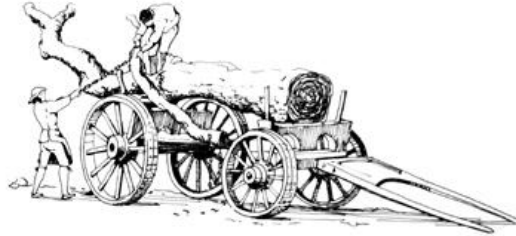


# Research and Reconstruction of Ships

## Anthropology 616

### Fall 2010



Tuesday, 11:10 a.m. to 14:10 p.m.  
Ship Lab (Anthropology 105)

Instructor: Filipe Castro  
Office 105 Anthropology Building, Tel. 845-6220, E-Mail: [fvcastro@tamu.edu](mailto:fvcastro@tamu.edu)  
Office Hours: Monday 10-12 or by Appointment  
(I will be checking in at the Ship Lab regularly)

### Texts

J. Richard Steffy. *Wooden Ship Building and the Interpretation of Shipwrecks*. College Station, TX: Texas A&M University Press, 1994. Purchase directly from TAMU Press (20% discount). Other short readings are listed on the syllabus and on the supplementary bibliography. Copies of these readings will be on reserve in the Nautical Archaeology Program Library (reserved readings are **not** to leave the library). We have prepared two three-ring binders containing many of the principal readings; one copy is in the library and may not be removed from the room, but the other is in the Ship Lab office and may be signed out overnight for copying.

### Supplies

You will need to purchase a **pocket tape measure** (metric or metric/Imperial, but not Imperial only), a **mechanical drafting pencil** (the thin-lead variety, either 0.3 mm or 0.5 mm); a container of **spare leads** (H or 2H leads are less likely to smudge), erasers, triangles, a pair of dividers, and a triangular metric scale. The department may provide some of the materials and equipment needed for your projects, but I recommend purchasing your own equipment.

## **Course Schedule**

### **Week 1. Introduction to the Wooden Ship.**

Distribution of the syllabus and discussion of course requirements.

Reading: Steffy, *Wooden Ship Building*, review the terms and diagrams in the illustrated glossary, pp. 266-298.

### **Week 2. Introduction to Hull Lines.**

Lecture: Understanding Hull Lines: Sheer, Half-breadth and Body Plans.

Reading: Steffy, *Wooden Ship Building*, pp. 8-20.

Assignment: Begin Project No. 1 (draw the lines of a small vessel, according to the requirements set out in the assignment sheet). Due by Week 5.

### **Week 3. Hull Lines, Continued.**

Lecture: Diagonals, Rabbets, and Transoms.

Assignment: Wrap up Project No. 1, begin Project No. 2 (draw the lines of a 20-meter vessel according to the requirements set out in the assignment sheet). Project No. 2 due by Week 5.

### **Week 4. Basic Hull Analysis.**

Lecture: Tonnage, Displacement, and Performance.

Reading: Steffy, *Wooden Ship Building*, Appendices A and B, pp. 251-255.

Gilmer, Thomas C. and Johnson, Bruce. *Introduction to Naval Architecture*. Annapolis, MD: Naval Institute Press, 1982, pp. 37-59.

Chapelle, Howard. *The Search for Speed Under Sail*. New York: W. W. Norton & Co., 1967, pp. 3-51.

Brown, David K. "The Form and Speed of Sailing Warships," *The Mariner's Mirror*, Vol. 84, No. 3, (1998), pp. 298-307.

Assignment: Begin Project No. 3 (calculate displacement and hull coefficients for the lines drawn for Project No. 2). Due by Week 5.

## **Week 5. Recording Shipwreck Sites and Hull Structure.**

Lecture: Introduction to Surveying and Mapping.

Reading: Review articles in Supplemental Reading Bibliography.

Assignment: Begin Project No. 4 (record a timber scatter according to the requirements set out in the assignment sheet). Due by Week 9.

## **Week 6. Recording Timbers and Fragments.**

Lecture: Recording Timbers.

Reading: Review articles in Supplemental Reading Bibliography.

Assignment: Begin Project No. 5 (record hull timbers according to the requirements set out by your instructors). Due by Week 9.

## **Week 7. Recording Fragments, Continued.**

Assignment: Continue working on Project No. 5 and Term Project lines.

## **Week 8. Recording Intact Structure.**

Lecture: Recording Coherent Structure: Taking Off Lines.

Reading: Steffy, *Wooden Ship Building*, pp. 189-213.

Cozzi, Joseph. "The Goniometer: an improved device for recording submerged shipwreck timbers," *International Journal of Nautical Archaeology*, Vol. 27, No. 1 (1998), pp. 64-80.

Assignment: Begin Project No. 6 (Record the curvature of a frame using offsets, a bevel-gauge goniometer, and a digital goniometer, according to the requirements set out by your instructor). Due by Week 11.

## **Week 9. Recopying and Drafting Field Measurements.**

Lecture: From Field Notes, to Notebooks, to Drafting Table.

Reading: Anderson, Jr., Richard K. *Guidelines for Recording Historic Ships*. Washington, D.C.: National Park Service, U.S. Department of the Interior, 1988, pp. 4.3.1- 4.6.92.

Assignment: Continue working on Project No. 6 and Term Project.

## **Week 10. Open Day**

Assignment: Continue with Project No. 6 and Term Project.

## **Week 11. Materials and Tools for Shipbuilding.**

Lecture: Ship Timber and the Tools of the Shipwright's Trade.

Reading: Steffy. *Wooden Ship Building*, pp. 256-259.

Horsley, John. *Tools of the Maritime Trades*. Camden, ME: International Marine Publishing Co., 1978, pp.70-157.

Assignment: Make tool marks in the wood shop.

## **Week 12. Reconstruction Through Models and Full-Scale Replicas.**

Lecture: Replication in Scale and 1:1.

Reading: Steffy, *Wooden Ship Building*, pp. 214-234.

Steffy, J. Richard. "The role of three-dimensional research in the Kyrenia Ship reconstruction," in H. Tzalas, ed., *Tropis I: 1<sup>st</sup> International Symposium on Ship Construction in Antiquity* (Athens, 1989), pp. 249-262.

Assignment: Keep working on your Term Project.

## **Week 13. Hull Recovery, Conservation, Reassembly and Display.**

Lecture: When, Why and How to Raise a Hull.

Reading: Steffy, J.R. "The reconstruction of the 11<sup>th</sup> century Serçe Liman vessel. A preliminary report," *International Journal of Nautical Archaeology*, Vol. 11, No. 1, (1982), pp. 13-34.

McCutcheon, Jr. C. T. "Alvin Clark: An Unfinished Voyage," *Wooden Boat*, Vol. 52 (May/June, 1983), pp. 52-58.

Spectre, Peter H. "The Alvin Clark: The Challenge of the Challenge," *Wooden Boat*, Vol. 52 (May-June, 1983), pp. 59-65.

Manning, Sam. "The Alvin Clark Revisited," *Wooden Boat*, Vol. 52 (May-June, 1983), pp. 66-68.

## **Week 14. Computers and Interpretive Drawings.**

Lecture: Computer Graphics and Ship Archaeology: Advantages and Disadvantages.

Reading: Wilson, Garth S. "The Great Lakes Historic Ships Research Project: Computers and the Analysis and Documentation of Small Craft," *Fresh Water*, Vol. 2, No. 2, (Autumn, 1987), pp. 9-13.

Assignment: Relax. You've earned it.

## **Course Requirements:**

Anthropology 616 will meet once each week for three hours. Sessions will typically begin with a lecture of 30 to 50 minutes, and then proceed with practical work and assignments. Please be on time, and use your class time wisely (do not use the scheduled lab time for library research).

Each student will be required to complete six lab assignments over the course of the semester, which together will comprise 50% of your semester grade. In addition, each student will complete and hand in a "Term Project," the reconstruction and analysis of a hypothetical ancient, medieval, or early-modern wooden vessel. The Term Project will comprise the other 50% of your final grade. See attached assignment sheets for details.

## **The Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with learning disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring accommodation, please contact the Office of Support Services for Students with Disabilities in Room 126 of the Student Services Building. The telephone number is 845-1637.

## **Aggie Honor Code**

"An Aggie does not lie, cheat, or steal or tolerate those who do." Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: [www.tamu.edu/aggiehonor/](http://www.tamu.edu/aggiehonor/).

On all course work, assignments, and examinations at Texas A&M University, the following Honor Pledge shall be preprinted and signed by the student:

**"On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work."**