

# Using Evidence from a Shipwreck to Explore Late Bronze Age Trade in the Mediterranean

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PROUTY INTERMEDIATE SCHOOL

SPENCER, MASSACHUSETTS

**Subject:** Ancient History

**Level:** Grade 6 (appropriate for grades 5–9)

**Length of Unit:** Two to three weeks

**Connections with the Textbook:** Most sixth-grade ancient history textbooks cover Egypt until the Persian conquest and then proceed to Greece, barely mentioning the Bronze Age except for the Trojan War. This unit is intended to fill in the period in more detail. Most textbooks also present one civilization after another, showing no interconnectedness among them. My hope is that this unit will demonstrate to students that there were many interchanges among ancient peoples, with trade being the catalyst.

## Readings for the Teacher:

Bass, George F., et al. "A Bronze Age Shipwreck at Ulu Burun: 1984 Campaign." (see General Bibliography).

Bass, George F., et al. "The Bronze Age Shipwreck at Ulu Burun: 1986 Campaign." *American Journal of Archaeology* 93:1 (Jan. 1989).

Meyers, Eric M., ed. *The Oxford Encyclopedia of Archaeology in the Near East*. New York: Oxford University Press, 1997.

Moran, William L., ed. and trans. *The Amarna Letters* (see General Bibliography).

Muckelroy, Keith. *Archaeology Under Water* (see General Bibliography).

Pulak, Cemal. "The Bronze Age Shipwreck at Ulu Burun, Turkey: 1985 Campaign." *American Journal of Archaeology* 92:1 (Jan 1988).

Pulak Cemal, et al. "1994 Excavation at Uluburun" (see General Bibliography).

Pulak, Cemal. "An Old world Treasure: The Site at Uluburun." *Archaeology and Public Education* 7:2 (1997).

Renfrew, Colin, et al. *Archaeology: Theories, Methods, and Practice*. London: Thames and Hudson, Inc., 2004.

## Readings for the Students:

Bass, G. F. "Oldest Known Shipwreck" (see General Bibliography).

Bass, G. F. *Faces*, "Mediterranean Trade" issue (Jan. 1990).

Peterborough, N.H.: Cobblestone Publishing, Inc. Bass, G. F. *Sunk! Exploring Underwater Archaeology*. Minneapolis: Runestone Press, 1994.

## Other Resources:

Video: *Ancient Treasures from the Deep*, Nova.

Website: Institute of Nautical Archaeology's "Final Campaign" article: <http://ina.tamu.edu> (click on "Virtual Museum," then click on "The Uluburun Bronze Age Shipwreck").

## PART ONE: INTRODUCTION

Prouty Intermediate School is a suburban middle school with approximately 225 students in grades 4, 5, and 6. In the sixth grade we are semi-departmentalized with each of the three sixth-grade teachers teaching language arts to their homeroom classes. In addition, we each specialize in math, science, or social studies. I am the social studies teacher for all three sixth grade classes.

Several years ago I became dissatisfied with the use of textbooks in the teaching of history, even with the addition of supplements such as projects and visuals. I found that material learned for a test was forgotten two weeks later, and that students simply sat through their classes in social studies because the subject was required, not because of any interest in the subject. I began looking for a better way. I found it with simulations. Since I have used simulations in my classes, retention has improved, and interest has skyrocketed.

With that in mind, I will be using the Uluburun shipwreck as the focus of an ancient history unit. The AIA/NEH Institute *Cargoes from Three Continents: Ancient Mediterranean Trade in Modern Archaeology* stressed the interaction among European, Asian, and African cultures in the period 1600 B.C. to A.D. 200. Very often, students are taught one individual civilization after another and are misled into believing that these were isolated peoples with very little contact with one another. This unit will demonstrate to students that there were many cultures inhabiting the earth together in the Bronze Age (and earlier), and that there was extensive trade among them. The results of the Uluburun excavation will be used as evidence to support this claim. The slide presentation described below will supply many details for further study in other parts of the unit, for example, a simulation of

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Late Bronze Age, in which students will play different parts (traders, sailors).

### PART TWO: A SLIDE PRESENTATION FOR THE CLASSROOM: INTRODUCTION TO THE ULUBURUN SHIP

This introduction is based on slides which can be obtained from the Institute of Nautical Archaeology (INA). Address and ordering information are listed in Selected Sources for Teaching Materials. All the INA slides have not been used in this introduction, and those which are used have been rearranged from their original order in the INA listing, to fit the order of the concepts to be presented to sixth-grade students in the classroom. This first number for each entry in my list indicates the order of slides for the classroom. The second number for each entry is the one used by the INA which you will need to order slides from them. (Please note that in the INA listing, "KW" stands for "Kas Wreck.") For a few topics in the presentation, a slide needed for the classroom presentation was not available from the INA. In these instances, I made color transparencies of the needed pictures from the National Geographic article by George Bass mentioned in Readings for Students.

The Uluburun shipwreck can be used to teach about Bronze Age trade in the Mediterranean, the interpretation of artifacts, underwater archaeology, or a combination of all three topics.

#### INTRODUCTION:

During the slide presentation, students should look for answers to the following questions:

- Was the cargo on board the Uluburun royal or private?
- Where was the cargo from and where was it going?
- Where was the crew from?
- Was anyone else aboard the ship when it sank?
- When did it sink?
- Where was the ship from?
- Which artifacts were part of the cargo? Part of the ship?
- Personal belongings of the crew or passengers?

Slide #, INA slide #, description of slide and supplementary information:

1. KW1, Map of southwest Turkey. The Uluburun shipwreck was located in water five miles southeast of Kas (pronounced "Kahsh"), Turkey
2. KW3, Uluburun peninsula. The shipwreck was so named for the promontory on the southern coast of Turkey off which it was found. "Uluburun" means "Great Cape."
3. KW2, Turkish sponge divers. The wreck was discovered in 1982 by Turkish sponge divers who had already been briefed on what to look for by people from the Institute of Nautical Archaeology (INA) at Texas A&M University.
4. KW4, Camp Site. After determining that the sponge divers had indeed discovered a site worthy of excavation, George Bass and the INA staff set up camp on the rocky promontory. What followed were 22,413 dives from 1984 to 1994. During that time, many questions were answered, and perhaps just as many raised.
5. KW6, Site before excavation. This is the site as it looked before excavation. The ox-hide copper ingots, so named because of their shape, were what helped the sponge divers identify this as a site that would be of interest to the INA. The copper has also been found in half- and quarter-ingot sizes.
  - A. Colored transparency of *National Geographic* article, pp. 694–696 (done in two pages). This picture represents, above the water line, an Egyptian tomb painting, fourteenth-century B.C., of the arrival of a Syrian fleet. To the left is a pithos being unloaded. (Note: Until the discovery of the Uluburun shipwreck, archaeologists believed that pithoi were used to carry liquids such as water; see Slides 9–12 below for new evidence.) In this picture are a bearded Canaanite merchant and a Mycenaean Greek with a gold chalice. The picture shows, below the water line, cargo based on the actual items recovered from the Uluburun ship. There are four-handled copper ingots, tin ingots, bronze tools and weapons, Mycenaean pottery, fishing nets, blue glass ingots, ebony-type logs, amphoras with aromatic resin, stone anchors, and cargo cushioned by thorny burnet (a Mediterranean shrub).
  - B. Colored transparency of *National Geographic* article, pp. 706–707. The wreck is scattered over a steep slope from approximately 140 to 170 feet in depth, with some articles tumbling down to over 180 feet. For a diver, every fifty feet in depth has the same effect as drinking one martini. Therefore, special safety precautions needed to be taken: divers could remain under for only twenty minutes at a time and could go down only twice a day. The red line in the picture represents the alignment of the ship's keel. The artifacts are color-coded and placed relative to a hip's hull.
6. KW11, Divers lifting four-handled copper ingot. One of the Amarna tablets from the king of Alashiya (Cyprus) to the Pharaoh stated: "I will bring to thee as a present two hundred talents of copper." The principal cargo aboard the Uluburun ship was 354 ox-hide copper ingots, weighing about sixty pounds each, which is the equivalent of an ancient talent. The ingots appear to come from two sites on Cyprus. Because of these pieces of evidence, it is thought that the Uluburun ship was carrying a royal cargo.
7. KW13, Copper bun ingots. Ingots came in different shapes, including pillow-shaped ingots and these bun ingots.
8. KW14, Wedge-shaped tin ingot. Although in poor condition, this was an important find, as tin ingots from this

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- period have seldom been found in a raw form. There was nearly one ton of four-handles and bun-shaped tin ingots aboard the Uluburun ship, in the correct proportion with the copper on board to make eleven tons of bronze-enough to outfit a small army.
9. KW29, Divers lifting a pithos. To lift a pithos, divers would wrestle a net under it and attach the net to a large balloon. Then they would partly fill the balloon with air for buoyancy. As divers were raising one of the pithoi, pottery spilled out. It was determined that this was Cypriot export pottery; this type of pottery was found in at least three of the pithoi.
  10. KW 30, Pottery found in pithos. 351 pieces of Cypriot export pottery, identified by neutron analysis of the clay, were stored in pithoi. Cypriot pottery was not wheel-made; therefore, it was not quite symmetrical. So much of it was imported to the Near East the archaeologists originally thought that it was made there. The pottery included pitchers, juglets, wishbone-handled bowls, and...
  11. KW31, A Cypriot Bucchero jug
  12. KW32, Cypriot oil lamps. and these Cypriot oil lamps, which had never been used. Used oil lamps found on the ship were all Canaanite.
  13. KW15, Divers excavating Canaanite amphoras. More than 100 Canaanite amphoras containing terebinth resin from the Near East or Cyprus were excavated. This was the third largest cargo in quantity. Terebinth resin comes from the pistachio plant and is used in the making of perfume. It also was burned by the Pharaoh as incense in religious rituals and has been found in Egyptian graves. There was also one amphora of orpiment which was used to make paints permanent and could also be mixed with wax (25%) to give it proper consistence and color. There were also amphoras of olives, almonds, figs, grapes and wine, safflower, pomegranates, and...
  14. KW59, Beads in Canaanite amphora. One amphora of glass beads.
  15. KW58, Agate and faience beads. These beads were of agate, gold, faience (pronounces "fay-ahns"), glass, and Baltic amber. Faience is one step below glass. It was made by those who did not yet have the technology to create high enough temperatures for making glass.
  16. KW19, Glass ingots. Another major cargo was 175 cobalt blue glass ingots. Molds for these have been found at Amarna, Egypt. They were 6 inches wide and 2 ½ inches thick. Chemical analysis shows that they are identical to glass used in Dynasty 18 Egyptian blue glass vases and Mycenaean pendants. The ingots may have come from Tyre and Ashkelon to Egypt. There were also ingots found in smaller amounts in two other colors, turquoise and lavender.
  17. KW 33, Gold cup. This gold cup was found on the wreck's western edge. It is made of two cones fastened by three rivets, with a thin strip as a collar to hide the junction. The cup was found in the middle of an area where a Canaanite pilgrim flask and amphora and a Mycenaean kylix (cup) were found. Does this support the possibility that the ship held a royal cargo?
  18. KW34, Gold falcon pendant. This gold pendant shows a falcon clutching hooded cobras in its talons. It is probably of Canaanite design because similar earring, identified as Canaanite, and is housed in a museum in The Netherlands.
  19. KW35, Gold medallion. This three-inch gold medallion with a Canaanite star design resembles other known to have been worn by Syrian merchants and sailors.
  20. KW36, Gold medallion cut in half. Divers found an unusual cargo of scrap metal. They found halves of gold pendants, some crumpled like pieces of paper; a crushed gold flower; twisted fragments of silver bracelets;...
  21. KW38, Cut gold ring. An Egyptian gold ring cut in half with a chisel; four halved roundels; and part of a bar or disk. It is thought that these were probably being shipped to western Asia Minor and/or the Aegean to be sold for their metallic content and eventually melted down for reuse.
  22. KW37, Silver bracelets. These bracelets are probably Canaanite.
  23. KW61, Statuette. This bronze statuette is Canaanite. Could it be the ship's protective deity?
  24. KW22, Cedar and ebony (African blackwood) logs. Divers excavated cedar and African blackwood logs, the largest being one yard long. African blackwood is not actually ebony; the trees are found in Sudan and as far south as Mozambique and Angola. The same wood was used in an elegant bed, a chair, and a stool found in Tutankhamen's tomb.
  25. KW23, Ostrich eggshell. These ostrich eggshells probably came from North Africa or Syria. They were probably intended to be embellished with faience or metal spouts to create exotic canteens.
  26. KW53, Mesopotamian cylinder seal. Several cylinder seals were found. Mesopotamian ones like this have been discovered in Cyprus and Greece, and are known to have been sent as gifts to Egyptian Pharaohs. Some are made of quartz; this one is of hematite. Traders rolled these seals on a clay tablet to close a deal. The original Mesopotamian design, cut about 1750 B.C., shows a king, a goddess, and a small priest, at left and right. Four centuries later, a frightful griffin-demon and a warrior were added at the center by an Assyrian artisan. The later engraving all but erased a cuneiform inscription alongside the old scene.
  27. KW62, Mace head. This is a ceremonial scepter-ax or mace of a type otherwise known only in the northern Balkans. How would it have come into the trade network?
  28. KW20, Hippopotamus incisors and tusks. More than a dozen hippopotamus incisors and tusks were found. These were found near an elephant tusk. They probably

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- came from the eastern Mediterranean. The discovery of hippopotamus teeth at other Bronze Age sites in the eastern Mediterranean suggests that hippopotamus ivory was used more extensively than previously known.
29. KW21, Measuring a section of an elephant's tusk. Both whole and partial elephant tusks were found. This one was eight inches long and neatly sawed at both ends. It probably came from the eastern Mediterranean or Nubia and possibly was to be used to make a cosmetic box (see #30) similar to this.
  30. KW44, Ivory duck-shaped cosmetic container. Two duck-shaped ivory cosmetic boxes with hinged-wing lids were found.
  31. KW45, Ivory trumpet. Or perhaps the ivory was intended to be used to make an item such as this— an ivory trumpet carved from a hippopotamus tooth. A. Colored transparency of *National Geographic* article, p. 731. In *Iliad* 6.169 we read the following: "...he sent him to Lycia and gave him baneful signs in a folding wooden tablet." This is the only certain reference to writing in all of Homer. This wooden diptych was reassembled from more than twenty-five fragments. The two wooden leaves were joined by an ivory hinge which had been replaced or repaired in antiquity. The crosshatched lines were to hold the beeswax, although no wax remained. Hinged wooden writing tablets, or diptychs, could be folded shut to protect the writing inscribed on the waxed inner surfaces. This is the "oldest book ever found." Another diptych leaf was found later, narrower and taller than this one.
  32. KW68, Anchors in lower section of the wreck. Twenty-four stone anchors were found. Unknown in the Aegean, many have been found in the sea off the coast of Israel; others were reused as building blocks in Ugarit, Byblos, and Kition (in Cyprus). Anchors like these were manufactured at two sites in what is now Israel.
  33. KW69, Weighing stone anchor. The largest anchors weighted between 266 and 458 pounds.
  34. KW50, Bronze Trident. This bronze trident, along with lead net sinkers, netting, needles, and fishhooks, provides evidence of fishing from the ship.
  35. KW40, Mycenaean stirrup jar. Small stirrup jars like this one were probably tableware. Perhaps some of the crew or passengers were Greek.
  36. KW41, Mycenaean kylix. This Mycenaean kylix was found near the gold chalice. It is of a style popular in the early fourteenth century B.C., shortly after the reign of Egyptian Pharaoh Amenhotep III (ruled 1417–1379 B.C.). It may have been made on the Greek island of Rhodes.
  37. KW47, Canaanite and Mycenaean swords. This Mycenaean sword was found three feet away from the Canaanite sword, hidden beneath a pithos. They are nearly identical in size and may have been stored together. A third sword, probably Italian, was also found.
  38. KW48, Bronze tools and weapons. Tools and weapons included bronze daggers, swords, spearheads, cutting tools such as chisels—all a mixture of Canaanite, Mycenaean, Cypriot, and Egyptian designs.
  39. KW52 Mycenaean cloak pin and seal. This Mycenaean cloak pin and seal were very probably personal items belonging to one of the passengers.
  40. KW64, Bronze fly weight. Three sets of weights were found. Does this mean that there were three merchants on board the ship when it sank? A merchant would never trust another's weights; he would likely use his own.
  41. KW65, Sphinx weight of bronze. Other weights included this sphinx, cows and bulls, lions, duck, frogs, and a cowherd kneeling before three of his calves.
  42. KW55, Nefertiti scarab. This scarab bears the title of the Egyptian queen, Nefertiti. This was the first gold scarab ever found of Nefertiti—in fact, the first artifact found in Asia Minor or the Aegean that names either Akhenaten or Nefertiti. This scarab was well-worn and found near the scrap gold. Therefore, the hypothesis is that it was discarded after the queen's death. This also helps to date the wreck.
  43. KW66, Pegs in planking (marked with white thumb-tacks). Portions of the hull were excavated. It was determined that the ship was 45–50 feet long, and made of fir planks (10" x 2") fastened by mortise-and-tenon joints pinned with hard-wood pegs. This was the same method used in the fourth century B.C. Kyrenia shipwreck, excavated from 1967–1969. Indications are that the same type of shipbuilding used at the time of the Trojan War was used much later for Greek and Roman ships.

## SUMMARY OF INFORMATION

## I. Some findings

It appears that there were about eight people on board the Uluburun ship when it went down—three to four hands (they could have been picked up at various stops), perhaps three merchants, maybe two of them Mycenaean.

Mycenaean objects included glass relief beads, a bronze pin, spears and knives, tools, eating ware, and a pair of swords and merchants' seals.

The Nefertiti scarab plus tree-ring analysis of a log, which was perhaps cargo or firewood, give a date of about 1316 B.C. This also matches the fourteenth-century B.C. dates of the Mycenaean pottery.

The cargo is mostly from the Syro-Palestinian coast and Cyprus, but that doesn't mean that is where the ship came from. Stone anchors are a better indicator, and they have been found off the coast of Israel. There was also a Canaanite statue aboard, as well as four used oil lamps—all Canaanite.

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**II. Summarizing with a Map** (color transparency of *National Geographic* article, pp. 697–698)

Discuss the cargoes by land, then by sea. Note which areas products were from.

Discuss the circular route (where did the ship begin? Where was it going?). Point out that archaeology very often raises as many questions as it answers, such as how the Baltic amber beads carved in typical Mycenaean shapes found their way into the trade network. (Amber came from a region arcing across northern Europe from the Baltic south to the Black Sea. A west-to-east movement is indicated, unless the beads

were worn by a Mycenaean merchant; they were found near a Mycenaean stone seal.)

Mace heads of the type found come from the northwestern and western Black Sea regions, possibly what is now Romania. How does that fit into the Bronze Age trade patterns?

**III. The location of all the artifacts viewed in the slides** (Slide KW70, Bodrum Castle)

The Bodrum Crusader Castle in Turkey now displays all of the Uluburun artifacts at the Bodrum Museum of Underwater Archaeology.