

The Truth about Book of Mormon Archaeology: Part Four, Nephi's Harbor

During the last two decades, three sites have been proposed for the place where Nephi built his ship. Warren Aston proposed Wadi Sayq¹, Wm. Revell Phillips suggested Mughsayl (Maghsayl)² as a possible candidate, and Richard Wellington and I proposed Khor Rori³. We have already seen that only Khor Rori has archaeological support for having “much fruit” in Book of Mormon times. Even today, according to Wm. Revell Phillips of BYU and the proponent of the Mughsayl candidate, of the three sites proposed for Nephi's Harbor only the Salalah Coast plain where Khor Rori is located has “today much fruits.”⁴ Of course, the story of Bountiful was not about fruit, it centered around the building of a great sail ship, one large enough and strong enough to cross two great oceans. As maritime archaeologist Tim Severin reminded us, to build such a ship one needs a place to build her that has a shipbuilding lore and the resources necessary to build a ship, a port into which to lower her, and a crew to sail her. Without question, Nephi needed the same three, and there is only one place in southern Oman where archaeological evidence of these assets, available in Nephi's time, has been discovered.

Nephi's ship had to have been a large ship for its day. A close analysis of Lehi's party shows that it probably had around 75 members, all who would have boarded the ship for a long voyage.⁵ Severin's ship was 80 feet long and carried a crew of only 20 men. Yet, his ship had to stop several times on its trip from Oman to China to replenish food, water, and supplies. Nephi's family traveled three times as far as Severin's voyage, and there were no ports-of-call to purchase supplies. Most of what Nephi's family needed to survive the long voyage had to have been aboard their ship when it left Oman and would have included food and water, several sets of sails, repair materials and tools, large bulky traditional tents (1 Nephi 18:23), anchors, weapons, brass plates, and other items. The ship also had to be large enough to have survived in the open seas four days of a terrible tempest that became “exceedingly sore.” (1 Nephi 18:13-15). U.S. Maritime engineer and hull expert for the U.S. Navy, Frank Linehan estimates that Nephi's ship had to have had a length of approximately 120 feet, a width of 30 feet, and a displacement of roughly 535 tons.⁶

¹ Warren P. Aston, “The Arabian Bountiful Discovered, *Journal of Book of Mormon Studies*, vol. 7, no. 1(Provo: FARMS, Brigham Young University, 1998).

² Wm. Revell Phillips, “Mughsayl, Another Candidate for land Bountiful,” *Journal of Book of Mormon Studies* vol. 16, no. 2, Neal A. Maxwell Institute for Religious Scholarship, (Provo: Brigham Young University, 2007).

³ Potter, *Lehi in the Wilderness*, 2003.

⁴ Phillips, 53

⁵ George Potter, Frank Linehan, Conrad Dickson, *Voyages of the Book of Mormon*, analysis by Richard Wellington, (Springville, UT: Cedar Fort Inc, 2011), 29-30.

⁶ Potter, *Voyages of the Book of Mormon*, 75.



Figure 1 Frankincense Harbor at Khor Rori, with remains of 8 ways (ramps) on left.

Nephi's Harbor



- 1. Shipbuilding site where a ship could be built above calm water**
- 2. Ways (ramps) where ships could be lowered into the water**
- 3. Site where ships could be moored for outfitting and loading**
- 4. A breakwater allowing a large ship to safely enter the ocean**
- 5. Iron ore for forging tools & flint**
- 6. Long Straight hardwoods for shipbuilding**
- 7. Cotton fabric for sails capable of powering a large ship**
- 8. Shipwrights**
- 9. Open-ocean sea captain who taught Nephi to sail**

- 1. Shipbuilding site where a ship could be built above calm water.** In northern Oman, Severin had difficulty finding a suitable place to construct his 80 foot replica ship. He needed a construction site next to deep calm water, so that when the hull was finished, the massive structure could be gently lowered on ways, using greased logs, into its natural domain. The building site had to be protected from the strong monsoon storms that pound the Omani shoreline. High monsoon winds alone can destroy a ship being built on stilts, and equally dangerous high waves, and storm tides could destroy any vessel being built near the shoreline. Severin was forced to build a proper construction yard by bringing in 300 tons of hard-packed gravel. The ship was built a full meter (39 inches) above tide levels.⁷ Khor Rori is a large and calm waterway extending over 1 ½ miles inland. Khor Rori was the premier port of the Dhofar region of Oman and was involved in seafaring as early as the fifth-fourth millennia BC.⁸ Both Khor Rori and the adjacent town of Taqah were settled long before Lehi's arrival in southern Arabia. Archaeologist Juris Zarins found evidence that a large-scale Bronze Age presence was there,⁹ as well as evidence of an Iron Age settlement.¹⁰ Ceramic typology suggests that Taqah's human occupation dates to the late phase of the Bronze Age, and this is supported by C¹⁴ dates averaging 1800 BC.¹¹ Zarins concludes: "All the evidence placed together then suggests Moscha [the port's name known to the Greeks] was Sumhuram/Khor Rori. The last suggestion is that Khor Rori/Sumhuram was Ptolemy's Abissa town (Van Wissmann 1977: 32-33, Groom 1994: 207), based on the natural falls upstream at Wadi Darbat."¹² Khor Rori undoubtedly provided an excellent site for building Nephi's ship. The full distance of the inlet is protected by cliffs on both sides, an imperative since season storms come both from the southwest and northeast, depending on the time of year. On the other hand, Richard Wellington has surveyed both Wadi Sayq and Mughsayl and found neither site would have provided a protection in both directions from the storms nor storm tides. Today, these sites have no protected harbors, nor has there ever been evidence that there was a harbor at these sites in antiquity, and any attempt to build a ship along the shoreline would have ended in disaster.
- 2. A Way (Ramp) where a ship could be lowered into the water.** It is likely that Nephi's ship would have been of such a size and weight that it could only have been built in a crib on "ways" (wooden rollers) above the tide line and then rolled down into the water. Once moored in sheltered waters, the construction could continue, adding the weight of outfitting, riggings, and tons of ballast and provision. Figure 3 shows the remains of ancient shipbuilding "ways" at Khor Rori. From time immemorial, large hulls have been launched from harbors, and Nephi's text implies that his ship was no

⁷ Tim Severin, *Sindbad Voyage*, 51-52. (New York: G.P. Putman's Sons, 1983), 51-52.

⁸ Zarins, *The Land of Incense*, *Archaeology and Cultural Heritage Series*, 64, 76, 154.

⁹ *Ibid.*, 74, 88.

¹⁰ *Ibid.*

¹¹ *Ibid.*, 72. 88.

¹² *Ibid.*, 139.

exception. The coastline of Dhofar is known for its heavy surf and is made up



of

Figure 2 Harbor of Khor Rori with ruins of 8 shipbuilding ways at lower left.

rocky cliffs alternating with sandy beaches.. While the ruins of the ship launching ways at Khor Rori have not been dated, it is likely that if Khor Rori has been an active harbor since the fourth or fifth millennium BC, the ways at Khor Rori were available when Nephi was building his ship. There is no evidence at Wadi Sayq or Mughsayl of ancient ways or any means of launching a large ship. Launching a hull weighing at least 200 tons, and without any means of power or control from a shallow beach into breaking surf with strong currents, is physically impossible.

- 3. Site where a ship could be moored for outfitting and loading.** Nephi's text implies a calm, orderly, and seemingly routine embarkation where party members all boarded the ship before they "did forth into the sea" (Nephi 18:8). There is only one way that everyone could be on board ship and then "put forth into the sea" – they had to be moored in a deep, calm harbor. When Nephi's wooden ship set forth into the sea, it could not have been the first time the ship was in the water. The reason for this is that a ship must be placed in water earlier in order for the hull to be tightened. Patai noted that both Hebrew and Egyptian shipbuilders used this technique: "Under the influence of the water the planks of the ship's hull swelled at the seams, and every seam, split, or crack became tightly closed."¹³ After Nephi was sure the hull was

¹³ Richard Patai, *The Children of Noah*, Jewish Seafaring in Ancient Times, (New Jersey: Princeton University Press, 1998), 37-38.

watertight, he could then load the tons of ballast into the ship and perform sea trials to make sure the ballast was of the correct weight and position for the sails. Khor Rori has several natural places where ships could moor, making it the likely reason that Khor Rori and the nearby town of Taqah were called Merbat (meaning “the moorings”) anciently. Dr. Jana Owen of the University of California at Los Angeles conducted a survey of the possible ancient harbors on the Salalah Coastal Plain. She concluded that only Khor Rori could have accommodated large ships, and noted about Khor Rori “We also did a dive survey of the lagoon and there is evidence of modification on the northeastern edge of the lagoon and obviously the size is indicative of large ship dockings.¹⁴ There is no evidence of ancient moorings at either Wadi Sayq or Mughsayl.

- 4. A breakwater allowing a large ship to safely enter the ocean.** How did Nephi, a novice captain, navigate his ship from where it was moored through the high waves and swift currents found in southern Oman safely into open waters of the Indian Ocean? Huge cliffs line the sea entrance to Khor Rori forming natural breakwaters on both sides of the mouth of the harbor that allowed ancient ships to sail out 400-450 yards into the Indian Ocean with protection from both sides. These 100-foot tall cliffs were a great strength of Khor Rori as a port; the natural breakwater provided protection from both the waves, currents, and strong cross winds of the summer southwest monsoon and the winter northeast monsoons. Thus, the port could be used year round. No natural structures exist at either Wadi Sayq or Mughsayl that provide a breakwater for entering the ocean.



¹⁴ Jana Owen, UCLA, Personal communications with Richard Wellington, 14 August 2000.

Figure 3 Cliffs that form a natural breakwater at Khor Rori.

5. **Iron ore for forging tools and flint.** Below the tallest mountain in southern Oman rises the east side of Khor Rori (1 Nephi 17:7). Just below the mountain and only 4.5 miles from Khor Rori is found the remains of a Neolithic flint quarry¹⁵ (1 Nephi 17:11). Only one mile further east of the flint quarry, BYU researchers discovered a source of iron ore.¹⁶ An iron smelter and iron smelting slag have been discovered among the ruins at Khor Rori¹⁷ (1 Nephi 17:9,10). Of special interest to students of the Book of Mormon is that a bronze plate was found in the temple at Khor Rori depicting a man dressed in robes and standing with his arms in a formal manner, as well as a bronze plate with words embossed on it.¹⁸ The discovery of these bronze plates at Khor Rori provides a possible idea as to how Nephi learned to form metal plates for the recording of his people's history. The only other place BYU found iron ore was, as Phillips writes "a tiny exposure of basement rock at a small wadi between Raykut and Mughsayl." No ore has been found in the area near Wadi Sayq. Thus, we are left comparing deposits next to Khor Rori and a location with smelting and metal plate lore to a "tiny deposit" in a area with no archaeological evidence of smelting in antiquity.
6. **Long straight hardwoods for shipbuilding.** Nephi needed hardwood to build a ship strong enough to survive an ocean crossing. The assumption is usually made that Nephi used trees that grew in Bountiful to build his ship. This overlooks one major problem—nearly all of the woods native to Dhofar in southern Oman are permeable softwoods and could not be used for shipbuilding.¹⁹ The hardwoods that are found in

¹⁵ Zarins, 37. Site TA 95:227 is on the west side of wadi Sinur (see fig. 28 "Archeological sites located on the Salalah Plain (1992-1995)." The distance to Khor Rori is 4 miles.

¹⁶ Wm. Revell Phillips "Metals of the Book of Mormon", *Journal of Book of Mormon Studies*, Vol. 9 Number 2, 2000, F.A.R.M.S., 38.

¹⁷ Jeffrey M Bradshaw Ph.D., (Senior Research Scientist, Institute for Human and Machine Cognition, Pensacola, Florida, jbradshaw@ihmc.us) email correspondence with authors, including photographs of copper and iron smelting slag found at the ruins of Sumhuram as well as the remains of a smelting furnace inside the city dating to the Sumhuram 1 period. Dr. Bradshaw was shown the copper and iron smelting slag and furnace by Saeed Al-Mashori, supervisor of the Khor Rori excavation for the Al-Bilad Archaeological Park, Salalah, Oman on 30 May 2006.)

¹⁸ Author observed both bronze plates on exhibit at the Heritage Museum, Frankincense Museum Hall of History, November 28, 2008.

¹⁹ Softwoods and hardwoods can be differentiated by the material that fills the cells of each. The cellular structure of softwoods, with few exceptions, is filled with water. Hardwoods, on the other hand, have solid material inside the cells. Therefore, softwoods make poor building materials when exposed to the weather because water passes easily through the cell wall. The solid material in the cells of hardwoods provides a resistance to the transfer of water through the material. The exceptions to this rule are cedar, cypress, and California Redwood, that have cells filled with a resinous material which provides the same type of resistance to water transfer as do the hardwoods. For further reference, see Bruce Haadley, *Understanding Wood*, (Bethel, Conn.: Bethel Books, 1997).

Oman are short, gnarly, and unsuitable for the fabrication of the massive structural components of a large sailing vessel such as *Nephi* needed. Historically, hardwoods had to be imported into Arabia for shipbuilding. The first records of timber being imported into the Persian Gulf region from foreign lands date to an inscription of Ur-Nanshe, King of Lagash, in Sumer in about 2500 BC.²⁰ Hardwood, or an impermeable softwood, was an absolute requirement for the building of a seaworthy ship. Indian archaeologist Ratnagar points out that “In the historic period, most Indian boats were made of teak. Even Arab craft were made on the west coast of India, due to the availability of wood.”²¹ Regarding the source of wood for ships built in Oman, Tom Vosmer, Director of the Traditional Boats of Oman Project, noted, “Most, if not all, planking timber had to be imported; teak (*Tectona grandis*), venteak (*Lythracea lanceolata*), mango (*Mangifera indica*), as did spar timber.”²² Famed maritime archaeologist Tim Severin noted, “The timber for building Omani ships is brought nearly 1,300 miles from the Malabar coast of India. It is a trade which goes as far back as the earliest records, because Oman lacks trees large enough to provide first-class boat timber.”²³ The softwoods that grow in Dhofar never would have been strong enough to survive long at sea. Hardwoods are used not only for their strength but also for their longevity. The wood used for a boat is subject to many dangers, particularly marine borers that attack the boat and decompose it very rapidly. Some species of tropical ship worms grow to six feet in length and attain the thickness of a man’s arm²⁴. If the reader has not sailed in the open seas aboard a wooden ship, it is hard to understand the relentless pressures the waves place upon the planks and the absolute necessity to have a strong hull. In order to carry all of the provisions needed for a long transoceanic journey, *Nephi* would have needed a ship that was large by the standards of the day. Let us recall that maritime archaeologist Tim Severin built an 80-foot long replica wooden medieval Omani ship, the *Sohar*, that he sailed from Oman to China. Granted that his ship was a medieval replica, still, his basic needs would have been similar to *Nephi*’s because wooden ships changed little in design until the 16th century A.D.²⁵ While Severin’s vessel was probably not identical in size to *Nephi*’s, the list of materials Severin needed to build his ship is useful because it gives us a general idea of the magnitude of materials *Nephi* would have needed to construct his ship. Severin had to find a tree suitable for the 81-foot main spar and a 65-foot log that was to be tapered into the mast.²⁶ He wrote that a ship’s keel “is long, straight and massive; it is the very backbone of the vessel...the

²⁰ Gerd Weisgerber, “Dilmun—A Trading Entrepot” in *Bahrain through the Ages the Archeology* (London: KPI Ltd, 1986), 137.

²¹ Sherren Ratnagar, *Encounters: The Westerly Trade of the Harappa Civilization* (New Delhi: Oxford University Press, 1981), 164–65.

²² Email to the authors from Tom Vosmer, 25 May 2000.

²³ Tim Severin, *Sindbad Voyage*, (New York: G. P. Putman’s Son, 1983), 31.

²⁴ Harry Morton, *The Winds Commands: Sailor and Sailing Ships in the Pacific* (Middletown, Conn.: Wesleyan University Press, 1975), 207.

²⁵ John Illsley, “History and Archaeology of the Ship, Lecture Notes, Nautical Archaeology,” (Bangor University, May 5, 2000), lecture 2, p.1. <http://www.cma.soton.ac.uk/HistShip/shlect02.htm>

²⁶ Tim Severin, *The Sindbad Voyage*, 43.

piece to my replica needed to be 52 feet long, 12 inches by 15 inches in cross section, and dead straight.”²⁷ Severin imported the timber for his Arab ship from India because Oman historically lacked “suitable timber for large boat building.”²⁸ If good shipbuilding timber never grew in Oman, then Nephi must have used, like the Arab shipwrights, imported materials from India and the islands thereabout. The Omani Ministry of National Heritage and Culture notes this of Omani shipbuilding: “Teak and coconut woods were used exclusively for building hulls. Teak had to be imported from India... Indeed, the virtues of the wood would have been known in the Gulf from the earliest sea voyages to the Indus in the third millennium BC.” The Omani Ministry adds, “Coconut wood also had to be imported—mainly from the Maldives and Laccadive Islands from where it is possible that the coconut tree spread to Dhofar in the Middle Ages.”²⁹ Recent discoveries in Egypt confirm that Indian teak wood was used for construction of ancient ships that sailed the Indian Ocean.³⁰ But would this timber imported from India have been available to Nephi at Khor Rori in the 6th century BC? The Omani Ministry of National Heritage and Culture says that Dhofar “grew from obscure beginnings before 1000 B.C...Its growth was the major stimulus to the re-opening and expansion of Indian Ocean maritime routes.”³¹ German maritime archaeologist Dr. Norbert Weismann, who specializes in Oman, writes of Dhofar, “Certainly it was involved in the traffic to India in Greco-Roman times, but there was trade with white India much earlier.”³² Nephi’s text alludes to the fact that the timber they were working had already been cut somewhere else. He wrote, “We did work timbers of curious workmanship” (1 Nephi 18:1). How could the timbers have been curious to Nephi and his workers if they had logged and cut the lumber themselves? Apparently, some of the timbers Nephi used to construct his ship were pre-cut in an unfamiliar manner or a manner that he would modify. We suggest this because, we know that hardwoods were being imported into the Arabian Gulf since the third millennium BC and that a few centuries after the time of Christ their export from India in the form of pre-cut beams and rafters was a common practice.³³ Solomon had a ‘navy of Tarshish’ (“ships of Tarshish (the name came to...denote ships of the largest size suitable for long voyages”), see Tarshish in the LDS Bible Dictionary) bringing gold, and silver, ivory, and apes and peacocks” from Ophir (1 Kings 10:11,22). It is often suggested that Tarshish was a port on the Indian Ocean and it has been put forward that Ophir is

²⁷ . Tim Severin, *The Sindbad Voyage*, 37, 38.

²⁸ Tim Severin, “Construction of the Omani Boom Sohar,” *The Sewn Plank Boats*, Ed. Sean McGrail and Eric Kentley. (BAR International Series, 276. Oxford: B.A.R. , 1985) 279-80.

²⁹ . Omani Ministry of National Heritage and Culture (MNHC), *Oman, a Seafaring Nation*, 2nd ed. (Sultan of Oman: Oriental Printing Press, 1991), 107.

³⁰ John Noble Wilford, “Under Centuries of Sand, a Trading Hub” July 9, 2002, <http://www.nytimes.com/2002/07/09/science/09SILK.html?ex=1027207913&ei=1&en=ed0f8dbf96a1968a>

³¹ MNHC (Omani Ministry of National Heritage and Culture), *Oman, a Seafaring Nation*, 2nd Edition, (Sultanate of Oman: Oriental Printing Press, 1991), 20, 22.

³² Norbert Weismann, email correspondence with authors, Kamen, Germany, 0230774382-0001@t-online.de, 17 May 2000.

³³ MNHC 107,108.

synonymous with modern Dhofar.³⁴ Local historian Ali Shahri is a member of the Shahri tribe and can trace his genealogical records to the man Ophir. His family owns the land surrounding the harbor of Khor Rori and claims that Khor Rori is the Biblical port of Ophir.³⁵ The three-year long voyage of Solomon's ships of Tarshish returned with peacocks, which are found in India (but not Africa).³⁶ These ships must have been to India or traded with merchants from India who would have been found at Indian Ocean ports like Khor Rori. The ships of Tarshish also returned carrying Almug wood, a hardwood that was used in the construction of the Temple and was presumably not native to Dhofar but imported from India.³⁷ It should be noted that "Almug" appears in the plural form, which Biblical scholars have taken to mean that the wood was delivered in planks.³⁸ Phillips, the proponent of Mughsayl writes, "No trees grow in Oman that could provide suitable planking for Nephi's ship, either today or probably in the past. Trees are very scarce in the Dhofar, and those of significant size tend to yield gnarly, punky wood...We know that Indian teak was transported along the Omani coast from the earliest times, and perhaps Nephi bartered for shipbuilding lumber on the docks at Khor Rori or purchased logs to be dropped offshore at Wadi Saqy or Mughsayl to float ashore with the tide."³⁹ The question begs to be asked, If Nephi could buy shipbuilding timbers at Khor Rori, why wouldn't he build his ship at Khor Rori rather than hike 50-70 miles from Khor Rori, purchase logs to be drop in the water and hope that they drifted with the tide to shore. What is certain, there was no evidence of shipbuilding lumber being available in Nephi's time at either Wadi Sayq or Mughsayl.

³⁴ Bertram Thomas, *The Arabs* (London: Thornton Butterworth, 1937), 262.

Groom notes the similarity between the names of Zufar (Dhofar) and Ophir:

"Zufar is sometimes proposed as a likely word etymologically close to Ophir, while the nineteenth-century traveler Vod Wrede observed that the Mahra of south Arabia, who lived adjacent to Zufar and whose language has very ancient origins, used the word 'ofir' to mean "red" and called themselves the tribe of 'Ofir', meaning the 'red country.'" (Groom, Nigel, *Frankincense and Myrrh, A Study of the Arabian Incense Trade* (London: Longman, 1981), 49-50.)

³⁵ Al-Shahri, 30-35.

³⁶ see: "peafowl" *The New Shorter Oxford English Dictionary*, Edited by Lesley Brown, Vol. 2 (Oxford: Clarendon Press, 1993), 2132.

³⁷ Almug (1 Kings 10:11, 12) = algum (2 Chr. 2:8; 9:10-11), in the Hebrew occurring only in the plural *almuggim* (indicating that the wood was brought in planks): the name of a wood brought from Ophir to be used in the building of the temple and for other purposes. Some suppose it to have been the white sandal-wood of India, the *Santalum album* of botanists, a native of the mountainous parts of the Malabar coasts. It is a fragrant wood, and is used in China for incense in idol-worship. Others, with some probability, think that it was the Indian red sandal-wood, the *pterocarpus santalinus*, a heavy, fine-grained wood, the Sanscrit name of which is *valguka*. It is found on the Coromandel coast and in Ceylon. (M.G. Easton, 1897 Bible Dictionary, World Wide Web Version <http://www.ccel.org/e/easton/ebd/ebd/T0000100.html#T0000182>)

³⁸ (M.G. Easton, 1897 Bible Dictionary, World Wide Web Version <http://www.ccel.org/e/easton/ebd/ebd/T0000100.html#T0000182>)

³⁹ Phillips, 5Mughsayl: Another Candidate for Land Bountiful, 5.

7. Cotton fabric for sails strong enough to power a large ship. Oceangoing sailing ships required several sets of sails. Different sails are required for night sailing, while storms required smaller sails than for light winds. Sails made from traditional materials also stretch and need to be replaced. Severin had to replace the sails on the *Sohar*.⁴⁰ His replacement sails required 2½ tons of canvas. One sail alone measured 3,000 square feet.⁴¹ Traditionally, the sails on Arab ships were woven from coconut or palm leaves, or made from cotton cloth.⁴² As noted before, cotton and date palms have been shown to have grown at Khor Rori in antiquity, possibly as early as 4000 BC⁴³ Thus, cotton would have been available either as a locally-grown product or imported from India or Egypt, “Fine linen with brodered work from Egypt was that which thou spreadest forth to be thy sail” (Ezekiel 27:7). According to the *Periplus of the Erythraean Sea*,⁴⁴ cloth was one of the products the inhabitants of Khor Rori, imported in return for their frankincense.⁴⁵ Ibn al-Mujawir wrote in 1221 AD that caravans brought fabrics from Baghdad to Dhofar.⁴⁶ As noted earlier, cotton was introduced in southern Arabia in antiquity, possibly as early as 4000 BC⁴⁷ There is no science-based evidence of cotton or date palms having been available at Wadi Sayq or Mughsayl in Nephi’s era.

8. Shipwrights. While some students of the Book of Mormon might disagree, any maritime archaeologist would find it extremely unlikely that someone from Jerusalem, a land with no shipbuilding lore, could build a ship without the help of skilled shipwrights. The Book of Mormon makes two things quite clear about the construction of Nephi’s ship. First, when Nephi arrived in Bountiful he did not know how to build a ship (1 Nephi 17:18-19), Second, the Lord instructed Nephi from time to time in the construction of the ship (1 Nephi 17:51). What is unclear for us is what did the Lord instruct Nephi. Was it in how to modify a ship to make it strong enough

⁴⁰ Ibid., 132.

⁴¹ Ibid., 133.

⁴² MNHC, 113.

⁴³ Mauro Cremaschi and Alessandro Perego, “Land Use and Settlement pattern in the Archaeological Sumhuram: An intensive survey at Khor Rori,” Sumhuram preliminary Report (Pisa: University of Pisa, 2006), 23, 27 making reference to M. Mariotti Lippi, “Indagini palinologiche nel site archeologico di Sumhuram (Khor Rori) in Dhofar (Oman),” *Primi risultati, Egitto e Vicino Oriente* (2002), 25, 145, 149. M. Mariotti Lippi, R. Becattini, and T. Gonnelli, “Archeopalynology at Sumhuram (Dhofar, Sultanate of Oman)” in *Archaeological Studies: Khor Rori Report 1*, ed. Avanzini (Pisa: Edizioni Plus, Pisa, 2002).

⁴⁴ The *Periplus*, literally meaning ‘roundtrip’, is an account of a trading journey between Egypt and India made by an unknown merchant or ship’s master. The date of authorship is not known and may be somewhere between 40 A.D. and the early 3rd century.

⁴⁵ The *Periplus Of The Erythraean Sea* by an unknown author with some extracts from Agatharkhides ‘On The Erythraean Sea’, Translated and edited by G. W. B. Huntingford. (The Hakluyt Society, c/o the British Library, London, 1980) chapter 32.

⁴⁶ Zarins, 20.

⁴⁷ Zarins, 60.

to reach the New World (1 Nephi 17:8; 18:2)? Or did the Lord provide specific instructions on how to fabricate a ship, including where to find skilled shipbuilding master craftsmen who could help Nephi with his ship? Certainly, one man could not have constructed by himself a ship of the size Nephi needed. The timbers required are far too heavy to lift or hold in place during construction by just one man. At the same time, the Book of Mormon hints that Nephi's brothers may not have continually helped him. While he wrote that his brothers repented and helped him work timbers (1 Nephi 18:1), Nephi did not give them credit for actually building the ship ("neither did I [not we] build the ship after the manner of men" (1 Nephi 18:2). Further, he wrote that "after I had finished the ship...my brethren beheld that it was good, and that the workman ship thereof was exceedingly fine" (1 Nephi 18:4). This passage may suggest that Nephi constructed much of his ship away from the sight of his brothers, and only when they finally beheld the finished ship did they see that it was of excellent workmanship. If his brothers were not helping him or always helping him create a ship of such fine workmanship, then who was assisting him? Even if his brothers did periodically assist Nephi, the skills needed to do all the work surely exceeded what Nephi's untrained brothers could offer. Who, then, could be of skilled assistance? Though desolate today, in antiquity Khor Rori was a principal market place. In the year 2000 the World Heritage Committee of the United Nations Educational, Scientific and Cultural Organization (UNESCO) designated Khor Rori as a World Heritage site, noting its trade in frankincense as "one of the most important trading activities of the ancient and medieval world."⁴⁸ Shipwrights of Magan, in northern Oman, are mentioned in a text from the Sumerian city of Lagash of about 2000 BC.⁴⁹ Dhofar also would appear to have its own tradition of ship building. Several kinds of ancient ships are depicted in rock art drawings found in caves in sight of Khor Rori (just 2.5 miles from the harbor).⁵⁰ The stick figure representations of humans in the Dhofar ships give the drawings a rough dating of 1000 BC.⁵¹ According to Muhammed Abdul Nayeem, professor of archeology and museology at King Saud University, the rock art drawings of ships in Dhofar "are different from the presentations in northern Oman."⁵² The implication is that the unique style of ships depicted on the rocks near Khor Rori means that the ancients who lived there built ships and did so in their own style. The rock art seems to confirm that Khor Rori had active shipbuilders long before Nephi's arrival. The Omani Ministry of National Heritage and Culture states that shipbuilding at Dhofar may go back into great

⁴⁸ "Report of the World Heritage Committee of the United Nations, Educational, Scientific and Cultural Organization," Convention Concerning The Protection of the World Cultural and Natural Heritage, Cairns, Australia, 27 November to 2 December 2000. 'Oman -The Frankincense Trail (C iii iv) <http://whc.unesco.org/en/news/184>

⁴⁹ MNHC, 16.

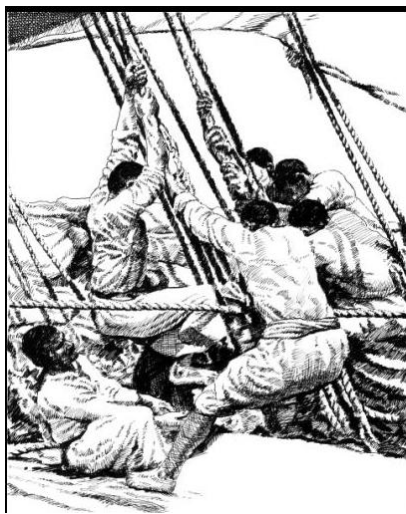
⁵⁰ Ali Al-Shahri took George Potter and 14 other LDS members to the caves on 22 September 2006.

⁵¹ Muhammed Abdul Nayeem, *The Rock Art of Arabia* (India: Hyderabad Publishers, 2000), 447.

⁵² Ibid. 445.

antiquity.⁵³ Of course, the tangible evidence of shipbuilding at Khor Rori is the ruins of the eight shipbuilding ways noted above. There is no evidence that ships were built in antiquity at Wadi Sayq or Mughsayl.

9. **Open-ocean sea captain who taught Nephi to sail.** Rabbi Shim'on ben Laqish listed elements necessary for building and sailing a ship. Lastly he listed 'seamen.' Nephi needed a crew and he needed to acquire the skills to train them. It takes years to learn and practice skills needed to control a sailing vessel at sea. A large Omani sailing dhow [ship] required a crew of between 25-40 trained seamen.⁵⁴ Frank, an experienced transoceanic sailboat skipper, notes, "Even with the inspiration of the Lord, it was simply impossible for Nephi to have sailed to the New World without training."⁵⁵ Historian Maurizio Tosi writes of the ancient Arabian captains: "For the



first navigators it was like venturing into outer space and only a body of accumulated experience, strengthened by tradition, would have ensured their survival at sea."⁵⁶ For Nephi, the same learning experience had to take place. Nephi could not have merely guessed how to sail the Pacific Ocean or have succeeded unless both he and his crew knew what they were doing. The *Periplus of the Erythraean Sea* mentions that Khor Rori was a safe haven for ships held up in the winter: "The place goes by the name of Moscha—where ships from

Cana (*Yemen*) are customarily sent; ships come from Dimyrike (*southern India*) and Barygaza (*modern day Broach in India*) which cruise nearby, spend the winter there due to the lateness of the season."⁵⁷ Undoubtedly the later Greek captains learned from the Arabs before them the advantages of mooring in the protected waters of Khor Rori during the winter northeast monsoons. Here over the winter at Khor Rori were experienced captains who knew how to sail a large ship across the open seas of the Indian Ocean from whom Nephi could learn and who had idle time to spend. There is no known seafaring lore at either Wadi Sayq or Mughsayl.

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⁵³ MNHC. 146.

⁵⁴ No author stated, *Oman a seafaring nation*, Second Edition, (Muscat, Oman: Ministry of National Heritage and Culture, 1991) 96.

⁵⁵ Frank Linehan, Personal communications with the authors, June, 1999.

⁵⁶ Maurizio Tosi, "Early Maritime Cultures of the Arabian Gulf and the Indian Ocean," in *Bahrain through the Ages the Archeology* (London: KPI Ltd, 1986), 94.

⁵⁷ *Periplus of the Erythraean Sea* as quoted in MNHC, 26.

