

## TOWING AND BALLAST IN ANCIENT SHIPS

Underwater archaeology has given us an enormous amount of information about the construction of ancient ships in the last thirty years and the study of representations in art, long known newly discovered, of Greek and Roman vessels continues to enlarge our knowledge of their actual appearance. There are some areas, however, where most of our information still comes from a study of ancient literary and epigraphic sources. Two of these areas, towing and the use of ballast, are the subject of this paper. While both are touched on in standard works like *Williams and Morrison* or *Casson* there has still not yet been a systematic analysis of ancient references and terminology, a project made much simpler now by the development of research tools like the *Ibycus* system for computerized word search of Greek and Latin authors. The Greek words for “shipwreck”—*nauagia*—and “a wreck but afloat”—*nauagion*—for example appear over 600 times in the corpus of authors included on a CD-ROM (nearly all, including the Church fathers; St. John Chrysostom particularly liked the image) in a variety of contexts. The computer generates the line of text before and after the line in which the word appears so that one can almost always see it in context. It can search most of extant Greek literature in under half an hour and print the texts out instantly with a laser printer.

Scenes of towing are in fact very rare and the only one said by *Williams and Morrison* (p. 109, pl. 19) to be of warships towing—on a well known black figure cup of the late 6th c. BC in the British Museum—upon examination shows no sign of such activity. One smaller vessel simply overlaps the stern of a larger under the handle of cup; the scene is certainly unusual, however as the overlapping ship is a miniature version of a warship, complete with ram. This cup also contains one of the few illustrations of a *holkas* or merchant ship in Greek art. As has been noted by many authors this term means a “towed vessel” and probably refers to the need for tug boats on occasion to move it into and out of harbour. More frequent of course are scenes of Roman merchant ships towing small boats behind and little need be said about them (see *Casson* 1970, fig. 144, 147, 154; *Torr* 1890,

103-4). Such boats no doubt accompanied Greek merchant ships too although we know of no representations of them. It is worth noting that one term for such a boat is *epholkion* or *epholkis*, words derived from the same root as *holkas*, presumably because they were towed behind a larger ship although one might speculate etymologically that the name rather indicates that they were tow boats (rather than towed boats), intended to haul the *holkas* when required. A word from the same root *parolkos* appears in papyri and in scholia on Thucydides as the word for a "tow rope." Such specially thick ropes may be meant in Aristophanes' *Peace*, II. 36-7, where "thick ropes for *holkades*" are mentioned. The Athenian naval inventories record substantial stern cables on warships of "six fingers" (i.e. 4.4 inches circumference) that would have been both convenient and strong enough for towing while anchor cables reached "eight fingers" (5.8 inches circumference). A separate class entirely were towed along the banks (Casson 1970, fig. 193). An unusual scene that has not been noticed in studies of ancient ships as far as we know appears on the remarkable glass panels from Kenchreai, eastern port of Corinth, that were recovered from beneath the sea some twenty-five years ago; they probably were intended to adorn an Isis temple on the south mole of the harbour and were buried in an earthquake around AD 365 or 375 (Ibrahim 1976, 95ff.; fig. IX, XVIII and pl. 97, 98a, 101). There are a number of scenes of ships on them but of interest here is one of a large vessel under sail which is joined to smaller ship, also under sail, by a thick rope from stern post to bow (Fig. 1). Such a method would not have been very practical since tow boats work best with their tow lines attached at least a third of the way forward from the stern arranged in a sort of yoke but accuracy was rarely of concern to the artist on such representations; another panel depicts a ship apparently being towed by a large sea creature of uncertain species—perhaps a *cetos* or sea monster (Ibrahim 1976, fig. XVII, pl. 91)—while a third seems to show a ship towing what looks like a trawl net, another topic passed over by students of maritime antiquity.

Three types of towing are of particular concern to us in this paper: warship towing merchant ship, warship towing warship, and warship towing disabled warship. We can set aside divine intervention like that of Glaucus and later Triton speeding the *Argo* on its way in Apollonius of Rhodes' Hellenistic epic, the *Argonautica* (I. 1314), although he does present us with the term *holkaion* (by which the sea gods grasp the ship) which has caused trouble for translators who have taken it variously as "keel" or "stern post" whereas as Professors Casson and Morrison have pointed out that it is undoubtedly the same as the *epholkaion* in Homer or the *epotides*, i.e. the catheads near the prow, in later writers, eminently suitable places for tow ropes or divine hands (Morrison 1968, 1998; Casson 1970,

46 n. 20). The awkward character of the holkas was no doubt compensated for by its much larger capacity but it was clearly at the mercy of the winds and it is not surprising to find references to holkades being towed on occasion by escorting warships, a practice not unknown in convoys in later days of sail. Demosthenes (50.32), for example, refers to Athenian warships towing grain ships from the northern Aegean island of Thasos to the Thracian coastal town of Stryme, a distance of some fifty miles—he uses the verb *helkein*—while Thucydides (7.23) mentions an Athenian holkas escaping a fast Syracusan trireme, presumably because it was towed by accompanying galleys, a remarkable accomplishment if true. Other occasions include Antigonos' invasion of Egypt when his warships took troop transports under tow (Diodorus XX.74) and the battle of Economus in the Punic wars when a Roman fleet was hampered by the horse transports that it was towing. The kind of disaster that could happen when towing was not available is demonstrated during the Roman Civil Wars of the first century B.C. when becalmed troop ships of Domitius Calvinus "were delivered by some god into the hands of their enemy", a fleet of 130 oared vessels on the other side (Appian IV.15.115). Wherever towing was undertaken it is likely that the towed vessel was stern first (at least if it was an empty warship), which made control much easier. Tacitus refers to this procedure even in the case of river towing when German vessels successfully cut out a number of Roman warships of the Rhine in a night time surprise attack (Histories 5.22).

It is evident from numerous references in ancient authors from the fifth century BC to Roman times that the victors of trireme battles were often able to tow away vanquished vessels if they had not broken up. It is a point that does not seem to have been made in studies of ancient shipping that the Greeks in fact apparently used two words for ship wrecks as we mentioned earlier: *nauagia* (feminine singular) for a wreck that went down and *nauagion* (neuter singular) for ships that suffered damage but were recoverable. The light build of these ships generally meant that, if rammed, they did not actually sink but continued to bob around in the water in their shattered state until washed up on some nearby shore by wind or currents, like the defeated Persian ships at Salamis on Cape Kolias. Indeed Herodotus (VIII.90) tells of one occasion when Samothracian soldiers on such a foundering vessel successfully used their javelins to overwhelm an attacker and to take his ship. The ability to claim the *nauagia* (neuter plural) was often used to support a claim for victory in battle and for the right to set up a trophy, something that happened after battle of Sybota in 433 BC during the fights between Corcyra and Corinth that were one of the principal immediate causes of the Peloponnesian War. On this occasion both sides claimed victory, the Corinthians because they

Unfortunately ballast was too mundane to receive much treatment by authors, Greek or Roman, and indeed the Greek word *herma* — which can also mean “props” or “reef” — and its compounds only appears a handful of times with reference to ships. Curiously enough it occurs as early as Aristophanes (Birds 1428-9) and Aristotle (Historia Animalium 8.12.5; 9.40.21) with reference to birds and bees taking on pebbles and sand to stabilize them in their flight, a conceit that we also find in Roman writers like Vergil (Georgics 4. 194-6) and Pliny the Elder. A fragment of Euripides uses the verb *hermatizo*—to take on as ballast—in the context of taking a bride and presumably settling down but its first use in a nautical context seems to be at Plato’s Theaetetus 144A where the simile “like unballasted ships” is found. A very clear use of the term with a war ship is to be found in the third century BC in that most difficult of Greek poems, Lycophron’s Alexandria, at l. 618: Diomedes throws out ballast stones, once part of Troy’s walls, from his vessel which has come to Italy after the Trojan War while later in the poem Medea is described figuratively as ballast for the Argo.

It is, we hope, evident from what we have said that there are further opportunities to examine such topics in greater detail than has been hitherto possible. It is slow laborious process and indeed access to the Ibycus system for us was limited to a few afternoons in London and Athens and we did not have time to search all terms or analyze all material recovered. In the end, however, we think that it will put our knowledge of many aspects of ancient maritime affairs on a firmer footing.

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