



Mid-Atlantic Fishery Management Council
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MEMORANDUM

Date: November 29, 2021
To: Council
From: José Montañez, Council staff
Subject: Omega Gauge – net mesh measurement device

The Greater Atlantic Regional Office (GARFO) and the United States Coast Guard (USCG) will be updating the Council on the rule making process that would revise regulations for the Atlantic Sea Scallop, Northeast Multispecies, and Summer Flounder, Scup, and Black Sea Bass FMPs to codify the Omega Gauge as an accepted method for measuring mesh size. This rulemaking would not eliminate the currently used wedge gauge as a method of measuring net mesh size. GARFO has been working on this rulemaking process since 2018, however, the Mid-Atlantic Fishery Management Council (MAFMC) was not properly informed of this action. The New England Fisheries Management Council (NEFMC) endorsed this rulemaking process (in 2018) and GARFO now seeks to update the MAFMC on this matter. Material listed below are provided as background information for consideration of this agenda item.

- 1) Summary Notes of the November 1, 2018 NEFMC Enforcement Committee Meeting**
- 2) USCG Omega Gauge Questions/Answers (Draft)**

Enforcement Committee Meeting
November 1, 2018
Boston, MA

Omega Gauge Presentation Summary

BACKGROUND

The Coast Guard has been conducting a net mesh measurement study that compares a device called the Omega Gauge (gauge) and the wedge device, the current approved mesh measurement device per the regulations. The study was intended to evaluate the gauge's suitability for adoption by the Coast Guard. On November 1, 2018, at the Joint Enforcement Committee and Advisory Panel meeting, the Coast Guard presented the results of their comparative testing, demonstrated the use of the Omega Gauge, and answered several questions about the equipment.

DESCRIPTION OF THE GAUGE

The gauge is an automatic, handheld electronic device for measuring net mesh size for the purpose of enforcing minimum mesh size regulations. To take a measurement, the two prongs at the end of the device slowly separate with a set amount of force.

Once the prongs reach a point at which they can no longer separate, they stop, retract, and produce the measurement. The gauge can measure mesh up to about 12 inches. Measurement data is stored internally, and can export to an Excel file for later review.



Before conducting a mesh measurement, the device must be calibrated by inserting the prongs into pre-cut and pre-measured holes in a metal plate. Internal weights must also be calibrated periodically.

Lastly, the units are rather expensive, with a price tag of \$4,500 each.

COAST GUARD TESTING

The Coast Guard has completed a pier-side comparative net measurement study and is in the process of conducting a similar comparative study in an operational setting. During the pier-side study, 19 boarding officers made 80 net measurements each with the gauge and the wedge device. For the operational study, two Coast Guard Cutter crews have been equipped with the gauge and have conducted comparative net mesh measurements on 13 boardings thus far. The results so far, as presented by the Coast Guard, seem to be positive. The gauge measurements generally resulted in a smaller standard deviation (i.e. less variation amongst measurements). Generally, however, gauge measurements were larger than wedge device measurements.

The study has also tentatively confirmed several supposed benefits of the gauge. It is much easier to use than the traditional wedge device, in that it is faster, lightweight, and safer. The automated features of the gauge have theoretically eliminated several sources of human error from the measurement process. In addition, the operational team has yet to report any complications from use in the saltwater environment of the field.

ENFORCEMENT COMMITTEE DISCUSSION

There was substantial discussion scrutinizing the specifications of the device and details of its use, especially the amount of force applied by the measuring prongs during measurement. Per the regulations, the amount of pressure/pull that may be applied by the wedge device downward through the mesh is 8 kg. The force applied by the prongs of the gauge is horizontally applied and set per the manufacturer's specifications for each range of mesh size. The force that would be applied when measuring groundfish nets would be 12.5 kg, and according to the Coast Guard, this cannot be changed. This difference would likely need to be reconciled before approval of the gauge. Does the increased force result in significantly different measurements than those taken by the wedge device? If so, is that something that can be accounted for? It is unlikely that, upon adoption of the gauge, the Coast Guard would be able to equip all of its units with a gauge. In addition, each cutter would keep a wedge device onboard as a backup device in the event of gauge failure or loss. Because the wedge device will still be in use, it is necessary that measurements taken by either device are equivalent or at least comparable to measurements taken by the other device, and that we are aware of differences where they exist.

Other questions include:

- Is the Omega gauge more accurate, more precise, or both, relative to the wedge/spade?
- Is the Omega gauge's automatic calibration sufficient?
- Is the manufacturer's certification adequate, or should federal/state Weights & Measures agencies be consulted?

Committee members suggested that boarded vessels could request one method or the other if the captain perceives one method to be unfair or inaccurate, but this would depend on how regulations are written, and it is unclear whether that option would actually be approvable. Committee members also noted that the gauge has been in use in European fisheries enforcement for the past decade or so, and that there must be resources from European fisheries agencies that can assist in answering these questions.

The Enforcement Committee, under unanimous consensus, recommended that the Council recommend to NOAA that it use its authority to adopt the use of the gauge to enforce mesh size, assuming that GCSE's legal requirements are satisfied.

Theoretically, NOAA could elect to use its secretarial authority under section 305(d) to adjust the regulations to implement the gauge without Council action, but the recommendation from the Council would help provide direction and justification to the Agency. Even after receiving a recommendation, the Agency is not obligated to implement the gauge, and would be able to explore all of the potential issues with the gauge before proposing regulations to implement through rulemaking.

NEXT STEPS FOR RULEMAKING

- The Council will likely recommend that NOAA conduct rulemaking to implement the gauge
- Further establish gauge specifications and address other issues
 - Meeting with Coast Guard, correspondence with industry/Council?
- Conduct Rulemaking, starting with a proposed rule w/ draft regulatory text

Omega Gauge Questions/Answers (DRAFT)

1. What model of the Omega Gauge will the USCG be using?

A: The USCG has tested and utilized the Omega Gauge produced by Observator Instruments.

2. Will the USCG perform this factory annual recalibration and maintain written certification for each Gauge?

A: Yes. According to the manufacturer, the factory recalibration is only required when there has been a system/software update to the Omega Gauge. The USCG individual units can calibrate their own Omega Gauges following factory calibration procedures. Calibration for the Omega Gauge (outside of system/software updates) is comprised of two phases, ensuring the device is measuring accurately and ensuring the device is applying force appropriately. The USCG unit and the manufacturer will perform the same two phases for the calibration process. The USCG will monitor software/system updates and conduct these updates as required by the manufacturer to ensure accuracy of the device. The measuring accurately portion of calibration will be conducted prior to and after each use and documented appropriately. The force portion of the calibration will be conducted every six months per manufacturer's recommendations. These results will be documented and maintained at the USCG unit level within the Omega Gauge log.

3. Will the USCG perform and record the results of this (force recalibration hanging weight) every six months?

A: Yes, these results and all calibration results will be maintained in the Omega Mesh Gauge unit log.

4. Will the USCG perform and record the results of the self-test and length measurement portion of calibration?

A: Yes, the results of the self-test and length measurement portion of the calibration will be recorded on the net measurement form by the boarding officer prior to taking net measurements.

5. Where will the USCG store the gauges?

A: The Omega Mesh Gauges will be stored in a cool, dry, location within a water tight pelican case at the USCG unit.

6. Will they be assigned to an officer or division, ie, will multiple people be using the same instrument?

A: Ideally, each USCG unit that performs the fisheries mission within District 1's AOR will be outfitted with an Omega Mesh Gauge. Therefore, multiple boarding officers at each unit will be using the same Omega Mesh Gauge, but each specific Omega Gauge will be assigned for property and maintenance purposes to one law enforcement officer.