MSC Guidelines for Review of Inland Tank Barge Structures and Longitudinal Strength

Procedure Number: T1-12 Revision Date: 07/01/03

References

a. ABS Rules for Building and Classing Steel Vessel for Service on Rivers and Intracoastal Waterways (1997), including all effective Rule Change Notices (RCNs)
b. 46 CFR Subchapter D
c. 46 CFR Subchapter I
d. 46 CFR Subchapter O
e. NVIC 1-98, Loading Considerations for Existing Inland Tank Barge

Disclaimer

These guidelines were developed by the Marine Safety Center staff as an aid in the preparation and review of vessel plans and submissions. They were developed to supplement existing guidance. They are not intended to substitute or replace laws, regulations, or other official Coast Guard policy guidance. The responsibility to demonstrate compliance with all applicable laws and regulations still rests with the plan submitter. The Coast Guard and the U. S. Department of Homeland Security expressly disclaim liability resulting from the use of this document.

Contact Information

If you have any questions or comments concerning this document, please contact the Marine Safety Center by e-mail or phone. Please refer to the Procedure Number: T1-12

E-mail: contactmsc@msc.uscg.mil
Phone: 202-366-6480.

General Review Guidance

- If the vessel is new and not a sister vessel, has the Application for Inspection been submitted? In general, no plan review will occur until receipt of a copy of the Application.
- Is it clearly stated what is desired from the MSC? Are all plans requiring Coast Guard review and/or approval submitted in triplicate? Are there any special or unusual requests involved?

- Is the vessel being reviewed under NVIC 10-82? If yes, then MSC review of structure and longitudinal strength is not required. Note: under NVIC 10-82, the MSC must review and approve general arrangement plans.

- Is the vessel being classed by ABS? If yes, check the vessel file for ABS letter/drawings or request from submitter/ABS. As stated in 46 CFR 31.10-1(c), CG considers ABS structural review for class as acceptable for showing compliance with US structural regulations.

- Per 46 CFR 31.10-32, if the barge is constructed after September 6, 1977 and is greater than 300 feet in length, a loading manual must be submitted in accordance with 46 CFR 42.15-1(a) or 45.105(a). Review of this item is normally conducted as part of the final stability review.

- Ensure the following drawings (items) are submitted:
  - General Arrangements
  - Scantling plans, including deck bin scantling
  - Structures calculations

- Verify that the hull, structural bulkheads, and decks are constructed of steel.

- Calculate all vessel scantlings using the appropriate Part and Section of reference (a).

- Loading/unloading sequences, bending moment calculations, and the hull girder section modulus calculations required by Notice No. 4 of reference (a) must be submitted for review.

- For Type I and II, Subchapter O barges,

  - Verify compliance with the pinnacle grounding requirement: 46 CFR 151.10-20(b)

Definition

Abnormal bending stresses: Those stresses caused by extreme distribution of cargo, such as loaded midship tanks with empty end tanks. This includes intermediate conditions of loading or discharging, even at terminals in calm water conditions. However, it does not include barges which are slightly

trimmed to facilitate cargo operations. The stresses can also be wave-induced. The Coast Guard has traditionally allowed tank barges designed and constructed to ABS River Rules to operate on LBS and near-coastal routes. However, the wave-induced stresses encountered on some of these exposed or partially-exposed waters may be beyond that intended by the ABS River Rules. Therefore, operation in these waters, regardless of loading practices, may warrant a structural evaluation.