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Emerging from the Nile's fog: Forgotten nautical reliefs from the Temple of Aton in Karnak

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The 18th Dynasty Temple of Aton in Karnak, constructed under the reign of pharaoh Amenhotep IV — Akhenaton (1352–1336 BC), was built of small stone blocks of standard dimensions (about $52 \times 26 \times 22$ cm) called talatat. After the demolition of the temple at the end of the Amarna period by the successors of Akhenaton, some of these blocks were reused in the foundations of the 9th Pylon of the Karnak Temple. In our days, some 12 thousand of them were extracted from the pylon by the Centre Français d'Étude des Temples de Karnak. They represent a giant archaeological puzzle, and computer-assisted data processing allowed for the restoration of a total of 135 reliefs that once adorned the walls of the proto-Amarnian temple. Among those are 16 painted reliefs referring to nautical contexts that provide valuable information on construction details of large Nilotic freighters, their rigging, crews, and cargo they transported. Their considerable dimensions are hinted at by the volume of this cargo, a sizeable number of through-beams and topping lifts, and large crews manning the vessels. Many scenes represent ships' manoeuvres and the handling of cargo. In addition to these scenes, several dozens of isolated talatat contain fragments of nautical representations, some of them unprecedented in comparative iconography. Several of the vessels depicted belonged to royal or ceremonial ships. These forgotten reliefs were worked out in high detail with the realism of Amarnian art and deserve to be included in the catalogue of ancient Egyptian river craft.

Keywords: Ancient Egypt, Akhenaton, iconography, naval architecture, navigation, 3D reconstructions, talatat.

Nautical scenes that make up a subject of a forthcoming monograph¹ were engraved during the reign of the pharaoh Akhenaton (years of rule 1352–1336 BC). Once, they adorned the walls of the temple of Aton in Karnak. The buildings under Akhenaton were constructed

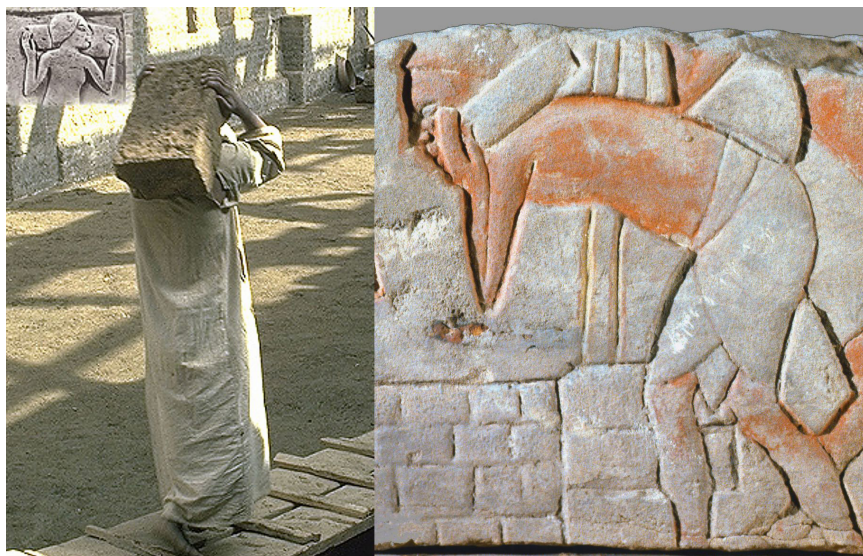


Fig. 1. *Talatat* carried by one person during the excavations (left) and representation of this operation on a contemporaneous relief (right). Photo: Robert Vergnien

with small sandstone blocks of standard dimensions (about $52 \times 26 \times 22$ cm) called *talatat*. Each block can be easily carried by one person, and their use considerably facilitates construction work during the considered period (fig. 1).

After the demolition of the temple at the end of the Amarna period by successors of Akhenaton, some of these blocks were reused in the foundations of the pylons of the Karnak Temple. Some 12 thousand of *talatat* were extracted from the 9th pylon and about 16 thousand from the 2nd pylon. Several thousand more were found inside the walls of the temple of Luxor. The total number of decorated *talatat* that have been preserved is estimated at 80–90 thousand². The reliefs engraved on the *talatat* represent all aspects of life in Akhenaton's Egypt, and many of them have a high artistic and historical value. These forgotten reliefs were worked out in high detail and with the realism of Amarnian art. The reliefs were also painted, although the conservation of colours depended on the layer in the filling of the pylon that the block occupied.

¹ Vergnien, Belov 2025.

² Bard 1999: 470.

The blocks were put pell-mell inside the pylon, and so the scenes represented a giant archaeological puzzle. Fortunately, the walls were once constructed following a rigid pattern of *talatat* with an alternation of headers and stretchers. Some information could also be extracted from the position of the blocks within the filling of the pylon. The reconstruction of the reliefs was started in the mid-seventies³, although these first attempts had several methodological flaws. Computer-assisted data processing considerably improved the fidelity of reconstructions⁴. This approach allowed virtually restoring a total of 135 reliefs composed with the *talatat* from the 9th pylon of the Karnak temple.

Among the restored scenes, 16 painted reliefs refer to nautical contexts. In addition to the scenes, several dozens of isolated *talatat* contain fragments of nautical representations, some of them unprecedented in comparative iconography. None of them have ever been the object of a specialised study. The nautical scenes are composed of a variable number of *talatat*, with about one half consisting of more than ten blocks. The largest of them is made of 53 *talatat* and is 7,5 m long and 1,5 m high. Different everyday activities on board ships and on the shore are illustrated almost by each relief. It is interesting to note a style of animation used by artists in the Amarna period on one of the reliefs. The delivery by a sailor of a mooring line ashore to moor a ship is rendered in a sequence of images.

The majority of the scenes represent large Nilotic freighters. These vessels are undoubtedly sailing ships. In some cases, the sails of moored ships are already furled, but others testify to the operation of lowering the upper yard with the sail still standing. Several scenes represent navigating ships. Their considerable dimensions are hinted at by the volume of the cargo they transport, a sizeable number of through-beams and topping lifts, and large crews.

The representation of the rigging and of the steering system is very detailed and shows many features that are so far unknown or only poorly attested. Two *talatat* are of particular interest as they show a scene fragment that represents a mast's removal. Several scenes provide excellent illustrations of the reinforcing girdles found at the hull's extremities. On the other hand, the shape of the ships' hulls is sometimes difficult to establish with precision because of lacunas in the block's assemblages, but generally it corresponds to the standards of the Nilotic cargo ships of the New Kingdom⁵.

Several vessels probably belonged to a type of royal or ceremonial ship, as well as the ships depicted on 24 unpublished blocks from the collection of the American Research Center in Egypt (ARCE). Courtesy of Dr. J. Gohary and Dr. G. Scott (ARCE), these blocks were also included in the corpus of the material.

Although women sporadically appeared in nautical context on ancient Egyptian reliefs before the Amarna period, the corpus of our material confirms their recurrent presence on board (fig. 2).

The introduction provides the historical background of the considered period and the origin of the reliefs engraved on the *talatat*. It also unfolds the idea behind the creation of the book and contains short information on what the reader will find inside.

³ Smith, Redford 1976.

⁴ Vergniew 1999.

⁵ See Landström 1970: 134–139.



Fig. 2. Assemblage A0052 showing women, preparing and serving a meal to the passengers on board of the sailing ship. Photos © CNRS-CFEETK / R. Vergniewux

Part one consists of two chapters. The first of them provides information on the corpus of the material and the notations used in the analysis of the scenes. The second chapter is quite extensive and important for the subsequent analysis. It reveals the methods used in assembling, reading, and interpreting the reliefs⁶. For this purpose, it starts with an overview of the basics of ancient Egyptian rigging and sails. The chapter further provides information on the materials used for the fabrication of sails and rigging as per written sources and available archaeological evidence. The scenes making up the subject of the monograph originate from the temple of Aton in Karnak. The context of the representation of boats that were transporting agricultural products from the country to the temples is equally considered in this chapter. The next part gives full attention to the peculiarities of representing the boats and their rigging in Amarnian art.

Current work makes use of the original methodology in the study of ancient Egyptian iconography that was proposed by R. Vergniewux⁷. This methodology introduces elementary units of iconographical information called *unicos* ('unités de connaissance' — *fr.*) and is based on three principles. The principle of the multiplicity of lines of sight implies that the artist could use several view angles within the same scene. While a global scene was drawn at one determined view angle, smaller scenes, making up part of the composition, could have their own and different perspectives. The principle of integrity means the completeness of each elementary iconographic unit (*unico*), which is identified without confusion by its characteristic features. Thus, the detailed elaboration of the scene depends on the message it carries. Finally, the spatial position of neighbouring *unicos* is translated within the scene

⁶ Vergniewux 1990.

⁷ Vergniewux 1990; Vergniewux 1999; Vergniewux 2001; Vergniewux 2018.

in accordance with the overlap principle. It allows the spectator to reconstruct the three-dimensional message of each scene. It well could be that the relative proportions of the objects within the scene are not respected to the benefit of their topographic relationship, which remains always correct. The representation of each *unico* is proportional in size to the graphic capacity of the scene. However, if there is a physical relationship between the *unicos* of the scene, their proportional dimensions are generally respected. The representations of ship hulls, appendages, rigging, cargo, and crew are all ruled by the above principles. Interesting and rarely commented-upon aspects of ancient Egyptian iconography are the representations of waterways, banks, and their interrelationships. The gang-planks are represented quite often in the considered iconographic material, and they provide important information on the sequence of cargo-handling operations.

The second part of the book contains ten chapters (Chapters 3–12), each treating a certain type of ship or a certain nautical maneuver. The same methodological approach is followed in the description of the material. It starts with technical details of each scene and comments on its assemblage. Charts showing the distribution of *talatat* composing each scene are provided, along with inventory numbers of each block and its position within the structure of the 9th pylon. The analysis is opened with a general description of the scene. The hull, deck structures with cargo, mast and yards, ropes, sail, rudder, deck crew, and stevedores are then described in turn.

Chapter 3 is devoted to one of the most complete hulls, which may be considered typical for the Nilotic freighters of the Amarnian period. The representation of two adjacent cargo compartments is required for meticulous analysis of minor iconographic details in order to understand the spatial organisation of these structures. Thus, several solutions were proposed in the reconstruction of these elements, although the authors cite arguments favouring one of them.

The representations of some elements are unique in ancient Egyptian art, and they were treated with particular attention. This is the case, for example, of stowing braces and sheets of a moored ship under the boom to keep everything shipshape and to free up more space for handling the cargo.

Chapter 4 covers a relief that best preserved its colours. (fig. 3). A special note is devoted to the conservation of different colours on the *talatat* from the 9th pylon. It was possible to trace a clear artistic tradition of representing groups of constructional details with certain colours.

The following chapters present a group of three cargo vessels moored in the port. The text is illustrated with 3D views of a model developed for better understanding of the mooring procedures. The composition and duties of different crew members, including the topmen up in the rigging, are considered in detail. Another subject analysed is the maintenance of ships and their rigging that may be followed on these scenes. A relief showing a part of the ship rigged with a loose-footed sail is considered in a separate chapter⁸. This relief reinforces the previously available iconographic material⁹ regarding loose footed sails from ancient Egypt. This new rigging feature is thus attested at least 150 years earlier than the sea battle represented on the relief of Ramesses III from Medinet Habu. The early type of

⁸ Also see Belov 2019.

⁹ Vinson 1993.



Fig. 3. *Talatat* showing a ship's hull coloured in red. Photo © CNRS-CFEETK / R. Vergnieux

brailing system, associated with both boom-footed and loose-footed sails, was probably used primarily for facilitating furling the sail. The number of ropes depicted would not have been efficient for sail control and, as such, the correct term for them should be 'buntlines'.

Separate chapters are also devoted to royal ships of *bik* type and possible foreign ships.

The third part of the monograph is devoted to the creation of the 3D model of a typical Nilotic freighter represented on the reliefs of the corpus (fig. 4). The scenes allow for the analysis of more than 40 constructional details, and so an important work of 3D reconstruction was undertaken with the kind help of Odile Erhard. This work was based on line drawings of the most complete ship. More than 130 versions of the 3D model were worked out before the final one was approved. Each detail was treated with the utmost attention. This part consists of seven chapters, and each of them is dedicated to one of the constructional elements, namely the hull, superstructures, mast and yards, rigging, sail, rudder, and fittings. After the volumes of the ship were established, the model helped a lot in better understanding the original reliefs. The groups of ships appearing on some reliefs were equally modelled in order to understand their system of mooring and cargo handling operations.

Many reliefs show the cargo being handled from and to the moored freighters. The cargo is of a quite varied nature and includes oxen, fowl, or amphorae. Quite often several types of cargo are transported on the same vessel; in such cases, each type is stored in its own

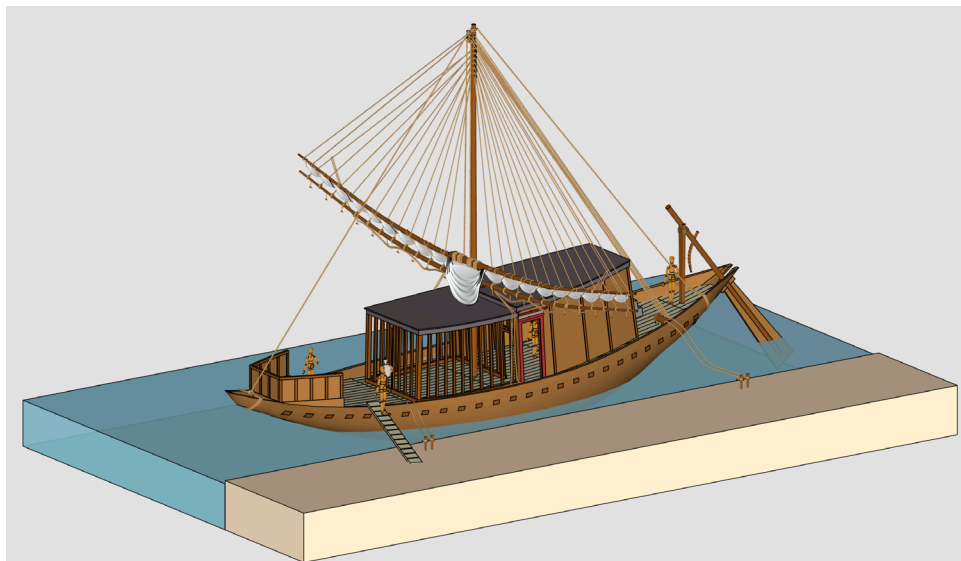


Fig. 4. A view of a 3D model of a typical Nilotic freighter as it appears on the reliefs of the corpus. CAD © O. Erhard, R. Vergnieux, A. Belov

compartment. The destination of goods being unloaded from the ships is a very interesting subject in and of itself. The fourth part by ceramics specialist Sabine Laemmel consists of four chapters and is devoted to the analysis of the types of vases that can be seen on the reliefs.

A conclusion and an illustrated glossary of maritime terms complete the monograph. The reader may also find useful the tables and index that allow searching for certain constructional details and manoeuvres in the text.

The archaeological material on ships and shipbuilding in the New Kingdom is scarce. Thus, iconographic evidence remains the most important element for shedding more light on these aspects of ancient Egyptian society. However, naval iconography, which was quite rich for other periods, became rare at the end of the 18th Dynasty. Only five representations of ships, two of them almost illegible, are known from the tombs of El Amarna¹⁰. The only nautical scene found in Hermopolis is composed of five *talatat*, two of them purely hypothetical¹¹. The Theban tomb of Neferhotep (TT49), which is almost contemporary with the material considered here, contains beautifully executed images of Nilotic boats near the port of Karnak¹². Fifteen new nautical scenes representing thirteen ships in total and numerous individual blocks with nautical details considerably expand the existing catalogue of ship representations of the period. The analysis of this material will shed more light on the Egyptian river-faring cargo fleet of the late 18th Dynasty, a period when innovations in shipbuilding were suggested by iconography as well as by written sources¹³.

¹⁰ Davies 1903–1908.

¹¹ Cooney 1965: 80–81.

¹² Davies 1933.

¹³ See Save-Soderbergh 1946.

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Потерянный нильский флот: сцены судоходства на рельефах из храма Атона в Карнаке

Р. Вернье, А. Белов

Подобно другим сооружениям амарнского периода, храм Атона в Карнаке был построен с использованием небольших блоков из песчаника, известных под названием «талататы». Талататы имели стандартный размер (52 × 26 × 22 см) и сравнительно небольшой вес. По окончании амарнского периода храм Атона был разобран, а составлявшие его талататы были использованы для заполнения IX пилона храма Карнака. В ходе археологических работ Centre Français d'Étude des Temples de Karnak из пилона удалось извлечь и зарегистрировать порядка 12 тысяч талататов. Применение компьютерных методов анализа позволило восстановить 135 красочных рельефов из храма Атона, в том числе 16 рельефов с изображением судов и перевозившихся ими грузов. Эти сцены содержат важную информацию о конструкции кораблей, об их экипаже и оснастке. Значительный объем перевозившегося груза, большое число сквозных бимсов корпуса и топенантов в оснастке, а также многочисленный экипаж позволяют сделать вывод о крупных размерах изображенных кораблей. К весьма редким можно отнести изображения погрузочно-разгрузочных работ, маневров парусных кораблей, царских и церемониальных судов. Эти рельефы выполнены в реалистичном стиле, свойственном для амарнского искусства, и характеризуются тщательной проработкой деталей. В статье приводятся основные положения монографии, посвященной изучению данных рельефов.

Ключевые слова: амарнский период; иконография; древнее кораблестроение; древнее судоходство; 3х мерные реконструкции в археологии; талататы.

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