

Seamanship: Navigating an Elusive Cornerstone of Safety-Critical Maritime Operations

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Seamanship lies at the core of maritime practice, shaping how professionals navigate, make decisions, and ensure safety at sea. Yet despite its central importance, the concept remains elusive—frequently invoked in legislation, training, and daily operations, but rarely defined with precision. It carries strong cultural meaning, reflecting values, experience, and professional identity, particularly within an international and diverse industry. At the same time, this flexibility can generate ambiguity, especially in safety-critical situations such as onboard decision-making or accident investigations, where references to “poor seamanship” are common but often vague. This pilot study provides an initial exploration of how maritime professionals interpret seamanship. Using a questionnaire with open-ended questions, data were collected from a small group of experienced maritime professionals and analyzed qualitatively to identify shared understandings and areas of divergence. Findings indicate considerable variation in how seamanship is understood, influenced by professional background, organizational culture, and operational context. Core elements—such as practical skill, sound judgment, and responsibility—are widely recognized, but other dimensions are interpreted inconsistently, creating potential for differing expectations and miscommunication in practice. While based on a limited sample and therefore exploratory in nature, the study highlights the value of clarifying what seamanship entails, particularly as the maritime sector increasingly incorporates automation and autonomous systems. Understanding how human expertise, judgment, and cultural knowledge intersect with technological developments is essential to sustaining safe and resilient operations. By mapping these preliminary perspectives, the study lays groundwork for future research and discussion on the evolving role of seamanship in modern maritime practice.

Keywords: seamanship, maritime safety, safety concepts

1. Introduction

Good seamanship is widely regarded as a self-evident prerequisite for safe navigation and maritime operations. The concept is frequently invoked in legislation, maritime education

curricula, academic literature, accident investigations, legal judgments following maritime accidents, and everyday professional discourse. Despite this extensive use, it remains unclear what is meant by good seamanship in practice. The concept often rests on vague

formulations and is frequently used without further explanation of its content. Precisely because good seamanship is treated as both fundamental and uncontroversial—yet remains variously defined, and sometimes not explicitly defined at all—it becomes analytically interesting to examine how it is understood by those expected to exercise it in practice—namely, seafarers. Accordingly, this paper contributes to existing research on how maritime professionals interpret good seamanship and discusses the safety implications of variation in these interpretations.

2. Seamanship as an Elusive Safety Concept

The exact historical origin of the phrase good seamanship is difficult to pinpoint. However, the concept has been institutionalized in modern maritime practice through regulatory frameworks and legal standards, where it plays a central role in defining navigational responsibility.

2.1 Seamanship in law and regulation

The Norwegian Maritime Code (Skipssikkerhetsloven 2007) formalize seamanship as a legal concept rather than merely a professional ideal. For instance, §132 states that “the master shall ensure that navigation and handling of the vessel are carried out in accordance with good seamanship” (translated by the authors), without providing further clarification as to how good seamanship should be understood in practice. In legal scholarship, attempts have been made to specify the content of the concept. Simonsen (2022, 109) for example, defines good seamanship as “the navigation and handling of a vessel in accordance with applicable regulations and in the manner that other competent, vigilant, and prudent seafarers would act under similar circumstances, so as to avoid danger to life and health, the environment, or material assets” (translated by the authors). Such definitions clarify the legal function of seamanship as a standard of conduct, but they presuppose a shared professional understanding that is rarely made explicit and may vary in practice. In everyday maritime operations, it is often unclear what the correct action is, and several courses of action may be reasonable depending on factors such as vessel type,

operational context, and experience. Assessments of whether conduct reflects good or poor seamanship may therefore be influenced by hindsight, particularly when such definitions are applied in juridical reasoning after an incident has occurred.

Despite these challenges, seamanship remains a central reference point in legal reasoning and court practice in Norway. Following the *Sleipner* grounding, the Gulating Court of Appeal held that the failure to use available navigational instruments was incompatible with the rules of safe navigation and good seamanship (Gulating Lagmannsrett 2003). Similarly, in the judgment following the collision between *Helge Ingstad* and *Sola TS*, the prosecution argued that the officer of the watch had, over an extended period, failed to act in accordance with good seamanship and the principles of safe navigation (Gulating Lagmannsrett 2023). In both cases, seamanship functioned as a decisive evaluative standard in attributing responsibility and criminal liability, despite the absence of a precise operational definition. These cases illustrate how seamanship acquires particular salience after accidents, even though its content is rarely specified in advance.

2.2 Seamanship in safety research

Empirical studies suggest that seafarers associate seamanship with a range of attributes, including practical competence, skill-based improvisation, the ability to keep calm during problem solving, and care for others, the ship and the cargo (Kongsvik et al. 2020). Other studies have highlighted social and relational aspects, such as trust, cooperation, a strong sense of community, and ability to uphold social relationships as central to how good seamanship is understood in practice (Antonsen 2009). More recent ethnographic work has shown how seamanship may also involve considerate navigation, informal cooperation, and the ability to improvise and find workable solutions in unforeseen situations, particularly in technologically advanced operational settings (Aalberg 2024). Further, in a large survey study, the authors found that seafarers most frequently associated good seamanship with safety, individual characteristics and capabilities, and social interaction and

cooperation. In addition, Alberg and Bye (2020) show that seamanship is described across multiple and partly overlapping dimensions, ranging from performance and competence to individual characteristics and organizational conditions.

Taken together, this body of research indicates that seamanship is a multifaceted and context-dependent concept. Previous studies have documented a wide range of attributes associated with good seamanship, but they also show that the concept is described in diverse and sometimes overlapping ways. As a result, seamanship remains difficult to delimit and apply consistently across contexts. The present study contributes to existing research by providing an in-depth, exploratory analysis of how seamanship is articulated by practitioners, highlighting salient meanings and points of divergence relevant for competence development and professional standards.

3. Methodology: Exploratory Qualitative Approach

The study is based on a questionnaire comprising open-ended questions, in which the respondents were asked to describe, in their own words, what they understand by the concept of good seamanship. The empirical data in this paper were originally collected as part of one of the authors' student examination project. And is here re-interpreted and theoretically reframed for research purposes. The purpose was to provide an initial exploration of how seafarers understand the concept. A qualitative approach was considered appropriate, as the aim was to identify key themes and variations in practitioners' interpretations rather than to test predefined hypotheses. The findings thus serve as a basis for further research and for the development of more focused research instruments.

The sample consists of ten active seafarers holding a Norwegian D1 certificate. The D1 certificate qualifies the holder to serve as master on all types of vessels and corresponds broadly to an unlimited master's qualification under the STCW Convention Regulation II/2 (IMO 1978). D1-certified officers have completed deck officer

education at either a university college or a vocational college. This group was selected because they are expected to have thorough knowledge of the regulatory framework in which good seamanship is used both as a legal concept and as an integral part of professional training.

The questionnaire was distributed via SurveyXact. Nine of the ten invited seafarers responded. The sample was a convenience sample, recruited through one of the authors' professional networks.

4. Findings: How Professionals Understand Seamanship

This section presents the results from the questionnaire study on how respondents understand and describe good seamanship. The analysis focuses on recurring themes in how the concept was interpreted, as well as notable absences. Findings from both the initial coding and the subsequent grouping of codes into broader categories are presented to illustrate how the results developed.

Table 1. Initial codes identified in responses.

Code	Number of respondents (n=9)
Competence	5
Safety	5
Proactive	3
Good planning	2
Follow rules	2
Experience	2
Consideration	2
Help others	1
Collaboration	1
Communication	1

Table 1 summarizes the initial coding of responses to the open-ended questionnaire. Ten distinct codes were identified. Among these, *competence* and *safety* were the most frequently mentioned, appearing in five responses each. In contrast, *helping others*, *collaboration*, and

communication were mentioned by only one respondent.

The initial codes were subsequently reviewed and merged into broader thematic categories. Specifically, *competence* and *experience* were grouped into the category *qualifications*, while *safety* and *following rules* were merged into *sound judgment*. The codes *good planning* and *proactive* were combined into *preparation*, whereas *consideration* and *helping others* were grouped into *care*. Finally, *collaboration* and *communication* were merged into the category *interaction*.

Table 2. Final categories derived from initial codes.

Category	Number of respondents (n=9)
Qualifications	7
Sound judgement	7
Preparation	5
Care	3
Interaction	2

Note: Categories were developed by merging related initial codes; respondents could contribute to multiple categories.

An overview of the resulting categories is provided in Table 2. As shown in the table, *qualifications* and *sound judgment* were the most frequently articulated categories, each mentioned by seven respondents. *Preparation* was emphasized by five respondents, while *care* and *interaction* were mentioned by three and two respondents, respectively.

Overall, respondents described good seamanship primarily in terms of professional qualifications—such as competence and experience—and sound judgment in relation to safe conduct. This emphasis is evident in several responses. For example, participant 4 defined good seamanship as: “That those on board know what they are doing and do it safely and well” (Translated by the authors). This formulation combines competence (“know what they are doing”) with safety-oriented practice (“do it safely”).

A similar understanding was expressed by participant 7, who linked safe conduct to responsibility for personnel, vessel, and cargo: “That one behaves and performs their work in a safe and responsible manner, so that there is no danger to oneself, colleagues, the vessel, or its cargo” (Translated by the authors). This response explicitly connects safe practice with professional responsibility and competence.

Some respondents described good seamanship in more concrete operational terms, highlighting everyday actions and practical considerations. Participant 5, for instance, emphasized taking other actors at sea into account, acting in accordance with applicable rules and traditions, and ensuring that the vessel and equipment are in good condition. This response illustrates how good seamanship is understood as a combination of care, preparation, and sound judgment in everyday maritime operations.

Our findings show that participants largely associate good seamanship with qualifications (competence and experience) and sound judgment. This aligns with earlier research linking seamanship to practical competence and safety-oriented performance (Kongsvik et al. 2020; Aalberg and Bye 2020). At the same time, interaction was mentioned by only a few participants, despite previous studies emphasizing social and relational aspects such as cooperation and community (Antonsen 2009; Aalberg 2024). Notably, elements such as continuous vigilance and attentiveness—frequently emphasized in legal definitions and accident investigations—were rarely articulated explicitly by respondents. While aspects of safety and responsibility were commonly mentioned, sustained attention and monitoring did not emerge as salient features in participants’ own descriptions of good seamanship.

The implications of these findings for maritime safety, accountability, and emerging sociotechnical challenges are discussed in the following section.

5. Discussion: Why Interpretive Variation Matters for Safety

The findings indicate that seamanship functions as a widely shared but internally variable reference point in maritime practice. While respondents broadly agree that good seamanship involves competence and safety-oriented conduct, there is notable variation in how other dimensions—such as care for others and interaction—are articulated. This variation is not merely semantic; it has direct implications for how safety is enacted, evaluated, and judged in maritime operations.

5.1 Seamanship as a shared but unstable safety reference

Across regulation, education, and professional discourse, seamanship operates as a taken-for-granted marker of safe and professional conduct. Legal definitions and court practice presuppose that seafarers share a sufficiently common understanding of what good seamanship entails. The present findings suggest, however, that while the concept is widely recognized, its content is not uniformly specified among practitioners. Seamanship thus appears to function as an implicit safety heuristic: a flexible reference that guides action in complex situations, but one whose meaning is rarely made explicit.

This implicitness may be advantageous in everyday operations, where rigid rules cannot anticipate all contingencies. The concept can thus be understood as a context-sensitive form of professional judgement, developed through experience in variable operational environment – including diverse vessel types, tasks, organizational demands, and environmental conditions, which means that “good” decisions cannot always be reduced to standardized rules. From a Human Factors perspective, this may reflect adaptive capacity, understood as the ability to respond to changing operational conditions (Hollnagel 2014). In this sense, seafarers continuously adjust actions to match situational constraints and emerging risks. In this perspective, the challenge arises primarily when good seamanship is applied retrospectively and normatively. Consequently, the key issue may not

be that seafarers hold multiple understandings of the concept, but how these understandings are translated into accountability frameworks that often overlook uncertainty, trade-offs, and the realities of work-as-done. At the same time, the conceptual variability introduces a potential safety vulnerability when different actors operate with different expectations of what seamanship requires in a given situation, because this can lead to unspoken differences in priorities and responsibilities during critical decisions. Divergent interpretations may remain unnoticed during routine operations but become highly visible after incidents.

5.2 Post-incident judgement and the problem of hindsight

The safety relevance of interpretive variation becomes particularly pronounced in post-incident contexts. As demonstrated in Norwegian court practice, seamanship is frequently invoked as a decisive evaluative standard when assigning responsibility and, in some cases, criminal liability. Legal definitions emphasize how competent and prudent seafarers would have acted under similar circumstances (Simonsen 2022). While such formulations serve an important normative function, they also risk introducing hindsight bias into safety assessments. The present findings indicate that practitioners do not consistently articulate elements such as continuous vigilance or attentiveness, despite these elements being emphasized in legal reasoning and accident investigations. This gap raises questions about the alignment between how seamanship is practiced and how it is later evaluated.

5.3 Implications for training and safety management

The observed variation in interpretations of seamanship has implications for maritime training and safety management systems. If seamanship is treated as a self-evident concept rather than an explicit object of reflection and instruction, differences in understanding may persist unnoticed. This may lead to mismatched expectations between seafarers, organizations, and regulatory actors.

Making the content of seamanship more explicit—without reducing it to a fixed checklist—could strengthen maritime education and training, by providing a cleared foundation for what is expected in practice. Such clarification would not replace professional judgment but rather help students and seafarers articulate the assumptions on which it rests.

5.4 Seamanship in an era of automation

Interpretive ambiguity becomes particularly salient as maritime operations increasingly incorporate automated and semi-autonomous systems. As technological systems assume greater responsibility for monitoring, navigation, and decision support, questions arise regarding what remains the responsibility of human operators—and thus what continues to count as seamanship. This is reflected in empirical studies where seafarers describe their role as moving from traditional seamanship skills toward monitoring technological systems (Kongsvik et al. 2020).

If seamanship is implicitly associated with vigilance, anticipation, and judgment, but these elements are unevenly articulated in practice, responsibility gaps may emerge at the human–automation interface. Clarifying how seamanship is understood in contemporary practice is therefore not only a conceptual concern, but a prerequisite for sustaining safe and resilient operations in evolving sociotechnical systems.

6. Conclusion and Implications

This study explored how seafarers understand the concept of good seamanship, a term that occupies a central position in regulation, training, and post-incident evaluation, yet remains loosely specified in practice. Based on an exploratory qualitative pilot study, the findings show that seamanship is widely recognized among practitioners but interpreted in varied ways, with emphasis placed on competence, sound judgment, preparation, and care, and less explicit attention given to elements such as continuous vigilance.

While the flexibility of the concept may support professional judgment in complex and dynamic situations, interpretive variation also creates

challenges when seamanship is invoked retrospectively in accident investigation and legal reasoning.

The study has clear limitations. The sample is small and context-specific, and the findings are exploratory rather than generalizable. Nevertheless, the results add to existing research and provide a basis for further research, including studies with larger and more diverse samples and closer examination of how seamanship is operationalized in training, safety management systems, and technologically advanced maritime operations.

Clarifying how seamanship is understood and enacted in practice is increasingly important as maritime operations evolve. As automation and decision-support systems assume greater roles in navigation and monitoring, questions of responsibility, judgment, and vigilance become more complex. Understanding seamanship as a shared but under-specified safety reference offers a useful starting point for addressing these challenges and for supporting safe and resilient maritime operations.

Future safety work should therefore attend not only to whether seamanship is present, but to how its meaning is negotiated, communicated, and retrospectively stabilized.

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