

PEDESETA GODIŠNJICA RADA NA PODMORSKOME ARHEOLOŠKOM NALAZIŠTU KOD GNALIĆA (1967. – 2017.)

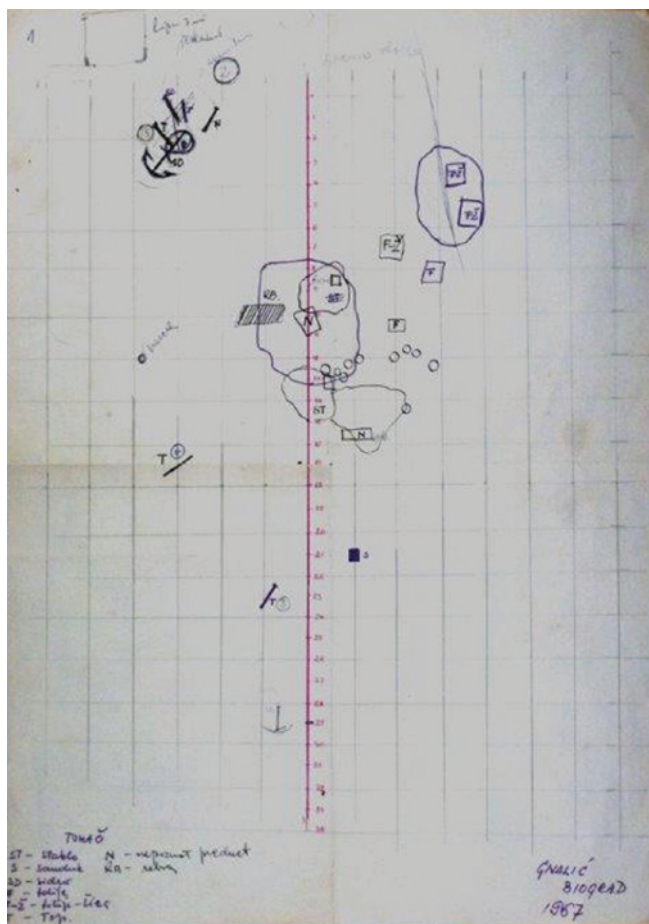
THE FIFTIETH ANNIVERSARY OF WORK AT THE UNDERWATER SITE AT GNALIĆ (1967-2017)

Podmorsko arheološko nalazište kod otočića Gnalića ušlo je u službenu literaturu 1967. godine, kad je napokon otkriven točan položaj brodoloma za koji se među lokalnim stanovništvom znalo već početkom šezdesetih godina prošloga stoljeća. U svome članku *Deset godina rada na hidroarheološkom nalazu kod Gnalića*, objavljenome 1981. godine, Sofija Petricioli požalila se da je nalazište definitivno napušteno, da „nitko više ne nadzire da li se na tome mjestu pljačka i nitko više ne pokazuje interes da ovaj vrijedni nalaz iscrpi do kraja“. Godine 2012., nakon sedam godina uzastopnoga nastojanja da se nadležne institucije zainteresiraju za nastavak istraživanja, mala su odobrena sredstva omogućila prvu istraživačku kampanju kojom je dokazano kako je riječ o nalazištu koje je višestruko zaslužilo da se na njemu provedu zaštitna istraživanja sustavnoga karaktera. Do 2017. godine arhivskim je istraživanjima potvrđena identifikacija broda, koju je još početkom sedamdesetih godina predložio Astone Gasparetto, a brojni su dokumenti pomogli ispričati složenu povijesnu priču. Osim toga, podmorskim je istraživanjima, koja s brojnim suradnicima provodi Sveučilište u Zadru, dokazano kako je riječ o desnome boku broda koji svojim položajem obećava još mnoga zanimljiva otkrića.

Ključne riječi: Gnalić, *Gagliana grossa*, brodolom, 16. st., podmorsko istraživanje, arhivsko istraživanje

Underwater archaeological site at the islet of Gnalić was first recorded in the scholarly literature in 1967, when the exact location of the shipwreck was finally determined. The local population had known about this site back in the early 1960s. Sofija Petricioli, in her paper *Ten years of work at the hydroarchaeological site at Gnalić*, published in 1981, complained that the site was definitely forsaken, "that nobody controlled any longer if that place was looted and nobody showed any interest to fully explore this valuable site". In 2012, after seven years of constant attempts to awake interest in competent institutions, limited funding was approved, enabling the first research campaign which proved that this site met all the requirements for a systematic rescue research. By the year 2017, archival research had confirmed the identification of the ship that was suggested back in the early 1970s by Astone Gasparetto, and a number of documents helped in reconstruction of a complex historical story. Furthermore underwater research that has been conducted by the University of Zadar with a number of associates had proven that it was the starboard side of the ship whose position promised many new interesting discoveries.

Key words: Gnalić, *Gagliana grossa*, shipwreck, 16th century, underwater research, archival research



Slika 1. Najstarija skica nalazišta, izrađena 1967. godine

Figure 1. The oldest sketch of the site, made in 1967

izradili / made by: J. Domančić, D. Balenović

1. INTRODUCTION

In 1981 an article by Sofija Petricioli was published under the title *Ten years of work at the hydroarchaeological site at Gnaljić* where different groups of finds recovered from the shipwreck near the islet of Gnaljić were presented as well as the complex procedures of their conservation.¹ In the introductory text the author presented research history and described briefly all research campaigns taking place from the year 1967 when the site was officially discovered until 1973 when Ksenija Radulić concluded that such a research enterprise makes no sense without adequate conditions.

In 1967, immediately after the discovery of the site that was dated preliminarily to the 16th or 17th century, research was organized, burdened by all problems associated with the work of conservators at the time. The main question was where to house the material, and a division between Zadar and Šibenik was suggested. Such solution was not to the liking of Ksenija Radulić, the leader of the operation of finds recovery, from the Institute for the Protection of Monuments of Culture in Zadar so it was decided that until permanent deposition in Biograd na Moru, all finds would be temporarily kept in the National Museum in Zadar that was also the institution in charge of conducting the research.

Although it is stated in the article that the first research campaign was undertaken from September, 23 to October, 2, subsequent review of the documentation revealed that it happened only between October 7 and 10,² then continuing from October 23 to 31, as mentioned in the existing description (Fig. 1). Multitude of finds was taken out on that occasion, including eight bronze guns, two iron anchors and an ironclad wooden chest that was believed to be ship's treasury. Large copper pots were recovered as well, glass, parts of candle holders and other items made of brass and tin. Hiring navy divers proved to be quite a limited solution of the problem of research at this site as their presence led to maximal reduction of civil participants and taking out finds regardless of their underwater

1. UVOD

Godine 1981. objavljen je članak Sofije Petricioli pod naslovom *Deset godina rada na hidroarheološkom nalazu kod Gnaljića* u kojemu su prikazane različite skupine materijala pronađenih na mjestu brodoloma kod otočića Gnaljića te složeni postupci njihove konzervacije.¹ U uvodnome tekstu autorica je prikazala povijest istraživanja i ukratko opisala sve istraživačke kampanje koje su se dogodile u vremenu od 1967., kada je nalazište službeno otkriveno, do 1973., kada je Ksenija Radulić zaključila da takav istraživački pothvat nema smisla ako se ne osiguraju odgovarajući uvjeti.

Godine 1967., odmah po otkriću nalazišta koje je preliminarno datirano u 16. ili 17. stoljeće, pristupilo se organizaciji istraživanja, uz sve probleme koji su u to vrijeme pratili rad konzervatora. Osnovno pitanje povelu se oko pohrane materijala, za koju je predložena podjela između Zadra i Šibenika. Takvo rješenje nije se sviđelo voditeljici akcije vađenja nalaza Kseniji Radulić, iz Zavoda za zaštitu spomenika

1 S. Petricioli 1981. Proučavanje brodoloma kod otočića Gnaljića danas se realizira zahvaljujući podršci Ministarstva kulture RH, Hrvatske zaklade za znanost (Projekt AdrisS – Archeology of Adriatic Shipbuilding and Seafaring – IP-09-2014-8211), njemačke udruge za promidžbu podvodne arheologije FUWA te povremenoj podršci drugih domaćih i inozemnih ustanova i institucija.

1 S. Petricioli 1981. Research of the Gnaljić shipwreck is presently realized owing to the support of the Ministry of Culture of the Republic of Croatia, Croatian Science Foundation (Project AdrisS – Archeology of Adriatic Shipbuilding and Seafaring – IP-09-2014-8211), the German Society for the Promotion of Underwater Archaeology FUWA and occasional support of other domestic and foreign institutions.
2 Exact information on the first research campaign was recorded in the correspondence kept in the Conservation Department in Zadar and the diary of Ivo Petricioli, that was kindly shown to us by Sofija Petricioli.

Posljednje istraživanje u nizu provedeno je od 31. kolovoza do 10. rujna 1973. godine, kad je sa 8 m² prostora u središnjemu dijelu broda podignuto obilje raznovrsnoga materijala koji je uglavnom pripadao brodskom teretu. Tom je prilikom pronađen i mesingani pečatnjak s inicijalima M P, kojemu se do danas zagubio trag, ali i bademove ljuske i anis te veliki brodski koloturnik, snop konopa i greda s otvorima čiji je promjer odgovarao promjeru konopa.⁴ Nakon toga Ksenija Radulić zaključila je stručno izvješće mislima o velikoj vrijednosti broda i brodske tereta, ali i stručnoj i financijskoj nemoći da se u zadanim uvjetima nastavi takvo istraživanje. Sofija Petricioli komentirala je novonastalu situaciju sljedećim riječima: „Nakon ove akcije lokalitet Gnalić je, čini se, definitivno napušten, nitko više ne nadzire da li se na tome mjestu pljačka i nitko više ne pokazuje interes da ovaj vrijedni nalaz iscrpi do kraja. (...) I zaista se čini da je ovaj zadatak uplašio nove generacije i da je na lokalitet Gnalić definitivno stavljena točka što imajući u vidu njegovu neizmjernu vrijednost nikako ne bi smjelo biti.“⁵ Sljedeće desetljeće i pol potrajala je opisana situacija, nakon čega se dogodio prvi pokušaj obnove istraživanja.

Istovremeno s posljednjim istraživačkim akcijama, talijanski povijesničar umjetnosti Astone Gasparetto pokušao je u mletačkome arhivu ući u trag brodolomu koji je na morsko dno odnio veliku količinu stakla iz mletačkih radionica.⁶ Na osnovi dokumenata koje je za sobom ostavio bilježnik Andrea Catti, Gasparetto je predložio identifikaciju s brodom koji je 1583. godine potonuo „južno od Biograda“ ili „u vodama Murtera“. Brod, u dokumentima zvan *Gagiana* (*Gaiana* ili *Gagliana*), po svojim je karakteristikama najviše odgovarao brodu potonulomu kod Gnalića, ali je Gasparetto ipak pitanje njegove identifikacije ostavio otvorenim.

2. PREGLED DOGAĐANJA DO 2006. GODINE

Nezaiteresiranost za Gnalić potrajala je do 1996. godine kada je Zdenko Brusić iz Arheološkoga muzeja u Zadru ponovno pokrenuo istraživanje. Tijekom lipnja i srpnja 1996. godine boravio je na terenu s njemačkim roniocima iz Koblenza i Frankenthala te je u suradnji s tvrtkom Nautilus d. o. o., kojom su rukovodili Gerhard Seeger i Miljenko Brkljačić, organizirao istraživačku kampanju. Dio posla bio je usmjeren na prikupljanje nalaza s površine morskoga dna, dimenzija oko 60 x 80 m, stotinjak metara južno i jugozapadno od samoga nalazišta. Na tome prostoru prikupljene su veće količine staklenih čaša za koje se tada pretpostavilo da su zajedno s ambalažom otplutale s mjesta brodoloma i potonule nešto dalje. Nakon toga pristupilo se čišćenju drvene brodske konstrukcije i vađenju preostalih nalaza kojih se u istraženo-

of Gnalić was definitely forsaken; that nobody controlled any longer if that place was looted and nobody showed any interest to explore this valuable site fully (...) It really seems that this task has frightened new generations, and that the case of Gnalić was concluded though it is a mistake considering its immense value.”⁵ Described situation lasted for a decade and a half, then finally first attempt of research renewal happened.

Simultaneously with the last research campaign, Italian art historian Astone Gasparetto searched the Venetian archives looking for a trace of the shipwreck that took a large amount of glass from the Venetian workshops to the seabed.⁶ On the basis of documents left by notary Andrea Catti, Gasparetto suggested the identification with the ship that sank in 1583 “south of Biograd” or “in the waters of Murter”. The ship named *Gagiana* (*Gaiana* or *Gagliana*) in the documents corresponded best to the ship that sank near Gnalić, but Gasparetto still left the question of her identification open.

2. OVERVIEW OF EVENTS UNTIL 2006

Lack of interest in Gnalić lasted until 1996, when Zdenko Brusić from the Archaeological Museum in Zadar reinitiated the research. During June and July of 1996 he was at the site with German divers from Koblenz and Frankenthal, and he organized a research campaign in cooperation with the Nautilus company, managed by Gerhard Seeger and Miljenko Brkljačić. Research included collecting finds from the 60x80m seabed surface, about a hundred meters south and southwest of the site. In this area, large amount of glass beakers was found that were assumed to have floated from the shipwreck location and sank somewhat further. Wooden ship structure was cleaned, and considerable quantity of the remaining finds was taken out.⁷ Devastation of the site was confirmed by holes resulting from digging and forceful removal of the finds.

The conclusion that Zdenko Brusić made on the basis of available finds was aimed at the ship interpretation. Despite the fact that signs of the Venetian Republic were not found on the guns, as repeatedly emphasized in the previous works,⁸ and Gasparetto's hypothesis that a round merchant ship sank near Gnalić,⁹ Brusić assumed that the remains of a galley 30-40m long, and 6-7m wide laid on the seabed.¹⁰ He reinforced his assumption by claiming that guns should be in the prow part of the ship in case of a galley, and alleged discovery of a flat side of the ship about 1m high. Furthermore Brusić followed the reasoning

4 K. Radulić 1973.

5 S. Petricioli 1981, 39.

6 A. Gasparetto 1973.

5 S. Petricioli 1981, 39.

6 A. Gasparetto 1973.

7 Z. Brusić 1996.

8 I. Petricioli 1970; S. Petricioli 1981, 44.

9 A. Gasparetto 1973; 1976, 412.

10 Z. Brusić 2006, 80.

dijelu broda našlo u priličnim količinama.⁷ Devastatorske su aktivnosti bile potvrđene rupama na nalazištu, koje su odavale tragove kovanja i nasilnoga vađenja materijala.

Zaključak koji je Zdenko Brusić izveo na osnovi dostupnih nalaza bio je usmjeren na interpretaciju broda. Usprkos činjenici da se na topovima nisu pronašli nikakvi znakovi Mletačke Republike, na što je višestruko upozoravano u dotadašnjoj literaturi,⁸ te Gasparettovoj pretpostavci kako je u slučaju brodoloma kod Gnalica riječ o zabljenome trgovačkom brodu,⁹ Brusić je pretpostavio da na morskome dnu leže ostatci galije dužine 30 – 40 m, a širine 6 – 7 m.¹⁰ Svoju je pretpostavku ojačao i tvrdnjom o rasporedu topova koji su se, u slučaju galije, trebali nalaziti na pramčanome dijelu broda te iskustvom istraživanja nalazišta kada je u istraženome dijelu navodno otkrivena ravna strana broda visine oko 1 m. Osim toga, Brusić se poveo i za razmišljanjem svojih prethodnika koji su u zapadnome dijelu vidjeli pramac, a u istočnome krmu broda. Sljedeće godine istraživanje je zaustavila Državna uprava za zaštitu kulturne i prirodne baštine pa nije preostalo drugo nego li se nadati njegovu ponovnom pokretanju.

Godine 2003., u suradnji sa Smiljanom Gluščevićem iz Arheološkoga muzeja u Zadru, započeo je rad međunarodne skupine stručnjaka na obradi nalaza s brodoloma kod Gnalica. Godine 2004. njihova je aktivnost uvrštena u projekt *The Heritage of the Serenissima*, financiran u okviru programa Culture 2000, čiji su voditelji Mitja Gušin, Sauro Gelichi i Konrad Spindler zauzeli stav da je nalaze s Gnalica potrebno prezentirati javnosti u obliku jednostavne publikacije, a potom se posvetiti obradi pojedinih dijelova gnaličke zbirke. U tome smislu tiskana je i prva knjiga o brodolomu, pod naslovom *The Venetian Shipwreck of Gnalici*, koja je dvije godine kasnije prevedena i na hrvatski jezik.¹¹ Nažalost, pri pripremi knjige slovenski su se kolege povelili za razmišljanjem Zdenka Brusića i njegovom interpretacijom potonuloga broda kao trgovačke galije, što je rezultiralo galijom na koricama publikacije.

Uz čitav niz radova o nalazima s brodoloma kod Gnalica,¹² Irena Lazar i Hugh Willmott obradili su staklene predmete te ih objavili u knjizi *The Glass from the Gnalici Wreck*, a na izložbi u Trentu zbirka predmeta s Gnalica njihovom je zaslugom bila posebno istaknuta.¹³ Ideju o pokretanju međunarodnoga projekta koji je trebao započeti velikom izložbom u Veneciji, odbilo je tada Ministarstvo kulture RH jer se kao predlagač pojavio Mitja Guštin

of his predecessors who saw prow in the western part, and stern in the eastern part of the shipwreck site. The following year the research was suspended by the State Administration for the Protection of Cultural and Natural Heritage so one could only have hoped that this cessation would have been temporary.

In 2003 an international group of experts started analyzing the finds from the Gnalici shipwreck in cooperation with Smiljan Gluščević from the Archaeological Museum in Zadar. In 2004 their activity was included in the project *The Heritage of the Serenissima*, funded within the program Culture 2000, led by Mitja Gušin, Sauro Gelichi and Konrad Spindler, who took a position that the finds from Gnalici should be presented to the public in form of a simple publication, and then individual parts of the Gnalici collection should be analyzed. In that regard the first book about the shipwreck was printed, entitled *The Venetian Shipwreck of Gnalici*, translated to Croatian two years later.¹¹ Unfortunately in preparation of this book Slovenian colleagues supported Zdenko Brusić's interpretation of the sunken ship as a merchant galley resulting in a galley depiction on the book cover.

Besides a number of works about the finds from the Gnalici shipwreck,¹² Irena Lazar and Hugh Willmott analyzed glass finds and published them in the book *The Glass from the Gnalici Wreck*. Owing to them the collection of finds from Gnalici was promoted at the exhibition in Trento.¹³ The idea about initiating an international project, that should have started with a big exhibition in Venice, was then rejected by the Ministry of Culture of the Republic of Croatia since Mitja Guštin from the University of Primorska from Koper proposed it instead of a Croatian proposer from a Croatian institution, as required by the Croatian legislation.

3. RELAUNCHING THE PROJECT

In 2005, when the documentary series *Great shipwrecks of the Adriatic* was filmed, professional team dived at the islet of Gnalici and examined the remains of a shipwreck. Several complete windowpanes in the surface layer of the site (Fig. 12), and visible remains of the ship structure were the best indicator that further excavations were necessary.¹⁴ After that, consecutive applications were issued to the Ministry of Culture of the Republic of Croatia which, in cooperation with the Regional Museum of Biograd na Moru, sought to draw attention to the importance of this research project.

Owing to UNESCO's Participation Program, on July 5, 2011 round table was held in Biograd na Moru, on the

7 Z. Brusić 1996.

8 I. Petricioli 1970; S. Petricioli 1981, 44.

9 A. Gasparetto 1973; 1976, 412.

10 Z. Brusić 2006, 80.

11 *The Venetian Shipwreck at Gnalici* 2004; Z. Mileusnić 2006.

12 C. Beltrame 2006; D. Davanzo Poli 2006; Z. Mileusnić 2006; M. Morin 2006; C. Terzer 2006.

13 I. Lazar, H. Willmott 2006a; *L'avventura del vetro dal Rinascimento al Novecento tra Venezia e mondi lontani* 2010.

11 *The Venetian Shipwreck at Gnalici* 2004; Z. Mileusnić 2006.

12 C. Beltrame 2006; D. Davanzo Poli 2006; Z. Mileusnić 2006; M. Morin 2006; C. Terzer 2006.

13 I. Lazar, H. Willmott 2006a; *L'avventura del vetro dal Rinascimento al Novecento tra Venezia e mondi lontani* 2010.

14 I. Radić Rossi, M. Nicolardi 2019, 69.



sa Sveučilišta na Primorskom iz Kopa, umjesto hrvatskoga predlagača iz hrvatske institucije, što bi bilo sukladno odredbama hrvatskoga zakonodavstva.

3. PONOVRNO POKRETANJE PROJEKTA

Godine 2005., prilikom snimanja serijala *Veliki brodolomi Jadrana* stručna je ekipa zaronila kod otočića Gnalića i na morskome dnu zatekla ostatke brodoloma. Nekoliko cjelovitih prozorskih stakala u površinskome sloju nalazišta (sl. 12) te vidljivi ostatci brodske konstrukcije bili su najbolji znak da je na nalazištu potrebno nastaviti istraživanje.¹⁴ Zaredale su uzastopne prijave Ministarstvu kulture RH kojima se, u suradnji sa Zavičajnim muzejom Biograd na Moru, nastojalo privući pozornost na važnost istraživačkoga projekta.

Zahvaljujući Participacijskomu programu UNESCO-a, 5. srpnja 2011. godine održan je u Biogradu na Moru okrugli stol na temu *Brodolom kod Gnalića: povijest istraživanja, problematika konzerviranja arheoloških nalaza, planovi za budućnost i primjena podvone informacijsko-komunikacijske tehnologije*, kojemu su prisustvovali svi potencijalno zainteresirani dionici budućega projekta (sl. 13).

Slika 3. Istraživačka ekipa 1967. i 2012. godine

Figure 3. Research team in 1967 and 2012

foto / photo by: Fototeka Sveučilišta u Zadru / Photographic Archive of University in Zadar

theme *The Gnalić shipwreck: research history, problems of conserving the archaeological finds, future plans and application of underwater information–communication technology*. It was attended by all potentially interested participants of the future project (Fig. 13). It continued in a workshop focused on documenting the state of the site by using modern technical devices (Figs. 14–15). Seminar *Future of the heritage of wooden shipbuilding of the medieval and postmedieval period* was held on October 6 and 7, 2011 in the Inter-University Center in Dubrovnik, where an international group of experts, interested in relaunching the project, was gathered again.

The project of research of the Gnalić shipwreck was relaunching in 2012 (Fig. 3). The modest funds provided by the Ministry of Culture of the Republic of Croatia were sufficient for a ten-day research campaign, conducted from June 25 to July 5, led by Irena Radić Rossi of the University of Zadar and Filipe Castro of the University of Texas A&M, which was intended to indicate the value and interest of the site. Archaeological trench was placed in NS direction, at the place where definitely most research had been carried out, to show that the site still hides an abundance of movable finds,

14 I. Radić Rossi, M. Nicolardi 2019, 69.

Usljedila je terenska radionica tijekom koje je s pomoću suvremenih tehničkih pomagala dokumentirano postojeće stanje nalazišta (sl. 14–15). U Interuniverzitetskome centru u Dubrovniku 6. i 7. listopada 2011. godine održan je i seminar *Budućnost baštine drvene brodogradnje srednjega i novoga vijeka*, na kojemu se ponovno okupila međunarodna skupina stručnjaka, izrazito zainteresiranih za ponovno pokretanje projekta.

Projekt istraživanja brodoloma kod Gnalića ponovno je pokrenut 2012. godine (sl. 3). Skromna sredstva koja je osiguralo Ministarstvo kulture RH bila su dostatna za istraživačku kampanju u trajanju od deset radnih dana, održanu od 25. lipnja do 5. srpnja, provedenu pod vodstvom Irene Radić Rossi sa Sveučilišta u Zadru i Filipa Castra sa Sveučilišta Texas A&M, koja je imala za cilj ukazati na vrijednost i zanimljivost nalazišta. Arheološka je sonda postavljena u pravcu sjever-jug, na mjestu gdje se zasigurno najviše istraživalo, kako bi se iskopom dokazalo da na nalazištu i dalje postoji mnoštvo pokretnih nalaza, ali i očuvani dijelovi brodske konstrukcije. U kvadratima A16 i B16 potvrđeno je tada postojanje broda i brojnih nalaza ingota olovnoga bjelila (sl. 16–18), dok je istraživanje u kvadratu G16 rezultiralo otkrićem velike količine staklenih predmeta i jedne čitave keramičke posude, ali bez tragova brodske konstrukcije. Tim je istraživanjem nakon dugo vremena otklonjena svaka sumnja u potrebu daljnijega rada jer se pokazalo kako je nalazište očuvano do te mjere da ga čim prije treba istražiti.

4. REZULTATI ISTRAŽIVANJA 2013. – 2017.¹⁵

Sljedeće godine, 2013., Sveučilište u Zadru provelo je u suradnji sa Sveučilištem u Patrasu¹⁶ geofizičko istraživanje u trajanju od dva radna dana. Zahvaljujući bočno skenirajućem sonaru, magnetometru i geološko-strukturnom dubinomjeru zabilježena je točna pozicija nalazišta i utvrđena je njegova veličina. Da je brod prilikom potonuća skliznuo samo nekoliko metara dublje, našao bi se u dubokome sedimentu i znatno bolje očuvao. U vremenu od 15. lipnja do 15. kolovoza istraživanje je prošireno u smjeru sjevera, zapada i istoka dodavanjem kvadrata Z15–C15 i Z17–19 / C17–19, ali je još uvijek ostalo nejasno o kojemu je dijelu broda ustvari riječ (sl. 19).

Godine 2014., od 15. lipnja do 15. kolovoza, i dalje pod vodstvom Irene Radić Rossi sa Sveučilišta u Zadru i Filipa Castra sa Sveučilišta Texas A&M, nastavilo se čišćenje prethodno označenih kvadrata, a na postojeće su mrežište dodani kvadrati D16–D20 i E16. Veća količina drvenih bačava u prilično lošem stanju izvađena je iz mora, dok je na morskome

as well as preserved parts of the ship structure. Presence of ship remains and numerous ingots of lead white were attested in squares A16 and B16 (Figs. 16–18), while the research in square G16 resulted in the discovery of a great amount of glass objects and a complete ceramic vessel, but without any traces of the ship structure. After a long time this research eliminated any possible doubt about the need for further work, as it turned out that the site was preserved to the point that it should be explored as soon as possible.

4. RESULTS OF THE 2013-2017 RESEARCH¹⁵

In the following year 2013, the University of Zadar in cooperation with the University of Patras¹⁶ conducted a geophysical survey which lasted for two workdays. Owing to side scan sonar, magnetometer and sub-bottom profiler exact location of the site was recorded as well as its size. If the ship had sunken only few meters deeper into the deep sediment, it would have been preserved much better. In the period from June 15 to August 15 the research was expanded northwards, westwards and eastwards by adding squares Z15–C15 and Z17–19 – C17–19, but it remained unclear which part of the ship it actually was (Fig. 19).

In the year 2014 from June 15 to August 15, still under the leadership of Irena Radić Rossi from the University of Zadar and Filipe Castro from the Texas A&M University, cleaning of previously marked squares was resumed, and new squares (D16–D20 and E16) were added to the existing grid. Large amount of wooden barrels, in a rather poor condition, were taken out of the sea while seven big barrels filled with iron-oxide based colouring material were left on the seabed as well as about forty smaller barrels filled with ingots of white lead. Although it was clear from the beginning of the research that it was a round ship that exhibited no similarities in construction with a galley, in this campaign it was finally determined that the ship lay on the right-hand side (starboard), with stern to the west, and prow to the east, inversely to all previous conceptions. In square D16 eleven new lead seals used in the textile trade were found, which is a really large number compared to five previous examples.¹⁷ In squares D18 and D19 beams of the first deck started to appear. Five frames were removed from the southwestern part of the ship structure from squares A–C 15–17, with the aim of their detailed documentation. Composite photogrammetric model, made on that occasion, showed the situation on the seabed during the two months of research (Fig. 4).

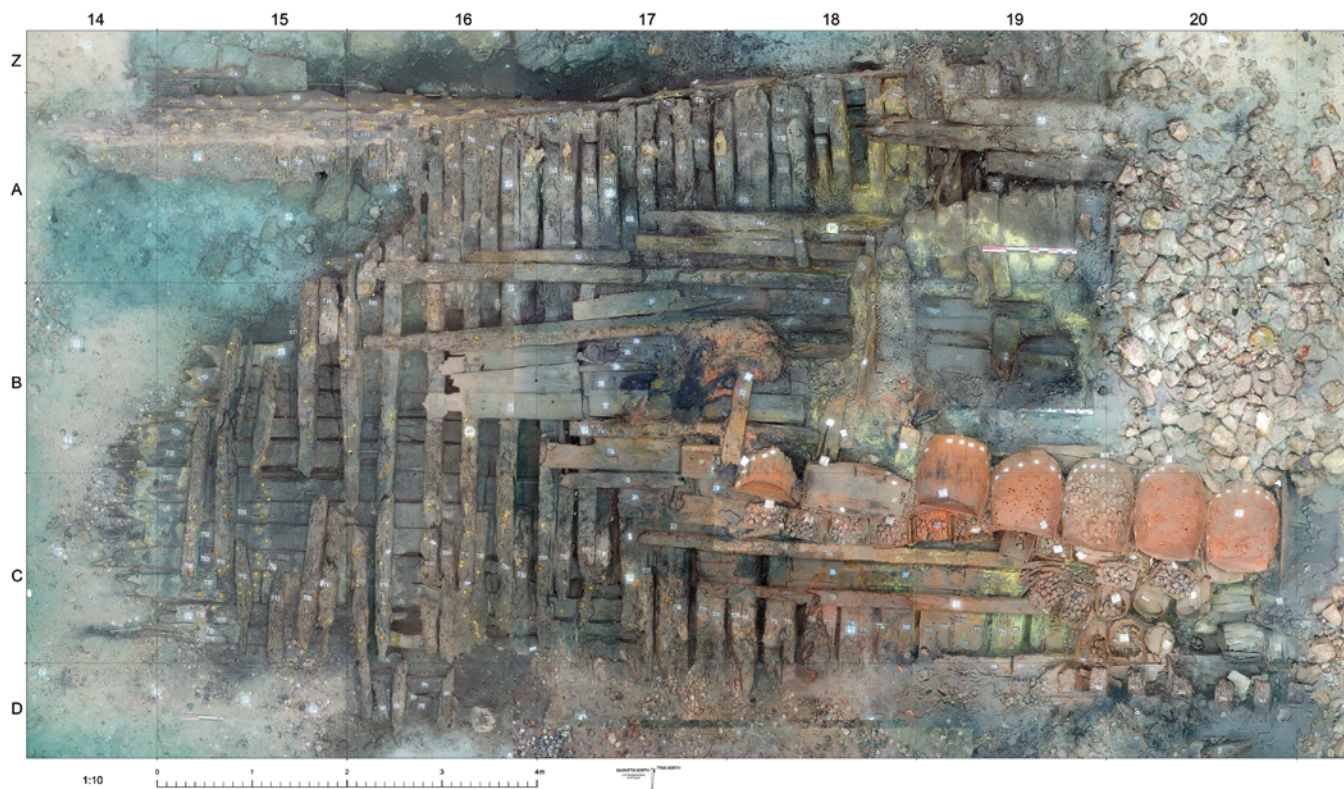
15 Sva istraživanja provedena su pod vodstvom Irene Radić Rossi sa Sveučilišta u Zadru. Do 2014. godine suvoditelj istraživanja bio je Filipe Castro sa Sveučilišta Texas A&M.

16 Istraživanje je provedeno u suradnji s ekipom Odjela za geologiju Sveučilišta u Patrasu, pod vodstvom Irene Radić Rossi i Georgea Papatheodoroua.

15 All the research was led by Irena Radić Rossi from the University of Zadar. Until the year 2014 co-leader of the research was Filipe Castro from the Texas A&M University.

16 The research was conducted in cooperation with the team of the Department of Geology of the University of Patras, led by Irena Radić Rossi and George Papatheodorou.

17 K. Radulić 1970, 18, 20; *The Venetian Shipwreck at Gnalić* 2004, 14; D. Davanzo Poli 2006, 98–99; C. Terzer 2006, 113.



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dnu ostavljeno sedam velikih bačava ispunjenih sirovinom na bazi željeznoga oksida te četrdesetak manjih bačava ispunjenih ingotima olovnoga bjelila. Iako je već od samoga početka istraživanja bilo jasno kako je riječ o zaobljenome brodu koji s galijom nema konstruktivnih sličnosti, te je godine napokon potvrđeno kako je brod legao na desni bok, s krmom na zapadu, a pramcem na istoku, tj. obrnuto od svih dotadašnjih predodžbi. U kvadratu D16 pronađeno je jedanaest olovnih plombi koje su se koristile u trgovini tekstilom, što je u usporedbi s dotadašnjih pet poznatih primjera doista velik broj.¹⁷ U kvadratima D18 i D19 naslućene su grede prve palube, a s jugozapadnoga dijela brodske konstrukcije, iz kvadrata A–C 15–17 uklonjeno je pet rebara s ciljem njihova detaljnog dokumentiranja. Kompozitni fotogrametrijski model koji je tada napravljen, pokazivao je situaciju na morskome dnu tijekom dva mjeseca istraživanja (sl. 4).

Godine 2015., od 25. kolovoza do 15. listopada, pod vodstvom Irene Radić Rossi sa Sveučilišta u Zadru, obavljeno je čišćenje kobilice u punoj dužini, od kvadrata Z14 u zapadnome dijelu nalazišta do kvadrata Z27 u kojemu se već nalazi pramčana statva. Iako je čišćenje sedimenta provedeno do razine vidljivoga drva, iskop nije dosegnuo željenu čistoću, pa je istraživanje kobiličnoga dijela konstrukcije ostavljeno za sljedeće istraživačke kampanje. Na razini kvadrata Z19 zamijećena je veća količina ravnoga

Slika 4. Fotogrametrijski ortomozaik 2014.

Figure 4. Photogrammetric orthomosaic 2014

izradili / made by: K. Yamafune, R. Torres, S. Govorčin

In 2015, from August 25 to October 15, under the leadership of Irena Radić Rossi from the University of Zadar, the keel was cleaned in full length, from square Z14 in western part of the site to square Z27 where the stem was located. Although this cleaning of the sediment was performed to the level of visible wood, the dig did not obtain the desired results, so that the research of the keel part of the structure was left for the forthcoming research campaigns. At the level of square Z19 large amount of flat glass was noticed. The trench was expanded towards square Y19, where broken wood of ship structure was found, mixed with glass material. In the same year, stern structure that carried metal base of a rudder was analyzed in detail.

In the following year (2016) under the same research leadership, from August 1 to August 8, load of ballast stones was removed from squares A19–20 and B19–20, which was hiding the traces of the ship bilge pump, that consisted of vertical stanchions and planking boards, and perforated central part penetrated by water that had to be removed. That year it was documented *in situ*, and in the next research campaign its central part was taken out in order to make additional documentation. In square D18–19, at the place where traces of the first deck were noticed, there were also large amounts of flat glass (Fig. 5), arranged in rows and immobilized by straw. Judging from

17 K. Radulić 1970, 18, 20; *The Venetian Shipwreck at Gnalić* 2004, 14; D. Davanzo Poli 2006, 98–99; C. Terzer 2006, 113.



stakla, pa je iskop proširen u smjeru kvadrata Y19 u kojemu je pronađeno razlomljeno drvo od brodske konstrukcije, izmiješano sa staklenim materijalom. Iste godine na nalazištu je detaljno proučena krmena konstrukcija koja je na svome kraju nosila metalno ležište za kormilo.

Sljedeće, 2016. godine pod istim je vodstvom, od 1. kolovoza do 8. listopada, iz kvadrata A19–20 i B19–20 uklonjena gomila balastnoga kamenja ispod koje su se ukazali tragovi brodske pumpe. Brodska se pumpa sastojala od vertikalnih upora i ogradnih dasaka te perforiranoga središnjeg dijela u koji je ulazila voda koju je trebalo izbacivati. Te je godine dokumentirana *in situ*, a u sljedećoj istraživačkoj kampanji izvađen je njezin središnji dio s ciljem izrade dodatne dokumentacije. U kvadratu D18–19, na mjestu gdje su uočeni tragovi prve palube, uočene su i velike količine ravnoga stakla (sl. 5), složenoga u nizove i imobiliziranoga slamom. Sudeći prema nalazima u kvadratu D20, osjetljivi je materijal bio transportiran u košarama, a među nalazima isticale su se ovalne boce s visokim vratom. Zbog velike količine osjetljivih nalaza iskop u tome dijelu nalazišta prekinut je u očekivanju nastavka istraživanja. U kvadratu E19 naslućen je trag druge palube. Dokumentiranje nalazišta provedeno je, osim klasičnim načinom, i upotrebom autonomne ronilice Girona 500 (sl. 20) u okviru terenske radionice *Breaking the Surface*, usmjerene na podvodnu robotiku i njezine primjene.¹⁸

Slika 5. Ukrašena prozorska stakla s nalazišta

Figure 5. Decorated windowpanes from the site

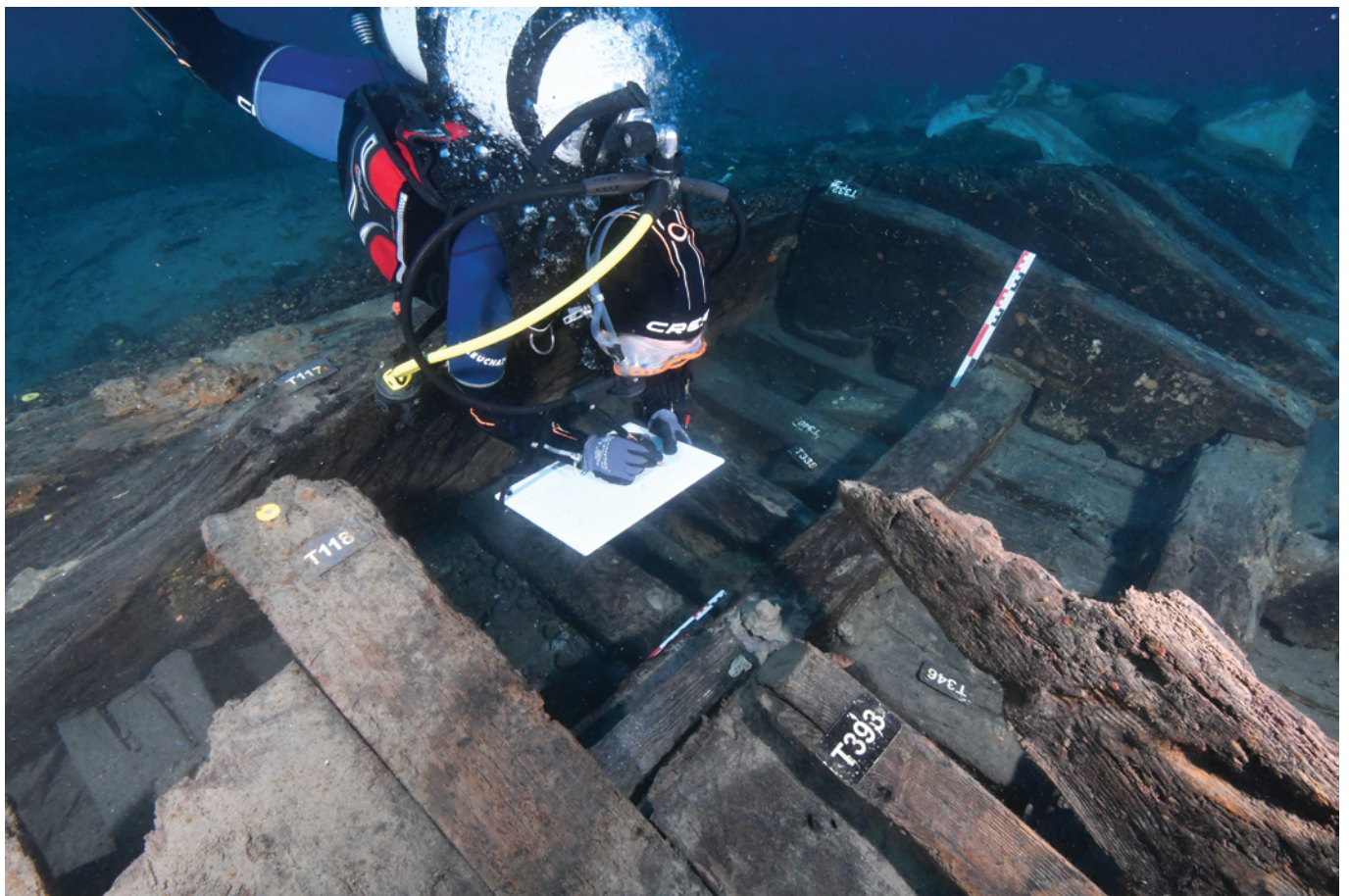
foto / photo by: B. Vukičević

the finds in square D20, fragile material was transported in baskets, and oval bottles with high neck stood out among the finds. Due to the large amount of fragile finds, excavation in this part of the site was stopped in expectance of the research continuation. In square E19 possible trace of second deck was found. Documenting of the site was performed regularly, and also with the use of autonomous underwater vehicle Girona 500 (Fig. 20) within field workshop *Breaking the Surface*, focused on underwater robotics and its application.¹⁸

In 2017, work on the Gnalić finds started with a glass bead workshop that was organized by the University of Zadar in cooperation with the Canadian Laval University and the University of Montreal. During work on sorting the finds, in accordance with the methodology established in 1970 by Martha and Kenneth Kidd, and integrated by Karlins Karklins in 2012,¹⁹ it was determined that 76 types of beads were found, differing in shape, decoration, colour and number of layers used in their manufacture. The same year, from August 1 to September 30, the squares that had already been included in the

18 I. Radić Rossi, M. Nicolardi 2019, 76–77.

19 M. Kidd, K. Kidd 1970; K. Karklins 2012.



Godine 2017. rad na nalazima s Gnalića započeo je radionicom na temu staklenih perlica koju je, u suradnji s kanadskim Sveučilištem Laval i Sveučilištem u Montrealu, organiziralo Sveučilište u Zadru. Tijekom rada na sortiranju, prema metodologiji koju su 1970. godine uspostavili Martha i Kenneth Kidd, a 2012. godine integrirao Karlins Karklins,¹⁹ utvrđeno je kako je na lokalitetu prisutno 76 tipova perlica koji se međusobno razlikuju oblikom, dekoracijom, bojom i brojem slojeva stakla iskorištenih za njihovu izradu. Iste je godine, od 1. kolovoza do 30. rujna, čišćenje bilo usmjereno na kvadrate koji su već bili zahvaćeni ranijim iskopom te kvadrate C14 i D14–15, u kojima se nastavilo otkrivanje sitnih nalaza. Iz mora su radi dokumentiranja izvađene bačve 1 i 2, visine oko 1,2 m, namijenjene prijevozu sirovine za izradu boje na bazi željeznoga oksida, koje su zbog nemogućnosti organiziranja odgovarajućega tretmana vraćene u more u prikladnoj ambalaži. Sve preostalo vrijeme iskorišteno je za detaljno dokumentiranje brodske konstrukcije (sl. 6). Te je godine napravljena i fotogrametrija čitava nalazišta (sl. 7), a sve dotadašnje fotogrametrijske snimke spojene su u jednu cjelinu (sl. 8, 21).

Među posebnim nalazima 2014. godine, pronađenima u jednoj od velikih bačava ispunjenih sirovinom na bazi

Slika 6. Dokumentiranje dobro očuvane brodske konstrukcije
Figure 6. Documenting well preserved ship structure

foto / photo by: K. Yamafune

previous excavations were further investigated, and the excavation of squares C14 and D14–15, that yielded an abundance of small finds, was continued. Barrels 1 and 2, about 1.2m high, were taken out of the sea for documentation purposes. They were intended for transport of iron-based colouring material, and were returned to the sea in adequate packaging due to inability to organize proper treatment. All the remaining time was used for detailed documenting of the ship structure (Fig. 6). Photogrammetry of the entire site was made in that campaign (Fig. 7) and all previous photogrammetric images were connected into a single unit (Figs. 8, 21).

Among the special finds recovered in 2014 campaign from one of the big barrels filled with iron-oxide based colouring material, particularly interesting is the lead seal is used to seal the goods loaded on the ship by Doge Nicolò da Ponte (Fig. 22). Depiction on the obverse consists of the figures of St Mark and the doge who accepts a flag from the saint, with an inscription *DVX*. The inscription *NIC(OLAUS).DE PONTE = DUX = S(ANCTUS).M(ARCUS). VENETI(ARUM)* encircles the edge of the stamp, containing abbreviated names of the doge, St Mark and Venice. The inscription on the reverse reads: *NICO/LAVS.DE/PONTE.DEI/*

19 M. Kidd, K. Kidd 1970; K. Karklins 2012.



Slika 7. Fotogrametrijski ortomozaik čitavoga nalazišta
Figure 7. Photogrammetric orthomosaic of the entire site

izradio / made by: K. Yamafune

željeznoga oksida, ističe se olovna plomba kojom je bila zapečaćena roba koju je dužd Nicolò da Ponte ukrcao na brod (sl. 22). Prikaz na aversu sastoji se od likova sv. Marka i dužda koji od njega prima stijeg, popraćen natpisom DVX. Duž ruba pečata teče natpis: NIC(OLAUS). DE PONTE = DUX = S(ANCTUS). M(ARCUS). VENETI(ARUM), koji sadrži skraćena imena dužda, sv. Marka i Venecije. Natpis na reversu glasi: NICO/LAVS. DE/PONTE. DEI/GRA. DVX. VENETIAR/ET, u značenju: *Nicolò da Ponte milošću božjom dužd Venecije itd.*²⁰

Drugi značajan nalaz skupljen je prilikom površinskoga pregleda terena 2015. godine, kada je iz mora izvađena komemorativna brončana medalja reformističkoga pokreta *Poljska braća (Polish Brethren, Minor Reformed Church of Poland)* (sl. 23), nastaloga 1565. godine odvajanjem od poljskih kalvinista, koji se drži jednim od najprogresivnijih vjerskih pokreta svoga doba. Izrazito pacifistički pokret negirao je postojanje Svetoga Trojstva, propagirajući jedinstvo Boga i Isusovu isključivo ljudsku prirodu. Na prednjoj strani medalje prikazan je portret Isusa u lijevome profilu, popraćen hebrejskim natpisom *Isus čovjek*, a na reversu, također na hebrejskom, *Mesija Kraljevstva mira došao je u stvarnom ljudskom obličju*. Medalja kojom se komemorirao odlazak u Svetu Zemlju morala je pripadati nekome od posade ili putnika koji su se u času potonuća zatekli na brodu.²¹

Iz brojnih nalaza vrijedi još posebno izdvojiti one koji su vjerojatno trag trgovine sirovinama za proizvodnju boja, od kojih su neki poznati već od ranije,²² a neki su novootkriveni.²³ Među već poznatim nalazima svakako su mali konični ingoti olovnoga bjelila, zvonoliki ingoti živina sulfida i antimonov sulfid u grumenju, a među novima vrijedi spomenuti grumenje igličaste strukture, također određeno kao živin sulfid, olovni oksid, te sirovine

GRA. DVX.VENETIAR/ET, meaning *Nicolò da Ponte doge of Venice by the grace of God etc.*²⁰

The second important find was collected during the surface inspection in 2015. It refers to commemorative bronze medal of the reformist movement Polish Brethren (*Minor Reformed Church of Poland*) (Fig. 23) formed in 1565, after split with the Polish Calvinists. Polish Brethren were believed to be one of the most progressive religious movements at the time. Distinctly pacifist movement negated the existence of the Holy Trinity, propagating the unity of God and Jesus' human nature. On the front side of the medal is a portrait of Jesus' left profile with a Hebrew inscription *The man Jesus*, and on the reverse, also in Hebrew, *The Messiah of the Kingdom of Peace came in true human nature*. Medal used to commemorate pilgrimage to the Holy Land had to belong to a crew member or passenger who happened to be aboard at the time of sinking.²¹

Out of abundance of finds we should mention the ones that probably can be interpreted as traces of trade with colouring materials, some of which had already been known,²² and some were newly found.²³ Previously discovered finds include small conical ingots of lead white, bell-shaped ingots of mercury sulfide and antimony sulfide in lumps, and new finds include lumps of needle-like structure also identified as mercury sulfide, lead oxide, iron-oxide and arsenic-sulfide based colouring materials. Pellets of organic pigment known as lake are particularly interesting, and so far unique among the Croatian underwater finds.

5. RESEARCH IN THE VENETIAN ARCHIVES²⁴

Research in the Venetian archives undertaken by Mariangela Nicolardi and Mauro Bondioli from 2011 to 2017, resulted in a discovery of a number of documents that

20 I. Radić Rossi, M. Nicolardi 2019, 94.

21 I. Radić Rossi, M. Nicolardi 2019, 95.

22 I. Kelez 1970.

23 K. Batur, I. Radić Rossi 2019.

20 I. Radić Rossi, M. Nicolardi 2019, 94.

21 I. Radić Rossi, M. Nicolardi 2019, 95.

22 I. Kelez 1970.

23 K. Batur, I. Radić Rossi 2019.

24 Story about the shipwreck was told in more detail in I. Radić Rossi *et al.* 2013, and then in I. Radić Rossi, M. Nicolardi 2019, where archival sources are listed. Only basic information is given in the continuation of the text, taken from the mentioned works.



na osnovi željeznog oksida i arsenovih sulfida. Posebnu zanimljivost čine kuglice organskoga pigmenta, poznate pod engleskim imenom *lake*, koje su za sada jedinstveni nalaz iz hrvatskoga podmorja.

5. ISTRAŽIVANJE U MLETAČKOME ARHIVU²⁴

Istraživanje u mletačkome arhivu, koje su od 2011. do 2017. godine proveli Mariangela Nicolardi i Mauro Bondioli, rezultiralo je otkrićem brojnih dokumenata kojima je potvrđena identifikacija broda. Arhivsko je istraživanje dovelo i do mnogih novih otkrića kao što je, na primjer, dokument o osnivanju kompanije Lezza, Moceniga e Basadonna s ciljem izgradnje broda (sl. 9), dokument o nabavi drvene građe ili dokument kojim se određuje da će brod izgraditi korčulanski brodograditelj Frane Valenčić (Francesco di Antonio da Curzola). Godine 1569. brod je porinut u more, ali je zbog izbijanja Ciparskoga rata dvije godine prevezio trupe na Krf, sve dok ga Osmanlije nisu presreli pred Valonom i oteli, zarobivši pritom čitavu preživjelu posadu. Brod se tako našao u rukama Uluč-Alije koji je nakon slavnoga Lepantskog boja proglašen velikim admiralom osmanske flote.

Deset godina kasnije Uluč-Alija odlučio je prodati brod, a kao kupac nastupio je Odoardo da Gagliano koji je kao osmanski podanik trgovao s Venecijom, ali je istovremeno sa stricem Domenicom, mletačkim građaninom, posjedovao obiteljsku tvrtku. Kupivši brod koji je nekada bio mletački, Odoardo ga je uspio zadržati na popisu mletačkih brodova te ga opremiti novim topovima, izlivenim 1582. godine u Veneciji.

Godine 1583. izgorjela je stara palača sultana Murata III. pa je veliki vezir Sijavuš-paša predao mletačkomu bailu

Slika 8. Fotogrametrijski ortomozaik 2017.

Figure 8. Photogrammetric orthomosaic 2017

izradio / made by: K. Yamafune

confirmed the identification of the ship. Archival research led to many new discoveries, as for example a document on founding the Lezza, Moceniga e Basadonna company, with an aim of building a ship (Fig. 9), document on acquiring wooden material or document stating that the ship will be built by the shipbuilder Frane Valenčić from Korčula (Francesco di Antonio da Curzola). In the year 1569 the ship was launched, but as the War of Cyprus broke out, she transported troops to Corfu until the Ottomans intercepted and captured her in front of Valona, captivating the surviving crew. The ship thus found herself in the hands of Uluç Ali who, after the famous Battle of Lepanto, was appointed as Grand Admiral of the Ottoman fleet.

Ten years later, Uluç Ali decided to sell the ship, and Odoardo da Gagliano was the buyer who traded with Venice as an Ottoman subject. At the same time he owned a family business with his uncle Domenico, the citizen of Venice. Once he bought a ship that was once Venetian, Odoardo managed to keep her on the list of Venetian ships and to supply her with new guns, cast in Venice in 1582.

In 1583, the old palace of Sultan Murad III burnt down and Grand Vizier Siyavuş Pasha ordered 5000 windowpanes from the Venetian bailo in Constantinople that were loaded on *Gagliana grossa*, after the Senate issued a special approval. Three bundles of "perfect" silk for sultan's mother Nurbanu were also shipped, as well as a bundle of brocatel for three or four pieces of attire for the grand vezier. We cannot say why the unfortunate ship waited for so long to sail, but it seems there were not enough goods to be loaded. When she finally sailed on her last voyage, by the end of October and beginning of November 1583, a box with jewels was given to the ship

24 Priča o brodolomu detaljnije je ispričana u I. Radić Rossi *et al.* 2013, a potom i u I. Radić Rossi, M. Nicolardi 2019, gdje su navedeni i arhivski izvori. U nastavku teksta donose se samo osnovni podatci, preuzeti iz navedenih radova.

16 25 719

1567. An. 18. aprile

ad Campagna

Et il nome d' spirito santo, Sono
 convenuti insieme li mag. my. Benedetto da
 Lezze d' el clmo. my. Juan pro. or, Mr. Piero
 Basadonna fu d' el clmo. my. Juan dottor o klor,
 o Mr. Loran Mocenigo d' el clmo. my. Juan
 de far in compagnia tra loro un nome
 d' quella portada et a loro piacere, Co
 li patti et conditioni infrascripti vj.

Prima ditti mag. consorsii voleno caduno de loro
 participar in detta nome p' un terzo. cotti
 ogniuno d' loro far la spesa in fabricar
 detta nome p' la terza parte, Donando
 medesimamente ditti. s. consorsii participar
 p' terzo et s. delli nelli et velli et seguisimo
 da detta nome.

Si obligano caduno de loro a fare fare
 scrivere in uno delli canchi et scritta
 dug. cinqu. duc. da S. G. N. q. p. d. b.
 p' poter dar principio Et el nome d' dio
 si comprar lignami et altre cose necie
 p' fabricar detta nome, Et finiti de
 spendere li dug. 1500. et sono li diti d. 500.
 p' caduno, siano medesimamente tornati

Slika 9. Nacrt dokumenta o osnivanju kompanije Lezze-Mocenigo-Basadonna
 Figure 9. Draft of document on founding the Lezze-Mocenigo-Basadonna company
 izvor / source: Archivio di Stato di Venezia, Notarile, atti, b. 11631, c. 714r

u Carigradu narudžbu za 5000 prozorskih stakala koja su, nakon što je Senat izdao posebno odobrenje, ukrcana na brod *Gagliana grossa*. Ukrcane su također i tri bale „savršene“ svile za sultanovu majku Nurbanu te bala brokatela za tri četiri odore velikoga vezira. Zašto se toliko čekalo s polaskom nesretnoga broda, nije nam poznato, ali je vjerojatno da se nije našlo dovoljno robe koja bi na njega bila ukrcana. Kad je napokon krajem listopada ili početkom studenoga 1583. godine brod krenuo na svoje posljednje putovanje, na njemu se nalazila i škrinjica s draguljima koju je, zajedno sa zavežljajem nepoznatoga sadržaja, preuzeo brodski pisar Šimun Fazanić (Simone Fasaneo), rodом s otoka Hvara.

Vijest o potonuću broda stigla je do Venecije 9. studenoga 1583., a odmah potom odabrani su predstavnici svih zainteresiranih za spašavanje tereta. Izvjesni Piero della Moneta bio je zadužen za organizaciju akcije spašavanja, u čemu mu je pomogao Manoli zvan Fregata. Krajem prosinca 1583. Manoli se domogao škrinje brodske pisara i iz nje izvadio nekoliko vrećica novca te škrinjicu i zavežljaj pune nakita, bisera, dijamanta i smaragda. Polovinom veljače sljedeće godine roba je preko Zadra stigla do Venecije, a pri službenome otvaranju procijenjena je na 7243 dukata, što je gotovo dvostruko više od onoga na što je u početku putovanja bila osigurana. Krajem ožujka akcija spašavanja potonule robe prekinuta je, a Manoli Fregata dobro je naplatio svoje usluge.

Kapetan broda Alvise Finardi, o čijem se životu mnogo zna, poživio je još nekoliko godina, a već 1584. s petoricom je poduzetnika osnovao pomorsko trgovačko društvo i postao zapovjednikom jednoga trgovačkog broda. Pokopan je u crkvi S. Iseppo u Veneciji, u blizini monumentalne grobnice svoga dobrog prijatelja Ivana iz Vrane, admirala Venierove galije u Lepantskome boju, kojega je svojevrmeno zamijenio na admiralskome mjestu.

Ovi i još mnogi drugi detalji izašli su na svjetlost dana tijekom arhivskih istraživanja, a brodolom kod Gnalića postao je svjetski poznat. Priča o brodu i brodolomu zaokupila je mnoge istraživače, a na nalazištu se okupila međunarodna ekipa sa svih svjetskih kontinenata.

6. ZAKLJUČNE NAPOMENE

Istraživanje brodoloma kod otočića Gnalića započelo je prije pola stoljeća vađenjem nalaza iz površinskoga sloja nalazišta, u nastojanju da se zaštiti i spasi sve ono što je od brodoloma preostalo na morskome dnu. S vremenom je akcija zadobila znanstveni karakter, iako su tadašnja ograničenja utjecala na njezinu realizaciju. Prvi istraživači spasili su brodolom za buduće generacije upozorivši na potrebu njegova sustavnog istraživanja, a mnogi nalazi zahvaljujući njima dočekali su naše dane.

Kratkotrajna obnova istraživanja 1996. godine upozorila je na vrijednost nalazišta i njegovu ugroženost, ali se nije pretvorila u sustavan istraživački rad. Tek 2012. godine započelo je istraživanje koje i danas traje. Njegovi su rezultati

clerk Šimun Fazanić (Simone Fasaneo), originally from the island of Hvar, together with a bundle of unknown content.

News about the shipwreck reached Venice on November 9, 1583, and immediately representatives of all sides interested in saving the cargo were chosen. Certain Piero della Moneta was in charge of organization of the rescue mission, assisted by Manoli called Fregata. By the end of December of 1583, Manoli found the clerk's chest and took out several bags of coins, a small box and a bundle full of jewelry, pearls, diamonds and emeralds. By mid-February next year these goods reached Venice via Zadar, and in the official opening their value was estimated at 7243 ducats, which is almost double what it was initially insured. By the end of March, rescue mission was stopped and Manoli Fregata was well paid for his services.

Captain of the ship Alvise Finardi, whose life is quite well known, lived for several more years, and as early as 1584 he founded a maritime trading company with five businessmen, and became a captain of a merchant ship. He was buried in the church of S. Iseppo in Venice, close to the monumental tomb of his good friend Giovanni da Vrana, the admiral of Venier's galley in the Battle of Lepanto, whom he once replaced on the admiral's position.

These and many other details were brought to light during the archival research, and the Gnalić shipwreck became world famous. The story of the ship and the shipwreck involved many researchers, and an international team from all continents gathered at the site.

6. CONCLUDING REMARKS

Research of the shipwreck near the islet of Gnalić started half a century ago by taking out finds from the surface layer of the site, in an attempt to save and protect whatever was left of the shipwreck on the sea bottom. Gradually this activity attained scientific character, although the limitations of the time affected its realization. The first researchers saved this shipwreck for future generations, and highlighted the need for systematic research. Many finds were preserved to the present owing to them.

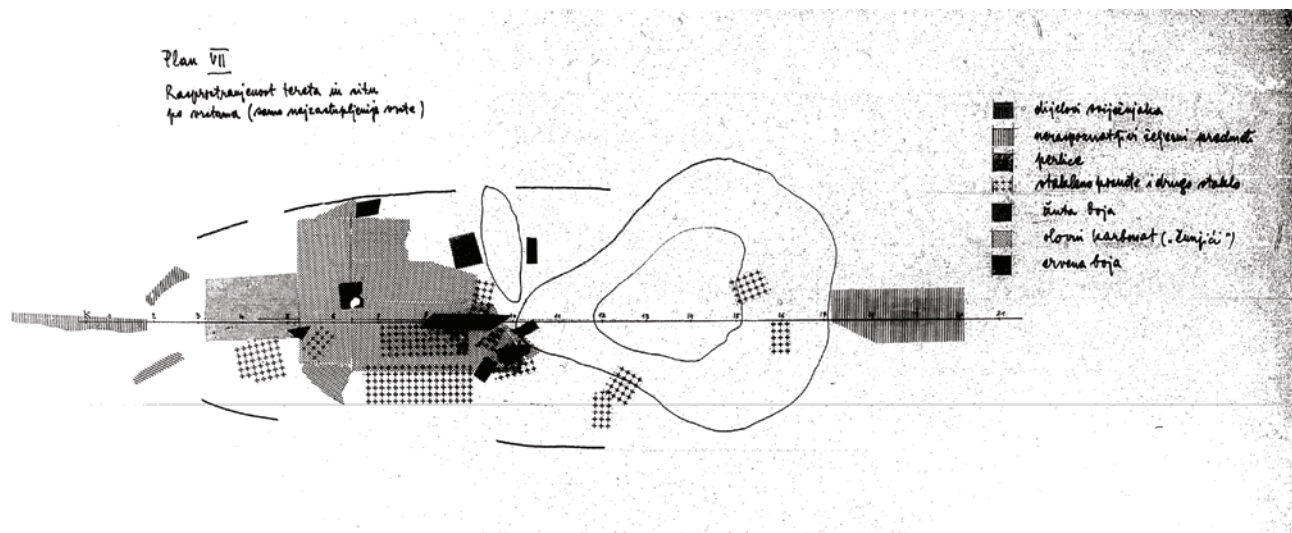
Short term renewal of the research in 1996 confirmed that the site was important, and also endangered, but it did not develop into a systematic research. Only in 2012 the research began, and still goes on. Its results are a best testimony to how a systematic approach can contribute to understanding the site and correctly interpreting what is being researched. Instead of an armed galley with prow to the west, remains of a big round merchant ship were found on the seabed, lying on the right side, with prow to the east. But most important of all is the cognition that not only a merchant

najbolji svjedoci koliko sustavan pristup može doprinijeti razumijevanju nalazišta i ispravnoj interpretaciji onoga što se istražuje. Umjesto naoružane galijske s pramcem usmjerenim prema zapadu, na morskome se dnu naišlo na ostatke velikoga zaobljenog trgovačkoga broda koji je legao na desni bok, s pramcem okrenutim prema istoku. No najvažnija od svega svakako je spoznaja da se na mjestu brodoloma kod Gnalića ne istražuje samo trgovački brod već prošlost čitavoga kasnorenesansnog svijeta.

Posvećujemo ovaj rad dragome kolegi i prijatelju Mati Radoviću koji je čitav svoj radni vijek skrbio o ninskim starinama, u želji da se i njegovih dobrih djela sjećamo na isti način kao što to činimo s djelima prvih istraživača brodoloma kod otočića Gnalića.

ship, but the past of the whole late Renaissance world is being explored at the shipwreck at Gnalić.

We dedicate this work to our dear colleague and friend, Mate Radović, who spent his entire life caring for the Nin antiquities, wishing we may remember his good deeds in the same way as we do with the works of the first researchers of the shipwreck of Gnalić.



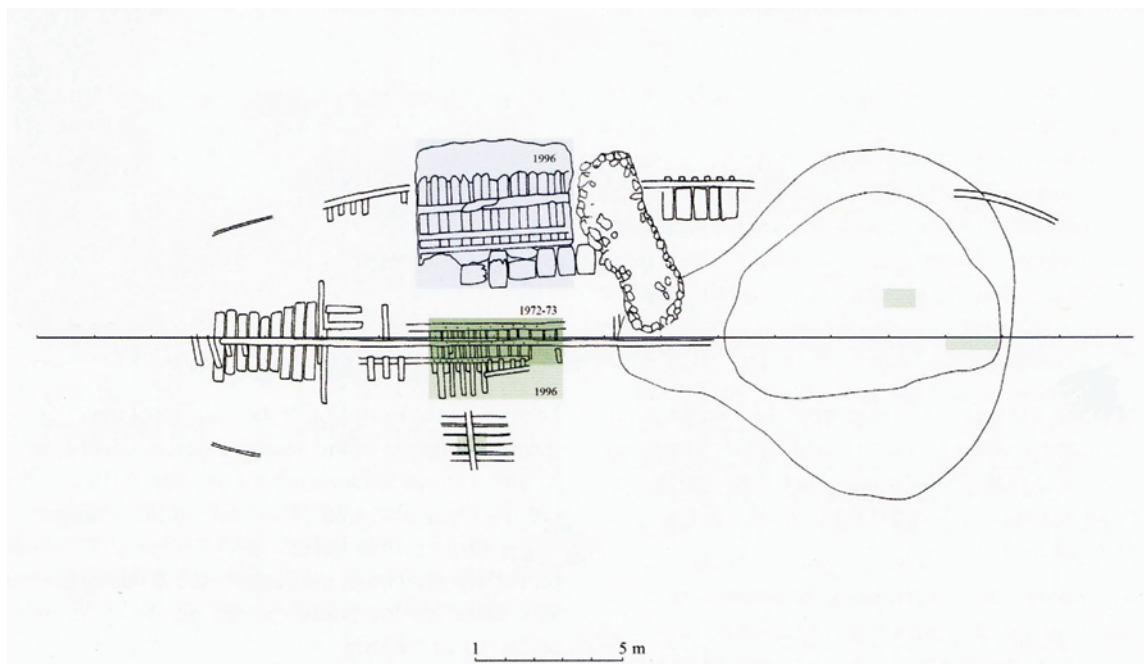
Slika 10. Skica s okvirnim rasporedom raznih materijala primijećenih na nalazištu
Figure 10. Sketch with approximate distribution of different materials noticed at the site

izvor / source: arhiva Konzervatorskoga odjela u Zadru / archives of the Conservation Department in Zadar

Slika 11.
Skica drvenih ostataka broda s označenom zonom istraživanja 1972. – 1973. i 1996. godine

Figure 11. Sketch of the wooden remains with marked zones of research in 1972-1973 and 1996

izradio / made by: Z. Brusić





Slika 12. Okrugla prozorska stakla u površinskome sloju nalazišta 2005.

Figure 12. Round windowpanes in the surface layer of the site in 2005

foto / photo by: D. Frka



Slika 13. Sudionici okrugloga stola u Biogradu na Moru 2011.

Figure 13. Participants of the round table in Biograd na Moru in 2011

foto / photo by: M. Brzac



Slika 14. Okrugla prozorska stakla pronađena tijekom radionice 2011.

Figure 14. Round windowpanes recovered during the workshop in 2011

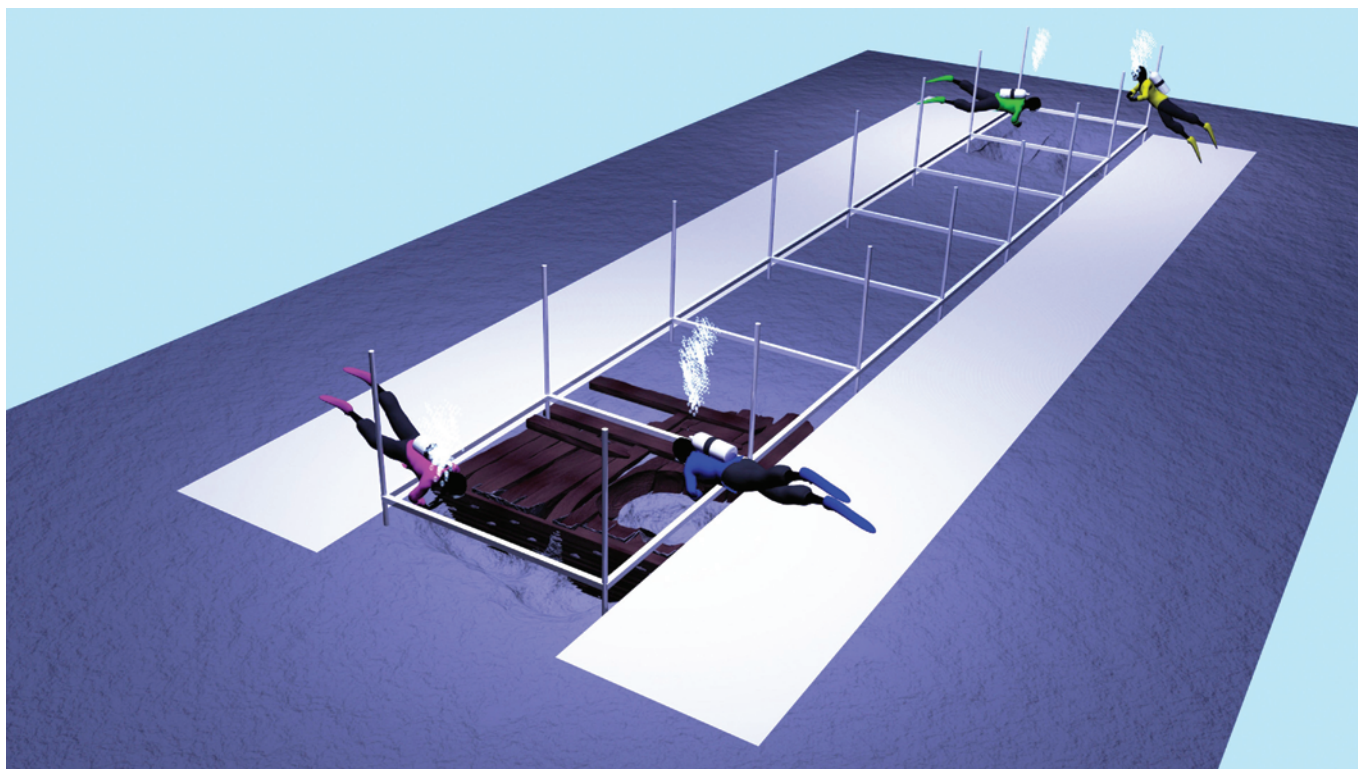
foto / photo by: M. Brzac



Slika 15. Drveni dijelovi broda uočeni tijekom radionice 2011.

Figure 15. Wooden parts of the ship noticed during the workshop in 2011

foto / photo by: M. Brzac



Slika 16. Idejni prikaz situacije na morskome dnu 2012.

Figure 16. Ideal representation of the situation on the seabed in 2012

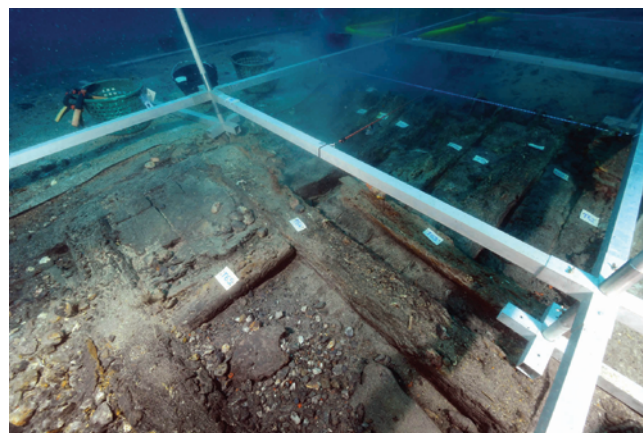
izradio / made by: K. Yamafune



Slika 17. Iskop u kvadratu B16 tijekom istraživačke kampanje 2012.

Figure 17. Excavation in square B16 during the research campaign 2012

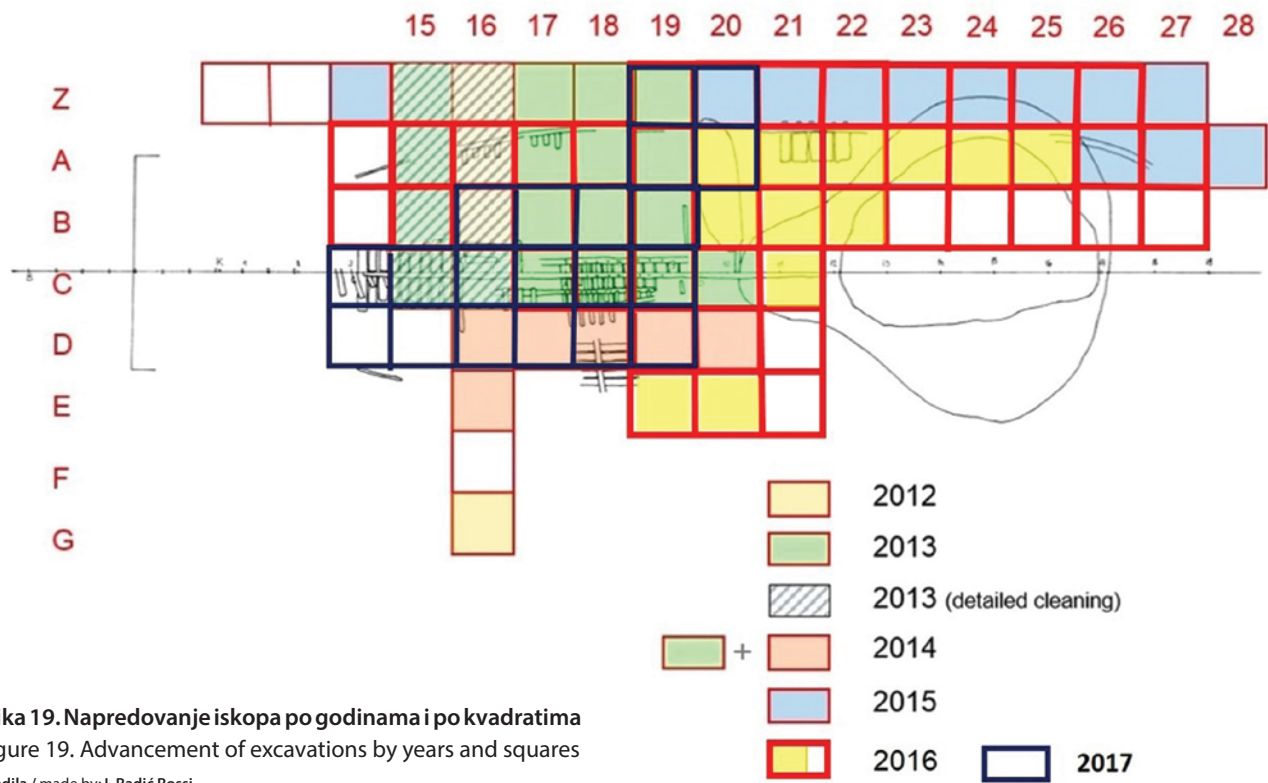
foto / photo by: M. Brzac



Slika 18. Situacija u kvadratima A16 i B16 tijekom istraživačke kampanje 2012.

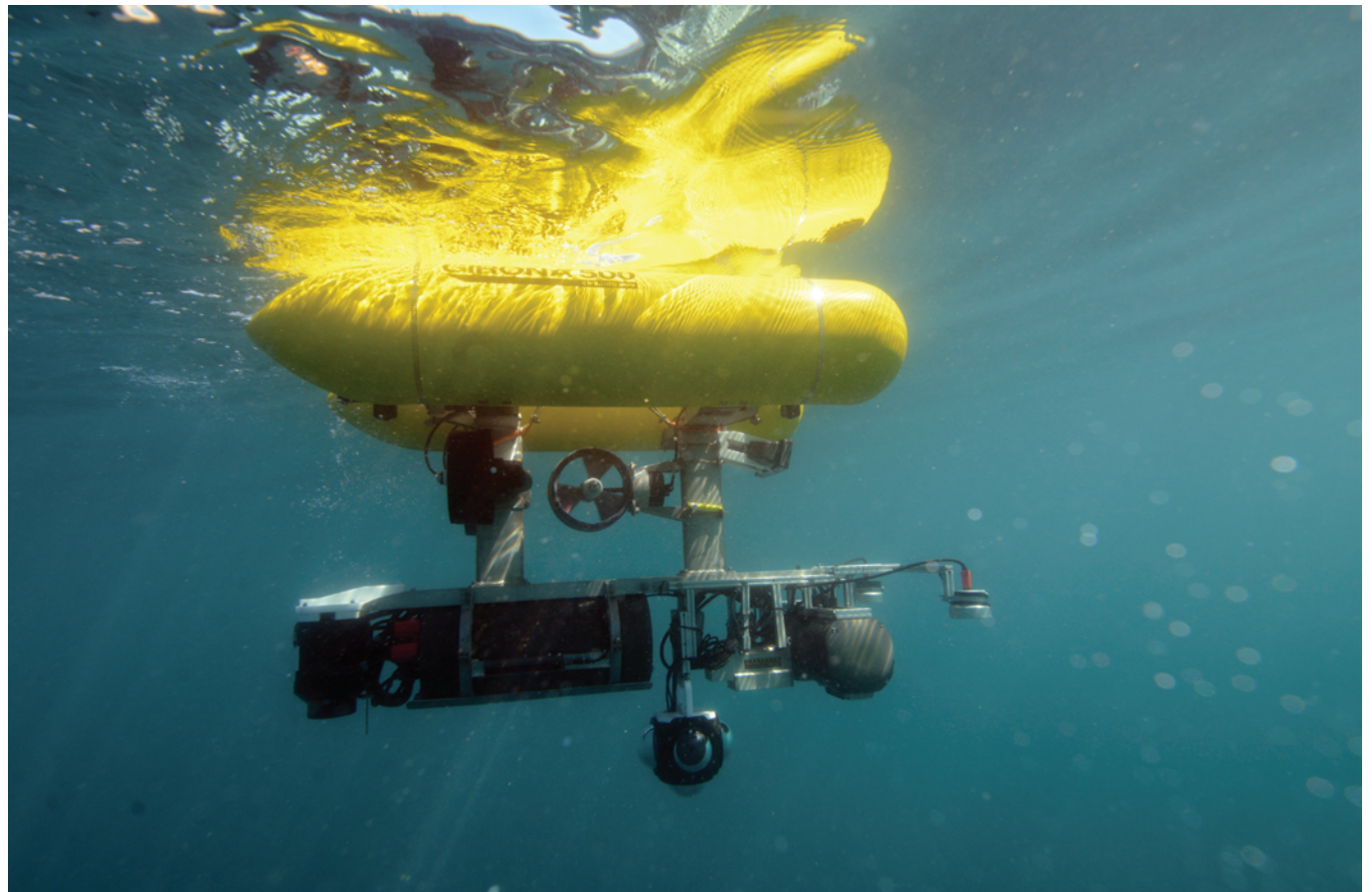
Figure 18. Situation in squares A16 and B16 during the research campaign 2012

foto / photo by: M. Brzac



Slika 19. Napredovanje iskopa po godinama i po kvadratima
Figure 19. Advancement of excavations by years and squares

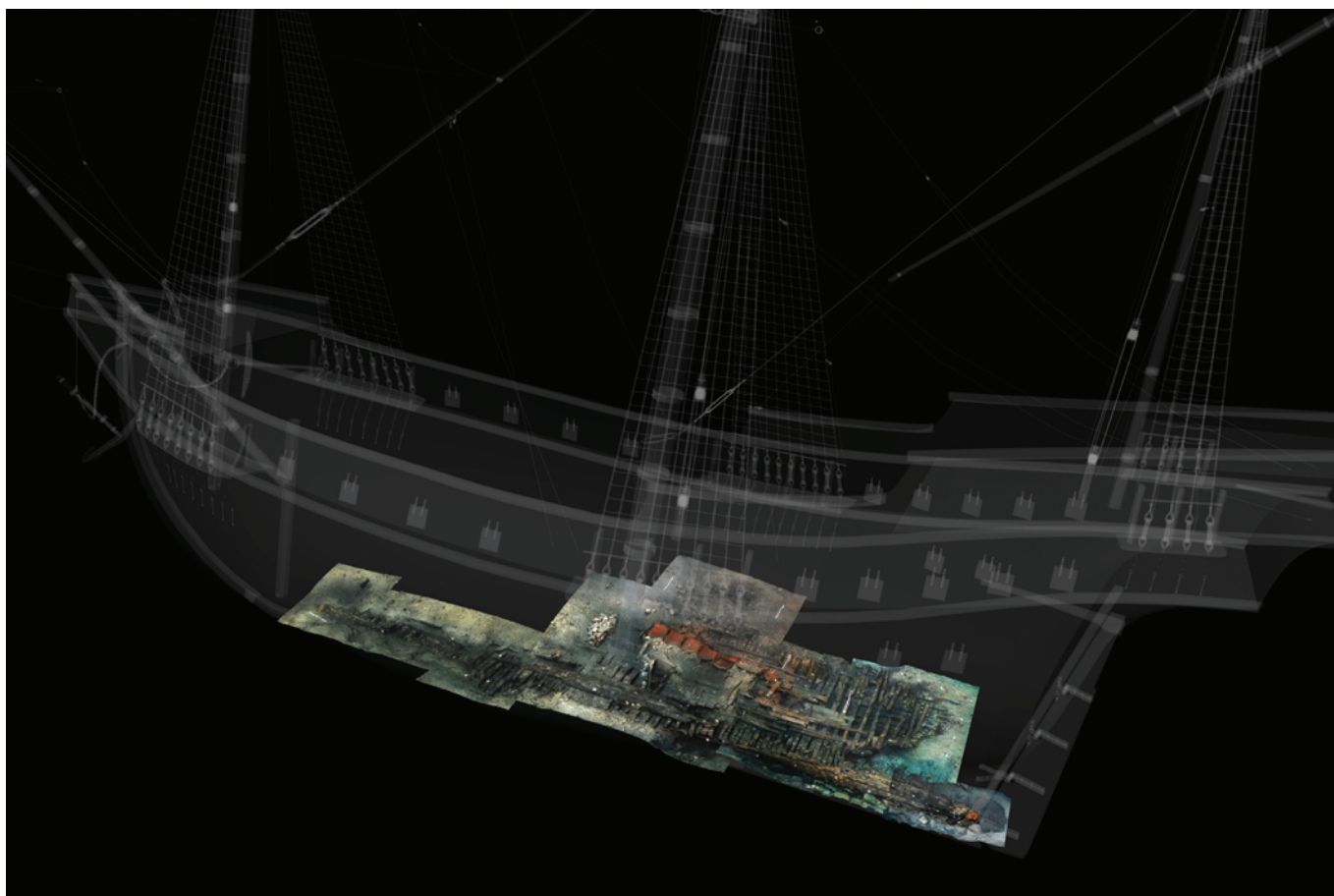
izradila / made by: I. Radić Rossi



Slika 20. Girona 500 u početku misije 2016.

Figure 20. Girona 500 at the beginning of the mission in 2016

foto / photo by: K. Zubčić



Slika 21. Mjesto iskopa u odnosu na idejni prikaz broda
 Figure 21. Excavation location in relation to ideal representation of the ship
 izradio / made by: K. Yamafune



Slika 22. Olovna plomba s imenom mletačkoga dužda
 Figure 22. Lead seal with the name of the Venetian doge
 foto / photo by: S. Govorčin



Slika 23. Brončana medalja reformističkoga pokreta
Poljska braća
 Figure 23. Bronze medal of the reformist movement *Polish Brethren*
 foto / photo by: S. Govorčin



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