

Work scheduling and work location control in precarious and ‘permanent’ employment

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Abstract

This article explores the relationship between precarious employment and seafarers’ control over the scheduling and location of their work, and considers the implications of this relationship for their occupational health and safety. Semi-structured interviews were carried out with 20 permanently and 17 precariously employed seafarers. In contrast with those on permanent contracts, seafarers employed by crewing agencies on temporary contracts were deployed at short notice and commenced work on vessels irrespective of whether they had experienced an adequate rest period at home. Such precariously employed seafarers were also deployed across the various sectors of the industry on unfamiliar vessels. Seafarers felt strongly that scheduling and location uncertainties were closely linked with increased risks to their safety and well-being, and it was clear that these areas of uncertainty were frequently experienced in combination, in particular, by those with precarious employment arrangements. The article, therefore, suggests that the widespread disorganisation of the employment relationship increases the occupational health and safety risks faced by those working in an already dangerous industry. It concludes that this lack of commitment by shipping companies to their workforce means that, for many seafarers, protection against these additional risks is effectively at the discretion of the captain on board.

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Keywords

Occupational health and safety, precarious employment, seafarer, temporary work

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Introduction

Precarious employment is multifaceted, but is described by the International Labour Organization (ILO) (2011) as employment,

usually defined by uncertainty as to the duration of employment, multiple possible employers or a disguised or ambiguous employment relationship, a lack of access to social protection and benefits usually associated with employment, low pay, and substantial legal and practical obstacles to joining a trade union and bargaining collectively. (p. 5)

It is also increasingly acknowledged as an important determinant of workers' health, safety and well-being.

Several large-scale systematic reviews have found that precarious employment is associated with poor occupational health and safety (OHS) outcomes (Koranyi et al., 2018; Quinlan and Bohle, 2009; Quinlan et al., 2001). They revealed that such employment is associated with complex and changing forms of work organisation that vary between industries and create specific OHS concerns. Temporary agency workers, for example, are more likely to take risks and be injured on the job than those in secure full-time employment because of a fear of dismissal, lack of knowledge about OHS rights, unfamiliar transient workplaces and assignment to the worst jobs (Underhill and Quinlan, 2011). In a similar vein, Lewchuk (2017) found precarious workers were more likely than permanently employed workers to report their health to be less than very good.

The Pressure, Disorganisation and Regulatory-failure model, which groups factors into three broad categories of interconnected risks, seeks to explain poorer OHS outcomes among precarious workers (Quinlan and Bohle, 2004). The model suggests that economic and reward pressures (such as, income uncertainty, working while injured and work intensification), disorganisation of work (in terms of factors relating to the lack of commitment to a stable workforce, such as poor induction and training, and ineffective procedures and communication) and regulatory failure (e.g. difficulty in providing regulatory oversight and enforcing laws for workers in isolated workplaces), may explain the relationship between adverse OHS outcomes and precarious employment (Quinlan and Bohle, 2009; Quinlan et al., 2001, 2015).

Lewchuk et al. (2003) noted that workers in precarious employment may face risks that are not specific to a single workplace, and developed the employment strain model, which identifies seven forms of work uncertainty, related to employment (control over access to work), earnings (control over future earnings), household precarious-ness (control/demand providing basic needs), task (control over use of skills and job assignment), workload (demand required to manage employment uncertainty), work location (control over work location) and scheduling (control over work schedule and hours). Research has extended these areas to consider the OHS impact of work location uncertainty and employment-related geographical mobility – whereby workers are employed in multiple or transient worksites (Fitzpatrick and Neis, 2015; Newhook et al., 2011). In their study of homecare workers, Fitzpatrick and Neis (2015) revealed that workers fell through cracks in both government and company OHS policies and procedures, and that this substantially increased their exposure to injury risk. Similarly, Golden (2015) examined the consequences of irregular work and found that scheduling uncertainty contributed to

a range of issues including difficulties in navigating domestic responsibilities such as care-giving, income instability and worsening work–family conflict.

Taking these findings as its basis, this article considers how precarious employment effects OHS risks through impacts on the control seafarers have over both work scheduling and work location. In doing so, the article explores the experiences of workers in an industry in which precarious employment is the norm, and in which fatalities, workplace injuries and suicide ideation are over-represented.

The international shipping industry

An estimated 1,647,500 people work at sea (Baltic and International Maritime Council (BIMCO), 2015), and within the industry, precarious employment is widespread. In a recent questionnaire survey, 75% of respondents reported being employed on single voyage contracts (Ellis et al., 2012). Such contracts cover one tour of duty, following which, seafarers may ‘remain on the books’ of the employment agency but have no guarantees about when or what kind of work they might get next. While individual shipping companies differ in their use of temporary workers, Bloor and Sampson (2009: 713) state, ‘typically only senior officers will be employed on permanent contracts if permanent contracts are in place at all: junior officers (frequently) and crew (almost invariably) will be employed on short-term contracts’. Thus, temporary workers tend to be used to supplement the permanently employed senior officers and consequently there are likely to be both permanent and temporary workers on board a ship.

Employment as a seafarer is dangerous. Between 2003 and 2012, seafarers’ relative risk of mortality due to occupational accidents was 21 times greater than that for all other workers in Great Britain (Roberts et al., 2014). The risk of occupational injury is also high but, as there is no industry-wide standardised reporting system, it is impossible to accurately quantify (Hetherington et al., 2006). In one study, however, seafarers on board Danish merchant ships were found to have a far higher rate of occupational injuries than shore-based workers (Hansen et al., 2002). Nevertheless, it is clear that injuries experienced at sea are vastly under-reported (Bhattacharya, 2012), so recorded safety data generally represents just be the tip of the iceberg.

Research regarding both the physical health and well-being of seafarers is similarly scarce. However, in a recent study, seafarers were found to have higher rates of depression than other working populations as well as relatively high rates of suicide ideation (Lefkowitz and Slade, 2019).

The occupational health, safety and well-being of those who work at sea, therefore, is of concern. However, to date, there has been relatively little consideration of how the widespread use of precarious employment methods in the industry impacts workers’ OHS experiences.

Method

The research was conducted in accordance with the ethical standards required by Cardiff University. In-depth semi-structured interviews were conducted with 37 seafarers on board four vessels while they were berthed in four ports in the United Kingdom between

Table 1. Occupational position of participants.

	Permanently employed	Precariously employed	Total
Senior Officer	8	2	10
Junior Officer	8	3	11
Cadet	0	3	3
Rating	4	9	13
Total	20	17	37

October 2014 and January 2015. Semi-structured interviews were utilised as this allowed a degree of structure for comparability while also allowing participants to answer on their own terms. The interviews covered seafarers' experiences of the arrangements made to manage the risks to their health and safety and OHS outcomes.

The four ships were one offshore vessel and three chemical/product tankers. The flag state under which each of the ships was registered varied. However, the classification of the four flag states was either white or grey.¹ This suggests that all four of the vessels visited were from the 'better end' of the international shipping industry.

Permission to board each of the ships while they were berthed was granted by their Captains, who were each contacted prior to their ship arriving in the United Kingdom. The researcher boarded each vessel immediately after arrival and conducted the interviews in a private room on board before leaving each vessel once final preparations for departure had commenced.

The number of seafarers on board each vessel varied between 10 and 23. The nationalities of those interviewed were British, Polish, Romanian, Norwegian, Russian, Swedish, Dutch and Filipino. The participants ranged in age from 20 to 62 and the average age was 39. Thirty-six of the participants were male and one was female.² Each of the ships contained a mixture of both permanently and precariously employed workers. Twenty of the participants were classified by the author as permanently employed and 17 experienced some form of precarious employment (3 of the latter were trainee officers/Cadets and therefore temporarily employed for the duration of their training). Workers were classified as permanent employees if they had work contracts of unlimited duration and were paid a monthly salary both on board and while at home. The participants included both officers and ratings (Table 1). Ratings are defined as seafarers who are employed in roles which require lower levels of professional seafaring qualifications (Glen, 2008).

Throughout the fieldwork, while many of the permanently employed individuals talked openly, the responses of seafarers employed on single voyage contracts were guarded.

When you interview them [ratings] they will say yes of course, they will be shit scared. (Senior Officer – permanent employee, ship 4)

Similarly, another senior officer suggested that while he felt the ratings were being exploited by the shipping company, he thought it unlikely they would be willing to participate in this study:

I think some of the boys do get a bit shanghaied, the crew all the time they are doing longer trips. If you can get any of them to speak to you, you'll find out, but they're all miserable as fuck because of it. (Senior Officer – permanent employee, ship 2)

In fact, several ratings did participate. However, in keeping with previous research (see, for example, Sampson, 2013) where there was reluctance, this seemed to be due to hesitancy to express any opinions which might jeopardise the chances of securing future work (despite our assurances of confidentiality).

Each of the four ships used English as the working language on board and all the interviews were conducted in English. The interviews were digitally recorded and subsequently transcribed verbatim. The transcripts were coded, and by grouping codes with common attributes, several important themes emerged. They included variations in work location control afforded to different seafarers and shore-management imposed work schedules. In the next section, these two main themes are explored in turn in an effort to highlight the mechanisms of the link between the organisation of employment and seafarers' OHS experiences.

Work scheduling

Uncertainty over dates and durations of tours of duty

Work as a seafarer necessitates prolonged periods of time away from home, regardless of employment type. In our study, participants' tours of duty ranged from 6, weeks to 6, months. Several factors influenced this variation, including the nationality of the seafarer and whether they were employed directly by a shipping company or indirectly via a crewing agency. Specifically, directly employed European seafarers worked shorter tours of duty. This is in keeping with Oldenburg et al. (2009), who found the average tour of duty for non-European seafarers was between 6 and 9, months while that for European seafarers was 3 to 6, months. Tour of duty duration was also associated with position on board, with seafarers higher in the occupational hierarchy working shorter tours.

Irrespective of tour length, those interviewed described multiple forms of work scheduling uncertainty. For example, seafarers were often asked to join a vessel at very short notice. How they reacted to such requests varied with their employment status. One permanently employed rating stated,

They [crewing department of shipping company] tried 12 hours once and I said no way. (Rating – permanent employee, ship 2)

In contrast, precariously employed seafarers reported accepting deployment at very short notice:

I got 4 days notice which was good. Last time I got 24 hours but this time I got 4 days. (Cadet – temporary employee, ship 2)

Furthermore, some seafarers returned to sea without an adequate rest and restoration period at home when requested to do so:

I heard originally, I was supposed to be joining December 1st and then they said ‘oh we want you to join earlier’. I mean I’ve only been home for 1 month after sailing for 7 months. (Junior Officer – permanent employee, ship 2)

While this officer was permanently employed, he had only recently secured this employment and agreed to join the vessel earlier than expected as it was his first tour of duty with the shipping company. The experience of returning to a vessel earlier than expected is not uncommon in the industry, with over half of respondents to a recent survey reporting having been asked ‘to return early from home leave to join a ship’ (BIMCO, 2015: 30).

Precarious employment was also behind some seafarers employed on single voyage contracts requesting extensions to their time on board the vessel beyond the end of their contract:

Some people don’t want to go home, they come when they have 4 months left of the contract they come and they say ‘extension’. They want to extend 1 to 2 months or something. (Senior Officer – permanent employee, ship 4)

Sampson (2013) points out that ‘for many seafarers the ship is not regarded as a home or a community but is merely an institutional work-space where they have to survive until the end of each contract’. Given their long working hours and the harsh environment, many seafarers who request extensions are doing so in response to necessity. Extending their work on board and therefore securing future earnings is perceived as preferable to returning home and facing insecurity over obtaining a future tour of duty.

Shipping companies increasingly source crew from countries where labour costs are relatively low. However, the wage seafarers can earn on board is significantly higher than can be earned ashore in many new labour supply countries. For example, in the Philippines, the lowest ranking seafarer earns nearly nine times more than a minimum wage worker ashore (Galam, 2018). Given that in many such countries, there is a surplus of seafarers seeking employment, it is not surprising that many accept any employment at sea that is offered. Equally, it is hardly surprising that shipping companies seek to organise employment in the international seafaring labour market in this flexible manner.

These findings suggest a clear link between seafarers’ employment type and their level of control over their work scheduling. Work scheduling uncertainty, and the strong pressures at play in the balance of power determining its extent, have consequences for seafarers’ safety, health and well-being in a number of ways. This was also apparent from our data, as we describe below.

OHS impact of work scheduling uncertainty

Many seafarers experience a mismatch between actual and expected tour of duty durations because of mandatory tour extensions. These are possible as contracts often incorporate a ‘plus or minus clause’. This enables shipping companies to decrease or increase the duration of a tour by a specified amount without notice and, in many instances, without such change appearing in their records. The amount is generally dependent on the initial duration of the tour of duty: for example, a plus or minus clause of 1, month is considered the norm for a 3-month tour. Leong (2012) suggests that shipping companies

make requests to increase the duration of a seafarer's tour of duty to overcome labour shortages. However, there are numerous other reasons why seafarers may remain on board for longer than anticipated: a lengthy ocean passage may mean the next port call is several weeks sail away and seafarers may be unable to leave a vessel in certain countries due to visa requirements. But the policies of some shipping companies – such as a marked reluctance for seafarers to depart the vessel in more expensive countries – are also likely a determining factor.

Mandatory tour extensions were experienced by both permanently and precariously employed seafarers in our study and were widely seen as a cause of adverse outcomes in terms of well-being:

I think getting relieved on time is very, very, important, I think it's probably the top thing. That's what really cheeses people off when they're not being relieved on time and you're in the vicinity, say in the Med or round Europe you know where they've got the time and the chance to do it, it's still really, really, poor. (Rating – permanent employee ship 2)

And in terms of safety,

I got the situation on the helideck with my bag on the back and my reliever haven't been in there, in the chopper so I had to come back and spent 5 days longer on the vessel, to wait for my reliever and I couldn't focus on the job, what I'm doing you know. I was thinking only about to go to home, I don't care about the job, I didn't care about my watch. Okay only my body been on the watch but I say I didn't think clearly, of course you are trying to do it safely but this is quite dangerous. (Senior Officer – permanent employee, ship 1)

As the quote above makes clear, seafarers often received very little notice regarding mandatory tour extensions, again indicating disorganisation by those who control the seafaring labour force. Such experiences were widely referred to by our interviewees as the 'postponing of Christmas', making very clear the excitement felt as they approached the end of their tour and the huge disappointment of discovering they were to remain on board for longer.

For the most part, the seafarers considered their employment to simply be an exchange of labour for money – with many perceiving the shipping companies as using them in an efficient and cost-effective manner, regardless of any impact on their health, safety and well-being:

They [the shipping company] don't care, they need only the head to cover the position, that's all, it not depends if I'm here and I work for almost one and a half years in here or someone new will come and cover the position, they don't care. (Senior Officer – permanent employee, ship 1)

This perception was exacerbated by the commonplace experience of mandatory tour extensions:

I never heard about a rating coming home on time. (Senior Officer – permanent employee, ship 4)

There are no data on the rate of mandatory tour extensions in the international shipping industry. However, in one survey, over 80% of respondents reported that they had

previously been asked to extend their tour of duty (BIMCO, 2015). Such scheduling uncertainty means that seafarers are also unable to effectively pace their work effort – something that is known to offset the impact of fatigue (Duchon et al., 1997). This is likely to be particularly problematic when, as indicated above, seafarers often also return to sea without adequate rest and restoration at home – which, like tour extensions, is some data shipping companies do not routinely record and so cannot measure or monitor.

Within the international shipping industry, the adverse effect of fatigue on safety is well-known. The Maritime and Coastguard Agency (MCA) (2013) estimated that fatigue was a significant contributory factor in one-third of accidents at sea. But fatigue also adversely impacts well-being, with sleep of adequate duration and quality central to positive well-being among seafarers (Carotenuto et al., 2012).

The findings of this study also indicate that many of the permanently employed seafarers were very concerned about their colleagues who were employed on single voyage contracts – in particular, the impact of issues which they considered to be the consequences, both direct and indirect, of precarious employment arrangements. They indicated that many of the ratings from less economically developed countries worked excessively long tours of duty and so were at significant risk of fatigue. In fact, some senior officers in this safety-critical industry were so concerned that, independent of their employer, they had taken action to safeguard *all* those who worked on board, as well as the ship itself and its cargo. For example, the senior officers on board one of the ships in the study refused all requests for tour of duty extensions for this reason.

Work location

OHS risks resulting from a lack of workplace-specific familiarity

Studies have suggested that seafarers move companies to seek promotion opportunities (Barnett et al., 2006), more favourable remuneration packages (Mitroussi and Notteboom, 2015) or improved working conditions (Fei and Lu, 2015). Such arguments are simplistic and imply that seafarers are able to control which shipping companies they choose to provide their services to. For many, particularly those who are precariously employed and from new labour supply countries, such control simply does not exist. One Filipino rating, who was employed on single voyage contracts, explained how a crewing agency had deployed him to vessels from various sectors of the international shipping industry:

My first vessel is LPG it was a Norwegian company and then after that I think 3 times contract in the LPG that was 9 months [contracts] and after that I transfer but this is the same manning in Manila but different owner it was in Italy but same LPG and then I have 3 times contract there as 9 months and then I try to work in oil chemical tanker it was in Norwegian flag but the owner is Swedish and then I don't know I have been many times there I don't remember how long I was working there and then after that the manning in Manila they planned to transfer here. (Rating – temporary employee, ship 3)

The interview data suggest that seafarers were readily employed across the various sectors of the industry – something which is possible because seafarers' professional qualifications are globally standardised and do not pose any restrictions in terms of ship type.

In practice, however, there are very substantial differences between sectors; their associated ship types; and hence seafarers' work requirements, routines and so on. Leong (2012) argues that this offers functional flexibility as seafarers are able to transfer their services across different sectors of the industry. However, such functional flexibility has resulted in seafarers being readily deployed to ships, and even types of ships, of which they have no prior experience.

This was something many of our interviewees had experienced. Furthermore, while permanently employed seafarers – and some who obtained repeat single voyage contracts – sailed with the same shipping company, subsequent deployments to unfamiliar ships were still highly likely:

This is first time on this vessel I was, my first vessel in this company was ship A and then after that only one contract in ship A and then transfer in ship B so I was then three times in ship B and then after that ship C. Ship C I been there 3 times also and then after Ship C I was in Ship D, one time and then after ship D, ship E and then now here [ship F]. (Rating – temporary employee, ship 3)

These findings are by no means exclusive to this study. Walters and Bailey (2013) revealed that while a handful of fortunate seafarers may be deployed with the same shipping company on board the same ship for a number of years, it was more likely that for each tour of duty, a seafarer would be deployed to a different ship or even with an unfamiliar shipping company. Consequently, many seafarers – both permanently and precariously employed – lack workplace-specific familiarity. One Cadet explained why he felt this was an issue:

You don't know things like even though I've done other ships before, coming here was a big shock I mean everything is completely different, starting on a completely new ship and I think that's the same even going between the same class of ships, so 2 ships that are exactly the same and you'll go to another ship and things will be done completely differently, things will be in different places. (Cadet – temporary employee, ship 2)

Research from shore-based industries (Breslin and Smith, 2006) has shown that workplace-specific inexperience contributes to injury risk. Agency workers, for example, are particularly vulnerable to injury at an early stage in their placements when the effects of unfamiliarity are strongest (Underhill, 2007). It is therefore unsurprising that in their study regarding seafarers' personal injuries, Hansen et al. (2002) found that injury risk decreased for seafarers who returned to the same ship for subsequent tours of duty.

Legislation requires that all seafarers undertake familiarisation training upon joining an unfamiliar vessel, and shipping company policies incorporate this requirement. The International Safety Management (ISM) Code, section 6.3 states,

The Company should establish procedures to ensure that new personnel and personnel transferred to new assignments related to safety and protection of the environment are given proper familiarisation with their duties. Instructions which are essential to be provided prior to sailing should be identified, documented and given. (International Maritime Organisation (IMO), 1993)

The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 78), Part A, Chapter I, Section A-I/14 also states,

The company shall provide written instructions to the master of each ship to which the Convention applies, setting forth the policies and the procedures to be followed to ensure that all seafarers who are newly employed on board the ship are given a reasonable opportunity to become familiar with the shipboard equipment, operating procedures and other arrangements needed for the proper performance of their duties, before being assigned to those duties. (IMO, 1978)

The interview data, however, revealed that familiarisation training was not always undertaken:

I haven't even done any bridge equipment familiarisation yet. I mean cos tomorrow morning I'm going to get a pilotage on the way out, you know I might have to set up the bridge and of course I can't do the AIS or any of that shit yet because I haven't even been shown it, different radar systems, different ECDIS systems. (Junior Officer – permanent employee, ship 2)

For the most part, lack of familiarisation training seemed to be a consequence of the insufficient duration of the handover between the new-joining seafarer and the seafarer departing the vessel as, more often than not, the latter was responsible for conducting the familiarisation training during the handover period. A Senior Officer explained,

If you go to Pembroke you arrive at the ship 3 o'clock in the afternoon and then you have your reliever standing there and he wants to go [home]. (Senior Officer, ship 4)

These findings echo those of Vidan et al. (2015) which revealed that 58% of respondents in a questionnaire study reported a handover duration of 6, hours or less. Moreover, the safe-manning requirements do not require any redundancy of personnel and consequently handovers are conducted alongside seafarers' work, normally while the vessel is in port – a period known to be particularly work-intensive. As a result, finding time for appropriate familiarisation training is an unrealistic prospect for many seafarers.

OHS risks resulting from unstable work teams

In addition to unfamiliarity with the equipment, the deployment of seafarers to unfamiliar vessels impacts on their familiarity with their colleagues and the stability of work teams on board. In shore-based industries, unstable work teams have been seen to adversely impact on workers' well-being (Sparks et al., 2001), while multi-employer worksites have been recognised as being prone to communication breakdown and disorganisation in relation to safety (Nygren et al., 2017). Moreover, in a recent questionnaire study, the use of stable crews was seen to positively impact on seafarers' well-being (Andrei et al., 2018). Similar findings emerged from our data:

This ship have [*sic*] a lot of changing [crew] the last year, lot of changing people every time. I believe that's not a good thing [for the] company, much better to keep people who will stay for

a long, long, time so you can work as a team. You know them, you don't need to start from scratch again. (Rating – permanent employee, ship 1)

The interview data also revealed that stable crews were perceived to positively impact on safety on board:

Well this ship as you're aware has a regular crew so it works pretty well, I would say because people come back to the same ship . . . from that point of view this ship has an advantage over other ships which is reflected in the fact that we haven't had a lost time accident in over 10 years. That's not an accident if you like that that's happened it's because of experienced people. (Captain – permanent employee, ship 2)

Lewchuk et al. (2003) suggested that the number of different groups of co-employees and supervisors a worker experienced was a function of task uncertainty – another of the seven components of employment strain. It is perhaps unsurprising, therefore, that the seafarers in our study reported their well-being to be especially poor at times when they were experiencing both work location and task uncertainty – something that was much more common among those who were precariously employed, and so therefore particularly among seafarers of lower rank and those from outside Europe:

The first week I don't know my way around, I don't know the people, I'm jet lagged, I'm tired, I hate it, I want to go home, I want to cry, it's just the worst experience ever. (Cadet – temporary employee, ship 2)

This is of even greater concern as our findings indicate that OHS management arrangements do not currently collect the data to allow measurement of these issues, and neither do they or the regulatory system adequately protect seafarers from such risks. Rather, the protection of the most vulnerable seafarers in our study was effectively at the discretion of the individual captain on board.

Discussion and conclusions

The results of this study add to the recently developing body of literature (e.g. Walters and Bailey, 2013) indicating that work and its effects on health, safety and well-being vary with seafarers' employment arrangements.

The findings link increased risk to safety and well-being with employment arranged through labour hire agencies. Furthermore, they indicate that this increase in risk stems from the substantial work scheduling and location uncertainty that seafarers experience because of the disorganisation of the employment relationship – reflecting the all-pervading lack of commitment by shipping companies to a stable workforce apparent across the industry today. As Quinlan and Bohle (2004) suggest, this can be understood in terms of pressure, disorganisation and regulatory failure.

Economic pressure led to some seafarers, in particular those employed through crewing agencies and on single voyage contracts, accepting deployments at very short notice and/or requesting extensions to their tour of duty. These seafarers had genuine concerns about becoming underemployed, unemployed or even blacklisted if they did not accept

employment on the terms offered to them. Of course, in an industry where crewing costs are estimated to account for 60% of operating expenditure (Griener, 2017), there is pressure on shipping companies to keep crewing costs down and this in turn results in pressure on crewing agencies to meet ship owners' price and labour supply demands. Thus, a cost-efficiency logic has been used in the organisation of seafarers' employment and this has implications for the OHS experiences of those who work at sea. In accepting such employment arrangements, seafarers sometimes joined a vessel irrespective of the duration of the rest and restoration period they had experienced. For example, one junior officer interviewed had spent at least 10, months, out of the preceding 12, months, at sea. This is by no means exclusive to the seafarers who took part in this study, as Walters and Bailey (2013: 95) indicate: 'due to pressure from crewing agencies, after completing a nine-month contract, it is not uncommon for seafarers to return to work after just a month of leave'. Inadequate rest and restoration periods at home contribute to fatigue – a particular concern given the strong association between fatigue and accidents at sea (MCA, 2013). Short periods at home also add to the social isolation many seafarers experience, with separation from their partner and family identified as a significant cause of stress (Thomas et al., 2003). Our data indicate that such short periods at home were often followed, with very little notice, by prolonged periods of time at sea – something which has no real parallel within other occupations. Workers on offshore oil and gas installations generally experience fixed rotations with pre-determined deployment dates (Parkes, 2007) and military personnel tend to receive substantial pre-deployment notification (Fitzsimons and Krause-Parello, 2009).

Disorganisation was apparent in the deployment of seafarers to unfamiliar work locations. Lack of workplace-specific familiarity and inexperience in a particular workplace have been seen to contribute to injury risk in shore-based workplaces (see, for example, Breslin and Smith, 2006). The issues surrounding seafarers' safety in relation to a lack of ship-specific familiarity are well-known, and indeed legislation aimed at reducing its associated risks is contained in both STCW and the ISM Code detailing the on-board familiarisation training new-joining seafarers must undertake. The findings from this study, however, indicate that as a result of the insufficient duration of handover periods and the intensive workloads of seafarers while in port, such familiarisation training is often not carried out. Clearly, given the isolation of seafarers' workplaces, monitoring and enforcement of such requirements are difficult and, for the most part, reliant on self-reporting and self-monitoring within the powerful hierarchies that define work on board all vessels. There is plenty of evidence from the sector to suggest that records of such monitoring, for example, in relation to working hours (Allen et al., 2006; Paris Memorandum of Understanding (MoU), 2014), often fail to accurately reflect reality because seafarers feel under pressure to present a compliant picture to shipping companies even when workloads prevent them from taking their required rest hours. It is very likely that records of familiarisation training suffer the same failings.

A further example of regulatory failure is the absence of any legislative requirement in relation to crewing strategies. While there are regulations on crew numbers, there are currently no requirements for crewing stability. However, our data, and that of other researchers (Andrei et al., 2018; Hansen et al., 2002), clearly show that there are substantial OHS implications to the current crewing strategies in the international

shipping industry, where unstable crews are the norm. Similarly, our evidence suggests that shipping companies' data are unlikely to be sufficient to allow them to assess and prevent the OHS risks associated with, for example, early recall from leave, extensions to tours of duty and failure to carry out familiarisation training; that is, data may be inaccurate (in the case of the latter) or not recorded at all (for the two former scenarios). This, of course, mirrors research from other industries which indicates that employment-related mobility can increase workers' vulnerabilities as it is often overlooked by both protective regulation and OHS management systems and arrangements (Fitzpatrick and Neis, 2015).

In this study, the experiences of precariously employed seafarers tended to be cumulative, with seafarers employed in this way generally experiencing both scheduling and location uncertainties in several forms. This suggests that the use of temporary employment contracts has substantial OHS implications for seafarers in the international shipping industry and beyond, in the many other industries in which individuals are precariously employed. Workers on temporary employment contracts have little (if any) control over their work schedule and locations, and are often without the protection of the arrangements for worker representation and participation in OHS that are widely accepted as being effective (see, for example, European Agency for Safety and Health at Work (EU-OSHA), 2017; Walters and Nichols, 2007).

This study was not without limitations. First, the ships we were able to access were from the 'better end' of the industry, and consequently, it is likely that the findings have not captured additional issues faced by seafarers employed at the poorer end of the industry. Second, interviews were conducted in the workplace and, despite assurances, some individuals were reluctant to speak openly about certain issues relating to the organisation of their work and employment. This clearly reflects both the hierarchical nature of seafaring and, of particular concern, the pressures seafarers, especially those in precarious employment, felt under to present a compliant and contented front. Despite this, however, their widespread discontent and fear of employment and so economic consequences if they spoke out were well-known among crew members with more favourable employment conditions. Third, our study was limited to four ships, though our findings are in line with those of other researchers (such as Walters and Bailey, 2013).

The study has, nevertheless, identified significant OHS concerns as a result of the ways in which seafarers are employed and, their work organised and scheduled. It has shown how the use of labour hire agencies undermines OHS because it reduces seafarers' control over their work scheduling and work location and consequently exposes them, with alarming regularity, to the well-recognised increased risks associated with fatigue, stress and lack of familiarity with workplaces, arrangements and teams. Given that our data are drawn from the 'better end' of the industry, these problems are likely magnified in the rest of the sector. As well as the adverse impact on workers' health and safety, critics of precarious employment have argued that such employment methods are characterised by few (if any) employee benefits, low wages and substantially limited opportunities for occupational advancement (Connell and Burgess, 2006; Erickcek et al., 2003). All of this is of particular concern while seafarers, and others in sectors with a similar imbalance of power between labour and capital, continue to have little choice but to accept such employment and work practices.

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Notes

1. White flags are classified as quality flags, grey flags are classified as between quality and medium risk, and black flags are classified as between medium risk and high risk. For further details, see Paris Memorandum of Understanding (2017).
2. Female seafarers are estimated to account for 2% of the global seafaring labour force (International Transport Workers' Federation (ITF), 2019).

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