The Late Bronze–Early Iron Transition: Changes in Warriors and Warfare and the Earliest Recorded Naval Battles

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Ancient Warfare

Ancient Warfare:

Introducing Current Research, Volume I

Edited by

Geoff Lee, Helene Whittaker
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Chapter Eleven

The Late Bronze–Early Iron Age Transition: Changes in Warriors and Warfare and the Earliest Recorded Naval Battles

Jeffrey P. Emanuel

Introduction

Seaborne threats were present in the Aegean and Eastern Mediterranean long before the chaotic transition from the Late Bronze Age (LBA) to Iron I, ca. 1200 BC. This can be seen from references in the Amarna Letters,[1] Hittite documents,[2] Ugaritic texts,[3] and Egyptian inscriptions[4] referring to maritime marauders intercepting ships at sea, conducting blockades, and carrying out coastal raids. Military forces were mobilized to defend coastal settlements against these raiders, while merchant ships seem to have taken on an ancient version of private security contractors to defend against encounters with pirates while at sea.[5] However, it was not until the decades leading up to the LBA–Iron I transition that states seem to have sent out fleets against these marauders and taken to the sea to preempt their piratical activities.

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[1] E.g. EA 38, 105, 113, 126, 155
[2] E.g. KBo XII 38
[3] E.g. RS L.1, 20.18, 20.238, 34.129
[4] E.g. the Aswan and Tanis II Rhetorical Stelai of Ramesses II, and the Medinet Habu inscriptions, Papyrus Harris I, and Deir el–Medineh Stela of Ramesses III
[5] Hafford 2001, 70n27, 199–202; cf., e.g., the possible "mercenaries [or mercenary] from the north who were in the service of the Mycenaeans" aboard the Uluburun ship; Pulak 1998, 219; 2005, 308.

EXISTENTIAL THREATS, PALATIAL DESTRUCTIONS, AND SEA PEOPLES

Evidence from several sources suggests that seaborne threats increased in number and severity as the age of Bronze gave way to that of Iron, perhaps playing a central role in the widespread palatial destructions that marked this watershed period in history.[6] Greater anxiety about maritime threats can be seen in 13th and early 12th century Egyptian inscriptions and reliefs, and in texts from the last years of Ḫatti and Ugarit, while in the Aegean world, signs of growing unease in the Mycenaean palatial system can be detected as early as the Late Helladic (LH) IIIB1–2 transition (ca. 1230 BC). Particular evidence for this may be seen in Linear B tablets from the last days of the palace at Pylos, which was destroyed in LH IIIB2 or LH IIIC Early and abandoned along with the entire Messenian hinterland.[7] Three sets of Linear B tablets, commonly grouped together, have been seen by some scholars as communicating an effort to coordinate a large–scale defensive action or evacuation in response to an existential threat from the coast.[8] The first group, known as the *o–ka* tablets, list the disposition of military personnel (both "watchers" and *e–qe–ta*) assigned to the task of "guarding the coastal areas,"[9] while the second, a single tablet (Jn 829), records the collection of bronze from Pylian temples for the purpose of forging "points for spears and javelins." The third, and perhaps most relevant, of these records is comprised of three tablets (PY An 610, An 1, and An 724) commonly referred to as "Rower Tablets" for their references to *e–re–ta* 'rowers' being called up to man what was most likely a fleet of galleys.[10]

If indeed they do reflect a palatial response to a coastal threat, it is possible that they catalogue efforts to coordinate either a general evacuation or an evacuation of palatial elites who sought to escape as their

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[6]   *Inter alia*, Singer 1983, 217; Baruffi 1998, 10–13, 188; Nowicki 1996, 285, with references.

[7]   Shelmerdine 1997, 581 n. 277; Mountjoy 1999, 343–55, figs. 116–20.

[8]   For a representative sample of scholarly opinion and its evolution over time, see Chadwick 1976, 141; Palmer 1980, 143–67; Hooker 1982, 209–17; Palaima 1995, 625; Shelmerdine 1997, 583; 1999, 405–10; Dickinson 2006, 43, 46, 55; Tartaron 2013, 64–5.

[9]   Deger–Jalkotzy 1978, 14; Hooker 1987, 264.

[10] Palmer 1980, 143–4; Palaima 1991, 286; Wachsmann 1998, 159–61; 1999; Tartaron 2013, 64–5.

situation became precarious late in the LH IIIB.[11] Schilardi and Karageorghis have suggested that Mycenaean elites may have fled to the Cyclades in advance (or in the wake) of the LH IIIB2 destructions, based in part on the appearance of a fortified mansion on an acropolis at Paros on Koukounaries in the transitional LH IIIB2–IIIC Early.[12] A third possible purpose of the Rower Tablets, perhaps more likely in light of contemporary evidence from around the eastern Mediterranean, may have been to call up crew members in preparation for a direct – and ultimately failed – naval action against an existential seaborne threat.

SEA PEOPLES AND NAVAL BATTLES

Somewhere into the events of the LBA–Iron Age transition fit the so–called 'Sea Peoples,' a heterogeneous series of coalition–like groups mentioned primarily in records from Ramesside Egypt (13th and early 12th centuries BC). The most famous representations of these warriors come from Medinet Habu, the well–known mortuary temple of the 20th Dynasty Pharaoh Ramesses III (ca. 1183–1152 BC), where two massive battles with representatives of these groups – one on land and one at sea – are recorded in monumental relief.[13] The naval battle, widely considered the first ever depicted (and perhaps the first ever engaged in), is integral to this study and will be discussed in greater detail below. The land battle relief depicts ox–carts, women, and children of varying age amidst the Sea Peoples warriors,[14] suggesting that the "invasion" may have been part of a migratory movement of people from the Aegean and western Anatolia whose cultural traits begin to appear in the archaeological record of the Cilician and Syro-Canaanite coasts around this time, with particular concentration in Canaan's southern coastal plain.[15]

Though almost always ascribed to Ramesses III's eighth year (ca. 1175 BC), these migratory land and sea invasions were important enough to be mentioned in no fewer than five separate inscriptions at Medinet Habu. Five Sea Peoples groups are named in them: the Peleset (= Philistines), Tjeker or Sikil, Shekelesh, Weshesh, and the Denyen or Danuna (= Δαναοι or Adana?). A later inscription of Ramesses III, on a rhetorical stele in

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[11]   Baumbach 1983; Wachsmann 1999.
[12]   Schilardi 1984; 1992; 1999; Karageorghis 2001, 5; Earle 2008, 192.
[13]   Epigraphic Survey 1930 (*MH I*) pls. 32–34, 36–41.
[14]   Sweeney and Yasur–Landau 1999.
[15]   *Inter alia* Birney 2007; Stager 1995; Stone 1995; Sweeney and Yasur–Landau 1999; Yasur–Landau 2010 (with extensive further bibliography).

Chapel C at Deir el–Medineh, also mentions the Peleset and the Teresh among up to 24 groups (22 of which have been lost) as defeated enemies who had "sailed in the midst of t[he s]ea".[16] The slight change in Ramesses' enemies list seen in the Medineh stele – namely, the addition of the Teresh, who are not mentioned in the Medinet Habu inscriptions – can also be seen in the Great Harris Papyrus (P. Harris I), a posthumous *res gestae* of Ramesses III, which replaces the Shekelesh with the Sherden in its narrative of the pharaoh's encounters with the Sea Peoples.

Though he boasts the best known of our available inscriptions and images, Ramesses III was not the first pharaoh to encounter groups associated with the Sea Peoples. Ramesses II, in two stelai from early in his reign a century earlier, claims to have "destroyed the warriors of the Great Green (Sea)" and to have defeated and captured Sherden warriors who "sailed bold–hearted in warships from the midst of the sea."[17] Following the latter defeat, Sherden appear in the Egyptian army, and the threat to Egypt from these and other Sea Peoples groups seems to dissipate (judging from written records) for the remainder of Ramesses the Great's reign, perhaps in part because of Ramesses' establishment of a line of defensive forts along the North African coast.[18]

Only five years into the reign of Merneptah (1213–1203 BC), Ramesses II's successor, the threat to Egypt's borders became immediate once more, as a migratory coalition tens of thousands strong of Libyans and Sea Peoples invaded from the west, and occupied a portion of the western Delta for one month before being routed by the pharaoh's army in the Battle of Perire. The battle is recounted in two inscriptions, the monumental Great Karnak Inscription and the Athribis stele. It is in the latter that the origin of the term "Sea Peoples" can be found: five of these groups are named in Merneptah's records – the Sherden, Ekwesh (= Aḫḫiyawa or Ἀχαιοι?), Shekelesh, Teresh, and Lukka – and all but the latter being referred to as "of the foreign countries of the sea." The Athribis stele omits this designation for all groups save for the Ekwesh, while the other two inscriptions that reference this event, on the Cairo Column and Heliopolis Victory Column, contain between them the mention of only one Sea Peoples group, the Shekelesh, whose naming is followed with "and every foreign country" .

16 Peden 1994, 65.
17 de Rougé 1877, 253.8; Kitchen 1996, 120, 182.
18 Habachi 1980; Snape 1997, 23; Yurco 1999, 877.

THREATS TO ḪATTI, UGARIT, AND CYPRUS

The Hittites, who were not historically inclined toward maritime affairs, were also forced to look to the sea with more interest at this time, perhaps as a result of the threat posed by an increase in coastal raiding. Two texts from the early 12th century especially seem to show increased Hittite concern with threats from the Mediterranean coast and beyond, with the latter serving – along with Ramesses III's naval battle inscription – as the earliest literary evidence for a true sea battle. In the first, RS 34.129, the Hittite king writes to the prefect of Ugarit about the *Šikala* "who live on ships," and requests that an Ugaritian who had been taken captive by them be sent to Ḫattuša so that the king can question him about this people and their homeland. The *Šikala* have been connected to two groups of Sea Peoples from the aforementioned records of Merneptah and Ramesses III, discussed above: the Shekelesh[19] and the Sikil (or Tjeker).[20] The second text, attributed to the last Hittite king, Šuppiluliuma II (ca. 1207–1178 BC), mentions "ships of Alašiya" which "met [him] in the sea three times for battle," followed by a land battle presumably against the same foe.[21]

The latter is highly reminiscent of Ramesses III's aforementioned claims to have fought land and sea battles against migratory Sea Peoples, which would have taken place at generally the same time. This similarity in chronology and narrative raises the possibility that Šuppiluliuma may have been facing repeated waves of raiders or migrant warriors (perhaps the same ones mentioned in Egyptian records), while clearly reinforcing the need for the Eastern Mediterranean's Late Bronze Age empires to take to the sea and engage in history's first naval battles in an effort to ward off this growing maritime threat.

NEW WARRIORS FOR A NEW TYPE OF WARFARE?

In addition to an increase in seaborne threats, this period was also marked by the appearance – seemingly *ex nihilo* – of a new type of warrior in Eastern Mediterranean iconography. These warriors, frequently pictured wearing "feathered headdresses," appear in martial scenes on land and at sea across the Aegean and Eastern Mediterranean beginning in transitional LH IIIB2–IIIC Early, and have typically been associated with the 'Sea

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[19]   Yon 1992, 116; Redford 2006, 11.
[20]   Wachsmann 1982, 297; 1998, 359 n. 10; Stager 1991, 19 n. 23.
[21]   KBo XII 38; Güterbock 1967, 78.

Peoples' who are so well known from the aforementioned records.[22]

Ramesses III's reliefs at Medinet Habu portray these headdresses, and the warriors wearing them, in great detail.[23] The plumed portions are largely identical, but individual groups of warriors seem to be differentiated from each other by the patterns on the headbands beneath the feathers. These include zigzag, circular, and crosshatched patterns, with some headdresses featuring two courses of the same pattern and one or two featuring both circular decoration and crosshatching.[24] Characters painted on Mycenaean vases, on the other hand, are often shown in silhouette, and are always portrayed far more schematically and stylistically, and in less detail, than their companions in Egyptian relief. In the case of the feathered headdresses depicted at Medinet Habu, therefore, the Aegean analogue appears to be a much less detailed set of dark spikes or lines protruding from the head, sometimes set above a checkered or "zigzag" band similar to those seen at Medinet Habu. Most examples of the latter style take the form referred to as the "hedgehog helmet" for its similarity to Aegean portrayals of hedgehogs in similar media, though representations from the Dodecanesian island of Kos provide slightly different portrayals of this headdress.

The best–known example of the "hedgehog"–style headdress, and the most complete picture of warriors in full complementary combat gear, comes from the Warrior Vase, found by Heinrich Schliemann in the "House of the Warrior Vase" at Mycenae.[25] This vessel, which like almost all examples of this motif is dated LH IIIC Middle, features two processions of warriors – one on each side. On the obverse are six bearded soldiers marching "in step" to the right. Each carries a nearly–circular shield, a leather "ration bag, and a single spear with a leaf–shaped point on his right shoulder, and they wear corslets, kilts,"[26] greaves, and horned helmets with plumes flowing from the crest (see further below). The five soldiers on the reverse are identical except for the placement of their spears (they are cocked in each soldier's right arm in preparation for throwing), the absence of the "ration bags," and the composition of their helmets, which are "hedgehog" in style instead of horned. This latter scene

[22]   Sandars 1985, 134; Vermeule and Karageorghis 1982, 132; Mountjoy 2005, 425; and see now Yasur–Landau 2013.
[23]   *MH* I pls. 19, 33–4, 37–9, 41–4, 46.
[24]   Oren 1973, 136–7 figs. 7, 9, 18–19.
[25]   Vermeule and Karageorghis 1982, 130–32, 222.
[26]   Vermeule and Karageorghis 1982, 131.

finds a nearly identical analogue in the aforementioned Warrior Stele, also from Mycenae.[27] Several further comparanda come from Mycenae and elsewhere on the Greek mainland, all dating to LH IIIC Middle,[28] while Cypriot and Levantine examples – which likewise lack precedent in the historical record – can be found from the same period.[29]

Some of the earliest representations of these warriors are found in the earliest known scenes of naval combat. The first representation of this type of headdress from the Aegean and the East Aegean–West Anatolian Interface may be found on an unstratified locally–made krater, from Bademgediği Tepe (ancient Puranda) in southwestern Anatolia, which has been dated to between the transitional LH IIIB2–IIIC and LH IIIC Middle.[30] If the earlier of these dates for the Bademgediği krater is accurate, this would place the earliest representations of "feather–hatted warriors" in southwestern Anatolia and the Dodecanese less than a quarter century (at most) prior to their appearance in Egyptian relief, and well before their appearance on the Greek mainland in LH IIIC Middle.[31] This, in turn, may provide further support for the possibility that at least some of these warriors originated in the area of southwestern Anatolia and the Dodecanese (the eastern edge of the East Aegean–West Anatolian Interface) and spread from there westward to the Aegean and south and eastward to Cyprus and the Levant.

Both the Bademgediği krater and a similarly–decorated LH IIIC vessel from Livanates in east Lokris (Homeric Kynos)[32] appear to depict naval battles between spear–wielding warriors aboard antithetic oared galleys. Interestingly, if the feathered headdresses of the warriors on these vessels do in fact mark them as Sea Peoples, then these first Aegean representations of shipborne combat may not only portray Sea Peoples vessels, but participants in a battle scene *between* ships manned by Sea Peoples – a point that may have historical significance, but which also

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[27] Tsountas 1886, pls. 1–2.
[28] Kanta 1980, fig. 24.8; Vermeule and Karageorghis 1982, 222–3, pls. XI.1B, 42–3, 45–7, 49, 51, 56–7, 64; Crouwel 1991, figs. 7a–b.
[29] Evans 1900, 210 fig. 6; Murray, Smith and Walters 1900, pl. 1; Oren 1973, 135–42, figs. 1–19; T. Dothan 1982, 4, figs. 11–12; Stager and Mountjoy 2007; Yasur–Landau 2013.
[30] Mountjoy 1998; 2011, 484, 487; Benzi 2013, 521.
[31] Mountjoy 2007, 226 has also tentatively suggested an updating of the rower sherds from Kos into this range.
[32] Dakoronia 1990.

seems to be in keeping with the interesting Mycenaean tradition of largely depicting Aegean warriors in combat against each other rather than against outsiders.[33] The naval battle relief at Medinet Habu is the only representation from this period that includes non–Sea Peoples participants – evidence, perhaps, that only Egypt was able to successfully defend against these foes at sea (though their victory was short–lived, as the events of this period set the Egyptian empire on a course toward inexorable decline).

BOARS' TUSKS, HORSEHAIR CRESTS, AND HORNED HELMETS

Additionally, given the stylistic differences between LH IIIC Mycenaean vase painters and Egyptian artists, it may be that the soldiers in horned helmets on the obverse of the Warrior Vase[34] were intended to represent something akin to the Sherden, who are generally depicted in horned helmets with center–mounted discs in the reliefs of Ramesses II and Ramesses III.[35] Warrior headgear in the Aegean Bronze Age took many different forms, from relatively straightforward bronze helmets to the famous boar's tusk headgear. The most heavily customized zone of these different types of Mycenaean helmet appears to have been the crest, atop which a knob was frequently mounted, to which could be attached a vertical tusk, or crests and plumes of various shape, size, color, and texture. The variety of this helmet adornment even within a single representation is striking; for example, in both the north wall frieze of the miniature fresco at Akrotiri (eight examples) and the silver battle krater from Shaft Grave IV (seven remaining examples), no two boar's tusk helmets feature identically–depicted accoutrements.[36]

The most common accoutrement placed atop these helmets appears to have been a horsehair plume or a large, circular crest with a feathered appearance, both of which are visible in the battle krater scene. With its circular shape, the latter provides an interesting analog to the disc mounted atop the crest of Sherden helmets in Egyptian reliefs. One of the most remarkable Mycenaean–style helmets to have entered the archaeological record to date comes from an inscribed bowl from the Hittite capital at

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[33]   Blakolmer 2013.
[34]   Vermeule and Karageorghis 1982, pl. XI.42.
[35]   Emanuel 2013, 16.
[36]   Morris 1989, 523 fig. 4; Blakolmer 2007, pl. LVI.1.

Boğazköi/Ḫattuša, which has been dated to ca. 1400 BC, and includes both horsehair plume and circular accoutrement – along with, perhaps most interestingly, horns.[37] Expected stylistic differences aside, the warrior represented on this Hittite bowl is strikingly similar to the horn–helmed soldiers depicted on the LH IIIC Middle Warrior Vase from Mycenae – who are, in turn, very similar in appearance to the Sherden seen in the reliefs of Ramesses II and III.

The two and a half centuries that separate the Boğazköi and Warrior Vase depictions are interesting to consider. On the one hand, this seems to demonstrate a striking, long–lived continuity of some aspects of Aegean–style warrior dress and equipment. On the other hand, though, this type of dress – in particular, the horned helmet – is *only* seen in these two periods (the 15th/14th and the 12th centuries), and in both cases an association with Anatolia can be argued. While this is obvious in the case of the Boğazköi bowl due to its provenance, the representation of horn–helmed warriors on the Warrior Vase is connected to Anatolia more indirectly: via the image on the reverse of the vase, the "hedgehog–helmed" warriors whose earliest known appearance is at Bademgediği Tepe (and perhaps Kos), on the eastern edge of the Interface. Rather than a sign of a westward movement by Anatolian warriors, then, this may demonstrate the martial assertion of people from the Interface at the end of the Late Bronze Age. Certainly, as shown above, the "feather–hatted" warriors appear in the Eastern Mediterranean first in the late 13th c. and appear to spread westward across the Aegean through the 12th c., while the horn–helmed warriors on the obverse of the Warrior Vase are both new to LH III imagery, and nearly identical to the "Mycenaean" warrior pictured on the Boğazköi bowl two centuries prior.

THE HELLADIC OARED GALLEY AND THE BRAILED SAIL

Thus far, we have discussed the growing maritime threat that faced the eastern Mediterranean civilizations at the end of the Late Bronze Age, the unprecedented naval engagements that the region's great powers entered into in an effort to stave off this threat, and the new type of warrior that appeared for the first time amidst this chaos. At this point, it is important to consider both the *type* and the *potential capacity* of the ships used in these actions, particularly in light of the new maritime technology introduced in the Aegean and Eastern Mediterranean at this time.

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[37] Bittel 1976, 9–14; Kelder 2010, 40; cf. Schofield and Parkinson 1994.

Traditional Bronze Age Aegean ship design, typified by Minoan and Egyptian sailing vessels, carried over into the Mycenaean period, with iconography providing evidence for its adoption by mainland polities.[38] Alongside this, though, the LH IIIA2–IIIB period saw the development and introduction of an altogether new type of vessel: the Helladic oared galley. A long, narrow, light craft propelled primarily by rowers and designed specifically for speed, the galley was a vessel best suited for martial purposes, including raiding, piracy, and naval warfare, and its invention has been called "the single most significant advance in the weaponry of the Bronze Age Eastern Mediterranean."[39]

The first depictions of the vessel type most relevant to this discussion appear late in the LH IIIB, and represent a true "break with the preceding development" of sailing vessels, typified by Minoan and Cycladic ships like the craft depicted on the Akrotiri miniature fresco. Unlike these earlier ships, the galley is a vessel built around its human "motor" – a crew of oarsmen – and its development is marked by "the struggle to place as many rowers as possible into as small a hull as practical."[40]

Iconographic evidence from Egypt and the Aegean suggests that, sometime around the LH IIIB–C transition, this vessel type began to be outfitted with the brailed rig and loose–footed sail.[41] This combination, which would become a mainstay of eastern Mediterranean sailing vessels for the next two millennia,[42] was probably developed in the area of the Syro–Palestinian littoral and diffused from there to the south and west via the "raiders and traders" of the LBA, including perhaps members of the Sea Peoples groups.[43] The brailing system consisted of lines attached to the bottom of a sail and run vertically through rings called "brails," which were sewn into the front of the sail. From there, they were run vertically over the yard and aft to the stern, where they were controlled by the steersman. Using this system, sails could be easily raised, lowered, and otherwise manipulated in a manner similar to a set of Venetian blinds.[44]

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[38]   Cosmopoulos 2010, 3–4; Shaw 2001.
[39]   Wedde 1999, 465, 470; Tartaron 2013, 63–4.
[40]   Wedde 1999, 465–6.
[41]   Wedde 2000, no. 6003; *MH* I pls. 37–39; Wachsmann 1998, 156–7
[42]   Roberts 1991, 59.
[43]   Artzy 1988; Emanuel 2014
[44]   Cf. Roberts 1991, pls. XVIIa, XIX–XX; Wachsmann 1998, 251.

If the introduction of the Helladic oared galley was "a strategic inflection point in ship architecture,"[45] the development of the brailed rig was a technological revolution in Mediterranean seafaring. The manipulation of the sail made possible by the addition of brails allowed for far greater maneuverability of sailing vessels than had been the case previously, as well as the ability to sail much closer to the wind, while the removal of the boom allowed warriors to move more freely about the deck when engaged in ship–to–ship combat.[46] Thus, once outfitted with the brailed rig and loose–footed sail, the Helladic oared galley became an ideal vessel for rapid travel, for lightning–fast raids on coastal settlements, and for combat in the open sea.[47]

MARITIME INNOVATION AND MODES OF FIGHTING

Brailed sails are first shown on galleys in the naval battle depiction from Medinet Habu, which was carved no later than Ramesses III's twelfth year, ca. 1171 BC. This relief serves as a monumental "coming out party" for several other new features of maritime technology, as well, including the top–mounted crow's nest and partial decking, from which warriors could engage enemy vessels with spears and grapnels. Remarkably, these attributes – including sail and rigging – are presented identically on both the Sea Peoples' and the Egyptian vessels.

The Egyptian ships depicted in the naval battle were neither Helladic galleys nor traditional Egyptian vessels; instead, they were evidently developed by combining elements of the new Sea Peoples vessels and familiar, old riverine "travelling ships" into a hybrid form of warship.[48] Interestingly, the inspiration for Egypt's adoption of these features might be found one century earlier, in the aforementioned early 13th century naval combat against seaborne Sherden warriors. A noteworthy element of the Tanis II inscription's reference to this event is the fact that the encounter it describes forced the Egyptians to invent a new term for "warship" in order to commemorate it.[49] As seagoing ships had been used for some time in the Egyptian military,[50] the need to coin a new term

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[45] Wedde 1999, 465.
[46] Sølver 1936, 460; Monroe 1990, 87; Roberts 1991, 57–9; Wachsmann 1998, 330; Wedde 2000, 90.
[47] Roberts 1991, 59.
[48] Landström 1970, 98–115. Emanuel 2014, 42.
[49] Yoyotte 1949; Emanuel 2013, 15.
[50] Jones 1988, 130.5, 131.13.

suggests a certain lack of prior experience either with the *type* of vessel sailed by the Sherden or with the *capabilities* of those vessels. Should this "rebellious–hearted" enemy have been in possession of the brailed rig, crow's nest, and other uniquely–effective technology, appropriating it at this time would have allowed for a "breaking in" period of roughly a century prior to the flawless integration of these components seen in the Egyptian ships whose naval triumph is memorialized at Medinet Habu.

So, how were these earliest naval battles conducted? There is no evidence for the presence of the Iron Age ram, so well known from Classical naval battles, prior to at least the 9th c. BC.[51] Instead, the mode of fighting in these earliest engagements seems nearly identical to that seen on land: standoff weaponry – arrows, slings, and thrown spears – was employed when the warring vessels were still at a distance, and then, when in close enough proximity to board, close combat techniques were employed. The techniques of fighting on the sea, then, were different to those on land only insofar as the method of approach was different: infantry fought as infantry, but with slightly different firing platforms, and with the added risk of a hostile element – the sea – surrounding them.[52] This is clearly seen on the Kynos and Bademgediği kraters and at Medinet Habu, with the chief exception to this being the ingenious employment by the Egyptians of the grapnel, which was used to capsize Sea Peoples' vessels by catching the enemy ship, then swiftly rowing backwards whilst abeam the captured vessel.[53] This way, ship–based soldiers could be defeated without even needing to engage in close combat.

FLEET SIZES AND SHIP CAPACITY

How many warriors, and in how many ships, should we expect to have participated in these earliest naval combats? Our best visual examples consist of just two (Bademgediği), three (Kynos), and nine (Medinet Habu) vessels in total, with only a handful of warriors atop the decks of each. However, as early as transitional LH IIIB2–IIIC Early, we begin to see evidence in the Aegean for the use of *pentekonters,* or galleys rowed by fifty men (twenty–five on each side).[54] A LH IIIC pyxis from Tholos Tomb 1 at Tragana near Pylos features a ship with twenty–four vertical

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[51]   Wachsmann 1998, 157.
[52]   Wachsmann 1998, 317; Crouwel 1999.
[53]   Wachsmann 1998, 319.
[54]   Wachsmann 1998, 132, 138, figs. 7.7, 7.27, 7.30–31; 2013; Wedde 2000, figs. 607–8, 643, 6003

stanchions,[55] thereby separating the rowers' gallery into twenty–five sections. A LM IIIB larnax from Gazi on Crete features a large ship with what appears to be twenty–seven stanchions, which could signify a ship crewed by even more than fifty men; however, as the "horizontal ladder" motif used to represent rowers' galleries on Late Helladic ship depictions also seems to have served to address a certain *horror vacui* on the part of Mycenaean artists,[56] it seems more likely that the Gazi painter intended to portray a *pentekonter* than a ship with fifty–four oarsmen.[57] 'Kynos A,' one of the aforementioned ship representations found at Pyrgos Livanaton, features nineteen oars and schematically–rendered rowers. The odd number of rowers, combined with the need to fit two antithetic vessels onto a single side of a krater, suggests that this vessel was also intended as a *pentekonter* but the artist was forced to abbreviate due to space constraints.

Further evidence for the use of *pentekonters* in the years surrounding the Late Bronze–Early Iron Age transition, and for the employment of such vessels by the Sea Peoples, may be found in a remarkable recently–published model of a Helladic oared galley from Tomb 611 at Gurob in Middle Egypt.[58]

Crews of roughly *pentekonter* size may also be attested in the aforementioned Rower Tablets from Pylos. Tablet An 610 records approximately 600 oarsmen, while An 1 lists thirty "rowers to go to Pleuron" summoned to man what is likely a single ship, a 30–rower *triakonter*.[59] When ship numbers are considered in light of likely crew sizes, the danger that raiding parties made up of small "fleets" could pose to unwary coastal settlements is clear. For example, if the ships crewed by the men of An 610 were *pentekonters*, the 600–man force would be enough to man only twelve ships. Even if they were *triakonters*, like the vessel crewed by the An 1 rowers, there would only be enough to fully man twenty ships. Two late 13th–early 12th c. letters from Ugarit (RS 20.238 and 20.18) mention enemy fleets of seven and twenty ships respectively, thus attesting to the panic small numbers of ships could

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[55] Stanchions supported the superstructure and partial decking on galleys, while also serving to divide the rower's gallery in ship representations.
[56] Cf. Wachsmann 1998.
[57] Wachsmann 1998, 138.
[58] The model was incorrectly assembled and labeled "Pirate Boat?" by its excavator, Flinders Petrie 1933, 74 fig. 85.
[59] Chadwick 1973, 186–7, 431; 1987, 77; cf. Linder 1970, 321; Killen 1983.

create in the inhabitants of coastal targets. The vessels mentioned in these
texts may have contained an aggregate of between 210 and 1000 rowers if
the respective fleets were composed of *triakonters*, *pentekonters*, or some
combination thereof – enough combatants to create havoc on an
unprepared or lightly defended coastal settlement if allowed to make
landfall.

The tumultuous transition from the LBA to the Iron I is noteworthy for
many reasons.[60] Significant among these is the rise of seaborne foes that
threatened the established polities of the Bronze Age to such a degree that
navies were sent out for the first time to engage in battles on the open sea.
The evidence for this shift in warfare, found in text and iconography from
the western Aegean to the Near East, aids our understanding of the events
at the close of the Bronze Age. It also heralds the arrival of the Age of
Iron, a period in which the descendants of several of these Bronze Age
Groups – the Phoenicians, the Greeks, and eventually the Romans – would
themselves engage in maritime activity, including both colonization and
warfare, on a much larger scale.

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[60] Cf., *inter alia*, Ward & Joukowsky 1992; Gitin, Mazar & Stern 1998; Oren
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