnog dana postavljeno je i pomoćno metalno mrežište koje je tijekom idućih dana zadržalo svoj konačan oblik. Osnovno mrežište sastojalo se od 2 x 6 kvadrata dimenzija 2 x 2 m, a tijekom rada dodane su metalne šipke s istočne, zapadne i južne strane, pomoću kojih je oblikovano još 12 kvadrata. Postojeći kvadrati označeni su slovima C, D i E i brojevima od 1 do 8. U kvadratima C2, C3 i D3–D6 otkriveni su elementi brodske konstrukcije (Sl. 3) koja je bila tek djelomično otkrivena tijekom zaštitne istraživačke kampanje. Drveni ostatci prilično su loše očuvani zbog stjenovite podloge i male količine sedimenta. Očuvana brodska rebra označena su oznakama F01–F44, očuvane platice oznakama P01–P54, a na kobilicu su postavljene oznake K1–K3. Skupina neidentificiranih elemenata označena je oznakama UM-1–UM-12. Svi elementi uzorkovani su radi određivanja vrste drvene građe iskorištene za izgradnju broda.

Riječ je vjerojatno o desnoj krmenoj strani broda, jer je u kvadratima C7 i C8 otkrivena velika korodirana greda koja bi mogla pripadati željeznom antičkom sidru. Osim toga, u zapadnom dijelu nalazišta otkriveno je još četrnaest čitavih ili gotovo čitavih amfora, dok je jedna uočena s istočne

left on the seabed, which need to be documented during the next research campaign.

On the first working day, an auxiliary metal grid was installed, which took its final shape during the following days. The basic grid consisted of 2 x 6 squares with dimensions of 2 x 2 m, and during the work, metal bars were added from the east, west and south sides, with which another 12 squares were formed. The existing squares were marked with letters C, D and E and numbers from 1 to 8. In the squares C2, C3 and D3–D6, elements of the ship's hull structure were found, which were only partially recovered during the rescue excavation campaign. The wooden remains are rather poorly preserved due to the rocky base and small amount of sediment. Preserved ship frames are marked with F01–F44, preserved planks with P01–P54, and the keel is marked with K1–K3. A group of unidentified elements is labeled UM-1–UM-12. All elements were sampled in order to determine the type of wood used to build the ship.

It is probably the right aft side of the ship, because a large corroded beam was discovered in squares C7 and C8, which could belong to an ancient iron anchor. In addition, fourteen complete or almost complete amphorae were discovered in the western part of the site, while one was observed on the eastern

strane mrežišta. Sve amfore izvađene su iz mora i pohranjene na desalinizaciju. Na ramenu jedne od njih uočena je pravilan okrugao otvor promjera oko 15 cm, koji je mogao služiti za vađenje sadržaja, ali i za uriniranje u posudu (Loughton, Alberghi 2015: 54). Od metalnih nalaza, u kvadratu E3 otkriven je prilično oštećen novac za koji se nakon preliminarnog čišćenja utvrdilo da potječe iz vremena cara Trajana ili Hadriana.

Ovogodišnje istraživanje popratila je i japanska nacionalna televizija koja je u trajanju od dva tjedna boravila na Iloviku. Iako je sustavnim istraživanjem zahvaćen veći dio nalazišta, postoje opravdane pretpostavke da se u sedimentu nalazi još čitavih amfora, a možda i manjih predmeta. Stoga se, u skladu s mogućnostima, planira nastavak sustavnog rada na nalazištu.

Istočna jadranska obala obiluje rimskim brodoloma, često s velikim i dobro očuvanim teretima. S obzirom na to, teško oštećene i opljačkane olupine nisu prioritetne za sustavan rad, ali u slučaju brodoloma kod otoka Ilovika intrigantna pitanja o njegovoj vezi s kipom Apoksiomena opravdavaju sustavno istraživanje. Osim toga, projekt je zanimljiva studija slučaja o tome što se još može naučiti pažljivim i sustavnim iskopavanjem inače neobećavajućeg nalazišta.

side of the grid. All amphorae were taken out of the sea and stored for desalination. On the shoulder of one of them, a regular round opening with a diameter of about 15 cm was observed, which could have been used for extracting the contents, but also for urinating into the vessel (Loughton, Alberghi 2015: 54). Of the metal finds, a rather damaged coin was discovered in square E3, which after preliminary cleaning was dated to the time of the emperor Trajan or Hadrian.

This year's research was covered by Japanese national television, which spent two weeks in Ilovik. Although systematic research covered a large part of the site, there are justified assumptions that there are still complete amphorae in the sediment, and perhaps some smaller objects. Therefore, in accordance with the possibilities, it is planned to continue systematic work at the site.

The Eastern Adriatic coast has many hundreds of Roman shipwrecks, many with large well-preserved cargos. Accordingly, heavily damaged and looted wrecks would not normally be prioritized for complete excavation. In the case of the Ilovik shipwreck, intriguing questions about its relationship to the Apoxyomenos statue justify the ongoing investigation. In addition, the project is an interesting case study of what can still be learned from careful and systematic excavation of an otherwise unpromising site.

LITERATURA / BIBLIOGRAPHY

- KARNIŠ I. et alii. 2008, *Hrvatski Apoksiomen*, katalog izložbe, Zagreb.
- LOUGHTON, M. E., ALBERGHI, L. 2015, Body piercing during the late Iron Age: the case of Roman amphorae from Toulouse (France), *HEROM; Journal on Hellenistic and Roman Material Culture*, 4.1, Leuven, 53–106.
- ORLIĆ, M. 1986, *Antički brod kod otoka Ilovika*, Mala biblioteka Godišnjaka za zaštitu spomenika kulture Hrvatske, 10-11, Zagreb.
- RADIĆ ROSSI, I., BUXTON, B. 2022, The Roman shipwreck of Sv. Petar, Ilovik: old research, new possibilities, Roman Pottery and Glass Manufactures: Production and Trade in the Adriatic Region and Beyond, Lipovac Vrkljan G. et alii. (ur.), Oxford, 106–115.
- SERVENTI, Z. 2012, Važnost otoka Ilovika i Sv. Petra za plovdbenu rutu duž istočne obale Jadrana u svjetlu novijih istraživanja, *Histria Antiqua*, 21, 401–412.

