

Crimes of Obedience:

Well-meaning auditors in dysfunctional systems

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Crimes of Obedience

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Abstract

The ISM Code requires companies to establish a safety management system and verify its effectiveness through internal safety audits done by internal auditors. The Code is replete with words that are open to interpretation. The ISM code conveys what its objectives are and what it intends to achieve by the language in the code. The interpretation of the meaning of the words is crucial to understanding the content. This research sought the perspectives and understandings of the notions of "safety", "safety management" and "safety management skills" among internal auditors who audit oil tankers. The research found that there was no common understanding. Initial research on the Code held cautious optimism about its potential impact. With time, the optimism waned and lately transformed into a confident critique of the Code. Is it now time to restore the relevance of the Code through a comprehensive review to align it with the latest developments in the field of Safety Science?

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Acknowledgements

This thesis is a culmination of a series of happy accidents. It started with a Google search that led me to Erik Hollnagel's work.

That accident set me up on a journey marked by numerous detours into rabbit holes triggered by some reference in a paper or a book or a mention by a teacher or a student. The journey has been exhilarating and humbling in equal measure. Maybe more humbling. There is just so much to know that with every new learning, it appears like I know less.

The many people I reached out to made time for me, talked to me, answered my questions, and guided me. Bookended between my manager and my examiner, there were so many kind people out there 'in the wild'. All I needed to do was ask. I have been fortunate to have met many brilliant people virtually and in person and received their generous support.

While the overall academic experience was enriching, the process of writing this thesis presented a formidable challenge. With a background of only twelve years of formal schooling, before I started my seafaring career, I found myself needing a lot more academic rigour for this research.

The academic rigour conflicted with the demands of a 'real' day job, leading me to doubt my ability and question my motivations. On many occasions, I contemplated giving up. However, my classmates- all accomplished practitioners, insightful academics and loving human beings- encouraged me to continue. I muddled through.

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Thank you if you are reading this.

Introduction

A colleague visited two ships in the same port over three days. He observed the bridge teams while under pilotage. When he returned, he narrated what he had observed on those ships.

There were three seafarers: a master, a navigating officer and a helmsman, on the bridge of both ships, along with the pilot. On the first one, the navigating officer diligently filled up the running logbook without once looking out of the window or providing inputs to the master and pilot. He was making sure he did not miss logging down anything.

On the second one, the navigating officer made very few entries in the running logbook¹ but regularly looked out the window and actively provided inputs to the master and pilot. The running log on the first ship ran over four pages, while that on the second ship was less than half a page.

During the debrief, the master of the first ship described how it was necessary to maintain evidence as “auditors would ask for them”. If the two vessels were audited some months later, it would be reasonable to assume that the first one, having better records, may be considered to have navigated better.

When my colleague narrated this to us, I was struck by the perverse influence of internal audits, a process instituted for ‘continuous improvement’ may really be constraining improvement: the perceived need to maintain records is reducing the effectiveness of navigation. Seafarers are constructing objective evidence² to demonstrate effective compliance rather than do the job right – keeping a lookout in this anecdote.

¹ A logbook in which officers record activities as they occur. The information in the running log is then transferred to the Deck Log Book. Both logbooks have evidentiary value and is used as Objective evidence in an audit.

² Objective Evidence means quantitative or qualitative information, records or statements of facts pertaining to safety or to the existence and implementation of a safety management system element, which is based on observation, measurement or test and which can be verified (ISM Code 1.1.7)

It is this researcher's experience that after a major accident is the expression by managers of their exasperation that auditing was deficient and failed to identify critical deficiencies that could have prevented the accident. This resonates with what Hutchinson et al., (2024a) says “..Such findings assume that deficiencies were waiting to be found: if only the audit had looked a little deeper, then the accident could have been prevented”. Their study revealed that audits findings did not call for “deep and systematic rectification of deficiencies” and the sample of audits in their study “prioritised superficial fixes over addressing significant operational risks”.

The expectations from audits are manifold.

The language in The Code and IMO circulars (IMO, 2018b) includes abstract concepts like ‘Safety’ and ‘Safety Culture’. While The Code does not define or explain “Safety Culture”, it is clearly implied that The Code is something that supports the development of what they call *Safety Culture*. Section 1.1.4 of the Revised Guidelines for the Operational Implementation of the International Safety Management (ISM) code by Companies says:

The application of the ISM³ code should support and encourage the development of a safety culture *in shipping* (Emphasis added). Success factors for the development of a culture that promotes safety and environmental protection are, inter alia, commitment, values, beliefs and clarity of the safety management system (IMO, 2018b).

The objectives of the code are to ensure safety at sea, prevent human injury or loss of life, and avoid damage to the environment and property. And in order to achieve these objectives the Code expects companies to have a safety management system, complying with all mandatory rules and regulations, codes, guidelines and standards, that will provide safe working environment, safe working practices, establish safeguards for all identified risks and continuously improve safety management skills of personnel ashore and aboard ships (IMO, 2018a, p. 16).

³ The International Management Code for the Safe Operation of Ships and for Pollution Prevention (International Safety Management (ISM) Code)

In order to verify whether safety activities are complying with the safety management system, the code expects the company to carry out internal safety audits (IMO, 2018a, p. 22). Audits become important. Auditors become important.

What is set out in the code is expressed in words. These words are read, understood and interpreted by the users of the code, including the auditors, to make meaning of the words that express the expectations of the code. Reading and interpreting the Code becomes crucial in understanding what the code set out to do and in achieving its objectives.

The interpretation of the language in 'The Code' by the internal auditors becomes significant in how they make sense of the contents of 'The Code' and thereby its essence ensuring effectiveness in its implementation.

Formulation of the Research Question

The researcher's journey, starting as a seafarer and progressing to the role of an audit manager, shaped a particular perspective on how audits were conducted. As an audit manager, one needs to present audit outcomes to derive meaningful action plans every quarter. Quarter after quarter, the data did not yield any insights that seemed useful to the management.

This frustration of extracting meaningful insights from data gathered in audits of numerous vessels was coloured in a new light during the master's program. As an audit manager trying to nudge changes into the auditors' ways of working, there was a clear conviction among auditors to adhere to what they said were the principles of the ISM code.

Recognising 'The Code' as a major influence on auditor behaviour, it became imperative to delve into its content for a comprehensive understanding and interpretation of its expectations. A personal examination of 'The Code' revealed numerous abstract concepts open to subjective interpretation. If the ISM code was a strong driver of an auditors' functioning, then the content

of The Code must be understood and interpreted to make meaning of what The Code expects so that the essence of The Code can be interpreted and applied.

An effective verification, review and evaluation of whether the safety activities onboard comply with the safety management system will depend on the internal auditors' reading and interpretation of The Code. This research seeks to uncover these subjective interpretations and explore how they influence the audit process.

Now, I will introduce the research question and present relevant literature to give an impression of the literature landscape that I will navigate during the research. Thereafter, I will introduce the research paradigm (Mayan, 2009, p. 24) with the intention of presenting my outlook and approach to data gathering and analysis.

The Research Question

I intend to answer the question: “Is there a common understanding of the notions of “safety”, “safety management” and “safety management skills” among internal auditors who audit oil tankers?”

Literature Review

My literature review includes literature:

- Covering ISM Code and current research on ISM code.
- Exploring the paradigm of “safety” in the maritime industry

ISM Code and Research on ISM Code:

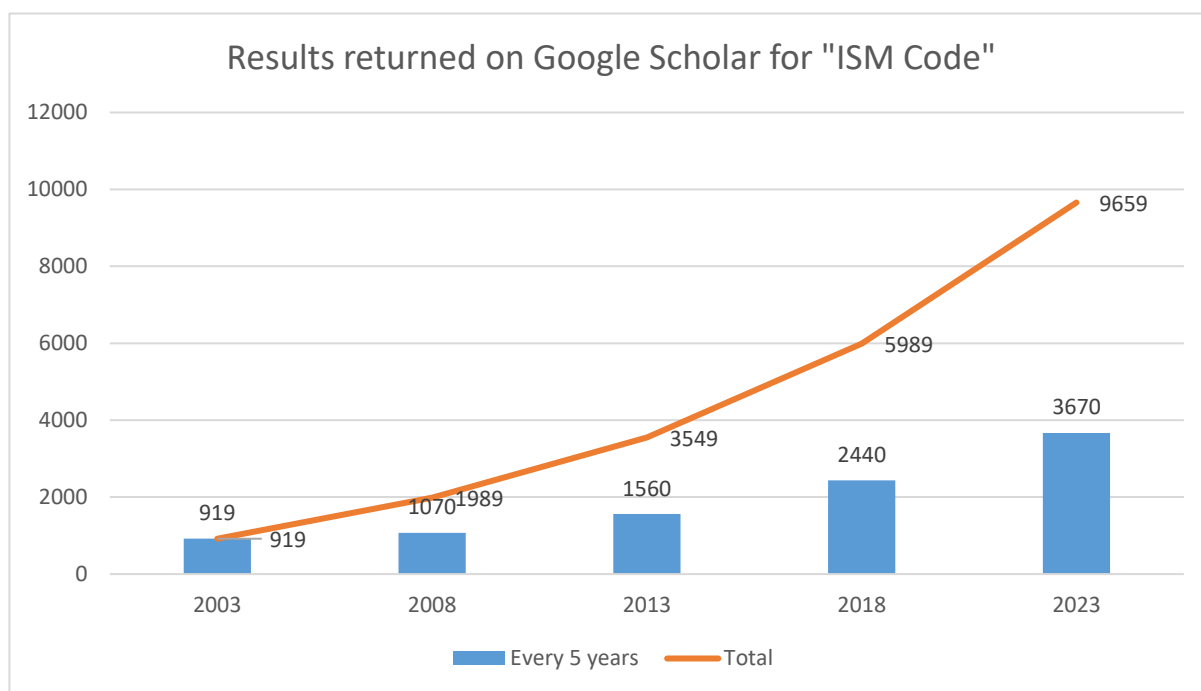
Shipping is a highly competitive, capital-intensive industry with very few barriers to entry, sensitive to market conditions with its cycles of demands, where the profit margins are driven down during periods of overcapacity (Chatterjee, 2016, p. 1). Operators reduce costs to remain relevant in the market by optimising crew wages and supplies. The market conditions affect crew motivation and, consequently, safety (Bhattacharya, 2012, p. 534). And less reputable ship operators who exploit these market forces jeopardise safety (Chatterjee, 2016, p. 1). The ISM code is one of the many instruments that regulates the industry retaining focus on safety.

Since 1998, international shipping has been subject to the requirements of The ISM Code, along with various other international and local regulations. The ISM Code has emerged as a cornerstone in ship management, signifying a shift in accountability to the company managing the vessel. The considerable influence of management on the conditions in which seafarers work and make decisions became clear to the world in the aftermath of the Herald of Free Enterprise.

While The Code does not stand alone, it is the umbrella under which the many other regulatory requirements for the safe operation of ships and the various industry initiatives exist Anderson, (2015). While the ISM code was never a panacea for the industry’s safety problems, The Code, along with other initiatives, Anderson (2015, pp. 2–3) thought had a good chance of making ships safer and protecting the marine environment.

Numerous research on the Code traces its origin and comments on its efficacy.

Figure 1

Figure 1 Graph showing results returned on Google Scholar for "ISM Code"

The origin of the code is traced to the trend of self-regulation in the early 1980s. This period is also recognised by Power, in the preface to his book he says that the world changed in the 1980s and auditing was taking on new forms and being promoted in a wide variety of ways (Power, 1997, p. Preface).

Industry bodies recommended a move towards greater self-regulation, urging ship managers to play a greater role in making their ships safer. Papers presented at the IMO were set to promote the importance of safety management, again highlighting the need for active involvement of the managers and pointing out that the overall responsibility for safety should lie with the managers of the company (Bhattacharya, 2009, pp. 32–83). The call for such regulation was accelerated when the *Herald of Free Enterprise* capsized in the English Channel with the loss of 188 lives in 1987 (UK Department of Transport, 1987).

While the capsizing of the Herald of Free Enterprise may have accelerated the call for such regulation, Anderson observes that event was simply one of the ‘better-known disasters’ of the time, which had shaken the politicians and governments. There were other incidents before 1987 which had the attention of the UK Government as evident when they issued the M Notice 1188 titled ‘Good Ship Management’ in 1986. Anderson traces elements from this notice that found its way into the ISM Code (P. Anderson, 2015, p. 70).

The ISM code came into force in 1998. There are numerous papers (P. Anderson, 2015; Philip Anderson, 2003; Batalden & Are, 2015; Batalden & Sydnes, 2014; Baumler et al., 2021; Bhattacharya, 2009, 2011, 2012; Chatterjee, 2016; Devereux et al., 2020; Karakasnak et al., 2018; Lappalainen, 2008; Teperi et al., 2019) that studied The Code, generally and in relation to Safety.

Some of these papers have highlighted the ineffective implementation of The Code while others have called into question the underlying assumptions and its effectiveness in managing safety in the maritime industry. While some have found benefits in the implementation of The Code, several others speak about room for improvement in safety practices by involving seafarers (Størkersen et al., 2017; Teperi et al., 2019).

Dr. Phil Anderson has written extensively on the ISM Code and is described by the publisher on the back cover of ‘ISM CODE:A Practical Guide to the Legal and Insurance Implications, as someone who is “widely recognised as one of the world’s leading authorities on the ISM Code and marine safety management”(P. Anderson, 2015). A copy of his 2003 publication ‘Cracking the code: the relevance of the ISM code and its impact on shipping practices’ was not available during the research, a review of papers that cited that publication revealed a gist of what may be relevant to this research.

Størkersen, (2021) cites from it to say that SMS, in practice, is overly standardized, detailed, and time-consuming. Teperi et al., (2019) recalls the strong belief that implementing a safety management system (SMS) would lead to a safety culture and mentions the need to improve

incident reporting which is hindered by “fear of blame”. Their paper also recalls that there were differences in what was expected in the SMS and how reporting was done. Størkersen et al., (2017) talks about how Anderson found that the rules are complicated because of the framework conditions, such as liability law and the SMS being general and not being adapted to the organisation. The paper mentions that these can be reformed through employee participation which can be brought about by improving employment conditions and trust between seafarers and management

Lappalainen, (2008) while studying the impact of ISM code on maritime safety culture in Finland concludes that the ISM Code has significantly improved safety and environment awareness compared to 12 years earlier. The research had challenges quantifying the exact impact due to lack of ‘hard data’ to quantify how much of this improvement could be attributed to the implementation of the ISM Code. The research concludes that a safety culture is emerging but the “the old-established behaviour which is based on the old day’s maritime culture” (Lappalainen, 2008, p. 48) is a barrier. The research done about a decade after implementation highlights “major shortcomings concerning effective safety management in the maritime industry” (Lappalainen, 2008, pp. 47–48).

Studies conducted to determine the efficacy of the ISM Code in the past included investigations of the trends of accident numbers and insurance claims and users’ perceptions. None of these produced a definitive conclusion (Bhattacharya, 2012) and so Bhattacharya went out into the field where his research found a wide disparity between perceptions of managers and seafarers in the implementation of the code.

Seafarers considered it a regulatory exercise that offered no room for them to participate in the management of risks. They felt their experience and skills and knowledge was what protected them. From his study, he has urged the policy makers to consider ways of improving underlying socioeconomic conditions of seafarers. In particular, strengthening seafarers’ employment

conditions needs urgent attention as the first step towards breaking the vicious circle of lack of trust, fear, blame and scepticism. His study highlights the critical need for seafarer involvement in safety management and urges policy makers to focus of improving working conditions. His analysis shows that the critical factor is the lack of seafarers' participation in management of workplace health and safety. The underlying causal factors for such lack of participation were located in seafarers' poor employment condition and low-trust relationship with their managers (Bhattacharya, 2012) .

Recognising the importance of reporting for continuous learning, Bhattacharya examined the sociological factors influencing the practice of reporting and found that there is a significant gap between what the principles are and how it is implemented. His research finds that reporting is challenging in the shipping industry because of organizational and social support being absent. And the problem of reporting becomes 'insurmountable' because of the low trust relationship between managers and seafarers coming from the managers' prejudice against "rule-breaking" and "poorly trained" seafarers (Bhattacharya, 2011; Devereux et al., 2020).

Teperi et al., (2019) in their research recognise the aim of ISM code to promote a good safety culture and accepts that it has improved safety but that came with increased bureaucracy and overlooking personnel as safety research has undergone a paradigm shift. They wonder If the ISM Code is "missing its potential to improve the safety level of the maritime field"(Teperi et al., 2019, p. 99) and invites the code to apply more 'modern safety thinking'.

Størkersen et al., (2017) In their paper "One Size Fits All" concludes that the ISM code has led to increased awareness and a higher safety level in the industry but also more administrative work and frustration, which is in line with earlier research(Almklov et al., 2014; Bhattacharya, 2012; Lappalainen, 2008). An interesting paradox that emerged in their research that safety management regulation is effective for preventing personal injuries where the personal (sic) have

sufficient time and resources, and the procedures are *consistent with seafarers' professional values* (emphasis added)(Størkersen et al., 2017, p. 1154).

Batalden & Sydnes, (2014) studied investigation reports and concluded that the main challenge pertain to development of plans for shipboard operations, local shipboard management and the *ability of the company to verify when such practices deviate from the required standards* (emphasis added) (Batalden & Sydnes, 2014, p. 20).

Batalden & Are, (2015) in their article, despite acknowledging the importance of audits in safety management, the findings reveal limitations in current practices that emphasise document control while neglecting the content quality in safety management systems (SMS). Companies tend to prioritize maintaining documentable audit trails over evaluating maritime operations. The article identifies challenges such as extensive document use, time constraints, and a focus on specific departments; thus, raising concerns about the effectiveness of self-regulation. The study says that companies adjust their SMS to meet auditing standards, potentially undermining the ISM Code's goals for safe ship management and pollution prevention; and the concept of self-regulation. The proliferation of audits leads to strategies like quick fixes and copying from other companies, potentially hindering genuine safety culture development. Overall, the article highlights discrepancies between audit practices and the intended goals of the ISM Code, signalling potential shortcomings in the current regulatory framework.

As if to validate much of what earlier literature found, recent research puts a stamp of validation when Baumler et al., (2021) says;

“The participants underline that the imbalance between workload and manning levels leads to recurrent violations, particularly during port-related operations and for seafarers on the 6On/6Off watch system. To hide their violation and feign compliance, the data revealed that almost all seafarers in our study adjusted work and rest hours' records. The fear of the consequences of non-conformities during third party inspections is the main

driver for such adjustment of records. Employment concerns and job insecurity tend to make seafarers submissive to the companies' interests, and they place the ship interests first.”

Given the self-regulatory principles of The Code, internal review and verification is a key element in the implementation of the SMS. IMO, (2018b) requires companies to consider, among others, the results of internal audits to enhance effectiveness of operations and procedures within the SMS. For this, The Code requires the company to conduct internal audits to verify whether the safety management activities – shore-based and ship-based - comply with the requirements of the SMS.

A chronological study of the literature shows guarded optimism in the earlier years moving to a growing concern in the recent literature. Initially research focused on potential benefits of the ISM Code but did not have data to conclusively assess its singular impact in improving safety in the maritime industry. Studies like Lappalanines (2008) identified improvements in safety awareness but struggled to quantify precise effects due to data limitations. Focus on accident trends, insurance claims, and user perceptions yielded inconclusive results due to inherent challenges in using these metrics.

Studies then moved beyond efficacy to examine implementation challenges and underlying social-cultural factors. Bhattacharya (2012) highlighted a significant disparity between managers' and seafarers' perceptions of the Code, revealing a gap between intent and practice. Poor employment conditions, low trust, and lack of seafarer involvement in safety management emerged as critical barriers to effective implementation.

Most literature point to document heavy audits. Batalden (2015) focused on limitations of OSV audit regimes under the ISM Code's self-regulation model talking about document-centric practices and how compliance overshadow real-world operation where companies adapt their SMS to audits, compromising the concept of self-regulation. Recent studies, like Baumler et al.

(2024), describe growing concerns and calls for change. They paint a concerning picture of widespread recordkeeping manipulation. The literature moving from guarded optimism to growing concerns calls for systemic changes focusing on addressing underlying socio-cultural factors including employment conditions.

The statements critiquing the Code appear to rise in crescendo with time, as recent papers seem to make these statements with more conviction. As Baumler et al., (2021, p. 8) conclude: “Finally, the ISM Code and its audit system seem unable to solve the problem, which raises doubts as to their current usefulness”.

Results from recent research shows that audits either overlooked safety aspects, overly fixated on documented systems treating them as if they were the issue, took an overly literal approach, placed too much value in signatures, and, some audits fostered unwarranted confidence in safety expressing a “comprehensive shallowness” delving excessively into minor details and paperwork rather than addressing actual practices or critical factors(Hutchinson et al., 2024a, 2024b).

Internal auditors are instrumental in the process of internal verification. While there is literature available on the efficacy of the Code, none could be found that sought to understand the meaning made of the contents of the Code by these auditors. What perspectives and understandings of the concepts in the code, viz., “safety”, “safety management”, and “safety management skills”, do auditors hold?

The ISM code does not expressly define Safety or what it entails. In the next section, the thesis will attempt to make a reasonable assumption of the notion of Safety in the industry and in The Code.

Safety in the Maritime Industry

Merchant Navy is considered a High-reliability Organization (HRO) model industry where “risk management is a daily affair” (Amalberti, 2013, p. 100). In an HRO, the ability of the group

to adapt locally to emerging situations is primary (Amalberti, 2013). Adaptation requires considerations beyond what is written in the safety management systems. The DMAIB paper on proceduralisation recalls a belief that safety is embedded in procedures that rest on an assumption that procedures are complete (DMAIB, 2016, p. 5).

In their paper, Schröder-Hinrichs et al., (2012) find that while maritime technology has changed beyond recognition from 1912 (Titanic⁴) to 2012 (Costa Concordia⁵), the characteristics of seafarers and the organisational factors have not. They show in their paper (Schröder-Hinrichs et al., 2012) that accidents still happen for the same underlying human and organisational reasons, despite the technological progress in the last 100 years and despite all safety regulations. Accidents continue to occur with ships that are “masterpieces of technology” despite more than 100 years of regulatory and technological progress in maritime safety. Often accident investigations recommend actions focused on improving the efficacy of existing procedures. This has led to a lack of awareness of complex interactions of factors and components of the sociotechnical systems (Schröder-Hinrichs et al., 2012).

The underlying principle of an SMS is to prevent accidents (ICS & ISF, 2010, pp. 10–11). ICS & ISF, (2010) further emphasise that “accidents do not just happen – they are caused.”

Hale & Borys, (2013) credit Dekker with two contrasting models of safety: Model 1 and Model 2.

Model 1 is rooted in Tayloristic scientific management and is rationalistic and prescriptive with a top-down approach to safety, the focus being on hierarchy, formal rules and routines and standardisation of procedures. Their activities, expected to derive from the detailed instructions,

⁴ The incident in 1912 where a cruise vessel took in water and sunk after it hit an iceberg in the Atlantic.

⁵ A cruise vessel that took in water and capsized in the Tyrrhenian Sea while trying to pass close to the Giglio island

are recorded. This model would have adequate records giving rise to a large source of data that will be served well by audits.

Model 2 is a bottom-up and dynamic approach that is characterised as local and situated in the specific activity in contrast with rules that are generic and abstracted from the situation. This view recognises that rules cannot be complete. The real experts in this view are the operators at the sharp end whose skills to navigate this dynamic process are essential. It recognises the centrality of the operators' experience (Hale & Borys, 2013). Here, the level of documentation and formalisation is low, making the gathering of audit evidence more challenging (Hale & Borys, 2013).

Model 1 aligns with what Seddon calls the Command-and-Control management. He recognised that the model is failing us because it represents a flawed logic which may be a normal way to work but not the best way. Moreover, because we are inside the system, we do not see the enormous waste that it imposes. Seddon, (2005) informs us that the basic precepts from command and control are unquestioned, although the paradigm has outlived its usefulness. It is not hard to imagine the legacy continuing unquestioned in the maritime industry as it appears to serve a purpose of providing assurance to stakeholders that a vessel and company certified under the Code meets acceptable standards and are fit to transport and trade, that being the primary purpose of the industry.

Safety is so familiar a word that there is an intuitive idea of what safety is. A review of public portals of flags of convenience, national flags, and industry bodies allude to their construction of 'Safety' as something that needs more regulations and compliance, with the possibility of

achieving zero harm. OCIMF TMSA⁶ suggests “Zero incidents” as best practice guidance for demonstrating “Management Commitment”(OCIMF, 2017, p. 13).

The interpretation of The Code, as gleaned from the literature available, allude to the possibility of zero accidents. The guidelines published by ISF and ICS say “However, the essential purpose of the ISM code is to instil a commitment to continuous improvement and the *eradication of behavioural complacency*. The goal of every shipping company should be *zero accidents* and zero pollution” (ICS & ISF, 2010, p. 8). This is the industry’s ‘Vision Zero’.

Dekker, (2014, p. 240) quoting (Donaldson, 2013), says that there is no conclusive evidence that a ‘zero vision’ enhances safety beyond other interventions. Dekker wonders whether the zero vision⁷ serves as a tool in bureaucratic entrepreneurialism allowing safety professionals to continue to remain relevant (Dekker, 2014, p. 240). While one could look at ‘vision zero’ as an outwardly expression of a belief that attracts business and eases regulatory approvals, the cynic in me would not have to stretch his imagination to think that a Vision Zero could be serving the purpose of an industry within the industry.

While a reading of The Code and guidelines (Anderson, 2015; ICS & ISF, 2010; IMO, 234 2018a) clearly point to continual or continuous improvement in safety management skills, there is a dearth of guidance on what such skills are, what continuous improvement entails or what to do to achieve such improvement. While there have been visible benefits to the industry following the implementation of The Code, the level of improvement in the industry may have plateaued and it may be time to look at different paradigms.

⁶ TMSA or Tanker Management Self-Assessment is a tool introduced by [OCIMF](#) to help companies assess, measure and improve their management systems. The programme encourages companies to assess the SMS against KPS and provides a minimum expectation (OCIMF, 2017, p. iii).

⁷ In their research, (Zwetsloot et al., 2013) differentiates Zero Accident Vision and Zero Accident Goal. For the purpose of this research, Zero Vision here aligns with Zero Goal. Ref Zwetsloot, G. I. J. M., Aaltonen, M., Wybo, J.-L., Saari, J., Kines, P., & Beeck, R. O. D. (2013). The case for research into the zero accident vision. *Safety Science*, 58, 41–48.

Marshall Island, one of the largest administrations registering ships, declare on their portal that they have full responsibility of *ensuring vessel and company compliance with the ISM code* through, among other things review of corrective actions taken by companies after audits (*Marine Safety*, n.d.). The Indian Administration (DGS) declare in their vision statement that "their vision is to develop measures to ensure *compliance of relevant international instruments* relating to safety " among others (*Vision and Mission Statement*, n.d.). The UK MCA wants to accelerate the "transition to sustainable shipping with *non-negotiable safety standards*" (*About Us*, n.d.-a). Rightship which is a "digital maritime platform" providing "expertise in global safety practices" and offers "insights" to their customers "supporting them on a *journey of zero harm*" (*About Us*, n.d.-b). OCIMF who have "grown to become a leading authority on safety for the marine industry" has a "portfolio of tools and inspection programs" to "enhance safety of operations" (*About OCIMF*, n.d.). These include inspection programs to promote "*regulatory compliance* in the marine industry". The IMO on their public portal declare that they have adopted "*many regulations and conventions*" to "improve operational safety conditions" (*Maritime Safety*, n.d.) and they recognise that the "*best way of improving safety is by developing international regulations*". (All emphasis added).

The public pronouncements of administrations and industry bodies reveal an emphasis on their dependence on standards and compliance with it to achieve zero harm. A critical review of these pronouncements suggests a dominant paradigm of "Safety" in maritime that aligns with Model 1. This model emphasises regulations and compliance as the primary drivers of safety. A critical reading of these indicates that the paradigm of "Safety" in maritime is more Model 1.

Anderson, who has written extensively on The Code and its interpretations, thinks that many accidents may not have occurred if "people had been thinking constantly about safety"⁸ (P.

⁸ This is quite like what is expected in an HRO. Amalberti also considers Merchant Navy to be an HRO ((Amalberti, 2013, p. 100)

Anderson, 2015, p. 63). Anderson, (2015) goes on to express what he thinks are the characteristics of safety culture:

Within a true safety culture, every member of the Company team, whether managing director or operations assistant, Master or able-bodied seaman (AB), thinks about safety, thinks about ways of improving safety and then taking appropriate action, and this is done as a matter of normal routine daily practice, almost (P. Anderson, 2015, p. 63).

Months after the Chernobyl accident report, the Maritime Safety Committee (MSC) at the IMO was asked to develop guidelines which then found its way into the ISM Code. Those reports⁹ added the influence of ‘Safety Culture’ to the then-prevailing paradigms of human and organisational factors, including commitment from the top, which were the outcomes of the Three Mile Island disaster and the Challenger fiasco (Hollnagel, 2013). The use of ‘Safety Culture’ in The Code without contextualising or defining it appears to reflect an arc of developing concepts in safety at the time rather than a considered inclusion. In other words, it has found its way in not after a careful consideration but because it sounded nice and was used in a report of a major industrial accident.

If you looked at it from a simplified perspective, The Code sought to replicate the standardised linear thinking, akin to the principles that propelled ISO standards, an ostensibly successful driver of efficiency through the repetition of standardised activities in manufacturing to an uncertain maritime environment by setting the purpose of The Code to “provide an *international standard* (emphasis added) for the safe management and operation of ships” (Oessur J.H. personal communication, November 16, 2023).

⁹ International Atomic Energy Agency. (1992). INSAG-7—the Chernobyl accident: updating of INSAG-1.

The contents in The Code require that the company consider “applicable codes, guidelines and standards recommended by the IMO, Administrations¹⁰, Classification societies¹¹ and maritime industry bodies¹² while designing its Safety Management System. This system should ensure compliance with mandatory rules and regulations. To achieve these objectives, The Code expects the company to develop functional requirements that include a Safety Policy. To allow the company personnel to implement the policy, it should have a safety management system (SMS), which is a structured and documented system that includes Instructions and Procedures for safe operation, reporting, emergencies, and review, along with defined levels of authority (IMO, 2018a, p. 16).

The notion of safety embedded in The Code requires Compliance with specified requirements that must be demonstrated with objective evidence.

The company’s specified requirements are maintained in the SMS. Any non-fulfilment of specified requirements is defined as non-conformity. This non-fulfilment must be supported with objective evidence that includes quantitative or qualitative information: records or statements of fact pertaining to safety that can be verified by observation, measurement, or test.

That The Code considers ‘safety’ work as separate from work can be seen by The Code asking the company to ‘define and document’ the responsibility of ‘all personnel who *manage* (emphasis added), perform and verify work relating to... safety” (IMO, 2018a, p. 18). The Code clearly

¹⁰ Administrations are national governments that legislate IMO conventions into law and register ships under their flag, assuming responsibility for compliance with the latest regulations, including the ISM Code. They audit the vessels and companies annually or get Recognized Organizations to do it on their behalf.

¹¹ In the context of The Code, Classification Societies act as recognised organisations on behalf of the administrations. They are also considered independent bodies with the expertise to supervise the construction of vessels to standards required by maritime regulations like SOLAS and MARPOL. They also conduct periodical and renewal surveys to ensure that the construction standards are maintained. Their independence came into question after the [Erika disaster](https://web.archive.org/web/20120308180515/http://www.beamer-france.org/BanqueDocument/pdf_87.pdf) (https://web.archive.org/web/20120308180515/http://www.beamer-france.org/BanqueDocument/pdf_87.pdf).

¹² There are various industry bodies that issue guidelines and recommendations to the industry: BIMCO, OCIMF, ITOSF, INTERTANKO, ICS, and ISF etc.,. In the context of tankers, the primary body of interest would be the Oil Companies International Marine Forum (OCIMF)

requires some of the company's personnel to perform work relating to safety and others to verify such work and yet others to manage it.

Bhattacharya, (2012, p. 528) quotes an article that claimed that other than the leading ship-owners, the remaining largely regard the ISM Code as a 'paper licence to conduct their businesses'. If companies and ships meet the requirements of The Code, the Administration issues them the Document of Compliance and a Safety Management Certificate, respectively. This compliance, as evidenced by the certificates, is a license for the ship and company to operate and trade commercially. Commercial entities take these documents as evidence that the Company and their Ships are acceptable for business, as is evident when ships without these documents are not considered for business or worthy of being insured by reputable insurers.

The maintenance of these certificates depends on the company's internal verification, review, and evaluation (IMO, 2018a, p. 22) of the system. For this, the companies must conduct internal safety audits to evaluate the effectiveness of the SMS at least annually to verify whether safety activities comply with the safety management system. The company's verification, review and evaluation of the system is done by their own personnel, (usually) called 'internal auditors'.

The researcher upon a review of literature on the ISM Code and Safety in the maritime industry is of the view that Safety as the regulators and industry expects is given much to complying with standards, such compliance being verified by, among other means – internal audits.

Compliance with an order or a law or with the demands of an authority or doing what you are told to are different ways in which dictionaries define Obedience. Compliance essentially refers to doing what SMS tells you to do; which is what 'obedience' is. With such compliance, as is expected in the industry, are we all committing crimes of obedience¹³?

¹³ Diane Vaughan reflecting on the role of conformity contributing to deviant outcomes recalls evidence described in Herbert Kelman and Lee Hamilton's "Crimes of obedience" (Vaughan, 1996, p. 633).

Research Paradigm

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Introduction

Embarking on research as a novice was an intriguing challenge. While diligently poring over articles and books on research methodology, the abstract concepts remained elusive. This prompted me to seek guidance from my supervisor, who emphasised the importance of establishing credibility for the reader.

It is essential when conducting research in social sciences for the researcher to explain what methodology and methods are employed and justify his choices (Crotty, 1998). Here on, I will present the research paradigm which includes epistemology, theoretical perspective, methodology and methods (Mayan, 2009, p. 24). I find comfort when I read Mayan say that they have struggled continually with their own “ever-changing place within these expansive divides”; because I struggle to label my epistemology, theoretical perspective, methodology and methods. Instead of trying to use labels, I will describe what the research involved for the reader, in their wisdom, to divine the research paradigm.

With a research question that explores the subjective understanding of auditors and seafarers, the expedient method to study this is by analysing textual data. In order to understand their perspectives, it is necessary to hear them speak about it. I chose to do individual interviews to collect textual data (Carter & Little, 2007).

My research is informed by the four elements of research process outlined in (Crotty, 1998, p. 5). The elements are outlined in the next table.

Table 1

Four Elements of the Research Process

Element	Description
<i>Method</i>	Semi Structured Interviews
<i>Methodology</i>	Informed and inspired by the spirit of symbolic interactionism
<i>Theoretical Perspective</i>	Symbolic interactionism
<i>Epistemology</i>	Constructionism

Method**Interviews**

The informants will be Auditors and Seafarers. The interview with the auditors will seek to gain insights into their perspective of phrases in The Code as described in the research question, while those with the seafarers will seek to understand their perspective on the audit process. The interviews will be done over remote video calls. The informants will be selected from outside my organisation to minimise bias due to prior working relationships. I recognise that during the interviews, I will be in a ‘social relationship’ with the interviewee making the process subjective.

The structure of the interview will be open-ended, with guiding questions to explore the perspectives and understanding of the informants. The interviews will be ‘in-depth interviews’ to grasp the informant’s point of view. The conversations will be with a purpose to allow informants to reproduce their fundamental perspectives (Ritchie & Lewis, 2003). The researcher is careful about the terms semi-structured as Ritchie & Lewis, (2003) informs us that these terms are not used consistently: the interviews for this research, though semi-structured, will tend to be open or unstructured – with the intent of allowing the informants to express themselves in a flow (Gibson & Brown, 2009), but keeping in mind the need to limit data to be able to analyse and

code it. While it is implicit that semi-structured includes both structured and unstructured, these are mentioned above to show the reader that there was a deliberate intent in the design of the questions.

To explore auditors' perspectives on "safety" and "continuous improvement," an interview guide ([Appendix B](#)) was prepared to structure the conversation around the research question. Instead of direct inquiries, the interview aimed to build context through open-ended prompts about the informant's auditing experience and how they approach their work. The interview concluded by inviting the informant to comment on desired changes, providing a holistic perspective. Their views on desired changes in some ways is formed by their assessment of the extant audit process.

Creswell & Creswell, (2017) also makes the suggestion of being flexible with constructing research questions. They make the assertion that respondents in an interview will not necessarily answer the question being asked by the researcher and, in fact, may answer a question that is asked in another question later in the interview. Creswell believes that the researcher must construct questions in such a manner to keep participants on focus with their responses to the questions. There will be probes prepared as follow-up questions or prompts in order to ensure that participants are able to provide optimal responses within the confines of the research question. Specific probes were prepared to delve deeper whenever the informant's narrative touched on relevant themes.

The interview is to examine the informants' views on the contents in The Code. In order to allow the informants to have a sense of control and freedom, the opening question will invite them to talk about their experience and their views on the current audit process before organically moving on to their perspective on specific phrases in The Code. The interview will close with inviting the informants to express opinions on changes they would like to see.

This data, beyond mere analysis, would serve as a rich foundation for a comprehensive discussion in the thesis. The loosely structured interview guide allows for flexibility and adaptability based on the informant's responses, potentially leading to richer and more insightful data. While this may be so, the researcher is aware of the need to limit data to manageable proportions.

Informants

The initial phase of data collection involved using established professional networks to gain access to informants and documents. The original research proposal included interviews with auditors, seafarers, and managers, as well as, an analysis of audit reports. However, due to resource limitations, the scope of the research was adjusted during the data collection phase limiting the data collection to interviews with auditors and seafarers.

Half of the auditor informants were older than 45 years old and started their sailing careers in the years just prior to the ISM Code coming into force. The experience among the auditor – informants, as auditors, ranged from 2 to 10 years. They were all male master mariners. They were employed with 2 different ship management companies, both reputed in the industry not just as large companies but also good companies.

The seafarer informants had varied experience ranging from 14 to 27 years. All of them but one were master mariners. All informants were male. This skews the narrative to emerge from the perspectives of only one gender and could be limiting.

The details of the informants are included in [Appendix C](#).

Methodology

The methodology is informed and inspired by the spirit of symbolic interactionism and seeks to uncover the meanings and perceptions of the informants, viewing these against the backdrop of the informants' worldview (Crotty, 1998, p. 7). In line with this approach, the research strives

to see things from the perspective of the participants. And for this the research collects data by carrying out unstructured interviews and to use a non-directive form of questioning within them (Crotty, 1998, p. 7).

Theoretical Perspective

Understanding a perspective by interpreting text data derived from interview transcripts involves matters of language and issues on intersubjectivity and communication. Symbolic interactionism is a theoretical perspective that grounds these assumptions in the most explicit fashion and deals directly with issues such as language, communication, interrelationships and community. Symbolic interactionism is about basic social interactions whereby we enter into the perceptions, attitudes and values of a community, becoming persons in the process (Crotty, 1998, p. 8).

Epistemology

The philosophical stance informing Symbolic interactionism is Constructionism (Crotty, 1998, pp. 2–3). People create reality through interactions with the world. This means that the research is not seeking to discover objective truths through numerical data but rather to explore the meanings and perceptions constructed by actors within the audit ecosystem. There is no objective truth waiting for us to discover it. Truth, or meaning, comes into existence out of our engagement with our world. Meaning is not discovered but constructed. Auditors reading The Code construct a meaning. Different auditors construct meaning in different ways in relation to the same phenomenon. This is influenced by their worldview, which is formed in part by the nature of their work. The focus of this research lies in understanding how individuals interpret and make sense of The Code.

Data Management

Interviews were carried out on Zoom and recorded. The audio recordings were transcribed using a web based free software. The transcriptions were copied into a MS Word document. I then read the transcripts as I listened to the recordings, making corrections in the transcript. There were a significant number of corrections to make because the quality of transcription was at best sketchy. Because of the work involved in correcting, I optimised the correction only to sections that I could not understand.

Data Analysis or The Analytic Perspective

The objective of the analysis was to systematically transform a large amount of text into a highly organised and concise summary of a transcript. I read and re-read the interviews while listening to the audio recording to gain a general understanding of what the participants were talking about. While listening, I began to get ideas of the main points that the participants were expressing.

The audio files were transcribed by an online software into word files. Text from the word files was formatted into tables and then copied into an Excel workbook for ease of working.

The data in the excel was converted to pivot tables and grouped. The text was divided into smaller parts based primarily on the speaker: the text was divided into units of speech by the researcher and the informant. The meaning from each unit was then condensed while retaining the core meaning. The Pivot Table made it easy to filter data based on the column headings and focus on relevant sections of the text during the analysis.

Whatever text was combined as a unit was then condensed in the next step. This condensed text was labelled by assigning codes. The codes were then grouped into categories based on the research question and the varying themes that emerged. The levels of abstraction chosen depended on finding an answer to the research question.

Themes outside the research question were parked for use in the discussion section of the thesis.

Crotty while describing ‘Dilthey’s objective mind’ in the section on Modern Hermeneutics expanding on Interpretivism writes:

“The texts humans write, the speech they utter, the art they create and the actions they perform are all expressions of meaning. Inquiring into that meaning is much more like interpreting a discourse or a poem than investigating a matter of natural reality through an experiment in, say, physics or chemistry” (Crotty, 1998, p. 94)

With a constructivist perspective rooted in a subjectivist epistemology (Mayan, 2009, p. 25), the analysis in this research involved an inquiry into the meaning by interpreting the discourse that was now available in the transcripts as text.

This framework seeks to understanding the meanings participants ascribe and allowing themes to emerge from their narratives. By interpreting these discourses, the research aims to illuminate the perspectives held by internal auditors and seafarers, and offer insights into this complex and dynamic domain. The model in the table below is built to show the levels of abstraction that evolved while analysing data. Reading the table involves following the arrow, marked to indicate increasing levels of abstraction in the direction of the arrow starting from the text in the transcript and progressing up.

Table 2

Levels of Abstraction while analysing data

<i>Levels of Abstraction</i>	<i>Example</i>
Theme	Safety is abstract and subjective
Category	Definition of Safety
Code	Safety depends on the outcome
What I condensed it to	Safety has a broad definition. Safety is the absence of injury, danger, damage, or pollution, emphasising a commitment to avoiding all associated risks
What the informant said	“Safety is a very broad definition to say. Safety is like OK being safe. Non-occurrence of any Risk of injury risk not not injury, risk of injury, risk of danger of risk of injury, risk of loss of damage, or even for pollution. So anything that you out of this. Thing that you are avoiding any.”

Research Ethics

Global Code of Conduct for Research in Resource Poor Settings, (n.d.) focusses on fairness, respect, care and honesty in research and acknowledges the power relation between the researcher and the researched. I will focus on these as a guiding principle for my interactions with informants.

The Ethical Review (*Ethical review*, n.d.) of the Lund University lists the conditions under which ethical permission is required. This research does not require a review by the ethical committee as this research does not involve procedures or activities that maybe ethically problematic, considering it does not answer any of the questions on the university portal in the affirmative.

I have been an audit manager in my current organisation. I have about 28 years of experience in the maritime industry. Given the hierarchical nature of our industry, the researchers' experience could place him in a hierarchical relationship with the informant during an interview. The use of semi-structured interviews will allow flattening of the hierarchy by designing questions and allowing uninterrupted narration. The interview will tend towards unstructured interviews to allow the informant to be able to share their perspective with as little influence of the hierarchy as possible.

The research method does not include any covert observation or deception; however, I will not be stating my prejudices to the informants as it may affect their narratives. My prejudices here refer to my held views that the extant process of auditing may not be the best way to understand work and that audits, deriving from the requirements in the code of continual improvement may in reality be impeding such improvement by limiting the observation and examination of work mainly to records and measuring it against a norm instead of recognizing the expertise of the seafarer in managing variability at work and adapting, and consequently drawing from it to learn about work. This is not with an intent at deception but with an intent to allow the informants narratives to emerge.

The informed consent (See [Appendix A](#)) of the informants will be sought before interviewing.

Ethics also relates to the representation of data. The researcher has ‘the obligation for truth-telling’ (Seale et al., 2007). I will maintain fidelity to the oral accounts that emerge from the research process. The transcripts will be shared with the informants for their validation of its contents.

Ethics is nuanced, and concerns could emerge during the research. In general, I will adhere to fairness, respect, care, and honesty in my relations with the informants, dealing with records and in the processing of data that emerges during the research.

Results and Analysis

This section will present the data gathered and analysed during the research.

Safety

“Safety” finds itself on almost every page of The International Safety Management (ISM) Code. Like in the wider safety discourse among academics, “Safety” had varying interpretations among informants. It was evident during the conversations that the informants held multifaceted views on safety as a concept. The varying interpretations highlight the challenges in trying to hold multitudes in one word.

There was a recurring theme of difficulty, among all informants, in defining safety; the first response on being asked what safety is, are usually circular. Another informant (A5) honestly admitted the difficulty when he says, “I am not able to explain it” (A5). In his attempt to define it, A1 said “Safety is a very broad definition to say.....Safety is like OK being safe.” or “something that is done safely means any activity on board that is done safely is a safe operation.” ‘Safe’ is used to describe what safety is.

Otherwise we have general statements like when A3 said “There are various versions of Safety....Safety Is very very vague, again, very perceptive” (sic). These articulations show a challenge in coming to a common understanding of something that the ISM code exhorts shipping companies to manage: ‘Safety’.

Safety is described as an ability: “their ability to do the job safely after assessing the risk (A3)” and “whatever you should be doing to achieve that task” . It is described as a process that is “... basically aiming at zero incidents, zero pollution, zero injuries (A6)”

Safety is looked at as a condition or outcome where “....there won't be any accident or incident or pollution, injury. So, that is my definition of safety” (A5). Informant A2 describes it as a condition or outcome where we “achieve the desired result of the job without harming

anyone or anything” and then goes on to bracket ‘Safety’ first as a ‘noun’ rather than a ‘verb’ and then as an ‘attitude’.

“So, in a way, we achieve the desired result of a job without harming anyone or anything.

If we do something in this fashion, I think we are doing it safely.”...basically, okay, safety

is not a noun, you know, it's more like a work. Okay, safety is more like a verb. You

know, it is more like, like, if I look from human perspective, it is an attitude. (A2)”

In a matter of few minutes, an experienced professional with many years as an auditor and long years at sea starts by describing safety as a condition or outcome, and then moves on to call it an action (verb), and finally an attitude. And this is described further by explaining that seafarers are unable to see unsafe conditions, and thereby control it, because of an *attitude*. (emphasis added)

And then I ask people, why it took me to come so far to find these things out when they were so visible to all of you. These conditions, like, for example, a compromised electric gadget, or a thing not latched properly for sea, or a safety device not working, or

bypassed intentionally and forgotten, or a more visible thing such as a crack in a lifebuoy, it did not develop in a day. Why? So again, *that is pure attitude, right?* (emphasis added)

That means you are not looking around yourselves. And if you're looking, you are saying, it's not my job. Maybe an engineer on a deck thinks that that is a chief officer's job, not my job. (A2)

Informant A3 who began by defining safety as work done “with a positive outcome” immediately corrected it, saying, “I don't want to say that”, demonstrating that he holds different views of safety in his mind. ‘Safety’, he moved on to describe “is that people should speak.” and he called it “more of a gut feeling. Nothing else. For example, why would a child feel safe with his parents...”. It is “their social interaction. Personal interaction also affects the safety and the operations on the ship”. Here ‘Safety’ is viewed as a feeling and a function of interpersonal interactions pointing to the intersubjective construction (Rochlin, 1999) refers to.

S3 is of the view that Safety is “... our daily culture. It is something with our discipline..... But end of the day, when I see it, it is the discipline that we follow, the routine that we do repeatedly one after another day”. Safety here becomes personal discipline.

Safety is described as “a non-occurrence of any risk of injury...” (A1) and then elaborated as safety is that what is “preventing the risk from happening” (A1). It is something that stops risks¹⁴

Informant (A2) who said that “safety is an attitude” and that if people “use their minds” instead of “blindly” following the SMS, there will be no accidents goes on to say that he decides whether a ship was safe by “going through documents” and by checking outcomes like “there were no delays” and “no off-hires”. Informant A4 “would consider a Ship safe if *certificates are valid* and inspection results are good”. But if he were to go onboard, then he would not “put too much emphasis on these records” and instead it would be what “I see with my own eyes, which would help me determine to see if the ship is safe or not.” Here the informants appear to hold two concepts without conflict: safety as something that is shown by documents while also narrating the importance of people and their minds.

The informants are able to hold varied and sometimes contradicting definitions of safety in their minds without apparent conflict as they seamlessly move from describing safety in one way or another.

The varying interpretation of The Code's definition of safety by auditors is subjective, leading to inconsistent interpretations. This varying interpretation of safety is not different from the general discourse among academics on the varying interpretations of what Safety is as was evident in various articles in ‘The Foundations of Safety Science’ Vol 67, Aug 2014 (Aven, 2014; Haavik, 2014; Hale, 2014; Hollnagel, 2014) .

¹⁴ In the maritime transport industry, risk is commonly defined as the product of probability (the anticipated frequency of an event) and consequence (American Bureau of Shipping, 2013/2013, p. 3). However, this scientific foundation of risk assessment often hinges on perspectives and principles that could potentially lead decision-makers astray (Aven, 2016, p. 10).

The informants highlighted the importance of the “human¹⁵” in maintaining safety which, in the researcher's view, is a reflection of the prevalent narrative in the wider tanker industry of “Human Factors” that is being spoken of in the context of the widely influential SIRE 2.0 program being introduced by the Oil Companies International Marine Forum (OCIMF). The prevalent dominant narrative among oil tanker operators on ‘Human Factors’ in the context of the introduction of the SIRE 2.0 program appeared to reflect in the informants’ use of the term “Human Factors” when defining or describing Safety (*SIRE 2.0*, n.d.).

All informants came across as passionate professionals who are proud of their role in improving “safety”. Their commitment to improving the system by fulfilling their obligations and even going beyond, by training and familiarisation, was evident in the passionate narration of what their role entails. Their perspectives on Safety ranged from outcome-focused definitions to normative, risk based, cultural and attitudinal considerations. Safety has been variously described as a noun, a verb, an ability, and even a feeling. The perspectives are heavily influenced by the dominant paradigm in the maritime industry espoused by the administrations and industry bodies: predominantly ‘Safety I¹⁶’. Upon probing, the informants tend to stick with the accepted industry definition that equates safety with the absence of unwanted outcomes and following procedures.

¹⁵ Upon probing, ‘Human Factors’ (used interchangeably with Human Element by the informants during this research) does not relate to ‘Ergonomics’ or ‘Conditions at work’ but to attitudes and characteristics of the Human. Though not as dire as made out in his paper, the misrepresentation aligns with findings in the paper that present recent evidence that casual consumers of human factors are misapplying the concepts (Miranda, 2019, p. 73),

¹⁶ Safety I here is referred to loosely refer to two different paradigms prevailing. Safety I and Safety II offer contrasting perspectives on safety. The concept is briefly described drawing from (Hollnagel, 2013, p. 8). Safety I defines safety as minimising incidents, where safety management is reactive, attributing accidents to failures or malfunctions, and viewing humans as liabilities. In contrast, Safety II views safety as maximising things going right, where safety management is proactive, anticipating developments. Accidents and no accidents are seen as outcomes of similar work processes, and human beings are considered valuable resources. The two approaches represent different paradigms in safety management, with Safety I focusing on minimising negatives, while Safety II emphasises maximising positives and understanding how systems succeed. Safety I looks to minimise variability by standardising, while Safety II thrives on human adaptability and performance variation (Hollnagel, 2013) .

Without a clear definition in The Code, auditors (and other stakeholders) subjectively interpret ‘Safety’ or construct their understanding it becomes a social construct (Rochlin, 1999) .

Safety Management

Just as the research could not establish a consistent definition or perspective for what safety is, ‘Safety Management’ was also open to varying interpretations.

A6 began defining safety management tentatively by saying, “I really don’t know the definition” and then describes it as managing the vessel “within parameters of *safety*”. This was not different when S1 described “Safety Management means like on board ... all operations, they are being handled *safely*”. A4 went on to generalise saying “Safety Management is company managing their vessels in a *safe* manner”. Informants use “safety” (as an adverb or noun), whose definition the research could not establish, to define Safety Management.

Two distinct ways of describing ‘Safety Management’ was to describe it as an object and a function: it is a tool provided and it is a function actively managing ‘safety’. As an object, informants included ‘structured document (A5)’ ‘assigning of DPA’, provision of ‘adequate checklists, guidance etc (A2).’, in what they considered is safety management. Where they described it as a function, they included “managing safety” (S1) where it includes identifying hazards risks and ensuring preventive safeguards” (S5).

An element of liability is brought into the discourse in defining safety management when A4 compares pre- and post-ISM era, saying that before ISM there was “not much input from the company” and their “responsibility was much lesser”. ISM has shifted “liability of running the vessel in a safe manner to the company”. Safety Management here is being described as something that involves a means of being liable for outcomes onboard.

Safety Management is also described as a process of creating expectations and using feedback to verify whether activities onboard are aligned with these expectations. So, safety management is

“like a structured document made by the company in the form of SMS manuals.... Procedures and policies (A5)” and then checking “whether ships are complying with these procedures or not” (A5). A4 describes it as

...the guidance which is given by the company to the ship, in the way the company expects a vessel to be run. If this ship is following the, I mean, the whole process and the procedure, how they would measure it would be through the feedback received from the vessel....through checklist or a form which they receive, if it's being complied with or not. I'm assuming that's what safety management means.

Safety Management again is defined circularly, saying that Safety Management is how you manage the process to do the job in a safe way: “Okay, so what I understand over here the *safety management* is how do you manage this process, the job or whatever it is in a *safe* way. This is what I understand from this.” (S5)

OCIMF has Tanker Management and Self-Assessment (TMSA) that complements the IMO conventions like the ISM code to encourage self-regulation and promote continuous improvement to achieve incident free operations. And for this there are KPIs. Among their best practice guidance for shore management establishing *targets* related to HSSE performance is “number of internal audit findings” among other KPI (OCIMF, 2017, p. 15).

Management by ISM code requires KPIs, targets, standardisation of work methods to streamline processes and reduce variability. The management by ISM code wants to streamline and reduce variability in a variable and complex industry given to the uncertainties (TMSA)

Safety Management Skills

Internal safety audits being the means of verification of the effective functioning of the Safety Management System (IMO, 2018a, p. 22), auditors become important in verifying the effective functioning; their understanding of ‘Safety Management Skills’ becomes crucial to know what

specific skills are being looked at during the verification. Like the other concepts that were explored during the research, there was a challenge in finding a common description for what this skill entailed.

When asked *what* such skills were, it came easily to informants to describe *how* skills could be improved rather than *what* those skills were. It was described as finding new ways to disseminate information or carry out trainings: “All right, safety management skill of people, both ashore and onboard. Yeah. To me, it is again, creating new ways, like for sure, we conduct seminars, interaction with shore staff, accumulation of data, presentation of data” (A2)

It was described as something that could be improved with training. Upon probing, these skills are described as knowledge of procedures, familiarity with equipment and doing tasks as expected. With improved knowledge of procedures, they foresee an increased chance of following them:

“Safety management skills I mean I'm assuming that they're (ISM Code) talking about the knowledge part, improving the knowledge skill so that you know when people are knowledgeable more knowledgeable regarding safety then the chances of following it and being more safe on the vessel.” (A1)

Skills, another informant point out is about knowing what they are doing, how to do it and ensuring that they don't get hurt or damage property. Safety management skill then is the skill of handling the system in a more efficient manner by reducing the severity of consequences.

Safety Management Skill is equated to hazard assessment skills when A1 goes on to describe Safety management skill as hazard assessment and anticipation and an improvement is evident when a seafarer is able to identify more hazards with every contract on board.

When asked what safety management skill is, A3 says he is “not sure what it means, but it is definitely the training, the job skills which we need to be acquiring for managing our vessels”.

When probed what those skills were, he says “I never had a thought on this.” A5 described it as the skills to ensure “safety of life at sea, prevention of human injury, loss of life”. It is described as the “skills which have been defined by the SMS is what we intend to do”.

During this research, safety management skills were defined broadly as knowledge of procedure, hazard assessment skills, skills needed to manage vessels, skills required to prevent injury and skills that are defined by the SMS. If the Code defines or describes what safety management skills are, it would become easier to measure their improvement and achieve the objective of “continuously improve safety management skills of personnel ashore and aboard ships (IMO, 2018a, p. 16)”

Does “improving safety management skills” mean learning to be more compliant?

There were themes that emerged that were not in the Research Question. These included procedures, auditing, preparation for audits, and effective functioning of the safety management system. The informants also expressed a desire for change.

Procedures

Procedures are looked at as something that, if followed, ensures a higher chance of being safe. Procedure is a standard way of doing things that are routinely followed and documented. Procedures set minimum standards and outline the purpose, and include tasks, methods, hazards, safeguards, and responsibilities. The adherence to procedures is believed to significantly enhance safety, with the likelihood of accidents being minimised, if not reduced entirely.

The absence or non-compliance with procedures is argued to be a common root cause of accidents, reinforcing the importance of following established protocols to prevent incidents,

“I would say if you follow the procedures as set up, the chances of having an accident would be minimised or reduced rather than saying it will never happen. It will probably happen, but the chances would be reduced.”(A4)

And this is emphasised by arguing that not having a procedure, or not following it leads to accidents:

“So it is a, see, for any incident happening on board, you know, you try to do a root cause analysis. So, I have done it a couple of times. And I always found it; it was a procedural error. Either not mentioned or not followed.” (A6). (sic)

This is complemented when A2 says “that I can assure you one thing, at least 95 to 98% accidents are preventable. If you just follow the procedure, simple, there is no doubt about it”

Procedures are standardised and written to provide ‘sufficient guidance to achieve some tasks safely’. Despite agreeing that procedures are a standardised way of doing work, informants acknowledge that following procedures is contingent upon the inherent variabilities of the human.

An informant (A3) admits that “The human factors¹⁷ is the big place. I myself cannot guarantee that if I do one checklist today and one checklist tomorrow, I will do exactly the same thing which I have done today. I cannot guarantee that”, alluding to the possibility that it is not possible to follow a standardised way of work.

Informants view procedures as a valuable for reducing the cognitive burden associated with task execution. The structured processes and checklists provided by procedures enable individuals to focus on their work without the need to constantly consider how to perform each task. “I mean, instead of me thinking about how to do the job, I've already had a well-structured process and checklist to follow. If I do that, then I can concentrate more on other things” (A3).

¹⁷ Upon probing, ‘Human Factors’ (used interchangeably with Human Element by the informants during this research) does not relate to ‘Ergonomics’ or ‘Conditions at work’ but to attitudes and characteristics of the Human. Though not as dire as made out in his paper, the misrepresentation aligns with findings in the paper that presents recent evidence that casual consumers of human factors are misapplying the concepts (Miranda, 2019, p. 73),

However, the reliance on procedures is also recognized as a potential threat to independent thinking among seafarers. The concern arises that the ease of following established processes might diminish individuals' inclination to think critically and make decisions outside the prescribed guidelines. “That's where with ISM code coming into play, we have actually killed, if not all, to some extent, the human element. Because we kill the inherent quality of a person to think(A2)”.

Furthermore, while informants posit that adherence is crucial for predictable outcomes and accident prevention, the potential drawback is the risk of stifling creativity and independent problem-solving. The fear and hesitation to deviate from established procedures, driven by the association of negative outcomes with non-compliance, may hinder the development of innovative solutions in situations where flexibility and independent thinking are essential.

Within the ISM Code and the SMS, procedures are a ‘determined way of conduct’ (DMAIB, 2016, p. 6) and within this discourse “a procedure“ is a safety barrier. If the end user does not keep in line with this determined way of conduct, then it follows that the consequence will be undesired. Procedures define the boundaries of “normative behaviour in a given situation” and deviating from a procedure means moving into an area of unacceptable behaviour (DMAIB, 2016, p. 6).

Starting from an assumption that procedures are a safety barrier, it becomes easy to frame a discourse that not following procedures leads to undesirable outcomes. DMAIB¹⁸ frequently observed that accidents in the maritime industry are attributed to not following procedures (DMAIB, 2016, p. 5).

¹⁸ DMAIB or the Danish Maritime Accident Investigation Board is a independent unit under the Ministry of Industry, Business and Financial Affairs that investigates accidents related to shipping and fishing on Danish and Greenlandic ships, and accidents on foreign ships in Danish and Greenlandic water with the goal to clarify the accidents, and to provide education about safety at sea. They investigate approximately 110 accidents yearly (www.dmaib.com/about-dmaib) .

Procedures are acknowledged as fundamental for safety in maritime operations, offering predictability and accident minimisation. However, the tension between strict compliance and the potential drawbacks, such as decreased independent thinking, emerges as a facet that must be considered. This balance becomes particularly relevant in auditing processes, where assessing both compliance and the potential impact on adaptations and problem-solving is crucial for understanding how work is done and yet maintaining the conditions necessary for the Safety Management Certificate. Continuing with compliance (obedience) can crush high-level, creative, conceptual abilities that are central to adapting not just with current variabilities but future developments as well.

Effective Functioning of the SMS

The SMS is viewed as a dynamically evolving document with regular reviews. Acknowledging the importance of the seafarer's experience, includes aligning their experiences with the Safety Management System (SMS) requirements. However, this was bookended with the caveat that established procedures must be followed, which comes across as an overarching expectation. As informant A3 portrays effective functioning is compliance with the procedures:

First of all is compliance with our procedures whatever processes and checklists are there. Are they using it effectively. Effectively means they are actually using it; it is not a tick mark. I should be able to justify myself that if a second mate says that he has finished pre arrival as a procedure, with the evidences, whatever is available using the hard evidence and the interaction with the officer, I should get a feeling that they are doing. And by and large, they should comply.

The informants underscore that seafarers will follow procedures better if they understand its purpose (why). Like A1 explains below:

See there what I explained earlier also that the effective following the safety management system will be done only when people understand it: why they have to do a particular thing in a particular way though it is written there; what is the reason and the basis.

Because see most of the people on board are certified and they have expertise or experience.

In an effectively functioning safety management system, auditors will not be able to see the same observation¹⁹ in a subsequent audit. Like A5 illustrates, “but the only thing is effectiveness means the next audit or anytime in the next, they should not get that same observation. Then only it is effective, otherwise it is of no use.”

The effective functioning is validated by evidence such as increased reporting, adequate training, and maintenance, ensuring a lack of sudden breakdowns. This includes a thorough review of previous audits and records.

Auditing

Perrow, based on his “subjective judgement”, places maritime in in the top left hand corner of his “Interaction / coupling chart” thereby classifying maritime operations as having linear interactions and tight coupling (Perrow, 1999, p. 97). This renders maritime operations as not complex. However, as Schröder-Hinrichs et al., (2012, p. 162) point out, complexity in maritime operations has been underestimated and goes on to describe shipping as a “complex system”. This is reiterated in (Patriarca & Bergström, 2017, pp. 2–3) where they depict maritime operations as complex socio technical activities made even more complex with decreasing crew size, advanced technology and the vagaries of the weather. So, while Perrow may not have classified maritime operations as ‘complex’, research in subsequent years seem to realise the

¹⁹ ‘Observation’ in ISM Code is defined as “a statement of fact made during a safety management audit and substantiated by objective evidence” (IMO, 2018a, p. 16). In everyday language that would include non-conformities and any findings that are recorded in an audit as measured by a deviation from the requirements in the SMS.

complex nature of maritime operations. Having been part of the industry and worked at the sharp end, the researcher's experience would agree with the industry being complex. Equally there is no attempt by this research to paint the industry as a binary but just to establish that maritime is considered 'complex' by later authors even though Perrow's classification did not place it in the complex quadrant.

Audits are everywhere. Power calls it an audit explosion (Power, 1997) . O'Neill pins it on a lack of trust and accountability (O'Neill, 2003, 2017). Whatever the reasons, audits are ubiquitous. Tracing the evolution of auditing, Power sketches a path that went from seeking and giving accounts among the Jesuits so they could get better at checking and correcting when such account seeking and giving moved to the financial domain and later to assembly line processes. And then to auditing complex dynamic systems (Quattrone, 2015).

Audits have become commonplace in the maritime industry since the ISM code introduced audits as a means for verifying the effective functioning of a company's safety management system set up to meet the requirements of The Code. Audits became an exercise to measure deviations from the norms stated in the safety management system by looking for "objective evidence" and then correcting these deviations.

Auditors are trained and familiarised with the requirements of the code and auditing techniques. Organizations set expectations for their auditors. Publications like (Chatterjee, 2016) provide general guidance. While the initial training and guidance helps them begin their careers as auditors, they develop their own idiosyncratic styles over time. Informant A6 talks about his 'personal favourite':

'That is my personal favourite, once I land on the board, how the gangway is placed, you know, that's very crucial for me because the first step anybody makes on the vessel is, you know, they first look at the gangway. So,(...) how the gangway has been rigged, how the

notices are there in place, how good is the gangway briefing (...), you know, how the training and implementation part is done on board.

Informants portray auditing as a “risk management” activity because “nobody trusts you with their multi-million-dollar machinery” (A1). Auditing is “verification of whatever processes ... defined in the SMS are by and large complied with” (A3).

Auditing is done by verifying how things are done by checking records, interviewing and verifying equipment is functioning (A4). It is a “double check” (A6) or a “third eye” (A1, A2) to see if “they are being compliant”.

Informants insist that auditing is not about “finding faults” (A3) but about explaining the purpose of the safety management system and making seafarers aware of new developments. Informants overwhelmingly consider themselves, by virtue of their professional role, as having gained a different perspective and more knowledge; and thereby having the obligation to pass on their knowledge to those onboard because “people onboard are not aware where to look (in the SMS)” (A1) and “making them understand why this is important”. A2 is confident that seafarers are aware because “we train them so well”. A3 considers the audit as a “training session” for “knowledge sharing” and explaining “why it is important” to follow SMS. A1 characterises the training provided by the auditor as “more engaging” as it is done onboard. Auditors also feel the need to clarify what is written in the SMS and explain how to follow a process for example, using a “bunkering checklist” (A4)

Informants describe an audit as a comprehensive process of assessing whether requirements in the safety management system have been met, identifying areas of improvement, and verifying compliance with company procedures.

While auditor informants portray audits as a training opportunity to help seafarers understand the reasons behind safety measures, manage risks, and ensure familiarity with established

procedures, they maintain that the core idea of an audit is to ensure compliance and prevent incidents, serving as a crucial aspect of risk management in the maritime context.

See, we are not going on board to collect a list of 200, 300 points²⁰. No, that's not the objective. The objective is to note something and make sure the other person realizes that why he has faltered or why this, you know, why this was not done as per the procedures.

(A6)

“And it is more of a training and it is more of a knowledge sharing session than actually auditing” (A3).

Auditors acknowledge that they have gained perspective from their time spent in office and working as an auditor that they did not have while seafaring. As A1 recounts:

Like as a master mariner, when I used to sail risk management was a paper exercise. OK, we used to do risk management. But putting it on the paper, we used to find it an additional work as a sailing staff, but when I became auditor, it became like it has to be in the checklist and procedure. How to explain that was a little bit tedious job to the other people.

The auditor informants appear to carry the responsibility of imparting this perspective to the seafarers as was evident by their depiction of training as an important aspect of their auditing. They enthusiastically describe the need to explain ‘the why’ of procedures in the safety management systems and look at auditing as an opportunity to assess knowledge and familiarity of the seafarer with the safety management system, new developments and even equipment and machinery. Auditors use the opportunity to train them so “they have to have that sort of a confidence when they go in front of any third party, a SIRE, a PSC (inspector)”(A6).

²⁰ Points refer to observations and non-conformities that are identified during an audit.

A3 thinks an audit “is the best opportunity to train the people of those 21 people on board” and he underlines the widespread effects of training by being “sure that if these 21 people go on some other ship, they will do that correct job” .

Seafarers consider auditing as a process where auditors check whether the company’s SMS is being followed. They auditors are “very smart. They know once they come on board, they will observe for 10-15 minutes. And then they start realizing that this is a place of weakness. So, they will start attacking those places. That is how the auditor works.”

While auditor informants describe their eagerness to train and familiarise the seafarers and explain the purpose of the SMS, the seafarer, considers their questioning as an assessment of their competence. An informant (S5) when narrating his experience recalled that there are some auditors who “create a good climate” but he has also seen his junior officers get nervous because some auditors may be “nasty”. They “they really get afraid”. He goes on to say that if an officer cannot answer an auditor’s question, then the auditor might judge that “you're not competent enough”.

Preparation

A theme that emerged during the research was preparation before audits.

In their view, auditor informants, think that the audit is a ‘disruptive exercise’ (A3) and a “burden” for the seafarers. A3 acknowledges that there may be a fear and seafarers may take auditors “as the enemy”. And this he attributes to a “very basic thing” where they will be “exposed how much knowledge they possess” during an audit. A4 agrees that audits are “stressful” and auditors may be looked at as having come to “find the faults” (A5). A2 thinks that “auditors generally are not taken...so very well because the ship staff think they are coming here to find mistakes”.

And to avoid this, they recognise that there is an element of preparation. A1 describes this as “everybody do (sic) the cleaning”. This cleaning up or creating false records, A4 attributes to “being forced upon by the company” which in turn he links to the expectations of the ISM code: “In my view, ISM code has probably forced it upon the company.” (A4)

While auditors recognize that there is an element of preparation, they acknowledge that they have the skills to identify any changes to records made for the purpose of presenting clean records. A2 does this by studying almost six months of documents and interviewing seafarers. This is effective because, as A1 says, no one takes the trouble to clean up documents beyond 1 month before their time onboard.

For seafarers, the preparation appears to be to protect their pride and reputation. Seafarers experience pressure and stress before audits, due to fear of reprimand, performance incentives being linked to audit results, and the desire to avoid a flawless audit. Seafarers engage in various preparatory activities before audits, such as reviewing checklists and documentation, rectifying mistakes, and brushing up on safety procedures.

This stress leads to last-minute preparations and potentially corrected records (falsified documentation). Seafarers spend significant time reviewing checklists, updating records, and ensuring everything is in order before an audit. This focus on documentation reflects the desire to avoid deficiencies and maintain good standing. Masters do what is necessary to present the ship in the best condition to the auditor. “Frankly speaking, I cannot have it like this. I tell them to change it. But I brief them before that whatever happened, but don't repeat it again. But I tell officers to change it” (S1); “it” here referring to mistakes in record keeping.

S2 in response to a question on what they do when they know an auditor is coming says:

Yes, that is, when I'm answering this, I'm telling this on behalf of my other staff and everyone how people see to it. So, initially, when you ask me what happens in our mind,

when it goes in our mind, when you say that, you know, we are going to have an audit. So, everybody tries to see that, you know, whatever we can close up, either we can fix it or we can cover it. *If you cannot cover it, put it, hide it somehow, so that, you know, the auditor doesn't see it* (emphasis added). But, you know, that should not be the way.

It is within this space that the seafarer adapts. There is nothing onboard that stops seafarers from adapting. While the system allows adaptations, analysis post facto, like in an audit, acts as if the written procedures are sacrosanct and don't allow this discretion. Seafarers internalise this approach and thereby maintain records to show compliance. They either limit their adaptations or hide them by recording what is expected to be done rather than what was done. It may not be incorrect to say that a seafarer formulates a praxis to a large extent depending on their experience of discretionary space auditors allow them during audits.

As if to validate what Baumler et al., (2021) found on the matter of seafarers recording their hours of work and rest, informant S2 is exasperated when he says:

Let's say our rest hour issues. So there have been instances where during the audit, it was found that some of the recordings have not been done properly in order to keep the number of non-confirmations to the minimum. There is some requirement that we cannot exceed number of rest hour NCs every month. So, people were trying to manipulate the records so that it does not show up in the records. But on a deeper scrutiny, it's not difficult to find for the auditor.

He asserts that even though it is not difficult for auditors to identify rest hour violations, they conveniently ignore them because “the issue is about the manpower and the operations and whether we could have done the operations differently, taking some allowance for people to rest properly”; alluding that if such deviations were highlighted, then the man power resource provided onboard will have to be addressed.

Some of these practices might be what Power calls “exploitative strategies by auditees” that could lead to “regressive effects”(Power, 1997, p. 144).

Juniors with limited experience often feel nervous and unprepared as their competence might be exposed. The juniors spend time brushing up their knowledge of the SMS and preparing for the auditor’s questions. Senior officers brief the junior officers and ratings so that they can present their best during the audit.

The pressure and stress of audits are closely linked to the importance of compliance and documentation as seafarers strive to avoid or reduce observations and present the ship and themselves in the best light. This need to reduce the number of observations in an audit is not merely imagined. That this is an expectation can be attested to by a reading of the OCIMF TMSA²¹ that lists “number of internal audit observations” as a best practice guidance (OCIMF, 2017, p. 15)

The preparation is part of an effort to be “fit for auditing, being auditable and ready for compliance visits”. (Power, 1997, p. 144). Such preparation could reduce the reliability of accounts provided during audits and provide a false sense of comfort about the organisation’s fitness for purpose or about the organisation’s readiness for dangers.

Human Factors

Informants used the term ‘Human Factors’ during the research. When probed on what the term means, they described it to include decision-making, motivation, communication, delegation, commitment, and other soft skills. So, the informants regarded these soft skills a

²¹ Refer footnote 6

pivotal element in the success of safety systems, influencing how individuals follow procedures, make decisions, and contribute to a safety culture.

So basically, human factors is, sir it is a very simple, these are six, eight points given by the site, you know, your decision making, motivation. So, what all things are there which you know attribute or contribute. We have an assessment sheet ... where we are told, okay, you know, I'll just read it out to you: Teamwork, communication, delegation, commitment, flexibility, planning, time management, motivation. So, you have to assign a number(A6)

Human element, equated to situational awareness here, is what will help follow the procedures

So, procedures are there to help us to avoid any incidents and accidents. But of course, that human element is always, you know, there, which can, you know, procedures of course, the procedures will not be wrong. What the company has told us what to do, procedures will not be wrong. But the human element...., I mean, the situational awareness is not there, suppose on the bridge (A5).

“Human” is used to refer to attitude. A2, while describing injuries and their causes says:

In all these cases, procedure as written in the SMS was not followed. So, two reasons, firstly, either you didn't know it, means you never read it. That's one thing, means you were ignorant of the procedure itself, though it is written, you have never read it. Or secondly, you've been doing it all the time and you knew it well. Both of these things are purely human, both the *factors, purely human* (emphasis added). Firstly, you were told that whatever you do, you do as per the procedure written in our manuals. You did not do it. It's human. Secondly, you knew it, you did not follow, for any good reason,, but you did not follow it. It's also human. *Human attitude* (emphasis added) is the biggest thing in success of any, what you can say, any system of operation.

What changes do I want to see?

The informants expressed a desire for changes in the extant auditing system. The duration of audit is something both seafarers and auditors feel need to be extended. Audits done in port while the officer's attention is on more contingent activities, is more a distraction.

He (auditor) should sail, he should not try to do in port, and in port it sometimes it gets difficult for chief officer, for other officer they are also doing six on six off²² and so sometime it gets difficult for them (S1).

This is echoed by A1 who has done both in-port audits and sailing audits sees a benefit in longer durations of audits. He says:

Small audits are not good; what we are doing in [name of company], mostly about 4-to-5-day audit (sailing). They are effective. Whatever the audit we do within a day or something (in port) that is not effective.

Another change that the informants, both seafarer and auditors, long for is using technology. They recognise that “record keeping cannot be avoided” (S2), but technology could be used to automate record keeping. A2 wants a “digital way of doing things” that will make recording easier and avoid duplicate entries.

Informant A6 expressed frustration at the “number games” and wanted to do something about it. This effort to reduce the number of observations is also on seafarer's minds. S2, who has had long years at sea, says that the juniors are observing the senior officer's onboard trying to close out all findings just before an audit. The concept that “there should not be any open findings.... before you have an audit” should change. He is concerned that the junior officers and

²² Six on six off” refers to the watchkeeping schedule in port where two officers rotate the watchkeeping duties every six hours. The Chief Officers does not stand watch while in port. This roster leaves little time for officers to relax or rest. And if they are called for audit interviews, then that eats into their hours or rest.

This is different from watchkeeping schedules at sea where the Chief Officer also joins watchkeeping duties and the three officers stand 4 hours of watch every 12 hours.

engineers “are witnessing people doing the wrong things and it has been embossed in their mind”. If we recall from the section on ‘Safety Management’ above, OCIMF in their TMSA have KPIs for number of internal audit findings.

Another aspect the informants wanted included was ‘Human Factors’. While not referring to the science of Human Factors, what they seek appears to be consideration of human variability and their decision making. Like A5 says:

OK. So the way the audit is happening these days is mostly, as I said before, the compliance with the SMS manuals. So that has been happening since so many years. But as I again just mentioned about the human element, I would want more of human element to enter into the audit system rather than just the, you know, the same old things, you know, from the questions from the whether this was followed, this was followed. I mean, more of a human element thing.

A2 laments that “there is no faith” in the Code because “they (seafarers) do not know the root (purpose) of the code. He says

They just think that we are given this paperwork. We all know ISM has brought paperwork with it, right? Checklist and documentation to be prepared and recorded, which ship staff feel is an obstruction to a smooth operation. They should rather feel that they must focus on operation rather than filling in checklists. But then again, we are facing accidents, incidents, because the procedures are not followed. So that was one shortcoming of the ISM code that we failed to generate interest in the root why the ISM code was first implemented.

S2, exasperated that auditors conveniently ignore “certain practices” (deviation in recording rest hours to avoid non conformities) because that would mean the organization would have to

address resource issues (more crew, more cost) and underlines it saying that seafarers don't see the ISM as helpful (friendly way) and instead look at it as a paper exercise.

So the thing is, there are certain practices which are considered standard, even though it is not supposed to be. Even the ISM code does not address it. So seafarers does not take the ISM code as their very friendly way. Let me tell you the thing. It has become something like the paper exercise.

IMO may have to do more to inject the purpose of the code into the industry and align its espoused purposes with what is happening on the ground: making the system create documents to show that it is doing the right thing so that they can continue to keep its certificates valid to keep trading.

Discussion

Quite contrary to my concerns before I began data gathering that there might be a power distance, the informants were quite expressive, quite talkative and comfortable. They appeared quite certain of the knowledge and their answers. Auditor informants were asked to rate their confidence in their knowledge of the ISM code; they rated themselves at least an 8 on 10 (See Appendix C).

All the auditors who participated in the study were certain that their role as auditors involved training. This included familiarising the seafarers with procedures and explaining the ‘why’ to them so that they would follow it. And by following it they reduced the chance of being harmed not just on this ship but on other ships they would work on later.

Their belief in the safety management system and their enthusiasm for training formed a picture in my mind of auditors as proselytisers, advancing the one religion: the safety management system as embedded in the procedures.

All auditors came across as well-meaning in their belief that complying with procedures will reduce harm, if not, altogether avoid it. There was one informant who argued that the ISM code had stopped seafarers from thinking for themselves and instead only had to mechanically follow procedures. Even he believed that procedures minimised harm. A2 claimed that “98% of the time, if you run the ship the way SMS is created, you will run the vessel safely”

This strong belief in procedures and commitment to compliance is not a product of interactions with the sharp end, generated from activities and beliefs on the ground, because even the auditor informants claim that it is not always possible to follow procedures. This is a dictum emanating from The Code as if from the religious scriptures of a monotheistic order²³.

²³ While the claim here is strong and emphatic, the researcher recognises that it is very difficult to claim the converse – that procedures don’t add to safety. However, the reliance on the finality of the written words in the procedures to make judgement calls on actions or decisions made in a dynamic environment by professionals, as is

In order to achieve these objectives, the Code expects companies to develop their own safety management system and set their own objectives. Among the objectives is an objective to continuously improve safety management skills of personnel ashore and aboard ships(IMO, 2018a, p. 16). Whether the ‘safety activities’ comply with the Safety Management system is verified by a system of internal audits done by internal auditors (IMO, 2018a, p. 22). ‘Compliance’ is something that the Code set out to achieve, probably believing that such compliance will ‘ensure safety at sea’.

Compliance is the ‘received paradigm’(Vaughan, 1996, Chapter 10 Lessons Learned) for which we developed tools and concepts on how to audit within this paradigm. As we became specialised, our world view narrows creating rigidity and resistance to change (Vaughan, 1996).

The ISM code is replete with catch all terms that mean nothing much; or conversely mean a lot. But these meanings are constructed in an individual's mind.. The ISM code is seeking to manage and develop something that is a construction, not in the physical world, but in the minds of every seafarer and auditor. Words like ‘Safety’ and ‘Safety Management’ are part of our everyday discourse. In the humdrum of muddling through every working day, we may not be disposed to pause and think of what these words mean or what the activity entails. Even if it does cross our minds fleetingly where we begin to ask questions, the exigencies of the everyday work soon crowd out these thoughts. For most of us, these words express something that allows a sensible conversation to continue. And possibly some actions to be taken enough to meet the statutory requirements of an audit and enable its certification to remain valid.

evident from investigation reports that attribute incidents to not having followed procedures and audit reports that record adaptations as deviations, the researcher retains the previous emphatic sentence to demonstrate a strongly held personal view.

Safety

Many words in the ISM Code are not defined, 'safety' being one. If you go a level deeper than asking what safety means and probe what it is that was said, then the word begins to unravel the many manifestations people hold in their heads. The research threw up diverse interpretations of "Safety" within the context of The International Safety Management (ISM) Code in the maritime industry. Informants express varied views, considering safety as a condition, outcome, ability, process, feeling, and even discipline.

The challenge of defining safety is evident, as the informants attempt to articulate their understanding of what safety is. The informants are able to hold more than one view of 'Safety' and seamlessly switch between them as they talk about it. The subjective interpretation of safety by auditors leads to varied understandings.

No clear definition of Safety emerged during the research, leaving room for subjective interpretation, making safety a social (intersubjective) construct. This is not surprising as it mirrors the broader academic discourse. Henriqson et al., (2014, p. 410) underscore safety as an emergent situated practice, emphasising its emergence from a collective process of meaning construction. Various authors and studies cited by Henriqson support the idea that safety is not an isolated concept but a complex interplay of cultural elements, including individuals, technologies, and symbolic forms. The assertion is made that safety is what is required for organizations to produce and deliver their products and services effectively. Moreover, safety is intricately woven into broader organisational goals, practices, technologies, and routines, illustrating its integral role in the overall functioning of an organisation.

While we have had papers (Aven, 2014; Haavik, 2014; Hale, 2014; Hollnagel, 2014; Hopkins, 2014) discussing the nuances of whether Safety qualifies as a science, there are papers (Almklov et al., 2014) that are written on the premise that it is. While there may be no merit in extending this discussion in this thesis, what is evident is that the discipline studying safety is at a

"tinkering" (Ramachandran & Blakeslee, 1998, p. 5) stage where academics or practitioners are discovering basic laws and are not in a position to proclaim grand unifying theories (Ramachandran & Blakeslee, 1998).

While we may not be able to define what Safety is, we need to be able to refer to it as something "that is open to intersubjective verifiability". Hollnagel, (2014) says

Safety does not represent an agreement on what should be studied. Nor can it be said to exist in any concrete or material sense or to be real. Because of this we cannot resolve disputes about what safety is by referring it to something that exists independently of our thinking. Yet we need to be able to have a common agreement on what we should focus on to be able to keep safety open to intersubjective verifiability.

If unable to define, the IMO should consider providing guidelines that allow the users to have an agreement on what safety is, allowing the industry to focus on concrete concepts aligned with Model 2 (Hale & Borys, 2013) rather than Model 1 aligned with the traditional command and control means of management.

Safety Management

The Code expects internal audits to verify whether "safety (and pollution prevention) activities" comply with the safety management system (IMO, 2018a, p. 22). Would this mean safety management system is a set of "activities"?

This research could not establish an agreement on what Safety and Safety management is. Størkersen, (2021, p. 1), without really defining what safety is, defines Safety Management as "systematisation of organisational conditions that should lead to safe operations".

As evident during the research and literature review, "safety" is not a binary. It means different things to different people. It is a spectrum: you can slide up and down it; or stay solidly placed. Your idea of safety is unlikely to be mine. When you try to manage something that has

different constructions among the people who manage it, management may not be easy. Le Coze et al., (2014) says that safety has proven to be a multifaceted topic that can be approached from many different perspectives.

They posit that Safety as an object of scientific investigation emerged from social ambitions for increased protection, developing tools and models with the aim of understanding and managing "*unwanted actions or events*" (Emphasis added) (Le Coze et al., 2014). One consequence of this, Hollnagel identifies is that safety management relies on measurements that refer to the absence of safety rather than to its presence. He terms safety is as an epiphenomenon²⁴ and cannot be said to exist in any concrete or material sense(Hollnagel, 2014, pp. 22–23).

Because the focus is on things that go wrong, there will be something to measure when safety is absent, but paradoxically, nothing to measure when safety is present. This is evident from a review of the TMSA²⁵ that suggests, as a best practice guidance, “setting KPIs” for number of injuries, incidents, audit findings, best management practices etc., for shore management to establish targets related to HSSE performance and to measure, assess and verify their implementation(OCIMF, 2017, p. 15)

This has profound practical consequences for how safety is managed(Hollnagel, 2014). This also raises the interesting question of whether it is possible to manage something that is not there. Can the object of safety management be nothing?

Safety Management Skill

Within the International Safety Management (ISM) Code lies a compelling objective: “Continuously improve Safety Management Skills of personnel ashore and aboard ships (ISM Code 1.2.2.3)” (IMO, 2018a, p. 16). While my association with the contents of the code should

²⁴ An epiphenomenon is defined as an incidental product of some process, that has no effects of its own

²⁵ Refer footnote 6

have been deliberate, especially during my role as an audit manager (who planned audits and reviewed audit reports), this objective came to my attention only upon a careful reading of the Code for this research.

This seemingly straightforward goal, however, becomes enigmatic upon closer examination. A search on Google Scholar or on the IMO portal did not provide literature that explained what IMO's definition of safety management skills are or a description of what it entailed. Given that this is a clearly stated objective of The Code, the development of such skill becomes pertinent in achieving what The Code set out to do. To develop a skill, we need to identify what that skill is.

Without having established a common definition of safety is or what safety management entails, it would not be worth the while trying to identify what the ISM code means by Safety Management Skills, let alone how to improve it and how to validate the improvement.

Auditing

Power, in his book *Audit Society* (Power, 1997), has a chapter on Audit Trust and Risk. There, he says that supporters of auditing argue that individuals cannot be trusted with economic resources and must be asked to give an account of their actions that must be verified.

He says that even if we agree with the argument that audits alleviate anxiety, what remains to be asked is where these anxieties come from and in what other ways these might be addressed. That evaluation, assessment, checking and account giving are part of everyday human interaction makes auditing a deep part of the social fabric.

Auditing in all its guises, he argues, is still the best option for achieving assurance about a wide range of activities. Rather than doing away with audits, his argument is that the issue is rather a question of organisational design that is capable of building moral competence. Power proposes various indicators by which audit could evaluate itself; among them he included

- empathy with and understanding of the auditee,

- capacity of audits to reflect on bias,
- strength of its orientation to original goals to avoid displacement,
- understanding of the exploitative strategies by auditees,
- creation of strategies sensitive to regressive effects,
- possibilities of bringing auditees into the audit process.

If the system allowed auditors to include “empathy with and understanding of the auditee” (Power, 1997, p. 144), that might help the extant process to look beyond the “rituals of verification”.

Power says that if the big dangers always lie outside organizational capabilities for formal inspection, then we need forms of control and communication that are high on environmental responsiveness rather than those high on institutionalisation. While he does advocate environmental responsiveness, he reminds us that it is important to recognize that such institutional capability could only be created by a confident society that needs a distinctive political culture (Power, 1997, Chapter 10).

Would it be optimistic to consider the maritime industry a “confident society” that has a distinctive political culture?

Other Themes

The industry’s proclivity to legislate away problems is evident in its continuing use of procedures for this purpose, as highlighted in the DMAIB, (2016) where changes to procedures are often recommended as corrective actions following an incident. The impact of legislation on bureaucratization has been extensively discussed in research papers (Dekker S, 2014; Provan et al., 2017).

While the shift from tradition²⁶ and authority (pre-ISM) to the constraints of the ISM code has brought about a structured approach, informants during the research have critiqued it for weakening the decision-making skills of seafarers. Their autonomy to think and act independently has been compromised by the strict adherence to procedures and the audit verification processes.

Batalden & Sydnes, (2014) express their view that despite the ISM code requiring shipping companies to establish a safety management system,

...two decades later, maritime safety remains a concern”. Informant A3 echoes a similar sentiment when he says “..... we have our ISM code for a very, very, very long time now,, it is an established code. But even after that, we are continuing to have accidents, ...it is time to introspect and think that we need something more”.

The continued occurrence of accidents, as narrated by informants, and established in research despite the Code clearly prompts questions about how successful has the code been in its pursuit of its objectives even after 25 years.

²⁶ (Lappalainen, 2008) also identifies “the old-established behaviour which is based on the old day’s maritime culture” as a barrier

Conclusion

The maritime industry looks at Safety as a condition without harm, where zero accidents are possible, a paradigm aligned with Model 1.

The ISM code sets objectives to ensure safety at sea, prevention of human injury and loss of life and avoidance of damage to the environment. The Code by legislating its requirements, has attempted to superimpose a quality system set up to measure and improve assembly line processes onto a complex and dynamic environment where human intervention is as yet still an integral part.

From a simplified perspective, The Code aimed to apply the same standardised linear thinking, much like the principles that drove ISO standards, whose success lay in serving as an efficient driver by repetitively employing standardised activities in industries. The underlying principles were extended from the known realm of manufacturing to the less predictable maritime environment as encapsulated in The Code's declared purpose: *"to provide an international standard for the safe management and operation of ships."*

Between the words in the ISM code and the actions and decisions of the seafarers lies the audit process. These words are interpreted, and systems designed to enable the work. Or are the words interpreted and systems designed so that these very words can be proven true so that the Code can be validated?

The Code(IMO, 2018a) and resolutions(IMO, 2018b, 2018c) include concepts like "safety", "safety management" "continuous improvement of safety management skills", and "safety culture". From among the many such concepts, this research focussed on the auditors' understanding of the first three. While the varied perspectives held by the informants emerged during the research, a common understanding could not be arrived at.

TMSA recommends companies to use KPIs to measure a management system(OCIMF, 2017, p. 5). Without defining it or having a common understanding of safety, how does one develop a reliable measure for it? And without a reliable measure, how does one manage it? .

Auditors are a well-meaning group of competent professionals whose work has unintended consequences of propagating a compliance culture by measuring deviation from the norm and trying to correct the system towards the established and prescribed norm. The way the code is written, the manner in which audits are done expects compliance without giving much room to appreciate adaptation. This would crush the high level conceptual and creative human thinking that solves problems in VUCA world²⁷.

The system is dysfunctional in the sense that it prefers compliance over adaptation. The system believes in the supremacy of procedures in the safety management system. And the extant process of audits are instigating people to comply; to obey. Compliance is obedience. Continuing with “obedience” can crush high-level, creative, conceptual abilities that are central to adapting not just with current variabilities but future developments as well. By continuing to stick with the existing paradigm and keeping compliance as the philosophical lodestone in an effort to ‘ensure safety at sea’, would actors in the audit ecosystem be unwittingly committing crimes of obedience.

The ISM code cast the maritime world into its mould. With time, has the industry progressively moved away from the cast originally intended by the authors of the Code; and is it now time to regain relevance of the Code by a comprehensive review to align it with the latest developments in the field of Safety Science? The current system has been working and enabling shipping companies to thrive. But is it time to revisit the deliberations of the original authors of the Code to see if it requires a review?

²⁷ VUCA- Volatility, Uncertainty, Complexity, Ambiguity: an acronym coined by the IS Army war college and widely used in the business world today (Edmondson, 2019, p. 19)

Meadows cautions us that paradigms are a “tremendously limited understanding of an immense and amazing universe”(Meadows, 1999, p. 19). Embracing a new paradigm will require flexibility and openness to new ways of seeing and understanding safety. As Meadows (1999) reminds us, "a paradigm can change in a moment. All it takes is a new way of seeing, a falling of scales from eyes" (Meadows, 1999, p. 18)

In writing this thesis I don't hope to present answers. I hope to reveal perceptions of important actors in the audit ecosystem and to stimulate curiosity and contribute to a discussion on current practices and its utility.

Further Research

This research is limited by the number of informants as also their demography – all are Indian males working in the tanker industry. The average age of the auditors is forty two and those of the seafarer participants in thirty six. The ship management companies and commercial actors in the industry who have a significant impact in the running of ships was not included in this research.

During the research interviews, it was apparent that the system only began to make sense after seafarers become auditors (or the office guy). So, there is value in seeking out why a system that has moulded the industry over the past twenty five years begins to make sense only when the system doesn't have to be followed but needs to be audited. And what makes influential industry bodies like the OCIMF introduce their own instruments like the TMSA²⁸ to attain a level of comfort?

There is merit in taking this research across a larger and varied demographic that is representative of the actual working population in the maritime industry, reveal their understanding and perceptions and then humbly submit the research findings to the stakeholders in the Industry, including the IMO, for their studied consideration on what changes in the Code will make it relevant to the needs of a dynamic and future focussed industry that has always sought to do right by the environment.

²⁸ Refer footnote 6

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Appendix A

Informed Consent Form

Researcher:

Abhijith Balakrishnan, Lund University

Supervisor:

Mads Ragnvald Nielsen, Lund University

Examiner:

Anthony Smoker, Lund University

Research Objective and Methodology

My research revolves around internal audits onboard tankers and how the actors involved in the audit ecosystem perceive and interpret the ISM Code. For the ISM code to attain what it set out to; the readers of the code must be able to interpret what the authors of the code intended. This requires an interpretation of the words and concepts used in the Code.

My research involves trying to understand the auditors' interpretation of the concepts in the ISM code and a Master's perception of the audit process.

Confidentiality

The research will follow all ethical considerations of the university and those expected in general research practice. I will remove all information that can reveal identities. The data from the interviews will be only used for the purposes of research.

I will make transcripts of the interviews and share it with you to confirm that what was captured in the transcript is what you intended. The transcripts will also help me in recalling and analysing our conversations. I will continue to maintain anonymity in any future activity related to the thesis.

What will be asked of you during the research

I would be interviewing you. The interviews will be semi-structured and will take around 90 minutes. The themes we will discuss includes your perceptions of the concepts in the code and the internal audit process. We could set up a follow up interview of about 30 minutes where I could share the interview transcript and validate that it has captured your views.

The interviews will be conducted online. I request your permission to record the interview so that I can recall it for the analysis and research.

Contact information

If you have any questions regarding the research, you may contact me at:

Name	Abhijith Balakrishnan
Mobile Phone	+918291892640
Personal email address	abhijith.nambiar@gmail.com
Student email address	abhijith.balakrishnan.5336@student.lu.se

If you require, I could provide you contact information of my Supervisor and Examiner.

Participation in this research is voluntary. You may choose to withdraw at any time. Your signature indicates that you have a copy of this consent form and that you consent to support with my research.

Consent

I, [Click or tap here to enter text](#), agree to support this research by participating in it as an informant as outlined above. My participation is voluntary, and I can withdraw at any time.

And my reply to the email from the researcher with the informed consent form, is my consent to willingly participate and support this research.

Appendix B

Interview Guide

<i>Category</i>	<i>Themes</i>	<i>Questions</i>	<i>I am looking for (Follow up and Probes²⁹)</i>
Auditors			
<i>Ice breaker (Creswell)</i>	Consent Form	1. Do you have any questions on the consent form?	1. Willingness to participate as per consent form 2. Time available for the session
	Icebreaker	1. Life as an auditor? 2. What do you recall from your work as an auditor? Or 3. How do you go about auditing?	The answers could provide an insight into the informants' approach to themes explored: 1. safety, compliance, procedures 2. the code, 3. continual improvement, learning
<i>Safety</i>	Safety	1. What is Safety?	1. "Safety" and "Safe operation" 1. Is Safety and Work different?
<i>From the Code</i>	Safety Management	1. What do you think is Safety Management?	1. What is being managed? 2. How is it being managed?
<i>From the Code</i>	Safety Management Skills	1. When you hear safety "management", what does that mean to you?	1. Perception of what "Safety Management" is 2. How does the informant think safety is to be managed? 3. How does the code relate to safety management?

²⁹ I will give an opportunity to the informants to interpret the question, process it, weigh the answers and then formulate it.

The probes that follow will depend on the answer.

- Directive: It could be directive if the respondent's answer gives the impression that my question could be constructed differently. This would mean I rephrase my question giving direction with specific questions like "I want you to talk about...." Or "could you explain....".
- Non-Directive: If the respondent's answer gives the impression that my question has been understood as intended, then the probes could be non-directive where I allow the informant to wander about and formulate the answer.
- Suggestive: If a question only has a limited possibility of an answer, I would use suggestive probes to suggest directions the answer could go in "would you want to consider describing the experience on".

The probes could be requests for elaboration, specification, contrasting, examples, reasoning, experience, feeling etc

(URL: <https://webcolleges.uva.nl/Mediasite/Play/2b4324a52e69474db6d4be81041352571d>)

		2. What is improvement in Safety Management Skills?	4. Would teaching people procedures help them perform tasks more skilfully? (Streetlights and shadows, Klein). Can procedures augment skills?
<i>From the Code</i>	Continual Improvement	1. What is continual improvement 2. What evidence do you look for to see if there has been continual improvement?	1. What is continual improvement? 2. Where would continual improvement stop? 3. PDCA – what is this? 4. Concept of learning linked to continual improvement?
<i>General</i>	SMS Procedures	1. What is the relevance of procedures for audit? 2. How do you relate that to Safety?	1. What is procedure? Relevance of Procedures. What all constitutes procedures? Recommendation? Suggestion? Mandate? 2. Compliance with rules for safety (Working to rules or working safely?) 3. Safety embedded in procedures (DMAIB)? 4. Is SMS a complete representation of how work is done? 5. Is it necessary to adapt while working? 6. How do you as an auditor confirm if procedures are being followed or not? “Effective functioning of SMS”. 7. What decisions do seafarers make (if they only have to follow procedures) 8. Do procedures become a standard for evaluating performance? <i>If yes, then does it not make it harder for people to adapt?</i>
<i>From the code</i>	Objective evidence	1. What do you look for as objective evidence while auditing?	1. What is “objective evidence” 2. Concept of deviation 3. Construction of evidence vs. recording of activities 4. “People’s ingenuity is engaged in survival, not improvement” – Seddon
<i>General</i>	Learning	1. What do you think is “Learning”	1. What do you think is learning?

Future

Changes
desired

1. What changes would you like to see?

- 2. Adaptation | Uncertainty
- 3. How do they think seafarers take decisions
(Heuristics)
- 4. Do they think audits capture decision making?

1. Answers here will give an idea of what is not working for the auditors in the extant system

Appendix: C

Informants

This data has been anonymised. The 6 auditor informants are employed in 2 different organisations. The organisations are reputed ship management companies that employ their own internal auditors, and manage more than 100 tankers. The seafarers were sourced through informal social media contacts and selected based on the first six respondents to the request. The six seafarers are employed in six different companies.

<i>Code</i>	<i>Gender</i>	<i>Nationality</i>	<i>Employer</i>	<i>Age</i>	<i>Certificate</i>	<i>Total Experience³⁰</i>	<i>Experience as auditor³¹</i>	<i>Started</i>	<i>Confidence³²</i>	<i>Interaction with Code³³</i>
A1	Male	Indian	A	45+	Master Mariner	26	10	1997	8	Once in last 3 months
A2	Male	Indian	A	45+	Master Mariner	22	8	1993	8	Once in last 3 months
A3	Male	Indian	B	35-40	Master Mariner	12	8	2004	8	Once in last 6 months
A4	Male	Indian	B	40-45	Master Mariner	25	2	1996	8	Once in last 12 months
A5	Male	Indian	B	45+	Master Mariner	31	4	1992	9	Once in last 12 months
A6	Male	Indian	A	40-45	Master Mariner	19	5	2001	10	Once in last 3 months
S1	Male	Indian	C	35-40	Master Mariner	14	-	2009	-	-
S2	Male	Indian	D	45+	Master Mariner	27	-	1996	-	-
S3	Male	Indian	E	35-40	Master Mariner	17	-	2006	-	-
S4	Male	Indian	F	30-35	Master Mariner	15	-	2008	-	-
S5	Male	Indian	G	40-45	Master Mariner	27	“Some experience”	1996	-	-
S6	Male	Indian	H	35-40	First Engineer	14	-	2009	-	-

³⁰ Experience counting from the day the informant started a career in the maritime industry

³¹ Experience counting for time spend outside seafaring roles in roles as actors in the internal audit ecosystem. This includes time spend as auditors or managers related to the audit function.

³² This is the confidence the informants have in their knowledge of the ISM Code.

³³ How regularly do the actors interact with the code in some way while at work. This could include a reading of the code, interpretation of the code or discussion around the code.