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LAMPS ON ROMAN SHIPS*

The risk of fire on a ship is a serious problem in sailing even in the 21st century, in the age of strict fire prevention regulations and seemingly reliable firefighting systems. The fire on board and destruction of the submarine *Kursk* clearly shows that more safety measures in this respect seem to be necessary. The fire must have been even more dangerous on wooden boats and ships, also in the Roman times.

Recent finds, especially ships from Pisa and Naples, but also many other shipwrecks, although in poor condition, allow us to get more accurate knowledge not only about the shipbuilding craft of the ancient times, in particular the Roman times, but also the conditions on boards of smaller and larger trade ships¹. Among the many artifacts from the ship equipment and shipmen's possessions there are oil lamps made of clay, which were used as the main light source both on land and at sea. The fear of starting fire by these lamps must have been smaller than their usefulness. Besides, the Roman sailors also used portable cookers, which were quite well protected so that the fire would not get out².

Contrary to the views presented in the older literature it could be acknowledged that night sea voyages were nothing unusual, the more so that sailing routes often run across the open sea and the sailors did not want to stay in the dark after dusk³. The passengers also did not feel like staying in the dark during voyages that sometimes lasted a few days, weeks or even months⁴. However, there are not many references to ship fires or disasters caused by fire in the literature concerning

* Translated by Tomasz Terpiłowski.

¹ Naples: „Forma Urbis”, 2005, 7/8, 4–8; Pisa: *Ancient Shipwrecks of Pisa*, ed. A. Camilli, E. Setari, Milano 2005. Discovery of equipment: C. Beltrame, *Vita di bordo in età romana*, Roma 2002, 103–133.

² Beltrame, *op. cit.*, 60–65.

³ J. Rougé, *La marine dans l'antiquité*, Paris 1975, 17–30, 199–203; S. Ducin, *Sztuka nawigacji w starożytnej Grecji i Rzymie*, Lublin 1997, 163–164.

⁴ L. Casson, *Podróże w starożytnym świecie*, opr. T. Kotula, Wrocław–Warszawa–Kraków–Gdańsk–Łódź 1981, 79–115 and *passim*; J. Rougé, *Le confort de passages à bord des navires antiques*, „*Archaeonautica*”, 4, 1984, 222–231; J. Jundziłł, *Morskie przewozy pasażerów w epoce rzymskiej*, „*Nautologia*”, 26, 1991, 3/4, 1–7.

Roman times, so both cooking and illumination on ships must have been relatively safe although they do not seem to be⁵.

An oil lamp is a small, handy device generally from a few to between ten and twenty centimeters in length. They were mass-produced in hundreds of thousands of copies, usually made from clay and less often from glass or bronze. The latter were probably the most expensive although the glass ones also must have cost more than the less decorative clay lamps. The lamps made of clay were usually spindle-like in shape, sometimes (the earlier ones) round, with a handle at the back. The container for oil is usually covered with a decorative disc changing into a passage leading to the wick⁶.

The clay lamps did not have any special handles for hanging them, although sometimes they had side pieces which could be attached to a string plaiting or a chain to hang them on a candelabrum. Some models had a specially shaped bottom which fitted a groove on the lamp stand, which made them more stable. On a ship, especially during strong rocking on the waves, this may have been not enough. Generally, bronze lamps had special handles and chains. It is rather unlikely that they were put on the ship's furniture or on the deck without any protection, however, as far as I know no such handles or candelabra were found in the wrecks. There is evidence for using lanterns though⁷.

Figurative decorations were placed mainly on the disc or less often on the handle and they included tens and hundreds of motives from real or even political references, through religious symbols, to pictures of objects and representatives of flora and fauna. The massproduced so-called Firmalampen in the 1st and 2nd centuries did not have decorations for economy reasons but these were an exception. Even if there were no figurative decorations lamps were ornamented with geometrical motives, imprints of small rosettes or leaves, etc. These decorations sometimes harmonized with the shape of the lamp as a whole, which took the form of a boat, ship, head, human figure and many other, although such lamps were produced seldom and they were rarely found until about the 3rd century. In fact every element of a lamp could have a symbolic meaning although it is easier to read it from the figurative decorations and the shape of lamps⁸.

⁵ J. Jundziłł, *Rzymianie a morze*, Bydgoszcz 1991, 20.

⁶ For example M. Bernhard, *Lampki starożytne*, Warszawa 1955; T. Szentléleky, *Ancient Lamps*, Budapest 1969; D. M. Bailey, *Catalogue of the Lamps in the British Museum*, vol. 1–4, London 1980–1996; J. Olczak, *Szkło rzymskie z terenu komendatury w Novae*, „Novensia”, 8, 1995, 15–85 (glass, also ways of hanging them).

⁷ L. Casson, *Ships and Seamanship in the Ancient World*, Princeton 1986, 248, see below.

⁸ J. Jundziłł, *Symboliczne i propagandowe znaczenie ikonografii morskiej w figuralnym zdobnictwie glinianych lampek rzymskich okresu cesarstwa*, [in] *Ideologia i propaganda w starożytności. Materiały konferencji Komisji Historii Starożytnej PTH Rzeszów 12–14 września 2000*, ed. L. Morawiecki, P. Berdowski, Rzeszów 2004, 425–442; B. Stawoska-Jundziłł, *Terracotta oil lamps from*

Among the well-described bigger groups and well-preserved single wrecks there are two ships from Lake Nemi in Italy, maybe those ordered to be built by Caligula. They were found in a perfect, as for the wrecks, condition in the late twenties but got burnt at the end of the Second World War before being fully studied⁹. They were not seagoing vessels, although one theory assumes, basing on Suetonius, that they had been transported there over land, but their shape and equipment are similar to those used in sea sailing. Among others a number of clay lamps were found on the wrecks. On the bigger one (Nemi I) there were: 1 lamp with a disc decorated with effigies of gladiators; 1 decorated with a grapevine motif; 21 decorated with geometrical motives; 20 other both inside and outside the wreck, which means there were 43 items. On the smaller ship (Nemi II) there were: 2 lamps with „simple” (?) decoration found at the stern; 12 with similar decorations; 10 decorated with leaves; 6 without any decorations and 6 damaged, which means there was almost the same number, that is 46 items.

There were many more lamps found at this site but their exact location was not recorded, that means they were discovered on ships, in the lake and the river flowing into the lake. This group included 65 lamps decorated in a „simple way”, 53 with „strong, distinct imprint” (not used?) and some single items including one with a woman figure decoration, sea horses motif, 2 with circular imprints, 2 with sprigs motif; 4 round and 25 indefinable, which means there were 155 different lamps altogether. Unfortunately, it is unknown how many of them came from the ships¹⁰.

The ships of Nemi were used for unknown ceremonies, celebrations and entertainment. The rich furnishing of the rooms including mosaic floors, sculptures, marble walls, terracotta tiles on the cabin roofs, numerous dishes and equipment could also explain attention to lighting. Thus, it is not surprising there were at least several dozen lamps on each boat. For the purpose of our discussion the important thing is the evidence that not only the comfort of lighting was really significant but also a safe way of using lamps, which did not cause fire even in such a great number. Unfortunately, it is not clear whether lanterns were also used, but the wrecks contained different devices like platforms and stands, some of which could have been fragments of lanterns¹¹.

the excavations of the Adam Mickiewicz University, International Interdisciplinary Archaeological Expedition at Novae (Moesia Inferior). Seasons 1960–1997, Poznań–Sevastopol 2008 (Novae. Studies and Materials vol. III, ed. A. B. Biernacki).

⁹ G. Ucelli, *Le navi di Nemi*, Roma 1983; G. Ghini, *Museo navi romane, santuario di Diana Nemi*, Roma 1992.

¹⁰ Ucelli, *op. cit.*, 422–424, 433–445, descriptions not precise, no information about the place of discovery, no drawings.

¹¹ *Ibidem, passim.*

Another big group of wrecks from Italy comes from the port of Ostia extended during the reign of Claudius and Nero. Six wrecks (including a fragment of the side without any equipment) were found not far from the pier, which just like the rest of the port was covered by sand (at present Fiumicino airport premises). The smallest is a fishing boat from the 2nd century, which contained 2 lamps Lamboglia 9c type from the 2nd c.¹² On a small merchant ship (oneraria minima II) of the supposed length of 13.5 m there were two lamps found: one „Christian” lamp made in Africa at the beginning of the 4th c. with a disc decorated with chrismon, which was cheap and worn-out; the second lamp was smaller, with geometrical ornaments and a trademark (rooster?)¹³. The ship was used for a long time, maybe even two centuries. Another lamp comes from a bigger merchant ship of the original length of 22 m built in the 3rd c. and still used in the 4th century (oneraria maggiore I). The lamp was also decorated with a chrismon, more carefully made („African”) and less often used from 4th to 6th c.¹⁴

Until 2008 in Pisa a considerable number of lamps have been found on ships and around them as well as at the bottom of the wet dock, which presently, just like in Ostia, is located on mainland. There were two lamps from the 2nd c. BC on a „Hellenistic ship”. There was one lamp from the times of Augustus found on the ship B, but it had a broken piece so it is impossible to say whether it was used. Another 51 lamps were found around ships and it is not known if they belonged to the crew and were lost in the sea or were part of the cargo of the merchant ships¹⁵.

In general, as far as the equipment found on ship wrecks from the Roman times¹⁶ is concerned there are 16 cases of single lamps without any further details concerning their state; 4 lamps had sooty marks. Single bronze lamps were found on 3 wrecks; one was made of lead, although it seems to be a mistake; one lamp even had a wick. All in all, single lamps were found on 25 wrecks with a predominance of clay ones.

Sets of two lamps were found on 11 wrecks including some with sooty marks. One ship had 3 or 4 clay lamps; one had 3 lamps including one new; another had 3 lamps including one used. There were also 3 lamps found with sooty marks and two sets of 3 lamps without any details concerning their condition. Five wrecks contained sets of 4 lamps without any details about their state and on one ship there were 6 lamps, some of which had sooty marks.

¹² *Le navi del Porto di Claudio*, a cura di V. Santa Maria Scrinari, Roma 1979, 25, fig. 5.

¹³ *Ibidem*, 28, tab. XXI 1.

¹⁴ *Ibidem*, 39, tab. XXIX 1–2.

¹⁵ F. Mennuti, *Lucerne*, [in] *Le navi antiche di Pisa*, a cura di St. Bruni, Firenze 2000, 216–232. In the most recent study concerning lamps from Pisa the author (G. Pace, *Le lucerne del Cantiere delle Navi Antiche di Pisa*, „Gradus”, 3, 2008, 1, 3–22) unfortunately does not mention the place of discovery.

¹⁶ Beltrame, *op. cit.*, 103–133 gives information about 178 wrecks.

Bigger groups of lamps included sets of 15 items with sooty marks; 30 lamps with no information about them; 34 lamps including 1 used (Commacchio), and four wrecks contained numerous „different” lamps.

There is also a fragment of wooden stand of a lantern, which C. Beltrame reconstructs as a cube-shaped container covered with a cupola and hung on a scale pan with three rods¹⁷. On the wrecks one stand made of lead was found as well as one lantern cupola with some sooty marks.

The most common seem to be the single item finds, sets of two lamps were found twice less often and groups of lamps were even less common. In a few cases there were several dozen lamps, which were described as the ship’s cargo, although it is doubtful. All these situations are mostly due to the conditions of wrecks and their equipment. On about one third of them no lamp was found.

Single lamps might have been used only as running lights or universal lights on very small ships and boats, whereas the wrecks where the lamps came from had several dozen to over a hundred tons of load capacity. Running lights used in navigation during sailing were presented by several historians from the Greek and Roman times, although they concerned only ships sailing at night. The lanterns were then mounted at the stern¹⁸. Such lanterns were noticed by L. Casson on a low relief depicting ships from the 2nd century from Palazzo Spada in Rome and on the column of Trajan. In the first case there is an oval medallion or container hanging on the decorated stern (aphlaston), which however could not have been a lantern with a lamp because of its shape. As far as the column of Trajan is concerned, the cube-shaped container hung on the aphlaston could have contained a lamp, especially as it was Trajan’s ship, so it was leading the formation. However, the low relief is damaged in this place and it is difficult to say anything more about the shape of the lantern¹⁹. I do not think these lamps were used, like in modern times, while sailing in the open sea even at night since the traffic was not that heavy. On the other hand, during coming into or leaving port, sailing in straits or inlets and other special circumstances such lights might have been necessary.

Not having any support from the sources I can only assume that for navigation purposes lamps made of bronze or glass were more useful as they had bigger containers, were better protected against oil spilling out and could be mounted or hung²⁰.

¹⁷ *Ibidem*, 117.

¹⁸ Xen., *Hell.* V 1, 8 (4th c. BC); Florus, *Hist.* IV 8, 9; App., *BC* II 89; Cass. Dio XLIX 17, 2; Procop., *BV* I 13, 3 (lanterns, also during the day), compare Casson, *Ships...*, 248.

¹⁹ Casson, *Ships...*, fig. 114, 128.

²⁰ Bronze lantern was found on the wreck off the coast of Monaco (1st c. AD), compare Casson, *Ships...*, 248.

I believe that as far as the practice of lighting ships is concerned the best were sets of two or four lamps, which is confirmed by well examined and preserved ship wrecks from Ostia, for example. They can be regarded as running lights or assigned for officer's cabin on small ships²¹. Sets of 30 or a little over 30 clay lamps could not really have been a cargo because there were too few of them and their value was rather low. It could be assumed that the ship took every possible load and then such small items were traded from port to port. This might be the case with the wreck from Commacchio from the River Po delta (Augustus' times) since it had many different goods on board, among others, wine from the Greek islands, lead from Spain, ceramics of various types and from different regions, including 31 lamps, only four of which were used²².

Larger sets of lamps, containing several to several dozen, might have been used by sailors or passengers. There were several dozen passengers even on quite small ships, not to mention big ships with a few hundred, who took their travel equipment so maybe also lamps²³.

The prevalence of clay lamps used by placing in a lantern seems quite obvious, but finding several lamps made of metal, thus having less chance to survive, suggests that they were used more often than it seems. They were more durable and resistant to extinguishing, so maybe were used as running lights or an expression of bigger comfort for captains, merchants, ship owners and passengers.

Some of the lamps are believed to be new, without any sooty marks, which were visible for example on the „Christian” lamp from Ostia. The size of the sooty marks depends on the intensity and duration of use of the lamp. A considerable amount of „new” lamps poses a question about the purpose of such lamps. Their number was insufficient to include them as the ship's cargo. The lack of soot might have been caused by a short usage time, but also the quality of wick and oil. An inaccuracy of the description made by archaeologists could also account for the lack of mention of the soot. Especially, in earlier studies the finds which were not directly connected with the wreck or seemed less attractive were not carefully described, which can be seen in the catalogue of small finds in the wrecks from Nemi.

However, if some of these lamps really were not used this means their role was different. Maybe they were used as spare parts. Clay lamps got broken quite easily and as a result of long use, so some reserves were necessary during a longer

²¹ D. J. Gibbins (*The Roman Wreck of c. AD 200 at Plemmirio, near Siracusa (Sicily)*, IJNA, 18, 1989, 1–25) claims that on average 1–3 lamps were used on smaller ships and about 10 on larger ships. There is no strong evidence for the latter number.

²² *Fortuna Maris. La nave romana di Commacchio*, a cura di F. Berti, Bologna 1990; Beltrame, *op. cit.*, 110–111.

²³ See n.4.

voyage. On the other hand, they might have had decorative or sentimental value, might have been used in some religious rituals or even as talismans. Their symbolism was similar to that of gems and cameos or some cult statuettes and they were used at burials, in temples or house chapels. As talismans they were useful for first time passengers or those who went on the sea voyages occasionally.

In such a case they were lit incidentally, which did not leave permanent soot marks. The evidence of different forms of activity on ships refers to, among others, religious practices, doctor's practice, artistic work and we know it from a great number of wrecks²⁴. They might also have been elements of ship chapels²⁵.

The last explanation for using lamps on ships and finding them in wrecks was transportation of lamps as merchandise. If it was not for the lamps found quite a big distance from the place of production one could doubt if it was profitable to transport them over sea. However, it was the cheapest and fastest way to transport them on medium and long distances. Carts had a relatively small load and several hundred lamps weighed quite a lot since one weighed several dozen grams. Unfortunately, there is not much information about a whole consignment of lamps. In this respect the finds in the port of Pisa seem exceptional, but the archaeologists quite often classify single finds, which is not always fair in my opinion²⁶.

The progress in underwater research of wrecks and recent discoveries of groups of ships deep in the land give hope for a better understanding of an everyday life on ships, hundreds of which sailed across the Mediterranean, the Black and the Red Sea as well as waters around Western Europe during the Greek and Roman times. There is more and more evidence that not only the nautical quality was important but also the comfort of sailors and passengers during voyage, which included the „night life” on the ship as well.

²⁴ Beltrame, *op. cit.*, 78–90.

²⁵ *Ibidem*, 60–78.

²⁶ *Le navi di Pisa...*, 216–217.