

# **MEASUREMENT OF NAVY AND COAST GUARD VESSELS**



## **TONNAGE GUIDE 2**

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## TONNAGE GUIDE 2

### 1. PURPOSE

This Guide provides general information on requirements for tonnage measurement of Navy and Coast Guard vessels. It specifically addresses measurement under rules or regulations of the United States, the Panama Canal Authority, and the Suez Canal Authority.

### 2. REFERENCES

- (a) Title 46, United States Code, Sections 2101 and 14104 (46 U.S.C. 2101 and 14104)
- (b) Title 46, Code of Federal Regulations, Part 69 (46 CFR 69)
- (c) Navigation and Vessel Inspection Circular (NVIC) 11-93, as amended
- (d) Panama Canal Authority Admeasurement Regulations dated September 3, 1998, as amended.
- (e) Suez Canal Authority Rules of Navigation, Part IV, June 1981 edition
- (f) NAVSEA Technical Manual, S9086-C6-STM-000

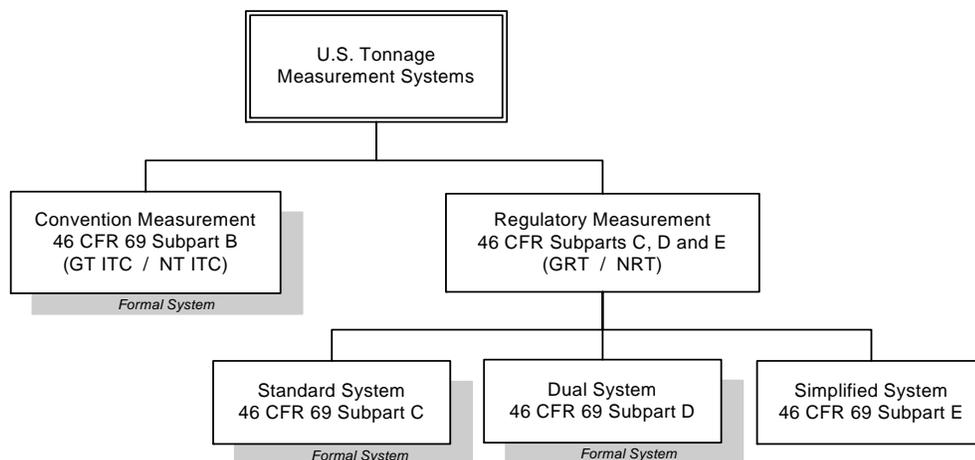
### 3. APPLICABILITY

This Guide applies to U.S. Navy and U.S. Coast Guard vessels that qualify as "vessels of war" under the definitions of reference (a). Navy warships, Navy auxiliaries not operated by the Military Sealift Command, and Coast Guard cutters and boats meet this definition, whereas Military Sealift Command vessels (which are manned by civilian crews) do not, even though these vessels may perform missions similar to those performed by some vessels of war.

### 4. U.S. TONNAGE MEASUREMENT

Tonnage-based navigation, pollution control, sea-service requirements for mariners, and other domestic laws and regulations, may apply to vessels of war, necessitating their measurement under the provisions of reference (a). The Coast Guard regulations for tonnage measurement are found in reference (b). Specific tonnage measurement requirements that apply to vessels of war under United States laws and regulations are summarized below:

- (a) **MEASUREMENT SYSTEMS** One of four tonnage measurement systems is used to measure a vessel of war. These measurement systems all yield gross and net tonnage values which are reflective of overall size and carrying capacity, respectively, as opposed to displacement (weight). The figure below illustrates the relationships between these measurement systems, and is followed by brief descriptions of the systems.



- (1) **Convention, Standard, and Dual Measurement Systems.** These are "formal" systems which require detailed measurements of a vessel's spaces. Gross and net tonnages calculated under these systems are certified by the Coast Guard on U.S. Tonnage Certificates (formerly Certificates of Admeasurement). The Coast Guard no longer requires that U.S. Tonnage Certificates, or copies thereof, be transmitted to or maintained aboard vessels of war, although in some instances these documents are still being transmitted to such vessels to fulfill new construction contractual requirements. The associated tonnages for each vessel of war are entered into the Coast Guard Marine Information for Safety and Law Enforcement (MISLE) database.
  - (2) **Simplified Measurement System** This is an "informal" system which uses a simplified formula to calculate tonnage. The Coast Guard does not issue a tonnage certifying document for a vessel of war (or other "undocumented" vessel) measured under the simplified measurement system. Instead, gross and/or net tonnage is calculated on an "as-needed" basis by interested parties.
- (b) **APPLICABILITY** Applicability requirements are found in reference (c), and are summarized as follows:
- (1) **Convention Measurement System** This is the primary system used to measure self-propelled vessels of war that are 79 feet and over in overall length. The convention measurement system is based on the system of the International Convention on Tonnage Measurement of Ships, 1969.
  - (2) **Standard and Dual Measurement Systems** These measurement systems are generally no longer used to measure vessels of war, although U.S. Tonnage Certificates for vessels measured under these systems remain valid.
  - (3) **Simplified Measurement System** This measurement system applies to vessels of war less than 79 feet in overall length, and those 79 feet and over in overall length that are non-self-propelled and engage in domestic and/or Great Lakes voyages only.
- (c) **REMEASUREMENT CRITERIA** U.S. Tonnage Certificates do not have expiration dates. They are valid for the life of the vessel, unless the vessel undergoes alterations of a significant enough magnitude to warrant remeasurement. Refer to reference (c) for remeasurement criteria.

## 5. PANAMA CANAL MEASUREMENT

The Panama Canal Authority assesses canal transit fees using either a volumetric net tonnage or a displacement tonnage, determined under its own regulations (reference (d)). This organization is the entity of the Government of Panama charged with the administration and operation of the Panama Canal. Specific requirements on tonnage measurement that apply to vessels of war are summarized below:

- (a) **MEASUREMENT SYSTEMS** One of three methods are used to measure a vessel of war that transits the Panama Canal. A brief description of each method follows:
- (1) **Displacement Measurement** This method involves determining the vessel's full load displacement. Vessels measured under this method are not issued tonnage certificates for transit purposes by the Coast Guard or other authority. Upon arrival, the Panama Canal Authority requests documentation specifying the full load displacement (e.g., for Coast Guard vessels, this information may be available in the Part IIa of the cutter's Damage Control book for vessels over 210 feet in length, or the Stability and Loading Data Booklet for vessels that

are less than 210 feet in length). Transit fees are assessed using this displacement. Should the information not be available, the Panama Canal Authority will use any acceptable and practicable method, including obtaining displacements from commercial publications (e.g., Jane's Fighting Ships book).

**(2) Panama Canal/Universal Measurement System (PC/UMS)** This method requires detailed measurements of a vessel's spaces, and certification of the resulting tonnage by the Coast Guard on a Panama Canal/Universal Measurement System (PC/UMS) Documentation of Total Volume certificate. The Coast Guard transmits this certificate to the vessel, with a copy provided to the Panama Canal Authority. Upon arrival at the Panama Canal for transit, the Panama Canal Authority verifies the tonnage data on this certificate, and issues the vessel a PC/UMS Net Tonnage Certificate for future transits. Transit fees are based on the PC/UMS net tonnage that appears on the certificate.

**(3) Formula Measurement** This method involves use of a simplified formula to calculate net tonnage, upon which transit fees are based.

**(b) APPLICABILITY** Applicability requirements are found in reference (d), and are summarized as follows:

**(1) Displacement Measurement** Most vessels of war are classified by the Panama Canal Authority as "warships" and, along with dredges and floating drydocks, are measured using the displacement method. Types of vessels that are typically displacement measured include:

Battleships	National Security Cutters
Submarines	High Endurance Cutters
Cruisers	Medium Endurance Cutters
Aircraft Carriers	Fast Response Cutters
Destroyers	Patrol Boats
Frigates	Training Cutters
Mine Warfare Ships	
Amphibious Warfare Ships	
Naval Training Ships	

**(2) Panama Canal/Universal Measurement System (PC/UMS)** Auxiliaries and other vessels of war that are not classified by the Panama Canal Authority as "warships" are measured using the PC/UMS method. Types of vessels that are typically PC/UMS measured include:

Transports	Buoy Tenders
Tank Ships	Polar Ice Breakers
Hospital Ships	Tugs
Supply Ships	
Repair Ships	
Tenders	

**(3) Formula Measurement** Auxiliaries and other vessels of war that are not classified by the Panama Canal Authority as "warships" **and** that are 100 feet or less in overall length are measured using the formula method. **NOTE: formula measurement may also be applied to larger vessels that arrive without the necessary PC/UMS documentation, which may result in higher transit fees.**

(c) **GRANDFATHERING PROVISIONS** The following grandfathering provisions apply:

- (1) **Panama Canal Certificates** Under the grandfathering provisions of the reference (d), older Panama Canal Tonnage Certificates that were issued while the Panama Canal was under United States control are accepted in lieu of the newer PC/UMS Documentation of Total Volume or PC/UMS Net Tonnage Certificates. These provisions apply to vessels which:
  - 1) have a Panama Canal Tonnage Certificate on board;
  - 2) transited the Panama Canal between March 23, 1976 and September 30, 1994, inclusive; and
  - 3) have not had any volume changes greater than 10 percent since the last transit during the above period.
- (2) **Inactivated Vessels** An inactivated vessel, or "hulk", that is not to be returned to service is assessed transit fees on the same basis (e.g., displacement or PC/UMS) as was applied on its last prior transit or, if transiting for the first time, as would have been applied if the vessel was active.

## 6. SUEZ CANAL TONNAGE MEASUREMENT

The Suez Canal Authority assesses canal transit fees on vessels of war of all types using net tonnage as established under its own regulations (reference (e)). This organization is the entity of the Government of Egypt charged with the administration and operation of the Suez Canal. Specific requirements on tonnage measurement that apply to vessels of war are summarized below:

- (a) **MEASUREMENT SYSTEMS** Two methods are used to measure vessels of war which transit the Suez Canal, both of which establish a net tonnage value upon which transit fees are based. This tonnage is a volumetric measure similar to the net tonnage under the U.S. standard or dual measurement system. A brief discussion of each method follows.
  - (1) **Rule 1** This method involves detailed measurements of a vessel's interior spaces, and certification of the resulting tonnage by the Coast Guard on a Suez Canal Special Tonnage Certificate. The Coast Guard transmits this certificate to the vessel.
  - (2) **Rule 2** This method uses an empirical formula to calculate net tonnage. The formula is applied by the Suez Canal Authority upon arrival of the vessel at the canal.
- (b) **APPLICABILITY** All vessels of war for which a transit of the Suez Canal is expected during the life of the vessel should be measured under Rule 1. Rule 2 is used only when a vessel of war arrives at the Suez Canal without a valid Suez Canal Special Tonnage Certificate. **NOTE: Use of Rule 2 may result in higher transit fees.**
- (c) **FUEL ASSESSMENTS** Under certain circumstances, fuel tanks (or portions thereof) that are located in the vessel's inner bottom are listed on the Suez Canal Special Tonnage Certificate. For the fuel tanks so listed, the Suez Canal Authority may increase the transit fee, depending on whether or not the tanks contain fuel during the transit. If this is done, the Suez Canal Authority will add the tonnage of the fuel tanks that are not in ballast during the transit to the Suez Canal net tonnage that is specified on the front of the Suez Canal Special Tonnage Certificate.

## 7. TONNAGE CERTIFICATE MAINTENANCE

After receiving a tonnage certificate from the Coast Guard, the certificate should be maintained in a secure location on board the vessel as part of the vessel's official papers. The following additional requirements apply:

- (a) **REPLACEMENT CERTIFICATES** If a Panama or Suez Canal certificate that was transmitted to the vessel by the Coast Guard is lost, the Coast Guard will provide a certified true copy of the document as a replacement for the lost original. These copies bear an embossed official seal of the Coast Guard, and are acceptable legal documents. Lost U.S. Tonnage Certificates are not replaced.
- (b) **INACTIVATED VESSELS** For an inactivated vessel which may be used as a "mobilization asset", the Suez and/or Panama Canal certificate (as applicable) should be maintained on board the vessel as described in this section until such time as the vessel is stricken. Any U.S. Tonnage Certificate (Certificate of Admeasurement), or copy thereof, found on board an inactivated vessel not identified as a "mobilization asset" should be destroyed.
- (c) **STRICKEN VESSELS** Any Coast Guard issued tonnage certificate, or copy thereof, found on the vessel should be destroyed, unless the vessel will be making a Panama or Suez Canal transit for which a previously issued Canal certificate is still valid. In that case, the certificate should be destroyed once the transit is completed.
- (d) **FOREIGN MILITARY SALES** Tonnage Certificates issued by the Coast Guard are no longer valid after a vessel of war is transferred to another government. Accordingly, any Coast Guard issued tonnage certificate, or copy thereof, found on the vessel should be destroyed.

## 8. REQUESTS FOR MEASUREMENT SERVICES

The Coast Guard Marine Safety Center is responsible for providing tonnage measurement services for Navy and Coast Guard vessels of war. Requests for tonnage measurement services should be directed as indicated below. Contact information is provided in Section 9 of this Guide.

- (a) **EXISTING NAVY VESSELS** All requests for new or replacement tonnage certificates should be directed to the Naval Sea Systems Command (NAVSEA), Code 05P3, or as otherwise authorized by NAVSEA.
- (b) **EXISTING COAST GUARD VESSELS** All requests for new or replacement tonnage certificates should be directed to the Coast Guard Marine Safety Center's Tonnage Division (MSC-4).
- (c) **NEW CONSTRUCTION NAVY AND COAST GUARD VESSELS** The appropriate authority should submit an Application for Tonnage Measurement Services form to the Coast Guard Marine Safety Center's Tonnage Division (MSC-4). This application form, as well as contact information for new or replacement tonnage certificates, is available on the Marine Safety Center's web site at <http://www.uscg.mil/HQ/msc>.

## 9. CONTACT INFORMATION

Addresses and other contact information for the Navy and Coast Guard vessel tonnage measurement services are provide below.

### (a) NAVSEA

Commander  
Naval Sea Systems Command  
Attn: SEA 05P3  
1333 Isaac Hull Ave, S.E.  
Stop 5145  
Washington Navy Yard  
Washington, DC 20376

Point of Contact: Mr. Phil Alman  
Voice: (202) 781-2038  
FAX: (202) 781-4559  
Email: philip.alman@navy.mil

### (b) COAST GUARD MARINE SAFETY CENTER

Commanding Officer  
Coast Guard Marine Safety Center (MSC-4)  
2100 2nd Street SW Stop 7102  
Washington, DC 20593-7102  
Email: msc@uscg.mil

Point of Contact: Mr. Brian Ellis  
Voice: (202) 475-5636  
FAX: (202) 475-3920  
Email: brian.t.ellis@uscg.mil  
Alternate: Point of Contact: Mr. Peter Eareckson  
Voice: (202) 475-3395

## 10. FURTHER INFORMATION ON NAVY VESSEL MEASUREMENT

Further information and requirements on Navy vessel measurement, including additional details on calculating displacement, and requirements for tonnage certificate maintenance, are included in Chapter 096 of the NAVSEA Technical Manual (reference (f)).



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By direction