

DIVING GUIDELINES

for the

U-1105 BLACK PANTHER
HISTORIC SHIPWRECK PRESERVE

18ST636

in the
POTOMAC RIVER, MARYLAND

August 2012

In the event of a diving emergency first call 911 and contact Coast Guard on VHF radio Channel 16, then call DAN (Divers Alert Network) at 919-684-9111. Call DAN collect if necessary in an emergency and ask for a diving physician.

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Introduction

The *U-1105* site is the first Maryland shipwreck included in the National Register of Historic Places and is also a Marine Protected Area in partnership with NOAA. It has been designated an Historic Shipwreck Preserve and is marked with a mooring buoy to facilitate access and preservation of the vessel. Although diving at the site is difficult and can be dangerous, it was reasoned that active, experienced divers would attempt to locate and dive on the site regardless of any policy the State of Maryland or the United States Navy might implement. Divers searching for the site would be likely to damage the submarine by dragging anchors into it. Without government monitoring, artifact looting was certainly possible. By marking the site with a buoy and publicizing the Preserve to the dive and local community preservation of the site is greatly enhanced.

Also, experienced divers who choose to dive on the site are afforded access to the submarine to increase safety considerations at the site. At most times of the year, the only visible portion of the *U-1105* is the conning tower. On average, the top of the conning tower is at a depth of 65 feet during slack tide.

Diving is a demanding and exciting activity. When performed properly, applying correct techniques it is a safe sport. When established safety procedures are not followed, however, there can be dangers. Despite modern equipment and up to date training programs sport diving, when conducted improperly, can be considered hazardous and like any other active sport, accidents can occur. Statistics show that the majority of diving accidents can be prevented if safe diving standards are followed. Diving accident reports reveal that many diving fatalities can also be prevented if proper rescue and resuscitation techniques are followed.

Therefore the following safety procedures manual is a summary of accepted safe diving practices and guidelines as well as emergency management procedures. It is intended to be used as a reference; for suggestions or recommendations only. Government agencies cannot require recreational dives to be conducted in a specific manner. To minimize the potential for mishap, possible accident scenarios, and how to prevent them, are outlined in the emergency management section. If an accident does occur, following the emergency procedures guide could possibly prevent a more serious situation. Each dive and the conditions encountered are specific unto themselves, particularly on the *U-1105* site. The decision to dive this site and the technique(s), used to conduct the dive should be made by each diver based on his/her level of experience, training, physical ability, and proper equipment. The weather and sea conditions should also be taken into consideration and constantly monitored as wind and waves at the site can change very rapidly.

The diving conditions at *U-1105* site can be dangerous and diving should only be undertaken by advanced divers experienced in low visibility environments, deep depths, strong currents and wreck diving environments. All divers should understand that any diving conducted at the *U-1105* site is done at your own risk.

I. GENERALLY ACCEPTED SAFE DIVING PROCEDURES

When diving, you will be expected to abide by current standard diving practices. These practices have been compiled to reinforce what you have learned, and are intended to increase your comfort and safety in diving. As a certified diver, you should:

A. Maintain good mental and physical fitness for diving. Avoid being under the influence of alcohol or drugs when diving. Keep proficient in diving skills, striving to increase them through continuing education and reviewing them in controlled conditions after inactivity.

- B. Be familiar with your dive sites. If unfamiliar, obtain a thorough diving orientation from a knowledgeable, local source. If diving conditions are worse than those in which you are experienced, postpone diving or select an alternate site with better conditions. Engage only in those diving activities which are consistent with your training and experience.
- C. Use complete, well maintained, reliable equipment with which you are familiar; and inspect it for correct fit and function prior to each dive. Deny the use of your equipment to uncertified divers. Always have a buoyancy control device and submersible pressure gauge when scuba diving. Recognize the desirability of an alternate source of air and a low pressure buoyancy-control inflation system.
- D. Listen carefully to dive briefings and directions, and respect the advice of those supervising your diving activities.
- E. Adhere to the buddy system throughout every dive. Plan all your dives, including communications, procedures for reuniting in case of separation, and emergency procedures, with your buddy.
- F. Be proficient in dive table usage. Make all dives no-decompression dives, and allow a margin of safety. Have a means to monitor your depth and time under water. Limit maximum depth to your level of training and experience. Ascend at a rate of 30 feet per minute or slower.
- G. Maintain proper buoyancy. Adjust weighting at the surface for neutral buoyancy with no air in the buoyancy control device. Maintain neutral buoyancy while under water. Be buoyant for surface swimming and resting. Have weights clear for easy removal, and establish buoyancy when in distress while diving.
- H. Breathe properly for diving. Never breath hold or "skip breathe" when breathing compressed air. Avoid overexertion in and under the water, and dive within your limitations.
- I. Know and obey local diving laws and regulations, including fish and game, dive flag laws, and submerged historic properties guidelines and regulations. If in doubt check first with the appropriate agencies.

II. SPECIFIC CONDITIONS AND PROCEDURES

A. Site Conditions

It should be stressed that the waters surrounding the German submarine *U-1105* can be considered a hazardous diving environment, typified by strong currents, high turbidity, low visibility and considerable depth. In addition, from the late fall through spring the bottom temperatures on the site can be very cold. Therefore, the preserve is open only when the mooring buoy is deployed on site, typically from April 1 through October 31.

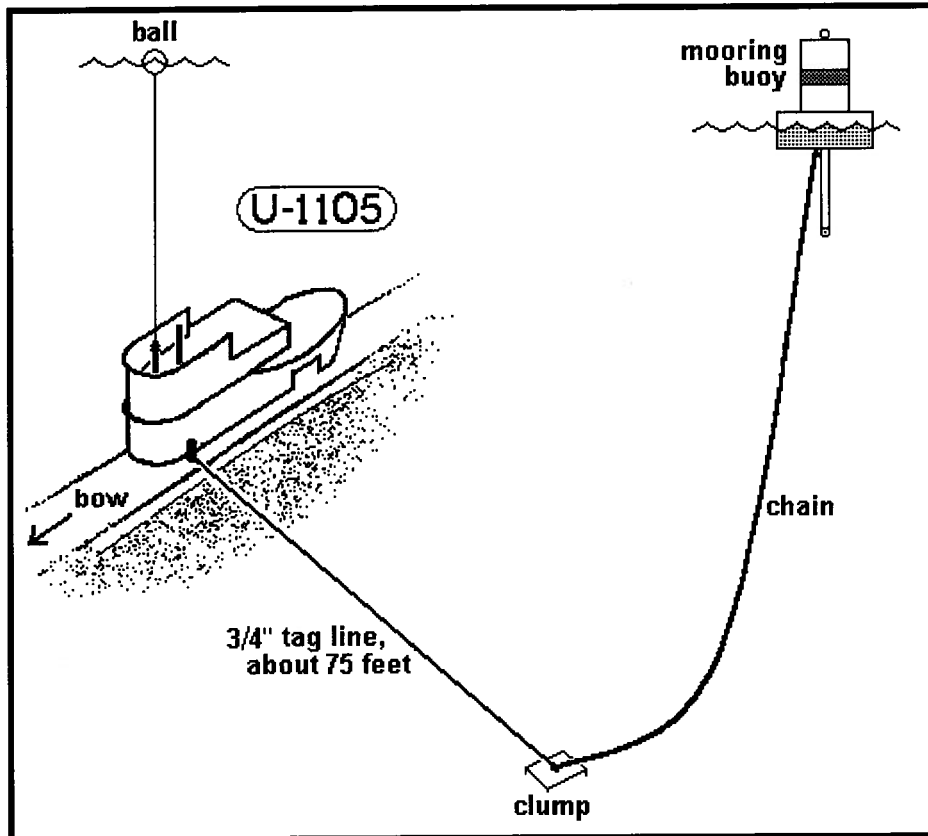
The sediments on and around the submarine consist of a black-brown very fine river bottom silt that is quite fluid. If these sediments are disturbed, a black cloud forms instantly around the diver suddenly creating a zero visibility environment. However if the diver remains calm, the strong currents on the site will usually remove the cloud in a few moments. Currents can be difficult to predict on the site even with tide tables, there are usually counter flowing top and bottom currents of different intensities. All of these environmental conditions combined make it a challenging dive site for even the most experienced of divers. Yet it is undoubtedly one of the most unusual shipwreck sites of its kind found in American waters.

Scuba diving, by its very nature, can be a hazardous sport, with inherent dangers increased or decreased as bottom conditions vary. Recommendations in these guidelines do not suggest that the *U-1105* is a safe dive site. The environment cannot be altered, although

some hazardous features of the wreck have been reduced. It should be noted, however, that site conditions are not unlike those of other Atlantic Coast and Chesapeake Tidewater wrecks which are dived on by sport divers every day, each with its own set of inherent hazards.

B. Safety Guidelines for Diving at the U-1105 Site

In addition to normal safe diving rules, there are some aspects of the U-1105 site that call for closer attention to specific safety considerations. The site is marked with a mooring buoy (white with horizontal blue stripe), which is off the site proper. A line runs from the mooring buoy anchor or "clump" to the base of the conning tower. When possible, a small buoy or floating ball for divers is connected directly to the submarine's conning tower.



1. There is daily commercial boat traffic on the river in the area of the site, therefore be sure the dive vessel displays both the official ALFA/Alpha flag (blue & white) and the unofficial sport diver flag (red with white diagonal). Both flags are required under Maryland law.

2. Because of strong currents on the site, dive vessels should deploy a long floating safety line ("tag line") to assist divers who may surface away from the dive vessel. The line should be at least 300 feet long, with a highly visible buoy or dive flag at the end, and perhaps others along its length. Boat captains and/or dive masters should also have a prearranged plan for recovering divers who surface too far from the dive vessel. If surfaced divers cannot reach the dive boat, the boat may need to leave the mooring to recover them while other divers are still down. The plan for this contingency should be discussed and understood by all divers.

3. Lookouts should be posted on the boat to watch bubbles and to spot divers surfacing away from the site. Divers should carry an inflatable surface marker buoy/signal tube ("safety sausage") in order to be visible if they surface away from the vessel. Once a surfaced

diver is spotted the lookout should confirm that the diver is OK and should maintain visual contact with the diver until recovery is completed.

4. A dive plan is especially important. Be sure to plan for contingencies and stick to your dive plan.

5. Divers can descend and ascend on the small buoy line, if present, but the small buoy line is not strong enough to moor a vessel.

6. For emergencies the dive vessel should have a marine VHF radio, first aid kit, and medical oxygen on board.

C. Site characteristics

1. **Depths** can vary by several feet, depending on tides and the river stage. The following depths are approximate, for planning purposes. Actual depths will vary.

mooring buoy anchor	95 feet
main deck and base of conning tower	85 feet
top of conning tower	65 feet

2. **Visibility** depends on tidal current, recent rainfall and run-off, and the season of the year. It can vary from a maximum of 15 feet down to a minimum of one foot or less. Disturbing the silt on or near the wreck will effectively make the *U-1105* a "zero-vis" dive.

3. **Current** can vary from zero to more than one knot. Diving during times of strong current is not recommended.

III. SITE PRESERVATION GUIDELINES

The *U-1105* is a rare and valuable resource. Most submarines off the American coast have been stripped bare by relic hunters leaving little purpose or pleasure in visiting these sites. The submarine *Black Panther* is interesting because it has remained relatively undisturbed. The *U-1105* Historic Shipwreck Preserve was created to protect the vessel and to ensure divers access to enjoy this significant historical site. To this end a number of rules have been instituted to minimize the chances of damage to the submarine. The site is marked by a large blue and white can buoy to identify the site and act as a mooring for vessels wanting to access the site.

A. The submarine is over 67 meters (220 ft.) long. Anchoring within 152 meters (500 ft.) of the site is prohibited

B. Only one dive vessel at a time may occupy the mooring buoy. The buoy is anchored with light chain, and is intended for small craft only. Vessels larger than 40 feet may not moor at the site. Because of depth and time limitations, dive vessels are unlikely to occupy the site for more than one hour including time to don and doff equipment. Do not moor to the small ball buoy if it is present: it is only for divers, not for boats.

C. Minimize sediment disturbance when on the site. Adjust for neutral buoyancy and try not to crawl around on the site, this will maintain a better level of visibility and lessen the possibility of damage to the site in areas where the metal has graphitized and weakened.

D. Look but don't touch. The features and artifacts on the *U-1105* are there for everyone to see and experience. Some features are fragile and all objects are US Navy property; nothing may be removed from the site. Artifact recovery is strictly prohibited,

offenders will be prosecuted under federal law. This can result in felony charges, and the confiscation of vessels, vehicles and equipment.

E. The preserve is monitored in an ongoing manner with periodic formal assessments. Any damage or vandalism on the site or to the buoy should be reported to the Maryland Historical Trust 410-514-7628 (State Underwater Archaeologist: 410-514-7662; Asst. State Underwater Archaeologist 410-514-7668). Report any theft or vandalism observed to DNR police (410-260-8888). Failure to report criminal activity may be punishable by law.

F. In order to ensure upkeep and management of the preserve the Maryland Historical Trust needs to compile use statistics for the preserve. In addition, comments and suggestions for improving the preserve are welcome and encouraged. Please complete site use forms available at the Piney Point Lighthouse, Museum and Historic Park (44720 Lighthouse Road, Piney Point, MD 20674; call 301-994-1471 for current hours). Comments may also be submitted to the Maryland Historical Trust by telephone (410-514-7662/7668), fax (410-987-4071), or by downloading and submitting the Visitor Log Form on the Trust's web site (<http://mht.maryland.gov/U1105.html>). Please include your name, address and telephone number on the form.

IV. EMERGENCY MANAGEMENT

A. Emergency Procedures

In any emergency on site, first call 911, then contact the Coast Guard Station St. Inigoes via marine VHF radio channel 16. If the situation may be life-threatening start the radio call with **"MAYDAY, MAYDAY, MAYDAY."** The Coast Guard does not monitor CB radio.

If you are moored at the site itself, report your position to the Coast Guard as

**Potomac River, Maryland side, one mile west of Piney Point.
Latitude three eight hyphen zero eight decimal one zero North,
Longitude seven six hyphen three three decimal one zero West.**

If you are not moored at the site, report your position using GPS coordinates or with reference to visible landmarks on shore.

If you leave the site before assistance arrives, be sure to keep emergency responders informed of your location and your movements.

If a diving emergency is involved, call 911 and Coast Guard Station St. Inigoes first, then call Divers Alert Network (DAN) at 919-684-9111.

B. Specific Risks

The *U-1105* site can pose specific risks, in addition to the more general risks of diving. Techniques for reducing those risks are offered below for consideration.

1. Lost Diver. A diver can become disoriented in the low visibility, and lose contact with the wreck itself or his buddy. The diver may ascend slowly and surface safely down current, away from the site, but might not be able to return to the dive vessel because of strong current. If the surfacing diver is not seen or heard by a lookout aboard the dive vessel, the diver will continue to drift farther away, and by the time he is discovered as missing he might not be visible to those on board the dive boat.

PREVENTION- Pre-dive plans should familiarize divers with the site
Post a lookout to watch for bubbles and surfacing divers
Deploy a long, floating tag line from the dive vessel

Have a plan for recovery of divers drifting down current
Make sure all divers know and understand the plan
Divers should carry an inflatable surface marker buoy/signal tube
("safety sausage")

2. Air Embolism A lost or disoriented diver may panic and may surface too rapidly, causing an air embolism injury. This problem could be compounded if the injured diver surfaces too far down current to be easily seen or reached by those on board the dive vessel.

PREVENTION
Pre-dive plans should familiarize divers with the site
Post a lookout to watch for bubbles and surfacing divers
Deploy a long floating tag line from the dive vessel
Have a plan for recovery of divers drifting down current
Post a stand-by surface rescue diver
Have a prearranged plan for the treatment of air embolisms
Have medical oxygen on board the dive vessel
Have a prearranged plan for evacuation if necessary.

3. Exhaustion / Heat Stroke / Heart Attack Strenuous conditions at the *U-1105* site require that divers be in good physical shape. It is possible that divers may overestimate their physical abilities and return from the dive exhausted and unable to properly exit from the water. While this is not in itself a serious problem it could become more complicated in the strong currents at the waters surface or manifest itself once the diver is aboard the dive vessel.

PREVENTION
Screen divers before they enter the water
Deploy a long floating tag line from the dive vessel
Post stand-by divers or swimmers to assist tired divers
Be prepared to administer CPR
Be aware of signs of heat stroke and heart attack.

4. Decompression Sickness The *U-1105* is a deep dive and it presents a potential for decompression sickness. In addition to strong currents, the water temperatures can be cold in spring and fall. A deep dive involving cold water and strenuous exertion on the part of the diver can result in decompression sickness even if the diver stays within the dive tables.

PREVENTION
Adjust dive plans to allow for cold, deep, strenuous dives
Have medical oxygen on board the dive vessel
Have a prearranged plan for treatment of decompression sickness
Have a prearranged plan for evacuation if necessary.

C. Minor and Non-life Threatening Injuries

The nearest hospital is:

MedStar St. Mary's Hospital		
25500 Point Lookout Road	General	301-473-8981
Leonardtown, Maryland 20650	Emergency	301-475-6111

V. DIVERS ALERT NETWORK (DAN)

The Divers Alert Network (DAN) was formed in 1981 to assist in the treatment of underwater diving accidents by providing a 24-hour telephone emergency number. This number may be called collect in emergencies. For medical problems the caller is connected with a physician experienced in diving medicine. These physicians assist with diagnosis and initial treatment of the accident, and supervise referral to an appropriate recompression chambers while working with regional coordinators throughout the nation.

DAN does not maintain any treatment facility and does not directly provide any form of treatment, but provides service to complement existing medical systems. The most important function of DAN is to facilitate the entry of the injured diver into the hyperbaric trauma care system by coordinating the efforts of everyone involved in the victim's care.

The nation is divided into regions, each headed by a regional coordinator who is a physician experienced in diving medicine. Each regional coordinator maintains up-to-date information on chamber status, transportation facilities, and other diving medical services within his area. The DAN physician and the regional coordinator work together in transferring the patient to an appropriate and available chamber.

Another important function of DAN is collecting and analyzing data on diving accidents to improve the understanding of the causes of diving accidents and to develop better treatment methods. More information about DAN is available online (<http://www.diversalertnetwork.org/>).

In the event of a diving emergency first call 911 and contact Coast Guard on VHF radio Channel 16, then call DAN (Divers Alert Network) at 919-684-9111. Call DAN collect if necessary in an emergency and ask for a diving physician.