

U.S. Department of
Homeland Security

**United States
Coast Guard**



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United States Coast Guard

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NAVIGATION AND VESSEL INSPECTION CIRCULAR (NVIC) NO. 01-89, CH-1

Subj: UNDERWATER SURVEY GUIDANCE

1. PURPOSE. This circular provides guidance to Coast Guard and marine industry personnel on implementation of regulations for Underwater Survey in lieu of Drydocking (UWILD)¹.
2. ACTION. Coast Guard personnel responsible for conducting drydock examinations should adhere to this circular. Members of the public may refer to this circular for additional guidance on UWILD.
3. AUTHORIZED RELEASE. Internet release is authorized.
4. PUBLICATIONS AFFECTED. NVIC 01-89 is superseded. All references to NVIC 01-89 in other Coast Guard policies should use this version. Where this circular conflicts with COMDTINST 16000.71, this circular takes precedence.
5. DISCUSSION. After extensive study throughout the 1980's, the Coast Guard authorized limited ship types to participate in UWILD as an optional method of crediting required hull exams. NVIC 1-89 was subsequently promulgated to provide guidance to vessel owners, operators, and Officers in Charge, Marine Inspection (OCMIs) in 1989. Since that time, eligibility has been expanded to additional vessel types, technological advancements have changed the manner in which UWILDs are conducted, and classification societies have developed more comprehensive standards related to UWILD, necessitating this change.
6. ENCLOSURES. Enclosures (1) and (2) provide guidance for implementing UWILD regulations. The enclosures apply as follows:
 - a. Enclosure (1): Underwater Survey Guidance for Classed Vessels. Enclosure (1) applies to vessels that are subject to inspection pursuant to 46 USC 3301, classed by an [Authorized Classification Society \(ACS\)](#)², and obtain and maintain the corresponding classification

¹ Regulations specific to UWILD are found in the vessel-specific Subchapters of Title 46 C.F.R., Chapter I as noted in Enclosure 1.

² Classification means that ship complies with the rules of a classification society related to quality, safety, and reliability of ships. For the purposes of this circular, an ACS is a classification society that has been authorized to issue a Cargo Ship Safety Construction or International Loadline Certificate on behalf of the Coast Guard.

society notation related to underwater surveys. Enclosure (1) leverages classification society delegations to streamline implementation of UWILD regulations.

- b. Enclosure (2): Underwater Survey Guidance for Unclassed Vessels³. Enclosure (2) provides underwater survey guidance for all other vessels subject to inspection and seeking to conduct a UWILD. In addition, it provides additional guidance for Inspected Towing Vessels (ITVs) enrolled in the Towing Safety Management System (TSMS) option of 46 CFR Subchapter M.
7. DISCLAIMER. This guidance is not a substitute for applicable legal requirements, nor is it itself a regulation. It is not intended, nor does it impose legally binding requirements on any party. It represents the Coast Guard's current thinking on this topic and is issued for guidance purposes to outline methods of best practice for compliance with applicable law. An alternative approach may be taken if the approach satisfies the requirements of the applicable statutes and regulations.
8. MAJOR CHANGES. This change eliminates duplicative administrative processes for classed vessels and authorizes the use of ACS service suppliers including divers and Remotely Operated Vehicle (ROV) operators. It also eliminates UWILD enrollment letters and relies on classification society notations or Certificate of Inspection (COI) endorsements to denote UWILD eligibility.
9. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. The Office of Environmental Management, Commandant (CG-47) reviewed this publication, and the general policies contained within, and determined that this policy falls under the Department of Homeland Security (DHS) categorical exclusion A3. This publication will not result in any substantial change to existing environmental conditions or violation of any applicable federal, state, or local laws relating to the protection of the environment. It is the responsibility of the action proponent to evaluate all future specific actions resulting from this policy for compliance with the National Environmental Policy Act (NEPA), other applicable environmental requirements, and the U.S. Coast Guard Environmental Planning Policy, COMDTINST 5090.1 (series).
10. DISTRIBUTION. No paper distribution will be made of this Change. An electronic version will be located on the following Commandant (CG-DCO) web site <https://www.dco.uscg.mil/Our-Organization/NVIC/>.
11. RECORDS MANAGEMENT CONSIDERATIONS. Records created as a result of this publication, regardless of format or media, must be managed in accordance with Records & Information Management Program Roles & Responsibilities, COMDTINST 5212.12 (series).
12. FORMS. None.
13. REPORTS. None.

³ An unclassified vessel is one that is not classified by a classification society and has not undergone the survey process required for a classed vessel.

14. SECTION 508. This publication is created to adhere to accessibility guidelines and standards as promulgated by the U.S. Access Board with consideration of Information and Communications Technology (ICT) requirements. The customer experience (CX), plain language, and service delivery improvements were considered. If modifications are needed for this artifact, please communicate with the Section 508 Program Management Office (PMO) at Section.508@uscg.mil. Concerns or complaints for non-compliance of policy or artifacts may be directed to the Section 508 PMO, the Civil Rights Directorate for the Coast Guard, or to the U.S. Department of Homeland Security at accessibility@hq.dhs.gov.
15. QUESTIONS. All requests for changes or questions regarding this circular should be directed to Commandant (CG-CVC) staff at CGCVC@uscg.mil.



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Enclosures: (1) Underwater Survey Guidance for Classed Vessels
(2) Underwater Survey Guidance for Unclassed Vessels

Enclosure (1): Underwater Survey Guidance for Classed Vessels

1. **Applicability.** This enclosure applies to vessels that meet all three of the following conditions: 1) the vessel is subject to inspection pursuant to [46 USC 3301](#); 2) the vessel is classed by an ACS; and, 3) the vessel obtains and maintains the corresponding classification society notation related to under or in-water surveys. Table 1 shows the relevant notations for currently authorized classification societies:

Table 1. ACS Underwater Survey Notations

Authorized Classification Society	Notation
ABS	UWILD
DNV	BIS
LR	IWS
ClassNK	IWS
IRClass	INWATER SURVEY
BV	INWATERSURVEY
RINA	INWATERSURVEY

2. **Application of ACS Rules.** In accordance with 46 USC 3316, the Coast Guard delegates the authority to conduct UWILDs to ACSs, as described in their respective delegation agreements. In addition, for classed vessels inspected under 46 CFR subchapters D, H, I, K, L, M, R, T, and U, an ACS's underwater survey program implemented in accordance with Enclosure (1) is accepted as equivalent⁴ to the UWILD regulations in those subchapters⁵.
3. **Enrollment.**
 - a. Vessels less than 15 years of age⁶, at the time of UWILD, are eligible to undergo UWILD consistent with the classification society rules and procedures without further modification, approval, or endorsement by the Coast Guard.
 - b. Vessels 15 years of age or over and subject to the Enhanced Survey Program (ESP)⁷ are not eligible for UWILD.
 - c. For vessels 15 years of age or over that are not subject to the ESP, the ACS may approve a vessel for UWILD participation consistent with their respective rules and [International Association of Classification Societies \(IACS\) Unified Requirement Z3.3 – Periodical Survey of the Outside of the Ship's Bottom and](#)

⁴ Authority to accept equivalents: 46 CFR §§ 30.15-1, 70.15-1, 90.15-1, 114.540, 125.170, 136.115, 167.01-15, 169.109, 175.540, 188.15-1,

⁵ I.e., 46 CFR §§ 31.10-21(d)-(e), 71.50-5, 91.40-3(d)-(e), 115.615, 126.140(f)-(g), 137.335, 167.15-33, 169.230, 176.615, 189.40-3(d)-(e)

⁶ "15 years of age" is determined from the vessel's delivery date consistent with IACS Procedural Requirement No. 11 (IACS PR-11) – Assigning Date of Build.

⁷ See International Maritime Organization (IMO) Resolution A.1049(27) – International Code on the Enhanced Programme of Inspections During Surveys of Bulk Carriers and Oil Tankers (ESP Code).

Related Items. If approved by the ACS, the ACS should provide notification via email to Commandant (CG-CVC) at CGCVC@uscg.mil, immediately following the initial or special survey, stating that the vessel was found to meet the respective ACS's criteria for continued enrollment. Upon receiving notification from the ACS, the Coast Guard may request that the ACS submit additional details (e.g., engineering drawings, thickness measurements, etc.) to facilitate oversight of the ACS continued enrollment process. The Coast Guard may reject a vessel's enrollment if there are concerns regarding the vessel's materiel condition. If rejected, CG-CVC will inform the vessel owner, operator, and ACS in writing.

4. Conducting the Survey (UWILD).

- a. UWILD must be conducted in accordance with related ACS rules and procedures.

Note 1: Consecutive UWILDs (e.g., Extended Dry-Docking (EDD) schemes)⁸ are not authorized.

- b. Vessel owners/operators, or the ACS on their behalf, should notify the local OCMI as soon as practicable upon a UWILD being scheduled. A list of contacts for the OCMI zones is available at [Prevention Directory Contact List](#).
- c. The water clarity should be sufficient such that the full height of the propeller and the rudder are visible to the diver in a single view. If the water clarity is insufficient, involved parties should be prepared to make alternate arrangements (e.g., different location or berth, better weather, drydocking, etc.).
- d. The hull should be sufficiently clean to allow for a meaningful examination of the plating, weld seams, and appendages.
- e. The Coast Guard accepts ACS recognized or approved diving companies as providing an equivalent level of safety pursuant to 46 CFR § 197.206. Companies may also elect to use Remotely Operated Vehicles (ROVs) from ACS authorized service suppliers. [See IACS Unified Requirement Z17 – Procedural Requirements for Service Suppliers](#) for procedures related to ACS approval of dive service providers.
- f. For classed vessels, drydock dates should not be listed on the COI. At the next renewal following publication of the circular, and thereafter, the drydock dates should be removed and replaced with the following endorsement:

Drydock dates are monitored by the authorized classification society. Notification of drydocking on these vessels will be provided by (enter class society) and the vessel operators to the local OCMI.

⁸ See [IACS Recommendation No. 133 – Guidelines for Pilot Schemes of Extended Interval between Surveys in Dry-Dock – Extended Dry-Docking \(EDD\) Scheme](#)

5. Oversight.

- a. The Coast Guard will generally attend each UWILD in conjunction with ACS surveyor(s).
- b. The Coast Guard will generally not attend UWILD for vessels enrolled in the Alternate Compliance Program (ACP) or Maritime Security Program “Select” (MSP Select) vessels⁹, unless they are identified on the Fleet Risk Index.
- c. The Coast Guard may conduct oversight of the ACS in water survey evaluation, the enrollment of vessels, and review related survey reports for any vessel, at any time, consistent with [46 USC 3316\(b\)\(3\)](#). An ACS may be subject to a Quality Case¹⁰ if objective evidence indicates a potential failure to adequately perform delegated functions related to enrollment or execution of UWILD.
- d. The classification society, pursuant to its rules, or the Coast Guard, may require drydocking either for cause or to facilitate necessary repairs.

⁹ For ACP, see 46 CFR Part 8 and NVIC 2-95 (series). For additional guidance on MSP Select, see NVIC 01-13, (series).

¹⁰ See CG-CVC Work Instruction ([CVC-WI-005\(series\)](#)) – Request for Recognized Organization Internal Quality Management System Review – “Quality Case”

**Enclosure (2): Underwater Survey Guidance for
Inspected Unclassed U.S. Flag Vessels**

1. Applicability. This enclosure applies to vessels that are subject to inspection pursuant to [46 USC 3301](#) that are: 1) unclassified, or 2) do not have the corresponding classification society notation related to under or in-water surveys.
2. Eligibility. Before considering a request for enrollment the vessel should be equipped with certain physical features that are detailed on available plans and drawings. Vessels made of a material other than steel or aluminum are not eligible for UWILD.
 - a. Physical Features. Vessels participating in UWILD should have the following physical features:
 - i. An appropriate hull marking or orientation system to include a weld bead system or “center punch” grid system, a contrasting color coating system, an acoustic locating system, or any other system acceptable to the OCMI.
 - ii. Hinged or removable sea suction grates for access to sea chest and sea suction openings.
 - iii. Means of taking rudder and shaft bearing clearances.
 - iv. Means of blanking sea chests for removal of sea valves.
 - b. Plans and Drawings. Plans or drawings showing the external details of certain hull features should be provided to the Coast Guard as part of the application to participate in the UWILD program commensurate with vessel construction, size, and service. These plans or drawings should be onsite and available during the UWILD. The plans or drawings should also be sufficiently detailed to provide means of orientation to Marine Inspectors, operators, and divers or ROV operators. The below list is a description of the plans or drawings that should be provided:
 - i. All shell openings
 - ii. All docking plugs
 - iii. Bilge keels
 - iv. Welded seams and butts
 - v. Appendages
 - vi. Anodes, including methods of attachment
 - vii. Rudder
 - viii. Propeller
 - ix. Reference points (e.g., details of grid system, drydock plug numbers, etc.)
 - x. Watertight and oiltight bulkheads
 - xi. Bilge keels
 - xii. Reference photos OR video that depict the above details.

Note 2: A “hull markings plan”, which is generally based on the “shell expansion plan,” typically shows details of plating seams and butts, inserts, shell openings, docking plugs, anodes (if any), bulkhead locations, bilge keels, and other external references necessary to aid the diver or other remote device in orientation during the UWILD survey.

3. Application for UWILD Enrollment.

- a. Regardless of vessel age, the vessel owner or managing operator must submit an application to the [cognizant OCMI](#) where the UWILD will be conducted at least 90-days prior to the drydocking that precedes the desired UWILD (normally 2-3 years in advance). There is no prescribed form for the application. The application should include supporting documentation indicating that the vessel has the required physical features, a statement indicating that the hull is in sound materiel condition, and a draft procedure. Logistical details (i.e., time, date, location, servicing provider) may be provided at a later date.
- b. For vessels less than 15 years of age from delivery, at the time of UWILD, the OCMI will verify the physical features and visually examine the materiel condition of the hull during the drydocking. If satisfactory, the following endorsement will be placed on the vessel’s COI:

This vessel was evaluated by [Insert OCMI] and has been approved to conduct a UWILD at alternating intervals. Consecutive UWILDs are not authorized. This approval remains valid until [insert date on which vessel becomes 15 years of age or older based on delivery date].

- c. For vessels 15 years of age or older, the OCMI will verify the physical features and hull materiel condition during the drydocking. In addition, a complete set of hull gaugings (thickness measurements) is required. Upon completion of the drydock and evaluation of the hull thickness measurements, the OCMI will forward a recommendation via email to the approval authority in Table 2. If approved, the approval authority will enter a Special Note into the vessel’s MISLE profile.

Table 2. UWILD Approval Authority for Vessels 15 Years of Age or Older

Inspection Subchapter	Approval Authority
H, K, R, T	District Commander
D, I, L, M, U	Commandant (CG-CVC)

- d. Vessels 15 years of age or older from delivery, approved by the Coast Guard, will have the following endorsement placed on the COI by the cognizant OCMI:

This vessel was evaluated by [District or Commandant (CG-CVC)] and has been approved to conduct a UWILD at alternating intervals. Consecutive UWILDs are not authorized. This approval remains valid until [insert next drydock due date after approved UWILD].

- e. Vessels 15 years of age or older from delivery at the time of UWILD, should apply for continued enrollment at each drydocking, to include new thickness measurements.
 - f. Initial or continued enrollment is based on the Coast Guard's overall evaluation of the condition of the vessel and its ability to continue service until the next drydocking. If there is a doubt as to the vessel's condition, the Coast Guard may reject the application or request additional information. If rejected, the Coast Guard will inform the vessel owner or operator in writing.
4. Preparing for the UWILD. After a vessel is approved to conduct a UWILD by the approval authority in Table 2, and no later than 30 days prior to the UWILD, the vessel owner or managing operator must submit an [Application for Inspection \(CG-3752\)](#), supporting documentation, and detailed UWILD procedure to the cognizant OCMI, including:
- a. The requested date on which the required Internal Structural Examination (ISE) will be completed. The ISE may be completed ahead of or in conjunction with the UWILD. If the ISE is conducted beforehand, it should be completed within three months of the UWILD.
 - b. A statement from the owner or operator confirming the general overall condition of the vessel, maintenance, known or suspected damage, hull cleanliness, and anticipated vessel draft at the time of survey.
 - c. The most recent hull thickness measurements (for vessels 15 years of age or older).
 - d. The method of hull cleaning.
 - e. The name of the diving company or ROV operators.
 - f. Number of divers or type of diving equipment to be used to include any nondestructive testing (NDT) and repair capabilities.
 - g. A copy of the diving operations manual in accordance with 46 CFR 197.420.

5. Preparatory Meeting. The vessel owner or operator, diving company, and the Coast Guard should conduct a meeting ahead of the underwater survey. This meeting should generally be scheduled as soon as the UWILD has been scheduled and details finalized. For surveys taking place in overseas locations, this meeting should take place before Coast Guard inspectors depart their home location. A recommended meeting agenda includes a review of the detailed UWILD procedure, to include:
 - a. Expected duration of the survey.
 - b. Equipment to be used in survey (e.g., divers, Remotely Operated Vehicle (ROV), cameras, display, communications, etc.).
 - c. Site selection and anticipated conditions. In general, the site should provide protected waters and minimal current.
 - d. Extent of ISE to be completed.
 - e. Hull cleanliness.
 - f. Anticipated problem areas, previous repairs, expected repairs.
 - g. Route of survey (e.g., forward to stern, port to starboard).
 - h. A review of sea valves to determine whether any will require removal, be blanked, or otherwise examined during the survey. To determine if sea valves will need to be removed, the Marine Inspector should review any records related to the valves (previous inspection, pressure tests, etc.) and ascertain from the owner or operator whether each valve is operational or leaking. If the integrity of a sea valve is in question, the Coast Guard may direct that it be removed for further examination or testing.
6. Conducting the Survey (UWILD).
 - a. The underwater survey should not be conducted unless all parties are satisfied that the equipment and procedures will provide a safe and meaningful examination of the ship.
 - b. The water clarity should be verified to ensure the full height of the propeller and the rudder are visible to the diver or ROV in a single view.
 - c. The hull must be sufficiently clean to allow for a meaningful examination of the plating, weld seams, and appendages.
 - d. If diving is taking place from a vessel with a COI, the Commercial Diving Regulations in [46 CFR Part 197 Subpart B](#), apply.

- e. The Marine Inspector (or Third Party Organization (TPO)) or authorized surveyor (as applicable for an ITV) must be satisfied with the method of pictorial representation (generally a high-quality closed-circuit system) and good two-way communication between the Marine Inspector and diver or ROV operator. Equipment should be tested prior to commencing the survey.
- f. The extent of the underwater survey must be sufficient to include all items which would normally be examined if the vessel was on drydock.
- g. Underwater thickness measurements may be necessary to ascertain thickness in suspect areas. Means for underwater NDT may also be necessary for fracture detection.
- h. The condition and wear down of rudder and stern tube bearings must be assessed considering [46 CFR 61.20-23](#). For oil lubricated bearings, an oil analysis, and a review of the operating history will generally be sufficient.
- i. Means are to be provided to confirm that sea chests are clear (accessible to the diver, ROV, or camera and be free from debris).
- j. In general, sea valves and attachments are to be externally examined. If it was determined during the preparatory meeting that certain sea valves needed to be removed due to questionable integrity, the owner should provide a detailed procedure, which at a minimum, includes the following:
 - i. The number, type, size, and method of operating the sea valves to be opened.
 - ii. The disabling of automation features which might affect the sea valves being examined.
 - iii. The method of installing blanks or plugs for sea chests and valves.
 - iv. The sequence of valves to be blanked/opened should ensure that vital cooling systems, essential electrical service, and bilge and fire pumping capabilities are maintained.
 - v. Closure of watertight doors.
 - vi. An emergency procedures plan.
 - vii. Means of communication between the bridge, dive team and engine room.

Note 3: If direct visual examination cannot be completed by the diver, a small underwater camera or borescope may be used to ascertain the condition of the sea chests or valves. If the integrity of the valve is in question, the Marine Inspector may require that it be removed for further examination or testing.

- k. If the underwater survey reveals damage or hull deterioration that requires further attention, the OCMI may require that the vessel be drydocked to complete a more detailed inspection and necessary repairs.

7. Documenting the Exam. After completion of the UWILD, the OCMI will update the vessel's hull and internal structural exam dates on the COI in accordance with CVC-WI-029(series). If the ISE was completed less than three months prior to the UWILD, the ISE will be credited on the same day as the UWILD.
8. Additional guidance for unclassified Inspected Towing Vessels (ITVs) enrolled in the Towing Safety Management System (TSMS) option under 46 CFR subchapter M.
 - a. Owners and managing operators of ITVs that are classed by an [ACS](#) and maintain a related classification society notation for "In Water Survey" or "Underwater Survey" should follow the guidance provided in enclosure (1).
 - b. Owners and managing operators of unclassified ITVs enrolled in the TSMS option should follow the process outlined in 46 CFR 137.335 and the guidance provided in this enclosure.
 - c. ITV owners and managing operators must develop UWILD procedures per 46 CFR 137.335 (b)(1), regardless of internal or external survey program. The guidance in this enclosure will assist with developing UWILD procedures that are appropriately tailored to a specific vessel. The UWILD procedures may also be incorporated into the TSMS consistent with 46 CFR 137.335 (a).
 - d. The TPO, internal surveyor, or external surveyor, as applicable, is authorized to verify the required physical features, hull material condition, and any required gauging (thickness measurements) at the drydocking preceding the desired UWILD. Documentation from this verification should be provided to the cognizant OCMI as part of the UWILD initial or continued enrollment application.
 - e. The TPO, internal surveyor, or external surveyor, as applicable, should participate in the preparatory meeting as described in paragraph 5. of this enclosure.
 - f. For companies using an internal survey program, the qualifications of personnel authorized to carry out a UWILD must be comparable to those of an approved TPO. Prior to conducting the UWILD, the owner or managing operator must notify both the TPO responsible for auditing the TSMS and the cognizant OCMI in accordance with 46 CFR 137.315. If the OCMI has reasonable cause to believe the UWILD is deficient, he or she may require Coast Guard or TPO attendance in accordance with 46 CFR 137.317(a).
 - g. For companies using an external survey program, the TPO responsible for auditing the TSMS is authorized to conduct the UWILD. If the cognizant OCMI has reasonable cause to believe the program for the drydock examination and internal structural examination is deficient, he or she may require an audit of ongoing drydocking procedures and of documentation applicable to the vessel, in the presence of a marine inspector and in accordance with 46 CFR 137.317(a).

- h. Upon completion of the UWILD, the owner or managing operator should submit a survey report documenting the results of the UWILD to the cognizant OCMI consistent with 46 CFR 137.305. The cognizant OCMI will review the documentation and, if satisfactory, it will serve as objective evidence of compliance consistent with 46 CFR 136.235 (c). The cognizant OCMI will amend the COI with the updated hull exam in accordance with CVC-WI-029 (series).