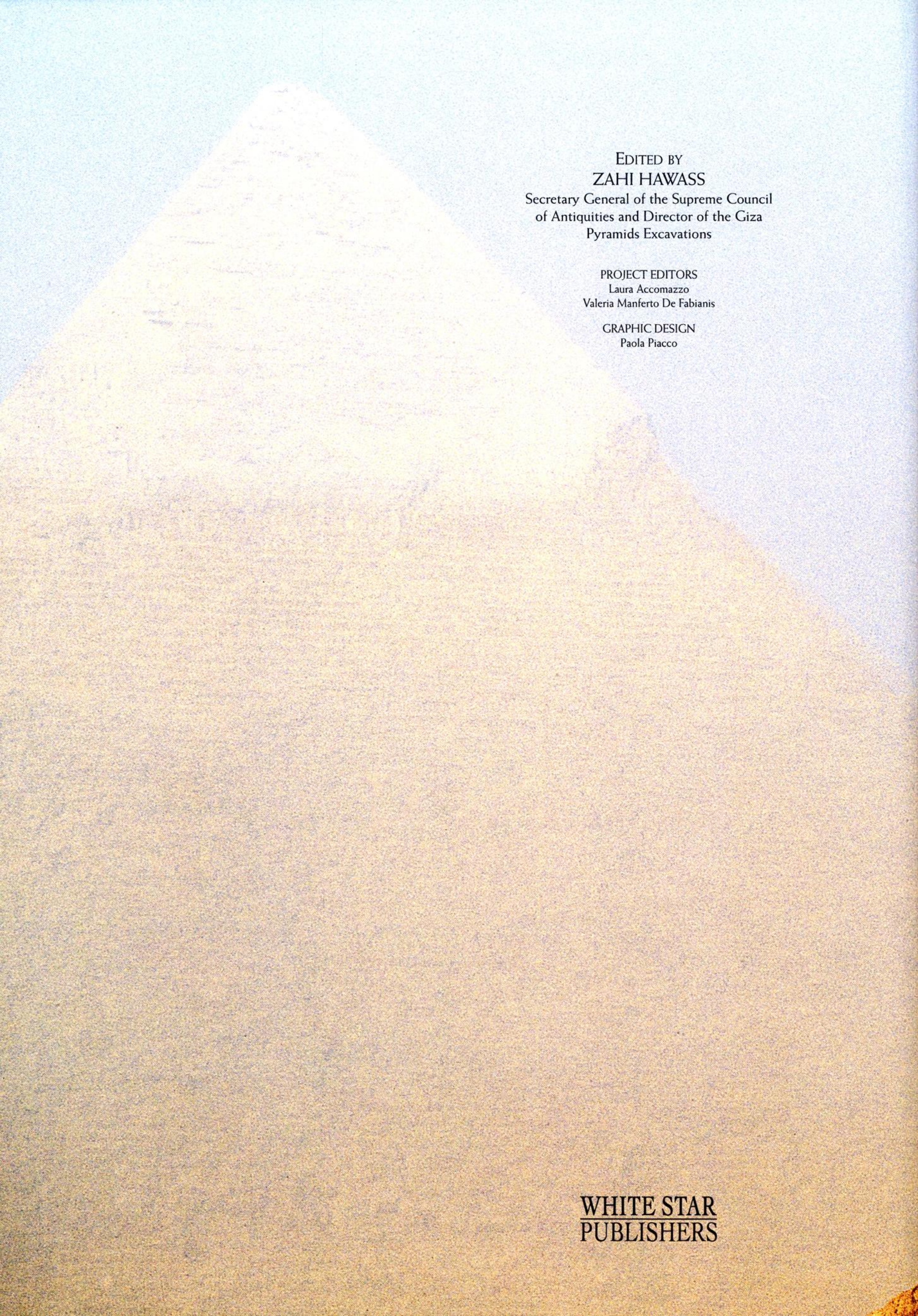


An aerial photograph of the Great Pyramids of Giza in Egypt. The pyramids are constructed from dark, weathered stone blocks, showing significant erosion and some missing sections. The Great Pyramid of Khufu is the largest and most prominent, with its apex slightly damaged. To its right is the Pyramid of Khafre, and to the left is the smaller Pyramid of Menkaure. The pyramids are set in a vast, sandy desert landscape. In the background, a dense urban area with numerous high-rise buildings is visible, illustrating the proximity of ancient Egypt to modern civilization. The sky is a clear, deep blue.

ZAHY HAWASS

THE TREASURES OF THE PYRAMIDS



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THE TREASURES OF THE PYRAMIDS





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10-11
Scene showing the 'Meidum geese',
Egyptian Museum Cairo, Old
Kingdom.

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The Royal Boats at Giza

by Zahi Hawass

Five boat pits have been discovered in the pyramid complex of Khufu. The three to the east of the pyramid are boat-shaped, with narrowed prow and stern, the remaining two, to the south, are rectangular in shape, and were cut to house full-size wooden boats that had been dismantled. There is a great deal of scholarly argument about the purpose and symbolism of these pits, which are the descendants of boat pits found associated with a number of Early Dynastic royal tombs.

Two of the eastern boat pits lie parallel to the east face of the pyramid, and were dug into the rock of the plateau to the north and south of the upper temple. These are very large: for example, the southern pit is 51.5 m long, seven meters wide at its midpoint, and eight meters deep. They were originally paved with limestone blocks, traces of which were found *in situ* in the southern pit by Petrie. Petrie also found some roofing blocks covering the west end of the southern trench, although other scholars believe that the pit was never covered, since pillars would have been needed to help span its width.

The southern pit was cleared of debris long ago; we recently cleared the debris from the northern pit as part of our site management plan. Various artifacts were found in the fill of these pits. One was a fragment of limestone with the word *akbet* written on it in hieroglyphs. This was probably part of the name *akbet-khufu*, the 'Horizon of Khufu,' which was the name of the Great Pyramid. A sherd from a red pot was also found, as well as a fragment of limestone

with the hieroglyph for life on it, and a fragment of a granite statue. The inscriptions and the statue fragments may originally have come from Khufu's temple; they would, of course, have been deposited in the boat pit at a time after the reign of Khufu, possibly later than the Old Kingdom.

The Egyptian scholar Selim Hassan, who did a great deal of work at Giza, noted the presence of a shallow cutting in the bottom of the southern pit, and suggested that it might indicate the original presence of a rectangular cabin, or that it may have formed a bed to support casing stones. There is argument about the orientation of both of these pits: some scholars think the prow of the southern pit was to the south and the prow of the northern pit was to the north, but others feel that the opposite was the case.

The third boat pit lies parallel to the causeway at a point several meters from the eastern wall of the upper temple. It measures 45.4 m in length and 3.75 m at its widest point. The vertical prow, representing a curtained bow post, is to the east, and is shaped like a cradle. The shape of this pit has been compared to boats from the Archaic Period. A stairway containing eighteen steps was found inside the pit, filled with masonry rubble; it is difficult to tell whether or not the pit was roofed originally. Holes cut in the sides of the pit have been interpreted as sockets for small transverse beams. George Reisner found cordage and pieces of gilded wood inside the pit, indicating that a boat had once been inside.



164

Khufu's extraordinary wooden solar boat was found by Kamal El Mallakh and now is conserved in a museum close to the pyramid of Khufu.

165

This wooden model of a solar boat, now conserved in the Egyptian Museum in Cairo, probably dates to the Old Kingdom.

Royal Boats



166 top left
Aerial view of the three boat pits that were discovered on the east side of the Great Pyramid of Khufu. Giza, Fourth Dynasty.

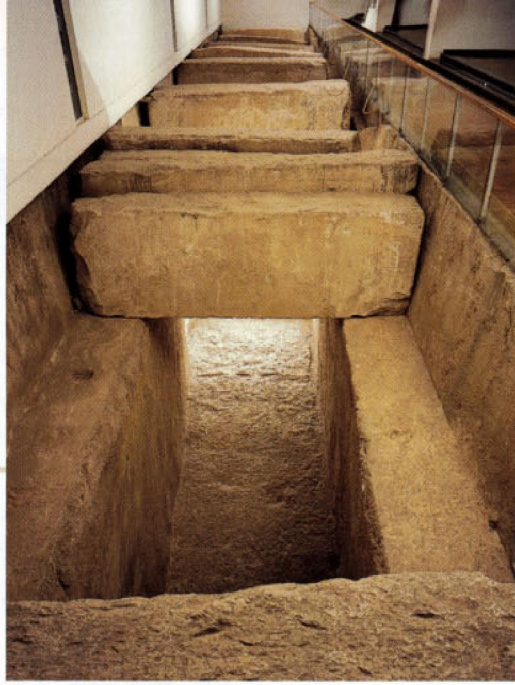


166 center left
The eastern boat pit can be easily discerned in this photograph. Giza, Fourth Dynasty.



166-167
The shrine of the solar boat of Khufu, discovered in 1954, has been completely reassembled in an accurate restoration.

167 top
The first boat pit of Khufu. in particular, one can observe the limestone covering stones.



In 1954, while excavating the southern side of the Great Pyramid between the base of the pyramid and the southern *mastabas*, Egyptian archaeologist Kamal El Mallakh discovered two new boat pits. These two pits lie outside the great *temenos* wall of the pyramid, and they were covered by the debris of the enclosure wall. The two pits are separated by a north-south wall of rocks which lies on the north-south axis of the pyramid. The eastern pit was opened and found to contain a large wooden

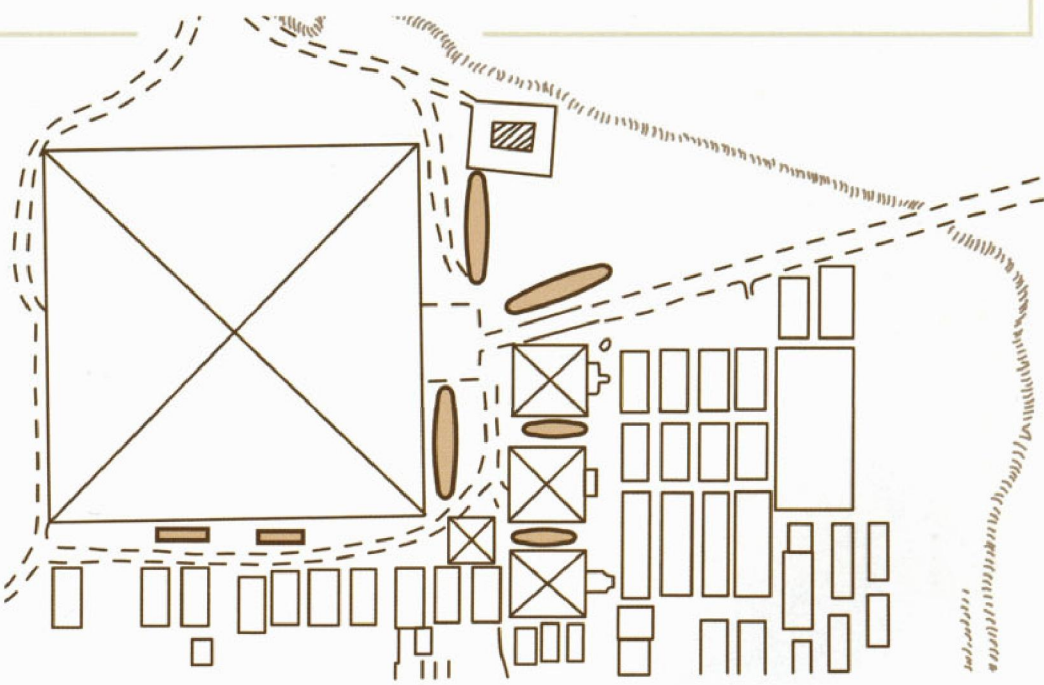
boat; the western is yet to be excavated, and is still covered by twenty limestone slabs.

When the eastern pit was discovered, it was covered by forty-one slabs of limestone (nine of which bore quarry marks in red and black ink) that were resting on a ledge around the upper edge of the pit.

These blocks weigh about 15 tons each; the largest is about 4.8 m long. The three westernmost of these stones were much smaller than the others and have been interpreted as keystones.

The pit itself is rectangular in shape and measures 32.5 m in length; its sides are vertical and tool marks on the sides and bottom show that they were dressed using copper chisels. Among the quarry inscriptions found on many of the roofing blocks were eighteen cartouches of Djedefre, Khufu's son and successor, showing that he was responsible for the funeral of his father. On the southern wall of the pit are signs in red ink that list measurements which, as yet, have not been studied.

Inside the pit were found the dismantled pieces of a very large wooden boat. On top of the wood was a layer of mats and ropes, an instrument made of flint, and some small pieces of white plaster. The prow of the boat, a wooden column topped by a round wooden disk, was found at the western end of the pit. This column was connected to two long wooden pieces that extended along the bottom of the pit. Most of the wooden parts had been tied together with ropes. Also found inside the pit were many other items, such as twelve oars, each of which was made of a single piece of wood; fifty-eight poles; three cylindrical columns; and five doors. In total, there were thirteen layers of materials consisting of 651 artifacts ranging in size from 10 centimeters to 23 meters.



167 bottom

In this plan of Khufu's pyramid complex, one can see the location of the five boat pits. The three to the east are boat-shaped, the two to the south are rectangular. The two boat pits between the queens' pyramids are also present.



168 top left
This archival photograph shows the location of the first boat pit before discovery.

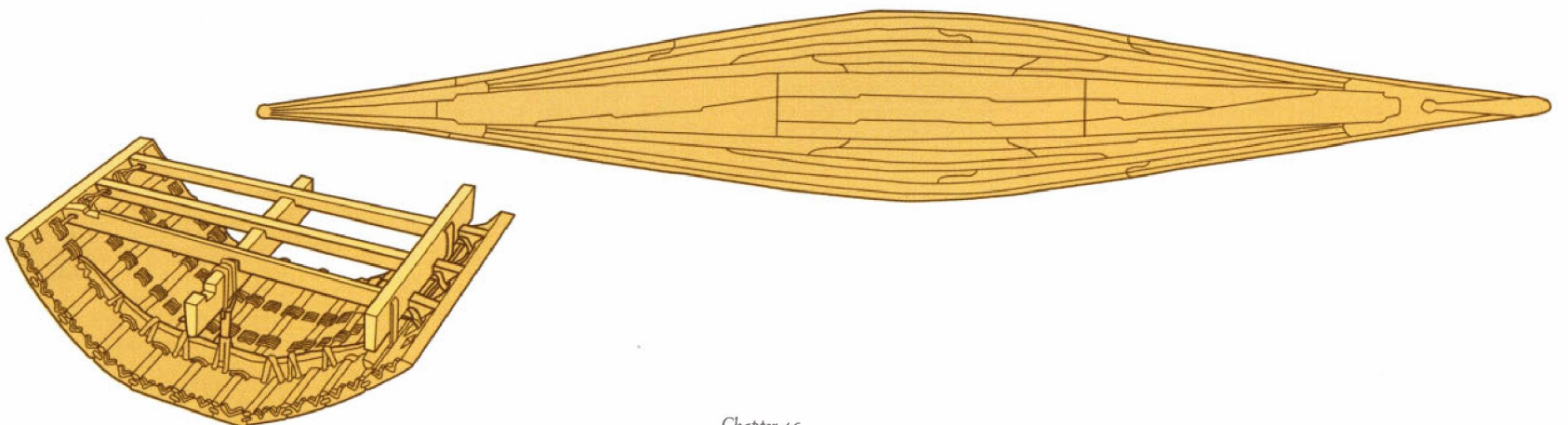
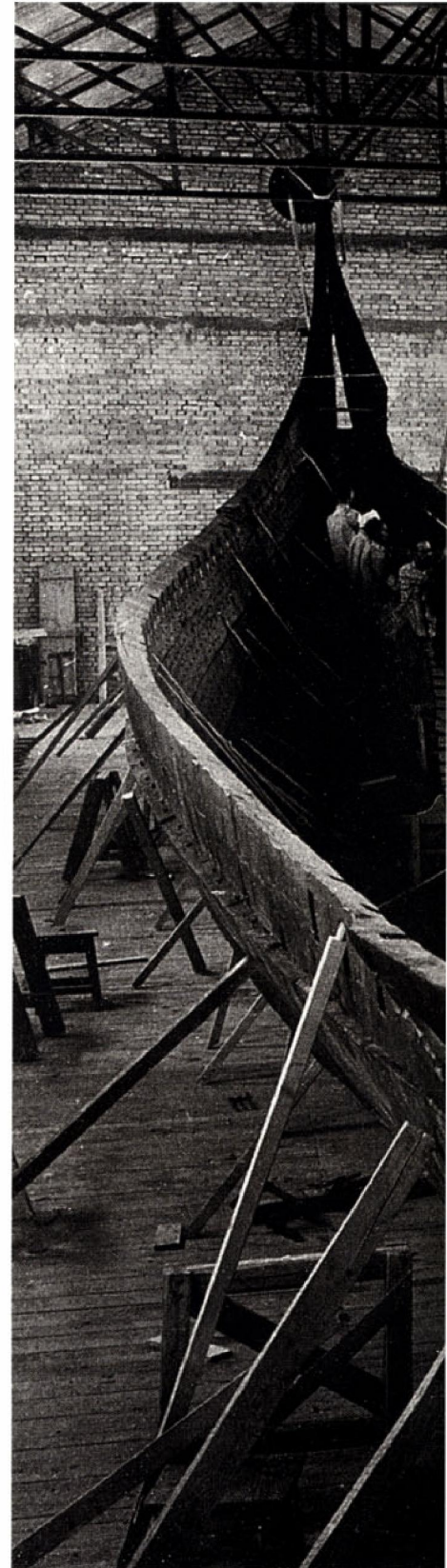
168 top right
The photographer has captured the moment that the blocks of the boat pit were excavated.



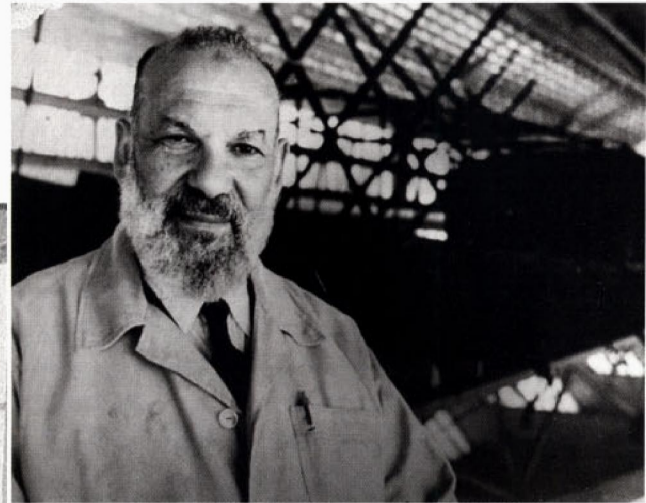
168 center
In these images one can see the different steps taken to collect the pieces of the boat and put them together with ropes. In a more advanced phase of the reconstruction (below) the boat seems to return to its original shape.



168 bottom
The drawing on the left depicts the cross section of the planking of the boat. The drawing on the right shows the final stage of the restoration of the boat.



Royal Boats



The expert conservationist Hag Ahmed Youssef spent many years preserving each individual piece found in the pit and reconstructing the ancient boat. The rebuilt boat measures about 43.4 m long and 5.9 m wide in the beam. The woods used in its construction were cedar and acacia.

Many scholars believe that the three boat pits found to the east of the Great Pyramid were cut during the reign of Khufu and that the two southern pits were built during the reign of Djedefre, as

indicated by the cartouches bearing his name found in the eastern pit. It is likely that the main building ramp leading from the southern quarry covered the area directly south of Khufu's pyramid, so these boat pits would certainly have been some of the last elements of the complex constructed. That the pits were built no later than the end of the Fourth Dynasty is demonstrated by the fact that they lie partially under the pyramid's southern enclosure wall, which is dated to the end of Fourth Dynasty.

*168-169 and 169 top right
Hag Ahmed Youssef is shown here
with Khufu's boat during restoration.
The image on the left shows the
workers during the rebuilding
of the boat.*

Boat pits are found associated with royal and high elite mortuary complexes from the First through the Fifth Dynasties. There is no standard number for these; Khufu's five pits are matched only by Khafre, who also had five pits, all east of his pyramid. The earliest boats of this sort were found recently at Abydos by David O'Connor: a fleet of twelve full-size wooden ships encased in mud plaster lie in the desert near the funerary enclosures of the Early Dynastic kings.

There are three main schools of thought concerning the function of Khufu's pits and the boats that they contained. The first, propounded by Jaroslav Černý, is that four of the boats were ritual boats for carrying the king to the four cardinal points, and that the fifth was the boat in which the body of the king was transported to Giza. The second school, originally expressed by Walter Emery in reference to the First Dynasty *mastabas* at Saqqara, and then adopted by Hassan, holds that the boats were solar boats, and thus carried the king to visit the sun god, Re, or accompanied him in his voyage across the sky. The third concept, expounded principally by Abubakr, suggests that all the boats were originally used in the king's lifetime for pilgrimages and other ceremonies. Kamal El Mallakh, the discoverer of the two southern boat pits, thought, like Hassan, that the boats were solar boats for the soul of the dead king; the boat found in the easternmost southern pit would have traveled to the west, parallel to the daily course of the sun. A fourth theory that could be suggested is that the southern pits contained solar boats, the pits flanking the upper temple contained the boats of Horus, and the pit by the causeway contained either the funerary boat used to carry the body of the king,

or was meant to be used symbolically by Hathor.

Černý notes that four of the boat pits (excluding the one parallel to the causeway) are oriented so that each faces a different cardinal point. Thus, he suggests that the king could depart at any time for any destination. As support for his theory, he refers to a passage in the Pyramid Texts that states that the western, eastern, southern, and northern gods give the king four reed mats to use when he goes into the sky. Thus, the boats would be later developments of these reed mats. He goes on to suggest that the fifth pit held the boat that transported the body of the king to Giza.

In his study of boats in Old Kingdom period complexes, Hassan identifies boat pits as receptacles for conventional solar boats regardless of their number in a particular complex. According to his theory, the king was identified with the polar stars in the northern sky, and under their influence, flew southward in the day boat to reach the west, and northward in the night boat to reach the east. The crew of the night boat was the 'Indefatigable Stars,' and the king acted as the boat's commander.

Hassan uses evidence from the Pyramid Texts and the Palermo Stone to support his theory. The Pyramid Texts contain several passages mentioning the use of solar boats. In one spell: "The king comes to Re and is proclaimed king of earth. He ascends with Atum, rises and sets with Re and the solar barges." Another spell proclaims: "Ye Gods of the west, ye gods of the east, ye gods of the south, ye gods of the north, these four boats which you placed for Osiris when he ascended towards heaven." Another spell tells us that the king's *ka* will become a star and join the northern stars, and yet another one associates the king with four cardinal points, stating that he will sail to the sky like Horus and Re.

Abubakr originally argued that the two southern boats represented solar boats used by the king and the sun god, and also quoted from the Pyramid Texts, referring to a passage where Re uses boats to make his daily journey across the sky. The float, or boat, that he used during the day, was called *mcndt*, and the one for the night was called *msktf*. Since the king represents the sun god on earth and after his death, he also would need similar boats. According to the Pyramid Texts, the king needs such boats to travel across the sky and reach his father Re.

In the second to fifth registers of the Palermo Stone, there are representations of several different kinds of boats, which have been studied by Hassan. One line contains the information that King Neferirkare erected a large 'day' boat at the southern corner of his sun temple. Another inscription of the same king refers to a day and night boat belonging to Re. In 1900–1901, Borchardt discovered a mud-brick boat built for King Niuserre beside his sun temple in Abusir. Because of their association with this temple, these boats are clearly 'solar' boats.

However, there are few pyramid complexes from the Fifth Dynasty, those of Unas and Neferirkare, that were found to contain boat pits. There are two pits in this complex, both lying parallel to the southern side of the causeway. The two boats of Unas probably represent the night and the day boats of Re referred to in the Palermo Stone. No boat pits have been found yet around the pyramids of the Sixth Dynasty, which may be due to lack of sufficient excavations; another possibility is that for economic or cultic reasons, the Sixth Dynasty rulers made do with representations of boats in scenes on the walls of their funerary complexes, or model boats such as were



170-171

This model of the solar boat of Khufu is now conserved in the museum, close to the pyramid of Khufu, together with the original.

found near the pyramid of Pepy II's queen, Neith, rather than cutting pits and burying actual boats. In support of this conclusion are fragments bearing representations of two boats found within the pyramid of Pepy II.

In a later article, Abubakr and Mustafa state that the reconstructed boat from the first of the southern boat pits is not a solar boat. Their analysis is based on a scene from the wall of the tomb of Kaninisut that shows a sailing boat, above which a text reads: "The coming from Buto and the sailing to the fields of the great beautiful offerings." A second text reads: "Sailing to Heliopolis." On this piece of textual evidence, which is not even royal in character, they label the five boats of Khufu as follows: one for the pilgrimage to Heliopolis; the second for the pilgrimage to Sais; the third for the pilgrimage to Buto; the fourth for various rites of coronation; and the last one for the sons of Horus who participated in the rites of coronation. The king would certainly have used boats during his lifetime to visit these cult centers, but there is no proof that he needed them beside his pyramid.

The reasons that Abubakr and Mustafa cite in their claim that the reconstructed boat could not be a solar boat are each easily refuted. They begin by arguing that the kings of the Fourth Dynasty did not officially adopt the dogma of the cult of Re. Most scholars believe just the opposite, that the cult of Re was very strong in the Fourth Dynasty, especially during the reign of Khufu. His son and successor, Djedefre, who buried this boat and its companion, was the first to hold the title 'son of Re.' The cult of Re is attested as early as the First Dynasty, and there was a man who held the title 'high priest of Re' from the reign of Khufu's father, Sneferu, indicating that

the cult was active. Stadelmann has even suggested that both Sneferu and Khufu were considered to be embodiments of Re himself during their lifetimes.

Abubakr and Mustafa state that the Pyramid Texts do not claim that the kings had solar boats for themselves. This is not true; there are a number of Utterances in these texts, which were recorded first at the end of the Fifth Dynasty but thought to be based on material dating back in to the Early Dynastic Period, stating that the kings traveled in solar boats.

Abubakr and Mustafa are joined by Černý and Jenkins in some of their arguments against a solar-boat designation for the reconstructed boat. They argue that the form of the boat is considerably different from a solar boat. For example, it does not have a ram or hawk-headed prow. However, the hull is similar to the hulls described in the Pyramid Texts. Khufu's boat may differ in other features from those mentioned for the solar boats of the Pyramid Texts, such as the large deckhouse and the hut for the captain, but this does not prove that it is not a solar boat.

Abubakr and Mustafa argue that not a single one of the characteristic emblems of the solar boat was found in the pit which contained all the parts of Khufu's boat. However, Hassan lists all the determinatives that occur with boats in the Pyramid Texts. Two of these symbols are flint tools and reed mats, and both of these symbols were found in Khufu's boat. These could well be considered solar symbols, thus disproving Abubakr and Mustafa's statement.

The fact that Khufu's boat was provided with ten rowing oars and two steering oars suggests to Abubakr and Mustafa that it was a real, rather than a symbolic, boat. However, these oars could be considered

symbolic oars. In the mind of the ancient Egyptians, the stars would row and the king would steer the boat. This identification is supported by Paul Lipke, who writes that the oars are too heavy to be used, therefore, they must have been symbolic.

Abubakr and Mustafa believe that there is some proof that the boat was once used, and therefore must have been funerary rather than solar; they cite, for example, the impressions of the tightly fitting ropes are still visible on some of the logs, which would have assured the water tightness of the boat. However, there is much evidence that the boat was never used. Traces of white color on the surface of some pieces of the boat, and a complete absence of water marks on the hull, indicate that it was never used on the Nile. Zaki Iskandar, who was in charge of the scientific study and conservation of the objects and materials found in the pit, found remains of cedar and acacia wood on the site, along with traces of mud and plaster covering the blocks of the pits. He concluded that the boat had been built near where it had been buried. Another boat expert, Björn Landström, states that the boat was never painted or decorated, indicating that the boat was built in a hurry.

I believe that the boats to the south of the pyramid are solar boats in which the soul of the king symbolically traveled through the heavens with the sun god. The boats in the pits by the upper temple were used by the king as Horus to travel throughout Egypt and maintain order in his realm. The pit that lies parallel to the causeway might have contained the funerary boat which was used to bring the king's body to its final resting place, or might have been used symbolically by the goddess Hathor.



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THE ROYAL BOATS AT GIZA

Text by Zahi Hawass

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THE SPHINX

Text by Mark Lehner

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THE TOMBS OF THE HIGH OFFICIALS AT GIZA

Text by Peter Der Manuelian

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