

# Mechanical Engineering in Ancient Egypt: Part XVII: Ladies Headdress in the Old, Middle Kingdoms, Third Intermediate and Late Periods

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## Abstract:

This research paper explores the role of Mechanical Engineering in the design and production of ladies Headdresses during the Old Kingdom, Middle Kingdom, Third Intermediate and Late Periods of ancient Egypt. The paper shows how ancient Egypt royal and normal ladies loves headdresses as a fashion and the different designs practiced by them through painting scenes, statues and sarcophaguses. The high technology in design and production is highlighted in the models of ladies headdresses presented in the paper from the studied periods from the Old Kingdom to the Late Period except the 18<sup>th</sup> dynasty which will be covered in a separate research paper.

*Keywords* — Mechanical engineering history, ancient Egypt, ladies headdress, Old Kingdom, Middle Kingdom, Third Intermediate Period, Late Period.

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## I. INTRODUCTION

This is the 17<sup>th</sup> research paper in a series of research paper aiming at exploring the history of mechanical engineering in ancient Egypt and its role in establishing one of the greatest civilizations in the ancient world. The paper investigates the tradition of ancient Egyptian ladies in wearing headdress as a fashion continued in all the historical periods of ancient Egypt.

Assmann (1996) presented some models of busts and full statues of ancient Egyptians like Nefertiti bust from Amarna and the statue of the wife of Nakhtmin of the 18<sup>th</sup> dynasty [1]. Pendergast and Hermsen (2004) studied the fashion, costume and culture in the ancient world including ancient Egypt and starting from the prehistoric life. The included a section about the headwear in all the eras they studied. In a section about Egyptian clothing, they referred to the tomb of Pharaoh Tutankhamun and scenes from undefined tombs [2]. Hilliard (2006) studied the visual representations of Pharaoh Hatshepsut and her influences on images of Queen

Nefertiti, wife of Pharaoh Akhenaten of the 18<sup>th</sup> dynasty. She brought to light the gender rules of the kingship and how Hatshepsut and Nefertiti constructed female king identities [3].

Tassie (2008) studied the hairstyles of the ancient Egyptians in the Protodynastic, Early dynastic, Old Kingdom up to the 18<sup>th</sup> dynasty. She presented statues and tomb scenes from the different eras illustrating the hairstyles [4]. Olivier (2008) studied a representational artistic works as visual evidence for the social, political, religious and economic lifestyles of the ancient Egyptian elite. She analysed many artistic works such as tomb and palace wall scenes, statues, obelisks and personnel artefacts for evidence for the roles of elite women in events, practices and rituals at the time of creating the objects [5].

Basson (2012) investigated the relationship between women in ancient Egypt and Hathor through art and artefacts. He outlined that Egyptian women not only experienced religion , but also lived religion. He presented samples of women with

various ranks in the ancient Egyptian society [6]. Markham (2014) explored clothing as an identity markers in the 2<sup>nd</sup> – 3<sup>rd</sup> centuries by examining the role of dress in Late antiquity. He analysed religious identity in buried by examining the material evidence from al-Fayoum, Egypt area [7].

## II. OLD KINGDOM

The Old Kingdom includes the 3<sup>rd</sup> to 6<sup>th</sup> Egyptian dynasties extending from 2686 to 2181 BC [8]. We have samples of ladies headdress from the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> dynasties presented as follows:

- Fig.1 shows the top part of a statue for Nesa, the wife of priest Sepa of the 3<sup>rd</sup> dynasty displayed in the Louvre Museum of Paris [9]. The headdress of Nesa covers her head and goes down to her shoulders. It is decorated at the end by two black lines and it is a dark-brown headdress.



Fig. 1 Statue of Nesa from the 3<sup>rd</sup> dynasty [9].

- The second model relates to Nofret, the wife of prince Rahotep of the 4<sup>th</sup> dynasty which is displayed in the Egyptian Museum and its top part is shown in Fig.2 [10]. It displays a side view of Nofret displaying the natural beauty of the ancient Egyptian woman. The headdress is worn above the normal hair appearing on the forehead and kept in position using a diadem. It consists of too many parallel trails without any decorations.



Fig. 2 Statue of Nofret from the 4<sup>th</sup> dynasty [10].

- The last model from the Old Kingdom is a wooden bust for Ka-Aper wife from the 5<sup>th</sup> dynasty displayed in the Egyptian Museum at Cairo and shown in Fig.3 [11]. Its design is similar to that of Nofret in Fig.2, however it has two decorating lines at its ends.



Fig. 3 Statue of the wife of Ka'Aper from the 5<sup>th</sup> dynasty [11].

## III. MIDDLE KINGDOM

The Middle Kingdom comprised the 11<sup>th</sup> and 12<sup>th</sup> dynasties of ancient Egypt extending over the time span from 2000 to 1700 BC [12]. We have three headdress examples from the Middle Kingdom presented as follows:

- The first model of the Middle Kingdom headdresses belongs to Queen Kawit, the lower ranking wife of King Mentuhotep II of the 11<sup>th</sup> dynasty from a relief from her tomb and shown in Fig.4 [13]. Her headdress has a horizontal parallel trails without any decorations. It is short up to only the end of the neck.



Fig. 4 Relief of Queen Kawit from the 11<sup>th</sup> dynasty [13].

- Another model of headdresses is from the 12<sup>th</sup> dynasty. It belongs to a woman from the reign of King Amenemhet I through her statue found during the Metropolitan Museum of Art excavations in 1907 and shown in Fig.5 [14]. Her headdress is relatively long up to her shoulders, wide near its end and decorated by yellow pins or beads. It is decorated also by yellow bands near the forehead.



Fig. 5 Woman from the 12<sup>th</sup> dynasty [14].

- A second model from the 12<sup>th</sup> dynasty is a statue of a serving woman standing in the Metropolitan Museum of Art at NY with her top is shown in Fig.6 [15]. Her headdress is green, long, narrow at its ends and has no decorations.



Fig. 6 Serving woman from the 12<sup>th</sup> dynasty [15].

#### IV. THIRD INTERMEDIATE PERIOD

The Third Intermediate Period covers the dynasties from the 21<sup>st</sup> to the 25<sup>th</sup> and extends over the time span from 1070 to 664 BC [16]. The models available in this era are from Sarcophagus lids in the 21<sup>st</sup> and 22<sup>nd</sup> dynasties as follows:

- Fig.7 shows the top part of a sarcophagus lid from the 21<sup>st</sup> dynasty and displayed in the Egyptian Museum at Cairo [16]. It simulated the body of the woman with her normal dressing. The headdress has a long style up to the bottom end of her chest and decorated by a coloured cap with extensive scenes and two bands near its ends.



Fig.7 Woman sarcophagus from the 21<sup>st</sup> dynasty [16].

- The second model from this period is from the lid of a sarcophagus of Tabakmut from the 21<sup>st</sup> dynasty and displayed in the Cleveland Museum of Art [17]. The headdress of Tabakmut is long and decorated by motifs in its front band, parallel trails on its two sides and coloured bands at its ends.



Fig.8 Tabakmut sarcophagus from the 21<sup>st</sup> dynasty [17].

- A third model is shown in Fig.9 for a sarcophagus lid of Tanakhtnnettahat from the 21<sup>st</sup> dynasty displayed in the Michael C. Carlos Museum [18]. The design of this headdress is similar to that in Fig.7 from the same dynasty except the decoration bands near it ends which consist of four parallel thin bands separated by dark borders.



Fig. 9 Tanakhtnnettahat sarcophagus from the 21<sup>st</sup> dynasty [17].

- Now, we move to the 22<sup>nd</sup> dynasty where we have two examples of ladies headdress. Fig.10 shows a sarcophagus lid of Nesperennub from the 22<sup>nd</sup> dynasty displayed in British Museum of UK [18]. Her headdress design is from the same design school of Fig.7 except the decoration bands at the ends of the headdress where they are located at its ends and painted in yellow.



Fig. 10 Nesperennub sarcophagus from the 22<sup>nd</sup> dynasty [18].

- The last model from the 22<sup>nd</sup> dynasty is for the singer-priestess Meresamun which is

displayed in the Oriental Institute of Chicago Museum of the University of Chicago and shown in Fig.11 [19]. Her headdress is a classical design of the 21<sup>st</sup> dynasty but has a very wonderful decorations in about five colours and decoration bands over the whole area of the headdress.



Fig. 11 Meresamun sarcophagus from the 22<sup>nd</sup> dynasty [19].

## V. LATE PERIOD

The Late Period of the ancient Egyptian history covers the dynasties from the 26<sup>th</sup> to the 31<sup>st</sup> over a time span from 672 to 332 BC [20]. We have three models of ladies headdress presented as follows:

- Fig.12 shows the top part of a coffin lid of Heresenes from the 26<sup>th</sup> dynasty displayed in the Metropolitan Museum of Art at NY [21]. The headdress design is from the same design school of the Third Intermediate Period except its decoration near the ends of the chest. It is decorated in this area by crossing lines forming a set of rhombus shapes.



Fig. 12 Heresenes coffin from the 26<sup>th</sup> dynasty [21].

- The second model is a silver statue for a royal woman from the reign of Necho II, the second Pharaoh of the 26<sup>th</sup> dynasty displayed in the Metropolitan Museum of Art and shown in Fig.13 [22]. It is a cap headdress covering only the head and decorated by its pattern and a sleeve band on the forehead.



Fig.13 Statue of a royal lady from the 26<sup>th</sup> dynasty [22].

- The third model is a statue for Isis nursing Horus and located in the Egyptian Museum at Cairo and shown in Fig.14 [23]. Her headdress is long up to her shoulders and decorated by a vulture on its top down to the end of her face and rectangular pattern in interchanging position as in building with bricks.



Fig.14 Statue of Isis nursing Horus , Late Period [23].

- The last model from the Late Period is a sarcophagus of Lady Kaahapy from the Late Period displayed in the Louvre Museum of Paris and shown in Fig.15 [24]. Lady Kaahapy is wearing a wonderful headdress of the long style decorated by symmetric scenes over the whole area of the headdress in three colours.



Fig.15 Sarcophagus of Lady Kaahapy, Late Period [14].

## VI. CONCLUSIONS

- The mechanical engineering in ancient Egypt was investigated through the design and production of ladies headdress during the Old Kingdom, Middle Kingdom, Third Intermediate and Late Periods.
- High ranking ancient Egyptian ladies used to wear headdress as a traditional fashion..
- The use of headdress in ancient Egypt was authorised through statues, tomb scenes, temple scenes and sarcophaguses.
- Not only high ranking ladies worn headdress, but also some low ranking ladies..
- Wearing the headdress by ladies was documented since the Old Kingdom of ancient Egypt.
- Headdress appeared in the Old Kingdom since the third dynasty and continued to appear in the fourth and fifth dynasties with

designs ranging from short to long headdresses without decorations and through statues..

- Using ladies headdresses continued in the Middle Kingdom through tomb reliefs (11<sup>th</sup> dynasty) and statues (12<sup>th</sup> dynasty).
- Decoration of ladies headdresses took place in the 12<sup>th</sup> dynasty of the Middle Kingdom and continued through the rest of the ancient Egypt Periods up to the Late Period..
- Short and long designs of the headdress continued also to appear in the Middle Kingdom and the Late Period.
- Long ladies headdresses were dominant in the Third Intermediate Period of Egypt.
- Wonderful decorations took place during the Third Intermediate and Late Periods.
- All the headdress designs in the Third Intermediate Period were authorized through sarcophagus manufacturing.
- Patterned and multi-coloured headdresses were known to the ancient Egyptians during the Third Intermediate and Late Periods.

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