

Shipwrecks are unique archeological resources

Archeology is the scientific study of human culture through investigation and interpretation of artifacts and other cultural remains.

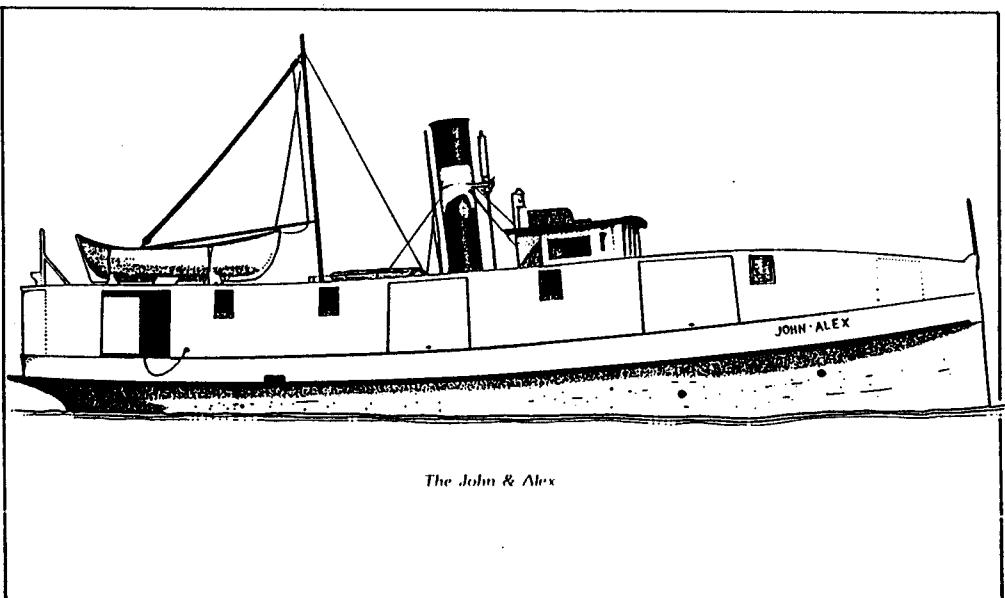
Underwater archeology simply defines a specialized environment in which archaeological research may be carried out, and may include the study of inundated terrestrial sites, dockworks, and even shipwrecks.

Shipwrecks are unique archaeological time capsules, allowing archeologists and historians many insights into past human culture, history, and technology. The cold fresh water of the Great Lakes offer unparalleled site preservation, often preserving entire ships and their contents intact.

Shipwrecks also act as artificial reefs for fish populations, and have even served as underwater laboratories for scientists to study dateable rates of biological growth and metal corrosion.

The study of the ship as an artifact has given rise to a new archaeological sub-discipline; nautical archeology. Through the study of shipwrecks, cargoes, armaments, equipment, and personal possessions of the crews, archeologists are beginning to understand the important role of maritime commerce, exploration, and marine technology in shaping world history and human culture.

The socio-economic development of the
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The John & Alex

The John & Alex was typical of the wooden, steam fishing tugs that plied the Great Lakes during the 1920s and 1930s. It had an overall length of 59 feet and a gross tonnage of 40 tons.

UW-Oshkosh to be site of April state-wide meeting of WUAA

The first spring meeting of the WUAA will be held on April 27 in Oshkosh at the University of Wisconsin-Oshkosh.

The meeting will be held in the Gruenhagen Conference Center (see page 4 for agenda). The morning sessions will include a discussion of research projects for 1991.

The following projects are being planned for the coming year:

Door County-Sturgeon Bay: Several dives were made at the Leatham and Smith quarry site last year. A good site plan of the east wreck is still needed. We also plan to survey three wrecks on the opposite side of the bay: the Oakleaf, the Ida Corning, and the Empire State. These are all shallow sites that are very close to shore, with easy access.

Lake Geneva: We will be selecting one of

several possible sites to work on this year. It will be a boat dive, and we will work with a charter operator.

Lake Michigan: We want to survey one wreck in Lake Michigan. This will be a boat dive of sixty feet or less. Possibilities include the Pride, the Carrington, the Niagara, the Kate Kelly, the Atlanta, and the Norland.

A day parking permit can be purchased at the Center office for \$1 on the day of the meeting. A free map of the campus can be obtained by sending a self-addressed, stamped envelope to: David Cooper, State Historical Society, 816 State Street, Madison, WI, 53706.

The final agenda for the 10 am session has not yet been set. One of the speakers will be
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Wisconsin's

Underwater Heritage

is published by the Wisconsin Underwater Archeological Association. Contributions are welcomed. For more information, call Bob O'Donnell at 414-722-8401 days or 414-722-8465 evenings.



Underwater Archeology: an introduction by Dave Cooper, state u/w archeologist

The baseline

One of the pieces of equipment used in surveying as site is the baseline.

A baseline is a marked length of rope that is used to gauge and record the relative positions of objects at a survey site.

The marks on a baseline serve two purposes: 1) they help surveyors to estimate distances, and 2) they act as points of reference. These marks should therefore be highly visible, and equally spaced along the baseline. The marks should also be labeled for ease of use.

Labeled lines can be purchased at construction or surveying supply companies. They can also be made from supplies that can be purchased at a hardware store.

We've made a 160'-long baseline from yellow, 1/4-inch-diameter polypropylene rope. Polypropylene was chosen for the rope because it resists rotting when wet.

Nylon could also have been used. Nylon sinks; polypropylene floats.

The color yellow was chosen for visibility.

White rope would have been acceptable, but yellow rope is easier to see.

The 1/4" thickness was also chosen for visibility. A 1/8"-diameter rope would have been acceptable, but 1/4"-diameter rope is easier to see.

A clip was first attached to the leading end of the rope--this allows the line to be attached to other objects. A series of equally spaced marks were then placed on the rope, starting about one foot from the clip. Narrow bands of black, heat-shrink tubing were placed on the line at ten-foot intervals and shrunk into place.

This gives visible and relatively permanent marks (so-called "permanent markers, tend to rub off underwater, and are not desirable). Marks were then labeled with electrical wire marking numbers--clearly visible numbers printed on paper or plastic with sticky backing.

Marking numbers were first wrapped around the line next to the marks. Clear hot-shrink tubing was placed over the numbers, and shrunk into place to ensure that the numbers did not come off.

The 160'-foot line has worked well in practice. In retrospect, however, a 200'-line would have been nicer to use.

The trailing end of a baseline should be attached to a reel that can be easily handled underwater--for example, by a person wearing 1/4" neoprene gloves.

Reels can be purchased at construction and surveying supply companies, or built from hardware store items. We built a reel from solid disks about 10" in diameter, with a 4" core. Handles were placed on both sides of the reel. It's crude, but it works.

A baseline is used primarily as a line of reference: the line is first placed at the site, and positions and distances are then recorded relative to the baseline. A second measuring device, such as a measuring tape, is needed for measuring distances from the baseline.

Open reel fiberglass tape measures can be purchased from Sears and other stores for under \$20. These tapes measures have plastic bodies with large handles and cranks, and rollers to guide the tape. A length of 100' works well.

feature's position. Divers involved in WUAA surveys will probably use two methods to determine an object's position: trilateration and offsets.

Trilateration uses two measurements to determine the location of a feature.

The first measurement records how far the feature is from a mark on the baseline. The second measurement records how far the feature is from a different mark on the baseline.

The feature and the two marks now form a triangle; simple trigonometry can be used to determine the feature's position.

In the offset method, one measurement is used to determine the location of a feature. This measurement is an estimate of how far the feature is from the baseline per se. The distance of a feature from the baseline can be estimated by making sure the tape is roughly perpendicular to the baseline. This measurement, together with the estimate of where the tape crossed the baseline, can now be used to estimate the feature's position.

Trilateration is the more accurate of the two methods. The offset method, on the other hand, is much quicker. With practice, a pair of divers can use the offset method to take a lot of reasonably accurate measurements in a short period of time.

Using a baseline in field research

As explained in the previous article, a baseline is a piece of rope with markings at specified distances along its entire length.

It is used as a point of reference for recording the positions of objects at a survey site.

The line is first stretched between two well-established points at the wreck to be surveyed. Using an underwater tape measure, measurements are taken from the baseline to relevant points at the site--for example, the outside rail of the ship. These measurements are recorded on underwater slates, and later used to draw a map of the site.

Baselines are easy to master. They can be used to obtain an acceptably accurate initial survey of a site--less accurate than a survey prepared from a gridded survey, but accurate enough for the purposes of the WUAA.

A final, important reason for surveying with baselines is that surveys can be conducted in murky water: divers don't need to see each other to lay out a baseline, or take measurements.

The placement of a baseline is determined by the features of the site. The baseline should run parallel to an imaginary line that

passes through the most interesting part of a site.

Baselines are often run parallel to the keel of a shipwreck. All of the parts of the site that are to be recorded in the survey should be reasonably close to the baseline. If this is not possible, than more than one survey will be needed to describe the site.

To lay out a baseline, one first selects two or more locations at the site that will serve to anchor the line. These locations are known as datum points.

A datum point can be a prominent feature of the site, such as a point on the bow or the stern of a wreck. If the bottom composition allows, a datum point can also be created by driving a spike into the bottom. Each datum point should be marked with a surface buoy so that the baseline's orientation can be determined.

Once the baseline is laid out, measurements are taken from the base line to major points in the site. These measurements are then used to determine the location of a site's major features, relative to the baseline.

What measurements are taken depends on what technique is used to determine a

Interest in u/w archeology is growing

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Great Lakes region has been particularly influenced by its maritime history. Nautical archeology offers insight into that heritage.

While nautical or underwater archeology is quite new in Wisconsin (the first archaeological study of a Wisconsin shipwreck did not take place until 1984), Wisconsin archeology is quite well established.

The first issue of *Wisconsin Archeologist* was published in 1902, and is one of the country's oldest archaeological journals. While virtually all of this early archeology was concerned with the study of pre-historic sites, much of today's studies are of historical-period sites, including historic European-American sites.

Quite a bit of Wisconsin archeology is going on around you, though many might not realize it. For example archeology is being done at highway construction and other public projects.

Virtually all the universities in the state (and some of the college) offer basic classes in archeology and anthropology, some offer summer field schools, and two offer graduate degrees. Local archaeological societies hold monthly meetings, featuring speakers on a variety of local, national, and interna-

Upcoming Events and Activities

APRIL

27 - Statewide Meeting of WUAA at UW-Oshkosh (see page 1 for details).

15 - "History and Location of Lake Michigan Shipwrecks", part of a two hour program on shipwreck diving at Inland Seas Diving, Neenah, beginning at 7 p.m. (free to WUAA members). For more information, call 414-722-0051.

29 - "History and Location of Lake Superior Shipwrecks", part of a two hour program on shipwreck diving at Inland Seas Diving, Neenah, beginning at 7 p.m. (free to WUAA members). For more information, call 414-722-0051.

June 22 thru 29 -- "The Shipwrecks of Tobemory" -- A one week trip to the Tobemory region of Lake Huron, for information, call 414-722-8465.

tional topics in archeology.

The WUAA hopes to facilitate information sharing among its members, and serve as a focus for training, education, and research. As a member, you may also wish to familiarize yourself with other archaeological opportunities in your community.

Check your local library for books and journals on archeology, your local college or university for classes, and your local chapter of our dry-land counterparts, the Wisconsin

Archeological Society for meetings, speakers, trips and other activities in your area. Archeology is much more than just shipwrecks, and there are numerous opportunities to become involved with Wisconsin's long-standing interest in its past.

Contact State Archeologist Robert Birmingham (608/262-0991) or Underwater Archeologist David Cooper (608/262-0160) for more information on archeology programs in your area.

WUAA Membership Application



As a private, non-profit organization, the Wisconsin Underwater Archeological Association presents an opportunity for both individuals and organizations to participate in and contribute to state efforts in u/w archeological research and preservation. Dues are \$15 per year.

Name _____

Address _____

City _____ State _____ Zip _____

Telephone: Day _____ Evenings _____

Since we are a new organization, we would like your input on the types of goals the association should have:

- Documentation of state underwater archeological sites
- Training individuals in u/w archeological methods
- Exchange of information between members
- Preservation of state underwater archeological sites
- Public education on underwater heritage
- Creation of state underwater preserves
- Others: _____

I would like to be involved in the following activities:

- Archival research
- Training in archeological methods
- On-site work - shoreside
- On-site work - underwater
- Association Committees:
 - Newsletter
 - Training
 - Organization
 - Membership
 - Other: _____

Make \$15 check payable to "WUAA" and mail with this form to:
Wis. Underwater Archeological Association - P.O. Box 6081 - Madison, WI 53716

First spring meeting to be held April 27

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Robert Korth of the UW-Stevens Point Extension's Lake Management program. Korth will be speaking on current underwater archaeological research in Wisconsin.

The afternoon training session will be an introduction to underwater surveying and mapping. The session will describe manual techniques for surveying, mapping, and interpreting an underwater site. The classroom part of the seminar will discuss the use of triangulation, trilateration, offset, and measured sketches to generate site maps. It will be followed by an on-land practice session.

A copy of the proposed WUAA by laws can be obtained by sending a self-addressed, stamped envelope to: Dave Neudek, 325 N. Sherman Ave. #1, Madison, WI 53704.

WUAA Spring Conference Agenda

The first spring meeting of the WUAA will be held on April 27 in Oshkosh at the Gruenhagen Conference Center at the University of Wisconsin-Oshkosh.

9 am to 10 am: Business Meeting and Committee reports

Research Committee: 1991 projects

Training Committee: 1991 seminars

By-Law Committee: proposed by-laws

Nominations for officers

10 am to 12 pm: Featured Presentations

12 pm to 1:30 pm: Lunch

1:30 to 2 pm: Discussion and vote on proposed by-laws and election of officers

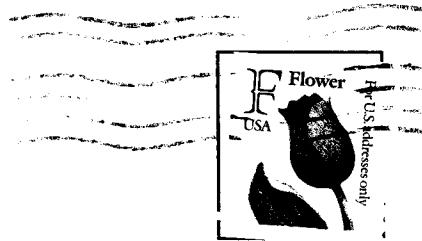
2 pm to 4 pm: Training session on U/W Archeology

4 pm to 5 pm: Tour of UW-O regional archeologist's lab

5 pm to ?: Social hour and informal discussions

Wisconsin Underwater Archeological Association

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April 1991

For those interested in
preserving Wisconsin's underwater history