

COMDTPUB P16700.4  
NVIC 2-97

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 2-97

Subj: IMPLEMENTATION OF OPERATIONAL MEASURES FOR EXISTING TANK VESSELS WITHOUT DOUBLE HULLS UNTIL 2015

1. **PURPOSE.** This Navigation and Vessel Inspection Circular (NVIC) provides guidance on the implementation and enforcement of operational measures required in 33 CFR 157, subpart G. These operational measures apply to single-hull tank vessels and tank barges (i.e., those not meeting the double hull requirements of 33 CFR 157.10d) until they are phased out of service as cited in 46 U.S.C. 3703a(b)(3) and (c)(3).
2. **ACTION.**
  - A. Coast Guard marine inspectors and boarding officers will refer to the enclosed guidance when conducting inspections, examinations, or port state control boardings on U.S. and foreign tank vessels without double hulls to assess compliance with these regulations. Requirements giving tank barge owners the responsibility for providing certain guidance or ensuring that certain measures are completed by towing vessels hired to tow tank barges of 5,000 gross tons (GT) or more will also be checked during random Coast Guard inspections. Enclosure (1) contains a checklist that Coast Guard inspectors can use as an addendum to tank vessel examination books. The checklist is designed to provide further assistance with enforcement of these regulations.
  - B. Because of the subjective nature of these requirements, Coast Guard inspectors must use discretion when considering enforcement action. A vessel should not be delayed and civil penalty action should not be initiated unless gross violations exist. Inspectors will ensure that vessel personnel are provided copies of this NVIC and should offer additional guidance as needed or requested. Deficiency reports should offer adequate time to allow for full compliance. This enforcement policy will remain in effect until 01 February 1997, after which standard Coast Guard inspection policy will apply.
  - C. Officers in Charge, Marine Inspection (OCMI) shall bring the enclosed guidance to the attention of appropriate individuals in the marine industry within their zones.

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D. Owners and operators of tank vessels without double hulls are encouraged to review the guidance contained in this NVIC to ensure proper compliance with operational measures.

3. DIRECTIVES AFFECTED None.

4. BACKGROUND

A. On July 30, 1996, the U.S. Coast Guard published a final rule establishing operational measures to reduce oil spills from existing tank vessels without double hulls. These regulations for operational measures are based upon the authority founding in the implementation of section 4115(b) of the Oil Pollution Act of 1990 (OPA 90). These regulations are designed to provide substantial protection to the environment with minimal economic or technological burden to the single-hull tank vessel industry.

B. Operational measures apply to all vessels carrying oil, animal fat, vegetable oil, and other non-petroleum oil in bulk as cargo or cargo residue, and include those vessels engaged in lightering operations or off-loading oil at deepwater ports in the U.S. territorial sea or the Exclusive Economic Zone (EEZ). However, foreign flag vessels merely transiting the EEZ or in innocent passage on the territorial sea of the United States are not required to follow these operational measures.

5. DISCUSSION. The following discussion of each operational measure is designed to further clarify the policy and procedures for implementation of these measures. Additionally, it will ensure that these operational measures are being consistently interpreted and enforced. Each section contains relevant background information and guidance necessary to ensure compliance with the regulations. Since some of the regulations are related to aspects of the STCW Convention and/or to IMO resolutions, appropriate cites are noted within each section, as well as on the checklist in enclosure (1).

A. Bridge Resource Management Policy and Procedures

(1) Background. By February 1, 1997, tankship and tank barge owners and operators must provide written bridge resource management policy and procedures to masters and officers in charge of the navigational watch. The requirements of this section are similar to Section B of the International Convention of Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 (STCW). However, compliance with STCW is not sufficient to satisfy this provision, because Section B is an optional part of the STCW Convention and therefore, may not be addressed by some flag state administrations.

(2) Guidance. The written bridge resource management guidance provided by vessel owners and operators should address each of the required elements listed in 33 CFR 157.415 using vessel and crew specific examples. The master and officers in charge of the navigational watch must be familiar with the policy and procedures contained within the owner's written guidance.

## B. Vessel Specific Watch Policy and Procedures

- (1) Background. By February 1, 1997 tankship and tank barge owners and operators must provide masters with written vessel specific watch policy and procedures. This requirement reflects the terms of STCW, Section A-I/14, part 2. However, because compliance with this measure depends on company-generated guidance and not on an individual's certification, STCW endorsements or certificates do not satisfy the requirements of this section.
- (2) Guidance. Compliance with this operational measure requires review of the elements listed in 33 CFR 157.420. Each owner or operator's guidance should reflect the unique operational arrangements aboard the vessel and should provide safety instructions essential for new personnel. Tank vessel owners and operators should ensure that all required elements are addressed within the guidance and verify that the vessel master and deck officers are familiar with the guidance.

## C. Enhanced Survey Requirements

- (1) Background. This measure requires tank vessel owners or operators to initiate an enhanced survey program complying with International Maritime Organization (IMO) Resolution A.744(18) at the vessel's next regularly scheduled drydock examination occurring on or after November 27, 1996. Several classification societies have already incorporated enhanced surveys as a condition of class for tank ships. These enhanced surveys closely parallel the standards found in IMO Resolution A.744(18).
- (2) Guidance. A drydock inspection that is required for compliance with U.S. regulations, SOLAS standards, or flag administration requirements is considered a regularly scheduled drydocking. Compliance with this section requires familiarity with IMO Resolution A.744(18). A copy of this Resolution is provided as Enclosure (2) of this NVIC.
- (3) Program Equivalency.
  - ◇ Determinations of program equivalency for this section will be handled on an individual basis based on written requests submitted to the Commandant (G-MOC). Vessels currently required to have a Critical Area Inspection Plan (CAIP) in compliance with NVIC 15-91, Change 1, will be given primary consideration for equivalency determinations.
  - ◇ For vessels that operate entirely within one OCMI zone, equivalency requests should be submitted directly to the cognizant OCMI for endorsement prior to review by the Commandant (G-MOC).
  - ◇ Note. Plans to implement an enhanced survey for tank barges, tankships less than 20,000 deadweight tons (dwt) carrying crude oil, or tankships less than 30,000 dwt carrying product need not be submitted to the Coast Guard for approval.

## D. Vital Systems Surveys

(1) Background. Beginning on November 27, 1996, tank vessel personnel must conduct regular surveys of cargo, mooring, and anchoring equipment systems as described in 33 CFR 157.435. The purpose of this requirement is to ensure that proper maintenance is completed on those systems critical to the safety of the ship.

(2) Guidance.

- ◇ Compliance with this section requires familiarity with chapters 6, 7, and 10 of the International Safety Guide for Oil Tankers and Terminals (ISGOTT), which is available from most commercial vendors.
- ◇ Surveys conducted for this regulation can be recorded in the deck logbook or any other onboard documentation.
- ◇ The name and title of the person conducting the survey should be reflected in the log entry, as well as the material condition of the equipment surveyed. This means that any wear, temporary repair, or potential problem noted by the surveyor should be reflected in the log.
- ◇ The person assigned to conducting the vital systems surveys must be knowledgeable of the vessel's cargo and mooring systems and have the authority to take corrective action when deficiencies exist.

#### E. Autopilot Alarm or Indicator

(1) Background. Beginning on November 27, 1996, tankships must be fitted with an alarm for the autopilot to warn personnel that it is engaged when manual helm commands are not capable of moving the rudder. Tank barge owners must also ensure that vessels engaged in towing their barges have an indicator clearly displaying the autopilot status as described in 33 CFR 157.440. The requirement for an autopilot alarm or indicator stems directly from the M/T EXXON VALDEZ disaster. Evidence obtained following this incident supports the conclusion that the helmsman attempted to steer the ship with the autopilot still engaged, and that it may have taken up to 6 minutes before the helmsman and mate on watch realized that the rudder (or ship) was not responding to the ordered command. The vessel did not respond to the manual helm change because the autopilot system was engaged and the helm was bypassed. To prevent such an oversight, tankships must be equipped with an alarm that indicates both visually and audibly that the autopilot is engaged when an effort is made to move the helm.

(2) Guidance. This requirement is not intended to restrict the use of the autopilot any further than present regulations (33 CFR 164), nor should this requirement be confused with the alarm that several autopilot manufacturers have installed on their units to sound if the vessel's course is lost by a certain set degree. The intention behind this provision is to allow for immediate rudder control in situations where the autopilot is inadvertently left engaged. Otherwise, if override control is not available, an audible and visual alarm must activate when the helm is moved. The following factors should assist in assessing compliance with this requirement:

- ◇ The term “automatic manual override” does not mean that the autopilot must be sensitive to the slightest manual movement of the helm. Since large rudder movements are normally necessary when operating at reduced speeds, it is considered satisfactory if the manual autopilot override is achieved only when a substantial rudder movement is ordered. For compliance purposes, automatic manual override should be achieved with no greater than five degrees of rudder ordered at the helm.
- ◇ If the rudder does not respond to a helm movement of 5 degrees or more while the autopilot is engaged, the system should incorporate an audible and visible alarm that activates when the helm is moved and the autopilot is still engaged. Inspectors should verify that the autopilot alarm, if equipped, is distinct from other bridge alarms.
- ◇ An autopilot alarm or override is only required for the standard mode of steering operation at the primary steering station. The override or alarm is not required for non-follow-up control or other secondary or emergency modes of operation.
- ◇ Vessels are not required to have the alarm or override at bridge wing control stations.
- ◇ The ability to override autopilot control by using a separate means of control, such as non-follow-up control, does not meet the intent of this requirement. Autopilot override must be achieved while using the primary steering control (i.e. the ship’s wheel).

### (3) Temporary Equivalency.

- ◇ If vessels cannot comply with this requirement by November 27, 1996, they should submit a request for a temporary equivalency to the local OCMI in accordance with 33 CFR 157.07.
- ◇ This equivalency request should include the basis for the request, the approximate date when the vessel will be in compliance with this section, and what action the master and crew will take to ensure that the helm responds immediately to manual orders.
- ◇ This may be accomplished by securing the autopilot prior to entering U.S. waters, including the Exclusive Economic Zone (EEZ), making a log entry to document securing of the autopilot, and displaying a sign warning that the autopilot shall not be engaged while transiting U.S. waters or the EEZ.
- ◇ OCMI’s, if satisfied with the proposed equivalency, should issue an approval letter and enter a deficiency report in MSIS with an appropriate compliance date.

## F. Maneuvering Performance Capability

- (1) Background. By July 29, 1997, tankship owners and operators must ensure that the maneuvering tests described in IMO Resolution A.751(18) (with Explanatory Notes in Maritime Safety Committee (MSC) Circular 644) are completed and the results prominently displayed in the wheelhouse. The master of a tankship must discuss the

test results with the pilot prior to entering port or getting underway as described in 33 CFR 157.445. A copy of this Resolution and the Explanatory Notes from MSC Circular 644 are found in NVIC 6-95. Enclosure (3) is an example of a completed form from Appendix 6 of the Explanatory Notes which should be posted on the bridge.

- (2) **Guidance.** The maneuvering test information required by this section differs from the information required by 33 CFR 164 and IMO Resolution A.601(15). The tests required by this section give valuable information on the vessel's maneuvering capabilities when smaller rudder angles are used and give more detailed information on the vessel's stopping capabilities. The test results are presented in relationship to the vessel's length and serve as a valuable benchmark for pilots. The following factors should assist in assessing compliance with this requirement:
- ◇ Tankships are not required to meet the maneuvering performance standards that are included in the Resolution. Each tankship owner or operator is simply required to certify completion of the tests and prominently display the results in the wheelhouse.
  - ◇ Scale model tests or computer predictions, validated by full-scale trials or full-scale trial results, are acceptable to meet this requirement if completed in accordance with Annex 1.2.2 of IMO Resolution A.751(18).
  - ◇ Tests may be conducted by vessel owners, operators, or their representatives. With present electronic technology, a vessel's master should be able to conduct the tests properly. Classification societies do not have to be involved in the testing.
  - ◇ Owners and operators have the responsibility for ensuring the test results are accurately recorded. If a tankship owner or operator uses a classification society to review the test results and ensure the tests were conducted in accordance with IMO Resolution A.751(18) and MSC Circular 644, the classification society's review serves only to ensure the tests were conducted as described in the Resolution, not as a check for accuracy of the information reviewed.
  - ◇ It is expected that tankship owners and operators will ensure the validity of this information.

#### G. Maneuvering and Vessel Status Information

- (1) **Background.** Beginning on November 27, 1996, tankship owners and operators must ensure that the maneuvering information displayed in the wheelhouse reflects the format and information required by IMO Resolution A.601(15), Appendix 2. A copy of IMO Resolution A.601(15) is included in NVIC 7-89. Tankship masters must also fill out a pilot card as described in Appendix 1 of IMO Resolution A.601(15) prior to entering or leaving port as required in 33 CFR 157.450.
- (2) **Guidance.** The maneuvering poster and other maneuvering information required in IMO Resolution A.601(15) is more detailed than the information required by 33 CFR 164 or 46 CFR 35. Squat characteristics and additional engine information must be displayed along with the general turning circle information. The pilot card, required to

be filled out by the vessel master, provides the pilot with quick reference to important propulsion, loading, and maneuvering information.

#### H. Minimum Under-Keel Clearance

- (1) **Background.** Beginning November 27, 1996, tankship masters must calculate the anticipated under-keel clearance of their vessels prior to entering port or getting underway as required in 33 CFR 157.455. This information is to be discussed with the pilot prior to entering or leaving port. Tankships or tank barges that are 5,000 GT or more and are fitted with double bottoms covering the entire cargo tank length do not have to complete this requirement
- (2) **Guidance.**
  - ◇ The calculations required to be completed by the master include calculating the vessel's deepest navigational draft and the anticipated controlling depth. The deepest navigational draft calculation is straight forward and should not be different from current calculations, with the exception of squat characteristics consideration.
  - ◇ The anticipated controlling depth calculation should be completed after consulting with local pilot agencies. The charted depth of the channel, any regulated navigation areas, as published by each Captain of the Port (COTP) in CFR 165, and the information from publications required to be on board the vessel in 33 CFR 164 act as a foundation for this calculation. In addition, the local knowledge of the pilot, port authorities, and the facility should be referenced to get the closest estimate of the anticipated under-keel clearance for the vessel's time of transit.
  - ◇ After the master has completed the anticipated under-keel clearance calculation, it should be reviewed with the pilot. This review should include a discussion between the master and pilot concerning any shoaling or weather conditions that may influence the vessel's clearance and the most challenging areas along the transit.

- (3) **Delay of Effective Date.** The effective date for paragraphs (a)(5) and (a)(6) of 33 CFR 157.455 has been delayed until further notice. This will allow additional time for the tank vessel industry to comment on the issue of port-specific under-keel clearance guidance. In anticipation of promulgation of these paragraphs, the policy guidance provided in enclosure (4) will assist tankship owners and operators with development of this guidance.

#### I. Emergency Steering Capability

- (1) **Background.** Beginning November 27, 1997, tank barges of 5,000 GT or more without double hulls must be towed by towing vessels that have a steering gear system as described in 33 CFR 157.460.
- (2) **Guidance.**
- ◇ This system is only meant to be required on the towing vessel that takes the barge through its port-to-port transit. Towing vessels such as fleeting tugs or assistant tugs that help maneuver a barge are not required to have this steering system duplication.
  - ◇ Towing vessels fitted with twin screws meet this requirement provided they have separate control systems for each propeller.

#### J. Fendering System

- (1) **Background.** Beginning November 27, 1996, tank barges of 5,000 GT or more without double hulls must be towed and maneuvered with towing vessels that have fendering systems substantial enough to prevent metal to metal contact between the towing vessel and the barge.
- (2) **Guidance.** This system is required for any towing vessel that takes the barge through its port-to-port transit and those towing vessels, such as fleeting tugs or assistant tugs, that help maneuver a barge.

#### Ss RADM CARD

- Encl: (1) Checklist for Compliance with Operational Measures for Existing Tank Vessels Without Double Hulls  
 (2) IMO Resolution A.744(18), Annex B; Guidelines on the Enhanced Programme of Inspections During Surveys of Oil Tankers  
 (3) Sample Maneuvering Performance Test Result Poster for Wheelhouse  
 (4) Examples of Written Under-Keel Clearance Guidance



