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Safety on Passenger Ferries from Catering Staff's Perspective

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Academic Editor: Martin J. Bull

Received: 1 June 2016; Accepted: 27 July 2016; Published: 1 August 2016

Abstract: The majority of employees on passenger ferries consist of the catering staff: those who operate in restaurants, shops, and in the hotel on board. Research on this category is scant. The aim of this study is to investigate the catering staff's experiences and perceptions of safety practice on board passenger ferries. The methods are semi-structured interviews and a qualitative content analysis of official documents and research articles. Results: Increased safety regulations and directives on an international and a national level have taken place after the major ferry disasters of late 1990s. Changes in the safety organization on the passenger ferries have resulted in more involvement of the catering crew in safety on board. Safety awareness and the way the catering staff think about safety have improved. The risk of terrorism has further reinforced safety awareness. A clear challenge for safety work on ferries is the reduction of catering crew. The transition to job flexibility for catering crew may constitute risk factors regarding safety and security.

Keywords: catering staff; risk; passenger ferries; safety; safety awareness; security

1. Introduction

A ship is a complex system with its various assignments such as navigation and cargo handling, managing of machine systems and electricity production for bridge, deck, engine and catering staff, besides communication with the shore side and various external stakeholders. Passenger ferries are even more complex. In addition to the traditional systems of the ship, there is an extended catering staff employed in restaurant, retail, hotel and entertainment activities, i.e., activities in order to provide service to passengers. The majority of the passenger ferry staff is usually working in these businesses.

Considering the fact that this category of staff also has a complexity in terms of gender, ethnicity, education, and working conditions, it differs from traditional seafarers on board. Since safety and security issues are in focus when it comes to ships, it is of great importance to investigate the catering staff's relation to risk and safety, and its incorporation in the ship's safety culture.

Passenger ships and their organization demand specific requirements concerning safety. Unlike merchant ships, other factors are relevant—in particular, safety culture, rules and procedures relating to passengers on board. New rules and directives on safety are added and revised continuously at both national and international levels.

A significant reason for the UN agency IMO (the International Maritime Organization) adopting the ISM Code (the International Safety Management Code) in 1993 was the increased number of serious accidents which in the late 1900s caused a large loss of human lives and extensive environmental degradation [1]. Global shipping was increasingly in a crisis of legitimacy, which accelerated the coordination of the global efforts. Apart from the accidents with passenger ships—for example, the *Herald of Free Enterprise* in 1987 and the *Scandinavian Star* in 1990—there were also accidents with

tankers, for example, the *Exxon Valdes*, which ran aground in the United States in 1989. These accidents to a high degree served to speed up the inception of the ISM Code. When the *Estonia* sank during the night of 28 September 1994, work on the ISM code was intensified, especially within the area of the EU [1].

The two ferry disasters that took place in Nordic waters in the 1990s—the fire on the *Scandinavian Star* and the sinking of the *Estonia*—led to a focus on security in ferry services [2–4]. In the investigations of these disasters the role of the catering crew was to some extent mentioned, and especially in connection with evacuation of the vessels [5]. In both cases, it stood clear that this category of employees had played no or a very small role at the evacuations and that training and preparation had been inadequate.

At the same time, and not least because they represent the majority of employees on board, the catering staff is assumed to play an important, active role in the ship's safety organization. However, their inclusion here is not unproblematic. Ethnological research has shown that there is a dividing line between catering staff and the two operational sectors (deck and machine) and that in practice the latter prevail when it comes to issues and decisions regarding safety on board [1,6]. Such dividing lines are grounded in the reality of different hierarchical principles based on professional affiliation, gender, ethnicity, etc. and this means that a common "safety culture", in other words a common understanding and focus on safety issues, complicates their work [6,7].

At the same time, competition in the area of shipping has increased, with tighter timeframes and reductions in personnel as a result [8–10]. As regards catering crew, research is scant, but the existing literature confirm the same pattern [1]. What consequences does this have for maintaining safety onboard?

2. Aims

Considering the strong emphasis on regulations and directives throughout the shipping industry in the recent decades, the aim of this paper is to investigate catering staff's experiences and perceptions of safety practices on passenger ferries. Our research questions are as follows:

- How have the changes of international regulations and directives during the recent decades affected the catering staff's participation in safety work on passenger ferries?
- What impact does the catering staff have on the development of practices for managing risk and safety?
- How does the catering crew reflect on the relationship between safety and service?

3. Methods

Qualitative methods are used. Through these methods motives underlying attitudes and behavior of different groups of catering crew, in terms of risk and safety, can be more deeply scrutinized compared to quantitative methods. The methods are semi-structured interviews [11,12], and a qualitative content analysis of official documents from international and national authorities and organizations, but also research articles and so forth [13–15]. Besides, in order to get an overview of the safety organization and safety drills of catering staff, on board observations have been performed, but no data collection has been made [16].

Thirty in-depth interviews have been conducted, with 14 women and 16 men, on board three ferry lines operating in Nordic waters. The ferries belonged to three major shipping companies going between different destinations in Sweden, Denmark, Finland and Germany. The intention was to get a spread of ferry routes and destinations. The sample consisted of representatives from different professions of catering staff representing all work areas on passenger ferries: kitchen, restaurant, shop, hotel section, reception and conference section. The sample included three catering staff officers, one from every ferry line. These officers helped select people from different work sections so that different areas of work would be represented.

Most of the catering crew worked on the basis of flexible work schedules. This meant that they alternated between different areas of work, such as a few hours work in the restaurant and a few hours in the hotel business. Almost everyone, however, had a solid base in any of the various work areas. The informants had in most cases decades of experience of working on passenger ferries. Even if the selection was made by three officers, the informants gave such a multifaceted and at times critical picture of their work that it enables the reliability of the study.

The interviews were conducted on board the three ferries, a type recorder was used, and afterwards the interviews were transcribed. The analysis of the interviews followed an inductive model based on concepts and a growing classification of material, influenced by Bogdan's and Taylor's analytical model [12]. The intention is to achieve a deeper understanding where knowledge and insights are developed from the empirical material. The analysis of the interviews is done by highlighting the characteristic features emerging from the interviewees' stories, making it possible to understand these from the person's own perspective. Following Taylor and Bogdan [12], the analytical process consisted of several steps from discovery to coding. The interpretation was done by continuously go between the empirical material and theory, whereby categories were emerging. Categories were compared and critically examined in order for us to be able to draw appropriate conclusions. The different steps are described more closely below:

- (1) *Emerging themes.* During the first step, all interviews were transcribed and carefully read through several times. The purpose was to identify themes such as hierarchy, flexibility, safety awareness and training and reduction of staff.
- (2) *Specific (sensitive) concepts.* In this step, words and phrases were put forward indicating how interviewees talk about themselves, others and about different phenomena, such as catering staff's views and experiences of themselves and others in the safety organization.
- (3) *Coding.* The third step in the coding process involves bringing together and analyzing data for each of the themes and concepts using a coding scheme. During the process, certain themes were overlapping and brought together or redefined. The interviews were read through once more in order to make sure there were no discrepancy between the empiric material and the coding categories.
- (4) *Construction of categories.* The last step in the analyses focused on comparing different data and how these could be related to how for instance catering staff's views of themselves can be interpreted from an overall perspective. The categories form the basis for the interpretation of the interviews presented in the result section. What conclusions can be drawn?

The analyzed material will be presented in the Results Section based on three themes: (1) *Hierarchy*; (2) *Safety awareness and training*; and (3) *Flexibility and reduction*.

4. Literature Review

Research on safety and risk in shipping is extensive. Historically, this research focused primarily on technical aspects but have in recent years increasingly come to include human/organizational factors even though this area may be considered undeveloped in comparison with what has been done in for example the aviation sector [17].

The existing research on "safety" and "security climate" in the shipping industry have mainly highlighted the traditional professions such as ship's officers, and deck and engine personnel. Besides, the research has focused primarily on merchant ships. The ferry disasters in northern Europe in the late 1980s and early 1990s, however, meant that interest was also directed towards this type of ships.

Ethnographic research has shown that there is a dividing line between the catering department staff and the two operating departments (deck and engine), and that the latter in practice prevail on issues and decisions concerning safety on board [6]. Such dividing lines are based on the existence of different hierarchical principles on the basis of professional affiliation, gender, ethnicity, etc. and

means that a common “safety culture”, i.e., a common understanding and alignment of safety work, is hampered [7,18,19].

Eldh’s study [6] also confirms the negative image of the role of the catering staff concerning safety matters. He followed through participant observation and interviews the life and work aboard a passenger ferry. The result indicated a work organization that was characterized by strong hierarchies and boundaries between different categories of staff which also had consequences for the safety work. Deck and engine crew tended to regard the catering staff to be less beneficial for the safety of the ship as they were considered to have no feeling for the work at sea. They were also excluded from the discussions and knowledge of procedures and functions that the “real sailors” considered important for the ship. Thus, they found themselves in a worse situation as regards being able to participate in and influence safety work.

Ek and Akselsson [20] have studied the safety culture on board six Swedish passenger ships by observing the activities on board and by questionnaires to the crew members. The results indicate that there are differences between individuals’ safety awareness depending on the type of ship they are working on and what position they hold in the ship’s organizational hierarchy. These differences were, however, small between the different catering staff categories. Ek and Akselsson emphasized that staffing on a passenger ferry is adapted to seasonal variations (applies especially to catering staff), i.e., the number of passengers. This flexibility in staffing is also reflected in the flexibility of the safety organization. For individual crew members, this means that one can occupy different positions in the organization at different travel occasions. This was highlighted as positive by the interviewed crew members since it meant they got greater knowledge of the security organization and were stimulated to think more actively about security.

What also came to the fore was that the crew saw the handling of safety equipment as a weak link in the work. Factors such as the staff’s age and physical condition were rarely considered in the organization of security.

Jense [1] has studied the work and safety in Swedish RoPax shipping in international traffic by interviews with representatives of shipping companies, government agencies, professional organizations and crew. While Jense argues that the traditional distance between operations staff and catering staff has been reduced and that there is today a well-functioning cooperation between different job categories, he highlights and discusses a range of safety problematic points:

- Staffing reductions, which, according to the surveyed job categories has meant insufficiently coherent work and rest periods and a higher work rate. This applies particularly to the catering staff.
- Increasing administrative burdens such as security-related documentation. The increased administrative burdens risk the every-day operations. This is highlighted by maritime researchers as an increasing problem in the shipping industry [10,21].
- High staff turnover especially in the catering staff. Increasing share of unqualified personal.
- Inadequate introduction and training of new staff on board.
- These problems can have a negative effect on safety on board and also highly affect the catering staff.

Lu and Yang [4] have examined the security climate/behavior among staff of Taiwanese passenger ferries in a survey. The study showed, among other things, that the existence/experience of a good safety climate on board, seniority and obtained security training was positively correlated with self-reported safety behavior. Self-reporting and the fact that it had a significant drop (about 75%), however, limits the conclusions that can be drawn from the study. It is also impossible to draw any specific conclusions on the catering staff on the basis of this survey.

Another study on the safety of Taiwanese ferries was conducted by Lu and Tseng [22]. It examined various stakeholders’ (ship owners, passengers, and others) view on how to achieve security. The

study emphasizes the importance of the crews being trained to handle the equipment for firefighting and evacuation, as well as being able to communicate with the passengers.

In the crews of today, nationalities and cultures are increasingly mixed, something that also applies to passenger ferries. A study of interest, although it was carried out mainly on the bulk/container ships, is a study by Håvold [23]. A survey was conducted on the attitudes of crew members of different nationalities, employed by a Norwegian shipping company, and their reaction to the various aspects of the concept of “security culture”. The result shows that there were national differences in attitudes which among other things could be related to whether respondents belonged to what was described as an “individualist” or a “collectivist” national culture.

Bailey, Ellis and Sampson [24] studied perceptions of risk with regard to ship casualty amongst the various occupational groups across the maritime industry. They were interested in how different professions reacted to the various risk factors. The three researchers used a survey of 2372 seafarers from 50 countries. The results were analyzed with a focus on identifying possible subcultures based on factors including rank, department, nationality and age. The analysis was in two parts: the first was about risk perception in relation to different events—such as fires, collision, explosion, sinking or grounding—within the respondent’s own company. The other part dealt with perceptions of risk more generally in the shipping industry. However, according to the authors, perceptions between different groups are relative. More detailed differences could not be presented. They point out that more research is needed to be able to rule on the specific differences.

In a follow-up study, Bailey, Ellis and Sampson [25] published a report showing more detailed results. They found that the principal factor influencing differences in perception was nationality. Rank, department, age and type of ship were also significant but to a lesser extent. They also found that younger seafarers showed less awareness of risk, but also the older tended to see risk as less.

Other researchers such as Vanem, Rusås and Skjong [26] highlight the importance of the design of the passenger ferry in order to be able to reduce and control the risk of collision. In a study, they advocate a risk-based approach and a holistic perspective when studying damage stability of ships. The researchers recommend applying this approach in the design of new passenger ships. They argue that one can also apply it in some specific areas for older ships.

Vanem and Skjong [27] explain in another study how to develop a basis for deriving a complete set of evacuation scenarios by results from a performed risk assessment. These scenarios are based on real events that include the major hazards that passenger ships are exposed to.

In summary, there is some research on human/organizational factors affecting safety on passenger ferries. Given how the number of passengers and cruise traffic has developed in our time, there is a need for more research in general about risk and safety on board. Not least, there is a lack of research that exclusively and systematically focuses on the catering staff and the conditions governing their perceptions of and involvement in safety on board.

5. The Impact of Maritime Safety Thinking and Regulations on Maritime Safety

Historically, the sinking of the *Titanic* in 1912 was the starting point for maritime safety regulations on a grander international scale, beginning with the adoption of the first version of SOLAS (International Convention for the Safety of Life at Sea) in 1914 [28]. However, due to World War I, it did not come into effect, even though many of its provisions were adopted by individual nations. Another four SOLAS conventions, as well as many different amendments, have since been adopted and gone into effect. The IMO in turn was founded by the UN as late as 1954 and went into effect in 1958 [29]. Ever since, new regulations, rules and codes have been created and/or changed as a means of ensuring a higher degree of maritime safety. As mentioned in the introduction, accidents such as the fire on board the *Scandinavian Star* in 1990, the foundering of the *Herald of Free Enterprise* in 1987 and of the *Estonia* in 1994, contributed to a massive focus on maritime safety thinking, as well as giving rise to cooperation and agreements at the international level [1].

This section focuses on the evolution of maritime safety thinking, and the most important guidelines, regulations, and amendments emerging since the 1980s. The section continues by asking if all these measures have had the intended effects, and if not, why that is. Since the literature on catering crew in relation to safety is so scant, it is necessary to give a more general picture as regards the development of maritime safety work in order to put their situation into context. This study is a contribution to the knowledge of how the practice of catering crew has been affected by the general development of IMO safety regulations. In answering this question, a study comparing the *Titanic* and the *Costa Concordia* accidents will be used [30].

5.1. Maritime Safety Regulations

When going through the most relevant maritime safety regulations it stands clear that *The SOLAS Convention*, *The ISM Code* and *STCW* (The International Convention on Standards of Training, Certification and Watch Keeping for Seafarers) are the main regulating instances within the IMO. It should be noted that the ISM code was incorporated into the SOLAS as a new chapter, Chapter IX, by the 1994 amendments to the convention [31].

In its early years, the IMO focused on developing international regulations, which meant that the majority of its conventions were adopted in the 1970s. In the 1980s, there was a shift of focus from adopting new regulations to effectively assisting implementation of existing instruments [32]. Thus, the IMO concentrated on technical cooperation activities (especially in the developing countries) such as training and improving the quality of seafarers, with the foundation of the World Maritime University in Malmö, Sweden in 1983, as the highlight. However, even though the need for global cooperation and implementing the technical assistance program were emphasized, there was a great divide between developed maritime countries and the emerging, developing ones. Not only that, the will to implement existing regulations in general was questioned [33]. The need for a new perspective was therefore highlighted. The sinking of the *Herald of Free Enterprise* marked just such a shift of attention, even though the issue of effective implementation was still on the agenda. The emphasis was now to reduce the likelihood of human error by promoting safe shipboard management and changing attitudes towards diligent application of rules and regulations [34].

As regards the IMO's focus on safety, its slogan "Safer Shipping and Clearer Oceans" was adopted and widely used during the 1980s and 1990s. In 1994, Chapter IX of SOLAS, the ISM code (International Safety Management Code), also introduced a more safety-oriented attitude within the maritime community and was decisive when introducing the concept of safety culture [35].

To conclude, the IMO has considerably strengthened its regulations especially after the catastrophic accidents that took place in the waters of northern Europe. At the same time, the IMO has gone from being characterized by a reactive organizational culture to an organization with a more pro-active culture. Furthermore, the IMO's concept of safety has gone from being heavily focused on technical matters to concentrating its efforts on implementation and on human factors [35].

STCW was adopted in 1978 and entered into force in 1984. The amendments were adopted in 1995 and came into force in 1997 [36]. The demands on employees responsible for managing passengers in emergency situations are described in chapter five. These demands include training in crowd management, specific safety training such as skills in communicating with passengers in their own language(s), or in basic English, being able to demonstrate the use of survival equipment and finally training in human behavior and crises management [36]. Chief officers, first officers and second engineer officers and any person with responsibility for the safety of passengers in emerging situations must have completed approved training in crisis management and human behavior [36]. It may be added that the revision of the *STCW* in 1995 included a recommendation to use a "functional approach" as to the organization of work in such a way that all tasks on board would be founded on competency-based-skills.

The functional approach opened for a loosening of traditional professional roles [10]. The increased competence of the crew also meant an increase in redundancy as a result of the overall

competency on board. With a focus on work functions, someone other than the person who traditionally performed a task could go in and do the job. Flexibility in performing tasks was created when more people in the crew could do more tasks than those who traditionally used to perform them [37]. The possibilities for employers to rationalize the work onboard increased. The number of employees was reduced, and the fewer employees, the more cost-effective it was for employers. Reduction of staff and job flexibility came to be applied to all professions onboard, thus also to the catering crew.

For employers, this meant that the reduction of staff, job flexibility, and the pursuit of cost-efficiency must be weighed against the main component: safety. "When elaborating with flexibility in an organization, safety must always come first." ([37], p. 130).

In the past few decades, the risk of terror attacks has increased. After 11 September 2001 safety work was intensified in practically all transport sectors. With regard to seafaring, in 2004 SOLAS was amended through the International Ship and Port Facility Security Code (ISPS). The Code was agreed at a meeting of the SOLAS Convention in London in December 2002 [38]. The purpose of this amendment was to prevent terror acts on ships and in ports. The code makes specific demands upon security. Among other measures, a safety program was to be established on every vessel, routines for increased surveillance and control were to be introduced, and the position of security officer added. The code also had the effect of improving communication and cooperation between the various sectors of crew involved [39].

The new security requirements that ISPS introduced led to an increased workload, especially for the crew on ferries. Besides, causing delays in traffic and a backlog in the delivery of freight, the personnel onboard had to deal with a greater workload due to the new regulations, which had to be followed and added to demands that must be met to maintain security onboard.

Increased safety requirements in the shipping industry also led to measures taken by the EU. In 2002, the EU Parliament and the European Council established EMSA (The European Maritime Safety Agency). The purpose of this organization was, among other things, to effectively provide support for the EU Member States in their efforts to comply with laws regulating safety at sea. The goal was also to increase cooperation between the Member States with regard to training and to devise common methods for investigating accidents and analyzing shipwreck reports [40].

5.2. Effects of Maritime Regulations

Returning to the question as to what, if any, effect all these regulations, safety rules and amendments have had on maritime safety, we ask ourselves why it is that accidents involving passenger vessels continue despite the technical progress and all the new safety regulations and precautions. The grounding of the *Costa Concordia* is a relatively recent example. What have we not learned from past experience of severe accidents at sea? Should we look elsewhere for the answer? Is it to be found in the safety regulations themselves? Let us see.

According to Rossander [41], regulations have proved to be toothless in many respects. One reason is that when a new safety regulation is instituted, it usually only concerns new ferries and to a much lesser extent already built ones. This is in accordance with the so-called grandfather principle; that is, once a ferry and its safety equipment have been approved, that stamp of approval is valid for the whole life of the ferry. New rules take a long time to implement and have a tendency to leave too much room for interpretation for different states, which is a problem. Yet another problem has been highlighted: the lacking verification of compliance with existing regulations [41].

A different issue, pointed out by Meyer and Rowan [42], is the need for organizations to adapt to the outside world and its requirements. However, there is seldom any straightforward discernable correlation between established structures for adapting to the surrounding world and the impact one expects to achieve. Many times rule-following results in ritualistic behavior whose significance for security in this case must be questioned.

Moreover, it is important to note that in 1993 the IMO adopted the *ISM Code* [1] requiring a safety management system (SMS) to be established by the ship owner or any person who has assumed

responsibility for operating the ship. This points to the possible contribution of management as a causal factor behind maritime accidents. In some cases, such as the sinking of the *Herald of Free Enterprise* in 1987 or the fire on the *Scandinavian Star* in 1990, it is established that management did contribute to the outcome of the accidents [30].

Nonetheless, the factor contributing most to continuing accidents seems to be specific human factors, which have been partly overlooked by the ISM Code [31]. Attention has mostly been directed towards technical aspects at the expense of socio-technical, organizational, and human factor issues and perspectives. In their article “From *Titanic* to *Costa Concordia*—a century of lessons not learned”, Schröder-Hinrichs et al. [30] argue that not much has been learned from the time of the foundering of the *Titanic* to the *Costa Concordia* grounding, in spite of all the improvements in technology and all the new safety regulations, amendments, rules and attention to maritime security and safety. The conclusion is that the same underlying human and organizational factors are still at large. So the question they pose is why accident investigations and the reactions to them remain more or less the same during this one-hundred-year time span. Their response is that safety thinking focuses on things that go wrong or could go wrong. Safety measures are in line with such thinking and safety culture is thus built around such assumptions. In this case that means trying to avoid things that can go wrong instead of ensuring things will go right. This would be achieved through understanding human and organizational factors, which include such elements as authority gradient, group thinking, cognitive hysteresis, and so forth, factors vividly described in the above-mentioned article. As is suggested, it is much easier to propose solutions that are more clearly of a technical or administrative nature than to deal with a combination of different factors and conditions including factors of human and/or organizational kind.

In the next section, we will turn to theoretical concepts and perspectives.

6. Theoretical Concepts and Perspectives

The concepts *safety* and *security* sometimes overlap in research on risk. For the most part, however, a distinction is made between them. Depending upon which of them is used, there are consequences for the practical aspects of workplace safety. Two researchers, Piètre-Cambacédès and Chadet [43], propose that the concept *safety* is used in discussions of unexpected and unintended accidents while *security* is used when speaking of intentional actions done to cause harm. When referring to *safety* one focuses primarily on weaknesses in a system; when referring to *security* focus is directed toward an external threat to the system.

Resilience Engineering in turn is a concept associated with new ideas on safety management, with its emphasis on dynamic flexibility in response to unpredictable risks and accidents. For example, a train driver who is facing unexpected events during a train journey may have to act in innovative rather than established ways to avoid a collision or a serious accident. Alternatively, authorities may rapidly have to improvise crisis management responses in the face of a danger of some kind. Resilience in this respect therefore means being “both prepared, and prepared to be unprepared” [44].

In order to handle both foreseeable and unforeseeable risks, it is necessary to have enough resources available when needed, which means that technical systems should have safety measures and margins built into them. As the *Herald of Free Enterprise* and the *Estonia* accidents show, it is far easier, cheaper, and saves more lives to make sure the technical system as well as other safety systems are fully adequate, equipped and functional. However, it is also necessary to make sure that all the different personnel categories are well educated and fully aware of what to do in emergency situations.

There is, however, always the temptation to cut back on the cost of risk management, hoping for the best. Examples of consequences of such shortsightedness are the *Challenger* and the *Columbia* space shuttle disasters, the *Deepwater Horizon* oil spill, and the *Bhopal* gas tragedy [45].

Safety-I and Safety-II responses are two important concepts in Resilience Engineering [46]. Safety-I responses deal with risk elimination in terms of errors in technical and human factor systems. Safety instructions normally follow the logic of Safety-I responses. Still, there are situations, even if they

are rare and unexpected, in which pre-determined responses are not the most suitable ones. Instead, a Safety-II response is called for, where skills and expertise are accessible. In such situations, agents should proactively use their knowledge and expertise after carefully checking the conditions. Therefore, a combination of Safety-I and Safety-II responses is recommended.

Moreover, employees must be trained to respond to and cope with unexpected situations that are not suitable for Safety-I responses. In that way, organizations are not only prepared to deal with complex, ambiguous, and often adverse situations, but may also learn how to improve Safety-I responses.

Another useful concept developed in Resilience Engineering is “the efficiency-thoroughness trade-off” (ETTO) Principle [47]. This principle states that it is not possible to maximize both efficiency and thoroughness at the same time. To focus narrowly on one at the expense of the other is ill advised. This is another way of looking at the balance between cost and safety. Noteworthy is that organizations in the risk business, such as organizations that are in charge of passenger ships, airplanes, or trains, but also nuclear plants and so forth, must make sure this line is never crossed in an effort to keep costs down. Again, the BP (British Petroleum) *Deepwater Horizon* catastrophe is a prime example of what happens when that line is crossed or that balance is not upheld.

Another useful theoretical concept is the notion of safety culture. The IMO, along with any other organization, is characterized by certain special organizational traits. Organizational culture is one of those traits. Following Mitroussi [35], we define culture as a system of values shared by all members of an organization. The underlying philosophy that a culture is built upon serves and reflects its core mission, its “raison d’être”. For the IMO, this culture can best be understood and described as “safety culture” since safety at sea has always been the primary aim and concern of the organization. Organizational cultures in general are in constant motion to adapt to what happens in their dynamic surroundings and environments; they develop and respond in ways that might strengthen them, reshape them or alter them all together. As with the IMO, the organization responds to what happens in its surrounding world in ways that reflect its priorities, content and practices and in that way its own and our understanding of the concept of safety. The culture might also be affected and developed by a change in leadership if the new leadership, on the one hand, brings along a new set of ideas and values and, on the other hand, becomes aware that a shift in values and responses is necessary for the survival of the organization and/or its main aim.

Still, it may well be that instead of altering a current culture the best method is to strengthen it [48]. As is the case with the IMO, according to Mitroussi [35], a strengthening of culture and the evolution of the concept of maritime safety have been the answer to those severe accidents that have occurred since the 1980.

7. Interview Results

The interviews with the catering staff are presented below, based on three themes which were developed through the data analysis: *Hierarchy*, *Safety awareness and training*, and *Flexibility and reduction*.

7.1. Hierarchy

The organization on passenger ferries, like that on merchant ships, has from a historical perspective been extremely hierarchical. Our study, which has been done on ferries traveling northern routes, clearly shows that this hierarchy has to some degree been flattened, but also that it is still present [10].

The organization works...It is perhaps a little stiff and bureaucratic, it is a little like the military, but communication between catering crew is very open...If something happens that has to do with safety, everyone takes it very seriously (cleaning manager)¹.

The dividing line that traditionally existed between the catering crew on the one hand and the other two sectors—deck and engine—is a now dotted line.

The boundaries have become blurred today, but there are still boundaries. Today the division between catering crew and those operating the ship is less distinct than the one between deck and engine (catering staff officer).

He goes on to say: We have become a more accepted sector of operations, while operations maintain strict boundaries between deck and engine room. I think they have a problem there while we have gotten rid of our problem.

This blurred boundary between the catering staff and those operating the ship is most likely a consequence of the fact that the catering staff has become more involved in the implementation of safety work and thereby come into closer contact with the personnel running the ship, who have traditionally been responsible for most safety work issues. The highest-ranking officer operating the ship has always had and still has the overarching responsibility for safety. None of those interviewed questioned that in any way. A hotel service manager expressed it as follows:

Sometimes there are things that are not up for discussion; most of us know where to draw the line. We do not have discussions when in action...we do that afterwards.

Certain boundaries are distinct and in line with the traditional hierarchy onboard. There are risks involved when at sea and the situation can become extremely critical. The Captain has the ultimate responsibility and he or she gives the orders.

When it became necessary to make changes to the organization of safety work in order to comply with new regulations and directives from the authorities, the catering staff became part of the implementation of safety work onboard. This led to a flattening of the hierarchical structure. As one catering staff officer put it:

I wouldn't say that there is greater acceptance...but they recognized the relevance of our catering crew sector. On the big passenger ferries we are the ones who conduct, and are occupied most with safety work.

But they don't look at us as sailors.

Within the catering staff, which consists of several sectors, there is also a hierarchy where the cafeteria crew has the highest rank.

The restaurant section has absolutely the highest rank, they have the most contact with the passengers and have a certain responsibility...then come kitchen, reception, the cooks...and the hotel has always had the lowest rank (head of catering staff).

However, the flexibility of positions has mixed it up because catering staff today work between different sectors. Increased travel has meant that the hotel has become the most important sector.

The hierarchy within the catering staff has been stricter but it is less so now. We work in modules now, for example, five hours in the shop, five hours in the restaurant. Boundaries have been erased (restaurant manager).

¹ All citations are from the transcribed interviews. After each citation the interviewee's profession is specified.

The introduction of job flexibility has led to the catering staff working in several sectors. One person, whose main job is in the hotel sector, works in other sectors—restaurant and shop—as well. For more, see below under the heading *Flexibility and reduction*.

Some of those interviewed said that the more distinct hierarchy can be found between officers and crew within the catering staff. As a bartender says:

I think that there is more hierarchy between officers and crew within the catering staff than there is between us and officers on deck and in the engine. When they (officers on deck and in the engine) talk to us, there is dialogue...While our officers speak to us...Then they are there and we are here...

Changes in safety work have strengthened cooperation and ties between officers within the various sectors. Even if all the officers on a ship have always worked together closely, this cooperation has been strengthened in recent decades, possibly at the cost of creating greater distance between them and their own crew.

However, as the bartender adds:

Of course, it varies...from person to person.

Personalities have a great significance—something that is often emphasized. Those interviewed also talk about the different ferries as having different personalities. This is something that seafarers did in another study too, even though the study's aim was to investigate functions, performance, and perceptions of work on ships [10].

The majority of the catering staff has worked for many years on passenger ferries and they are able to compare work and organization onboard the various ferries. This is articulated in different ways:

The ships are very different...it's like they have different personalities. It is especially noticeable for me since I work on two ferries. It is the character of the ship that sets the tone.

There has always been hierarchy at sea...But it varies tremendously from ship to ship...(hotel service manager).

Organizational changes are not just about making technical changes, for example, moving personnel around in the organization and giving people different jobs to do. A healthy working environment onboard is to a substantial degree dependent upon non-technical skills like good leadership, teamwork and communication. It might be added that a healthy working environment also benefits the safety culture on a ship.

Thoughts and reflections about the relationship between hierarchy and safety came up among those interviewed:

The hierarchical organization can certainly have an influence on safety. It is a good idea to continue this discussion with the officers in operations in a more informal atmosphere after the drills, but there are limits, it might be disruptive...If we had more informal channels, we would get more information and it would be good for safety (conference hostess).

A more transparent organization with opportunities for both formal and informal communication between divisions, between sectors within divisions and between officers and crew at all levels could be something to strive for. Combining this with a clear and distinct distribution of responsibility could result in a safer and more satisfying working environment. Those interviewed emphasize that the changes made have been positive—the difference is tangible, according to those with long work experience. Other components, however, have challenged the progress made, primarily the measures taken by employers to beat the competition and rising costs. This will be dealt with below under *Flexibility and reduction*.

7.2. Safety Awareness and Training

After the large ferry disasters in the 1990s (the *Estonia* and the *Scandinavian Star*), safety awareness has increased. Following directives from the IMO (International Maritime Organization) and The Swedish Transport Agency all catering crew must today undergo a three-day Basic Safety Training course. They can then add other courses to that training.

After the *Estonia* catastrophe in 1994 a lot has happened. Everything has become more organized and the plans are on paper, we have more manuals and training systems, everything is documented. Attitudes have changed—everyone takes safety seriously (cleaning manager).

Today, there is a whole new systematics for learning and maintaining safety, both theoretical and practical. The level of knowledge has risen and practical skills have improved, which has led to an increased awareness of the importance of safety issues.

Consciousness of safety has increased. People think more...(catering assistant).

Safety issues must be updated constantly. The frequency of the practical drills has increased considerably in comparison to a few decades ago. It is the officers in operations who lead the drills.

We have drills at least once a week. We have them in conjunction with the handing over of watch—we have a drill the following day (restaurant manager).

The danger is that the frequent drills become routine, which is what the majority of those interviewed say. It is easy sometimes to stand there in a corner, passive, without getting involved.

Sometimes we are a little tired of the drills...(hotel service manager).

Often people become engaged when the drill has begun and they have to focus on carrying out tasks and solving problems. One of the bartenders has a lot to say about the safety drills:

The safety drills onboard are good...the only thing I think is a little strange is that those in charge know what is going to happen. They should not really know what is going to happen. They are supposed to control it.

I presented a proposal that a small group us could stage a scenario so that neither those who are responsible nor the other personnel would know what was going to happen. My proposal was discussed and then it was forgotten, time went by and nothing happened...

Making drills varied and engaging requires imagination and creativity. However, often drills need to be repeated over and over again so that no one forgets what to do. It is impossible to avoid this repetition. From the interviews, it is clear that the officers in charge are always willing to discuss employees' suggestions, but as the quotation above shows, the suggestions are seldom acted upon. Those interviewed cannot say whether this is due to time constraints, lack of interest, poor listening skills, or something else.

One person feels there is a need to take a break from the regular drills once in a while in order to give employees the chance to gain more advanced proficiency in practical skills. The weekly drills are limited to a certain time slot and there is not always enough time to elaborate upon particular details.

I would like to have one day a year when we go a little deeper. Then we could travel to a training center where we'd have everything we need. I understand that this costs money, but at a regular drill you give maybe 75% but at an all-day drill you might give 110% (bartender).

No matter how much practical training and theoretical knowledge employees acquire, one never knows what will happen or how people will react when there is an incident and they are confronted with various risk-filled situations. Real emergencies cannot be practiced. One of those interviewed, working in the restaurant, who had experienced several emergencies onboard says:

Certain things can never be practiced. Once when a fire broke out I could really see how people reacted. Those that we thought would never manage, became strong and those we really thought would handle it, lost it completely...You can never practice this.

Almost everyone has experience of fires, groundings and highly severe weather situations. They often refer to incidents that have occurred during the 1990s and the first decade of this century; that is to say, after the introduction of the ISM code (International Safety Management Code) in 1993 and the introduction of new regulations and directives to improve safety and raise awareness. Accidents, incidents and dangerous situations occur all the time, as those who were interviewed testified to.

The catering staff are, like the passengers, afraid of high waves and fire. The majority believe, nonetheless, that they have been trained for that and that there are clear regulations for improving safety. However, judging from the quotation above, it is clear that providing safety drills and rules to follow are not always enough. The human factor is always present and cannot always be controlled.

The catering staff has in recent years been given greater responsibility, above all concerning mustering, guidance, and evacuation of the passengers onboard.

It is the catering staff who are in close contact with the passengers, and they emphasize the importance of both service and safety in their profession. An assistant hotel service chief expresses:

Service and safety are two sides of the same coin. Safety work is so integrated in the overall work.

All personnel see themselves primarily as service personnel but safety awareness has in recent years increased in importance.

Passengers definitely see us as service personnel...but nowadays I keep an eye on some of the passengers' cabins (head of catering staff).

Some say that they have become a good judge of character through their profession. They are often informed by the front desk that someone is a bit deviant.

Due to 11 September 2001, all personnel were requested to attend the ISPS courses (International Ship and Port Facility and Security), i.e., after the IPS Code was agreed to the SOLAS Convention in 2002.

Terror has affected safety. It's harder to get onboard. You must think a little differently. Be a little more observant. The worst scenarios are possible on passenger ferries. There are so many different sectors: the kitchen, store and hotel. So much can happen...(restaurant manager).

Through the ISPS courses, yet another course was added to the list of safety courses. It was a course with different content. Much focus was given to external threats. The threat came from organizations and terrorists who could wreak havoc for people and seafarers in general. A catering staff officer explains:

We are taking an ISPS course—it is about human behavior, profiles, it challenges prejudices and clichés, teaches us to be aware of baggage...

The employees onboard had new risk factors to handle and respond to. For many of the catering staff, this became the worst danger of all that they might encounter in their work.

A bomb...that is the worst thing that can happen. Everyone used to talk about fires...Now there is not a ship that has flammable materials. And there are good sprinkler systems. But a bomb...that we cannot control...(catering assistant).

A woman who is working in the kitchen describes the worst thing imaginable:

I think about terrorism...think that next time it will be one of the ships that blows up. But I can't walk around thinking that they are going to blow up a ship...

No, none of the employees walk around thinking about a terrorist attack. That would have an effect upon their whole work-life situation. For the majority of those interviewed for this study, the impossibility of controlling a terror attack seemingly leads to a strategy of not talking about the subject so much but nonetheless being watchful and observant of what is happening around them.

7.3. Flexibility and Reduction

The work organization of passenger ferries has evolved towards greater flexibility. This development has a great deal to do with the emergence of TWAs (Temporary Work Agencies) during the 1990s [49] An ad hoc catering contract was signed on a number of ferries, which meant that catering personnel, for example, would have more flexibility, doing a variety of tasks onboard. This was, however, not signed with the kitchen personnel chefs and bartenders, whose jobs remained the same the entire time. The number of employees working for TWAs varied depending upon the ferry.

The formerly clear division of labor among the catering crew changed for increasingly flexible job roles. Service work now often means working in several sectors, for example, in the course of one week, serving in the restaurant, and working in the hotel and the shop. One of the catering staff officers expresses:

Catering hosts earn a basic salary but can also be employed as servers. They get a commission-based salary and hence the job in itself gains status. They try to rotate in this way so that it will be fair. The restaurant boss makes the decisions.

Rotating between jobs is not quite problem-free. It is not unusual that there are conflicts among the personnel since certain jobs—for example, serving—is better paid due to the extra commission. Furthermore, certain jobs are seen to be more attractive than others. The catering staff officer continues:

I feel uncomfortable with these flexible positions. It always tends to be more positive to work in the bar in the evening than to go down and clean...

The flexible work schedule has been introduced in the sectors deck, engine, and catering crew but according to different organizational conditions. A restaurant manager explains the differences between the sectors:

Catering is a changing world. When we work with flexible staffing, demands are made upon management, how to recruit and on organization. In comparison with deck and engine, we have different working conditions. Especially in the engine, they have less flexibility, the way it was before.

Job flexibility also means that the employees' schedules must be adapted and according to the number of guests and passengers onboard. Previously, there were more employees, and they always did the same task. During the summer, when there are more traffic and tourists, more temporary summer jobs were created.

Flexible staffing means extra planning as well as more effort when it comes to safety drills. When the temp workers get onboard they have to go through the customary safety training.

On weekends we have flexible staffing—there are more guests on the weekends. Those who take temp jobs on the weekend have to participate in special weekend drills, among other things, evacuation technique. The first officer takes them to the lifeboats so that they don't lose those skills (assistant hotel service chief).

Flexibility has both advantages and disadvantages. Variation of tasks is brought up as something positive. Another advantage is put this way according to the assistant hotel service chief:

It is easier to find smoke divers among the catering crew, especially cooks—young, strong, have to cope with physical tests.

Those who are critical say that they experience a feeling of fragmentation at work that things have been split up. Some experience an increase in stress and fatigue, as well as an increased feeling of isolation. The greater sense of unity they had before when there were more employees has changed and now there are more tasks that are done alone or in smaller groups.

Moreover, they feel it is difficult to perform well. Working in two sectors may lead to a diminished sense of responsibility. It is easier to be responsible for work done in one sector where one also might feel more at home and where it is easier to identify with the tasks at hand. A head of catering staff explains:

It's quite difficult to get it to work well. There is an ability to pull off to your own subroutines. Difficult for some to feel responsible for perhaps two sections with a combi-service. Depends on the person, of course.

The development of work flexibility has made it easier for employers to make reductions in personnel. Fewer employees perform all the tasks when the traditional roles and boundaries between sectors are erased.

The reduction of staff implemented in recent years has become increasingly noticeable to the catering crew. The effect of increased workload and fatigue involves an increased safety risk. The head of catering crew continues:

The worst that can happen now is more reductions because it has effects on service and safety...you cannot take away another staff person needed for passenger evacuation...it is not possible...

Flexibility and staff reduction are two intertwined concepts that influence work organization on passenger ferries, just like many other areas of employment these days. An increased flexibility provides room for rationalization of personnel so that fewer employees are needed to do the work onboard. When employers cut back on staff, work organization has to be adjusted to the reduction in employees.

Flexibility and staff reduction are work organization tools that employers use to handle the demands of cost-efficiency and increased competition. Safety—maintenance and development of safety skills and awareness of safety issues—comes first though. In the interviews above it is made clear, however, that workforce rationalization increases risk.

The various sectors—deck, engine and catering staff—have different ways of organizing tasks, which was pointed out by those interviewed. For example, they criticized the way tasks, especially those in the engine, were “static and old-school.” One catering staff officer believes that “work flexibility should be introduced in the deck sector too, and in the engine. Would be good for the sense of solidarity onboard. They have much to learn from the catering staff.” It should be added that the same person also emphasized the disadvantages of work flexibility.

The question that arises is whether the sectors' various ways of structuring their work has any significance for safety, and if so, what? Related to this question is the ship's hierarchal structure that, even if it has been slightly flattened, nonetheless remains. According to those interviewed, the dividing line between deck and engine in particular is “as it's always been”—that is to say, distinct and strict. Does the hierarchical structure, with its three sectors and the variation in transparency between them, have a significance for safety?

The introduction of work flexibility among catering staff, the reduction in employees and the specific hierarchical structure of the ferries calls for more questions about risks and safety onboard and some answers. More studies need to be done in order to find those answers.

8. Discussion

The ferry disasters that occurred in the Nordic waters during the late 1900s have led to major changes to the safety measures taken on passenger ferries. At the global level, the IMO created new regulations and directives, among other things specified by the ISM code and the introduction of mandatory safety training courses and exercises introduced by the STCW 1995. New and clearly defined demands were now made upon the employees.

We have good reason to claim that the IMO was changed from being a reactive organizational culture to an organization with a more pro-active culture [35].

The interviews indicate that the changes in regulations and directives have had a practical impact on safety work.

A question that arises is: What have been the results of this energetic investment in and development of safety work? Have accidents and incidents on passenger ferries decreased? According to Schröder-Hinrichs et al. [30], despite all the technological improvements and safety regulations, accidents have continued to happen. The authors claim that the shipping industry has not learned anything from the accidents that took place from 1912 when the *Titanic* sank through to 2012, when the cruise ship *Costa Concordia* grounded off the Italian coast. The conclusion they draw is that the underlying human and organizational errors are mainly the same. Safety mentality has, they assert, been directed toward things that have gone wrong or could have gone wrong; that is to say, Safety-I situations. One should instead turn to the Safety-II perspective where the goal is to reach an assurance that all is well and functions as it should [30,46]. This sort of perspective leaves room for an understanding of human and organizational factors.

Still, we would like to argue that IMO has developed towards a more pro-active culture. Through continuous work with new regulations and directives, IMO has strengthened the awareness of the importance of safety and training. The interviews with the catering crew give clear expressions of this. However, as Schroeder-Hinrichs et al. point out, the accidents and incidents have continued to occur. This can partly be explained by IMO having had a more technical perspective in the work with rules and directives. The authors indicate in their article the lack of human and organizational aspects, something we would like to underline. These aspects should be incorporated in the continued safety work of passenger ferries.

Through the interviews it became clear that quite a lot of thought goes into safety work onboard. The increased safety work has meant that above all the leaders in the catering crew have been given increased responsibility. The safety organization has changed, sometimes several times, and catering crew's main tasks: mustering, guidance and evacuation, have been streamlined. The relationship between these three functions is today a rational order that has improved safety work. Catering crew is the category of employees with the most contact with the passengers, both under ordinary conditions and in dangerous situations. The increased safety awareness of the catering crew has brought about a somewhat different attitude towards passengers—safety thinking and vigilance are always there.

The frequent drills are generally seen in a positive light, even if they can easily become routine, that might have a reductive effect on learning. More imagination and innovative ideas are requested, which could be achieved through a greater exchange of ideas and cooperation between the marine officers and catering crew. As one of them expressed: "Why can't those of us who work closely with the passengers create different scenarios as a basis for the drills?" The idea was rejected by the responsible safety officer. Even though the officer in charge is often open to suggestions and dialog, the suggestions from the catering staff are often forgotten and rarely acted upon.

It should be noted that the captain and other officers have the ultimate responsibility for safety onboard including responsibility for safety drills. The hierarchical order is thus often an obstacle to implementing the catering crew's proposals for changes in safety work.

The hierarchical organization onboard is somewhat flattened but the power structure remains—the captain has the overriding authority and makes the final decisions. From a safety perspective, the partial flattening of the organization could be problematic. Between the three sectors, deck, engine

and catering staff, there are different degrees of transparency—between catering staff and the two operational sectors there has been an erasure of the boundaries, while the dividing line between deck and engine is distinct. Looking at the organization as a whole, one sees an imbalance between the three sectors, especially since catering staff has work flexibility, which the other two sectors do not have.

To return to our discussion of drills, these are not the same as actual incidents or accidents. Some interviewees pointed out that when there is a real event, one still does not know what will happen or how people will react. As one of them put it: “Certain things can never be practiced...”. He had experienced a fire in which people on board behaved completely differently than he expected they would: “Those that we thought would never manage, became strong and those we really thought would handle it, lost it completely...”.

Human behavior is not always rational. There are variations. Meyer and Rowan [42] assert that rule-following can sometimes result in a ritualized behavior—one acts according to habit and according to what one believes to be expectations, which does not necessarily benefit safety.

Above all, this quotation reflects the existence of human factors that are difficult to predict and probably impossible to prevent through training. The Safety-II perspective [30,46] must be seen as an effective strategy for developing an understanding. Increased knowledge and understanding of human and organizational factors like good leadership, teamwork, the processes of group dynamics, communication at different levels, knowledge of what it means to be human—for example, behavior in a crisis, so-called non-technical skills, must be seen as mandatory in a purposeful effort to improve safety on passenger ferries.

While safety work and safety awareness have been developed and strengthened, the shipping companies have continued to rationalize their operations in order to cut costs. The reduction of personnel in the maritime sector has in recent decades been significant [10]. This involves both merchant and passenger ships. The catering staff has also been affected by this reduction. Reductions have occurred in all job functions. The number of employees in the catering crew varies depending on the shipping companies’ different policies and types of passenger ferries. In addition, the number of employees vary due to the season of the year. During high season in summer, the number increases significantly, but also on various holidays such as Christmas and Easter as well as on week-ends and school holidays. How reduction looks like in specific numbers therefore varies. Based on the interviews the effects of the reduction in employees is evident. Job flexibility has largely been implemented to manage these reductions [37]. A blurring of what was a clear division of labor has also to some extent erased boundaries between the different sectors within the catering crew: kitchen, restaurant, shop and hotel.

The interviews reveal mixed experiences: work variation that is perceived as positive and stimulating, but also negative experiences of fragmentation and isolation. There are expressions of concern that the reduction of staff and job flexibility will have a negative effect on safety.

This concern can be related to Hollnagel [47] and his “ETTO Principle” where he speaks of the relationship between cost and safety. As he notes it is not possible to maximize both efficiency and thoroughness at the same time. Hence, the challenge for the ship owners is to strike a balance between the two. One thing is clear: cutting costs must not be pursued to the detriment of safety.

Based on the study’s analysis and conclusions presented below, we believe that the results have a considerable relevance to both the shipping industry and the society as a whole.

9. Conclusions

- Changes in the safety organization on the passenger ferries have resulted in more involvement of the catering staff in safety on board.
- Safety awareness and the way the catering staff think about safety have improved. The risk of terrorism has further reinforced safety awareness.
- A clear challenge for safety work on ferries is the reduction of catering staff. Even the transition to job flexibility for catering staff may constitute risk factors regarding safety and security.

- The specific hierarchical structure of ferry employees into three sectors with different work organizations and varied transparency between them may constitute a risk to safety onboard.

Acknowledgments: This project is financially supported by the Swedish Research Council for Health, Working Life and Welfare (FORTE). We want to thank all the people in the catering crew who let themselves be interviewed in this project.

Author Contributions: Margareta Ljung has written introduction, aims, literature review and conducted the interview survey, analysis, discussion and conclusions. Furthermore, she has written some parts of the theoretical section. Margareta Oudhuis has written section: The impact of maritime safety thinking and regulations on maritime safety and about theoretical concepts and perspectives. She has also contributed to the discussion section. Together we have written the section on methodology.

Conflicts of Interest: The authors declare no conflict of interest.

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