

Scenes of overseers of Wooden Boat Construction in the tombs of the Old Kingdom

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Boat construction represents one of the frequently depicted scenes in the reliefs of the Old Kingdom tombs. Most of these scenes developed in the period between the 4th and 5th Dynasties. Builders appeared in these scenes seriously engaged in their work in various postures; using different tools. Their work was supervised by overseers, guiding and managing the construction process.

The overseers appeared in nine scenes mostly dates back to the 5th Dynasty, while only one belongs to the 6th Dynasty. The tombs are those of :Sekhemkara at Giza, Tepemankh at Abusir. Also the Saqqara tombs of Nefer and Ka-Hay, Niankhkhnum and Khnumhotep, Ti and Rashepses. As well in the tombs of Khunes at Zawyet el-Maiyetin and Ibi at Deir el-Gebrawi.

The scenes depict different phases of boat construction, mostly the phases with the workers use their tools to put the planks and smoothen the hull the surface. The overseers are shown standing in the midst of busy workers, in the act of watching or guiding their activities. One of the most important tools used in boat construction was the plumb bob, used together with the staff to ensure the hull symmetry. It appears from the scenes that it was provided to workers through the overseer, though its use was not only restricted to him as has been cleared. The use of the plump bob was detected from both the 4th Dynasty tomb of Khunra and the 5th Dynasty tomb of Mereuka.

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The artists of these scenes were very skillful in showing details of carpenters' work, holding various types of tools and performing different tasks, though related. They were successful in differentiating between the workers and the overseers particularly in attitude. This was the same in the tombs of Giza and Saqqara, where the official artists were and the local tombs. The artists also managed to make use of space, where the hulls and adjacent areas were filled with workers. The overseers were managed to be placed in positions suitable for their guidance job. As standing they can get better sight of the workers.

Introduction

Ancient Egyptians were masters in many aspects of life. This mastery included art, architecture, sculpture, astronomy, mummification and other things. Among the latter, they mastered boatbuilding and navigation. The existence of the Nile, in particular together with the shores of both Mediterranean and the Red Seas facilitated this. Boats played an important role in the ancient Egyptian life since early history. They were used for transportation, trade, fishing, serving afterlife purposes and even for pleasure sailing.¹

Ancient Egyptian builders used both papyrus and wood for building boats ranging from simple small skiffs to large boats that roamed the Nile River and the seas. Twenty two real boats were recovered from Egypt dated between c. 3050

¹Boreux, M. C., Études de Nautique Égyptienne. L'art de la Navigation en Égypte jusqu' Á la Fin de L'Ancien Empire, Impr. del'Institut franc aisd'archéologie orientale, Le Cairo, 1925, pp.1-2; Ward, C.A., Boatbuilding in Ancient Egypt, in: F. Hocker & C. Ward (ed.) The Philosophy of Shipbuilding. Conceptual approaches to the Study of Wooden Ships, College Station: Texas A& M University Press, 2004 p.13.

and 450 BC, supporting the ancient Egyptian mastery of boatbuilding and navigation.²

Builders used local wood like timber, acacia and tamarisk as well as imported cedar which was preferred.³ Ancient Egyptian boats took the form of shallow-shaped hull. This form continued throughout the ancient Egyptian history. Cabins took the form of deckhouses, most often of a frame covered with mats. The boats were either, paddled, rowed or poled.⁴

Scenes decorated the tombs and temples with sailing boats either housing the deceased in a pleasure trip, pilgrimages, people fishing in the swamps, or even sailing boats loaded with merchandise or carrying heavy obelisks. Workers were also represented enthusiastically engaged in manufacturing boats in many scenes, namely in the Old Kingdom tombs. These scenes provided the first images of naval activities; providing a unique opportunity for many scholars to study boat construction in ancient Egypt.⁵

Wooden Boat Building scenes

Reliefs revealing the phases of wooden boats construction were included in some of the tombs of the Old Kingdom, starting from the Fourth Dynasty. The majority of which appear on the walls of the tombs of Giza, Saqqara and few local tombs in Middle Egypt. After the Old Kingdom, only few reliefs depicted wooden boats building.⁶

² Ward, C.A. Boatbuilding and its Social Context in Early Egypt: Interpretations from the First Dynasty Boat-grave Cemetery at Abydos, in: *Antiquity* 80(2006), pp.118-119. Ward (2004), op.cit, p.13.

³ Ward (2004), op.cit, p.14.

⁴ Boreux (1925), op.cit, pp.272-275; Casson, L. *Ships and Seamanship in the Ancient World*, The John Hopkins University Press, Baltimore and London, 1995, pp.16-17.

⁵ Vandier, J., *Manuel d'Archéologie Égyptienne V*, Editions A. Et J. Picard, Paris, 1969, p.660; Harpur, Y. *Decorations in Egyptian Tombs of the Old Kingdom*, Methuen, Routledge & Kegan Paul, London, 1987, pp.152-153.

⁶ Rogers, E. M. , *An Analysis of Tomb Relief Depicting Boat Construction from the Old Kingdom Period in Egypt*, Unpublished Master Thesis, Texas A&M University, 1996, pp.1-4; 9.

The oldest known representation of wooden boats construction came from the tombs of Senefru's son and daughter in law at Meidum, Rahotep and that of Atet, wife of prince Nefermaat. The scene depicts a small wooden boat being handled by workers using adzes and chisels.⁷ The most detailed scene for construction of wooden boats came from the Fifth Dynasty tomb of the court official Ti at Saqqara. It consists of three registers occupied with workers involved in the assembly of five boats.⁸

Judging from the scenes and the examination of real wooden boats found in a number of Egyptian sites, the construction of wooden boats passed several phases ranging from the initial stages of chopping down of trees to the final stages of hull construction. This included tremendous body of workers and the use of several tools including saws, axes, adzes and chisels.⁹

Logically this process was under supervision of a chief worker or an overseer that gives instructions and guides the workers. Only nine scenes of overseers supervising the work of wooden boats construction occurred from the tombs of the Old Kingdom until now. They are as follows:

⁷Vandier (1969), op.cit., p.664, fig. 207; Porter, B. and R. Moss, Topographical Bibliography of Ancient Egyptian Texts, Reliefs and Paintings, Clarendon Press, Oxford, 1968, Vol. IV, pp.90-94; Jones, D., Boats, British Museum Press, London, 1995, pp.73, fig.63.

⁸Vandier (1969), op.cit., pp. 666-672; pl.xxxvi, fig. 266 ;Porter, B. and R. Moss, Topographical Bibliography of Ancient Egyptian Texts, Reliefs and Paintings, Clarendon Press, Oxford, 1981, Vol. III, Part 2, p.473; Jones (1995), op.cit., pp.73-74, fig.64.

⁹Montet, P. Les Scènes de la vie Privée dans les Tombeaux Égyptiens de L'Ancien Empire, Oxford University Press, Oxford, 1925, pp.331-341; Harpur, Y. , " The Identity and Position of Relief Fragments in Museums and Private Collections, Miscellaneous Reliefs from Saqqara and Giza", in: JEA 71 (1985), p.41, fig.10; Ward (2006), op.cit., pp.122-125; Gilbert, G. P., Ancient Egyptian Sea Power and the Origin of Maritime Forces. Foundation of International Thinking on Sea Power, No.1, Sea Power Centre , Canberra, 2008, pp. 27-38.

1. A scene from the tomb of Sekhemkara, Giza LG 89, 5th Dynasty, reign of king Sahura. (Fig.1).¹⁰
2. A depiction on a block from the tomb of the tomb of Tepemankh at Abusir, 5th Dynasty, reign of Neusserra to Unis. The block now is in Berlin Museum (fig.2).¹¹
3. A representation from the tomb Nefer and Ka-Hay at Saqqara, 5th Dynasty, reign of Neusera (fig.3).¹²
4. A scene from the tomb of Niankhkhnum and Khnumhotep at Saqqara, 5th Dynasty, late Neusera to Menkauhor(fig.4).¹³
5. A scene from the Tomb of Ti at Saqqara, D 22, 5th Dynasty, reign of Menkauhor to early Djedkara(fig.5).¹⁴
6. A destroyed relief from the tomb of Rashepses at Saqqara, no. LS 16, 5th Dynasty, reign of Djedkara (fig.6).¹⁵
7. A depiction from the tomb of Khunes at Zawyet el-Maiyetin, Minia, 5th Dynasty, reign of Djedkara to Unis (fig.7, fourth register).¹⁶

¹⁰ Hassan, S., Excavations at Giza (1932-1933), Government Press, Cairo, Vol. VI, 1943, p.106-110, fig.57; Vandier (1969), op. cit, p.661-662, fig.265; Porter and Moss (1981), op.cit, III, Part 1, p.233 (1); Harpur, Y. (1985),op.cit, p.42, fig.10.

¹¹Borchardt,L., DasGrabDenkmal des Köings Ne-User-Re, J.C.Hinrichs'scheBuchhandlung, Leipzig, 1907, pp.29-30, 122-123, pl.103b; Porter and Moss (1981) III, Part 1, op.cit, p.343.

¹²Moussa, A.M. and Altenmüller, H., The Tomb of Nefer and Ka-Hay, Mainz Am Rhein, Verlag Philipp von Zabern, 1947, p.27, pls.18-19; Porter and Moss (1981), op.cit, III, Part 2, p.640 (3)

¹³Moussa, A.M. and Altenmüller, H., Das Grab des Nianchchnum und Chnumhotep, Mainz Am Rhein, Verlag Philipp von Zabern, 1977, p.74, Taf.20-21, pl.63, Abb.8; Porter and Moss (1981), op.cit, III, Part 2, p.642 (7); Harpur, Y. and Scremin, P., The Chapel of Niankhkhnum and Khnumhotep, Oxford Expedition to Egypt, Oxford, 2010, p.583.

¹⁴Steindorff G., Das Grab des Ti, J. C. Hinrichs'scheBuchhandlung, Leipzig, 1913,pp.1-7, pls.119,120; Épron, L. and F. Daumas Le Tombeau de Ti, Impr. del'InstitutFranc aisd'ArchéologieOrientale, Le Caire, 1939, pl. cxxix, top register, middle; Wild, H., Le Tombeau de Ti, , Impr.del'InstitutFranc aisd'Archéologie Orientale, Le Caire, 1953, Facsimille II, Part 1, pls.XCVI (B), CXXVIII-CXXIX.

¹⁵Lepsius, R., DenkmälerausAegypten und Aethiopien III ii, Berlin, 1849-1859, pl. 61; Rogers (1997), op-cit, p.142, fig. 24 and fig.53.

8. A second depiction from the tomb of Khunes at Zawyet el-Maiyetin, Minia, 5th Dynasty, reign of Djedkara to Unis (fig.7, fifth register).¹⁷

9. A relief from the tomb of Ibi at Deir el Gebrawi, Assyout, 6th Dynasty, reign of Pepi II. (fig.8).¹⁸

Scenes Details

The first scene comes from the 5th Dynasty tomb of Sekhemkara at Giza. It occupies the first register of the southern wall on the right hand side of the entrance (fig.1). The wall is damaged, but one can identify one of the stages of boat construction in the top register; where a wooden boat is being handled by three workers. The one on the right and the other worker on the extreme left seem to be smoothing the planks, probably with adzes (their arms are washed away), while the worker on the right end seems to hold a club-shaped hammer and work with boat prow; which is supported by wooden props.¹⁹ In the middle of the boat a man stands wearing a medium kilt and holds a long staff in his right hand, while remains of a rope appears in his left. He seems to be supervising the work.²⁰ He seems to be bold, probably an indication of advanced age and experience. Two other blocks were found in the tomb, probably completes the rest of boat building process.²¹

A block from the tomb of the 5th Dynasty tomb of Tepemankh at Abusir, depicts the lower part of two boats being built (Fig.2). The boat on the right hand side is

¹⁶Lepsius, R. (1849-1859) ,op.cit IV ii, pl.108; Varille, A., La Tombe de Ni-Ankh-Pepi A Zâouyet el-Mayetîn, Imprimerie de l' IFAO, Le Cairo, 1938, p.15, fig.5.; Porter, B. and R. Moss (1968), op.cit IV, p.135 (9).

¹⁷Lepsius, R. (1849-1859) , op.cit IV ii, pl.108; Varille, A. (1938), op.cit., p.15, fig.5.; Porter, B. and R. Moss (1968), op.cit IV, p.135 (9).

¹⁸ Davies, N. De G., The Rock Tombs of Deir el Gebrawi, Egypt Exploration Fund, London, 1902, Part 1, p.20, pl.xiii; Porter and Moss (1968), op.cit IV, p.244 (13).

¹⁹ Hassan (1943), op.cit, p.110, fig.57; Harpur (1985), op.cit., fig.10.

²⁰Vandier (1969), op.cit, p.662, fig. 265, right end.

²¹ Ibid, p.662, fig.265, left.

occupied by three workers use chisels on the unfinished boat which is being supported like in the first scene by straight props and a circular object. In the middle a lower part of a man appears to be wearing a medium kilt, holds a long staff in his right hand while from his left hangs a pointed arrow like object.²² This is perhaps the overseer of the workers standing there without being involved in the action, just supervising the work.

A more vivid relief is attested on the east wall of the tomb of Nefer and Ka-Hay at Saqqara (fig. 3). The relief represents an animal head prow boat being tightened by a curved truss.²³ This is the best preserved of the three intact truss scenes.²⁴ The activities here are all centered around the truss cable, tightening the internal lashings, and launching the hull.²⁵

Inside the boat two workers are busy with the lashing. While the worker standing on the right seems to be tightening the truss, he puts his left foot on the bulwark to pull up on the line, which leads into the hull. The fellow beside him uses an oblong stone to bound the lashing. On the left side of the boat four workers are represented. The one on the left pulls a rope which he has wrapped around his shoulder. The other

²²Borchardt (1907), op.cit, p.122, Abb.103 b.

²³The truss was probably used after the construction to bend the hull in a curved shape. More reasonably, it was employed to force the planks tightly together, so that the transverse hull lashing could be tightened over seam battens. (Boreaux (1925), op.cit, pp.249-250; Moussa and Altenmüller, (1974), op.cit, p.27).

²⁴ One is in 4th Dynasty Giza tomb of Khunra (Smith, W.S., History of Egyptian Sculpture and Painting in the Old Kingdom, Hacker Art Books, New York, 1978, pl.49b; the second is in tomb of Ti (Wild (1953), op.cit, pl.129) and the third lies in the late 5th and early 6th Dynasty Tomb of Fetekta (Lepsius, R. (1913) Denkmäler aus Ägypten und Aethiopien, Ergänzungsband, J.C. Hinrich, Leipzig, pl. 40c. as well as a Brooklyn Museum fragment, no. 51.14 (Fazzini, R. Miscellanea Wilbouriana, Brooklyn Museum, Brooklyn, 1972, p.61). A damaged relief can be seen in the tomb of Khunes at Zawyet el Mayetien, (see fig.7, final register)

²⁵Sliwa, J., Studies in Ancient Egyptian Handicraft: Woodworking, Kraków, Warsaw, 1975, p.39; Hadlane, C, Ancient Egyptian Hull Construction, Unpublished Dissertation, Texas A & M University, Texas, 1993, pp.15-17, p.55.

three seem to be putting too much effort to pull the rope, while a fifth is pouring water in the path of the hull, so it would be easier when it moves. A sixth worker is crouching under the hull to remove the stern support. This scene is a depiction of the final moment before launching the hull.²⁶

Near the boat's stern stands a supervisor, wearing a loincloth like workers. He holds a scepter-like baton and raises his right arm in guidance.²⁷ He could be giving orders for the workers to pull away the support so the boat can be launched. In front of him stands a baboon, holding a scepter similar to the one held by the supervisor. This could be a humorous scene as the baboon seems to be imitating the moves of the supervisor. A practice very much known in Egypt even until present days.²⁸

A slightly damaged relief of boat construction from the Saqqara 5th Dynasty tomb of Niankhkhnum and Khnoumhotep decorates the middle part of the third register on the right half of the north wall above the doorway of room two (fig.4).

Under the sight of the tomb owners; the relief depicts one of the phases of boat construction, where a half bald headed overseer is standing in the middle of the boat wearing a medium kilt. Like his other overseer fellows he is holding a long staff in his right hand, while in the left he holds a coiled rope with traces of a pointed object hangs from it. The overseer here seems to be supervising carpenters adzing some pieces of wood that are supposed to be integrated into the hull which resets on props like in the previous scenes.²⁹

In front of the boat on the right side a worker holds an adze

²⁶Moussa and Altemüller (1974), op.cit, p. 27, pls.18-19, Rogers (1997), op.cit, 90-94, figs. 47 (from the 4th Dynasty Giza tomb of Khunera) 54, 55, Hadlane, (1993), op.cit., fig.1-2.

²⁷Ibid, p.92.

²⁸Houlihan, P.F., Wit and Humor in Ancient Egypt, Rubicon, London, 2001, p.19.


²⁹Moussa, A.M. and Altemüller, H. (1977), op.cit, p.74, pl.63.

dealing with a piece of wood. The hieroglyphic inscription on top of the him states :nDrsht in mDh, "fabrication of the sht ship parts by the carpenters".³⁰ Another one is using a two-handed pull saw to cut logs.³¹

A detailed three registers boat construction process is being represented on the eastern wall of the back room in the famous 5th Dynasty Saqqara tomb of Ti. In the second register between two boats being handled by workers; stands an overseer supervising the work of the left boat as he is facing left (fig.5). He is wearing a short kilt and a necklace with a *favus* hair.³²

He puts his right hand on his left shoulder as a gesture of respect to the tomb owner who stands inside the boat holding a scepter and seems to following up the construction process. A scribe appears on the right end of the boat performing the same action with his right hand, while holding books under his left shoulder.³³ In his left hand he holds a long staff and a coiled rope with a pointed object hanging from it as in figures 1, 2,3 and 4. This time the overseer had a title; smswwxt " Elder of the dockyard"³⁴ or " Master shipwrights"³⁵ (fig.5).

³⁰Ibid, p.75; Erman, A.; Grapow, H. and Reinke, F., Wörterbuch der Aegyptischen Sprache im Auftrage der Deutschen Akademien II, J.C. Hinrichs'sche Buchhandlung, Leipzig, 1928, p.190, 8; Ward, W. A., Index of Egyptian Administration and Religious titles of the Middle Kingdom, American University of Beirut, Beirut, 1982, p.97 (812, 813); Jones, D., A Glossary of Ancient Egyptian Nautical Titles and Terms, Kegan Paul International, London & New York, 1990, p.119, no.4; Darnell, J.C., "The

Annotation ", in: Gm 83 (1984), p.25, n. 39.

³¹Rogers (1997), op.cit, pp.19-22, fig.7.

³²A disease that occurs in some parts of the hair, leaving a hairless spot in the head. (Kamal, H. (1967), A Dictionary of Pharaonic Medicine, National Publication House, Cairo, 1967, p.331

³³Vandier (1969), op.cit, p.669; Helck, H., "Gesten", in: Lexikon der Agyptologie, Otto Harrassowitz Wiesbaden, 1981, Col.578, e. Usually in such a type of posture; the hand is always drawn wrong with the thumb away from the body. (Smith (1978), op.cit, p.278).

³⁴Jones (1990), op.cit, p.122, no.19; Erman, A.; Grapow, H. and Reinke, F., Wörterbuch der Aegyptischen Sprache im Auftrage der Deutschen Akademien I, J.C. Hinrichs'sche Buchhandlung, Leipzig, 1926, p.355, 12; Badawi, A., "Denkmäler aus Saqqara" in: ASAE 40 (1940), pp.608-610.

³⁵Montet (1925), op.cit, p.334.

Eleven carpenters are performing number of tasks with variety of postures to finish the hull. Some of them are squatting under the boats holding their adzes, while others are working on the surface. It seems that they are smoothing the blanks and beams.³⁶ Three workers are using chisels and hammers to make notches for the pivot points of the oars. The apparent holes are used for the loops of rope which will be attached to these holes to hold the boat's oars.³⁷

An illustration of a destroyed scene from the 5th Dynasty tomb of Rashepses at Saqqara depicts three hulls supported by long poles, which probably acted as simple cranes to adjust the position of the hull. The work is being supervised by a standing overseer holding a long staff in his right hand; while on the left he is holding a rope from which hangs a pointed end object similar to a jar. He is wearing a pointed medium sized kilt with a sash around the waist (fig.6).³⁸ The workers of the hull facing him seem to be adzing and hammering the hull.³⁹ The workers on the extreme left of the scene, are visible in two registers. The first shows two workers one is sawing a blank, while the other is adzing another one. In the second register, the hull is being supported by long poles like the first while the workers seem to work with the surface of the hull and adzing oars.⁴⁰

The five registered relief in the local tomb of Khunes at Zawyet el Mayetin represents a complete boat construction process. It starts from the chopping out of trees to get wood for the boat until the final stage of hull construction.⁴¹ An overseer appears in the left end of the fourth register, he is wearing a short kilt with sash. A long staff is being held by

³⁶ Rogers (1997), op.cit., p.30, fig.14.

³⁷ Ibid, p.36, fig.18.

³⁸ Lepsius (1849-1859), op.cit., pl.61.

³⁹ Vandier (1969), op.cit, p. 273, fig. 268, 2.

⁴⁰ Ibid, p. 272, fig.268, 1.

⁴¹ Varille (1938), op.cit, fig.5. Vandier (1969), op.cit., p.663, fig.60

both hands while a pointed object hangs by a rope is being held in the left hand. In front of him are two boats are visible. The boat facing the overseer is damaged except for its right end, where a carpenter is working with his chisel. In the second boat; a carpenter is facing his mate working as well with chisel, while three other workers are using their adzes to smooth the boat's surface (fig.7, fourth register). Judging from his features and clothing, the same overseer seems to supervise the work in the fifth register, where there are two boats as well, but this time the workers are tightening a curved truss. He stands passively with his left hand raised, but the relief is too damaged to judge what he is exactly doing (fig.7, fifth register).⁴²

The fourth of the north wall in the local tomb of Ibi at Deir El Gebrawi represents a different phase of boat construction. Near the prow of a hull supported by short stocks; the overseer stands wearing a regular kilt. He is holding a short scepter in his left hand, while his right arm is poorly treated and his hand seems to be twisted (fig.8).⁴³ Three men are handling the hull with chisels and mallets, while the fourth is handling the back of the boat with an axe. In front three men are shaping pieces of wood with hammers.⁴⁴ Another boat is traditionally being chiseled by three workers, while the fourth is using an axe. Between the two boats four men are holding a large log of wood, through ring ropes passed through a tall stick being held on the porters' shoulders.⁴⁵

⁴² Ibid, p.15, fig.5 (fourth and fifth rows), Vandier (1969), op.cit., p. 675-676.

⁴³ Davies (1902), op.cit, p.20, pl.xiii; Vandier (1969),op.cit, fig.270, bottom, Hadlane (1993), op.cit, p.15.

⁴⁴ Vandier, (1969), op.cit, p.678, fig.270, bottom, Boreaux (1925),op.cit, p.251, n.1. Davies (1902), op.cit, p.20.

⁴⁵ A similar scene of the log porters is to be found in the tomb of Djou at Deir el Gebrawi as well (see:Vandier (1969),op.cit., p.680-681, fig.271,2; Davies (1902), op.cit, pl.XXIV).

Going through the eight scenes; it will be noticed that seven of the nine overseers are supervising the carpenters while chiseling and adzing the hull (figs1-8, except 3 and fig.7, fifth register).⁴⁶The chisel was very important for ancient Egyptian woodworkers, as they relied on different varieties of mortises, dovetails among others for joinery purposes.⁴⁷As for adzes, they were very important to give the hull its final smooth shape or to remove the red ochre used by boat builders to mark the planks for sawing or to make positions for nails.⁴⁸The overseer in the tomb of Nefer and Kahay is supervising a different stage where the hull is being tightened by a curved truss (fig.3). The truss was probably used to force the planks tightly together so that the transverse hull lashing used in the construction of all known dynastic Egyptian boats, could be tightened over seam battens.⁴⁹ This means that the truss phase comes after the sawing, hammering, chiseling and adzing phase. This is probably why the overseer in the tomb of Nefer and Kahay is totally different than the others in the scepter like baton that he holds and the worker's loincloth that he wears, giving him more freedom in doing his job.⁵⁰A second scene of the overseer in the tomb of Khunes is supervising the same action as well, though it is damaged to judge if he holds the same kind of scepter or not. Scepter-like batons appeared in many scenes of the Old Kingdom, mostly held by boat pilots; but in some cases it was held by an overseer of troops, funerary priests or officials following the tomb owner.⁵¹ The

⁴⁶ It is not clear whether if the overseer in the tomb of Rashepses (fig.6) is supervising the trimming of the branches or just the work on the boat.

⁴⁷Sliwa (1975), op.cit, p.29.

⁴⁸Rogers (1997), op.cit, p.30; pp.34-35.

⁴⁹Hadlane (1993), op.cit, p.17, 55.

⁵⁰Vogelsang-Eastwood, G., Pharaonic Egyptian Clothing, E.J. Brill, New York,1993, pp.35-36.

⁵¹ Fischer, H.G., "Notes on Sticks and Staves in Ancient Egypt" in MMAJ 13(1979), pp.16-17.

same baton, but taking a straight shape on top this time, is being held by the overseer in the tomb of Ibi, though supervising the traditional phase of chiseling (fig.8).⁵²

The kilts worn by both the overseers in the tomb of Sekhemkara and Niankhkhnum and Khnumhotep are exactly the same (figs.1 and 4), both are wearing long pointed kilts with the top end of the cloth tucked into the top of the kilt.⁵³

The kilt worn by the overseer in both Ti's tomb and Iby are of similar type except that the kilts are shorter (figs.5 and 8). Both the overseers in the tombs of Rashepses and Khnues are wearing the same pointed kilt with the sash worn over, the end of which is hanging down (figs.6 and 7).⁵⁴

Six of the overseers are holding a long straight staff and variously shaped pointed object hanging from a rope. The long straight staff is very common in the hands of non-royal officials.⁵⁵ But it seems here that it has more function than being just ceremonial or office sign. The pointed object is what is called plumb pop known since the 3rd Dynasty. A metal or stone weight suspended by a length of line. It provides a vertical line of reference and was traditionally used during construction while building walls.⁵⁶ From the scenes it is noticed that the plumb bob may come in slightly different shapes. The depiction from the tomb of Ti show a short spheroidal shape pointed at the lower end (fig.5). While the plumb bob in the Rashepses relief is unique more similar to a jar (fig. 6).⁵⁷ The plumb bob was also either held separately from the staff as in the tombs of Sekhemkara (fig.1), Tepemankh (fig.2), Rashepses (fig. 6) and

⁵²Ibid, p.17, n.74.

⁵³Vogelsang-Eastwood, G. (1993), op.cit., p.55.

⁵⁴ Ibid, p.55.

⁵⁵ Fischer (1979), op.cit., p.15.

⁵⁶Arnold, D., Building in Egypt: Pharaonic Stone Masonry, Oxford University Press, New York, 1991, pp.253-255. Petrie, Tools, p.42.

⁵⁷ For different shapes of the plumb bob see Petrie, pls.47,48.

Niankhkhnum and Khnumhotep (fig.4) or it was held in the same hand with the staff as in the reliefs of Ti (fig.5) and Khunes (fig.7).

During boat construction, a plumb pop is used to measure the symmetry of the hull and to adjust the position of the hull in preparation for erecting the truss stanchions, as the planking was assembled. After the Old Kingdom, the plumb bob disappeared from boat construction reliefs, probably because of the decline in using the truss due to changes in the edge fastenings and the type and size of boats shown in the reliefs.⁵⁸

The use of the plumb pop can be detected from two reliefs; one from the 4th Dynasty tomb of Khunera at Giza and the tomb of Mereruka.⁵⁹ In the tomb of Khunera, the plumb pop appeared more than once, in one of them a carpenter is holding an adze on his shoulder, while in the other is holding a plumb pop. This means that the use of the plumb pop was not only restricted to overseers.⁶⁰ In another relief a man is shown holding a partially coiled plumb bob and line against an upright staff at the centre of a hull (fig.9). In association with the plumb pop, the staff probably has a utilitarian function.⁶¹

In the tomb of Mereruka, a scene illustrates another stage of using the plumb bob, where two workers are holding a line over the ends of a hull, while a third places an uncoiled plumb pop against it. Another worker leans over and appears to use a small stick to mark the spot adjacent to where the plumb bob touches the hull. Another worker grasps the stretched line with one hand. It is noticeable here that the

⁵⁸ Rogers (1997), op.cit , pp.46-47, 83-86, 123. Jenkins, N., The Boat beneath the Pyramid, King Cheops Royal Ship, Thames and Hudson, London, 1980, p.128.

⁵⁹ Smith (1975), op.cit., pl.49b; Duell, P., The Mastaba of Mereruka, The University of Chicago press, Chicago, 1938, Vol.II, pl.152.

⁶⁰ Rogers (1997), op.cit., p.43.

⁶¹ Ibid, p.43, 46.

staff is absent (fig.10).⁶²It seems that the boatwright is inspecting the hull dimensions or keeping the hull symmetrical through using the plumb bob and the stretching line.⁶³

Conclusion :

The reliefs studied here depict different phases of boat construction, mostly the phases with the workers use their tools to put the planks and smoothen the hull the surface. Those phases were supervised by overseers to guide the carpenters to the required quality of work. They are shown standing in the midst of busy workers, in the act of watching or guiding their activities. One of the most important tools used in boat construction was the plumb bob, used together with the staff to ensure the hull symmetry. It appears from the scenes that it was provided to workers through the overseer, though its use was not only restricted to him as has been cleared.

In the scene of the overseer in the tomb of Ti, the person holding both the staff and the plumb bob was called " elder of the dockyard" or " master shipyard" (fig.5); a reference to his position in supervising, thus probably the other persons in similar scenes were supervisors as well, though no texts were mentioned, as they direct the same activities.

The artists of these scenes were very skillful in showing details of carpenters' work, holding various types of tools and performing different tasks, though related. The artists were successful in differentiating between the workers and the overseers particularly in attitude. This was the same in the tombs of Giza and Saqqara, where the official artists were and the local tombs, except for the strange manner of the arm in the tomb of Deir el Gebrawi (fig.8).

⁶²Duell (1938),op.cit., pl.152.

⁶³Lipke, P., The Royal Ship of Cheops, BAR International Series No.225, Oxford, 1984, p.82, fig.56; Hadlane (1993),op.cit., p.55.

The artists also managed to make use of space, where the hulls and adjacent areas were filled with workers. The overseers were managed to be placed in positions suitable for their guidance job. As standing they can get better sight of the workers.

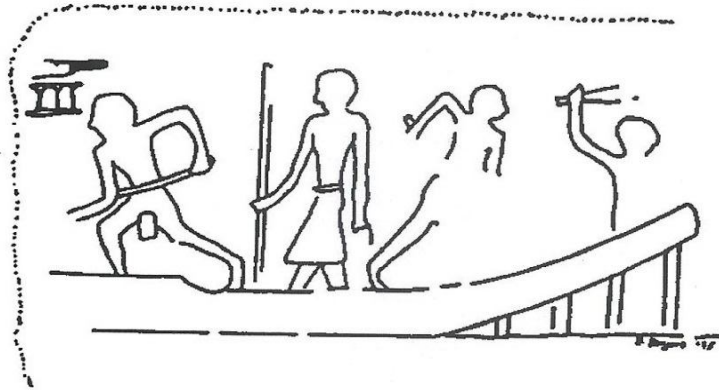


Fig.1 An overseer standing in the middle of a boat construction process, Tomb of Sekhemkara, 5th Dynasty, Saqqara.

(Source: Hassan, S., Excavations at Giza (1932-1933) IV, Government Press, Cairo, 1943, fig.57)

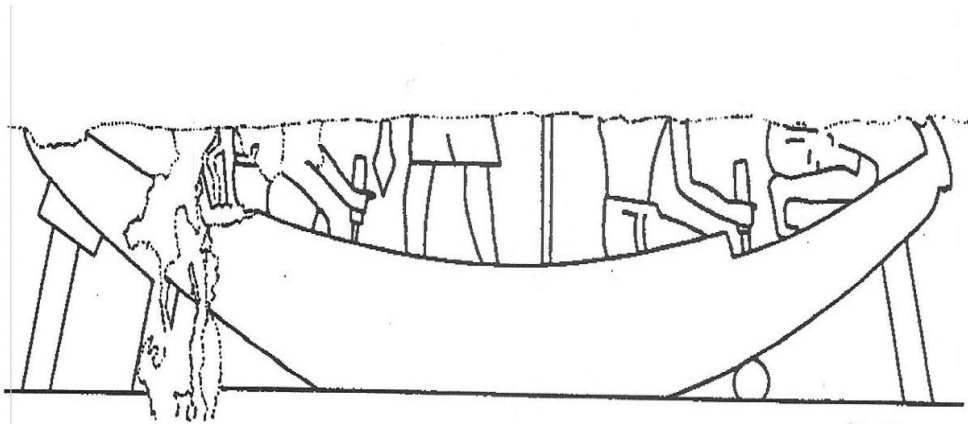


Fig.2 Remains of a relief with an overseer standing in the middle of a boat construction process, Tomb of Tepemankh, 5th Dynasty, Abusir.

(Source: Vandier, J., Manuel d'ArchéologieÉgyptienne V, Editions A. Et J. Picard, Paris, 1969, fig.265)

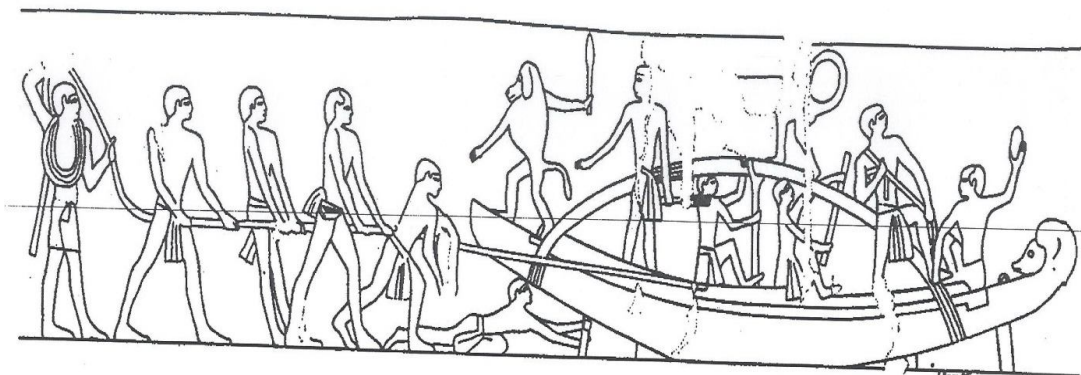


Fig.3 An overseer supervising the tightening of the truss, Tomb of Nefer and Kahay, 5th Dynasty, Saqqara.

(Source: Rogers, E. M. , An Analysis of Tomb Relief Depicting Boat Construction from the Old Kingdom Period in Egypt, Unpublished Master Thesis, Texas A&M University, 1996, fig.55)

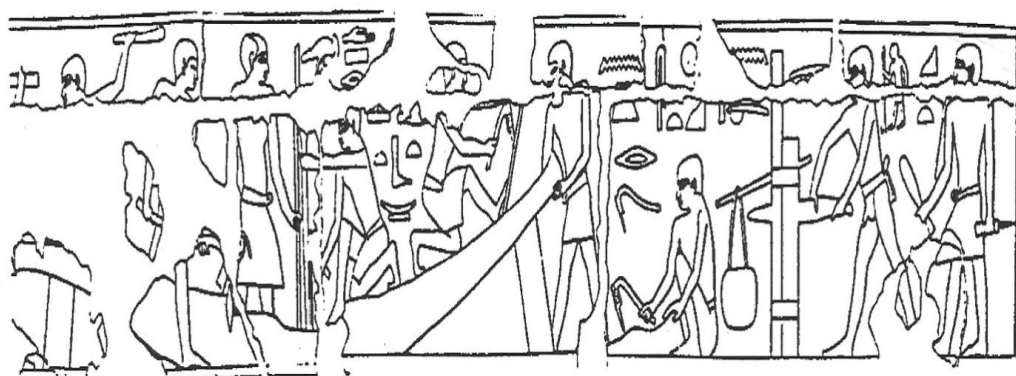


Fig.4 An overseer supervising the the shaping of the hull, Tomb of Niankhkhnum and Khnumhotep, 5th Dynasty, Saqqara.

(Source: Moussa, and Altenmüller, Das Grab des Nianchchnum und Chnumhotep, Mainz Am Rhein, Verlag Philipp von Zabern, 1977, Abb.8)

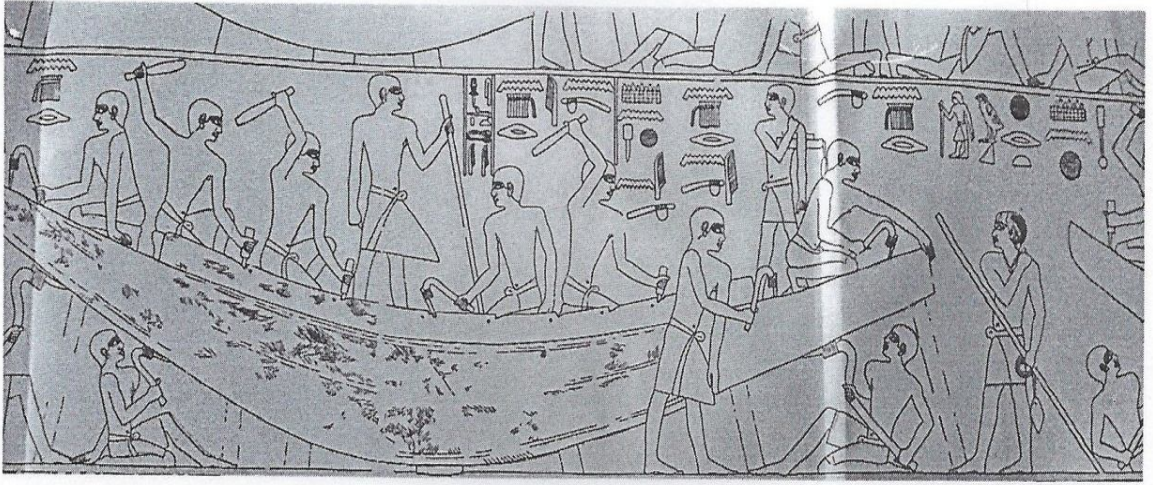


Fig.5 An overseer supervising the shaping of the hull, in the presence of the tomb owner, Tomb of Ti, 5th Dynasty, Saqqara.

(Source: Wild, *Le Tombeau de Ti, Facsimille II, Part 1, Impr. de l'InstitutFrancaisd'archéologieOrientale*, Le Caire, 1953, pl.129)

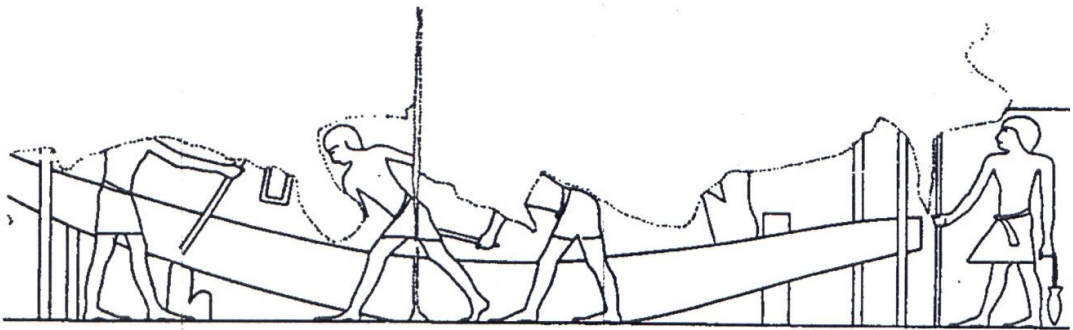


Fig.6 An overseer supervising the shaping of the hull, Tomb of Rashepses, 5th Dynarya.

(Source: Lepsius, *DenkmälerausAegypten und Aethiopien III ii*, Berlin, 1849-1859, pl. 61)

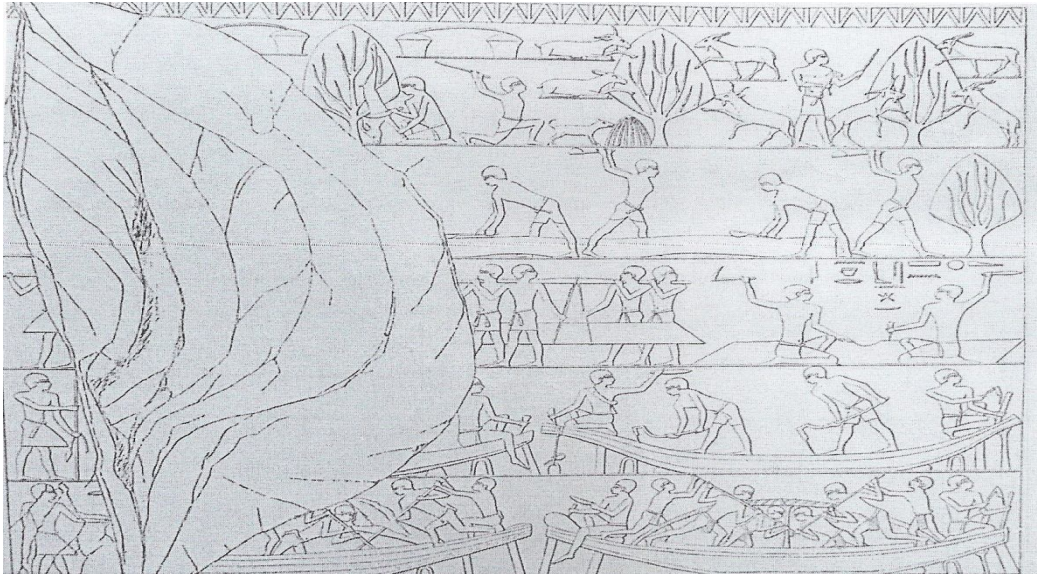


Fig.7 An overseer supervising the shaping of the hull, Tomb of Khunes, 5th Dynasty, Zawyet el Mayeiten.

(Source: Varille, A., La Tombe de Ni-Ankh-Pepi A Zâouyet el-Mayetîn, Imprimerie de l' IFAO, Le Cairo, 1938, fig.5)

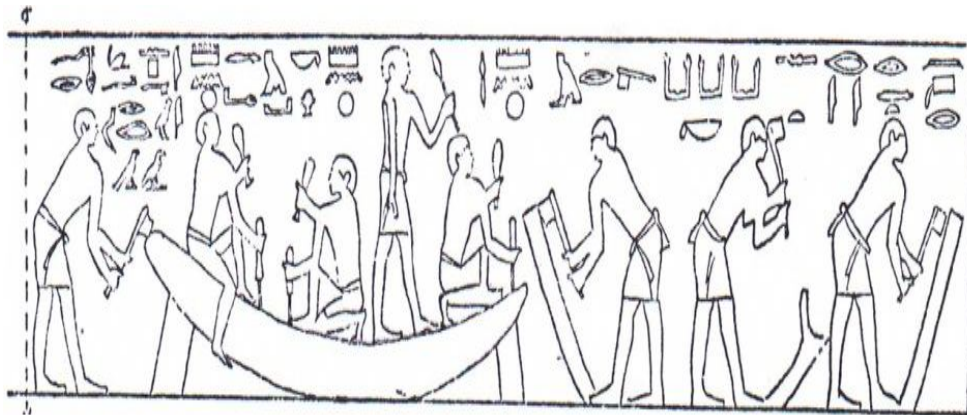


Fig.8 An overseer supervising a boat construction process, Tomb of Ibi, 6th Dynasty, Deir el Gebrawi.

(Source: Vandier, J., Manuel d'ArcheologieEgyptienne V, Paris, fig.270).

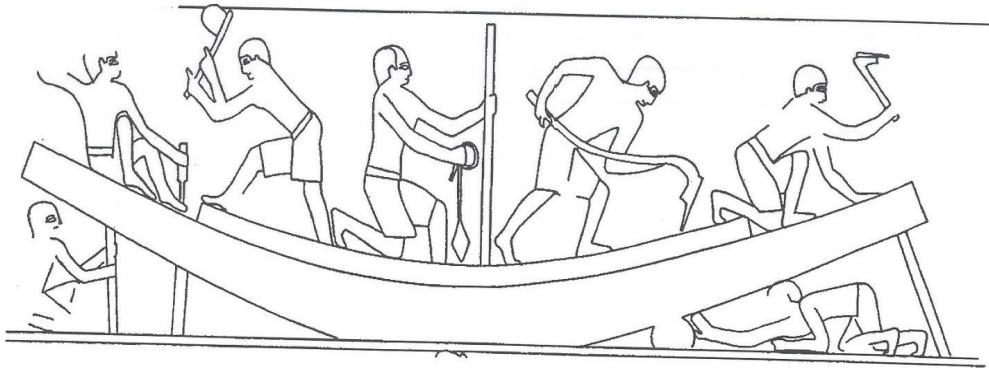


Fig.9 A Boatwright measuring the symmetry of the hull by using the staff and a plumb bob, Tomb of Khunra, 4th Dynasty, Giza

(Source: Rogers, E. M. , An Analysis of Tomb Relief Depicting Boat Construction from the Old Kingdom Period in Egypt, Unpublished Master Thesis, Texas A&M University, 1996, figs.5, 47)

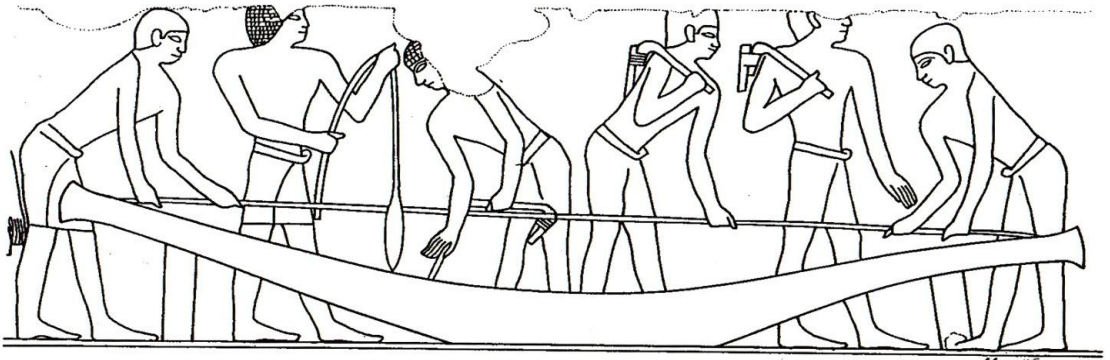


Fig.10 A Boatwright using a plumb bob and a line, Tomb of Mereruka, 6th Dynasty, Saqqara

(Source: Jenkins, The Boat beneath the Pyramid, King Cheops Royal Ship, Thames and Hudson, London,1980, pl.152).

مناظر المشرفين علي بناء المراكب الخشبية في مقابر الدولة القديمة

الملخص :

تميز المصريين القدماء بمهارات مميزة في عدة مجالات مثل العمارة، الفن، النحت، الفلك و غيرها من مجالات الحياة. مثلت صناعة السفن و المراكب أحد هذه المهارات. و قد ظهرت تفاصيل صناعة المراكب في عدد من المناظر التي زينت جدران المقابر. و من أهم هذه المناظر مجموعة ظهرت في مقابر الدولة القديمة و التي يظهر فيها العمال يقومون بقطع الأخشاب لاستخدامها في صناعة المراكب أو اثناء قيامهم باستخدام أدواتهم لصناعة هيكل المركب . و ذلك تحت إمرة مشرفين للعمال يقومون بتوجيههم و إدارة عملية البناء اثناء مراحلها المختلفة. ظهرت مناظر أولئك المشرفين في تسعة مناظر ، في مقابر سخم-كا-رع بالجيزة ، تب-إم-عنخ بأبوصير، و مقابر نفر ، كا-حاي وني- عنخ- خنوم و خنوم-حوتب ، تي ، رع-شبس بسقارة و منظرين من مقبرة خونسو بمنطقة زاوية الميتين بمحافظة المنيا، إبي بدير الجبراوي بأسوط.

و من خلال مقارنة المناظر خلص البحث إلي انه يوجد ثمانية مناظر للمشرفين علي بناء المراكب الخشبية تنتمي لعصر الأسرة الخامسة بينما منظر واحد ينتمي للأسرة السادسة. قام المشرفين بمتابعة العمل في عدة مراحل من بناء المركب و لكن أغلبها كان اثناء قيام العمال بتشكيل هيكل المركب و تنعيمه باستخدام الأزاميل، المطارق، القوادم. العصا الطويلة و الأداة المدببة التي ظهرت في ستة من المناظر قد استخدمت لقياس تماثل جانبي هيكل المركب و بالتالي فإن العصا هنا لها وظيفة أكثر من كونها إشارة للمنصب. و قد عرف وظيفه هذه الأدوات من منظرين يمثلان عملية القياس أحدهما في مقبرة خون-رع بالجيزة من عصر الأسرة الرابعة و الأخر من مقبرة ميريوكا بسقارة. ظهرت مهارة الفنان سواء في العاصمة أو الأقاليم في إظهار المراحل المختلفة لبناء المراكب في حيوية حيث ظهر العمال كخلية النحل كل يعمل بجهد بينما ظهر غالبا في وسط العمال يقف منتبها للعمل أو يقوم بإدارته لضمان الدقة خاصة اثناء عملية شد الجمالون التي ظهرت في منظرين فقط.