

## HISTORY OF WOODEN SHIPBUILDING TECHNOLOGY ANTHROPOLOGY 615

**Cemal Pulak, Ph.D.**

Fall 20210 – Thursday 9:30 – 12:30  
Anthropology Building – Room 130

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**Office Hours:** Thursday 1:00 – 4:00 pm or by appointment

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**Course Description and Objectives:** This course is taught in seminar format and is designed to examine the major components of watercraft and the systems involved in operating them. The survey cannot hope to be comprehensive in any real sense, but at the end of the semester students should have a solid grasp of the basic principles influencing the construction and operation of ships and boats, the major trends in the development of watercraft, and some sense of the relationship between shipbuilding and greater economic, social, and technological developments in culture.

The course revolves around a single meeting, of three hours, each week. Part of that meeting may involve an introductory lecture to explain fundamentals and to set the scene for the day's discussion (the first three weeks will be all lectures, in order to introduce basic concepts). The rest of the meeting is a mixture of formal presentations by students--generally two major presentations of 30 minutes each (marked on the syllabus by \*) and a number of shorter contributions of 15 minutes each--and general discussion. The goal is not only to gain an understanding of the basic principles involved, but through informed dialogue to explore new ideas and alternative interpretations. The livelier the discussion, the more successful will be the class. All ideas are welcome, and you should remember that there are no gospels in this field. Just because an expert in the field wrote it, or I said it, does not mean it is incontrovertibly true. Challenge, and open yourself to challenge.

Please have all your presentations complete well beforehand. The order of reports as given in the syllabus may not be strictly observed on the day, so you should be ready by the beginning of class.

**Resource Materials:** The primary text for this course is Richard Steffy's *Wooden Ship Building and the Interpretation of Shipwrecks*. In addition to several other titles given in your syllabus for background reading, there are a number of readings assigned each week. These readings are divided into two groups: required and suggested. The required readings (marked by \*) provide essential information on the topic of the week, and the suggested readings (which may be quite extensive) provide additional information and greater depth. Because the course depends on informed group discussion, it is imperative that you keep up with at least the required readings.

- \*Anderson, B.D. 2003. *The Physics of Sailing Explained*. New York: Sheridan House.
- \*Basch, L. 1972. "Ancient Wrecks and the Archaeology of Ships." *IJNA* 1: 1-48.
- Falconer, W. 1970. *An Universal Dictionary of the Marine*. New York: Augustus M. Kelley.
- \*Greenhill, B. 1995. *The Archaeology of Boats and Ships: An Introduction*, 47-72. London: Conway Maritime Press.
- \*Hasslöf, O. 1972. "Main Principles in the Technology of Shipbuilding." In *Ships and Shipyards, Sailors and Fishermen: Introduction to Maritime Ethnology*, edited by O. Hasslöf, H. Henningsen, and A.E. Christensen, 27-72. Copenhagen: Copenhagen University Press.
- \*Hocker, F.M. 2005. "Shipbuilding: Philosophy, Practice and Research," in *The Philosophy of Shipbuilding*, ed. by Fred Hocker and Cheryl Ward, 1-11. College Station: Texas A&M University Press.
- \*Hocker, F.M. 1991. *The Development of a Bottom-Based Shipbuilding Tradition in Northwestern Europe and the New World*. Ph.D. diss., Texas A&M University, Ch. 1.
- Lenfestey, T., and T. Lenfestey, Jr. 1994. *The Facts on File Dictionary of Nautical Terms*. New York: Facts on File.
- Marchaj, C.A. 1988. *The Aero-hydrodynamics of Sailing*. Camden, ME: International Marine Pub.
- Pomey, P. 1988, "Principes et méthodes de construction en architecture navale antique" *Cahiers d'Histoire* 33.3/4 : 397-412.
- Pomey, P. et al. 2012, "Transition from Shell to Skeleton in Ancient Mediterranean Ship-construction: Analysis, Problems, and Future Research." *IJNA* 41.2 : 235-314.
- \*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 5-23. College Station: Texas A&M University Press.

**Grading:** Course grading is based on:

- 5% proposal and abstract for the semester paper
- 45% semester paper
- 40% on oral presentations (25% on the major presentations, 15% on the others)
- 10% on contributions to class discussions

This last is not just a "fudge factor," but an incentive to think about the material and make an original contribution to our understanding of the history of seafaring. Students are responsible for being prepared for their class presentations. Extra credit assignments will NOT be offered. Do not feel that because you are new to the subject you have nothing concrete to offer, or worry that you do not speak well in front of others. Everyone has something to contribute, and this is your chance to take a stand.

Grading will be assigned as follows:

- 90 to 100 = A (Excellent)
- 80 to 89 = B (Good)
- 70 to 79 = C (Satisfactory)
- 60 to 69 = D (Passing)
- 59 and below = F (Failing, no grade points, hours included in GPR)
- No grade points = I (Incomplete, no grade points, hours not included in GPR)

Absence from examination will be accepted for students who have legitimate excuses as defined in the Texas A&M University (TAMU) Handbook for Student Rules (<http://student-rules.tamu.edu/rule07>). These include:

1. Participation in an activity appearing in the University's Authorized Activity List
2. Proof of confinement due to illness (medical slip)
3. Death of a student's immediate family member
4. Participation in legal proceedings that require a student's presence
5. A religious holiday (defined as a holy day observed by a religion whose places of worship are exempt from property taxation under Section 11.20 of the Texas Tax Code).

Make-up exams will be offered *only* for legitimate excuses as listed in TAMU's Student Rules. If an absence is excused, the student will be given the opportunity to make up the exam at a time and date scheduled in advance. A student who has a legitimate university-excused absence is not relieved of the responsibility of notification and documentation. Falsification of documentation is a violation of the Aggie Honor Code. There will be no opportunities to earn extra credit.

## Class Schedule

### SESSION 1 (September 2): Introduction I

Lecture: Basic concepts: nautical and engineering fundamentals, terminology.

### SESSION 2 (September 9): Introduction II

Lecture: Basic concepts: ship systems and conceptual approaches.

### SESSION 3 (September 16): Dugouts and Early Planked Boats

Reading:

See background reading above.

Lecture: The roots of wooden boatbuilding; stability and seaworthiness.

Reports:

#### 1. The Hasholme Logboat

Millet, M. and S. McGrail. 1987. "The Archaeology of the Hasholme Logboat." *The Archaeological Journal* 144:69-155.

McGrail, S. 2004. *Boats of the World: From the Stone Age to Medieval Times*. Oxford. Pp. 176-178.

#### \*2. The Ferriby, Dover, and Brigg Boats

Clark, P. (ed.) 2004a *The Dover Bronze Age Boat*. London.

Clark, P. (ed.) 2004b *The Dover Bronze Age Boat in Context: Society and Water Transport in Prehistoric Europe*. Oxford.

Crumlin-Pederson, O. 2006. "The Dover Boat—A Reconstruction Case-Study." *IJNA* 35:58-74.

McGrail, S. 2007. "The Re-Assessment and Reconstruction of Excavated Boats." *IJNA* 36:254-264.

McGrail, S. 2004. *Boats of the World: From the Stone Age to Medieval Times*. Oxford. Pp. 174-76.

McGrail, S. 1994. "The Brigg 'raft': A Flat-bottomed Boat." *IJNA* 23: 283-288.

Roberts, O.T.P. 1992. "The Brigg 'Raft' Reassessed As a Round Bilge Bronze Age Boat." *IJNA* 21:245-258.

Wright, E.V. 1990. *The Ferriby Boats—Seacraft of the Bronze Age*. London and New York: Routledge.

#### 3. The Hjörtspring Boat

Jensen, J. 1989. "The Hjörtspring Boat Reconstructed." *Antiquity* 63: 531-5.

Valbjorn, K.V., H.P. Rasmussen, and J.A. Jorgensen. 2000. "Reconstruction of the Hjortspring Boat – Philosophy, Execution and Initial Results." In *Down the River to the Sea*, edited by J. Litwin, 103-10. *ISBSA VIII, Proceedings of the Eighth International Symposium on Boat and Ship Archaeology*, Gdańsk 1997. Gdańsk: Polish Maritime Museum.

Fenger, N.P., and H. Lumbye-Hanswen. 2000. "Reconstruction of the Hjortspring Boat – Theoretical Performance and Initial Test Results." In *Down the River to*

*the Sea*, edited by J. Litwin, 111-16. *ISBSA VIII, Proceedings of the Eight International Symposium on Boat and Ship Archaeology*, Gdańsk 1997. Gdańsk: Polish Maritime Museum.

Crumlin-Pederson, O. and A. Tradakas. 2003. *Hjortspring. A Pre-Roman Iron-Age Warship in Context*. Vol. 5, *Ship and Boats of the North*. Roskilde: National Museum of Denmark and Viking Ship Museum.

#### **SESSION 4 (September 23): Lashed/Sewn Boats in the Mediterranean Basin**

##### Reading:

Haldane, C.W. 1993. *Egyptian Hull Construction*. Ph.D. diss., Texas A&M University.

McGrail, S. 2002. "North-west European Seagoing Boats before AD 400." In *The Dover Bronze Age Boat in Context: Society and Water Transport in Prehistoric Europe*, edited by P. Clark. Oxford: Oxbow Books.

\*Kahanov, Y., and P. Pomey. 2004. "The Greek Sewn Shipbuilding Tradition and the Ma'agan Mikhael Ship: A Comparison with the Mediterranean Parallels from the Sixth to the Fourth Centuries." *MM* 90.1: 6-28.

Pomey, P. 1981. "L'épave de Bon-Porté et les bateaux cousus de Méditerranée." *MM* 67: 225-43.

\*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 23-42. College Station: Texas A&M University Press.

Lecture: Lashed, sewn, and stitched; sail dynamics.

##### Reports:

##### \*4. Khufu's Barge and Lisht Timbers

Lipke, P. 1984. *The Royal Ship of Cheops, a Retrospective Account of the Discovery, Restoration and Reconstruction*. BAR International Series 225, Archaeological Series 9. Greenwich: National Maritime Museum.

Haldane, C.W. 1988 "Boat Timbers from El-Lisht: A New Method of Ancient Egyptian Hull Construction." *MM* 74: 141-52.

Haldane, C.W. 1992. "The Lisht Timbers." In *The Pyramid Complex of Senwosret I*, edited by D. Arnold, 102-12 and plates. Publications of the Metropolitan Museum of Art Egyptian Expedition XXV. *The South Cemeteries at Lisht III*. New York: Metropolitan Museum of Art.

Mark, S. 2009. "The Construction of the Khufu I Vessel (c. 2566 B.C.): A Re-evaluation." *IJNA* 38.1: 133-152.

Mark, S. 2013. "Graphical Reconstruction and Comparison of Royal Boat Iconography from the Causeway of the Egyptian King Sahure (c. 2487–2475 B.C.)." *IJNA* 42.2:270-85.

Ward, C.W. 2000. *Sacred and Secular: Ancient Egyptian Ships and Boats*. Boston: Archaeological Institute of America. Iowa: Kendall/Hunt Publishing Company, 45-67, 107-128.

##### \*5. The Dashur Boats

Creasman, P. 2005. *The Cairo Dashur Boats*. M.A. Thesis, Texas A&M University.

Patch, D.C. and C.W. Haldane. 1990. *The Pharaoh's Boat at the Carnegie*. Pittsburgh: Carnegie Museum of Natural History.

- Ward, C.W. 2000. *Sacred and Secular: Ancient Egyptian Ships and Boats*. Boston: Archaeological Institute of America. Iowa: Kendall/Hunt Publishing Company, 83-102.
- \*6. Greek Laced Tradition: Bon-Porté, Giglio, Gela, and Place Jules Verne (Marseilles) Ships
- Bound, M. 1991. "The Giglio Wreck. A Wreck of the Archaic Period (600 B.C.) off the Tuscan Island of Giglio." *Enalía Supplement I*. Athens: Hellenic Institute of Marine Archaeology.
- Jestin, O. and F. Carraze. 1980. "Mediterranean Hull Types Compared 4. An Unusual Type of Construction. The Hull of Wreck 1 at Bon-Porté." *IJNA* 9: 70-2.
- Joncheray, J.-P. 1976. "L'Épave Grecque ou Etrusque de Bon Porté." *Cahiers Archéologie Subaquatique* 5: 5-36.
- Panvini, R. 2001. *The Archaic Greek Ship at Gela: and Preliminary Exploration of a Second Greek Shipwreck*. Translated by B.E. McConnell. Palermo: Salvatore Sciascia Editore.
- Polzer, M.E. 2004. An Archaic Laced Hull in the Aegean: The 2003 Excavation and Study of the Pabuç Burnu Ship Remains. *INA Quarterly* 31(3): 3–11.
- Pomey, P. 1995. "Les Épaves Grecques et Romaines de la Place Jules-Verne à Marseille." In *Comptes Rendus des Séances de l'Année 1995 (Avril-Juin)*, 459-84. Paris: Académie des Inscription & Belles-Lettres.
- 2003. "Reconstruction of Marseilles 6<sup>th</sup> Century B.C. Greek Ships." In *Boats, Ships and Shipyards*, edited by C. Beltrame, 57-65. *ISBSA IX, Proceedings of the Ninth International Symposium on Boat and Ship Archaeology, Venice 2000*. Oxford: Oxbow Books.
- Pomey, P. and G. Boetto. 2019. "Ancient Mediterranean Sewn-Boat Traditions." *IJNA* 48.1: 5-51. (Note: Report primarily on pp. 22-36).
- \*7. The Ma'agan Mikhael Ship
- Kahanov, Y. 1996. "Conflicting Evidence for Defining the Origin of the Ma'agan Mikhael Shipwreck." In *Tropis IV*, Proceedings of the 4<sup>th</sup> International Symposium on Ship Construction in Antiquity, edited by H. Tzalas, 245-48. Athens: Hellenic Institute for the Preservation of Nautical Tradition.
- 1999. "The Metal Nails from the Ma'agan Mikhael Ship." *IJNA* 28:277-88.
- Linder, E., and Y. Kahanov. 2003. *The Ma'agan Mikhael Ship, A Recovery of a 2400-Year-Old Merchantman*, edited by E. Black. Vols. I and II, *Final Report*. Jerusalem: Old City Press.
8. Adriatic Laced Construction
- Berti, F., ed. 1990. *Fortuna maris: La nave romana di Comacchio*. Bologna: Nuova Alfa.
- Beltrame, C. 2000. "Sutiles Naves of Roman Age, New Evidence and Technological Comparison with Pre-Roman Sewn Boats." In *Down the River to the Sea*, edited by J. Litwin, 91-6. *ISBSA VIII, Proceedings of the Eight International Symposium on Boat and Ship Archaeology*, Gdańsk 1997. Gdańsk: Polish Maritime Museum.
- Beltrame, C. 2013. "Fragments of Boats from the *Canale Anfora* of Aquileia, Italy, and Comparison of Sewn-Plank Ships in the Roman Era." *IJNA* 42.2: 296-304.
- Bonino, M. 1985. "Sewn Boats in Italy; Sutiles Naves and Barche Cucite." In *Sewn*

*Plank Boats*, edited by S. McGrail and E. Kentley, 87-104. BAR International Series 276. Oxford.

Pomey, P. and G. Boetto. 2019. "Ancient Mediterranean Sewn-Boat Traditions." *IJNA* 48.1: 5-51. (Note: Report primarily on pp. 8-19).

Castro, F. and M. Capulli. 2016. "A Preliminary Report of Recording the Stella 1 Roman River Barge, Italy." *IJNA* 45.1: 29-41.

Willis, S. and C. Massimo. 2018. "A Report on the Late 1<sup>st</sup>-2<sup>nd</sup>-century AD Venice Lido III Sewn Timber Assemblage." *IJNA* 47.2: 343-56.

## SESSION 5 (September 30): Mortise-and-Tenon Construction

### \*\*\*\*\*TERM PAPER TOPICS DUE AT BEGINNING OF CLASS\*\*\*\*\*

#### Reading:

Morrison, J.S., and R.T. Williams. 1968. *Greek Oared Ships, 900-322 B.C.* Cambridge: Cambridge University Press.

Rival, M. 1991. *La charpenterie navale romaine.* Paris: CNRS.

\*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 37-72. College Station: Texas A&M University Press.

Lecture: The development of rigid shell construction; sail typology.

#### Reports:

9. Bronze- and Iron-Age Ships (Uluburun Ship, Cape Gelidonya, Mazarrón I Ships)
  - Cabrera Tejedor, C. 2018. "The Mazarrón I Shipwreck: An Iron-Age Boat with Unique Features from the Iberian Peninsula." *IJNA* 47.2: 300-24.
  - Pomey, P. and G. Boetto. 2019. "Ancient Mediterranean Sewn-Boat Traditions." *IJNA* 48.1: 5-51. (Note: Report primarily on pp. 19-22).
  - Pulak, C. 1999. "The Late Bronze Age Shipwreck at Uluburun: Aspects of Hull Construction." In *The Point Iria Wreck: Interconnections in the Mediterranean ca. 1200 BC*, edited by W. Phelds, Y. Lolos, and Y. Vichos, 209-38. Athens: Hellenic Institute of Marine Archaeology.
  - , 2002. "The Uluburun Hull Remains." In *Tropis VII, Proceedings of the 7<sup>th</sup> International Symposium on Ship Construction in Antiquity*, edited by H. Tzalas, 615-36. Athens: Hellenic Institute for the Preservation of Nautical Tradition.
  - , 2003. "Paired Mortise-and-Tenon Joints of Bronze Age Seagoing Hulls," In *Boats, Ships, and Shipyards*, edited by C. Beltrame, 28-34. *ISBSA IX, Proceedings of the Ninth International Symposium on Boat and Ship Archaeology, Venice 2000.* Oxford: Oxbow Books.
- \*10. Kyrenia Ship
  - Katzev, M.L., and S.W. Katzev. 1985. "Kyrenia II. Building a Replica of an Ancient Greek Merchantman." In *Tropis I, Proceedings of the 1<sup>st</sup> International Symposium of Ship Construction in Antiquity*, edited by H. Tzalas, 163-175. Athens: Hellenic Institute for the Preservation of Nautical Tradition.
  - Steffy, J.R. 1985. "The Kyrenia Ship: An Interim Report on Its Hull Construction." *AJA* 89:71-101.

## \*11. The Madrague de Giens Ship

- Pomey, P. 1982. "Le navire romain de la Madrague de Giens." *CRAI*: 133-54.
- Pomey, P. 2015. "The Madrague de Giens Project Wake of the Byzantine Wreck at Yassiada." In *Maritime Studies in the Wake of the Byzantine Wreck at Yassiada, Turkey*, edited by Carlson, Leidwanger and Kampbell, 73-81. College Station: Texas A&M University Press.
- Rival, M. 1991. *La charpenterie navale romaine*. Paris: CNRS, 147-239.
- Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*. College Station: Texas A&M University Press. Pp.62-65
- Tchernia, A., P. Pomey, and A. Hesnard. 1978. *L'épave romaine de la Madrague de Giens (Var) (Campagnes 1972-1975)*. *Gallia*, Supplement 34. Paris: CNRS.

## 12. Anse des Laurons II Ship

- Bonino, M. 2012. "Evidence of Geometric Operators Used to Shape Ancient Hulls." *IJNA* 41.1: 120-33.
- Gassend, J.M., B. Liou, and S. Ximénès. 1984. "L'épave 2 de l'Anse des Laurons (Martigues, Bouches-du-Rhône)." *Archaeonautica* 4: 75-106.
- Gassend, J.M. 1998. "L'apport des découvertes des vestiges antiques du navire des Laurons 2 à la restitution d'une épave antique." In *Méditerranée antique; pêche, navigation, commerce, 197-201*. Paris: CNRS.

## 13. Small Craft: The Herculaneum and Kinneret Boats

- Steffy, J.R. 1985. "The Herculaneum Boat: Preliminary Notes on Hull Details." *AJA* 89: 519-21.
- Wachsmann, S. 1990. "The Excavations of an Ancient Boat in the Sea of Galilee (Lake Kinneret)." *Atiqot* (English Series) 19, Jerusalem.
- Court, S., D. Camardo, and N. Marino 2014. "Ercolano E il mare." *Archaeo* 354: 71-79.

## 14. The Athlit Bow

- Casson, K. and J.R. Steffy, eds. 1991. *The Athlit Ram*. College station: Texas A&M University Press.
- Oron, Asaf. 2001. *The Athlit Ram: Classical and Hellenistic Bronze Casting Technology*. M.A. Thesis, Texas A&M University.
- Oron, Asaf. 2006. "The Athlit Ram Bronze Casting Reconsidered: Scientific and Technical Re-examination." *JAS* 33: 63-76.

**SESSION 6 (October 7): Transition I: The Mediterranean**Reading:

- Casson, L. 1987. "Hulls and Barrels: Underwater Archaeology's Vital Contributions to the History of Naval Technology." In *Tropis II, Proceedings of the 2<sup>nd</sup> International Symposium on Ship Construction in Antiquity*, edited by H. Tzalas, 85-6. Athens: Hellenic Institute for the Preservation of Nautical Tradition.
- \*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 79-93. College Station: Texas A&M University Press.
- Pomey, P., Y. Kahanov, and E. Reith. 2012. "Transition from Shell to Skeleton in

Ancient Mediterranean Ship-Construction: Analysis, Problems, and Future Research.” *IJNA* 41.2: 235-314.

Lecture: From shell to skeleton.

Reports:

\*15. The 4<sup>th</sup>- and 7<sup>th</sup>-century Ships at Yassiada.

Van Doorninck, Jr., F.H. 1976. “The 4<sup>th</sup>-Century Wreck at Yassiada. An Interim Report on the Hull.” *IJNA* 5: 115-30.

Bass, G.F., and F.H. van Doorninck, Jr. 1982. *Yassi Ada: A Seventh-Century Byzantine Shipwreck*. College Station, Texas A&M University Press.

16. The Anse St. Gervais II Ship

Jezogou, M.-P. No date. *L'épave byzantino-merovingienne de Fos-sur-Mer*, M.A. Thesis, 1-18.

-----, 1985. “Elements de construction sur couples observes sur une épave du Haut Moyen-Age découverte à Fos-sur-Mer (Bouches du Rhône).” In *VI Congreso Internacional de Arqueologia Submarina*, 351-6, Paris.

-----, 1985. “L'épave II de l'anse Saint-Gervais à Fos-sur-mer (Bouches du Rhône): une navire du haut Moyen-Age construit sur squelette.” In *Tropis I, Proceedings of the 1<sup>st</sup> International Symposium on Ship Construction in Antiquity*, edited by H. Tzalas, 139- 46. Athens: Hellenic Institute for the Preservation of Nautical Tradition.

\*17. The Bozburun Ship

Bass, G.F. 1974. “Turkey: Survey for Shipwrecks.” *IJNA* 3: 335-8.

Hocker, F. 1999. “Cargo Stowage, Jettison and Wreck Formation Processes: Information on Middle Byzantine Commerce from the Ninth-Century Bozburun Shipwreck.” *Archeologia delle Acque* 1.2, 28-38.

Harpster, M. Forthcoming. (Note: There is a draft copy in NAP Library offprint files) “Further Research on the 9<sup>th</sup>-Century AD Vessel from Bozburun, Turkey.” In *Tropis VIII, Proceedings of the 8<sup>th</sup> International Symposium on Ship Construction in Antiquity*, edited by H. Tzalas. Athens: Hellenic Institute for the Preservation of Nautical Tradition.

\_\_\_\_\_. 2002. “Preliminary Report on the 9<sup>th</sup> Century A.D. Hull Found near Bodrum, Turkey.” In *Tropis VII, Proceedings of the International Symposium on Ship Construction in Antiquity*, edited by H. Tzalas, 409-18. Athens: Hellenic Institute for the Preservation of Nautical Tradition.

\_\_\_\_\_. 2005. *A Re-assembly and Reconstruction of the 9th-century AD Vessel Wrecked off the Coast of Bozburun, Turkey*. Ph.D. diss., Texas A&M University, 2005.

\_\_\_\_\_. 2009. “Designing the 9<sup>th</sup>-century AD Vessel from Bozburun, Turkey.” *IJNA* 38(2): 297-313.

\*18. The Serçe Limani Ship

Bass, G.F., S.D. Matthews, J.R. Steff, and F.H. van Doorninck. 2004. *Serçe Limani, an Eleventh-Century Ship*. Vol. 1. *The Ship and Its Anchorage, Crew, and Passengers*. College Station: Texas A&M University Press.

Harpster, M. 2010. “Designing the 11<sup>th</sup>-century AD Vessel from Serçe Limani,

- Turkey.” *IJNA* 39(1): 44-55.
- Steffy, J.R. 1982. “The Reconstruction of the 11<sup>th</sup> Century Serçe Limanı Vessel. A Preliminary Report.” *IJNA* 11:13-34.
- , 1991. “The Mediterranean Shell to Skeleton Transition: A Northwest European Parallel?” In *Carvel Construction Technique: Skeleton-first, Shell-first*, edited by H.R. Reinders and K. Paul, 1-9. *ISBSA V, Proceedings of the Fifth International Symposium on Boat and Ship Archaeology*, Amsterdam 1988. Oxford: Oxbow Books.

## SESSION 7 (October 14): Lapstrake (Clinker) Construction

### \*\*\*\*\*TERM PAPER ABSTRACTS DUE AT BEGINNING OF CLASS\*\*\*\*\*

#### Reading:

- Brogger, A.W. and H. Shetelig. 1953. *The Viking Ships: Their Ancestry and Evolution*. Oslo: Dreyers forlag.
- Christensen, A.E. 1982. “Viking Age Ships and Shipbuilding.” *Norwegian Archaeological Review* 15: 19-28.
- Crumlin-Pedersen, O. 1997. *Viking-Age Ships and Shipbuilding in Hedeby-Haithabu and Schleswig*. Schleswig and Roskilde: Archäologisches Landesmuseum der Christian-Albrechts-Universität and Viking Ship Museum, 224-36.
- Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 100-14. College Station: Texas A&M University Press.

Lecture: The flexible shell.

#### Reports:

19. The Nydam Oak Boat (Note: Discuss only Nydam boat, not the other two boats found with it)
- Akerlund, H. 1953. *Nydamskeppen*. Göteborg: Elander.
- Engelhardt, C. 1866. *Denmark in the Early Iron Age*. London: Williams and Norgate, 29-39.
- Shetelig, H., and F. Johannessen. 1930. “Das Nydamschiff.” *Acta Archaeologica* 1: 1-30.
- Rieck, F. 2000. “New Parts of the Nydam Ships. Investigations on a Classical Danish Site, 1989-97.” In *Down the River to the Sea*, edited by J. Litwin, 7-12. In *ISBSA VIII, Proceedings of the Eight International Symposium on Boat and Ship Archaeology*. Gdańsk 1997. Gdańsk: Polish Maritime Museum.
- \*20. The Gokstad Ship
- Dammann, W. 1983. *Das Gokstadschiff und seine Boote*. Heidesheim: Arbeitskreis Historischer Schiffbau e.V.
- Nicolaysen, N. 1882. *Langskibet fra Gokstad ved Sandefjord/The Viking Ship from Gokstad*. Christiania: Cammermeyer.
- \*21. The Skuldelev Ships (Vessels 1, 2, 3, 5, and 6)
- Olsen, O. and O. Crumlin-Pedersen. 1967. “The Skuldelev Ships (II).” *Acta Archaeologica* 38: 73-174.

Crumlin-Pedersen, O. and O. Olsen. 2002. *The Skuldelev Ships I. Topography, Archaeology, History, Conservation and Display*. Vol. 4.1, *Ships and Boats of the North*. Roskilde: Viking Ship Museum.

## 22. The Graveney Boat

Fenwich, V., ed. 1978. *The Graveney Boat: A Tenth-Century Find from Kent*. BAR British Series 53, Archaeological Series 3. Greenwich: National Maritime Museum.

## SESSION 8 (October 21): Transition II: The Lapstrake Tradition

### Reading:

Anderson, R.C. 1932. "‘Carvel’ and ‘Caravel’." *MM* 18: 189.

Lecture: Size and structure.

### Reports:

## 23. Kalmar I Ship and Bergen Ship

Åkerlund, H. 1951. *Fartygsfynden I den Forna Hamnen I Kalmar*. Uppsala.

Englert, A. 2000. *Large Cargo Vessels in Danish Waters AD 1000-1250*. Ph.D. Dissertation, Roskilde & Kiel.

Herteig, A.E. 1985. *The Bryggen Papers*. Oslo, Universitetsforlaget As.

Hutchinson, G. 1955. *Medieval Ships and Shipping*. Cranbury, Associated University Presses, 4-46.

## 24. The Aber W'rach Ship

L'Hour, M. and E. Veyrat. 1989. "A Mid-15<sup>th</sup> Century Clinker Boat Off the North Coast of France, the Aber Wrac'h I Wreck: A Preliminary Report." *IJNA* 18: 285-98.

L'Hour, M. and E. Veyrat. 1994. "The French Medieval Clinker Wreck from Aber Wrac'h." In *ISBSA VI, Crossroads in Ancient Shipbuilding: Proceedings of the Sixth International Symposium on Boat and Ship Archaeology*, Roskilde 1991, edited by C. Westerdahl, 165-180. Oxford: Oxbow Monographs.

## 25. *Grace Dieu*

Anderson, R.C. 1934. "The Bursledon Ship." *MM* 20: 158-70.

Prynn, M.W. 1977. "The Dimensions of the *Grace Dieu* (1418)." *MM* 63: 6-7.

Friel, I. 1993. "Henry V's *Grace Dieu* and the Wreck in the R. Hamble near Bursledon, Hampshire." *IJNA* 22: 3-19, no. 1 (several articles).

Clark, R., *et. al.* 1993. "Recent Work on the R. Hamble Wreck near Bursledon, Hampshire." *IJNA* 22:21-44.

McGrail, S. 1993. "The Future of the Designated Wreck Site in the R. Hamble." *IJNA* 22: 45-51.

Plets, M.K. *at al.* 2009. "The Use of a High-resolution 3D Chirp Sub-bottom Profiler for the Reconstruction of the Shallow Water Archaeological Site of the *Grace Dieu* (1439), River Hamble, UK." *Journal of Archaeological Science* 36(2): 408-18.

## 26. The Woolwich Ship

Salisbury, W. 1961. "The Woolwich Ship." *MM* 47: 81-90.

## SESSION 9 (October 28): Bottom-Based Construction.

### Reading:

- \*Hocker, F. 1991. *The Development of a Bottom-Based Shipbuilding Tradition in Northwestern Europe and the New World*. Ph.D. Dissertation, Texas A&M University, 1991, Chapter 2.
- \*Marsden, P. 1976. "A Boat of the Roman Period Found at Bruges, Belgium, in 1899, and Related Typos." *IJNA* 5: 23-55.
- 1977. "Celtic Ships of Europe." In *Sources and Techniques in Boat Archaeology*, edited by S. McGrail, 281-7. BAR Supplementary Series 29, Archaeological Series 1. Greenwich: National Maritime Museum.
- \*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 72-7. College Station: Texas A&M University Press.

Lecture: "Celtic" shipbuilding.

### Reports:

#### \*27. The Blackfriars Vessel

- Marsden, P. 1966. *A Ship of the Roman Period from Blackfriars in the City of London*. London: Guildhall Museum.
- 1994. "Blackfriars Ship 1, 1962." In *Ships of the Port of London*. English Heritage Archaeological Report 3. London: English Heritage.
- 1990. "A Re-assessment of Blackfriars' 1." In *Maritime Celts, Frisians and Saxons*, edited by S. McGrail, 66-74. CBA Research Reports 71. London: Council for British Archaeology.

#### 28. The Guernsey Ship

- McGrail, S. 1995. "Romano-Celtic Boats and Ships: Characteristic Features." *IJNA* 24:139-45.
- McGrail, S. 1997. "Romano-Celtic Boats and Ships." In *Studies in Maritime Archaeology*, BAR 256, Oxford.
- Monaghan, J. 2010. "Guernsey's Roman Ship: Small Island Big Problem." In *Refereed Papers from the Sixth International Small Island Cultures Conference*, Guernsey.
- Rule, M. 1990. "The Romano-Celtic ship excavated at St. Peter Port, Guernsey." In *Maritime Celts, Frisians and Saxons*, edited by S. McGrail, 49-56. CBA Research Reports 71. London: Council for British Archaeology.
- Rule, M. and J. Monaghan. 1993. *A Gallo-Roman Trading Vessel from Guernsey*. Guernsey Museum Monograph 5. Sutton, Guernsey.

#### 29. The Bevaix Boat

- Arnold, B. 1978. "Gallo-Roman Boat Finds in Switzerland." In *Roman Shipping and Trade: Britain and the Rhine Provinces*, edited by J. du Plat Taylor and H. Cleere, 31-5. CBA Research Reports 24. London: Council for British Archaeology.
- Arnold, B. 1999. "Some Remarks on Romano-Celtic Boat Construction and Bronze Age Wood Technology." *IJNA* 28.1: 34-44.

#### 30. The Zwammerdam Barges

- De Weerd, M. 1988. *Schepen voor Zwammerdam*. Ph.D. Dissertation., University of Amsterdam.
- . 1978. "Ships of the Roman Period at Zammerdam/Nigrum Pullum, Germania Inferior." In *Roman Shipping and Trade: Britain and the Rhine Provinces*, edited by J. du Plat Taylor and H. Cleere, 15-30. CBA Research Reports 24. London: Council for British Archaeology.
- . 1988. "A Landlubber's View of Shipbuilding Procedure in the Celtic Barges of Zwammerdam, the Netherlands." In *Local Boats*, edited by O.L. Filgueiras, 35-51. *ISBSA IV, Proceedings of the Fourth International Symposium on Boat and Ship Archaeology*, Porto 1985. BAR International Series 438(i). Oxford: Oxbow Books.

## **SESSION 10 (November 4): Transition III: Cogs and the Dutch**

### Reading:

- Ellmers, D. 1985. "The History of the Cog as a Ship Type." In *The Hanse Cog of 1380*, edited by K.P. Kiedel and U. Schnall, 60-8.
- Hocker, F.M. 1991. *The Development of a Bottom-Based Shipbuilding Tradition in Northwestern Europe and the New World*. Ph.D. Dissertation, Texas A&M University. Chapters 4-5.
- Hocker F.M. 1991. "Cogge en Coggeschip: Late Trends in Cog Development." In *Bouwtraditie en scheepstype*, edited by H.R. Reinders, 25-32. Inleidingen gehouden tijdens het vierde Glavimans symposion. Groningen: Universiteitsdrukkerij RUG.
- L'Hour, M. and L. Long. 1990. "The Wreck of an 'Experimental' Ship of the 'Oost-Indische Compagnie': The *Mauritius* (1609)." *IJNA* 19: 63-73.
- \*Reinders, H.R. 1985. *Cog Finds from the IJsselmeerpolders*. Flevobericht 248. Lelystad: Nederlands Instituut voor Scheeps-en onderwaterArchaeology (NISA).
- \*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*. College Station: Texas A&M University Press, 114-24.
- \*van de Moortel, A. 1991. *A Cog-like Vessel from the Netherlands*. Flevobericht 331. Lelystad: Nederlands Instituut voor Scheeps-en onderwaterArchaeology (NISA). (Also available as Aleydis van de Moortel's 1987 M.A. Thesis at TAMU, with same title).

Lecture: Cog construction and Dutch shipbuilding.

### Reports:

- \*31. The Bremen Cog
- Kidel, K.-P. and U. Schnall, eds. 1985. *The Hanse Cog of 1380*. Bremerhaven: the Society for the Promotion of the German Maritime Museum.
- Lahn, W. 1992. *Die Kogge von Bremen*. Vol. 60, *Schriften des Deutschen Schiffahrtsmuseums*. Hamburg: Convent.
- Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*. College Station: Texas A&M University Press. Pp. 118-21.
32. The Almere Cog
- Hocker, F. and K. Vlierman. 1996. *A Small Cog Sunk on the Zuiderzee*. Flevobericht 19.

Lelystad: Nederlands Instituut voor Scheeps-en Onderwater Archaeology (NISA)

\*33. Oostflevoland B71 Ship

- Hocker, F.M. 1991. "The Development of a Bottom-Based Shipbuilding Tradition." In *The Development of a Bottom-Based Shipbuilding Tradition in Northwestern Europe and the New World*, 181-219. Ph.D. Dissertation, Texas A&M University.
- Lemée, C.P.P. 2006. "The Renaissance Shipwrecks from Christianshavn." *Ships and Boats of the North* 6. Roskilde 108-147.

34. *Batavia*

- Green, J.N. 1975. "The VOC Ship *Batavia* Wrecked in 1629 on the Houtman Abrolhos, Western Australia." *IJNA* 4: 43-63.
- , 1991. "The Planking-first Construction of the VOC Ship *Batavia*." In *Carvel Construction Technique: Skeleton-first, Shell-first*, edited by H.R. Reinders and K. Paul, 70-1. *ISBSA V, Proceedings of the Fifth International Symposium on Boat and Ship Archaeology*, Amsterdam 1988. Oxford: Oxbow Books.
- Parthesius, R. 1994. "The *Batavia* Project: An Experimental Reconstruction of a 17<sup>th</sup>-Century East Indiaman." *Bulletin of the Australian Institute for Maritime Archaeology* 18.2: 25-32.
- van Duivenvoorde, W. 2015. *Dutch East India Company Shipbuilding: The Archaeological Study of Batavia and other Seventeenth-century VOC Ships*. College Station: Texas A&M University Press.

**SESSION 11 (November 11): Naval Architecture**

Reading:

- \*Bonino, M. 1978. "Lateen-Rigged Medieval Ships. New Evidence from Wrecks in the Po Delta (Italy) and Notes on Pictorial and Other Documents." *IJNA* 7: 9-28.
- Lane, F.C. 1934. "Naval Architecture, about 1550." *MM* 20: 24-49.
- Lavery, B. 1984. *The Ship of the Line*. Vol. II, *Design, Construction and Fittings*. Annapolis, MD: Naval Institute Press, 7-27.
- Steffy, R. 1991. "The Mediterranean Shell to Skeleton Transition: A Northwest European Parallel?" In *Carvel Construction Technique: Skeleton-first, Shell-first*, edited by R. Reinders and K. Paul, 1-9. *ISBSA V, Proceedings of the Fifth International Symposium on Boat and Ship Archaeology*.
- , 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 93-141. College Station: Texas A&M University.

Lecture: Written Sources on Shipbuilding. Whole molding.

- \*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*, 93-141. College Station: Texas A&M University Press.

Reports:

- \*35. The Notebook of Zorzi Trombetta from Modon
- Anderson, R.C. 1925. "Italian Naval Architecture about 1445." *MM* 11: 135-54.
- Hocker, F.M., and J.M. McManamon. 2006. "Medieval Shipbuilding in the

Mediterranean and Written Culture at Venice.” *Mediterranean Historical Review* 21(1): 1-37.

Sarsfield, J.P. 1984. “Mediterranean Whole Moulding.” *MM* 70: 86-88.

36. Mathew Baker's *Fragments of Ancient English Shipwrightry* (Pepys Library MS 2820—as a backup, there is also a microfilm version in NAP Library)

\*37. Culip VI

Rieth, E. 1998. “L’arquitectura naval.” *N Excavacions arqueològiques subaquàtiques a Cala Culip*, edited by H. Palou, et al, 115-89. vol. 2, *Culip VI*. Girona: Museu d’Arqueologia de Catalunya.

----- 1998. “L’épave du caboteur de Culip VI.” *Archaeonautica* 14: 205-212.

38. Iberian Shipbuilding in the 16th Century

Bajakowski, P. 2012. *Western Ledge Reef: The Analysis and reconstruction of the Late 16<sup>th</sup>-Century Ship of the Spanish Empire*. Ph.D. Dissertation, Texas A&M University.

Grenier, R. 1988. “Basque Whalers in the New World: The Red Bay Wrecks.” In *Ships and Shipwrecks of the Americas*, edited by G.F. Bass, 69-84. New York: Thames and Hudson.

Grenier, R., M.A. Bernier, and W. Stevens. 2007. *The Underwater Archaeology of Red Bay: Basque Shipbuilding and Whaling in the 16<sup>th</sup> Century*. Vol. II. Ottawa: Parks Canada.

Oertling, T. 1989. “The Highborn Cay Wreck: The 1986 Field Season.” *IJNA* 18: 224-54.

----- 1989. “The Molasses Reef Wreck Hull Analysis: Final Report.” *IJNA* 18: 229-43.

----- 2004. “Characteristics of Fifteenth and Sixteenth Century Iberian Ships.” In *The Philosophy of Shipbuilding*. Pp. 129-136.

Rosloff, J. and J.B. Arnold. 1984. “The Keel of the *San Esteban* (1554): Continued Analysis.” *IJNA* 13.4: 287-96.

Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*. College Station: Texas A&M University Press, 287-96.

Watts, G.P.Jr. 1993. “The Western Ledge Reef Wreck: A Preliminary Report on Investigation of the Remains of a 16<sup>th</sup>-century Shipwreck in Bermuda.” *IJNA* 22: 103-24.

## **SESSION 12 (November 18): Warships in the Age of Fighting Sail**

### Reading:

Goodwin, P. 1987. *The Construction and Fitting of the English Man of War 1650-1850*. Annapolis, MD: Naval Institute Press.

Hocker, F. 2011. *Vasa. A Swedish Ship*. Medströms Bokförlag and National Maritime Museums in Sweden; Oxbow Books.

\*Steffy, J.R. 1994. *Wooden Ship Building and the Interpretation of Shipwrecks*. College Station: Texas A&M University Press, 141-86.

Lecture: The ship as an implement of foreign policy; advent of the naval gun.

Reports:\*39. *Vasa*

- Cederlund, C.O. 1985. "Shipbuilding in the 17<sup>th</sup> and 18<sup>th</sup> Centuries: The *Wasa* as a Product of Dutch Shipbuilding." In *The North Sea. A Highway of Economic and Cultural Exchange*, edited by A. Bang-Andersen, B. Greenhill, and E.H. Grude, 167-78. Stavanger, Oxford and New York: Norwegian University Press and Oxford University Press.
- Hocker, F. 2006. *The Archaeology of Vasa I*, edited by F. Hocker.
- Hocker, F. 2011. *Vasa. A Swedish Ship*. Medströms Bokförlag and National Maritime Museums in Sweden; Oxbow Books.
- Lanström, B. 1988. *The Royal Warship Vasa*. Interpublishing.

## 40. Anthony Deane's Reforms

- Lavery, B., ed. 1981. *Deane's Doctrine of Naval Architecture of 1670*. Annapolis, MD: Naval Institute Press.

## 41. The 74-gun Ship

- Boudriot, J. 1986. *The Seventy-Four Gun Ship. A Practical Treatise on the Art of Naval Architecture*. Translated by D. Roberts. 4 vols. Annapolis, MD: Naval Institute Press.
- Lavery, B. 1985. *The 74-Gun Ship Bellona*. Annapolis, MD: Naval Institute Press.

## \*42. The American Heavy Frigates of 1796

- Bass, W.P. and E.L. Bass. 1981. *Constitution: Super Frigate of Many Faces. Second Phase 1802-1807*. Melbourne, FL: Shipresearch.
- Chapelle, H.I. 1949. *The History of the American Sailing Navy, the Ships and their Development*, 115-78. New York: Bonanza Books.
- Smith, P.C.F. 1974. *The Frigate Essex Papers: Building the Salem Frigate 1798-1799*. Salem, MA: Peabody Museum of Salem.
- Toll, I.W. 2006. *Six Frigates: The Epic History of the Founding of the U.S. Navy*. New York: W.W. Norton & Co.

**SESSION 13 (December 2): Merchant Vessels and Commercial Empires**Reading:

- MacGregor, D.R. 1980. *Merchant Sailing Ships 1775-1815: Their Design and Construction*. Watford: Argus Books.
- Sutton, J. 1990. "The English East India Company: the Historical Perspective." *IJNA* 19: 5-12.

Lecture: The economic imperative.Reports:

## 43. Flutes

- Green, J. 1986. "The Survey of the *VOC Fluit Risdam* (1727), Malaysia." *IJNA* 15: 93-104.
- Lemée, C.P.P. 2006. "The Renaissance Shipwrecks from Chistianshavn." *Ships and Boats of the North* 6. Roskilde, 148-195.

- Petersen, B.-M. 1987. "The Dutch Fluitship *Anna Maria*, Foundered in Dalarö Harbour in 1709." *IJNA* 16: 293-304.
44. The Jutholmen Wreck  
 Cederlund, C.O. 1982. *Vraket vid Jutholmen: Fartygets byggnad*. Stockholm, statens sjöhistoriska museum.  
 Lemée, C.P.P. 2006. "The Renaissance Shipwrecks from Chistianshavn." *Ships and Boats of the North* 6. Roskilde, 196-232.
- \*45. East Indiamen  
 Bound, M. 1990. "The Hulk *Jbelum*: A Derivative Expression of Late British Indiamen Ship-building." *IJNA* 19: 43-47.  
 Cumming, E.M. and Carter, D.J. 1990. "The *Earl of Abergavenny* (1805), an Outward Bound English East Indiaman." *IJNA* 19: 31-33.  
 Dagget, C., E. Jay, and F. Osada. 1990. "The *Griffin*, an English East Indiaman Lost in the Philippines in 1761." *IJNA* 19: 35-41.  
 Gawronski, J.H.G. 1990. "The *Amsterdam* project." *IJNA* 19: 53-61.  
 Kist, J.B. 1990. "Integrating Archaeological and Historical Records in Dutch East India Company Research." *IJNA* 19: 49-51.  
 L'Hour, M. and Long, L. 1990. "The Wreck of an 'Experimental' Ship of the 'Oost-Indische Compagnie': The *Mauritius* (1609)." *IJNA* 19:63-73.  
 Lightley, R. 1976. "An 18<sup>th</sup>-century Dutch East Indiaman, found at Cape Town, 1971." *IJNA* 5:305-316.  
 Martin, C.J.M. 2005. "The *Adelaar*: A Dutch East Indiaman Wrecked in 1728 off Barra, Outer Hebrides, Scotland." *IJNA* 34:179-210.  
 Parthesius, R. 2005. "Preliminary Report on the Excavation of the 17<sup>th</sup>-century Anglo-Dutch East Indiaman *Avondster* in Bay of Galle, Sri Lanka." *IJNA* 34: 216-237.  
 Redknapp, M. 1990. "The *Albion* and *Hindostan*: The Fate of Two Outward-bound East Indiamen." *IJNA* 19: 23-30.  
 Sutton, J. 1990. "The English East India Company: The Historical Perspective." *IJNA* 19: 5-12.
- \*46. Clippers  
 Chapelle, H.I. 1967. *The Search of Speed under Sail, 1700-1855*. New York: W.W. Norton & Company.  
 Crothers, W. 1997. *The American-built Clipper Ship, 1850-1856*. Camden: International Marine.  
 Cutler, C. 1960. *Greyhounds of the Sea: The Story of the American Clipper Ship*. Annapolis, MD: Naval Institute Press.  
 Howe, O., and F.C. Matthews. 1986. *American Clipper Ships, 1833-1858*, vols. 2. New York: Dover Publications.  
 Jobe, J. 1967. *The Great Age of Sail*. Greenwich: Edita Lausanne.  
 MacGregor, D.R. 1979. *Clipper Ships*. Watford: Argus Books.  
 ———. 1993. *British and American Clippers: A Comparison of Their Design, Construction and Performance in the 1850s*. Annapolis: Naval Institute Press.  
 Switzer, D.C. 2000. "The Rescue and Preservation of the Only Existing American Clipper Ship." In *Down the River to the Sea*, edited by J. Litwin, 197-200. *ISBSA*

VIII, *Proceedings of the Eight International Symposium on Boat and Ship Archaeology*, Gdańsk 1997. Gdańsk: Polish Maritime Museum.  
 Whipple, A.B. 1980. *The Clipper Ships*. Alexandria, VA: Time-Life Books.

#### **SESSION 14 (December 7): The New World**

##### Reading:

- Bass, G.F., ed. 1988. *Ships and Shipwrecks of the Americas*. New York: Thames and Hudson.
- Chapelle, H.I. 1935. *The History of the American Sailing Ships*. New York: Bonanza Books.
- Crisman, K.J. 1986. *Of Sailing Ships and Sidenheelers, the History and Nautical Archaeology of Lake Champlain*. Montpelier: Division for Historic Preservation, Agency of Development and Community Affairs.
- \*Fleetwood, R. 1982. *Tidecraft: An Introductory Look at the Boats of Lower South Carolina, Georgia, and Northeastern Florida: 1650-1950*. Savannah: Coastal Heritage Society.
- Goldenberg, J.A. 1976. *Shipbuilding in Colonial America*. Charlottesville, VA: University Press of Virginia.

Lecture: New Problems, old solutions.

##### Reports:

\*47. US Brig *Eagle & Jefferson*

Crisman, K.J. 1987. *The Eagle: An American Brig on Lake Champlain during the War of 1812*. Annapolis, MD: Naval Institute Press.

48. Baltimore Clippers

Chapelle, H.I. 1930. *The Baltimore Clipper, Its Origin and Development*. New York: Bonanza Books.

\*49. Piscataqua River Gundalows

Winslow, R.E. 1983. *The Piscataqua Gundalow: Workhouse for a Tidal Basin Empire*. Portsmouth, Portsmouth Marine Society.

**\*\*\*\*\*TERM PAPERS DUE ON THURSDAY, DECEMBER 9, BY 5:00PM\*\*\*\*\***

**Attendance Policy:** The University views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments. Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

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Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor. Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines. Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)). The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence ([Student Rule 7, Section 7.4.2](#)). Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code ([Student Rule 24](#)).

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