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## **CURRENT DESIGN AND CONSTRUCTION STANDARDS FOR U.S. FLAG FISHING INDUSTRY VESSELS**

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Authors: Hal Hockema, P.E.; John Myers, P.E.; Craig Pomeroy, P.E.; Paul Monical, P.E.

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### **Introduction and Executive Summary**

This article mainly addresses current federal law and regulations governing the design, construction and maintenance of new U.S. flag fishing vessels and fish tender vessels built after July 1, 2013. Limited historical information and information regarding major conversions is also included. It is offered as a courtesy to the fishing industry but it is not a substitute for consulting with an experienced Naval Architect or Marine Engineer to ensure current regulatory compliance when designing and building your vessel.

Current federal law also prescribes which design work is to be done by state licensed Naval Architects or Marine Engineers, and marine survey requirements. So the responsibilities of state licensed Professional Engineers related to their direct supervision of engineering and design work are discussed, as well as the concept of “accepted marine surveyors”.

The changes to the law and regulations for fishing and fish tender vessels since 2013 include the following. Each of these subjects are expanded in detail later in this article.

- 1) Fishing and fish tender vessels at least 79 feet in length built after July 1, 2013 must be classed by the American Bureau of Shipping (ABS) or a similarly qualified organization, and must be assigned a load line.
- 2) Fishing and fish tender vessels of 50 to 79 feet in length built after July 1, 2013 and on or before February 8, 2016 must be classed by ABS or a similarly qualified organization.
- 3) Fishing and fish tender vessels of 50 to 79 feet in length built after February 8, 2016 must either be classed, or designed to classification or other equivalent standards by a state licensed Naval Architect or Marine Engineer, and the vessel must be surveyed during construction by a marine surveyor of an organization accepted by the U.S. Coast Guard.
- 4) Each fishing, fish processing or fish tender vessel of at least 50 feet in length built on or before July 1, 2013 that is at least 25 years of age, or undergoes a major conversion, after an Alternate Safety Compliance Program (ASCP) is established must meet the standards of the ASCP. The ASCP has not been fully developed yet and it is not clear when it will be issued.
- 5) Each fishing vessel of at least 79 feet in length built before July 1, 2013 that undergoes a major conversion after an Alternate Loadline Compliance Program (ALCP) is established must meet the standards of the ALCP. The ALCP has not been fully developed yet and it is not clear when it will be issued.

- 6) Professional Engineers, through regulations and ethics, have specific standards they must comply with for direct supervision of engineering work and design information. Simply stamping shipyard drawings is not an acceptable means of complying with P.E. laws.

More detailed information on regulations, definitions, and the U.S. Code can be found on the Coast Guard website at <https://www.uscg.mil/d13/cfvs/regs.asp>. It is important to understand that the Coast Guard has no authority to repeal or modify laws, only to create and/or modify the implementing regulations — the Code of Federal Regulations (CFR) — and related policies.

### **Brief History of Classification and Load Lines for Fishing Industry Vessels**

Let's start with length. For most vessels, "length" means the length listed on the vessel's Certificate of Documentation or Certificate of Number. For vessels of at least 79 feet in length, this is usually the "registered length" as defined in 46 CFR 69.53. For vessels of less than 79 feet in "overall length" as defined in 46 CFR 69.9, it can be either the registered length or the overall length, depending upon which tonnage measurement method is applied to the vessel. More information regarding length is offered later in this article.

**Fishing Vessels:** 46 CFR Part 28 Subpart E regulations in place since 1991 require that each fishing vessel of at least 79 feet in length built on or after September 15, 1991 must either meet a specific set of unintentional flooding (damage) stability standards, or must be load lined in accordance with 46 CFR Subchapter E. If you have built a new fishing vessel in this size category and timeframe and your vessel does not formally meet one of these two standards, you are not in compliance.

**Fish Tender Vessels:** In this article, any reference to "fish tender vessels" does not include Aleutian Trade Act vessels. 46 U.S. Code § 5102 requires that each fish tender vessel of at least 79 feet in length and of not more than 500 gross tons constructed as a fish tender vessel on or after January 1, 1980, or converted for use as a fish tender vessel on or after January 1, 1983, must be load lined.

**Fish Processing Vessels:** 46 CFR Part 28 Subpart F requires that *"each fish processing vessel which is built after or which undergoes a major conversion completed after July 27, 1990, must be classed by the ABS, or a similarly qualified organization"*. In addition, 46 U.S. Code § 5102 requires that each fish processing vessel of at least 79 feet in length and of not more than 5,000 gross tons constructed as a fish processing vessel on or after August 16, 1974, or converted for use as a fishing processing vessel on or after January 1, 1983 must be load lined.

### **Construction of New Fishing Vessels and Fish Tender Vessels Since July 1, 2013**

The Coast Guard Authorization Acts of 2010 (2010 CGAA) and 2015 (2015 CGAA), and the Coast Guard and Maritime Transportation Act of 2012 (2012 CGMTA), changed the law governing new fishing and fish tender vessel design and construction standards. Part of this change specifies that each new fishing or fish tender vessel of at least 50 feet overall in length and built after July 1, 2013 that operates beyond 3 nautical miles of the baseline or operates with more than 16 individuals onboard *"meets all survey and classification requirements prescribed by the American Bureau of Shipping or another similarly qualified organization approved by the Secretary"*.

The law governing new fishing and fish tender vessel design and construction is in 46 U.S. Code § 4503 and § 5102. Implementing regulations for the Coast Guard Acts mentioned above have been only partially issued at this writing, but the law is already in effect so it is important to understand some basic compliance issues before you build a new fishing vessel.

Load lines were previously accepted by the Coast Guard in lieu of unintentional flooding (damage) stability standards for new fishing vessels of at least 79 feet in length built on or after September 15, 1991. However, U.S. Code § 5102 now requires that all fishing vessels in this size category built after July 1, 2013 are load lined.

The 2015 CGAA reduced the classed vessel requirement for new fishing and fish tender vessels of “at least 50 feet overall in length, and not more than 79 feet overall in length as listed on the vessel’s certificate of documentation or certificate of number” by alternatively allowing vessels in this size category built after February 8, 2016 to dispense with class if “the vessel is designed by an individual licensed by a State as a naval architect or marine engineer, and the design incorporates standards equivalent to those prescribed by a classification society ...” and “construction of the vessel is overseen and certified as being in accordance with its design by a marine surveyor of an organization accepted by the Secretary.”

Pending completion of future regulatory action, the Coast Guard has indicated they will consider that the 50-foot threshold will be applied using “overall length”, and the 79-foot threshold will be applied using the “length” appearing on a valid Certificate of Documentation or Certificate of Number.

Here are a few basic principles of classing a vessel:

- 1) The vessel’s arrangements, hull and systems are designed to ABS or similarly qualified organization standards;
- 2) The design documents undergo classification society technical review and approval to ensure compliance with the classification society’s design standards;
- 3) The vessel is surveyed by the classification society during construction to ensure it is built in accordance with the approved design, and materials and equipment/machinery must be approved by the classification society;
- 4) When construction is complete, the classification society witnesses the stability test and performs technical review and approval of the stability calculations and loading instructions;
- 5) The classification society performs regularly scheduled in-water and drydocking condition surveys of the vessel, for the life of the vessel;
- 6) When modifications are to be made to the vessel, steps 1 thru 4 are repeated for those vessel features that are to be modified; and
- 7) Records of all design and marine survey documents are kept by the classification society, and should also be kept by the designer and owner, for the life of the vessel.

Load lined vessels follow a similar design, construction, survey and regulatory process as for classed vessels except that the design review is limited to major hull structure, watertight and weathertight integrity, railings and bulwarks, and stability. Piping systems not penetrating the hull or external decks, and all electrical systems, are not usually regulated by load lines. Vessels less than 79 feet in length are not load lined. Further details regarding load lines can be found on the Coast Guard website at <http://www.uscg.mil/hq/cg5/cg5212/loadlines.asp>

For fishing and fish tender vessels 50 to 79 feet in length built after February 8, 2016, the law requires the vessel to either be classed as described above or to be designed to classification society or equivalent standards using the following principles:

- 1) A licensed Naval Architect or Marine Engineer is responsible for the design that incorporates equivalent standards to those of an approved classification society;

- 2) Classification society review of the design documents is not required, but it is the responsibility of the licensed Naval Architect or Marine Engineer to ensure that *“the design incorporates standards equivalent to those prescribed by a classification society”*;
- 3) Survey of the vessel during construction must be *“by a marine surveyor of an organization accepted by the Secretary”* and certified by that surveyor *“as being in accordance with its design”* (“accepted organization” is defined in 46 CFR 28.73), but class approvals of materials and equipment/machinery are not required;
- 4) When construction is complete, a qualified individual — most states require this to be a licensed Professional Engineer — must complete a stability test, issue written stability and loading instructions, and assign a loading mark to the vessel (without third party review);
- 5) The vessel must undergo regularly scheduled in-water and drydocking condition surveys *“to the satisfaction of a marine surveyor of an organization accepted by the Secretary”*, for the life of the vessel;
- 6) *“Once every 5 years and at the time of a substantial alteration to such vessel”*, the vessel’s stability must be reviewed and updated as necessary by a qualified individual (“substantial alterations” and “substantially altered” are defined in 46 CFR 28.501 and 28.510);
- 7) When modifications are to be made to the vessel, steps 1 thru 3 are repeated for those vessel features that are to be modified; and
- 8) *“For the life of the vessel, the owner of the vessel maintains records to demonstrate compliance ... and makes such records readily available for inspection”* by the Coast Guard. Appropriate records should also be kept by the designer and the marine surveyor.

A peculiarity in the law is that fishing and fish tender vessels of 50 to 79 feet in length, built after July 1, 2013 and on or before February 8, 2016, must be classed.

For the purpose of building a new vessel, 46 U.S. Code § 4503 defines “built” as:

- 1) *“The vessel’s keel is laid;”* or
- 2) *“Construction identifiable with the vessel has begun and assembly of that vessel has commenced comprising of at least 50 metric tons or one percent of the estimated mass of all structural material, whichever is less.”*

### **Major Conversion of Existing Fishing Vessels and Fish Tender Vessels Since July 1, 2013**

The 2010 CGAA and the 2012 CGMTA changed the law governing major conversions of fishing and fish tender vessels.

**Alternate Safety Compliance Program (ASCP):** 46 U.S. Code § 4503 specifies that each fishing vessel, fish processing vessel or fish tender vessel of at least 50 feet overall in length, built before July 1, 2013 that *“is 25 years of age or older”* or *“that undergoes a major conversion completed after the later of July 1, 2013, or the date the Secretary establishes standards for an alternate safety compliance program, shall comply with such an alternative safety compliance program that is developed in cooperation with the commercial fishing industry and prescribed by the Secretary.”*

**Alternate Loadline Compliance Program (ALCP):** 46 U.S. Code § 5103 specifies that *“A fishing vessel built on or before July 1, 2013, that undergoes a major conversion completed after the later of July 1, 2013, or the date the Secretary establishes standards for an alternate loadline compliance program, shall comply with such an alternative loadline compliance program that is developed in cooperation with the commercial fishing industry and prescribed by the Secretary.”* Because load lines are normally applied only to vessels of at least 79 feet in length, the Coast Guard has indicated they intend to also apply the ALCP only to vessels of at least 79 feet in length.

It should be noted that both the ASCP and the ALCP have not been fully developed yet and it is not clear when they will be issued. Meanwhile, in January 2017 the Coast Guard published Voluntary Safety Initiatives and Good Marine Practices for Commercial Fishing Industry Vessels, for safety practices not addressed by statute or regulation.

### **Professional Engineers – Regulations and Ethics**

All states offer licensure of Professional Engineers but only a few states, usually coastal ones, offer specific licensure in Naval Architecture or Marine Engineering. This is normally achieved by licensing Professional Engineers in the specific field of Naval Architecture and Marine Engineering. Usually each Professional Engineer is issued a license indicating his/her field of expertise. So for example, if a Professional Engineer is licensed as a Civil Engineer, this does not by itself qualify that engineer to practice Naval Architecture or Marine Engineering — Professional Engineers are prohibited from practicing engineering outside their areas of competence.

State engineering regulations require that Professional Engineers stamp and sign the design and engineering documents, and be able to demonstrate that their final documents and work products conform to commonly accepted standards. When a Professional Engineer stamps and signs a document, that engineer must have either performed the engineering work or directly supervised the engineering work. For example, the state of Washington calls this “direct supervision”. An excerpt from the Washington Administrative Code (WAC) regulating this issue is shown below. Other states have similar requirements.

#### **WAC 196-25-070**

##### ***Providing direct supervision.***

***Direct supervision*** means the actions by which a licensee maintains control over those decisions that are the basis for the findings, conclusions, analyses, rationale, details, and judgments required for the preparation of engineering or land surveying plans, specifications, plats, reports, and related activities. ***Direct supervision*** requires providing personal direction, oversight, inspection, observation and supervision of the work being certified.

*These actions may include, but are not limited to: Direct face-to-face communications; written communications; U.S. mail; electronic mail; facsimiles; telecommunications, or other current technology. Contractual or employment relations must be in place between the licensee and unlicensed preparer to qualify as direct supervision. Mentoring is not direct supervision. Drawing or other document review after preparation without involvement in the design and development process as described above cannot be accepted as direct supervision.*

The last sentence of the WAC regulation is very important. There have been times our Naval Architecture firm has been asked to review and stamp drawings developed by someone else, usually a builder, looking for “an engineer’s stamp”. While the request is understandable, this form of review and stamping is not legal so Professional Engineers cannot do it.

The “direct supervision” requirement is not intended to limit a vessel owner or shipyard from telling a Professional Engineer what he/she wants and to ensure the Professional Engineer stays on track to achieve those objectives.

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## Summary Comments

New fishing vessels or fish tender vessels of at least 79 feet in length built after July 1, 2013 are required to be load lined and classed.

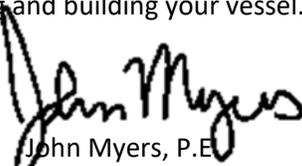
The alternative to classing a new fishing vessel or fish tender vessel of 50 to 79 feet in length remains a formal process, but without direct classification society involvement. The vessel must be designed, built and maintained to standards equivalent to those prescribed by a classification society. Usually the easiest way to accomplish this is to design the vessel to classification standards but in other cases it will be appropriate to design specific vessel areas or systems to an alternate standard that offers an equivalent level of safety and performance, as determined by the licensed Naval Architect or Marine Engineer.

A caution about “equivalent standards”: If you request your licensed Naval Architect or Marine Engineer to design to an alternative proposed standard, it may be a standard not commonly accepted and could be something that a Professional Engineer is not allowed to consider as an equivalent standard. However, a Professional Engineer will explain to you why something you suggest may not be equivalent or otherwise appropriate, and can recommend a solution that will be in compliance with the applicable law or regulation.

Hopefully this information will help you in planning your next fishing industry vessel construction project and aid in your discussion with an experienced Naval Architect or Marine Engineer to ensure current regulatory compliance when designing and building your vessel.



Hal Hockema, P.E.  
*President*



John Myers, P.E.  
*Vice President*



Craig Pomeroy, P.E.  
*Principal Naval Architect*



Paul Monical, P.E.  
*Associate Naval Architect*

### **HOCKEMA & WHALEN ASSOCIATES, INC.**

Naval Architects / Marine Engineers / Electrical Engineers  
Seattle WA