

What is the long-term direction of the National On-Water Standards Program? What approach is the On-Water Standards SME Team taking to develop On-Water, skills-based Standards for national application?

On-Water Instruction and Education

A great deal of work has been done to educate, train and prepare people to operate recreational boats, with much progress made in the area of classroom education. In recent years, experiential learning has become increasingly recognized as a highly effective approach to teaching recreational boating operation. The United States Coast Guard (USCG) understands the value of a combination of approaches to learning. Accordingly, acquiring boat operator skills through learning by doing augmented with knowledge acquisition on-land, is the long-term goal to be achieved through development of a set of national standards for On-Water, skills-based instruction in recreational boat operation.

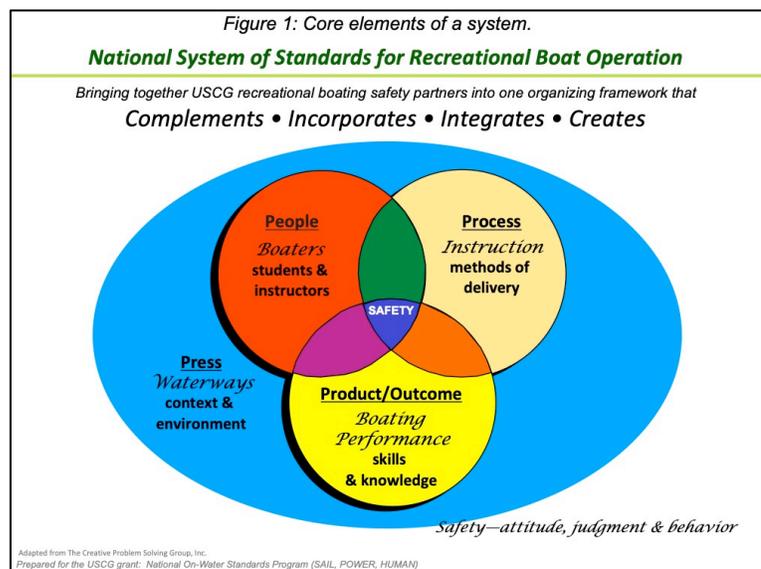
Skills-Based Standards for Recreational Boat Operators

The National On-Water Standards (NOWS) Program was established to produce an agreed upon set of entry-level skills-based standards for recreational boat operation to complement knowledge standards. These standards identify the outcome skills recreational boat operators should be able to demonstrate as a result of engaging in On-Water instruction. They also identify the qualities of the instructional approach used to deliver those skills. Confirming what “skills and behaviors” entry-level boat operators should be able to demonstrate and how best to instruct them is the first step in developing a comprehensive, consensus-driven *National System of Standards for Recreational Boat Operation*. The Coast Guard’s intention is that the System of Standards serves as a central source of information for the fundamental building blocks education providers can freely access and voluntarily use within their design and delivery of instruction for recreational boat operation. The system is designed to ensure education providers use a coordinated and consistent platform of skills and knowledge instruction to increase the overall level of quality, consistency and availability of on-water skills-based instruction in recreational boat operation across the country. The outcome for boaters is that they receive a common set of entry-level skills and knowledge that helps increase their level of safety and enjoyment during recreational boating.

The Big Picture: A System of Standards

Any approach to learning and development needs to examine four core elements in what is called a *System of Standards*. The four parts of the system (see Figure 1) include: 1—standards associated with the *People* involved (e.g., instructors, students); 2—standards related to the *Process* used to stimulate learning (e.g., teaching, training methods); 3—standards for the *Press* (e.g., context, environment, place) in which learning takes place; and 4—Product standards associated with the outcomes of learning (e.g., awareness, understanding, skills, behavior, knowledge). Recreational boat operation safety standards fit in all four parts of the system.

The standards developed by the NOWS Program are only one part of this larger system. NOWS began by identifying and agreeing to the Product or outcome part of the system (entry-level skills boat operators are able to demonstrate as a result of instruction) because outcomes



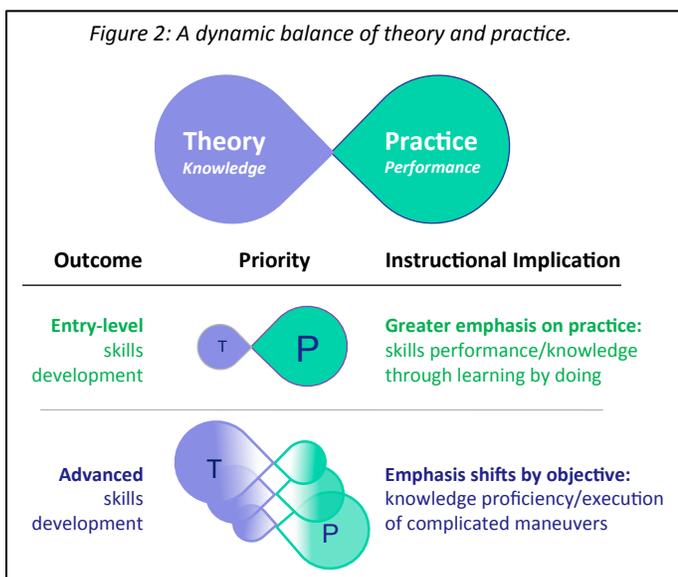
skills determine the content of other standards in the system. NOWS then developed an instructional approach standard to work in conjunction with outcome skills standards that identified the qualities of the People, the Process of instruction, and the Press or context in which instruction takes place.

Benefits of a Systemic Approach

Following are some of the key benefits to taking a systemic approach to developing national standards:

a. *Complement work previously completed* (e.g., previous standards and On-Water standards). As pointed out earlier, the USCG’s boating safety partners have already completed much work on the development of recreational boating standards. This systemic approach provides a framework that enables the current work being conducted by a broad representation of Subject Matter Experts (SMEs) to develop On-Water standards to complement previous standards development, as well as to provide new contributions to recreational boater education.

b. *Integrate different methods for teaching and instructing safe and enjoyable recreational boat operation* (e.g., On-Water instruction and classroom teaching). Learning and developing recreational boat operation skills requires knowledge and understanding of theory, as well as the ability to demonstrate behavior and skills associated with practice (see Figure 2). Different teaching and learning approaches lend themselves to more efficient and effective development and learning. This System of Standards helps ensure a productive and complementary integration of all these different methods to produce a higher level of performance in the safe and enjoyable operation of recreational watercraft.



Research has shown that individuals develop skills, especially at the entry-level, most effectively through hands-on practice, “learning by doing”, complemented by knowledge acquisition “theory” during the practical experience. Once entry-level skills are acquired, a greater emphasis on theory allows boat operators to further enhance proficiency of their recreational boat operation skills.

c. *Include all components associated with high quality standards for learning and development* (e.g., credentials of instructors, qualities of the instructional environment). The NOWS Program SMEs identified outcome skills and instructional approach standards. Together, they identify national standards for many of the essential factors that should be incorporated within the overall system of instructional standards for recreational boat operators (see Figure 3).

Figure 3: Elements within the System of Standards

People Standards (students/instructors)	Process Standards (methods of delivery)	Press Standards (context/environment)	Product Standards (outcomes: knowledge/skill)
<ul style="list-style-type: none"> Students (incoming level of skills and experience) Instructors (qualifications, experiences, credentials) Master trainers (qualifications, experiences, credentials) Evaluation & development 	<ul style="list-style-type: none"> Curriculum strategy and design Course design (goals & objectives) Instructional design and activities Evaluation & development 	<ul style="list-style-type: none"> Location Conditions (weather, waves, etc.) Equipment and resources Evaluation & development 	<ul style="list-style-type: none"> Knowledge and Understanding Skills able to be performed Behaviors to be demonstrated Evaluation & development
Safety Standards			

d. *Provide a framework for future developments in national standards for On-Water instruction in recreational boating.* The standards produced

by the NOWS Program focused specifically on *entry-level* skills and instructional approach standards for On-Water instruction. The *entry-level skills* apply to operating recreational boats in *clear weather* with *no restricted visibility* or *threatening weather*. The NOWS standards set the foundation for future work in all parts of the national system. For example, additional work can be completed in the Product (skills/outcomes) area to develop national standards for intermediate and advanced recreational boat operation; for nighttime operation, and operation in inclement weather.

A comprehensive System of Standards that can be recognized by the USCG as key components of boater education programs nationwide would involve national consensus-driven development of the People, Process, Press (environment) and Product (skills) standards across the domains of POWER, SAIL and HUMAN recreational boat operation.

Taking a systemic approach to developing national standards enables an inclusive and collaborative approach in which all affected parties (USCG boating safety partners) can and are encouraged to play a vital role in the process. Leveraging the vast expertise of SMEs throughout the recreational boating community will ensure that the resulting System of Standards represents the highest quality, consensus-based, developmental framework that the USCG can recognize on a national scale. Once established and made freely available, on-going voluntary participation by boating safety partners in maintaining and updating of the System of Standards will facilitate continued collaboration on the evolution of the system over time. Most importantly, this approach will help the USCG implement its strategic plan aimed at promoting increased safety through education both On-land and On-Water, while facilitating an enjoyable experiences for the millions of recreational boaters across the United States.