

U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

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CG-543 Policy Letter

11-03
APR - 8 2011

From: Eric P. Christensen, CAPT
COMDT (CG-543)

To: Distribution

Subj: IMPLEMENTATION OF REVISED PASSENGER WEIGHT STANDARDS FOR EXISTING
PASSENGER VESSELS

Ref: (a) Passenger Weight and Inspected Vessel Stability Requirements: Final Rule (*Federal Register Vol. 75, No. 239, USCG-2007-0030, December 14, 2010*)

1. PURPOSE. This Policy Letter provides guidance for the implementation of the new Assumed Average Weight Per Person (AAWPP) required by reference (a).
2. ACTION. Sector Commanders and Officers in Charge, Marine Inspection (OCMIs) should ensure that passenger vessel compliance with regulatory changes in AAWPP is carried out in accordance with the guidance in this Policy Letter and its enclosures. This Policy Letter will be distributed by electronic means only. It is available on the Internet at <http://homeport.uscg.mil/USvsls>. Search for "Office of Vessel Activities Policy Letters."
3. DIRECTIVES AFFECTED. None.
4. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS. Environmental considerations were examined in the development of this policy letter and have been determined to be not applicable.
5. FORMS/REPORTS. None
6. BACKGROUND. The Coast Guard amended its regulations governing the maximum weight and the number of passengers that may safely be permitted on board a passenger vessel. The Coast Guard determines the maximum number of persons permitted on a vessel by several factors, including the total weight of people carried based on an Assumed Average Weight Per Person (AAWPP). Effective December 1, 2011, the AAWPP is 185 lbs.
7. DISCUSSION.
 - a. Because of the large number of passenger vessels affected by the Final Rule, it is not practical for the Coast Guard to amend all stability letters and Certificates of Inspection (COI's) prior to the

effective date of the new AAWPP, nor is it reasonable to defer vessel operator compliance until all vessel documents are updated. For these reasons, passenger vessel owners/operators should certify compliance with a new AAWPP by providing the cognizant OCMI with appropriate supporting documentation of compliance by the date the new AAWPP becomes effective. Passenger vessels with stability demonstrated through compliance with 46 CFR Subchapter S stability calculations or a pontoon simplified stability test must also submit this documentation to the Marine Safety Center (MSC), which issues stability letters to those vessels. The submittal guidance is outlined in enclosure (1).

b. The cognizant OCMI or MSC will verify supporting documentation and issue revised stability letters or addenda to existing stability letters, as appropriate, providing operational guidance in accordance with the new AAWPP. Coast Guard Marine Inspectors will verify each vessel operator's compliance with the new AAWPP no later than the vessel's first Inspection for Certification or Annual Inspection following December 1, 2011. OCMI's will amend stability letters and COIs in conjunction with those inspections as needed and in accordance with enclosure (1).

c. The Final Rule also permits an OCMI to accept an alternative to the AAWPP for a particular vessel if the owner/operator can demonstrate that the average weight of passengers and crew routinely carried on that vessel differs significantly from the published AAWPP. Guidance on alternatives to the AAWPP is contained in enclosure (2).

8. **DISCLAIMER.** This guidance is not a substitute for applicable legal requirements, nor is it itself a rule. It is not intended nor does it impose legally-binding requirements on any party. It represents the Coast Guard's current policy 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. Vessel owners/operators can use an alternative approach for complying with these requirements if the approach satisfies the requirements of the applicable statutes and regulations. If vessel owners/operators or their representatives want to discuss an alternative approach (you are not required to do so), you may contact the Coast Guard Office of Vessel Activities, Domestic Compliance Division (CG-5431) who is responsible for implementing this guidance.
9. **QUESTIONS.** Questions concerning this policy guidance should be directed to the Office of Vessel Activities Domestic Compliance Division at CG5431@uscg.mil or (202) 372-1224. This policy and other Domestic Vessel Policy documents are posted on Homeport at <http://homeport.uscg.mil/USVsIs>.

Enclosures: (1) Vessel Operator Certification of Compliance and OCMI Verification Following a Change in the AAWPP
(2) Compliance Alternatives to the AAWPP

**Vessel Owner/Operator Certification of Compliance and
OCMI Verification Following a Change in AAWPP**

Enclosure (1) to CG 543 Policy Letter 11-03

1. Implementation of the AAWPP

There is no regulation to specifically compel an owner/operator to submit certification of compliance; however failure to do so may void the vessel's stability letter or COI. On December 1, 2011, all vessel owners/operators must comply with the 185 lb AAWPP. Certification of compliance, once received by the OCMI, would permit the vessel to continue operating though its stability letter may not accurately indicate the number of persons that may be carried using the AAWPP and/or its COI may not have been amended to reflect the revised number of persons permitted. If an owner/operator fails to submit a certification of compliance by December 1, 2011, the OCMI may issue a form CG-835 reducing the total passengers permitted using the Weight Ratio method described in paragraph 2a.

The following procedures may be used by vessel owners/operators and OCMI's to determine, demonstrate, verify, and document compliance with the AAWPP. The OCMI may authorize other procedures as may be appropriate.

2. Calculating Vessel Passenger and Crew Capacity to Reflect Change in AAWPP

Passenger vessel owners/operators may comply with the change in AAWPP by employing one of the five methods described below.

a. Weight Ratio Method

This method reduces the total passengers and crew permitted by existing stability guidance to a number not greater than the former passenger and crew capacity multiplied by the ratio of the previous assumed weight per person (i.e. the assumed weight per person the existing stability guidance was based on) to the new AAWPP. If documentation of the previous assumed weight per person is not available, the most conservative (lowest) existing weight per person commensurate with the vessel's service should be assumed.

In formula, this means:

$$\frac{(\text{Existing Capacity} \times \text{Previous Assumed Weight per Person})}{185 \text{ lbs / Person}} = \text{New Passenger \& Crew Capacity}$$

Example 1: Vessel with 100 persons with an authorized route on either partially protected or exposed waters.

$$100 \text{ persons} \times 160 \text{ lbs per person} = 16,000 \text{ lbs}$$

$$16,000 \text{ lbs} \div 185 \text{ lbs per person} = 86.49 \text{ or } 86 \text{ persons permitted (always truncated to the whole number)}$$

Reduction of 14 persons

Example 2: Subchapter T vessel with 100 persons with an authorized route on protected waters only.

$100 \text{ persons} \times 140 \text{ lbs per person} = 14,000 \text{ lbs}$
 $14,000 \div 185 \text{ lbs per person} = 75.68$ or 75 persons permitted.
Reduction of 25 persons

Example 3: Vessel on a partially protected route carrying 100 persons with a documented test weight (e.g. 16,000 lbs)

$16,000 \text{ lbs} \div 185 \text{ lbs per person} = 86.49$ or 86 persons permitted.
Reduction of 14 persons

Example 4: Vessel with 100 persons and previously reviewed stability calculations demonstrating compliance with the requirements of Subchapter S at an assumed passenger weight of 165 lbs per person.

$100 \times 165 \text{ lbs per person} = 16,500 \text{ lbs}$
 $16,500 \text{ lbs} \div 185 \text{ lbs per person} = 89.19$ or 89 persons permitted.
Reduction of 11 persons

b. Weight Compensation Method

Vessels that are authorized to carry either deck or vehicular cargo in addition to passengers may reduce the cargo weight carried in order to offset all or part of the increase in AAWPP. Owners/operators who choose this option would see less or no reduction in passenger capacity. Owners/operators electing this option should provide calculations to the OCMI and/or MSC, as appropriate, showing the offset:

Example: Vessel with 100 persons with an authorized route on either partially protected or exposed waters. Vessel is also authorized to carry 5,000 lbs of deck cargo.

Change in AAWPP = $(185 - 160)$ lbs per person = 25 lbs per person

$100 \text{ persons} \times 25 \text{ lbs per person} = 2,500 \text{ lbs.}$
Vessel may continue to carry 100 persons if deck cargo is reduced to:
 $5,000 - 2,500 = 2,500 \text{ lbs.}$

If there is no change in deck cargo, the number of persons is reduced:

$100 \times 160 \text{ lbs per person} = 16,000 \text{ lbs}$
 $16,000 \text{ lbs} \div 185 \text{ lbs per person} = 86.49$ or 86 persons permitted.
Reduction of 14 persons

Enclosure (1) to CG 543 Policy Letter 11-03

c. Direct Verification Method

(1) The owner/operator may *directly verify* that the total weight of persons loaded aboard the vessel does not exceed the total permitted weight of persons associated with the existing stability guidance by weighing all passengers and variable loads using either mechanical or electronic means. Variable loads to be included in direct verification weighing may be limited to passenger personal effects provided the weight of other consumables aboard the vessel was previously accounted for in the stability evaluation. Using the formula in paragraph 2a, owners/operators may determine the total test weight for their vessels if not otherwise documented. If the average weight of a particular group of passengers is less than the published AAWPP, the vessel may be able to carry additional passengers up to a point where the total weight of passengers and variable loads equals but does not exceed the total test weight¹ specified on the stability letter. However, the COI may limit the passenger count because of lifesaving equipment, fire systems, or other factors.

(2) Equipment used to verify weight should be independently calibrated (ASTM, UL, etc.) and used as specified by the equipment manufacturer and to the satisfaction of the OCMI. While draft or loading marks may be used to maintain a vessel within overall weight restrictions, these marks cannot be used to differentiate between personnel weight and other variable loads such as tankage. As an exchange of low weight (such as tank capacity) for high weight (excess personnel weight) will have a negative effect on stability, draft or loading marks alone are not considered to be an adequate means for direct verification. Regardless of the total weight of passengers, at no time may more passengers be carried than permitted by the COI.

(3) Passenger vessel owners/operators employing this option should propose a plan to the OCMI that describes the equipment and procedures that will be used to directly verify weight. Persons may be weighed individually or in groups as long as the total weight may be determined. The total weight loaded for each voyage should be logged as evidence of compliance with the vessel's stability guidance.

(4) A vessel operator approved by the OCMI to use Direct Verification in lieu of an AAWPP will have the following endorsement place on the vessel's COI:

In lieu of limiting passengers based on AAWPP, the operator may weigh passengers and variable loads so that the Master can ensure before departure that the vessel does not exceed its authorized passenger weight. The total weight of passenger and variable loads should not exceed the total weight allowed by the vessel's stability letter dated XXX XX, XXXX but in no case should the total number of persons aboard exceed the total number of persons permitted by the COI.

(5) If an operator elects to demonstrate compliance through this option, a revision or an addendum must still be issued to the vessel's stability letter indicating the number of persons permitted using the AAWPP and the total test weight for which the vessel was approved. If for any reason, the

¹ Total Test Weight is defined in §178.330 (b) as the total weight of persons other than required crew, plus the personal effects of those persons expected to be carried while aboard the vessel. The weight of crew and other variable loads should be accounted for as part of the loaded condition described in §178.330 (a)(4). However, if these weights were not accounted for as part of the loaded condition, they should be considered a subset of the total test weight and appropriately considered when determining the maximum number of passengers that may be permitted.

operator does not employ direct verification at any time, the passenger count stipulated by the stability letter reflecting the AAWPP would apply.

d. Stability Calculations Method

Some vessels may have sufficient stability to permit an increase in the AAWPP with either no reduction in passengers or fewer than that determined by the weight ratio method. Owners/operators of vessels with stability determined through compliance with Subchapter S stability calculations may submit revised calculations demonstrating that the vessel complies with applicable stability requirements when loaded with persons at the updated AAWPP. These calculations may use the results of previous or a new stability test (See NVIC 17-91 regarding the preparation for and conduct of a stability test). New stability tests associated with revised stability calculations must be conducted in the presence of a Coast Guard Marine Inspector. Calculations must be submitted in accordance with Subchapter S to the MSC with a copy to the cognizant OCMI.

e. New Stability Proof Test Method

(1) An SST would normally determine the total test weight by multiplying the total number of persons by the applicable AAWPP. Because the previous AAWPP may have limited the total test weight used in the SST, a vessel that had an SST performed may not have maximized the total test weight and it may be possible for that vessel to pass an SST at a greater total test weight than previously used.

(2) Owners/operators may choose to conduct a new SST or Pontoon Simplified Stability Test (PSST) to demonstrate compliance with the new AAWPP. New SST's must be conducted in the presence of a Coast Guard Marine Inspector. The Coast Guard will accommodate requests for new SSTs or PSSTs as resources permit.

(3) In accordance with the Final Rule, OCMI's will contact MSC prior to witnessing any PSST so MSC personnel may attend the proof test. Stability letters for pontoon vessels will be issued to vessel owners/operators by MSC after satisfactory completion of a PSST.

(4) Owners/operators may always opt to use an assumed weight greater than the AAWPP when conducting an SST.

3. Vessels for Which Stability Tests Were Previously Waived

(1) Regulations permit the OCMI to waive stability tests for certain vessels carrying 49 or fewer passengers if the OCMI does not question the stability. Vessels for which stability tests were waived do not have stability letters but those owners/operators must still demonstrate compliance with the new AAWPP. This may be done in several ways including those listed in paragraphs 2a through 2e. Though they do not have stability letters, the maximum approved weight can be determined by multiplying the passenger and crew capacity (i.e. the authorized number of persons) by 160 lbs per

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person for exposed and partially protected routes and by 140 lbs per person for protected routes. Operators can then reduce the passenger count (similar to 2a) or weigh passengers to ensure that total weight is not exceeded (similar to 2c).

(2) If an owner/operator wishes to demonstrate the vessel has adequate stability to accommodate the existing passenger capacity at the AAWPP, then the OCMI must reassess the vessel's stability. If, given the increase in AAWPP, the OCMI still does not question the stability and will not require compliance with Subchapter S or an SST, a note in the Marine Information Safety and Law Enforcement (MISLE) database should be made indicating that the vessel has adequate stability for the number of passengers at the new AAWPP but issuance of a stability letter is not necessary. If the increase in the total weight leads the OCMI to question the vessel's stability, then compliance with Subchapter S, an SST, or another method acceptable to the OCMI may be required as appropriate. A stability letter would then be issued to the vessel by the OCMI or MSC as appropriate.

4. Owner/Operator Certification of Compliance to OCMI

a. All vessels

If the Coast Guard has not issued a stability letter associated with the new AAWPP or a greater average weight, or the Coast Guard has not confirmed that existing stability guidance is acceptable with respect to the new AAWPP, then the owner/operator should certify to the OCMI that the vessel complies with applicable stability requirements not later than December 1, 2011. Certification of stability compliance by an owner/operator means that –

- (1) The owner/operator has provided a written statement to the OCMI together with documentation clearly supporting the total weight and number of passengers and crew permitted to be carried at the new AAWPP (see paragraph (b) or (c) below); and
- (2) A copy of this information has been provided to the MSC if the vessel is a pontoon vessel or the owner/operator has demonstrated compliance with the provisions of Subchapter S.
- (3) If the vessel has a stability letter, a copy of it should be included with the documentation.
- (4) Owners/operators who determine that their vessel will incur no reduction in the total number of passengers permitted still should certify to the OCMI that there will be no impact on the total passenger capacity, and should develop sufficient documentation to support their findings.
- (5) Owners/operators should keep appropriate copies of this documentation aboard their vessels as evidence of compliance after the new AAWPP becomes effective, pending receipt of revised stability letters or stability letter addenda. Additional information and/or tests may be required if the OCMI questions the vessel's stability.

Vessel owners/operators are strongly encouraged to implement the new AAWPP as soon as practicable, but may continue to operate their vessels under the stability guidance and AAWPP in force at the time the Final Rule was published until December 1, 2011.

b. Owner/Operator certification for vessels complying with Subchapter T simplified stability

Owners/operators of vessels with stability letters based on an SST should submit this certification information to the cognizant OCMI (see Appendix B). This may or may not be the same OCMI who issued the current stability letter. USCG Sector mailing addresses and contact information may be found at <http://homeport.uscg.mil> under Sector Directory or at www.uscg.mil.

c. Owner/Operator certification for vessels complying with Subchapter S stability requirements

Owners/operators of vessels with stability letters issued by the MSC or a Coast Guard District should submit this certification information to the cognizant OCMI, with a copy to the MSC. MSC will review and verify the information provided and issue an addendum to the existing stability letter or a new stability letter, as appropriate. Pending revision of these documents, owners/operators must still comply with the provisions of the Final Rule and ensure that their vessels are not overloaded.

Commanding Officer (MSC)
US Coast Guard
2100 Second Street SW Stop 7102
Washington, D.C. 20593-7102

Or

MSC@uscg.mil

d. Revisions to owner/operator certification of compliance

There is no prohibition on an owner/operator revising or updating their certification of compliance or to employ another method at a later date, subject to the approval of the OCMI. For example, a vessel owner/operator employing the Weight Ratio Method to ensure compliance by December 1, 2011 may request an SST to be performed or submit stability calculations at a later date to demonstrate stability for an increased passenger capacity.

4. OCMI Verification of Compliance (See Diagram in Appendix A)

a. Documentation of owner/operator certification of compliance

Upon receipt of a vessel owner's/operator's certification of compliance, the OCMI should scan the submittal into MISLE Vessel Documents and enter the following Inspection Note:

Received operator's certification of compliance with AAWPP to become effective December 1, 2011. Compliance to be verified at next annual inspection following effective date.

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No further action by the OCMI is necessary until compliance is verified by a Marine Inspector at the next annual inspection. For any vessel whose supporting documentation has not been verified by the time of the vessel's next annual inspection, the OCMI should permit the vessel to continue operation under the conditions of the owner/operator's self-certification until such time as supporting documentation is verified and revised stability guidance has been issued.

b. Evaluation of owner/operator certification of compliance

As resources permit, the OCMI may review compliance submittals prior to verification inspections. It should be noted, however, that OCMI's not completing this review should not impact vessel operations at the owner/operator certified vessel capacity. This review may ultimately coincide with the verification inspection described below.

c. Verification Inspection

The Coast Guard will verify implementation of the owner's/operator's certification no later than the vessel's next annual inspection following the December 1, 2011 implementation date.. Stability letters will be revised and COIs will be amended as needed in accordance with current policy and as Coast Guard resources permit.

5. Amendments to COI's and Stability Letters

a. Addenda or Revisions to Stability Letters issued by the OCMI (SST)

An addendum or revision to the stability letter should be generated, as needed, for each vessel previously issued a stability letter by the OCMI and that demonstrated compliance through an SST. Addenda and revised stability letters will be issued by the OCMI in whose zone the vessel will operate when the new AAWPP becomes effective. The addendum or revised stability letter should clearly state the AAWPP used in the calculations, the maximum passengers and crew permitted at the AAWPP, and the total weight allowed for passengers and variable loads (total test weight). See Appendix B for examples.

b. Addenda or Revisions to Stability Letters issued by MSC (Subchapter S compliance)

Each vessel that complies with the stability requirements of Subchapter S or that demonstrated compliance through a PSST will be issued an addendum to the existing stability letter or a revised stability letter as may be appropriate, from MSC after evaluation of the owner/operator submittal discussed in paragraph 4. See Appendix B for examples.

c. COI Amendments

(1) If the change in AAWPP results in a change to the number of persons permitted to be carried by a vessel's stability letter it may be necessary to amend the COI. This may not be required in all

cases if the stability letter authorizes the carriage of more persons than the COI, as there may be other limiting factors such as, but not limited to, primary lifesaving or fixed firefighting equipment.

(2) If a COI amendment is warranted, the Marine Inspector should make a pen-and-ink change at the time of the vessel verification inspection and then process the Amended COI for OCMI approval and signature during the vessel inspection activity in accordance with normal inspection activity routing procedure.

d. Effective Date of COI and Stability Letter Amendments

(1) Revised stability letters, addenda to stability letters, and COI amendments issued in accordance with the provisions of this policy will, in general, not become effective until December 1, 2011. For vessel owners/operators whose certification documentation is verified prior to December 1, 2011, revised stability letters or addenda may be dated December 1, 2011. Those owners/operators who elect to implement the revised stability guidance sooner than December 1, 2011 will have stability letters or addenda issued to be effective as requested in their submission. COI's should be amended as necessary after implementation.

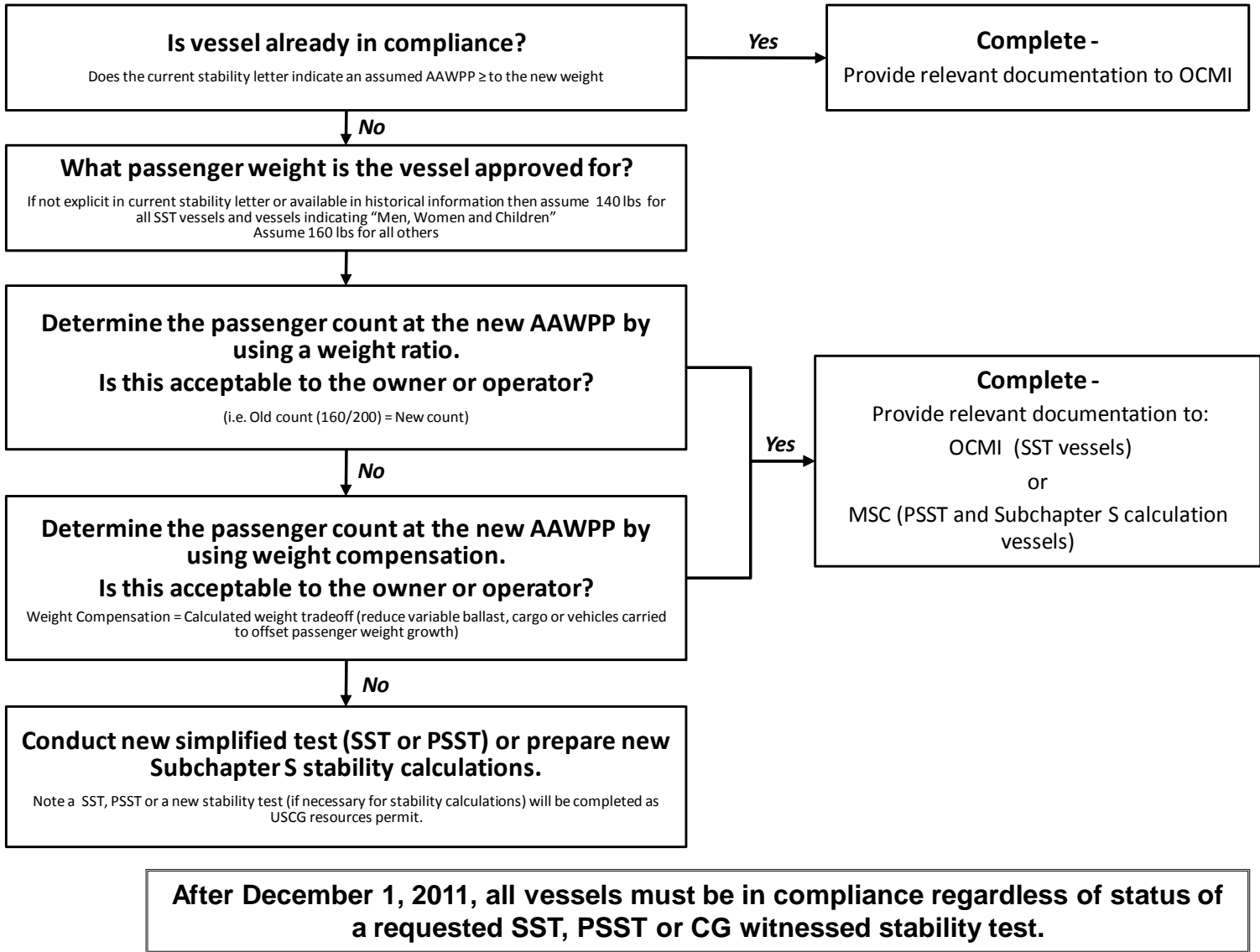
(2) Those vessel owners/operators who do not receive revised stability guidance prior to December 1, 2011 will have revised stability guidance issued and COIs amended in conjunction with their vessel's first annual inspection following that date.

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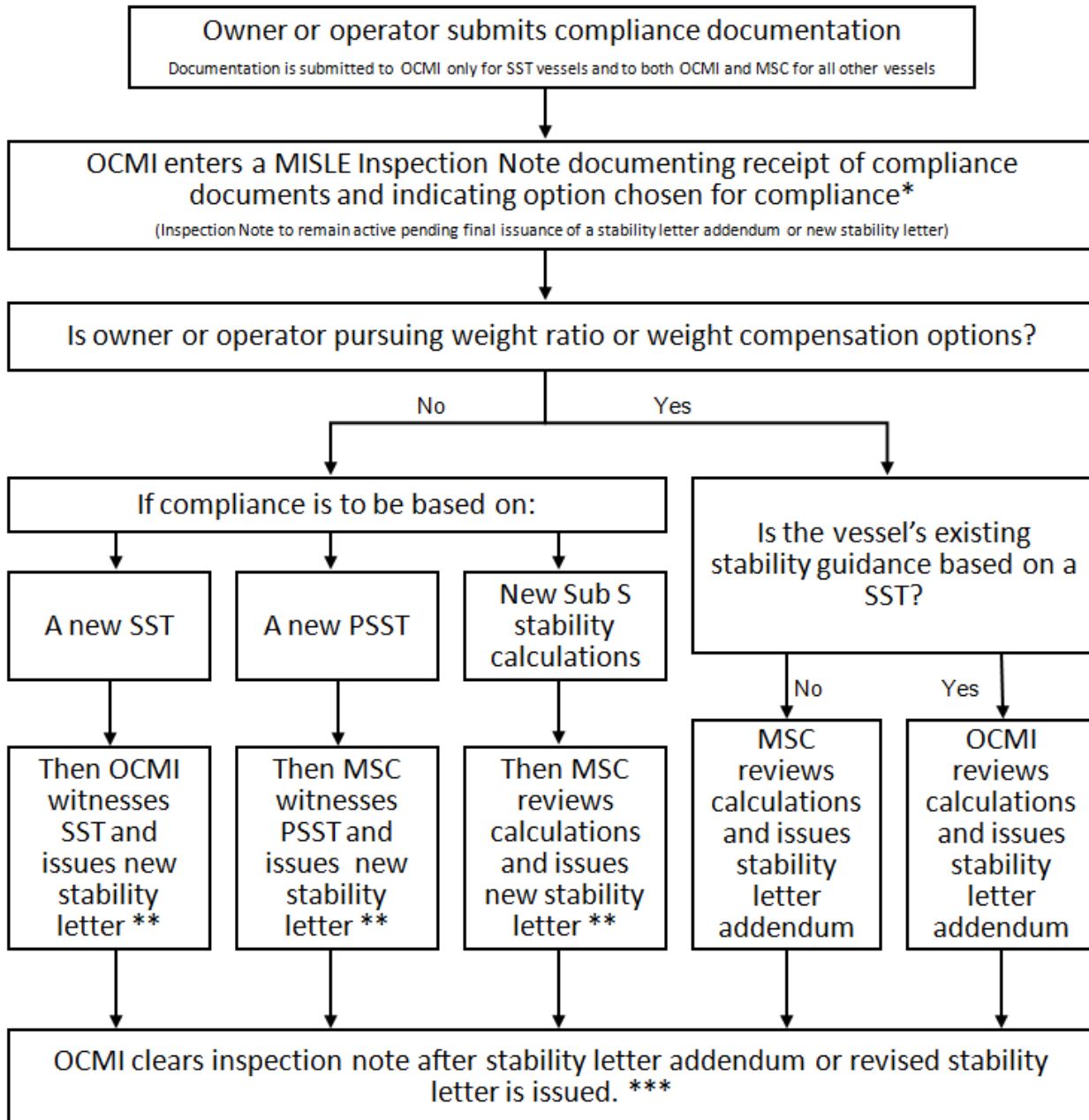
Appendix A

Owner/Operator and USCG Compliance Diagrams

Passenger Weight Compliance – Owner or Operator Actions



Passenger Weight Compliance – USCG Actions



* After December 1, 2011, all vessels must be in compliance regardless of status of a requested SST, PSST or CG witnessed stability test.

** SST's and PSST's and any stability tests necessary for completing Subchapter S stability calculations must be witnessed by USCG personnel and will be conducted as USCG resources permit.

*** USCG will endeavor to issue stability letter addendums or new stability letters to vessels by their first annual exam after December 1, 2011 – however, if reviews or stability tests are not completed by that time, no additional USCG action will be taken and vessels will continue to operate under their self-certification scheme.

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Appendix B

Sample Correspondence and Documents

**SAMPLE OWNER/OPERATOR CERTIFICATION OF COMPLIANCE
(Simplified Stability)**

Officer in Charge Marine Inspection
U.S. Coast Guard Sector Homeport
123 Coast Guard Way
Homeport, USA
Attn: Marine Inspections

Dear OCMI,

My vessel, M/V Passenger, Official Number 1234567, presently has a stability letter authorizing the carriage of 100 passenger and 3 crew members on an exposed waters route. The assumed average weight per person (AAWPP) at the time approved stability information was issued was 160 lbs. The total weight for passengers and crew for my vessel is determined to be 16,480 lbs.

Beginning December 1, 2011(or earlier if operator chooses) and to comply with the stability regulations using the AAWPP of 185 lbs, I will restrict the total number of passengers and crew aboard M/V Passenger to a maximum of 89 total persons (86 passengers and 3 crew members) based upon the AAWPP of 185 lbs. I have enclosed a copy of my vessel's current stability letter.

Sincerely,

Captain J. Smith
M/V Passenger

Enclosure (1) to CG 543 Policy Letter 11-03

**U.S. Department of
Homeland Security**

**United States
Coast Guard**



Commander
Coast Guard Sector Homeport

123 Coast Guard Way
Homeport, USA 11111
Phone: (202) 555-5555
Fax: (202) 555-5555

16710/M/V PASSENGER
December 1, 2011

SAMPLE ADDENDUM TO STABILITY LETTER
(Simplified Stability Test)

Master, M/V PASSENGER, O.N. 1234567
64' x 18' Small Passenger Vessel (T)

A Simplified Stability Proof Test has been performed to demonstrate compliance with the passenger weight requirements of 46 CFR 178.320. Results indicate that, when operated in accordance with its current stability letter, dated October 1, 1997, and any further restrictions indicated below, the stability of the PASSENGER remains satisfactory for operation on Exposed Waters. You are reminded that you are required by 46 CFR 185.315 to verify your compliance with these instructions and precautions after loading and prior to departure on each voyage.

OPERATING RESTRICTIONS

1. **PERSONNEL**: The vessel may carry a maximum of 89 persons of which 86 may be passengers. These numbers are based on an assumed average weight of 185 pounds per person and a total weight for passengers and crew of 16,480 lbs. Since the personnel capacity is based upon other considerations in addition to stability, you are cautioned that the number of persons and their distribution may be further limited to that specified on the Certificate of Inspection.

This stability letter addendum should be posted under glass or other suitable transparent material in the pilothouse of the vessel so that it and all pages of the stability letter are visible.

J. A. JONES
Captain, U.S. Coast Guard
Officer in Charge, Marine Inspection

Enclosure (1) to CG 543 Policy Letter 11-03

**U.S. Department of
Homeland Security**

**United States
Coast Guard**



Commander
Coast Guard Sector Homeport

123 Coast Guard Way
Homeport, USA 11111
Phone: (202) 555-5555
Fax: (202) 555-5555

16710/M/V PASSENGER
December 1, 2011

SAMPLE STABILITY LETTER
(After AAWPP implementation)
(Simplified Stability Test)

Master, PASSENGER, O.N. 1234567
64' x 18' Small Passenger Vessel (T)

You are responsible for maintaining this vessel in a satisfactory stability condition at all times and for following the instructions and precautions listed below. You are reminded that you are required by 46 CFR 185.315 to verify your compliance with these instructions and precautions after loading and prior to departure on each voyage.

A simplified stability test, witnessed by the U.S. Coast Guard, was performed on the M/V PASSENGER, O.N. 1234567, at Homeport, USA, on October 1st, 2011. The test was conducted in accordance with the requirements of Title 46 Code of Federal Regulations (CFR) 178.330. This stability test was conducted with a total test weight of 18,500 lbs. The assumed average weight per person is 185 lbs. Results indicate the stability of PASSENGER, as presently outfitted and equipped, is satisfactory for operation on Exposed Waters, provided the following restrictions are strictly observed.

OPERATING RESTRICTIONS

1. **ROUTE:** Operation on Exposed Waters is permitted. Since the vessel's route is based upon other considerations in addition to stability, you are cautioned that the route may be further limited to that specified on the Certificate of Inspection.
2. **PERSONNEL:** The vessel may carry a maximum of 103 persons of which 100 may be passengers. These numbers are based on an assumed average weight of 185 pounds per person and a total passenger weight (total test weight) of 18,500 lbs. Since the personnel capacity is based upon other considerations in addition to stability, you are cautioned that the number of persons and their distribution may be further limited to that specified on the Certificate of Inspection.
3. **WATERTIGHT DOORS AND BULKHEADS:** There are six main transverse watertight bulkheads located at 3 ft., 15 ft., 30 ft., 45 ft., and 60 ft, aft of the forward perpendicular and no watertight doors. Bulkheads should not be added or modified without the authorization and supervision of the cognizant Officer in Charge, Marine Inspection (OCMI).

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4. HULL OPENINGS: Any openings that could allow water to enter into the hull or deckhouse should be kept closed when rough weather or sea conditions exist or are anticipated.
5. WEIGHT CHANGES: No fixed ballast or other such weights should be added, removed, altered or relocated without the authorization and supervision of the cognizant OCMI.
6. DECK CARGO: No deck cargo may be carried.
7. BILGES: The vessel's bilges and voids should be kept pumped to minimum content at all times consistent with pollution prevention requirements.
8. LIST: You should make every effort to determine the cause of any list of the vessel before taking corrective action.
9. FREEING PORTS: Deck freeing ports should be maintained operable and completely unobstructed at all times.

This stability letter should be posted under glass or other suitable transparent material in the pilothouse of the vessel so that all pages are visible.

J. A. JONES
Captain, U.S. Coast Guard
Officer in Charge, Marine Inspection

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**U.S. Department of
Homeland Security**

**United States
Coast Guard**



Commanding Officer
United States Coast Guard
Marine Safety Center

2100 2ND ST SW, STOP 7102
WASHINGTON, DC 20593-7102
Staff Symbol: MSC-1
Phone: (202) 475-3401
Fax: (202) 475-3920
Email: msc@uscg.mil

STABILITY LETTER
ADDENDUM
(Subchapter S Compliant Vessel)

16710/P012345
Serial: H2-1000000
December 1, 2011

Master, TYPICAL BOAT, O.N. 2345678
Boat Builder Hull No. 0
95' x 30' x 10' Small Passenger Vessel (K)

Calculations have been performed to demonstrate compliance with the passenger weight requirements of 46 CFR 170.090. Results indicate that, when operated in accordance with its current stability letter, dated October 1, 1970, and any further restrictions indicated below, the stability of the TYPICAL BOAT remains satisfactory for operation on Exposed Waters. You are reminded that you are required by 46 CFR 122.315 to verify your compliance with these instructions and precautions after loading and prior to departure on each voyage.

OPERATING RESTRICTIONS

1. **PERSONNEL:** A maximum of 224 persons may be carried on this two deck vessel, of which 220 may be passengers. A maximum of 150 passengers may be carried on the upper deck. These numbers are based on an assumed weight of 185 pounds per person. Since the personnel capacity is based upon other considerations in addition to stability, you are cautioned that the number of persons and their distribution may be further limited to that specified on the Certificate of Inspection.

This stability letter addendum should be posted under glass or other suitable transparent material in the pilothouse of the vessel so that it and all pages of the stability letter are visible.

J. P. JONES
Commander, U.S. Coast Guard
By direction

U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
Marine Safety Center

2100 2ND ST SW, STOP 7102
WASHINGTON, DC 20593-7102
Staff Symbol: MSC-1
Phone: (202) 475-3401
Fax: (202) 475-3920
Email: msc@uscg.mil

STABILITY LETTER
ADDENDUM
(Subchapter S Compliant Vessel)

16710/P012345
Serial: H2-1000000
December 1, 2011

Master, BIGGER TYPICAL BOAT, O.N. 7654321
Boat Builder Hull No. 0
200' x 40' x 12' Small Passenger/Vehicle Ferry (K)

Calculations have been performed to demonstrate compliance with the passenger weight requirements of 46 CFR 170.090. Results indicate that, when operated in accordance with its current stability letter, dated October 1, 1970, and any further restrictions indicated below, the stability of the BIGGER TYPICAL BOAT remains satisfactory for operation on Exposed Waters. You are reminded that you are required by 46 CFR 122.315 to verify your compliance with these instructions and precautions after loading and prior to departure on each voyage.

OPERATING RESTRICTIONS

1. **PERSONNEL**: A maximum of 204 persons may be carried on this vessel, of which 200 may be passengers. These numbers are based on an assumed weight of 185 pounds per person. Since the personnel capacity is based upon other considerations in addition to stability, you are cautioned that the number of persons and their distribution may be further limited to that specified on the Certificate of Inspection.
2. **VEHICLES**: A maximum of 266 long tons (596,000 pounds) of trucks may be carried. For the purposes of vehicle weight considerations, any vehicle with a height over 7 feet 0 inches is to be considered a truck. Vehicles other than trucks may be loaded without restriction subject to the draft limitations in the above cited stability letter. Vehicles should be loaded so as to minimize heel and trim.

This stability letter addendum should be posted under glass or other suitable transparent material in the pilothouse of the vessel so that it and all pages of the stability letter are visible.

J. P. JONES
Commander, U.S. Coast Guard
By direction

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Compliance Alternatives to the AAWPP

Enclosure (2) to CG 543 Policy Letter 11-03

1. OCMI Acceptance of Alternatives to the AAWPP

- a. Passenger vessel owners/operators have several tools at their disposal to ensure vessels do not become overloaded. These include draft marks, loading marks, draft indicating systems, direct verification (weighing passenger and variable loads), and use of the AAWPP. These tools may be used collectively to ensure a vessel does not become overloaded.
- b. Since the AAWPP was determined using nationwide data, the Coast Guard expects that this value will be applied to the majority of passenger vessels. However, the Coast Guard recognizes there may be exceptions for which the AAWPP is clearly not appropriate for their service, such as vessels which consistently carry children as their primary passengers. In such cases, the Coast Guard may accept an alternative assumed average passenger weight for a particular vessel if the owner/operator can produce supporting evidence. These cases will be addressed on a case-by-case basis.
- c. While final authority to accept an average weight which deviates from the AAWPP has been left to the OCMI, it is anticipated that the evaluation of such requests will involve close coordination between the OCMI, Commandant (CG-5431) and the MSC, as appropriate.
- d. One acceptable method, based on Federal Aviation Administration (FAA) Advisory Circular AC 120-27E, Aircraft Weight and Balance Control dated June 10, 2005, for documenting an assumed weight which differs from the AAWPP is provided below.

2. Passenger Weight Survey

- a. Vessel owners/operators who wish to demonstrate that the published AAWPP does not reflect the average weight of their passengers and wish to employ an assumed average weight of passengers more representative of that carried on their vessels may conduct a scientific survey of passenger weight to determine that average and submit the data and results to the OCMI for consideration.
- b. Owners/operators intending to conduct surveys should submit a Survey plan to the OCMI for approval prior to beginning any survey. Because the survey process and calculations may be complex, vessel owners/operators are encouraged to engage appropriate consultants as may be needed. While the survey plan and results must be acceptable to the OCMI, there is no expectation for the OCMI to provide technical assistance or advice for the conduct of surveys to vessel owners/operators.
- c. Survey Procedures
 - (1) Upon receipt of an owner's/operator's plan to conduct a survey, field units may request assistance or seek additional guidance from Commandant (CG-5431) Domestic Vessel Compliance. CG-5431 will provide technical assistance to the OCMI as needed in the evaluation of the survey plan and results.

(2) In order to collect the information needed for the survey, vessel owners/operators will need to weigh passengers. In keeping with the methodology used to determine the AAWPP, passengers should be weighed with all of their belongings they will take aboard the vessel including outer wear and personal baggage. The scale readout should be hidden from public view to ensure privacy of the passengers and all collected weight data should be kept confidential. Owners/operators may round sample passenger weights to the nearest half-pound but should ensure rounding is done consistently throughout the survey.

(3) The OCMI should review the data and results to verify completeness, the sample size was determined correctly, and the resulting average weight is supported by the data.

e. Sample Size

(1) When owners/operators are determining an adequate sample size (number of passengers to be surveyed) they should be aware that, if the weight of those sampled varies significantly, a larger sample size will be required to obtain a reliable estimate of the average passenger weight.

(2) The vessel owner/operator should collect a sufficient number of sample passenger weights to satisfy the following formulas which assume a 95% confidence level:

$$s = \frac{\sqrt{\sum_{j=1}^n (x_j - \bar{x})^2}}{\sqrt{n-1}}$$

Where:

s is the standard deviation

n is the number of points surveyed (passengers)

x_j is the individual survey weights

\bar{x} is the sample average and will be the assumed average weight of passengers in lieu of the AAWPP

$$e = \frac{1.96 * s * 100}{\sqrt{n} * \bar{x}}$$

Where:

e is the tolerable error percentage

Note: The OCMI should only accept the sample average weight \bar{x} if the tolerable error percentage, e , is calculated to be equal to or less than 1% (0.01)

Enclosure (2) to CG 543 Policy Letter 11-03

f. Survey Results

(1) The number of persons weighed should be sufficient to achieve a tolerable error, e , of 1% (0.01) or less as derived from the formula on the preceding page. The sample average represented by \bar{x} will be the assumed weight of passengers and crew and can be substituted for the AAWPP for the vessels on which the survey was conducted to determine the total number of passengers and crew permitted aboard the vessel.

(2) The OCMI should not accept multiple assumed weights for the same passenger vessel nor list multiple assumed weights on stability letters or COIs. This means the assumed weight of passengers and crew must be representative of the AVERAGE PASSENGER given the general service of the vessel and not for specific voyages or excursions. Survey data should be collected accordingly.

(3) OCMI should not apply survey results to multiple vessels and operators or to multiple routes and geographic locations. However, owners/operators of multiple vessels operating out of the same facility or location may conduct a single survey if the sample passenger population is reflective of the passengers for each of the vessel they operate at that facility or location. Likewise, operators of multiple vessels, such as a ferry system, operating out of different facilities but in the same geographic area such as a harbor, bay, or port area, may apply their results to each of their vessels provided data comprising the sample size was collected from several facilities in that area as survey locations.

(4) To use an average weight per person other than the AAWPP after December 1, 2011, owners/operators wishing to employ a survey to determine the assumed average weight of passengers must have their surveys completed and results submitted to the OCMI by December 1, 2011. Owners/operators may conduct surveys after the AAWPP effective date, but the assumed passenger weight for their vessels will remain at the AAWPP until such time as the OCMI accepts the survey results and stability letters and COIs are revised as appropriate.

(5) OCMI should require owners/operators to conduct a new survey whenever there is a change to the AAWPP as described in § 170.090. Owners/operators are permitted to use the assumed weights from their previous survey data until any new AAWPP becomes effective as described in the Final Rule. At the new AAWPP effective date, they will need to provide updated survey data to the OCMI for approval or comply with the new AAWPP.

3. Direct Verification

Owners/operators may propose a method for *Direct Verification* to the OCMI as described in Section 2c of Enclosure (1) to this Policy Letter. This means weighing passengers and crew individually or in groups to ensure the total weight of passengers who board the vessel and variable loads does not exceed the total test weight for which the vessel was approved. See Enclosure (1) for details and appropriate COI endorsement.

4. Amendments to COIs and Stability Letters

a. If the OCMI accepts an assumed average weight per passenger other than the AAWPP, it should be indicated on the vessel's stability letter or addendum. COIs and stability letters should be amended as may be needed in accordance with Section 5 of Enclosure (1). New stability letters, addenda to stability letters, and COI amendments issued in accordance with the provisions of this policy will not become effective until the effective date of the AAWPP.

b. Acceptance of an alternate assumed average weight per passenger is predicated on this weight being typical of a vessel's service. Operation of the vessel with passenger loads which are not reflective of the accepted alternate weight may be permitted by the OCMI in accordance with the Direct Verification Method (Enclosure (1), paragraph 2c).