

Mechanical Engineering in Ancient Egypt, Part 66: Stelae Industry (Third Intermediate and Late Periods)

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ABSTRACT

This work investigated the evolution of mechanical engineering through studying the stelae industry during the Third Intermediate and Late Periods. The features of the stelae production examples are presented including: material, height, owner, decoration, scenes, text type and present location. The purpose of each stele is also highlighted.

Keywords: Mechanical engineering, ancient Egypt, stelae industry, Third Intermediate Period, Late Period

INTRODUCTION

This paper is the 66 one in a series of research papers aiming at investigating the evolution of Mechanical Engineering in ancient Egypt through studying the stelae industry during the Third Intermediate and Late Periods. Kaper (2009) in her research paper about evidence from the Dakhleh Oasis in the Libyan Period presented a limestone fragment of a hieratic stele from the temple at Amheida, a section of the great Dakhleh stele from Mut el-Kharab, a stele from the reign of Takeleth III from the temple of Amheida [1]. Labudek (2010) in her M. Phil. Thesis about the Late Period stelae from Saqqara presented and analysed the votive stelae from the Serapeum, funerary stelae with Carian inscriptions [2]. Wikimedia (2012) wrote an article about the stelae of the Egyptian Late Period where they handled the stelae of the 26th Dynasty, the stelae of the 27th Dynasty and the stelae of the 30th Dynasty. They presented seven stelae showing their present location [3].

Conlon (2014) in her chapter about the quarter of the divine adoratrices at Karnak during the 26th Dynasty presented a 1.43 m height sandstone stele from the British Museum and a stele ANT 35 from the Louvre Museum [4]. Abdelmaguid (2015) studied two painted wooden stelae from the Egyptian Museum at Cairo. One of them was for Hor-nakht comprised a funerary scene and a six horizontal lines of hieroglyphic text. The second stele was for Dd-Bastet-snk-sj

and included a funerary scene and five horizontal lines of a hieroglyphic text [5]. Wikipedia (2017) wrote an article about Pharaoh Takelet III who ruled Egypt for 13 years during the 23rd Dynasty. They outlined that according to a stele from Ahmeida in the Dakhla Oasis, he ruled Egypt for only 7 years [6]. MFA (2018) presented a painted wooden stele of Shepen-Bastet from the 26th Dynasty of the Late Period with a funerary scene and a four horizontal lines of a hieroglyphic text and a decorating frame for the whole stele [7]. Hassaan (2018) investigated the stelae industry as an indication of the evolution of mechanical engineering during the periods from Early Dynastic to New Kingdom [8,9].

STELAE PRODUCTION DURING THE THIRD INTERMEDIATE PERIOD

The Third Intermediate Period comprised the 21st to 25th Dynasties over a time period from 1069 to 664 BC [10]. We have a number of examples depicting the development of the stelae industry during the Third Intermediate Period of Egypt presented as follows:

- The first example is a 409 mm height stele honouring Pharaoh Amenhotep I of the 18th Dynasty from the 21st-24th Dynasties of the Third Intermediate Period (1070-717 BC) in display in the Museum of Fine Arts at Boston and shown in Fig.1 [11]. It was of the classical rectangular type with domed top. Under the domed top came a scene for a

winged sun-disk under which came two scenes for Pharaoh Amenhotep I and his Royal Wife with a large number of Deities. The activities of the stele were supported by hieroglyphic texts written in vertical columns and a horizontal row.

- The second example is a painted wood funerary stele for Lady Nekhhonsupakhered from the 21st-22nd Dynasties (1070-736 BC) in display in the Egyptian Museum at Turin, Italy and shown in Fig.2 [12]. The stele design was a continuation of the rectangular design with domed top decorated by a winged sun-disk in the domed area. Under the winged sun-disk came a funerary scene for the stele owner praying to one of the ancient Egyptians deities. A hieroglyphic text was written in four vertical bounded columns.



Fig1. Limestone stele honouring Amenhotep I
From 21st-24th Dynasties [11]



Fig2. Wooden stele of Lady Nekhhonsupakhered
from 21st-22nd Dynasties [12].

- The third example is an 0.52 m height donation stele from the 22nd Dynasty, reign of Pharaoh Sheshenq III (804 BC) in display in the Brooklyn Museum at NY and shown in Fig.3 [13]. It was of the domed-top rectangular stele design with large fillet rounded bottom corners. The top scene was for a winged sun disk with the domed area bounded by a horizontal engraved line. Then came a register for the donation process to a number of

ancient Egypt Deities. Then came a hieroglyphic text written within seven horizontal bounded lines describing the donations process of a specific land and the conditions of the donation.

- The fourth example is a 230 mm height painted wood stele of Aafenmut from the 22nd Dynasty during the reign of Pharaoh Osarkon I (924-889 BC) in display in the Metropolitan Museum at NY and shown in Fig.4 [14]. This is a continuation of the wonderful painted wooden stelae produced during the New Kingdom and still living in a number of National Museums [15].



Fig3. Donation stele from 22nd Dynasty [13]



Fig4. Wooden stele of Lady Aafenmut from 22nd Dynasty [14].

This is a domed-top rectangular stele-design decorated by a sun-disk and Uraeus symbol on a River-boat. Under the domed area comes a funerary scene for the lady praying to one of the ancient Egypt Deities with an offering table in between them. Hieroglyphic text was written in five vertical bounded columns.

- The fifth example is a 278 mm painted wood stele of Nayefennebu from the 22nd Dynasty (825-712 BC) in display in the Metropolitan Museum of Art at NY and shown in Fig.5 [16]. The design of the present stele was similar to that shown in Fig.4 except the decoration under the domed area where around the sun-disk, the designer used an

Uraeus and Wadjed eye symbols from both sides of the disk. Also, the offering table was much simpler than that of Fig.4 with an extremely one large lotus branch except of two lotus branches in the other design. The hieroglyphic text was written in this design in eight vertical bounded columns.

- The sixth example is a 238 mm height painted wood stele of Saiah from the 23rd Dynasty (825-712 BC) in display in the Metropolitan Museum of Art at NY [17]. This type of stelae was of the same family of the painted wooden stelae presented in Figs.2, 4 and 5. The hieroglyphic text was written in six vertical bounded columns, while in the domed area came a scene for a winged sun-disc over two Wadjed eye symbols and two Shen symbols.



Fig5. Wooden stele of Nayefennebu from 22nd Dynasty [16].



Fig6. Wooden stele of Saiah from 23rd Dynasty [17]

- The seventh example is an 0.764 m painted limestone grave stele of Nehmes-Ra-Tawy from the 23rd-25th Dynasties (817-658 BC) in display in the Brooklyn Museum at NY and shown in Fig.7 [18]. This design was a continuation of the painted limestone rectangular designs with rounded bottom corners. Inside the domed area came a winged sun-disc scene under which came a single scene for the owner of the stele praying to some of the ancient Egypt Deities with a hieroglyphic text written in four vertical bounded columns. Then came the main funerary text of the stele written in six horizontal bounded rows. It

was decorated by a frame flashed towards the outside borders and another discrete border next to the outside one and separating the domed area, the scene area and the main text area.

- The eighth example is a 240 mm height painted wood stele of Padi-Khonsu from the 25th Dynasty (760-660 BC) in display in the Museum of Fine Arts at Boston and shown in Fig.8 [19]. This stele was following a typical design for painted wood stelae spread during this era. The domed area was decorated by a winged sun-disc under which came two Uraeus symbols, the an 8 vertical bounded columns of hieroglyphic funerary text, then a scene for the owner lady fully dressed and praying to an ancient Egypt Deity with a offering table between them.
- The ninth example is an Anhydrite magical stele dedicated by Nesamenemopet from the 25th Dynasty (750-664 BC) in display in the Metropolitan Museum and shown in Fig.9 [20]. This was a unique design for a stele having a domed-top rectangular shape with sharp bottom corners with a head on the domed top taking the shape of Bes (one of ancient Egypt Deities). There was a scene under the head surrounded by a hieroglyphic text written in vertical columns. Under the scene came the main text of the stele written in six horizontal bounded rows.



Fig7. Limestone stele of Nehmes-Ra-tawy from 23rd-25th Dynasties [18]

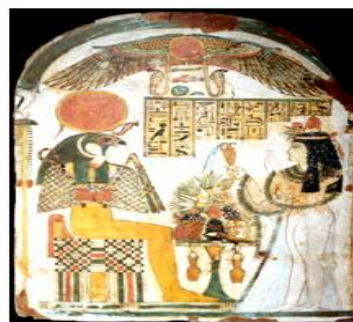


Fig8. Wooden stele of Padi-Khonsu from 25th Dynasty [19].



Fig9. Anhydrite magical stele of Nesamenemopet from 25th Dynasty [20]



Fig10. Wooden stele of Tabiemmut from 25th-26th Dynasties [22]

STELAE PRODUCTION DURING THE LATE PERIOD

The Late Period of ancient Egypt comprised from the 26th Dynasty to the 31st Dynasty over a time span from 664 to 332 BC [21]. The evolution of stelae production through this historical era is investigated through the following examples:

- The first example is a 430 mm height painted wood stele of the 'Lady of the House' Tabiemmut from the 25th-26th Dynasties (750-525 BC) in display in the Metropolitan Museum of Art at NY and shown in Fig.10 [22]. The stele was of the standard domed top rectangular type with rounded bottom corners. In the domed area, the designer drew a scene for a winged sun-disk supported by two crowned Uraeus with a column of hieroglyphic text in between. Then came a decorative scene followed by a scene for the Lady of the House praying to six of ancient Egypt Deities with three columns of hieroglyphic text and three symbols in between. In the bottom came the main funerary hieroglyphic text of the stele written in five bounded rows. Wonderful colored borders were drawn between four areas on the stele.
- The second example is a 454 mm height painted wood stele of Tjepem from 25th -26th Dynasties (712-525 BC) sold by Christies on June 2009 for 32,500 US\$ and shown in Fig.11 [23]. The design of this stele was similar to that of Tabiemmut stele in Fig.10 but with less quality from Art point of view. The scene in the domed area is similar to that in Fig.10, there were no decorating borders between the different areas of the stele, the main scene is different than that in Fig.10 and the hieroglyphic text was written in seven horizontal bounded rows besides one vertical column text behind the lady.



Fig11. Wooden stele of Tjepem from 25th -26th Dynasties [23]

- The third example is an 0.515 m height painted wood stele of Ankh-ef-en-Khonsu from the 25th-26th Dynasties (680-670 BC) in display in the Egyptian Museum at Cairo and shown in Fig.12 [24]. It was of the standard style of the painted wood stelae used extensively during those Periods of the ancient Egyptian History. The domed area housed a scene for the winged-sun-disk, then came the main scene of the stele presenting the owner saluting the Horus Deity with an offering table in between and a hieroglyphic text written in vertical bounded columns between the heads of Horus and the owner. Then came the main text of the funerary hieroglyphic text written in five horizontal bounded rows. The three areas were separated by colored horizontal bands.
- The fourth example is a 445 mm height painted wood stele from the 26th Dynasty (664-525 BC) sold by Christies on April 2015 at London for 12,343 US\$ and shown in Fig.13 [25]. It was a domed top rectangular stele with rounded bottom corners. Within the domed, the designer used a scene for a winged-sun-disk under which came a hieroglyphic text, then a decorative

band, then a scene for the owner praying for a Deity with an offering table in between them which was repeated twice. Then came a hieroglyphic text written in seven horizontal bounded rows.

- The fifth example is a 95 mm height faience magical stele from the Late Period (664-380 BC) in display in the Metropolitan Museum of Art and shown in Fig.14 [26]. This design was similar to that of the 25th Dynasty shown in Fig.9. The front surface was full of engraved scenes and symbols.
- The sixth example is a 325 mm painted wood stele of Shepen-Bastet from the 26th Dynasty (664-525 BC) in display in the Museum of Fine Arts at Boston and shown in Fig.15 [27]. This is a unique wonderful stele design. It was of the rectangular type with large round corners in the top and small round corners in the bottom. The stele started in its top with a scene for a winged sun-disk supported by two Uraeus symbols, then came a decorative scene, then a funerary scene for the owner praying to 5 ancient Egypt Deities, the a funerary hieroglyphic text written in four horizontal bounded rows two of white background and two of red background alternating with each other. There was a decorating frame around the stele with two lateral bands consisting of rectangular shaped colored with three different colors.



Fig14. Faience magical stele from Late Period [26]



Fig15. Wooden stele of Shepen-Bastet from 26th Dynasty [27].



Fig12. Wooden stele of Ankh-ef-en-Khonsu from 25th-26th Dynasties [24]



Fig13. Wooden stele from 26th Dynasty [25]

- The seventh example is a 272 mm limestone stele of Pharaoh Necho II from the 26th Dynasty (600 BC) in display in the Walters Art Museum at Baltimore and shown in Fig.16 [28]. It was of the rectangular type with small-fillet rounded corners. It depicted the Pharaoh facing the Goddess Hathor with the Cartouche of the Pharaoh and a hieroglyphic text written in five short vertical columns.
- The eighth example is an 0.54 m height stele of Princess Ankhnesneferibre, daughter of Pharaoh Psamtik II from the 26th Dynasty (595-589 BC) in display in the Egyptian Museum at Cairo and shown in Fig.17 [29]. This is probably a limestone stela of the domed-top rectangular type with rounded corners at its bottom. The domed area housed an engraved scene for a winged sun-disk, under which came a scene for the Princess holding a Sistrum in each hand and saluting Amun-Re with a funerary table between them. Her steward Sheshonq was shown standing above her.
- The ninth example is a stele from reign of Pharaoh Amasis from the 26th Dynasty (570-525 BC) in display in The Los Angeles County Museum of Art at California and shown in Fig.18 [30]. It may be produced from an engraved limestone where it was from the standard domed-top rectangular type with bottom corners having small fillet.

Within the domed area came a scene for a winged sun-disc under which came a hieroglyphic text. Then came a scene for the Pharaoh Amasis praying to the crowned Apis with an offering table between them. Then came a funerary text conforming of twelve horizontal bounded rows of a hieroglyphic text.



Fig16. Limestone stela of Pharaoh Necho II from 26th Dynasty [28]



Fig17. Stela of Princess Ankhnesneferibre From 26th Dynasty [29]



Fig18. Stone stela from 26th Dynasty [30]

- The tenth example is a granodiorite stela with a decree of Pharaoh Nectenabo I from the 30th Dynasty (380-362 BC) in display in the British Museum and shown in Fig.19 [31]. It was of the classical rectangular type with domed top, but with slightly inclined sides. Inside the domed area came a scene for a winged sun-disk with two Uraeus symbols, scarab and two jackals. Then came two funerary scene for the Pharaoh offering to a Deity with a hieroglyphic text written inside vertical bounded bands. Then under those two scenes came the main text of the stela written also inside vertical bounded bands.

- The eleventh example is a 144 mm height black stone magical stela from the reign of Pharaoh Nectenabo II of the 30th Dynasty (360-343 BC) in display in the Metropolitan Museum of Art and shown in Fig.20 [32]. This stela was of the rectangular type with domed-top and sharp bottom corners. Magical symbols were engraved on the upper 40 % of the stela surface, then came a scene followed by a text written in horizontal lines.



Fig19. Granodiorite stela with decree of Nectenabo I from 30th Dynasty [31]



Fig20. Stone stela from 26th Dynasty [32]

- The twelfth example is a 283 mm height limestone stela of Thutirtis from Late 30th Dynasty (350-300 BC) in display in the Metropolitan Museum of Art and shown in Fig.21 [33]. The stela has the classical design of a rectangular shape with domed-top and small filleted bottom corners. Inside the domed area came a scene for a winged sun-disk with two Uraeus, scarab and two jackals. Then came two funerary scene for the owner of the stela prying to two of the deities separated by a vertical column of a hieroglyphic text. Then came the main funerary text of the stela engraved inside five horizontal bounded rows.



Fig21. Limestone stela of Thutirtis from 30th Dynasty [33].

CONCLUSION

- The development of the stelae production during the Third Intermediate and Late Periods was investigated through 23 stelae examples.
- The ancient Egyptians during the studied periods from 1069 to 332 BC produced stelae having heights between 144 to 764 mm.
- The material used in stelae production was: limestone, granodiorite, anhydrite, wood and faience.
- Most of the stelae produced during this period were of the rectangular type with domed-top with sharp rounded bottom corners.
- They could wonderfully paint wood and limestone producing colored scenes and decorations as an outstanding ancient Egyptian art.
- They produced magical stelae during the 25th and 30th Dynasties.
- Most of the stelae produced during this history era of ancient Egypt were supported by a hieroglyphic text written either vertically or horizontally.
- Amenhotep I, the second Pharaoh of the 18th Dynasty was honored by a limestone stele during the 21st-24th Dynasties Period.
- The painted wood stelae had wonderful colors that could withstand all the environmental effects in graves or temples and in museums where they are in display up to now. This is an indication of the relatively high technology used in the production of the pigments used.
- Most of the domed-top stelae had a common scene of a sun-disk either winged or un-winged besides some of the ancient Egyptian symbols such as Uraeus, Shen and Wadjet eye.
- They were keen to register land donation to temples in stelae kept inside the temples.
- They were keen to show an offering table in most of the personal stelae showing individual praying to a Deity.
- Some wooden stelae were nicely decorated by multiple-colors-patterns in frames housing the scene or text areas.

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