MECHANICAL ENGINEERING IN ANCIENT EGYPT, PART XXIII:
WOMEN CLOTHING IN THE 18\textsuperscript{th} DYNASTY

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ABSTRACT
This is the 23\textsuperscript{rd} research paper exploring the evolution of Mechanical Engineering in Ancient Egypt. The paper investigates women clothing in ancient Egypt during the 18\textsuperscript{th} Dynasty of the New Kingdom. It explores the different types of women clothing during this wealthy Dynasty and establishes some of their characteristics. The use of clothing among Royal Ladies, Noble Ladies and normal ladies is investigated. The use of Tunic, Corselet, Calasiris, modified Tunic, modified Calasiris, modified Corselet, Robe, Sash and Panty types of women clothing is traced during the 18\textsuperscript{th} Dynasty.

KEYWORDS: History of mechanical engineering, ancient Egypt, women clothing, 18\textsuperscript{th} Dynasty.

INTRODUCTION
This is the 23\textsuperscript{rd} research paper in a series aiming at exploring the evolution of mechanical engineering in ancient Egypt through the different activities of their wonderful civilization. In the previous part of this series, I discussed the women clothing in ancient Egypt during the period from Predynastic to Middle Kingdom. This paper extends the work in Part XXII to cover the New Kingdom Period since this is the most powerful and wealthy era in the ancient Egyptian history.
Riefstahl, 1970 studied four dresses from ancient Egypt available in the Museum of Fine Arts at Boston. She outlined that most of the complete garments survived can be dated to after 1300 BC. One of the dress types she presented is a draped dress from the New Kingdom and bag-tunics from the 20th Dynasty.[1] Newman, 1997 presented some illustrations from Pharaohs Tombs in Dier el-Medina during the 18th – 20th Dynasties. Some of his illustrations carried information for both men and women clothing during the New Kingdom of Egypt.[2] Watt, 1998 presented a large number of illustrations about Egyptian deities which carried good information about women clothing in ancient Egypt, symbols form protecting, rejoicing, mourning, wife and her daughters of the deceased, offering bearer model in Meketre Tomb of the 12th Dynasty, Hatshepsut statue of the 18th Dynasty, Seti I chapel of the 19th Dynasty, Menna and his family of the 18th Dynasty in his Tomb, Yuni and his wife statue (19th Dynasty), scene from the Book of the Dead written in the 21st Dynasty and a chantress of Amun-Re.[3] Hilliard, 2006 studied in her Master of Arts the visual representation of Pharaoh Hatshepsut and her influence on the images of Queen Nefertiti wife of Pharaoh Akhenaten of the 18th Dynasty. She argued that Pharaoh Akhenaten himself was influenced by the androgynous characteristics used in Hatshepsut’s visual representations.[4]

Roberson, 2008 studied the mortuary art and architecture in the Royal Tombs of the New Kingdom. He presented wonderful coloured scenes from some of the New Kingdom Tombs at Thebes. The presented scenes carried some information about men and women clothing during the New Kingdom.[5] Olivier, 2008 studied the social status of elite women of the New Kingdom of Egypt. She presented good number of illustrations for women from the New Kingdom carrying information about their clothing during this period.[6] Laboury, 2010 tried to answer the question: how and why did Hatshepsut invent the image of the royal power?. He presented a number of illustrations for Pharaoh Hatshepsut as scenes in her chapel at Karnak and the Temple of Thutmose III, in the granite quarries of Aswan at el-Mahatta, in Sarabt elKhadim in Sinai, in her Temple at Deir el-Bahri, in Karnak Temple and in the Southern Temple of Buhen.[7] Fahim, 2013 discussed the widespread usage of the bag-tunic for all categories of people in ancient Egypt. He depended on statues and reliefs for Pharaohs and individuals during the New Kingdom to compare the different styles of the bag-tunic for all classes of people. He concluded that bag-tunic appeared in the New Kingdom as a new fashion in ancient Egypt.[8] Wikipedia, 2016 in presenting Queens Nefertari and Meritamen, the wives of Pharaoh Rameses II of the 19th Dynasty presented scenes and statues of both Queens. The scenes carried good information about Queen clothing in the 19th Dynasty.[9,10]
Hassaan, 2016 studied the evolution of women clothing in ancient Egypt during the period from Predynastic to Middle Kingdom. He analysed the different types of women clothing illustrating all the available resources.\textsuperscript{[11]}

**Royal Women**

The fashions of the Royal women clothing in the 18\textsuperscript{th} Dynasty are presented below.

- Fig.1 shows a colored tomb scene at Thebes for Queen Ahmose Nefertari, wife of the 1\textsuperscript{st} Pharaoh of the 18\textsuperscript{th} Dynasty, Ahmose I.\textsuperscript{[12]} She is wearing a full-loose-transparent-half sleeve Tunic dress. The belt at her waist has long ends going down to the end of the dress. The sleeves are decorated by thin lines.

- Fig.2 shows a scene for Queen Ahmose, the Great Royal wife of Pharaoh Thutmose I, the 3\textsuperscript{rd} Pharaoh of the 18\textsuperscript{th} Dynasty with her husband.\textsuperscript{[13]} She is wearing a modified Calasiris design (having two long legs).

- Fig.3 shows Queen Iset, wife of Pharaoh Thutmose II, the 4\textsuperscript{th} Pharaoh of the 18\textsuperscript{th} Dynasty in a Tomb scene with her son Thutmose III in a boat.\textsuperscript{[14]} It seems that she is wearing a full-tight Calasiris.

- Fig.4 shows a statue for the female Pharaoh Hatshepsut, the 5\textsuperscript{th} Pharaoh of the 18\textsuperscript{th} Dynasty as displayed in the Metropolitan Museum of NY.\textsuperscript{[13]} She is setting and wearing a full-tight-tunic dress.
- Fig. 3 shows a wall scene in the Tomb of the foreign three wives of Pharaoh Thutmose III, the 6th Pharaoh of the 18th Dynasty showing the Pharaoh with his three wives and his daughter. All of them are wearing full-tight-Calasiris.

- Fig. 6 shows wall relief for Pharaoh Thutmose IV, the 8th Pharaoh of the 18th Dynasty smiting the head of his enemies and his Great Wife Laret is standing behind him. She is wearing a full-tight modified Tunic with two legs.

- Fig. 7 shows a dual statue for Pharaoh Amenhotep III, the 9th Pharaoh of the 18th Dynasty and his Great Royal Wife Tiye displayed in the Egyptian Museum at Cairo. The Queen is wearing a full Tunic down to her feet.
- The next Royal women clothing example from the 18th Dynasty is for Queen Nefertiti, wife of the 10th Pharaoh of the 18th Dynasty, Akhenaten displayed in the Louvre Museum and shown in Fig.8. The queen is wearing a full-wide-tunic dress. Her dress has half sleeves. However, the left sleeve appears to be long. This may be a sash put on her left shoulder and going down to cover her left arm.

- The next example is Queen Ankhesenamun, the wife of Pharaoh Tutankhamun, the 13th Pharaoh of the 18th Dynasty. It is a colored scene probably from the back of the throne of the Pharaoh as displayed in the Egyptian Museum at Cairo and shown in Fig.9. The Queen is wearing a full-half sleeved Tunic and a Robe above the Tunic.

- The last example of the Royal Queens clothing returns to Queen Mutnedjmet, the Great Royal Wife of Horemheb, the 15th Pharaoh of the 18th Dynasty. A line diagram of her scene in the Tomb of her husband is shown in Fig.10. She is wearing a Robe over a modified full-Tunic with two legs.
Noble Women

Noble women were wives of high class officials in the ancient Egyptian society. Those people were wealthy ones and their wives were a class of elite women having distinct presentation in using high-level fashions in clothing and make-up. Here are some examples of her clothing as authorized through Tomb scenes and statues.

- The first example of women clothing from Noble daily life returns to Rekhmire, the Governor of Thebes and Vizier during reigns of Thutmose III (6th Pharaoh of the 18th Dynasty) and Amenhotep III (7th Pharaoh). Fig.11 shows a colored scene from his Tomb at Thebes. Rekhmire wife Meryt is setting beside him and wearing a white-tight Corselet.

- The second example returns to Sennefer, the Mayer of Thebes and Overseer of Gardens and Cattle of Amun during the reign of Amenhotep II, the 7th Pharaoh of the 18th Dynasty. In a colored scene from his Tomb, his wife Senetnay is shown standing before him as shown in Fig.12. She is wearing a full-Tunic with probably a Robe above it covering her left arm.

Fig 10: Queen Mutnedjmet.\(^{[21]}\)

Fig 11 Wife of Rekhmire.\(^{[22]}\)

Fig 12 Wife of Sennefer.\(^{[23]}\)
- The third example of elite women clothing is from the Tomb of Menna, the Scribe of the Fields of the Lord of the Two Lands during the reign of Thutmose IV, the 8th Pharaoh of the 18th Dynasty. A colored scene for him and his wife in his Tomb at Thebes is shown in Fig.13.\cite{24} His wife is holding his right arm in a very soulful position and wearing a sleeveless-white-full Tunic down to her feet. Her husband Menna is not clear in the figure because probably to criminal Tomb robberies have cut this part and sold it to tourists or museums outside Egypt !!.

- Another example from Menna Tomb is for his wife standing in a worshipping position as shown in Fig.14.\cite{25} In this scene, she is wearing a colored-sleeveless-full Tunic down to her feet with a sash on her left shoulder and arm as clear in the zoomed upper part of her.

![Fig.11 Wife of Menna.\cite{24}](image1)

![Fig.12 Wife of Menna in worshipping position.\cite{25}](image2)

- The next example for Nobles wives clothing returns to Noble Nakht, an 'astronomer', scribe and priest during the reign of Thutmose IV of the 18th Dynasty. One of the colored scenes in his Tomb at Thebes is shown in Fig.13.\cite{26} His wife is standing behind him and wearing a full-sleeveless-white tunic as shown in her zoomed bust in Fig.13.

![Fig 13: Wife of Nakht.\cite{26}](image3)
The next example of elite women clothing of the 18th Dynasty belongs to the wife of Userhat, the Overseer of the Fields of Amun during the reign of Thutmose IV. Fig.14 shows one of the colored scenes in his Tomb at Thebes. She is wearing a full-white-half sleeved Tunic. The sleeves are extremely wide.

The last example of women clothing of the Noble-wives in the 18th Dynasty belongs to Hatshepsut, the wife of Nobamun, Scribe and Grain Accountant at the end of the 18th Dynasty. A colored scene stolen from his Tomb and displayed now in the British Museum is shown in Fig.15. She is wearing a full-white Tunic with a Robe above it.

Normal Women

The ancient Egyptian woman was a working woman in a society put itself in a leading position for the whole Middle East area. She took place in too many professions from Country Ruler to member in musician and dancing bands. Here, we try to investigate how the low class women wore in the ancient Egyptian society through available material from Tombs and Temples.

- The first example is a colored painting in Rekhmire Tomb shown in Fig.16. The scene is showing two girls wearing a colored tight-half-sleeved-full-modified Tunic having two legs. The girls are carrying offerings in both hands.

- The second model again from the Tomb of Rekhmire is a colored scene for three girls-musicians shown in Fig.17. One of the girls is wearing a standard-white-full-tight Corselet. The other two girls are wearing a modified Corselet design with two legs instead of the bag design.
The third example is from Menna Tomb for a serving girl carrying lotus flowers and ducks as shown in Fig.18. The girl is wearing a full-while-modified Calasiris (having two legs) with a sash on her left arm (and shoulder).

The fourth example is again from the Tomb of Menna which a colored scene for two offering girls shown in Fig.19. The two girls are wearing full-modified Tunic with Robe over it.

The fifth example is again for a female musicians but from the Tomb of Nakht. The colored scene of the female band is shown in Fig.20. The musician in the center is wearing a panty while the others are wearing a full-wide-transparent Calasiris.

The sixth example is for two female dancers and a female flutist from the Tomb of Nebamun. The colored scene is shown in Fig.21. The dancing girls are wearing only a panty, while the flutist is wearing a full-wide-Tunic with full-loose sleeves.
The seventh example is for a scene of two harvesting women in the Tomb of Nakht shown in Fig. 22. One of the harvesting women is wearing a white-full Corselet while the other is wearing a full-sleeved-white Tunic.

Fig. 20 Musicians from Nakht Tomb.

Fig 21: Dancers and flutist from Nebamun Tomb.

Fig 22: Harvesting women from Nakht Tomb.
- The eighth example again is from the Tomb of Nebamun. It is a colored scene for two girls serving a man as shown in Fig. 23. The two female servants are wearing a modified Tunic, Robe and Sash covering their hands.
- The last example is for Lady Nay through her wooden statue dedicated to her by her brother Ptahmay displayed in the Louvre Museum of Paris and shown in Fig.24. She is wearing a full-sleeved Tunic down to her feet.

CONCLUSION
- The evolution of women clothing in the 18th Dynasty of ancient Egypt was investigated.
- The philosophy of the paper was to divide the women society in the 18th Dynasty to: Royal women, Noble women and Normal women.
- In each of the three classes, examples of women clothing were presented through scenes and statues.
- Royal women of the 18th Dynasty wore full-loose-half sleeves Tunics, full-tight Calasiris, Modified-tight Calasiris with long legs, full-tight Tunic, sleeved Tunic with Robe above it and modified Tunic with Robe above it.
- Noble women of the 18th Dynasty wore tight-Corselet, full-Tunic with Robe above it, sleeveless-full Tunic, half-sleeved Tunic, modified Calasiris and full-wide Calasiris.
- Normal women of the 18th Dynasty wore full-tight-half-sleeved modified Tunic, full-tight Corselet, modified Tunic with Robe above it, full-wide Tunic, full-wide Tunic, full-wide Tunic with full-loose-sleeves, full-wide-sleeved Tunic, modified Tunic with Robe and Sash and Panty.
- They used belts on their waists with straps going down to near their feet.
- Normal women practiced putting a Sash on their shoulders.
- Normal women practiced wearing a Robe above the Tunic as did the Royal women.

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BIOGRAPHY

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