

May 26, 2006

RADM Thomas H. Gilmour
Assistant Commandant for Prevention
United States Coast Guard
2100 Second Street, SW
Washington, D.C. 20593-0001

VIA U.S. Department of Transportation Docket Management Facility and Fax [202-493-2251]

RE: Docket #USCG – 2005-22732, Domestic Vessel Passenger Weights – Voluntary Interim Measures Notice and Request for Public Comments

Dear Admiral Gilmour:

The National Marine Manufacturers Association (NMMA) offers the following comments in response to the U.S. Coast Guard's (USCG) announced voluntary interim measures for certain domestic passenger vessels to account for increased passenger and vessel weight when determining the vessel passenger capacity.¹ These interim measures were developed in response to National Transportation Safety Board (NTSB) safety recommendations² to the U.S. Coast guard to address overloading prompted by NTSB investigations into two tragic accidents:

- *The Lady D*, a small passenger pontoon vessel carrying 25 persons which capsized in high winds in Baltimore harbor on March 6, 2004; and
- *The Ethan Allen*, a New York State certified monohull passenger vessel, carrying 49 passengers, capsized on Lake George and sank on October 2, 2005.

The NTSB investigations have concluded that a contributing factor in these accidents was the overweighting of these vessels. The Coast Guard's Voluntary Interim Measures, among other things, would change the average weight per person assumed in the current simplified stability proof test (SST) or the pontoon simplified stability proof test (PSST) from the current 160 pounds (140 pounds for vessels that operate exclusively on protected waters and the passenger load consists of men, women, and children) to 185 pounds. The Coast Guard is recommending this change based upon its "evaluations of all available weight studies" and its conclusion that "the 185 pound average appears at this time to be the most accurate and appropriate average weight for evaluating the stability of small passenger vessels."³

¹ *Domestic Vessel Passenger Weights – Voluntary Interim Measures*, 71 Fed. Reg. 24,732 (Apr. 26, 2006).

² NTSB Safety Recommendation M-04-04, stated that the current 140 pound per person weight allowance for operations on protected waters does not reflect actual loading conditions and recommended that the Coast Guard revise its guidelines.

³ *Domestic Vessel Passenger Weights*, 71 Fed. Reg. at 24,734.

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The National Marine Manufacturers Association staff understands from our conversations with the Naval Architecture Division that the intent of the Coast Guard is to apply these voluntary measures to passenger vessels and not to recreational vessels. However, the *Federal Register* notice also noted that the Coast Guard is in the process of preparing a rule that would amend its regulations to address the stability issues caused by increases in passenger and vessel weight. This rule would, according to the notice, “apply to the same group of small vessels covered by the voluntary procedures...as well as all pontoon vessels.”⁴

In light of this statement and the NTSB’s concern with passenger capacity calculations, it is NMMA’s view that it would be constructive to the policy making process to provide a summary of how passenger capacity is calculated and labeled for recreational vessels. In particular, policy makers and the public should understand that while the commercial passenger vessel regulations do use an estimation of an average person’s weight in the capacity calculation, the recreational boat regulations do not. Importantly, the recreational boat regulations and the industry standards include a generous design factor in the capacity calculation to provide a safety margin for boat capacity. Therefore, while the recreational boating industry welcomes a constructive discussion on whether the current regulations and industry standards are adequate, such a discussion must include all of the facts.

The Federal Regulatory Requirements Enforced by the U.S. Coast Guard

U.S. Coast Guard capacity and labeling regulations for recreational vessels can be found at 33 C.F.R. § 183 Subpart C. These provisions apply to monohull boats less than 20 feet in length, except sailboats, canoes, kayaks, and inflatable boats. This subpart requires the maximum persons and weight capacity of a boat to be marked on the boat where it is visible to the operator. On certain boats, the maximum horsepower is also required on the label. What follows is an explanation on how to calculate the maximum weight capacity and the maximum persons capacity of a recreational boat.

Maximum Weight Capacity

The first step in calculating how many people a recreational boat can safely carry is to determine how much weight the boat can hold. Once that calculation is completed, the boat manufacturer then divides that number by a design factor to provide an additional margin of safety.

For an inboard (or sterndrive) powered boat: The maximum weight capacity is calculated by obtaining the displacement of the boat, subtracting the boat weight and the machinery weight, and then dividing the result by five. An alternative method to find the weight capacity is to obtain the *displacement* of the boat, subtract the *boat weight*, and then divide the result by seven.

For outboard powered boats: The maximum weight capacity is calculated by obtaining the *displacement* of the boat, subtracting the *boat weight*, and then dividing the result by five.

What is Maximum Displacement? The maximum displacement of the boat is the weight of the volume of water displaced by the boat at its maximum level immersion in calm water without water coming aboard.

What is the Boat Weight? The boat weight is the weight of the hull, deck and superstructure, permanent appurtenances and full fuel tanks. For inboard boats it also includes the engine weight.

⁴ *Domestic Vessel Passenger Weights*, 71 Fed. Reg. at 24,735.

Maximum Persons Capacity

Once the maximum weight capacity (divided by the design factor) is calculated, then the boat manufacturer must determine how many people the boat can carry – the maximum persons capacity.

For inboard boats: The maximum persons capacity expressed in pounds is the maximum weight capacity. If the boat's weight capacity is less than 550 pounds then the boat must be tested by immersion (through adding weights) and an additional calculation is necessary. The maximum person capacity is the lesser of the two numbers. The maximum persons capacity in whole numbers is found by using the maximum persons capacity in pounds, adding 32 to that number, dividing by a factor of 141 and then rounding up or down to the nearest whole number.

For outboard boats: The maximum persons capacity in pounds is the maximum weight capacity minus the weight of the outboard engine, controls, battery and portable fuel tank. For boats with a maximum weight capacity of less than 550 pounds, the method is the same as for inboard boats. The maximum persons capacity in whole numbers is found using the identical method as for inboard boats.

The persons capacity for boats powered by an engine of two horsepower or less is treated in a similar manner except that the calculated maximum persons capacity in pounds is 90% of the boat's maximum weight capacity.

American Boat and Yacht Council Standards (ABYC) and NMMA Certification

ABYC standards are the voluntary safety and construction standards used by boat builders in the U.S. and by many builders throughout the world. These are the standards, along with the USCG regulations, that form the basis of the NMMA certification program. Many of the ABYC standards go beyond the minimum requirements of the Coast Guard Regulations.

The USCG requires that load capacities be determined for boats less than 20 feet in length. The ABYC standards, and NMMA certification, require that these capacities be determined for boats less than 26 feet in length.

Labeling Requirements

For NMMA certification, boats less than 26 feet in length must be labeled for their maximum persons capacity and maximum weight capacity. The design of the labels must adhere to the requirements of 33 C.F.R. § 183 Subpart B.

Recreational Pontoon Boats

There are no Coast Guard regulations applicable to determination of capacities of recreational pontoon boats. Instead, pontoon boat builders follow the ABYC H-35 standard, *Powering and Load Capacity of Pontoon Boats* (attached with permission). Calculations of maximum load capacity are based on either the geometry of the pontoon tubes or by conducting an immersion test. Both methods build into the calculation a generous design factor prior to determining the maximum persons capacity.

The maximum persons capacity in pounds is determined by the same method as for monohull boats. The maximum persons capacity in whole numbers is found by using the maximum persons capacity in

pounds and dividing by the same factor of 141 and then rounding up or down to the nearest whole number.

Other Recreational Craft

ABYC also provides standards to calculate the maximum weight capacity and maximum persons capacity for other craft such as inflatable boats, canoes and kayaks.

Design Factors and Where Does that 141 Factor Come From?

In either method of determining maximum weight capacity and in both inboard and outboard boats, a design factor of at least five is used. This gives the boat operator a huge margin of safety when operating the boat. Similarly, a design factor is included in the ABYC H-35 standard for pontoon vessels.

What about that 141 factor used in calculating maximum persons capacity? Isn't that an average weight figure? No, the number 141 is not used as an average person's weight, but was derived during the development of the Federal Boating Safety Act of 1971 as a linear regression, the slope of a line through all boat persons capacities at the time of the research. U.S. Coast Guard Boating Safety Circular #68 published in 1989 provided a detailed explanation of the maximum capacity calculation and the 141 factor and can be found at: <http://www.uscgboating.org/recalls/pdfs/bscscan68a.pdf#people> .

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By way of background, NMMA is the nation's largest recreational marine industry association, representing over 1,600 boat builders, engine manufacturers, and marine accessory manufacturers. NMMA members collectively produce more than 80 percent of all recreational marine products made in the United States. Recreational boating is a popular American pastime, with almost 71 million boaters nationwide and over 13 million registered boats. The recreational boating industry is a substantial contributor to the nation's economy with expenditures on recreational marine products and services of over \$37 billion in 2005 alone.

NMMA appreciates this opportunity to comment on the voluntary interim measures and offers its assistance to the Coast Guard as it develops any proposed regulation to address passenger vessel capacity calculations. Please do not hesitate to contact NMMA's Regulatory Counsel, Cindy Squires, Esq. (202-737-9766; csquires@nmma.org) should you have any questions or need any further assistance.

Sincerely,



Monita W. Fontaine, Esq.
Vice President Government Relations

Attachment: ABYC H-35 standard, *Powering and Load Capacity of Pontoon Boats*

CC: Thomas J. Dammrich, President NMMA