

MSC Guidelines for Review of Inland Tank Barge Stability

Procedure Number: C1-13

Revision Date: May 13, 2016

T. O. PHILLIPS, CDR, Chief, Tank Vessel and Offshore Division

Purpose:

To establish a process for reviewing stability calculations submitted to the MSC for Inland Tank Barges regulated under 46 CFR Subchapters D, I, and/or O.

References:

- a. 46 CFR Subchapter S
 - b. NVIC 17-91, Guidelines for Conducting Stability Tests
 - c. ASTM F 1321-14, "Standard Guide for Conducting a Stability Test (Lightweight Survey and Inclining Experiment) to Determine the Light Ship Displacement and Centers of Gravity of a Vessel"
 - d. Marine Safety Manual, Volume IV
-

Contact Information:

If you have any questions or comments concerning this document, please contact the Marine Safety Center (MSC) by email or phone, and refer to Plan Review Guide Number C1-13.

Email: MSC@uscg.mil

Phone: 202-795-6731

Website: <http://homeport.uscg.mil/msc>

Responsibilities:

Using the applicable portions of references (a) through (d), the submitter shall provide sufficient documentation and plans to indicate compliance with the applicable requirements. The submission shall be made electronically to the above email address or, if paper, in triplicate to the MSC's address found on the above website. To facilitate plan review and project management, all plans and information specified in these guidelines should be submitted as one complete package through a single point of contact for the project.

MSC Guidelines for Review of Inland Tank Barge Stability

Procedure Number: C1-13

Revision Date: May 13, 2016

General Review Procedure:

- This Plan Review Guide is applicable to barges designed to operate on Inland routes. The definitions section at the end of this guide contains further information regarding the specific meaning of Inland routes.
 - If the vessel is new and not a sister vessel, has the Application for Inspection been submitted? In general, plan review may not occur until receipt of a copy of the Application is received.
 - Does the submission include all necessary information to support compliance with the applicable requirements? At a minimum, submissions should include the following:
 - General Arrangements
 - Lines, offsets, or computerized hull model
 - Tank Capacity Tables/Plans
 - Hydrostatic Tables
 - Stability Calculations (intact and damage, as applicable)
 - Does the submission clearly state what is desired from MSC? Are all plans requiring Coast Guard review and/or approval submitted in triplicate (if submittal is in hard copy)? Are there any special or unusual requests involved?
-

- For a barge regulated under 46 CFR **Subchapter D**, the stability requirements in 46 CFR Subchapter S **do not** apply if all of the following conditions are satisfied:
 - The barge does not have to meet 33 CFR Part 157, Subpart B,
 - The barge only carries a cargo listed in 46 CFR 30.25-1, and
 - Is less than 150 GT, or
 - Operates only in rivers, or lakes, bays, and sounds service.
- If all of the above requirements are met, then no stability review is required unless the stability is questioned by the OCMI. The OCMI will typically not require additional stability review if the following conditions from reference (d), section 6.E.5.b(2) are met:
 - All cargo is carried below the barge's main deck;
 - The barge has an oil tight or watertight centerline bulkhead;
 - The barge carries no more than 1/3 of its tank pairs slack; and
 - The barge's draft to depth ratio is not greater than 0.85.

MSC Guidelines for Review of Inland Tank Barge Stability

Procedure Number: C1-13

Revision Date: May 13, 2016

- Verify that lightship characteristics were (or are to be) determined using one of the following methods:
 - Acceptance as a sister vessel with known characteristics (reference (d), Section 6.D.2)
 - Deadweight survey combined with a conservatively assumed vertical center of gravity (VCG) (references (b) and (c))
 - In accordance with 46 CFR 170.085, a written stability test procedure must be sent to the MSC at least two weeks before the stability test. Reference (c) provides guidance on the required elements for the stability test procedure. The procedure shall be approved by the MSC prior conducting the test or survey.
 - In accordance with 46 CFR 170.175(b), arrangements should be made with the OCMI to have an acceptable Coast Guard representative to witness the stability test.
- For a barge regulated under 46 CFR **Subchapter D only**
 - Verify the intact righting energy requirements 46 CFR 174.015 are applicable.
 - If they are applicable, the area under the righting arm curve must exceed 5 ft-degrees for river service and 10 ft-degrees for lakes, bays, and sounds service. [See reference (d) Section 6.E.5.b(1)]
 - * Note: 33 CFR 157.08(h) exempts inland barges from the OPA 90 damage stability requirements.
- For a barge regulated under 46 CFR **Subchapter O**:
 - Verify that the barge meets the intact transverse stability requirements found in 46 CFR 172.090.
 - Verify that the barge meets the survival conditions in 46 CFR 172.110 assuming the damage found in 46 CFR 172.104 according to the barge's hull type (Type I and II only).
 - Verify the barge meets the intact longitudinal stability requirements found in 46 CFR 172.095.
 - Verify that the barge meets the weather tight weather deck integrity requirements found in 46 CFR 172.100 (Type I and II only).
- Per 46 CFR 31.10-32, if the barge was constructed after September 6, 1977 and is greater than 300 feet in length, a loading manual which complements the conditions examined in the stability review shall be submitted for approval in accordance with 46 CFR 42.15-1(a) or 45.105(a).
- If a barge is seeking a one-time voyage Special Loading Authorization (SLA), submit calculations based on the current stability letter and restrictions which comply with applicable requirements.

MSC Guidelines for Review of Inland Tank Barge Stability

Procedure Number: C1-13

Revision Date: May 13, 2016

Definitions:

Inland:	See 33 CFR 2.26
Rivers:	See 46 CFR 30.10-61
Lakes, Bays, and Sounds:	See 46 CFR 30.10-41
Great Lakes:	See 46 CFR 30.10-33
Special Services Voyages:	See Reference (d), Section 6.F.3.g
Fair Weather Voyages:	See Reference (d), Section 6.F.3.i

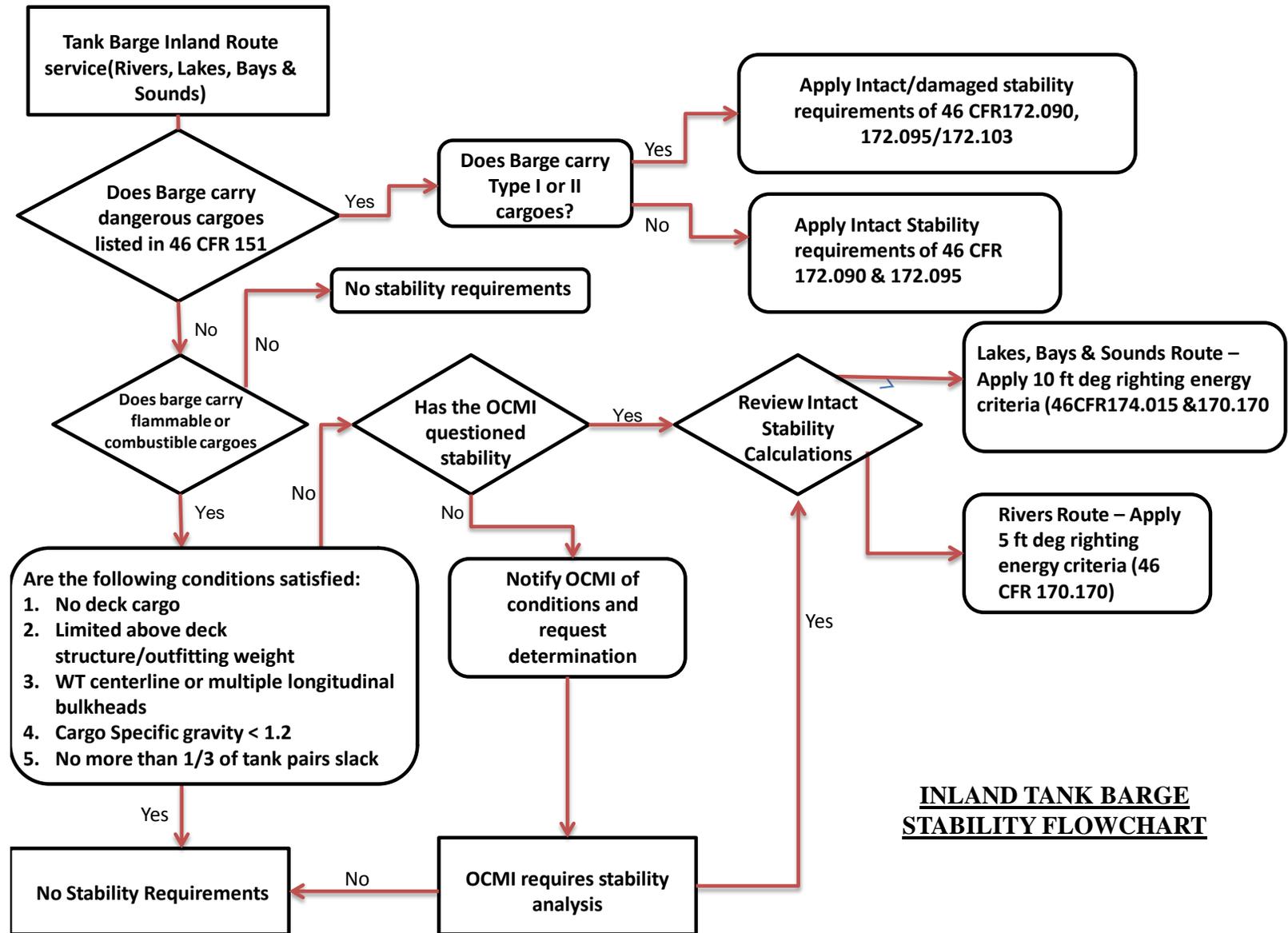
Disclaimer:

This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended to, nor does it impose, legally-binding requirements on any party. It represents the Coast Guard's current guidance on this topic and may assist industry, mariners, the general public, and the Coast Guard, as well as other federal and state regulators, in applying statutory and regulatory requirements. You can use an alternative approach for complying with these requirements, if the approach satisfies the requirements of the applicable statutes and regulations. If you want to discuss an alternative approach, you may contact the Marine Safety Center (MSC), the unit responsible for implementing this guidance.

Attachments:

(1) Flow Chart for Inland Tank Barge Stability

Attachment (1): Flow Chart for Inland Tank Barge Stability



INLAND TANK BARGE STABILITY FLOWCHART