



# **On-Water POWER Standards Content Analysis of Version 1: Survey Monkey Results, Interpretations and Recommendations**

**National Standards for On-Water Instruction for Recreational Boat Operators - USCG Grant**



## **Summary**

An on-line survey was conducted with a diverse group of over 200 SMEs from across the SAIL, POWER, and PADDLE domains in May, 2012. The goal was to determine how much agreement there was about what standards were included in the list of On-Water POWER Standards Version I, from a group of SMEs that were not involved in the initial development of the standards. Results of the survey indicated very strong agreement that the set of standards included in the list identifies the entry-level skills POWER boat operators should be able to demonstrate. Quantitative analysis of respondents' feedback showed at least 90% Agreement on 36 of the 37 standards. This result is higher than the typical target of 80% agreement on this kind of survey. One standard received 86% Agreement. Qualitative analysis of respondents' comments on an open-ended question designed to identify potential standards not currently included in the list, identified 17 small themes that did not provide any significant guidance or direction for adding any particular standard to the list of POWER standards. It is the recommendation of the POWER Team Leaders who have reviewed the results of the survey to maintain the current set of standards as a Version II set of POWER standards. They also recommended using respondents' comments provided on the survey as input into the development of the Rubrics that will be used to assess performance on the standards.

## **Background**

As a result of Summit I (October, 2011) and Summit II (March, 2012), and all the work conducted in between, the team of SMEs developed Version 1 of a set of On-Water entry-level standards for recreational POWER boat operators. Based on a consultation from Dr. Stephen Silverman, Professor and Chair, Department of Biobehavioral Sciences, Teachers College, Columbia University, we developed a process to validate the content of the standards as part of the current USCG grant for the development of On-Water skill based standards for recreational boat operators.

The validation process involved sharing the list of On-Water POWER standards Version 1 with a larger audience of SMEs to elicit their input and feedback through the use of an on-line survey tool called Survey Monkey. The goal was to gauge the perceptions of as many different people as possible about how much they agreed with the set of standards included in the list. The goals was also to provide respondents with an opportunity to recommend additional standards if they perceived them necessary.



## **Description of Respondents**

227 people started the survey. Approximately 29 people did not complete it in its entirety (this may have been due to the length of the survey). Between 198 and 202 people provided feedback on the standards portion of the survey – most provided feedback on all 37 standards. Respondents represented all six affiliations (see table below), with no one affiliation representing more than 30% of the respondents. (Some people did report having multiple affiliations.) This keeps the results in alignment with ANSI standards on lack of dominance and balance.

<b>Affiliation</b>	<b>Number</b>	<b>Percentage</b>
Industrial	32	16.0%
Professional School	21	10.5%
Community	42	21.0%
Non-Governmental/Non-Profit	52	26.0%
Federal/State	59	29.5%
Public	55	27.5%

Just below 90% of the respondents identified themselves as having On-Water, On-Land (classroom), and/or On-line boating education certifications (80% for On-Land – classroom; 59% for On-Water; and 23% for On-line; and some reported having multiple certificates across multiple arenas). This mix provides support for having feedback on the standards from across On-Water, On-Land and On-line instructional platforms. 134 of the respondents reported being Certified Boating Instructors.

Of the 202 people who provided feedback on the standards, 29 reported being master trainers for On-Water boating courses and 45 indicated they had experience with developing standards for On-Water boating skills performance in the POWER domain.

This description suggests the respondents who completed the survey were a knowledgeable and experienced group of individuals with a diversity of backgrounds, areas of experience and certifications related to recreational boating instruction and operation.

## **Results and Interpretations**

Results of the survey are in both quantitative and qualitative formats. Quantitative results focus on the respondents' level of agreement with including each standard in the list of entry-level POWER standards. The Qualitative results focus on respondents' comments about what might need to be added or changed to the list to make it more complete.

### **Quantitative Analysis Results**

SMEs were asked to read each standard and to make a judgment about how much they agreed or disagreed with that standard being one that recreational POWER boat operations should be able to perform with an entry-level of skill. Their choices were: Completely Agree, Moderately Agree,

Moderately Disagree, and Completely Disagree. Standards were organized according to the seven boat operations. Detailed results on all 37 standards are contained in Appendix A.

**Overall results of the quantitative analysis indicate that respondents had at least 90% Agreement on 36 of the 37 standards.** This result is higher than the standards target of 80% agreement on this kind of survey. One standard, *Stop the vessel in "emergency" mode, B: from planning or normal operating speed in less than 2 boat lengths, turning to ensure stern wave passes behind the vessel with consideration of passengers and gear,* reached 86% Agreement.

### **Qualitative Analysis Results**

Of the 202 respondents who completed Survey Monkey, 105 provided comments to question #35, *In the conditions stipulated, please provide any additional skills that entry-level power boat operators should be able to perform in Operations 1 – 7 of POWER boat operation as outlined in this survey.* These comments were analyzed using a qualitative analysis tool called Constant Comparison to identify themes in the comments.

**The analysis produced 17 small themes that did not provide any significant guidance or direction for improving the list of POWER standards.** Response themes ranged in size from 2 to 11 specific comments that made up the specific theme (see figure below). The strongest theme (with 11 comments) centered on the use of navigation procedures and equipment such as a GPS, compass or chart to aid in navigation. The next strongest theme (with 8 responses in each) identified the need for an entry-level recreational POWER boat operator to be able to signal for assistance in emergencies, use navigation aides and markings, and understand the rules of the road associated with right of way. The next two largest themes contained seven comments each and focused on application of PFDs and having a basic understanding of the rules of the road. For further details about the themes and the comments that made up each, see Appendix B.

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### **Theme Summary**

The following themes were identified in respondents' comments. The number in ( ) at the end of each theme identifies the number of comments that made up the theme.

- **General Safety Procedures and Equipment**
    - Signaling for assistance (8)
    - Application of PFDs (Life jacket) (7)
    - What to do when someone falls in the water (4)
    - Basic first aide (3)
    - Understand impact of Alcohol (3)
    - Dealing with gasoline/vapors (3)
  - **Navigation procedures and equipment**
    - Use of GPS, compass and charts (11)
    - Use of navigation aides and markings (7)
    - Set and navigate a course heading (3)
  - **Rules of the Road**
    - Rules of the road related to right of way (8)
    - Have a basic understanding of the Rules of the Road (7)
    - Affects of wakes on other boats (2)
  - Wind and weather conditions (6)
  - Use of POWER vessel's motor and gauges (4)
  - **Towing the vessel (3)**
  - **Managing lines (3)**
  - **How do we judge "Speed"? (6)**
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Five themes were also identified that appear to be out of the scope associated with how On-Water entry-level POWER standards have been defined in this work (the strongest being Using a radio, Anchoring the vessel and Safely fueling the vessel). There were a number of comments that provided general feedback about the POWER standards and other individual comments that were not coded because they did not make up any particular theme. One small theme (six comments) emerged that raised a question about how the concept of “speed” was being defined in this work but provided no clear recommendation for how to improve the list of standards (see Appendix C).

### **POWER Team Leaders’ Observations**

After reviewing the quantitative and qualitative results on the Survey Monkey, the POWER Team Leaders made the following observations about the results.

**Results are mostly on the Agreement side.** We have a small number of *Completely Disagree* statements from the respondents. There is less weight on the disagreement side than there is on the agreement side. The strength of responses that agree with the standards suggests, “*we worked hard in our sub groups and as a total group to identify the standards and were successful in doing so, and the numbers show it.*”

**Even the lowest Agreement percentage is at a high level.** 87% agreement is the lowest percentage we have on all 37 POWER standards. Even that percentage is above the 80% target for agreement on this kind of assessment as identified by Dr. Stephen Silverman, our SME on assessment from Columbia University. As Dr. Silverman commented about the results on Survey Monkey, “You typically strive for 80% agreement on such a survey. Your numbers are higher than that. These are impressive results!”

**Some comments point to topics discussed during standards development or that are in the current list of POWER standards.** Some of the comments provided by the respondents are consistent with what we spoke about and consistent with what is in the standards - such as the theme about wearing life jackets, and the effects of alcohol.

**Some comments recommend changes that are outside the definition of an entry-level skill-based standard.** Some of the comments go outside our definition of *skill-based* standards that we used to develop the POWER standards. They focus on such things as *knowledge*, behaviors that are at a different level of skill, or on topics unique to specific power vessel rather than a skill (behavior) that cuts across power vessels. These might be considered for use in developing other parts of the system of standards - such as towing a vessel.

**We can use comments provided by respondents to help develop Rubrics.** There are five standards that are below 70% on *Completely Agree*. Although they do not need to be changed, they might benefit from some *special attention* as we move forward in developing the Rubrics that will be used to assess performance on the standards. Respondent comments might provide some specific language that can be used to develop Rubrics in a way that makes the standards more understandable to a wider audience.

**Although we have a lot of input, there is not enough specific guidance from the comments to warrant changing the list the standards.** Even if we thought we should make a change to a standard given the results, there is not enough disagreement or targeted comments that we could use to modify the standards without running the risk of making it worse (or less agreeable) if we changed it. There is no clear direction or guidance for improvement – suggesting we did a good job in identifying the standards.

Even the standard that received the lowest percentage agreement (which was still at 87%); had only two comments associated with it. But even those comments did not point to what might be done differently with the standard to improve it.

## Recommendations

Survey Monkey results indicate over 85% Agreement on all standards (90% on 36 out of 37); above an 80% measure of success for such a survey. The POWER Team Leaders anticipate that we will be able to flesh out the standards or make some minor tweaks and explanations as we go forward in creating Versions 3 and 4 of the POWER standards. It is the recommendation of the POWER Team Leaders going forward that we:

1. **Keep the existing Standards.** Given the overall high level of agreement across the standards, and little direct guidance or feedback for how to change or improve them, the recommendation is to keep the 37 On-Water entry-level skill-based POWER Standards as they are rather than running the risk of changing a standard without sufficient guidance and making it less effective.
2. **Use respondent comments to help develop Rubrics.** Although there were no strong themes that might direct specific actions to change or improve the list of POWER standards, respondents did provide language in their comments that may be useful in clarifying the standards. Rubric SMEs should use this language during the POWER Standards Rubrics workshop on June 6-7, 2012, to help shape the Rubrics in a way that clarifies the standards. The priority focus would be on those standards that received the lowest *Completely Agree* percentage.
3. **Recommend to the Oversight Committee POWER Standards Version 2.** Although no official changes are being recommended to the standards, the recommendation is to confirm this list as Version 2 of the POWER Standards to identify that it has been vetted with over 200 additional SMEs with strong agreement on its contents. This list of standards should be presented to the Oversight Committee as Version 2 of On-Water entry-level POWER Standards and that the Oversight Committee recommends it to the Coast Guard for use in developing performance Rubrics and eventual field-testing.

If you have any questions about the content of this report, please contact K. Brian Dorval, On-Water Grant Facilitator, at: [brian@thinkfirstserve.com](mailto:brian@thinkfirstserve.com).

## Appendix A:

*Quantitative results on Survey Monkey for the 37 On-Water entry-level skill based POWER Standards V1*

### OPERATION 1: Prepare to depart

27. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 1. Prepare to depart?**

**A: Skill**

B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Inspect boat systems and safety equipment</b>						
B: by completing a pre-departure checklist noting state, federal, and manufacturer requirements for the intended voyage and weather, identify mooring/towing/anchoring points	<b>89.1% (180)</b>	7.9% (16)	1.5% (3)	1.5% (3)	3.85	202
<b>A: Obtain (recite) weather conditions and forecast</b>						
B: assessing if conditions are favorable for the voyage for length/time of trip	<b>77.7% (157)</b>	19.3% (39)	1.5% (3)	1.5% (3)	3.73	202
<b>A: Board a boat</b>						
B: using three points of contact and distributing persons/gear while maintaining stability	<b>83.7% (169)</b>	12.4% (25)	2.5% (5)	1.5% (3)	3.78	202
<b>A: Prepare the boat for departure</b>						
B: readying lines, equipment and crew for intended departure maneuver	<b>92.1% (186)</b>	6.4% (13)	0.0% (0)	1.5% (3)	3.89	202
<b>A: Start the engine</b>						
B: safely and running properly	<b>96.5% (195)</b>	1.5% (3)	0.5% (1)	1.5% (3)	3.93	202
					<b>answered question</b>	<b>202</b>
					<b>skipped question</b>	<b>25</b>

## OPERATION 2: Leave a dock/slip/mooring/ramp/beach

28. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 2. Leave a dock/slip/mooring/ramp/beach?**

**A: Skill**

B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Get underway (from a dock, slip, mooring, ramp, beach)</b>						
B: using shift, throttle and steering giving consideration to wind, current while properly managing lines maintaining look out (throughout all activities)	<b>91.5% (184)</b>	7.0% (14)	0.0% (0)	1.5% (3)	3.89	201
<b>A: Check for a clear departure</b>						
B: confirming that there are no conflicts with vessel's intended actions with boats and activities in the vicinity	<b>96.5% (194)</b>	2.5% (5)	0.0% (0)	1.0% (2)	3.95	201
<b>Unique to leaving from a Mooring:</b>						
<b>A: Depart a mooring</b>						
B: avoiding contact with the mooring line and buoy	<b>68.7% (138)</b>	26.9% (54)	3.0% (6)	1.5% (3)	3.63	201
<b>Unique to leaving from a Beach:</b>						
<b>A: Leave from the ground</b>						
B: without damaging the propulsion and avoiding people in the water	<b>76.1% (153)</b>	18.4% (37)	3.5% (7)	2.0% (4)	3.69	201
					<b>answered question</b>	<b>201</b>
					<b>skipped question</b>	<b>26</b>

## OPERATION 3: Maneuver in close quarters

29. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 3. Maneuver in close quarters**?

**A: Skill**

B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Turn the boat</b>						
B: by safely executing a pivot turn of at least 180-degrees within a space of 1 to 2 boat lengths	<b>74.6% (150)</b>	22.4% (45)	1.5% (3)	1.5% (3)	3.70	201
<b>A: Hold position of the vessel</b>						
B: near an object in the water for at least a minute within two boat lengths	<b>73.1% (147)</b>	23.9% (48)	1.5% (3)	1.5% (3)	3.69	201
<b>A: Maintain directional control at minimum control speed</b>						
B: keeping boat on a predetermined course for a distance of at least five boat lengths	<b>89.1% (179)</b>	10.0% (20)	0.0% (0)	1.0% (2)	3.87	201
<b>A: Maintain proper lookout</b>						
B: by demonstrating frequent 360-degree visual checks and identifying potential hazards	<b>94.0% (189)</b>	5.0% (10)	0.0% (0)	1.0% (2)	3.92	201
<b>A: Bring the vessel to a complete stop</b>						
B: within one boat length	<b>69.7% (140)</b>	23.9% (48)	4.5% (9)	2.0% (4)	3.61	201
<b>A: Back the vessel</b>						
B: in a predetermined direction for five boat lengths	<b>70.6% (142)</b>	24.4% (49)	3.5% (7)	1.5% (3)	3.64	201
					<b>answered question</b>	<b>201</b>
					<b>skipped question</b>	<b>26</b>



## OPERATION 4: Operate in open water

30. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 4. Operate in open water**?

**A: Skill** B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Trim the vessel</b> B: while under way by adjusting position of persons/gear and engine/drive trim or trim tabs	<b>64.0% (128)</b>	30.0% (60)	3.5% (7)	2.5% (5)	3.56	200
<b>A: Turn the vessel at high speed</b> B: assume a new heading 45 degrees to port and starboard using appropriate throttle control	<b>70.5% (141)</b>	22.5% (45)	2.5% (5)	4.5% (9)	3.59	200
<b>A: Steer a straight course</b> B: at high speed in a predetermined direction for 50 boat lengths	<b>84.0% (168)</b>	14.5% (29)	0.5% (1)	1.0% (2)	3.82	200
<b>A: Throttle up to and down from low speed to high speed to slow speed</b> B: smoothly with consideration of passengers and gear	<b>86.5% (173)</b>	11.5% (23)	1.0% (2)	1.0% (2)	3.84	200
<b>A: Stop the vessel</b> B: from planning or normal operating speed to within five boat lengths ensuring the wake doesn't over take the stern and with consideration of passengers and gear	<b>78.0% (156)</b>	15.0% (30)	5.5% (11)	1.5% (3)	3.70	200
<b>A: Make course alterations</b> B: smoothly change direction 45 degrees	<b>89.0% (178)</b>	9.5% (19)	0.5% (1)	1.0% (2)	3.87	200
<b>A: Cross waves or wakes</b> B: using appropriate angle of approach and controlling vessel speed for the given wake/wave size and frequency	<b>87.5% (175)</b>	11.0% (22)	0.5% (1)	1.0% (2)	3.85	200
<b>A: Maintain a proper lookout</b> B: using 360-degree visual checks and identifying potential hazards	<b>95.5% (191)</b>	3.5% (7)	0.0% (0)	1.0% (2)	3.94	200
<b>A: Avoid collisions</b> B: assessing potential hazardous situations and taking early and decisive action	<b>96.5% (193)</b>	2.5% (5)	0.0% (0)	1.0% (2)	3.95	200
					<b>answered question</b>	<b>200</b>
					<b>skipped question</b>	<b>27</b>

## OPERATION 5: Arrive at a dock/slip/mooring/ramp/beach

31. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 5. Arrive at a dock/slip/mooring/ramp/beach (make first contact)?**

**A: Skill**

B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Prepare the boat for arrival</b>						
B: readying lines, equipment and crew for intended arrival maneuver	<b>90.4% (179)</b>	8.6% (17)	0.0% (0)	1.0% (2)	3.88	198
<b>A: Check for clear approach</b>						
B: confirming there are no conflicts with vessel intended actions with boats and activities in the vicinity	<b>94.9% (188)</b>	4.0% (8)	0.0% (0)	1.0% (2)	3.93	198
<b>A: Bring the vessel to a predetermined point</b>						
B: using stopping procedure; giving consideration to wind, current and boat traffic, coming to a full, safe stop within 12 inches of the dock/mooring/ramp/beach (point of contact)	<b>72.2% (143)</b>	25.3% (50)	1.5% (3)	1.0% (2)	3.69	198
<b>Unique to arriving at a Beach:</b>						
<b>A: Arrive at the shore</b>						
B: without damaging the propulsion and avoiding people in the water	<b>75.8% (150)</b>	20.2% (40)	3.0% (6)	1.0% (2)	3.71	198
					<b>answered question</b>	<b>198</b>
					<b>skipped question</b>	<b>29</b>

## OPERATION 6: Secure the boat

32. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 6. Secure the boat (this means preparing to leave the boat unattended)**?

**A: Skill**

B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Secure the boat to the dock/slip/mooring/beach</b>						
B: using appropriate knots and lines anticipating winds, currents and tides expected	<b>85.9% (170)</b>	12.1% (24)	1.0% (2)	1.0% (2)	3.83	198
<b>A: Prepare to depart</b>						
B: having checked and/or secured systems and equipment	<b>87.9% (174)</b>	10.1% (20)	1.0% (2)	1.0% (2)	3.85	198
<b>A: Depart the boat</b>						
B: disembarking using three points of contact	<b>77.3% (153)</b>	19.7% (39)	2.0% (4)	1.0% (2)	3.73	198
					<b>answered question</b>	<b>198</b>
					<b>skipped question</b>	<b>29</b>

## OPERATION 7a: Perform general safety/emergency procedures/maneuvers that fit across all three domains?

33. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 7a. Perform general safety/emergency procedures/maneuvers that fit across all three domains?**

**A: Skill**

B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Return to man overboard</b> B: within 10 feet and less than a minute	<b>65.7% (130)</b>	28.8% (57)	4.5% (9)	1.0% (2)	3.59	198
<b>A: Retrieve man onboard</b> B: without further injury to the person	<b>70.2% (139)</b>	24.2% (48)	3.5% (7)	2.0% (4)	3.63	198
<b>A: Maintain proper lookout</b> B: by demonstrating frequent 360-degree visual checks and identifying potential hazards	<b>96.0% (190)</b>	3.0% (6)	0.0% (0)	1.0% (2)	3.94	198
<b>A: Put on a life jacket (not required to wear?)</b> B: ensuring it is serviceable and fits each individual while appropriate for the boat/activity	<b>91.4% (181)</b>	5.1% (10)	1.0% (2)	2.5% (5)	3.85	198
					<b>answered question</b>	<b>198</b>
					<b>skipped question</b>	<b>29</b>

## OPERATION 7b: Power safety/emergency maneuvers (unique to power)?

34. In the conditions stipulated, do you agree that entry-level power boat operators should be able to perform the following skills in **Operation 7b. Power safety/emergency maneuvers (unique to power)?**

**A: Skill**

B: proficiency

The individual will be able to:

	Completely Agree	Moderately Agree	Moderately Disagree	Completely Disagree	Rating Average	Response Count
<b>A: Stop the vessel in "emergency" mode</b>						
B: from planning or normal operating speed in less than 2 boat lengths, turning to ensure stern wave passes behind the vessel with consideration of passengers and gear	<b>60.1% (119)</b>	26.8% (53)	8.6% (17)	4.5% (9)	3.42	198
<b>A: Start the engine</b>						
B: safely and running properly	<b>92.9% (184)</b>	5.1% (10)	1.0% (2)	1.0% (2)	3.90	198
<b>answered question</b>						<b>198</b>
<b>skipped question</b>						<b>29</b>

## Appendix B:

### Qualitative results on Survey Monkey On-Water entry-level skill based POWER Standards V1

The following identifies comments provided by respondents on Survey Monkey question #35, *In the conditions stipulated, please provide any additional skills that entry-level power boat operators should be able to perform in Operations 1 – 7 of POWER boat operation as outlined in this survey.* The goal of this question was to determine if SMEs who were not involved in the original development of the 37 On-Water, entry-level, skill-based standards for recreational POWER boat operators would recommend additional standards be added to the standards list.

Approximately 200 SMEs responded to the Survey Monkey. Of those, 105 respondents provided comments to question #35. These comments were analyzed and produced 17 themes that range in size from 2 to 11 specific comments that make up the theme. The strongest theme (with 11 comments) centered on the use of navigation procedures and equipment such as a GPS, compass or chart to aid in navigation. The next strongest themes (with 8 responses in each) identified the need for an entry-level recreational POWER boat operator to be able to signal for assistance in emergencies and understand the rules of the road associated with right of way. The next three largest themes contained seven comments each and focused on use navigation aides and markings, application of PFDs, and having a basic understanding of the rules of the road.

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## Theme Summary

The following themes were identified in respondents' comments. The number in ( ) at the end of each theme identifies the number of comments that made up the theme.

- **General Safety Procedures and Equipment**
    - *Signaling for assistance (8)*
    - *Application of PFDs (Life jacket) (7)*
    - *What to do when someone falls in the water (4)*
    - *Basic first aide (3)*
    - *Understand impact of Alcohol (3)*
    - *Dealing with gasoline/vapors (3)*
  - **Navigation procedures and equipment**
    - *Use of GPS, compass and charts (11)*
    - *Use of navigation aides and markings (7)*
    - *Set and navigate a course heading (3)*
  - **Rules of the Road**
    - *Rules of the road related to right of way (8)*
    - *Have a basic understanding of the Rules of the Road (7)*
    - *Affects of wakes on other boats (2)*
  - Wind and weather conditions (6)
  - *Use of POWER vessel's motor and gauges (4)*
  - *Towing the vessel (3)*
  - *Managing lines (3)*
  - *How do we judge "Speed"? (6)*
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Five themes were also identified that appear to be out of the scope associated with how On-Water entry-level POWER standards have been defined in this work. There were a number of comments that provided general feedback about the POWER standards and 21 individual comments that were not coded because they did not make up any particular theme. One small theme (six comments) emerged that raised a question about how the concept of “speed” was being defined in this work.

## General observations and recommendations

### General Observations

Comments provided by SMEs indicate strong support for the current list of On-Water POWER Standards as an effective set of entry-level skill-based standards. Only approximately half of the 200 SME respondents thought it necessary to provide any comments about the standards list. And of those 105 respondents, there does not appear to be any strong and specific themes that have a single focused message about something in particular that should be changed, removed or included within the current list of On-Water POWER standards. The strongest theme within the scope of this project has just 11 comments; with most of the themes averaging approximately five comments.

### Recommendations

Since the comments provided by SMEs are so diverse and do not point to any one key change or modification with enough critical mass to warrant a change, the best use of these comments is to provide input into potential language that might be helpful in developing the rubrics that will be used to assess performance on the On-Water POWER standards. Using this language when possible will help provide a wider range of thought into developing the Rubrics, as well as help ensure a wide range of acceptance for later versions of the On-Water skill-based POWER standards.

## Verbatim comments

The follow are the verbatim comments provided by SMEs. The **bolded** title is the name of the theme of comments. The numbered items below the theme title are the verbatim comments provided by respondents that made up the theme. The themes are listed in order of strength based on the number of comments that are contained in the theme. The different colors only signify a different theme and were used to help with the analysis.

## General Safety Procedures and Equipment

### *Signaling for assistance*

- 1 The operator should have basic emergency notification ability (i-flag, daylight arm signal, at least), perhaps add to Op#7.
- 2 Call for assistance on a VHF radio.
- 3 Radio Operations and how to use it for calls, warnings and emergencies.
- 4 Emergency situations (i.e. unexpected high winds, thunderstorms).
- 5 Appropriate use of distress signals in situations requiring assistance.
- 6 Communicate an emergency to the Coast Guard or Marine Patrol.
- 7 Describe methods for rescue signaling.
- 8 Call for help/assistance.

### *Application of PFDs/Life jackets*

- 1 Life jackets should be required to be worn.
- 2 I'm confused about the PFD question. Isn't the first thing they would do is put it on before departing.... not during training?
- 3 And the one question we should train people to always wear a life jacket some of the jackets are

- very comfortable we need to show people these jackets.
- 4 Understand the difficulties in treading water in jeans and heavy shoes without a PFD on.
  - 5 Inflate a portable floatation device
  - 6 Demonstrate basic survival techniques with a PFD and ability to re-board a vessel from in the water and techniques for personnel retrieval.
  - 7 Know that a life jacket is only useful when worn.

### ***What to do when someone falls in the water***

- 1 Retrieve a MOB in a minute or less may be too tough. Possibly use 3 minutes or less?
- 2 Demonstrate proficiency in self-rescue.
- 3 Have a back up plan if operator becomes disabled.
- 4 Preventing hyperthermia. Basic water survival.

### ***Basic first aid***

- 1 Hypothermia issues/dehydration concerns/proper safe use of flares/knowledge of CG approved fire ext./
- 2 Be familiar with basic first aid.
- 3 Mouth to mouth resuscitation and/or CPR basics.

### ***Understand impact of Alcohol***

- 1 I would think - that there should be an indication that alcohol and boating do not mix and it was noted.
- 2 Learn about the consequences of drinking and boating.
- 3 Understand the onset of fatigue/heat stress and the increased effects of alcohol when on the water.

### ***Dealing with gasoline/vapors***

- 1 Handle other emergency situations (i.e., fire, thunderstorm, using a vhf radio for May Day).
- 2 For gasoline-powered engines, emphasis needs to be made about proper ventilation before starting engine.
- 3 Check the vessel for any detection of vapors or other harmful elements and ensure additional carry-on items are evenly distributed and secured.

## **Navigation procedures and equipment**

### **Use of GPS, compass and charts**

- 1 Review a local chart for hazards, aids to navigation in the proposed boating area.
- 2 Operate a navigational compass.
- 3 Reading of compass charts and GPS.
- 4 GPS operation.
- 5 Operate and configure sonar and GPS.
- 6 Use of GPS while steering.
- 7 GPS benefits.
- 8 Reading a chart. Reading a GPS.
- 9 Understand and use a chart,
- 10 Understand markers and basic navigation (chart reading, GPS use).
- 11 Basic chart reading skills.

### **Use of navigation aids and markings**

- 1 Understand the relationship of tides and currents to navigable water, understand the use of visible aids to navigation.
- 2 Require familiarization of navigation lights.
- 3 Understanding of Navigation Aids.
- 4 Navigating (or avoiding) lee shores.



- 5 Grounding, consult charts, navigation.
- 6 Demonstrate the proper understanding and use of basic navigational sound signals and light configurations while underway.
- 7 Knowledge of buoys and water markings.

### Set and navigate a course heading

- 1 Basic navigation.
- 2 For operation in open waters: plot a triangular course with two legs being at least 2 nautical miles using current paper chart for area of operation and then cruise this course using compass, time and distance.
- 3 Be able to determine position.

## Rules of the Road

### Rules of the road related to right of way

- 1 Demonstrates rules of right-of-way, overtaking.
- 2 Learn the rules of the road. Know who has the right -a away in all situations.
- 3 Demonstrates rules of right-of-way, overtaking.
- 4 Basic understanding of navigation aids and right of way when approaching and overtaking other vessels.
- 5 Ability to recognize and properly identify stand-on and give-way vessel and take proper action ability to recognize and properly maneuver using ATON.
- 6 Sound proper signals for overtaking a vessel.
- 7 They should understand the right of way of other vessels around them in high traffic areas from both in the classroom material and on the water test.
- 8 Rules of the road for collision avoidance.

### Have a basic understanding of the Rules of the Road

- 1 Basic understanding of the Rules of the Road, specifically 1-19.
- 2 Understand basic rules of the road.
- 3 Understand & execute the proper NavRules.
- 4 Follow all rules of the road.
- 5 Rules of the road exercises
- 6 Execute proper sound signals in necessary conditions.
- 7 COMMUNICATION WITH CREW AND PASSENGERS NAVIGATION RULES, WHAT IFS ON THE WATER.

### Affects of wakes on other boats

- 1 Understand the affects of boats wakes on docked or moored boats.
- 2 Recognition of rules of the road in navigation and proper etiquette for observing no wake zones.

### Wind and weather conditions

- 1 No where in here is there a requirement to continue to monitor the weather during the voyage.
- 2 Foul weather hazards
- 3 Understand basic weather terminology
- 4 Recognize signs of changing/dangerous weather that were not forecast.
- 5 Understand wind
- 6 Wind and current conditions and how to use them to your operational advantage. (Ferrying concept with wind and current)

### Use of POWER vessel's motor and gauges

- 1 There is no requirement to check any bilge or enclosed area for fumes prior to starting the engine(s).
- 2 Know all functions available on Dashboard: bilge pumps, livewell pumps, trim switches, gas tank

- switches. How to attach the kill switch to ones' body.
- 3 Proper watch of gauges.
- 4 Carbon monoxide issues

### **Towing the vessel**

- 1 Towing basics for disabled boats.
- 2 Tow a disabled vessel out of danger.
- 3 Operate with consideration of towing a ski/tube behind a boat. Maintain a safety clearance with the extra length. Retrieving a downed skier in congested boat traffic within 30 sec.

### **Managing lines**

- 1 Coiling, throwing a line.
- 2 Proper use of spring lines for departing and approaching docks.
- 3 Demonstrates basic knot tying skills of common boating knots.

## **Comments Out of Scope**

The following comments and the themes they form, appear to be out of the scope for the current work to identify skills-based performance standards for entry-level On-Water instruction for recreational POWER boat operators. It will be important to store these responses for later consideration as other parts of the National System of Standards are developed. For example, *Anchoring the vessel*; *Launching, recovering and trailering a vessel*; and *Nighttime operation of the vessel* were identified as themes. Although these are out of scope the current On-Water standards work, these skills may fit for example, as part of an intermediate or advanced skill sets.

### **Use of Radio**

- 1 Operate a marine radio
- 2 reasons for having VHF radio/EPRIB and PLBs/proper use of VHF radio...
- 3 How to operate a VHF Radio and perform a radio check (The Sea Tow Automated Radio Check system can help with this).
- 4 Use a marine radio to call for help.
- 5 Perform basic ham radio skills.
- 6 Operate a marine Radio to report distress: Know when and how, demonstrate as role play.
- 7 Use a marine radio for emergency needs.
- 8 Summon help with visual, audio and radio.
- 9 PROPER VHF RADIO OPERATION.
- 10 Operate a VHS radio.
- 11 Use of VHF radio where applicable.
- 12 Demonstrate radio operation.
- 13 Handle other emergency situations (i.e., using a vhf radio for May Day).
- 14 Demonstrate proper use of VHF radio including. May day, Pan-Pan and Security calls.
- 15 Demonstrate proper use of radio (especially with a MAYDAY).
- 16 VHF operation
- 17 Operating a VHF
- 18 Radio protocols.

### **Anchoring the vessel**

- 1 Demonstrate use of a sea anchor.
- 2 Anchoring situations and proper location to tying off the anchor at the bow not the stern to avoid capsizing and swamping.
- 3 Conduct proper anchoring and weighing anchor techniques.

- 4 Use of anchoring
- 5 Anchoring basics. Upwind and downwind operating differences.
- 6 Deploy the anchor in the event of engine failure.
- 7 Deploy the anchor. Determine proper rope length. Set the anchor. Trip the anchor. Retrieve the anchor and get underway
- 8 Should know proper anchoring techniques.
- 9 There was no mention of the ability to anchor. This is a must since power boaters depend on engine only and if it fails The boat must be anchored so that it is not damaged and cause injury to the crew.

### ***Safely fueling the vessel***

- 1 Proper fueling procedures.
- 2 Discussion of how to fuel safely - where does the fuel go, how to wipe it up if it spills, etc.
- 3 Safe/Environmentally friendly fueling.
- 4 Safe Fueling.
- 5 Fueling procedures
- 6 Become familiar with... fueling
- 7 Also, safe fueling
- 8 Monitor fuel usage to ensure that there is adequate fuel to be able to return safely considering weather & currents.
- 9 Safe fueling procedures.

### ***Launching, recovering and trailering a vessel***

- 1 Safely launch and recover a boat from a trailer on a boat ramp (if applicable).
- 2 Add trailering to the program.
- 3 Trailer, unloading and loading procedures at boat ramp.
- 4 Safe trailer launch/retrieve if applicable.
- 5 Safely launch and recover a vessel from a trailer.
- 6 How to trailer the boat in gentle or calm conditions. How to back up the hauling vehicle and trailer on the launch ramp.
- 7 Demonstrate launching and recovery at a boat ramp. Demonstrate safely backing a motor vehicle and trailer for vessel launch and recovery.
- 8 Show proficiency backing up a trailer at a ramp.
- 9 Identify potential hazards while launching.

### ***Nighttime operation of the vessel***

- 1 Reference Night time Captain, Mate and Crews duties to passengers safety
- 2 Articulation of various lighting systems that would be required at low-light/nighttime ops. I understand conditions were set for day time unrestricted visibility; however, a bad DAY at sea, may turn to a bad NIGHT at sea, and would therefore
- 3 Operate vessel in night conditions with all required lights.
- 4 Consideration for nighttime navigation - or perhaps that would be covered in a more advanced course.
- 5 Ability to properly navigate at night using buoy, land, and vessel light markings.

## **Clarification Question**

### **Questions about Speed**

- 1 Some of the Skills I think would be SPEED Dependent.
- 2 All maneuvers within reasonable distance based on speed, conditions and type of craft.
- 3 Maneuver in close quarters? - Other than maintaining a sharp lookout, the requirements seem too tight. Turn the vessel at high speed. B: assume a new heading 45 degrees to port and

- starboard using appropriate throttle control - throttle(s) and steering.
- 4 Some items in the survey are very unreasonable, such as moving at a high speed and coming to a complete stop in less than two boat lengths.
  - 5 Offer a speed that defines "High speed." I don't believe a novice power boat operator should be operating at a speed in excess of 30 MPH until they are completely 'comfortable' with the operational characteristics of the boat they are operating.
  - 6 Are the stopping distances reasonable for all powerboats at all speeds? Or, do we need caveats, just thinking out loud especially on "shorter" vessels, does powerboat include PWC's, not sure I remember if that was "excluded" in the definition. Good job.

## General Comments

- 1 Please check USPS-BOC-Inland Certification for complete description, also note POTW (Practical On the water Training).
- 2 Maturity and judgment needs to be a deciding factor. A poor attitude toward the purpose of performing these tasks is an essential part of the learning process and a factor in deciding to pass or fail the student. Proficiency without prompting should be the standard.
- 3 I believe that the on-the-water skills training is absolutely essential to ensuring boat operators safely operate their vessels. Classroom instruction for the basic knowledge is necessary but putting an individual in a boat without developing and testing their skills like placing a teenager behind the wheel of a car after only reading the DMV guide.
- 4 I have been a power and sail boater for over 55 years and I think this kind of an assessment is a total waste of time and money. This whole program smacks of a group of do-gooders who have decided that they should be able to "rule the world" of boating. FYI, while I am a very safe boater and believe strongly in safe boating, I would fight this tooth and nail at every level of government to see that it is not put into place.
- 5 These standards are well meaning, but somewhat trite. Much of what is learned is learned from experience and the capabilities of the boat itself. In boating, as in much else in life, is not engaging in activities that are beyond one's capabilities, or the capabilities of the equipment one is using.
- 6 None at this time - very thorough!
- 7 None.
- 8 37 skill sets are enough for an entry-level powerboat operation course.
- 9 N/A.
- 10 Regarding a PWC, there are too many 'types' of PWC's and the training needs to have consideration for these 4 basic hull types. Each one has a different weight capacity. Some do not have 'trim' capability. Some do not offer 'reverse'. Most do not have a 'neutral' position. Some of the questions cannot apply to a PWC training program, as you can see in my 'disagree' comments. I could comment in greater depth on the PWC specific issues separate from this form. I have an 8-hour basic recreational PWC training program that has been taught since 1989 and is updated annually. It is quite effective in basic skills applying to all four-hull types and is very 'specific'. Probably better to submit that content for your review.
- 11 I think you nailed it.
- 12 More on Dock Landing.
- 13 Entry-level boaters should demonstrate ALL SAFETY skills.

## Uncoded

- 1 Dock bow and stern first in a slip. Come alongside a pier (such as a fuel dock) and tie up correctly.
- 2 Demonstrate proper use of a Type IV.
- 3 None.  
The definition of entry-level needs clarification (recently started operating a powerboat could mean very different things to different people).
- 4 Demonstration of Throttle use (no grinding of gears).
- 5 Secure dead man cut off to body.
- 6 Marlinspike, back and fill (single screw), passenger orientation, float plan filing, Williamson turn

- (power boat), backing in straight line, both single and twin screw, overcoming leeway, and I could go on and on.
- 7 Using three points of contact - sometimes only two are necessary, using shift(s), throttle(s) and steering - Multiple shafts. Maneuver in close quarters?
  - 8 Prepare a float plan and leave with a responsible party.
  - 9 Prepare Contact List and understand Waterway Watch.
  - 10 Understand current conditions for safe docking and close quarter maneuvering. Understand the affects of boats wakes on docked or moored boats.
  - 11 Be constantly aware of one's own wake.
  - 12 Identify potential hazards while, running. Become familiar with new water hazards.
  - 13 Launch ramp etiquette.
  - 14 Boarding a vessel from the water. Both from beach area and deep water.
  - 15 Attend a safe boating class put on by the Coast Guard Auxiliary or Power Squadron. Marlinspike or how to tie up your vessel properly.
  - 16 Use of fenders.
  - 17 Provide crew/passengers safety information prior to departure.
  - 18 Ensure the safety of those aboard.
  - 19 Quick stop (sail boat).
  - 20 Safely fend off of dock or another vessel without physically endangering themselves or their crew (i.e., keeping body parts out from between boats &/or structure).
  - 21 Basic fire fighting techniques

## Appendix C:

*Qualitative results on Survey Monkey On-Water entry-level skill based POWER Standards V1 for comments from respondents that disagreed on the standard with the lowest agreement percentage.*

The following comments came from those respondents who moderately or completely disagreed with the standard *Stop the vessel in "emergency" mode, B: from planning or normal operating speed in less than 2 boat lengths, turning to ensure stern wave passes behind the vessel with consideration of passengers and gear.* The purpose of separating and analyzing these comments was to determine if any of these respondents might have recommended a change or modification to the standard that received the lowest overall agreement percentage of any of the 37 standards.

**Bolded** titles represent the themes identified by the comments. The numbered statements below identify the verbatim responses that made up the theme. Results of analyzing the comments indicate no strong clear recommendation that might be acted upon to change or modify the standard in question. Although it is not a heavily weighted theme, two of the 15 comments identified *speed of the vessel* as a factor that needed to be considered when operating a POWER boat.

**Recommendation:** The theme associated with speed of the vessel is not strong enough by itself to warrant changing the definition of the standard. However, the comments associated with speed might provide some language that can be used to help identify Rubrics upon which performance on the particular standard can be assessed.

### Themes and Verbatim Responses

#### Operate communication and navigation equipment

1. Radio operations and how to use it for calls, warnings and emergencies.
2. Operate a marine Radio to report distress: Know when and how, demonstrate as role play.
3. Reading a chart, Reading a GPS. Operating a VHF.
4. Operate and configure sonar and GPS.
5. Consult charts, navigation.

#### Managing speed

1. All maneuvers within reasonable distance based on speed. Conditions and type of craft.
2. Some items in the survey are very unreasonable, such as moving at a high speed and coming to a complete stop in less than two boat lengths. Older outboard engines do not all lock down. Etc.

#### Rules of the road

1. Ability to recognize and properly identify stand-on and give-way vessel and take proper action. Ability to recognize and properly maneuver using ATON.
2. Recognition of rules of the road in navigation and proper etiquette for observing no wake zones.

#### General comments

1. Regarding a PWC, there are too many 'types' of PWC's and the training needs to have consideration for these 4 basic hull types. Each one has a different weight capacity. Some do not have 'trim' capability. Some do not offer 'reverse'. Most do not have a 'neutral' position. Some of the questions cannot apply to a PWC training program, as you can see

in my 'disagree' comments. I could comment in greater depth on the PWC specific issues separate from this form. I have an 8-hour basic recreational PWC training program that has been taught since 1989 and is updated annually. It is quite effective in basic skills applying to all four hull types and is very 'specific'. Probably better to submit that content for your review.

2. I have been a power and sail boater for over 55 years and I think this kind of an assessment is a total waste of time and money. This whole program smacks of a group of do-gooders who have decided that they should be able to "rule the world" of boating. FYI, while I am a very safe boater and believe strongly in safe boating, I would fight this tooth and nail at every level of government to see that it is not put into place.
3. Please check USPS-BOC-Inland Certification for complete description, also note POTW (Practical On the water Training).

#### **Not coded**

1. Show proficiency backing up a trailer at a ramp. Steer a boat in close quarters showing knowledge that the vessel steers from the stern and being watchful of the stern during maneuvering.
2. Identify potential hazards while launching, running. Reference Night time Captain, Mate and Crews duties to passengers safety, become familiar with new water hazards, foul weather hazards, fueling, fire safety, grounding, Emergency scenarios.
3. Operate with consideration of towing a ski/tube behind a boat. Maintain a safety clearance with the extra length. Retrieving a downed skier in congested boat traffic within 30 sec.
4. Install and or operate lights. Know all functions available on Dashboard. Bilge pumps, livewell pumps, trim switches, gas tank switches, How to attach the kill switch to ones' body. How to trailer the boat in gentle or calm conditions. How to back up the hauling vehicle and trailer on the launch ramp.
5. Be constantly aware of one's own wake.



## About this Work

### National System of Standards for Recreational Boat Operation USCG On-Water Standards Initiative



This work has been produced through US Coast Guard grant funding to **US SAILING** to facilitate a consensus-based process by which a team of diverse SMEs from across the recreational boating community develops On-Water, entry level, skill-based performance standards as part of a *National System of Standards for Recreational Boat Operation*.

An objective grant facilitator is designing and managing the collaborative development of SAIL, POWER and HUMAN propelled standards that will be made freely available and recognized (not mandated) by the U.S. Coast Guard for voluntary incorporation in beginner-level recreational boating training programs.

For more information, please visit the On-Water Standards Initiative website at: [www.onwaterstandards.org](http://www.onwaterstandards.org). Or, contact K. Brian Dorval, On-Water Standards Facilitator at 716-994-2842. You can also email him at: [brian@thinkfirstserve.com](mailto:brian@thinkfirstserve.com).



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