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THE HISTORICAL ORIGINS OF THE ARABIAN GULF MARITIME HERITAGE: SHIPBUILDING AS A MODEL

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ABSTRACT

This study delves into the historical origins of shipbuilding in the Gulf region, shedding light on its profound cultural and economic significance. By examining archaeological findings from Saudi Arabia, the UAE, and Bahrain, it unveils evidence of boat manufacturing practices dating back to the sixth millennium BC, illustrating the region's long-standing maritime heritage. Furthermore, the research investigates artistic exchanges between the Gulf and Mesopotamia, focusing on ship engravings and architectural designs, which reflect a rich interplay of cultural influences and shared craftsmanship. A historical-archaeological approach forms the backbone of this study, encompassing a detailed analysis of excavated materials, engravings, and documented trade routes. Through a comparative analysis of ship designs between the Gulf and Mesopotamia, the study highlights their shared influences, emphasizing how maritime innovations transcended regional boundaries and contributed to interconnected civilizations. The have a look at underscores that shipbuilding become pivotal in fostering change and cultural alternate in the Gulf location. While archaeological proof shows that the origins of shipbuilding can also trace again earlier to Egypt, the Gulf's maritime enterprise made a vast impact on local trade, mainly inside the transportation of products and copper to Mesopotamia. This dynamic trade dating shaped geopolitical techniques, as evidenced by means of Mesopotamian efforts to say control over Gulf change routes. These findings underscore the Gulf's importance as a hub of early maritime hobby and its have an impact on at the broader vicinity. This research integrates both archaeological and artistic evidence, presenting a comprehensive analysis of early Gulf shipbuilding. By uniting these perspectives, it highlights the industry's profound impact on trade and regional interactions, offering a fresh lens through which to understand the historical development of maritime practices in the Gulf. The study holds immense value for historians, archaeologists, and maritime scholars, providing critical insights into the Gulf's early trade networks and shipbuilding traditions. Additionally, it offers a rich historical context for examining the region's economic and trade dynamics, serving as a foundational resource for future research and exploration in these fields.

KEYWORDS: Shipbuilding, Uqair and Tarout, Umm Al-Nar, Dilmun, Mesopotamia, Cultural Significance.

1. INTRODUCTION

The maritime background within the Arabian Gulf holds profound importance, standing as a cornerstone of the area's records and culture. Over the course of lots of years, navigation and shipbuilding have become necessary aspects of day by day existence for the human beings inhabiting this location. The origins of these practices are traced back to prehistoric instances, evolving in tandem with the geographical and financial environments that formed their development. In this context, shipbuilding serves as a essential model, reflecting the modern evolution of maritime practices and embodying the ingenuity of Gulf societies in adapting to their surroundings.

Consequently, studying the roots of maritime historical past inside the Arabian Gulf and promoting its cultural significance to the general public has come to be more and more important. Despite the richness of this historical past, there stays a major lack of initiatives and structures for public engagement with maritime cultural traditions. In the Arab location, simplest six maritime museums exist, the majority of which are placed inside the Gulf place. Beyond museums, the Gulf hosts diverse maritime festivals that provide immersive stories for traffic of every age, presenting a glimpse into conventional coastal lifestyles. Notable examples consist of the Katara International Dhow Festival in Qatar and the Maritime Heritage Festival in the United Arab Emirates, which function exhibitions showcasing maritime historical past collections, specialised pavilions dedicated to standard handicrafts, and workshops demonstrating shipbuilding techniques and historic crafts (Nofal, 2024).

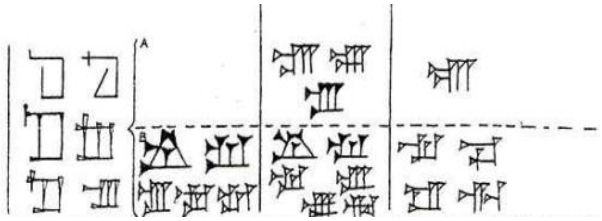
The Arabian Gulf area exemplifies the cultural richness of historic civilizations in the Near East, as contemplated in its strategic geographical attributes. The Gulf of Oman, placed as a natural extension of the Indian Ocean, mirrors the importance of its counterpart, the Red Sea, similarly raising the vicinity's prominence. The precise geographical milieu compelled the emirates and settlements within this location to cognizance closely on maritime hobbies along with trade, fishing, and pearl extraction. These particular environmental situations done a pivotal position in shaping the trajectory of shipbuilding, with scholarly assertions suggesting that the earliest vessels have been simple wood constructs, initially designed for navigating lakes or rivers (Staples, 2020).

Recent archaeological excavations have shed light on the adept utilization of environmental resources by the region's inhabitants. Findings from the H3 cemetery in Kuwait and various Dilmun graves underscore the proximity of Gulf dwellers to water sources (Rausch et al., 2014; Carter, 2002). Consequently, settlements were strategically concentrated along the western coast of the Gulf, the eastern coast of Oman, and the Oman Peninsula, indicating active engagement in seafaring, pearl diving, and fishing activities. These activities necessitated the construction of diverse types of ships tailored for specific purposes. While some vessels were employed for commercial applications, others were purpose-built for naval and defensive operations, a fact corroborated by archaeological evidence that highlights the region's multifaceted maritime expertise. (Moon et al., 1995)

Basic terminology of boats in Sumerian, and Akkadian:

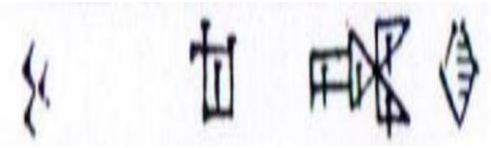
Cuneiform writings contained numerous signs and symbols that referred to ships and vessels, reflecting the pivotal role maritime activities played in ancient societies. These signs underwent various modifications and developments over time, showcasing the evolution of shipbuilding techniques and their cultural importance (Figure 1, 2). Among these terms, the expression (MA2-NI.TUK=Dilmun.ki) is particularly noteworthy, as it translates to "Dilmun ship." Such terminology, found within cuneiform texts, provides valuable insight into the maritime connections and trade networks of the period. It also underscores the involvement of the inhabitants of settlements and Gulf regions, especially those along the eastern coastline, in the craft of shipbuilding and the broader maritime economy. (Prichard, 1950) .

Figure 1: The Development Of The Word "Ship" Signs, Starting From Sumerian, Classical Sumerian, And Akkadian.



Source: Labat 1948, 92-93.

Figure 2: A drawing of the cuneiform marks that indicate the term (Magan.ki), meaning the land of ships or the land of a port, and ends with the marking of a boat with masts.



Source: Landsberger 1975, 173.

Other terms associated with the concept of a ship in cuneiform texts provide additional insight into the maritime practices of ancient cultures. The term ((ñiš) má-addir) refers to a transport or maritime vessel specifically designed to facilitate movement between shores, emphasizing its functional role in connecting different regions. Another notable term, ((ñiš) má-lá), signifies broad ships, likely indicating vessels with wider designs suited for carrying larger cargo or accommodating more passengers. Additionally, in the Akkadian language, the term (elppqrabi) was employed to describe warships, highlighting their strategic use in naval warfare and defense. These linguistic nuances offer a glimpse into the diverse types of ships and their varied purposes within the maritime traditions of the time. (Parton, 1929)

Table 1: Examples Of The Word "Ship" In Sumerian Texts.

barsû	A part of the ship	*markabtu*	Boat
ellilûtum	the ship	*marturrû*	Boat
girmadû	A part of the ship	*pitnu*	A part of boat
girmaduššu	A part of the ship	*siruwala*	A part of boat
hušanu	the ship	*šernu*	A part of boat
sapanatu	the ship	*šikšu*	A part of boat
1têlu	The ship anchors	*makkitu*	boat

These maritime terms saw continued evolution during the Greek and Roman eras, reflecting advancements in ship design and their specialized applications, particularly for warships. For instance, the triaconter was a streamlined vessel equipped with thirty oars, optimized for speed and maneuverability in naval conflicts. Similarly, the pentaconter, a larger ship with fifty oars, was designed to carry more rowers and enhance propulsion power during engagements (Casson, 1995). The term trireme denoted a highly distinctive type of warship characterized by its three rows of oars. This innovation allowed for increased efficiency and contributed significantly to naval supremacy in historical battles (Thubron, 2004). Beyond warships, the term hippos, translating to "horse," was also attributed to certain boats, possibly emphasizing their utility or symbolic association with strength and endurance in maritime contexts. (Nantet, 2023)

2. THE BOATS USED DURING THE NEOLITHIC AND BRONZE AGES IN THE ARABIAN GULF

Our understanding of the boats used during the Neolithic and Bronze Ages in the Arabian Gulf remains quite limited due to the scarcity of archaeological remains. Despite this challenge, there is compelling evidence to suggest that extensive maritime activities were an integral part of life in Mesopotamia and the Arabian Gulf during the third millennium B.C. (Makela, 2002). In the northern regions, riverboats facilitated the transportation of goods along the Euphrates and Tigris rivers, serving as vital conduits for trade and communication. Meanwhile, oceangoing ships were actively navigating the waters of the Gulf to the south, establishing maritime connections that likely played a critical role in the exchange of goods, ideas, and culture.

Given the rarity of physical remains, scholars have had to rely heavily on iconographic evidence, such as carvings, depictions in ancient art, and boat models. These sources have provided valuable insights into the shape, size, materials, and functions of these watercrafts. Additionally, they offer clues about the construction methods employed by early shipbuilders, shedding light on the technical ingenuity and craftsmanship that defined these ancient maritime traditions. (Ghidoni; Vosmer 2021)

2.1. Raw Materials Used In Shipbuilding And Maritime Craft

A) Plant materials

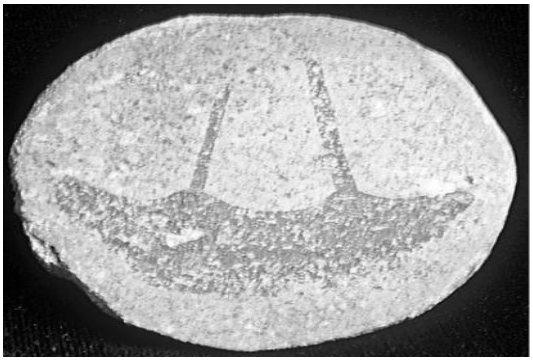
Archaeological discoveries throughout the Sultanate of Oman, the Kingdom of Bahrain, the United Arab Emirates, and the State of Kuwait have supplied considerable insights into the foundational uncooked materials used inside the production of boats, maritime vessels, and ships. These findings have also illuminated the evolutionary advancements in shipbuilding strategies spanning awesome ancient eras. By examining those remnants,

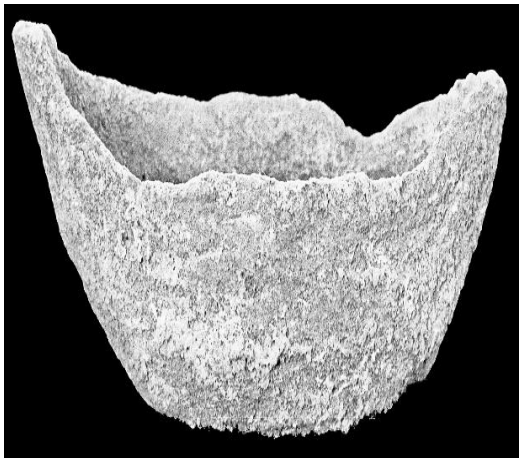
researchers have traced the developmental trajectory of maritime craftsmanship within the vicinity.

In the early phases, the fabrication of watercraft predominantly depended on the utilization of plant-based materials readily available in the Gulf's natural environment. This reliance on local resources underscores the ingenuity and adaptability of ancient shipbuilders who leveraged what was at their disposal. Analytical studies of boat remnants unearthed from the archaeological site (H3) in Sabiyah, along with those retrieved from Failaka and Umm al-Namal islands in Kuwait, have revealed the use of reeds as the primary construction material. These reeds were expertly coated with bitumen, a naturally occurring tar-like substance, to enhance the durability and waterproofing of the boats. This innovative approach highlights the technical skill and resourcefulness of early maritime communities in the Gulf region (Figure 3, 4). (Connan& Carter, 2007)

Figures 3–4

Two models of the design of boats made of reeds were found at the site (H3) in Kuwait. The first represents a model of a clay boat currently undergoing restoration to remove the salts deposited on it, and the second is a painted pottery disc, 6.5 cm in diameter, with a boat-like design drawn on it with two Masts.





Source: Carter 2002, 44-47.

They also incorporated a variety of natural and marine-derived materials into the construction of boats and maritime vessels. Among these were palm fronds, straw, reeds, and ropes crafted from palm leaves, all of which were readily available resources within the Gulf region. These materials were complemented using marine drift objects such as shells and pearls, which served a practical purpose in filling gaps and enhancing the structural integrity of the watercraft (Cleuziou & Tosi, 1994). The ingenuity exhibited in their use of locally sourced materials underscores the adaptability and craftsmanship of these early shipbuilders.

Furthermore, animal hides played a tremendous position in their construction strategies. This is supported by using findings from a Danish archaeological task at the Ras al-Junayz web page in Oman, which exposed proof of those substances being applied in shipbuilding. These discoveries endorse the presence of a committed workshop for building ships, in particular those called Magan ships. This shows that the shipbuilding practices inside the location had been now not only resourceful however additionally highly specialized, geared toward satisfying the unique demands of maritime activities in the Gulf.

B) Wood

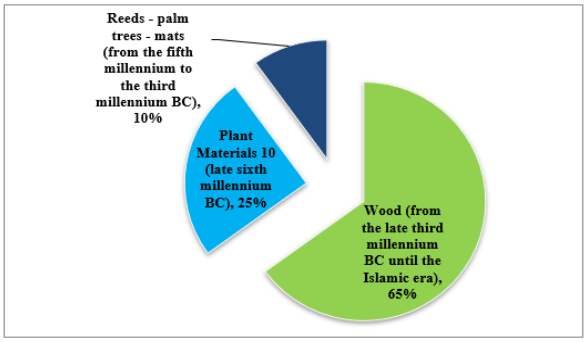
The uncooked substances utilized in Gulf shipbuilding underwent substantial evolution with the advent of wooden, which have become a vital resource, in particular for building large and broad ships. These blanketed industrial vessels designed to reach Mesopotamia, showcasing the developing complexity and scale of maritime exchange. Wood additionally performed a critical role within the manufacturing of warships, marking its status as a primary raw cloth for shipbuilding in each the Gulf and Mesopotamia (Figure five). Its adoption displays improvements in shipbuilding era and the growing demands of each change and military sports.

One top notch cuneiform textual content, located on a statue of King Gudea (Gu3-de2-a) from the Second Dynasty of Lagash (around 2150 BC), highlights the importation of wood from the Magan mountains to Lagash (Ma2-gan, ma 2 giš-da3-a-bi, lagaša.Ki-še3) (Konrad, 1999). This textual content specially mentions cedar trunks of amazing sizes, measuring 30 and 25 meters, which had been transported into southern Mesopotamia. Such imports underscore the widespread alternate networks that enabled access to extremely good wood from remote areas like Magan. Similarly, Leemans (1960) notes that wooden originating from the east changed into delivered to Mesopotamia in

the course of the third millennium B.C., consisting of various forms of wooden important for boatbuilding. This wooden was sourced from areas inclusive of Elam, similarly illustrating the significance of go-local exchange in helping shipbuilding endeavors.

In addition to wooden, shipbuilders utilized a number of supplementary materials, enhancing the durability and functionality in their vessels. These covered fish or marine mammal oils, which probably served as waterproofing retailers, as well as sheep wool and goat hair for enhancing structural elements. Further maritime sources along with marine sponges and coral reefs were additionally hired, reflecting the resourcefulness and adaptability of historic shipbuilders within the Gulf)Cleuziou & Tosi 1994).

Figure 5: Rates Of Raw Material Usage In Shipbuilding In The Gulf Across Eras.



Source: The researcher concluded by analyzing excavation reports.

Source: Potts, D 1990. 29 – 51& Collaborazione Museo Egizio 2004 .23. The data for this chart is derived from a meticulous analysis of excavation reports obtained from the H3 site in Kuwait and excavations in Dilmun and Majan, Oman.

2.2. Building Stages Of Gulf Ships.

The construction of ships and maritime vessels in the Gulf underwent two foundational stages:

2.2.1 Stage one: shipbuilding from plant materials

The inaugural phase, spanning from the late sixth millennium BC to the mid-third century BC, marked a significant period during which Gulf inhabitants engaged extensively in shipbuilding, relying predominantly on plant-based materials. Woven reeds were fundamental to this era, serving as essential components for the panels or frames that constituted the boat's structure. Through a meticulous process of reed crushing, fibers were extracted to produce durable ropes, while cutting the reeds into strips enabled the creation of mats that enveloped and reinforced the boat's body. This strategic utilization of natural materials provided not only structural integrity but also a dependable safeguard for sailors and the goods they transported to Mesopotamia (Cleuziou & Tosi, 1994).

In addition, palm fronds performed an vital function inside the production of boats, in particular within the location of Dilmun. These fronds had been expertly woven into mats, which have been then affixed to the boat's body and covered with bitumen (oil) to decorate waterproofing. This innovation further solidified the boats' durability and functionality in challenging maritime situations.

The evolution of boat production in the course of this era saw the advent of sails, a transformative development in maritime technology. These sails, skillfully woven from reed strips, enabled advanced navigation and propulsion. Evidence suggests that the idea of sail production turned into prompted via the advancements of the ancient Egyptian civilization, where sailing played an crucial role. In ancient Egypt, boats with sails crafted from papyrus leaves (Figures 6, 7, eight, nine) had been essential in transporting food resources, creation materials for temples, and various commodities to neighboring regions (Collaborazione Museo, 2004). These innovations highlight the interconnectedness of Gulf maritime practices with the ones of different historical civilizations, emphasizing a shared legacy of technological progress.

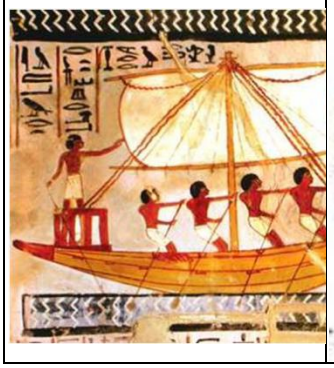
Figure 6 *showcases two ships from the ancient Egyptian civilization during the New Kingdom era, featuring the earliest use of sails, marking a pivotal advancement in sailing technology.*	**Figure 7** *A seal discovered at the Tell Abraq site reveals a carved model of a sailing ship from the Majan era. This archaeological artifact provides valuable insights into the shipbuilding practices and maritime advancements characteristic of the Majan era*
	

Figure 8

Clay boat model from Eridu, dating to the fourth millennium B. C

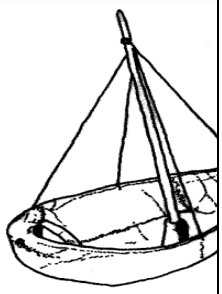


Figure 9

Boat model from Uruk, dating to the 7th century B. C., showing a quadraped figure and a box or a seat inside the hull.

Source: Collaborazione Museo Egizio 2004 .23.

3. THE SECOND STAGE: SHIPBUILDING FROM WOOD

The second stage, spanning from the mid-third century BC (Figure 10) until the start of the Islamic generation, represents a length of super advancement in shipbuilding practices, as the development of wooden ships have become more and more sophisticated inside the towns alongside the Gulf. Archaeological excavations at historical harbor websites, consisting of Tel Ras al-Junayz and Tel Abraq, recommend that the transition to timber deliver creation started around the mid-0.33 century BC. In the preliminary stages of this period, ships were built the use of unmarried blocks of timber, which were secured together with ropes made from palm fronds (Staples, 2020). This technique marked a significant shift from earlier methods and demonstrated the ingenuity of early shipbuilders.

Over time, the construction process evolved into a series of intricate stages, showcasing both technical advancements and an increasing emphasis on durability and design.

- The first degree worried securing the base of the deliver and crafting a strong wood plank designed to undergo the weight of the deliver's sturdy frame. To improve the structure, wood frames had been delivered, fortifying the walls from all sides and enhancing the deliver's universal balance.
- The second stage focused on assembling the main structure of the ship. This included carefully filling gaps across the ship's width with wooden panels, creating a seamless and solid exterior.
- The third stage entailed shaping the front and rear sections of the ship. These sections often featured artistic designs, with distinctive forms resembling animals or birds, reflecting cultural and symbolic elements of the time (Limet, 1977).
- The fourth stage targeted on the development of the ship's roof, where the top floor become skillfully designed to include one or greater rooms, generally known as the deliver's cabin. These cabins provided protection and capability for sailors and passengers, highlighting the developing complexity of deliver structure.

This period of shipbuilding innovation not only enhanced the structural integrity of wooden ships but also demonstrated the creative and technical expertise of ancient Gulf shipbuilders.

Figure 10: Failaka seals depicting a seagoing wooden vessel.

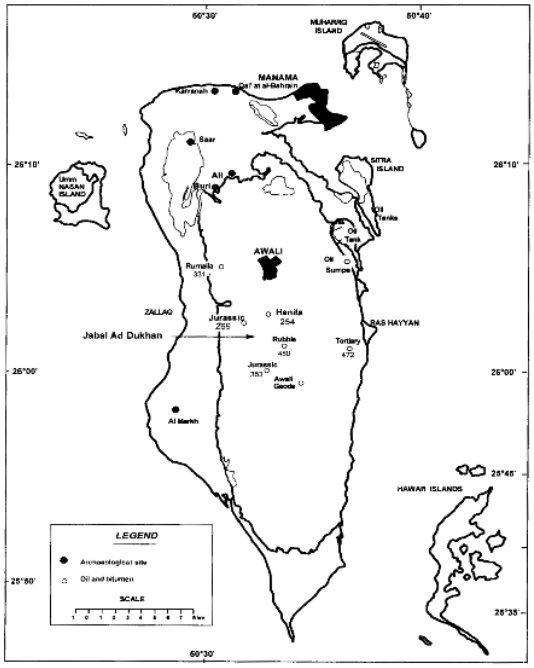
Moving forward, the fifth step in the shipbuilding process encompasses the crucial preparations required for navigation. This stage involves installing essential components such as oars, which ensure propulsion and maneuverability, and the construction of masts and sails, which harness wind power for efficient movement across water. Additionally, the installation of the helm and steering rod enables precise control and directional stability during voyages, marking this step as fundamental to the ship's operational functionality (Driver & Miles, 1968).

The sixth and very last degree specializes in fortifying and readying the ship for its maiden voyage. This entails coating the ship both internally and externally with bitumen and oil (Fig. Eleven), serving to water resistant and protect the vessel from external elements. Once carried out, those coatings are allowed to dry, making sure the ship's sturdiness and resistance to the cruel maritime surroundings.

The concluding task in this stage is the launching of the ship into the water, a moment that symbolizes the culmination of the entire construction process. This is achieved by placing circular-sectioned wooden planks beneath the ship, which act as rollers to facilitate a smooth and efficient transition from land to water. This method reflects the ingenuity and resourcefulness of ancient shipbuilders in

overcoming logistical challenges and ensuring the safe launch of their creations. (Driver & Miles 1968).

Figure 11: Map showing where bitumen and oils were brought from in Bahrain around 2200 BC.



Source: Connan et.al 1998,141- 181

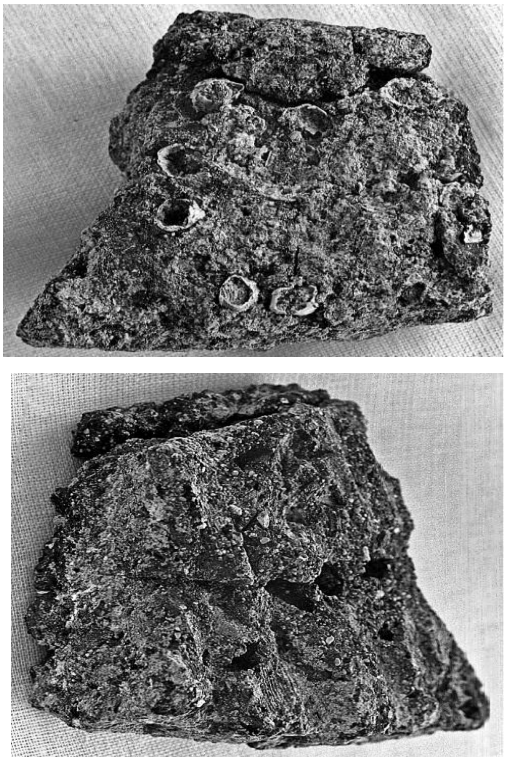
3.1. Types Of Gulf Ships And Their Iconographic And Archaeological Evidence

Historical and archaeological records propose that the denizens of the Gulf, particularly those residing along the eastern coast, assimilated shipbuilding and maritime craftsmanship from the ancient Egyptian civilization. This perspective underscores the cultural and technological exchanges facilitated by close ties between Gulf societies and their Egyptian counterparts (Cleuziou & Tosi, 1994). Such exchanges likely contributed to the foundational shipbuilding techniques and innovations adopted by Gulf communities, emphasizing their interconnectedness with other ancient civilizations.

However, an alternative viewpoint, presented by Robert Carter, argues that the geographical disposition of Gulf inhabitants was a driving force behind their engagement in seafaring and the development of shipbuilding practices. According to Carter, the proximity of settlements to vast waterways naturally encouraged maritime activities, fostering a culture of shipbuilding independent of external influences.

Substantiating evidence for Carter's perspective was unearthed at various archaeological sites, including Failaka and Umm al-Namal islands in Kuwait, Dilmun, and Ras Tall Abraq, an ancient port located in Bahrain (Fig. 12). These locations revealed dispersed remnants of boats and maritime vessels, offering tangible proof of indigenous shipbuilding traditions. The vessels were constructed from woven straps of reeds or palm fronds coated with bitumen, showcasing the resourceful use of available materials. Dating back to the sixth millennium BC, these remnants highlight the long-standing maritime ingenuity of Gulf communities and their pivotal role in advancing early seafaring practices (Carter, 2002, pp. 44–47).

Figures 12: Parts Of Boats Show Parallel Reed Impressions On The Inner Side.



Source: Carter 2002, 44-47.

The diversity of Gulf ships is evident through archaeological missions along the western and eastern coasts of the Gulf, providing insights into various ship types, architectural styles, and their diverse uses. Among the prominent types of Gulf ships are:

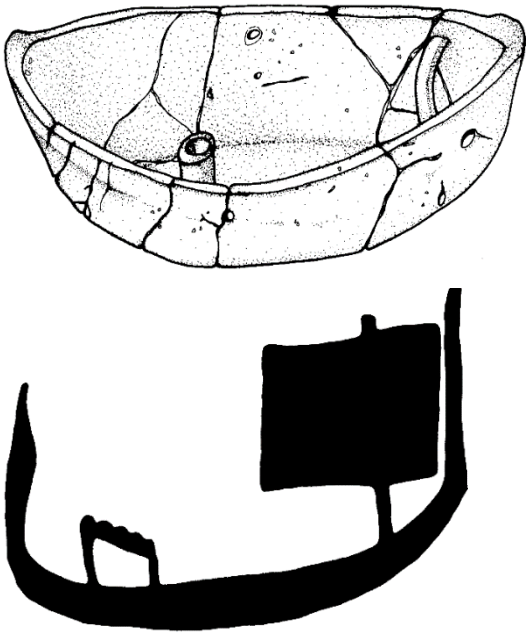
A) Boats and maritime craft

Prevalent along the Gulf coasts, the curved or single-form boat, which was equipped with a sail and occasionally operated without sails, represents the most common type of watercraft used in the region (Figure 13) (Hohlfelder et al., 2005). These boats were typically six to ten feet in length or even longer, demonstrating their versatility in accommodating

various maritime needs. Extensively employed for activities such as fishing and diving for pearl extraction, they were integral to the livelihoods of Gulf inhabitants. As documented by the Danish expedition, these vessels frequently featured baskets or woven containers made from palm leaves, which served as practical receptacles for storing fish or pearls. This thoughtful incorporation of local materials highlights the resourcefulness of the Gulf communities in designing functional and effective maritime craft (Connan et al., 1998).

Furthermore, archaeological findings from the islands of Failaka and Umm Al-Namal, as well as the site (H3) in Sabiya, Kuwait, have furnished additional insights into the multifunctional roles of those boats and watercraft. Evidence indicates that these vessels had been no longer handiest critical for maritime activities however also served as delivery conveyances for Gulf citizens, facilitating movement and connectivity among settlements alongside the coastline. They performed an critical role inside the transportation of products and products, ensuring the green alternate of assets and strengthening the interconnectivity amongst Gulf settlements. This twin-reason use underscores the importance of those boats in fostering both financial pastime and communal ties inside the location (Carter, 2002).

Figures 13: Models Of Boats And Sea Vessels Used In The Gulf And Mesopotamia.



Source: Hohlfelder et al., 2005, 127- 130.

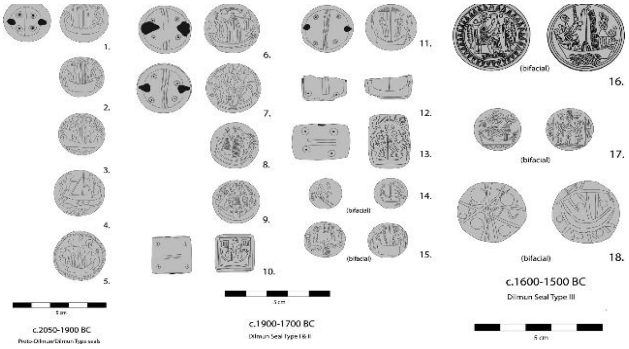
B) Dilmun ships (Bahrain)

The Dilmun seals, unearthed near the ancient harbors of Ras Al-Janaz and Ras Abraq, which facilitated shipping and unloading activities between Dilmun, Oman, and Mesopotamia, have provided remarkable insights into ship designs of the era. Among the notable designs revealed were boats and maritime craft constructed from "Bous", characterized by their curved structure. These boats were primarily designed for travel and mobility, with the capacity to accommodate one or more individuals, showcasing their practical application for both individual and group navigation (Laursen, 2008).

Another big category of ships recognized from those seals consisted of timber crusing vessels equipped with a unmarried mast, which had been predominantly hired for fishing sports. Additionally, massive timber ships have been distinguished by their superior functions, along with a couple of masts, a curved shape, and sharp the front and rear additives. These ships had been similarly greater by means of an elongated mast, starting from fifteen to thirty yards in duration (Figure 14). A specific characteristic of those vessels become the inclusion of creative elaborations, which include a fowl-like statue positioned on the rear and, at the front, a statue resembling an animal, regularly corresponding to a snake or dragon (Laursen, 2020).

During the Greek and Roman eras, these symbolic figures advanced, with a few ships incorporating statues in the form of a horse (Nantet, 2023). This model underscores the cultural and creative affects that shaped deliver design across exclusive civilizations. These versatile ships played a twin position, being applied for both industrial functions—facilitating change and the change of goods—and navy activities, highlighting their significance inside the financial and shielding strategies of the time (Laursen, 2020)

Figure 14: A Group Of Seals Discovered In The Dilmun Region In Bahrain, Which Illustrate The Shapes Of Ships And Wooden Boats Used In Dilmun In The Period 2050 To 1500 BC.



Source: Laursen 2020, 301- 312

C) Majan ships

Majan ships are many of the most sizable Gulf vessels, famend for their twin-motive utility in business and army sports. Archaeological investigations, coupled with epigraphic evidence from Oman and the United Arab Emirates, have supplied priceless insights into the layout and construction of those vessels. Initially, Majan ships have been small maritime boats crafted from reeds, reflecting the early reliance on plant-based substances. This level of shipbuilding underscores the resourcefulness of historical Gulf inhabitants in using comfortably to be had materials for maritime innovation.

The ancient Omanis installed a outstanding shipbuilding workshop at Ras Al-Janaz, extensively known as the "Ras Gharib Shipyard." This site, additionally identified through the interchangeable names "Ras Gharib Shipyard" or "Ras Gharib Shipbuilding Workshop," changed into pivotal inside the improvement of shipbuilding practices. Interestingly, these names also align with references to an historic Roman shipbuilding facility placed in the Eastern Desert of Egypt. At Ras Al-Janaz, remnants of reeds covered in bitumen, with a few even imprinted with wood grain styles, had been exposed in a trade items house at Umm Al-Nar (Frifelt, 1995). These findings highlight the craftsmanship and techniques employed in the construction of early Majan ships.

Further evidence from Mesopotamian kings' writings explicitly mentions the development of Majan ships, indicating their critical position in Mesopotamian maritime activities and change. Additionally, archaeological findings at Ras Al-Janaz in japanese Oman illustrate the advanced skills of ancient Majan shipbuilders, whose information become obtrusive of their particular and problematic engineering methods (Frifelt, 1995).

Over time, Majan shipbuilding developed notably, transitioning from using reeds to wooden because the primary creation material. This advancement also added a curved design to Majan ships, mirroring the fashion and capability of Dilmun ships. This evolutionary trajectory highlights the modern adoption of greater durable substances and sophisticated designs, underscoring the pivotal function of Majan ships within the maritime history of the Gulf vicinity. (Laursen, 2020)

D) Uqair and Tarout ships

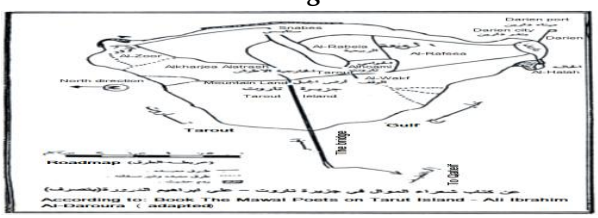
Uqair and Tarout ships stand as historical exemplars of some of the earliest maritime transportation methods employed in the ports of the Eastern Kingdom. Notably, the port of Uqair in Saudi Arabia gained renown for its abundance of sizable commercial ships, which were initially crafted from reeds and later transitioned to wood (Philby, 1922). These vessels were designed to anchor several miles away from the port, approximately three to four miles, demonstrating their capability to operate efficiently over longer distances. They played a pivotal role in transporting essential commodities such as dates, textiles, ghee, hides, and camels, thus contributing significantly to half of the internal trade within the Al-Ahsa region (Zwemer, 1900). This underscores their critical importance in supporting regional economic activities and sustaining the livelihoods of Gulf communities.

Similar to Uqair ships, the vessels from Tarout Island were big ships, initially made out of reeds and later adopting timber as the number one creation cloth. These ships were in general deployed for business purposes, reflecting their fundamental function in nearby exchange networks. Tarout Island, identified as one of the oldest islands in Saudi Arabia, hosted one of the five earliest ports inside the Eastern location alongside the Arabian Gulf (Philby, 1922).

The historical significance of Tarout's port is further underscored by references in Babylonian, Sumerian, and Assyrian texts, as well as accounts from Arab historians and poets (Figure 15). These writings highlight Tarout's prominent role in ancient maritime activities. Notably, poets such as Al-A'sha emphasized the importance of Darien Port, located on the island's southern coast, immortalizing its role in Gulf trade with verses like: "They pass Darien lightly loaded, dragging their baggage out of Darien." Such literary references reflect the cultural and economic prominence of Tarout in historical memory.

Tarout ships were vertical in design and served various purposes, including fishing and pearl diving; additionally, some were actively involved in trade. The port of Tarout regularly received ships from distant regions, particularly Indian vessels laden with spices, gemstones, ivory, and incense, further cementing its role as a vital hub in the extensive maritime trade networks of the time. (Zwemer,1900)

Figure 15: Tarout Island And Its Surrounding Villages.



Source: Al-Hammad 2014, 256.

Table 2: Types Of Gulf Ships And Their Uses .

Types of ships	Archaeological site standards	Metrics	Raw materials	Archaeological evidence	Using for
Small boats or ferries	(H3) Subiya Website and the Islands of Umm al-Naml and Failaka: These sites in Kuwait offer critical archaeological insights into the maritime heritage of the Gulf region. Failaka Island, with its historical links to Mesopotamian trade, and Umm al-Naml, known for artifacts related to maritime activity, emphasize the Gulf's role in ancient seafaring.	About 5 to 7 feet long, it has only one mast	Plant materials, (reed and reed)	Parts of boats were found coated with tar	Mobility
Marine vessels	Location (H3) Subiya, and the islands of Umm al-Naml and Failaka, in Kuwait, Dilmun and Tal Abraq in Bahrain, Majan in the Oman Sultanate.	About 10 feet or more, with two or more masts	Plant materials (reeds, reeds, palm leaves)	Parts of boats were found coated with tar	Moving, bringing goods, traveling, fishing and pearl diving
Boats and boats with sails	Dilmun and Tel Abraq in Bahrain: The region of Dilmun, often regarded as a hub of ancient trade and shipbuilding, holds significant cultural and historical value. Tel Abraq is notable for its remnants of settlements, reflecting Bahrain's active engagement in maritime pursuits during ancient times.	About 10 feet or more, with two or more masts	Plant materials, (cane, reeds, palm leaves) and wood	Parts of boats coated with tar and a set of seals were found	Moving, bringing goods, traveling, fishing and pearl diving
Dilmun ships	Majan in the Sultanate of Oman and Umm al-Nar in the United Arab Emirates: Majan stands as a symbol of Oman's advanced shipbuilding practices, with Ras al-Jinz showcasing early maritime workshops. Umm al-Nar represents the UAE's contributions to ancient maritime activities, as evidenced by its well-preserved archaeological sites.	More than 10 feet	Plant materials (cane, reeds, palm leaves), and wood	Parts of boats coated with tar and a set of seals were found	Movement, bringing goods, travel, trade, loading and unloading, some of which were used to pay tribute
Majan ships	Ras Al Jinz and Majan in the Sultanate of Oman: Ras Al Jinz, an ancient port, demonstrates Oman's prominence in early shipbuilding, while Majan provides insights into the region's significant maritime advancements, including copper trade and engineering expertise.	More than 10 feet	Plant materials (cane, reeds, palm leaves), and wood	Parts of boats coated with tar	Movement, bringing goods, travel, trade, loading and unloading, and transporting soldiers for the kings of Mesopotamia
Ships of the Kingdom of Saudi Arabia (Eastern Province)	Al-Uqair Port, Al-Ahsa Province, and Tarout Island (Dareen Al-Ham Port): Located in Saudi Arabia, these sites reflect the Gulf's dynamic trade networks and contributions to commerce and transportation. Al-Uqair Port and Tarout Island are crucial for understanding the development of commercial vessels and the role of traditional ports in sustaining regional trade and cultural exchange	Range 7:10 feet	Plant materials (cane) and wood	It was identified through the writings of Arab historians and travelers	Mobility, bringing goods, travel and trade

4. RESEARCHER'S WORK

4.1. Impact On The Gulf Shipbuilding Industry

The integration of studies and archaeological findings across various Gulf cities, with a particular focus on Bahrain and Oman, underscores a profound impact on the shipbuilding industry. This integration highlights the exchange of knowledge and practices that shaped the development of maritime technology and craftsmanship in the region. A notable convergence took place between shipbuilding activities in these Gulf cities and those in numerous other settlements, especially Mesopotamia, which facilitated the establishment of extensive and enduring connections (Rausch et al., 2014).

These affects manifested across several domains, with super influence in the political and military spheres. In the political area, the improvement of shipbuilding and the resulting maritime alternate fostered alliances and bolstered diplomatic ties between Gulf towns and Mesopotamian powers. The superior maritime competencies contributed to monetary interdependence and mutual growth, shaping the geopolitical panorama of the time. In the army domain, improvements in shipbuilding enabled the construction of vessels that might help naval operations and enhance defense talents, underscoring the strategic importance of maritime era in securing territorial hobbies and maintaining local stability

4.2. Political And Military Influences

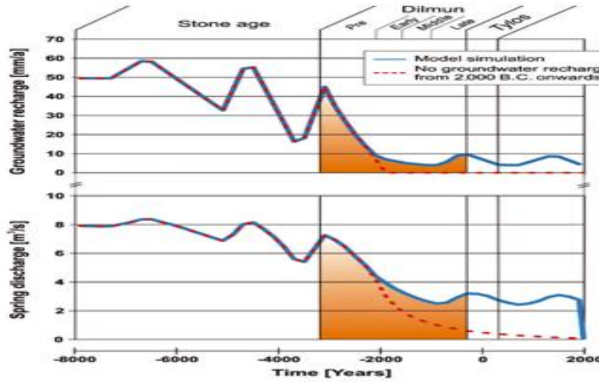
The political dynamics between Mesopotamian kings and the kingdoms and emirates in the Arabian Gulf region exhibited considerable variability, reflecting the complexities of interregional relationships during ancient times. On certain occasions, relations were marked by amicability and peace, with efforts concentrated on preserving economic ties rooted in organized trade systems

overseen by governing authorities. These cooperative interactions underscore the mutual benefits derived from trade, fostering stability and prosperity in the region (Kramer, 1964).

However, Mesopotamian kings frequently pursued efforts to exert political and military control over Gulf territories, driven by their ambitions to dominate strategic resources and trade routes. One notable example is King Manishtusu, who sought to control Magan and Dilmun (Figure 16) to gain access to the region's abundant deposits of rich copper and high-quality diorite stones, which were highly valued in Mesopotamian construction and craftsmanship. A cuneiform text from his era vividly recounts a military campaign, showcasing his aggressive approach to expanding Mesopotamian influence. It describes a victorious naval campaign conducted in boats against cities situated on the eastern shores of the Lower Sea (Arabian Gulf): "Manishtusu, king of Kish, when he conquered Anshan and Shirkiyum across the Lower Sea in boats... defeated them and subjected their cities" (Kramer, 1964). This demonstrates the significant role those maritime activities played in Mesopotamian military strategy.

Conversely, historical evidence also highlights instances of political and economic collaboration during the reign of King Ur-Nanshe, who ruled around 2520 BC. One Mesopotamian text from his time emphasizes the role of Dilmun ships, which were instrumental in bringing wood as tribute from foreign lands, signifying organized cooperation and shared economic interests (Kramer, 1964). Such episodes reveal a multifaceted relationship characterized by both conflict and collaboration, underscoring the dynamic interplay between Mesopotamian rulers and Gulf civilizations. (Kramer, 1964)

Figure 16: A Statistical Chart Showing The Sources Of Water Through Which Dilmun Ships Used To Pass.



Source: Rausch et al. 2014, 640-644

4.3. Trade Relations

Trade relations between the Gulf and Mesopotamia can be traced back to the 4th millennium BC, highlighting the longstanding connectivity between these regions. The advent of ships in Mesopotamia marked a transformative period, bringing about significant advancements in transportation and trade. These trade relations heavily relied on commercial centers in the Arabian Gulf, which were prominently mentioned in cuneiform texts in sequential order: Dilmun, Magan, and Meluhha (Wadi al-Sind).

Specifically, Dilmun, Magan, and Meluhha are historic historic regions often referenced in various texts and inscriptions, each bearing crucial significance in the exchange networks of the technology. Dilmun is extensively regarded because the historic call for cutting-edge-day Bahrain, serving as a key middleman in Gulf change routes. Magan, on the other hand, is associated with the place of Oman and probably components of the United Arab Emirates, emphasizing its function in aid provision. Meluhha is frequently diagnosed with the historic Indus Valley civilization, positioned in gift-day Pakistan and northwest India, with Wadi al-Sind especially referring to the Indus Valley location around the River Indus. These areas contributed considerably to the dynamics of historical exchange, providing essential resources and substances at the same time as facilitating interregional connections (Leemans, 1960).

These commercial centers were pivotal suppliers of wood, stones, and metals, which were integral to the activities of both Gulf and Mesopotamian civilizations. Cuneiform inscriptions on a KAR-RA tablet provide detailed accounts of Arabian Gulf ships reaching the ancient Iraqi ports, engaging in the loading and unloading of imports and exports. This process formed the backbone of maritime navigation in the Arabian Gulf while also linking it seamlessly to river navigation along the Tigris and Euphrates rivers.

The inscriptions specifically mention several ship names, including "Boat Mari," "Boat Ashur," "Boat Akkad," "Boat Ur," "Boat Dilmun," "Boat Makan," and "Boat Meluhha," illustrating the diverse and sophisticated trade networks operating in the region. A closer examination of the text further reveals the detailed routes of Gulf ships (Figure 17), shedding light on the movement of goods and resources. For example, Dilmun ships transported wood essential for boat construction and metals, while Magan ships exported finished ships and copper, which were vital for producing copper tools, weapons, decorative

items, and seals. The route traced from the Euphrates River through the Arabian Gulf, descending from Mari (Tell Hariri) to Ur, subsequently connecting with Dilmun ships, continuing to Magan, and ultimately culminating in Meluhha (Leemans, 1960).

Additionally, Gulf ships played a reciprocal role in the trade network by importing various goods from Mesopotamia, including textiles, clothing, grains, vegetable oils, and leather, further enriching the economic and cultural exchanges between the two regions. (Potts, 1993)

Figure 17: The Movement Of Gulf Ship Trade And Its Route From The Gulf To The Euphrates.

Source: Rausch et al. 2014, 640-644

4.4. Cultural Connections

The influence of Arabian Gulf ships extended far beyond their practical applications in maritime activities, leaving a profound and enduring impact on the culture and civilization of the Mesopotamian people. These vessels became deeply intertwined with religious beliefs and mythological narratives, symbolizing connections between the material and spiritual worlds while reflecting the cultural importance of maritime innovation.

One outstanding instance of this affect is evident within the delusion of "Enki and the World Order." This Sumerian myth recounts how the god Enki—a crucial figure in Mesopotamian mythology—organizes the arena and its diverse capabilities. The fantasy portrays Enki assigning exceptional deities to their respective roles, emphasizing the divinely ordained structure vital for maintaining order and civilization. It in addition elaborates on the allocation of obligations and domain names many of the gods, demonstrating the interconnectedness of divine influence, human governance, and the natural world.

The inclusion of ships and maritime elements within such myths underscores their pivotal role in shaping not only the practical aspects of Mesopotamian life but also its symbolic and spiritual framework. Arabian Gulf ships are thus emblematic of the enduring connections forged between Mesopotamian society, its maritime heritage, and its rich tapestry of religious and cultural traditions.

The myth stands as a cornerstone of Sumerian religious and cultural beliefs, reflecting their profound understanding of the world and the divine hierarchy. It weaves together themes of divinity, order, and the interconnectedness of human activities with the celestial realm. Specific passages within the myth bring attention to the prominence of Magan and Dilmun ships, illustrating their essential role within the cultural narrative and mythological context.

One notable excerpt highlights the maritime connections and the importance of these regions, stating: "The lands of Magan and Dilmun turned their attention towards Enki. Dilmun boats filled the waters and carried the boats of Magan to their full capacity. They transported the boats of Meluhha, gold, and silver for the lord Enlil, chief of all gods" (Dalley, 1989). This depiction underscores the symbolic integration of maritime vessels into divine responsibilities, with Magan and Dilmun ships portrayed as conveyors of wealth and tribute to Enlil, the chief deity. The inclusion of gold and silver emphasizes reverence for these trade routes and their role in sustaining divine and worldly order.

Similarly, another passage from the myth "Enki and Ninhursag" sheds light on the intrinsic value of Magan as a source of powerful resources, describing it as a land rich in copper, diorite, the potent 'Awe' stone, and the Shamash stone (Dalley, 1989). These elements not only represent the region's natural wealth but also its contribution to the spiritual and material needs of Sumerian society. Such references highlight Magan's integration into the mythological fabric as a supplier of resources deemed sacred and vital in the Sumerian worldview.

Together, these references encapsulate how Gulf ships have been deeply embedded in the cultural and religious consciousness of Mesopotamian beliefs. They had been now not simply vessels for exchange but additionally symbolic participants in narratives of divine order and prosperity.

5. CONCLUSION AND RECOMMENDATIONS

This study underscores the significance of Arabian Gulf ships in fostering connections and relationships between the Gulf region and Mesopotamia, reflecting their pivotal role in facilitating interregional interactions. It explores the historical roots, developmental stages, and tangible roles of these maritime vessels, highlighting their contribution to enhancing trade and economic

activities during ancient times. The analysis draws extensively from archaeological and epigraphic evidence, including seals, drawings, and artifacts, which provide valuable insights into the raw materials employed in the construction of Arabian Gulf ships. These materials predominantly comprise plant-based and organic substances, such as wood, showcasing the innovative use of natural resources available within the region.

The findings further emphasize the importance of the Arabian Gulf region and its abundant natural resources, including stones and metals, with particular attention given to copper. This highlights the vital role copper played in the economic and technological frameworks of the time. The study also uncovers the efforts of Mesopotamian kings and rulers to seize control of these resources, driven by their ambitions to dominate the lucrative trade of raw materials and commodities. Additionally, it reveals how the geographical characteristics of the Gulf region compelled its inhabitants to engage in seafaring and shipbuilding, enabling transportation between settlements, searching for food, and conducting essential activities like fishing and pearl diving.

In conclusion, the researcher proposes the creation of models representing ships and maritime vessels from various historical periods, using insights derived from archaeological findings and ship models discovered during excavations. Such an initiative could be realized through collaborative efforts involving institutions like the Abu Dhabi Museum, ensuring the preservation and representation of the maritime heritage and history of the Arabian Gulf.

REFERENCES

Al-Hammad, A 2014. Steatite vessels from Tarout Island 3000-500 BC, King Abdullah Project for the Care of Cultural Heritage, Riyadh, 2014, p. 256.

Carter, R. (2002). The Neolithic origins of seafaring in the Arabian Gulf. Archaeology International, 6(1). https://doi.org/10.5334/ai.0613

Casson, L 1995., Ships and Seamanship in the Ancient World, The Johns Hopkins University Press, Baltimore.

Cleuziou, S. & M. Tosi 1994. 'Black Boats of Magan: Some Thoughts on Bronze Age Water Transport in Oman and Beyond from the Impressed Bitumen Slabs of Ra's al- Junayz' in A. Parpola & P. Koskikallio eds., South Asian Archaeology 1994, Vol. II. Helsinki: Suomalainen Tiedeakatemia, 745–761. https://issuu.com/heritageonline/docs/1994_cleuziou___tosi-_black_boats_o

Collaborazione Museo Egizio- Mondi In Citta Onlus, La Vita Quotidiana Nell'Antico Egitto, Egypt, 2004.

Connan, J., & Carter, R. (2007). A geochemical study of bituminous mixtures from Failaka and Umm an-Namel (Kuwait), from the Early Dilmun to the Early Islamic period. Arabian Archaeology and Epigraphy, 18(2), 139–181. https://doi.org/10.1111/j.1600-0471.2007.00283.x

Connan, J., Lombard, P., Killick, R., Højlund, F., Salles, J., & Khalaf, A. (1998). The archaeological bitumens of Bahrain from the Early Dilmun period (c.2200 BC) to the sixteenth century AD: a problem of sources and trade. Arabian Archaeology and Epigraphy, 9(2), 141–181. https://doi.org/10.1111/j.1600-0471.1998.tb00116.x

Dalley, S 1989. Myths from Mesopotamia, Oxford.

Driver, G.R. & J.C Miles 1968. The Babylonian laws, volume II. Transliterated text, translation, philological notes, glossary, Oxford.

Frifelt, K 1995. "The Island of Umm A-Nar", The Third Millennium Settlement, vol. II, Aarhus University Press.

Ghidoni, A., & Vosmer, T. (2021). Boats and ships of the Arabian Gulf and the Sea of Oman within an archaeological, historical and ethnographic context. In Springer eBooks (pp. 957–989). https://doi.org/10.1007/978-3-030-51506-5_43

Hohlfelder, R. L., Brandon, C., & Oleson, J. P. (2005). Building a RomanPilain the Sea-Experimental Archaeology at Brindisi, Italy, September 2004. The International Journal of Nautical Archaeology, 34(1), 123–127. https://doi.org/10.1111/j.1095-9270.2005.0049a.x

Højlund, F. (1993). The Ethnic Composition Of The Population Of Dilmun. Proceedings of the Seminar for Arabian Studies, 23, 1–8. http://www.jstor.org/stable/41223393

Konrad V 1999. A Sumerian Reader, Studia Pohl: Series Maior 18, Roma.

Kramer, S.N 1964. The Sumerians, Their History, Culture and Character, Chicago.

Labat R 1948. Manuel d'épigraphie akkadienne : (signes, syllabaire, idéogrammes), Paris.

Landsberger B 1975. Materialien Zum Sumerschen lexikon, Vol. 5, The series HAR-ra hubullu, Rome. https://press.uchicago.edu/ucp/books/book/chicago/S/bo27481022.html

Laursen, S. T. (2008). Early Dilmun and its rulers: new evidence of the burial mounds of the elite and the

development of social complexity, c. 2200–1750 BC. Arabian Archaeology and Epigraphy, 19(2), 156–167. https://doi.org/10.1111/j.1600-0471.2008.00298.x

Laursen, S. T. (2020). Dilmun boats on seals, horned figureheads, and the serpent/dragon slaying myth, c. 2050–1500 BC. Arabian Archaeology and Epigraphy, 32(S1), 301–312. https://doi.org/10.1111/aae.12170

Leemans, W.F 1960. Forging trade in the Old Babylonian period, Leiden. https://archive.org/details/foreigntradeinol0000leem/page/n9/mode/2up

Limet, H 1977. 'Les Schems du commerce neo sumerien,' Iraq, vol. 39.1, 51-58.

Makela. T. 2002. Ships and Shipbuilding in Mesopotamia (ca. 3000-2000 b. c.), Texas A&M University, https://oaktrust.library.tamu.edu/items/e41c01ea-36e7-46c0-bcb9-6ae6d78f9e71

Moon, J., Farid, S., Hicks, A., Hicks, M., Kiely, J., Irving, B., Matthews, W., & French, C. (1995). London-Bahrain Archaeological Expedition excavations at Saar: 1993 season. Arabian Archaeology and Epigraphy, 6(3), 139–156. https://doi.org/10.1111/aae.1995.6.3.139

Nantet, E. (2023). " Hippapai !" Horse-Carriers: a master ship of ancient thalassocracies. Klio, 105(2), 486–509. https://doi.org/10.1515/klio-2022-0029

Nofal, N. (2024). Bridging the gap between maritime archaeology and public engagement in the Arab region: Egypt as a case study. https://doi.org/10.33583/mags2023.05

Parton. G. A 1929. The Royal Inscriptions of Sumer and Akkad, Oxford University Press.

Philby,C.I.E 1922. The Heart of Arabia A record of travel and exploration, Vol.one, London.

Potts, D. T. (1993). Rethinking some aspects of trade in the Arabian Gulf. World Archaeology, 24(3), 423–440. https://doi.org/10.1080/00438243.1993.9980217

Potts, D.T 1990. The Arabian Gulf in Antiquity, Vol. one, Oxford.

Prichard, J.B 1950. Ancient Near Eastren Texts, Princeton University Press.

Rausch, R., Dirks, H., Kallioras, A., & Schüth, C. (2014). The Riddle of the Springs of Dilmun—Does the Gilgamesh epic tell the truth? Ground Water, 52(4), 640–644. https://doi.org/10.1111/gwat.12214

Staples, E. (2020). Innovations in early maritime technology in Mesopotamia and the Arabian Gulf. Social Science Quarterly, 101(7), 2539–2554. https://doi.org/10.1111/ssqu.12918

Thubron, C 2004. The Seafarers: Ancient Mariners, The ancient mariners (Seafarers). Time Life Education, London.

Zwemer S.M 1900. Arabia, the cradle of Islam, New York, U.S.A. https://www.loc.gov/item/00005629/