U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Marine Safety Center

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MSC-WI-C3-03
March 3, 2022

MARINE SAFETY CENTER WORK INSTRUCTION C3-03

Subj: TONNAGE CERTIFICATION OF NAVY AND COAST GUARD VESSELS

Ref: (a) MSC Tonnage Guide 2, *Measurement of Navy and Coast Guard Vessels*, latest revision
(b) Work Instruction C3-02, *Generating Calculations and Certificates*, latest revision
(c) MTN 01-98, *Tonnage Administrative Policy*, as amended
(d) BP-11, *Tonnage Correspondence Guidelines*, latest revision

1. PURPOSE. This work instruction establishes procedures for tonnage certification of U.S. Navy vessels of war and Coast Guard cutters, including issuance and transmittal of original and replacement tonnage certificates, and the uploading of associated information into the Marine Information for Safety and Law Enforcement (*MISLE*) system.

2. APPLICABILITY. This work instruction addresses the Marine Safety Center's (MSC's) process for tonnage certification of U.S. Navy vessels of war and Coast Guard cutters, as is required by 46 CFR 69.15, which commences following receipt of the tonnage measurement application submittal. A related Tonnage Guide, reference (a), provides general information on requirements for tonnage measurement of Navy and Coast Guard vessels.

3. DEFINITIONS. The following definitions apply.

   a. *Files Database*: A database that catalogs tonnage measurement records for which the MSC is responsible, including those that were transferred to a Federal Records Center. Additionally, this database provides select *MISLE* information, such as former names, through links to the *MISLE* Extract database.

   b. Tonnage Measurement Application: For formally measured vessels, the Application for Formal Measurement Services, provided in appendix A of reference (c).

4. RESPONSIBILITIES.

   a. Tonnage Division Chief

      (1) Ensure overall compliance with this procedure.
      (2) Log tonnage measurement submittals into *MASCOT*.

(3) Validate tonnage calculations.
(4) Sign tonnage certificates and transmittal correspondence.
(5) Ensure *TonCalc* is properly maintained and improved as needed.
(6) Audit *Files Database* and *MASCOT* for quality control.

b. Tonnage Division Staff

(1) Process submittals in accordance with this procedure, complying with the "certificate need date" whenever possible.
(2) Obtain certificate numbers from *Files Database*.
(3) Update *Files Database* to reflect tonnage certificate information.
(4) Upload certificates into *MISLE*.
(5) Transmit electronic and/or paper copy of correspondence and tonnage certificates.
(6) Complete all required filing actions.
(7) Log the submittal out of *MASCOT*.

c. Office Automation Assistant

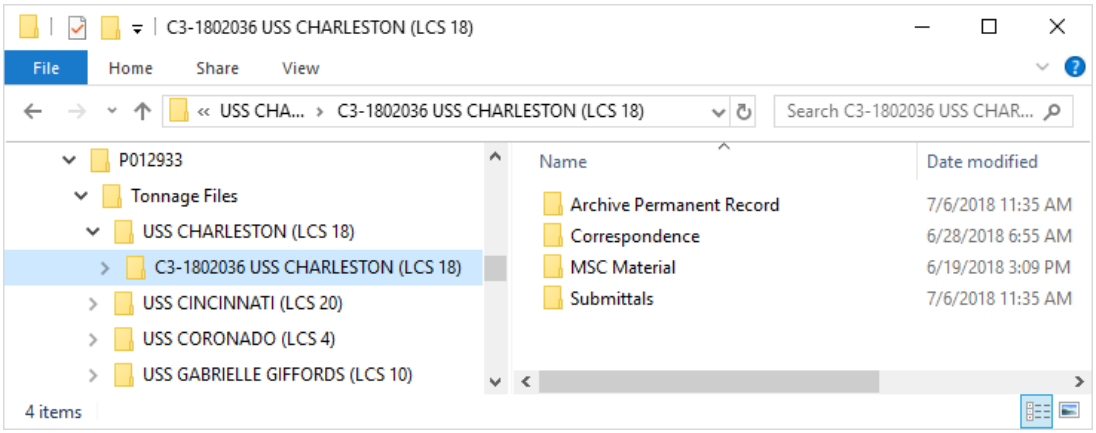
(1) Process submittals consistent with procedures for plan review submittals.
(2) Provide assistance in mailing tonnage certificates, upon request.

5. OVERVIEW. The MSC is responsible for the initial measurement and remeasurement of U.S. Navy vessels of war and Coast Guard cutters, including calculation of tonnages and issuance of tonnage certifications. The certification process is initiated by builders, acquisition managers and other authorized parties, who submit tonnage measurement applications to the MSC as described in reference (a). The MSC then completes tonnage calculations and issues the required certificate(s), taking into consideration the application date, the requested need date, and the constraint implicit in the tonnage regulations that all work affecting tonnage is complete when the certificates are issued. Usually, certificate issuance prior to "Builder's/Alpha" sea trials provides sufficient lead time to support the vessel's delivery schedule and, for Navy vessels, the document verifications conducted by the Board of Inspection and Survey (INSURV).

6. *MISLE* ENTRIES. Upon receipt, search for the vessel in *MISLE*, and if not found, create the vessel record. When using or creating this record, ensure a CG Number is assigned. At this point, it is appropriate to enter the pertinent known information in *MISLE* from the application, such as: vessel name (e.g., "USS CHARLESTON (LCS 18)"), hull material, hull number, length, class, type and sub-type, builder, delivery and keel laid dates.

7. *MASCOT* LOG-IN. Log the submittal into *MASCOT* under the appropriate project number to ensure proper tracking. Include the vessel name and Coast Guard (CG) Number in the Activity remarks block (e.g., "*J. Doe: USS CHARLESTON (LCS 18) (CG 1499522); Initial Measurement*"). Also, attach the vessel to the *MASCOT* document/activity, creating the vessel in *MASCOT* if it does not already exist. Delays in tonnage certification may have negative effects on contract delivery schedules and cost,

and adversely impact ship operations (e.g., canal transits). To preclude unnecessary delays, Tonnage Division staff engineers may process certificates in advance of *MASCOT* log-in. In such cases, immediately provide a copy of the application to the Tonnage Division Chief. Use the following project folder structure and naming conventions:




8. *FILES DATABASE* ENTRIES. Enter the vessel data into *Files Database*, creating a new record, if necessary. This will be necessary prior to completing the *TonCalc* workbook described below, as the U.S. and Suez Tonnage Certificate numbers are generated in this database. Ensure the staff engineer's name is included in the remarks block. Depending on the order of completion of this process, it may be necessary to return to the vessel record in *Files Database* (e.g., to enter the assigned tonnages and dates once the certificates are issued). Use the "modify" button on the vessel's data sheet to update a record.

9. VALIDATE SUBMITTED INFORMATION. The MSC will normally not conduct extensive onboard surveys of Navy and Coast Guard vessels, as the vessels are often 'sistered' and built to approved drawings under strict government supervision. However, to obtain assurance that the as-built configuration matches the drawings and other submitted information, the staff engineer must verify the validity of this information with an individual responsible for the vessel's as-built configuration, including any differences with previously certificated ships. This is typically documented following a phone call between the staff engineer and a cognizant acquisition program official, naval architect, or production manager, but may also involve on-site or remote verification when warranted. If any anomalies are identified as a result, obtain new drawings or other information, as required.

10. *GHS HYDROSTATICS*. For the majority of Navy and Coast Guard vessels, a *General Hydrostatics (GHS)* geometry file will be available for use in calculating Convention tonnage. For vessels that do not have a complete hull and superstructure model, it may be necessary "build-out" the model in *GHS, Rhino*, or similar (e.g., modify the hull form, add deckhouses, and remove solid appendages), in order to obtain a proper model and readable geometry file. Once that is complete, create individual Adobe Portable Document Format (.pdf) files or similar within the project folder for subsequent attachment to the *TonCalc* calculations, along the following lines:

*a.* *1&2.pdf* (hydrostatics, tonnage info, and offsets)
Set the default printer to "Adobe PDF" and return to the GHS model. Create a "run file" containing a script for reading, printing, and hydrostatically submerging the vessel, and name the run file using the vessel designator (e.g., "*WPC_1148.rf*"). In the run file example below, the ".5 " in the line "hs 0 .5 ... 40" represents the increment of draft change in feet, and "40" is the maximum draft in feet as the vessel submerges hydrostatically. Execute the run file. Before closing the GHS print file preview, right-click and print it to .pdf, naming the output as "*1&2.pdf*". ***NOTE: Ensure the maximum draft submerges the entire vessel, not just the hull.***

```
clear
read WPC_1148.GF
units LT
report GHS_WPC_1148_Tonnage.pf
hs 0 .5 ... 40
comp /to
display print /preview
report off
end
```

*b.* *3.pdf* (solid model isometric)
View the geometry file using the *Deadweight*, *Rhino* or a similar 3-D modeling application to verify that the model looks fair and complete, checking specifically for geometric anomalies, such as thruster tunnels, deckhouses, forecastles, stern ramp, and bulbous bow. Rotate the model to obtain the "best" isometric view of the hull and superstructure. Copy and paste the screen shot to a MS Word document and save as "*3.pdf".* ***NOTE: Most often, rotate the view so the starboard bow is down to the right, maximizing the view of the hull, superstructure and all appendages***.

11. GENERATE CALCULATIONS AND CERTIFICATES. Create and populate a *TonCalc* Excel workbook in accordance with reference (b). From *TonCalc*, save copies of the calculations and all certificates to be issued in the project folder as .pdf files. Append the "*3.*pdf" file described above to the end of the Convention calculations .pdf file. The staff engineer then electronically signs the Suez Canal Special Tonnage Certificate, if applicable. Review the calculations and certificates, and in the case of a follow-on vessel, compare with the first of the class to ensure accuracy. Use the following file naming conventions:

*CG 1499522 USS CHARLESTON (LCS 18) Ton Calcs Suez 26Jun2018*
*CG 1499522 USS CHARLESTON (LCS 18) Ton Calcs Conv 26Jun2018*

*CG 1499522 USS CHARLESTON (LCS 18) Ton Cert Suez 26Jun2018*
*CG 1499522 USS CHARLESTON (LCS 18) Ton Cert US 26Jun2018*

12. PREPARE TRANSMITTAL CORRESPONDENCE. Use formal correspondence to transmit certificates to the designated recipient as identified on the measurement

application. Create the transmittal cover letter or memorandum, as appropriate, for the Division Chief's signature, and list all required certificates to be transmitted as enclosures, using the samples provided in enclosure (1). Place the draft correspondence in the project folder, naming it using the MSC correspondence serial number (e.g., "*C3-1802036.docx*"). Forward the submittal package to the Division Chief (or staff engineer with signature authority) for action.

13. SIGN DOCUMENTS. After reviewing the tonnage calculations and certificates, the Division Chief (or staff engineer with signature authority) finalizes the Convention measurement system calculations, if applicable, by appending the "3.pdf " file described above if not done by the Staff Engineer. The Division Chief (or staff engineer with signature authority) electronically signs the certificates.

14. TRANSMIT CERTIFICATES. Send the transmittal correspondence and the "original" electronic tonnage certificate(s) to the recipient designated on the measurement application. FedEx or express mail may be used for certified true paper copies, when created, if the cost is paid by the submitter, or if otherwise approved by the Division Chief. A certified true copy (hard copy) of the Suez Canal Special Tonnage Certificate may be needed. Additionally, for U.S. Navy vessels, transmit an electronic copy of the correspondence and all associated certificates to the NAVSEA point of contact identified in reference (a). For Coast Guard cutters, transmit an electronic copy of the correspondence and all associated certificates to CG-PPC Advancements (ADV) - Service Validation Team. OAA assistance in completing this tasking may be utilized, as authorized by the Division Chief.

15. *MISLE* DATA ENTRY AND UPLOAD. Enter the U.S. tonnages, principal dimensions and the measurement organization ("United States Coast Guard") into MISLE, and upload copies of the certificates. The "issue port" for MSC-measured vessels is "Washington, DC".

16. *FILES DATABASE* DATA ENTRY. Update the vessel information in *Files Database* (e.g., add assigned tonnages, file content information, and transmittal remarks).

17. FILING. Ensure all filing actions are complete, observing the requirements of references (c) and (d) with respect to retention of tonnage measurement records. Retain electronic copies of the MSC transmittal correspondence, certificates, calculations, and *TonCalc* workbook in the "Archive Permanent Record" folder. Drawings and other supporting information should be retained within the project folder, which is labeled with the serial number of the MSC transmittal correspondence, the ship's name, and designator (e.g., "C3-1802036 USS CHARLESTON (LCS 18)").

18. *MASCOT* LOG-OUT. Log the activity out of *MASCOT* once all associated actions are complete.

19. REPLACEMENT CERTIFICATES. As noted in reference (a), the MSC provides electronic or electronically-signed replacements of original Panama or Suez Canal

certificates that are lost or otherwise mislaid. If no such electronic document is available, a replacement certificate is generated by printing or otherwise making a copy of the tonnage certificate (e.g., using the electronic copy in the project folder, if available), stamping it as "certified to be a true copy", and imprinting it with the Coast Guard seal. Replacement is an administrative action and does not require formal transmittal correspondence, with replacement certificates typically transmitted by email (if electronic) or regular U.S. mail (if paper).

S. T. BRADY
Chief, Tonnage Division
By direction

Encl: (1) Sample Transmittal Memo and Letter, 2 pgs

Sample Transmittal Memo and Letter:

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Marine Safety Center

US Coast Guard Stop 7430
2703 Martin Luther King Jr. Ave SE
Washington, DC 20593-7430
Staff Symbol: MSC-4
Phone: (202) 795-6731
Email: msc@uscg.mil

16717/P015850
Serial C3-2101327
16 Dec 2021

**MEMORANDUM**

From: David B. Karnes
CG MSC (MSC-4 Manager, Tonnage Policy)

To: CG-9324 FRC Technical Director

Subj: USCGC CLARENCE SUTPHIN (WPC 1147); TONNAGE CERTIFICATES

Ref: (a) Bollinger email dated 18 Mar 2021
(b) Tonnage Guide 2, CH-4, Measurement of Navy and Coast Guard Vessels

1. Reference (a) submitted an application for tonnage measurement services for the subject ship to the Coast Guard Marine Safety Center.

2. We issued the U.S. Tonnage Certificate and the Suez Canal Special Tonnage Certificate for the subject ship. These electronic certificates have been uploaded into the CG Marine Information for Safety and Law Enforcement (MISLE) database, and are provided as attachments to our transmittal email.

3. Please ensure that the memo and certificates are provided to the prospective Commanding Officer, Navigator, or other designated representative of the ship's crew. The Suez certificate, or a printed paper version, should be maintained onboard the ship along with other official ship documents. There is no requirement to similarly maintain the U.S. certificate. We did not issue a Panama Canal (PC/UMS Documentation of Total Volume) Certificate for this ship, as ships of this type are categorized as warships and assessed Panama Canal tolls based on displacement.

4. We have not sent a certified true paper copy of the Suez certificate, as the Coast Guard issues electronic tonnage certificates in lieu of paper certificates as of January 2018. In the event that a certified paper document is required for contractual or other reasons, please notify us. For additional information on tonnage measurement, refer to reference (b), found on the U.S. Tonnage Publications page of our website (http://www.dco.uscg.mil/msc/).

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Copy: CG-PPC Advancements (ADV) - Service Validation Team

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US Coast Guard Stop 7430
2703 Martin Luther King Jr. Ave SE
Washington, DC 20593-7430
Staff Symbol: MSC-4
Phone: (703) 795-6729
Email: msc@uscg.mil

16717/P012933/tjc
Serial C3-1802036
June 26, 2018

Austal, USA
Attn: Mr. Jimmy Barbosa
100 Addsco Rd.
Mobile, AL 36602

Subj: USS CHARLESTON (LCS 18); TONNAGE CERTIFICATES

Dear Mr. Barbosa:

In reference to your application for tonnage measurement submitted on May 24, 2018, the Coast Guard Marine Safety Center issued the U.S. Tonnage Certificate and the Suez Canal Special Tonnage Certificate for the subject ship. These electronic certificates have been uploaded into the CG Marine Information for Safety and Law Enforcement (MISLE) database, and are provided as attachments to our transmittal email.

Please ensure that the letter and certificates are provided to the prospective Commanding Officer, Navigator, or other designated representative of the ship's crew. The Suez certificate, or a printed paper version, should be maintained onboard the ship along with other official ship documents. There is no requirement to similarly maintain the U.S. certificate. We did not issue a Panama Canal (PC/UMS Documentation of Total Volume) Certificate for this ship, as ships of this type are categorized as warships and assessed Panama Canal tolls based on displacement.

We are also enclosing a certified true paper copy of the Suez certificate, in the event that a certified paper document is required for contractual or other reasons. For additional information on tonnage measurement, refer to Tonnage Guide 2 (TG 2), *Measurement of Navy and Coast Guard Vessels,* found on the U.S. Tonnage Publications page of our website (http://www.dco.uscg.mil/msc/).

Sincerely,

P. D. EARECKSON
Chief, Tonnage Division
U.S. Coast Guard
By direction

Encl: (1) Certified True Copy of Suez Certificate

Copy: NAVSEA 05P3 (T. Mazumdar)