

MARITIME INSIGHT

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Focus on seafarer wellbeing during Covid-19 pandemic

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The world is in lockdown during this unprecedented global health crisis. A total of 181 countries have reported incidents of COVID-19 infection and are at war with this unseen enemy, the coronavirus. Governments' only weapon is to restrict the movement of its citizens within their country's borders and to deny entry to the foreign visitors they would normally welcome. The disruption to lives and livelihoods is incalculable. We are consumed with media reports of the numbers of fatalities around the globe and are urged, commanded, to shield the vulnerable, to protect our key workers and stay at home. However, there is one group of people the world's media attention has overlooked; a group of people on whom we all depend without even knowing it; a group of people who help our interconnected, interdependent world to function; a group of people who are caught up in the crossfire of this war on Covid-19. These people are the seafarers of the world; the men and women who operate the ships that carry our food, our medicines, our energy, our raw materials that we need to see us through this pandemic. Through this piece, we want to focus our attention on the plight of seafarers and their well-being in these most difficult of times.

Sea Traffic

The majority of world trade is facilitated by shipping with 95% of all products and raw materials carried in the hold of a ship. In the current crisis, airplanes are grounded, roads are empty, yet shipping continues to operate out of sight and in many respects, out of

mind. A screenshot (Figure 1) from Marine Traffic's ship tracking website (MarineTraffic.com; 2 April, 2020) shows the number of ships currently at sea. Our towns and cities may be quiet, but our sea lanes are not. Each of these ships will be crewed with seafarers, some of whom may have already been on board their vessels for many months before news of the coronavirus outbreak started to surface.

Seafarers Work and Employment

Seafarers' work and employment is governed by international conventions and laws of the sea. These laws and conventions restrict the length of time that seafarers can spend on board, the number of hours they can work in a 24-hour period and the amount of rest they can expect to receive over a working week.

Two significant instruments that govern seafarers' working conditions have recently been revised or ratified by the international shipping community; namely, the International Labor Organisation's (ILO) Maritime Labour Convention (MLC, 2006) and the International Maritime Organisation's International Convention on the Standards of Training and Certification for Watchkeepers (STCW, 2010 Manila Amendments).

These are not the only instruments that affect the quantity of work that ship operators can demand of their seafarers or the quality of rest they must afford them. Other instruments can have an indirect influence on working conditions and include the Principles of Safe Manning in Annex 6 of the International Convention for Safety of Life at Sea (SOLAS), which determines the number of people that must be on board to safely operate the ship; and, the Convention on Facilitation of International Maritime Traffic (FAL Convention), which contains directions to national administrations to permit shore leave to seafarers regardless of their background.

The next section explains the mandatory terms and conditions of employment contained within these instruments that serve to govern operations in normal circumstances. Subsequent sections will explain how the COVID-19 pandemic is affecting both operators and seafarers in this regard and the



Figure 1. Ships at Sea on April 2, 2020 (Source: MarineTraffic.com)

likely social and psychological consequences of the virus outbreak through its impact on seafarer mental health directly and indirectly through increasing on board service, reducing access to shore leave, increasing hours of work and reducing hours of rest.

Seafarers' Employment Agreements (SEA)

In 2013, the Maritime Labour Convention (2006) came into force and introduced an important protection for seafarers. It requires employers to draw up legally enforceable employment agreements with each seafarer, outlining the capacity in which they are to work; detailing the duration of their contract or if indefinite, the notice period; explaining their health and social security benefits; setting a limit to their contract lengths; detailing the specifics of their repatriation, such as destination and mode of transport; specifying the amount of compensation in the event of loss of their property; and, informing the seafarer about details of any collective bargaining agreement in place. Seafarers who are employees of the ship owner or manager can also expect their Seafarers' Employment Agreement to contain information about how their wages are arrived at and how they will be paid, the number of hours they will be expected to work, the paid leave they can expect as well as any pension benefits and grievance procedures. For those seafarers who are not employees, the SEA needs to outline the amount they will be remunerated as well as the manner and the dates on which they will be paid.

Contract Duration

The maximum duration of service on board a seafarer can be expected to provide before he or she is entitled to repatriation is now less than 12 months. However, in practice, there is considerable variation in the duration of seafarers' on board service reflecting the variety of contract types in force. Contract types range from those given to permanent salaried employees who are paid when ashore on leave as well as when on board, through indefinite contracts given to employees who are not paid when they are on leave, to a whole array of temporary contracts where the seafarer may be signed on with an agency and only paid for a single voyage with no obligation on the part of the ship owner / operator to re-employ them at some future date.

The duration of on board service and the ratio of work to leave can also vary from a number of weeks, such as 12 weeks on: 12 weeks off, to several months, with on board service lasting for up to 9 months including an implied holiday entitlement of 3 months included in the monthly payments made to the seafarers. The more secure forms of employment and shorter service durations are generally associated with the higher ranking positions on board, such as the master or chief engineer. The insecure and longer employment contracts are more often offered to those with fewer qualifications such as the deck, engine and mess crews. Nationality can also play a large part in determining the terms and conditions of employment, with northern Europeans

and North Americans commanding more open-ended forms of employment and seafarers from the Indian sub-continent and Asia subject to far more contingent and insecure contracts. In situations of multi-national crewing, individuals who fulfil the same position on board can be on very different contracts by virtue of their nationality.

In practice, some flexibility is often written into the contracts to help ship operators manage crew changes when relief officers and crew are unavailable due to leave, sickness absences or staff turnover. Seafarers may be asked to agree to be called back early or to stay on board for longer than their SEA stipulates if the company is having difficulty finding a suitably qualified relief with many contracts having an automatic one-month service extension written in to cover these eventualities.

Hours of Work and Rest

The Seafarers Employment Agreement sets the absolute limit of time seafarers can spend on board, but it is other provisions in the MLC and STCW that determine the hours of work and rest that need to be adhered to when the seafarer is working.

Internationally trading ships that operate 24 hours a day, 7 days a week need to distribute the work and work hours amongst the workforce on board in order to maintain a continuous operation. They are obliged under international law to ensure that their staffing levels also ensure a safe operation.

Typically, the work schedule is organised into watch patterns or duty rosters with different departments and different designations of individuals following different work schedules according to the demands of their role. The safe manning certificate will determine the minimum number of people of various occupations and ranks that need to be on board and consequently will set the lower limit for the number of people amongst whom the work hours can be shared. The MLC and STCW set the upper limit of the number of hours that any one watchkeeper or rostered individual can work and the minimum numbers of hours of rest they are entitled to in an 7-day period. These limits are designed, in principle, to minimise fatigue and to maintain a safe ship operation and are based on the standard of an eight-hour day with one rest day per week and rest days on public holidays.

Currently these limits are as follows:

The limits on hours of work or rest shall be as follows:

- a. maximum hours of work shall not exceed:
 - ii. 14 hours in any 24-hour period; and
 - iii. 72 hours in any 7-day period; or
- b. minimum hours of rest shall not be less than:
 - i. 10 hours in any 24-hour period; and
 - ii. 77 hours in any 7-day period.

Hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours in length, and the interval between consecutive periods of rest shall not exceed 14 hours.

Parties may allow exceptions from the required hours of rest provided that the rest period is not less than 70 hours in any 7 day period and on certain conditions, namely:-

- Such exceptional arrangements shall not be extended for more than two consecutive weeks. The intervals between two periods of exceptions shall not be less than twice the duration of the exception;
- The hours of rest may be divided into no more than three periods, one of which shall be at least 6 hours and none of the other two periods shall be less than one hour in length;
- The intervals between consecutive periods of rest shall not exceed 14 hours; and
- Exceptions shall not extend beyond two 24-hour periods in any 7-day period.

Summary

Taking together the provisions of the MLC and STCW, the maximum time a seafarer can serve on board is 12 months, minus any leave entitlement. The maximum total number of hours they can work in a given week is 91 (the result when the minimum 77 hours of rest is subtracted from the total number of hours in 7 days). Not all seafarers will work on board for this amount of time and at this level of intensity, but research suggests that a working week in excess of 60 hours is not uncommon (Zhao et al., 2016).

Work and Health

For most people that work in shore-side occupations, the idea that they could be asked to work 7 days a week for up to 12 months of the year would be completely abhorrent. However, for a large proportion of seafarers, this is the reality of their working lives.

In this section, we want to examine what science tells us about the way work impacts our physical and psychological health and explore how seafarers' 'ordinary' work and employment conditions might affect their wellbeing. In subsequent sections, we will turn the focus of our attention on the impact that the pandemic is having on seafarers' working lives and the likely consequences that might ensue.

Seafarer Occupational Mortality

In order to understand the impact that any changes to seafarers' work and conditions of employment, we first have to understand which factors are important in considering the relationship between work and health. Studies in the area of occupational medicine lead us to understand that seafaring is a high-risk occupation with annual seafarer deaths at work from accidents or ill-health numbering anything between six (Borch et al., 2012) and twenty-six times (Roberts & Roberts, 2005) that of shore-side occupations, although the number of fatalities recorded in some national databases have declined in recent years (Roberts et al., 2012).

Epidemiological studies that examine premature deaths associated with ill-health and disease among working people again reveal that male seafarers have some of the highest mortality rates due to alcohol, drugs and sexual habits (Coggon et al., 2010). Seafarers are also reportedly more obese than shore-side workers (Hoeyer & Hansen, 2005) and tragically, greater numbers take their

own lives than many people working in other occupations do (Iversen, 2012).

Exact figures are difficult to come by, but the general picture is that seafarers' work, under normal circumstances, can have significant deleterious consequences for an individual's longevity, health and well-being.

In order to understand why seafarers' working conditions can have these negative effects, we need to consider how the human body and mind respond to physical and mental exertion associated with work. We also need to understand how recovery occurs and define the limits beyond or below which injury, ill-health or poor psychological well-being are the likely result.

Work Demands

It was in World War I that we learnt from studies of workers in munitions factories that the relationship between the length of time that people work and the amount they produce is *not* linear – people are simply not able to produce more the more they work (Mcivor, 1987). Exhaustion, fatigue and poor health are the likely outcomes of overworking employees. Industrial fatigue as it came to be known was prevalent in Victorian workplaces in industrialising Britain and recognition grew that 'the human element' suffered from physiological and psychological limitations to the amount of work it could endure without adequate rest.

The principal finding from that era was that increased work duration does not translate into increased productivity. In fact, individuals who worked shorter hours were shown to be more productive than those who worked longer hours.

Industrial fatigue – a state of overstrain or exhaustion resulting from excessive work not being balanced by adequate rest and exhibiting itself primarily in diminished personal capacity for doing work-that is, declining productivity

(Mcivor, 1987; p.724)

It is worth noting and drawing comparisons between the length of the working week in Victorian Britain and modern merchant shipping. Mcivor reports that Parliament responded to the inhumane conditions in the British factories and the working week started to reduce. By the 1890s, the typical hours worked had reduced to between 52 and 57 a week, with a few "sweated trades" demanding 70 hours or more (Mcivor, 1987; p.725).

In a recent survey of European and Chinese seafarers, Zhao and colleagues (Zhao et al., 2016) found that in 21st century shipping a typical working week is over 60 hours long. This would suggest that currently, seafarers work on average eight hours more a week than workers in factories did 130 years ago.

Sleepiness, Fatigue and Stress

Two disciplines provide us with considerable information about the consequences of excessive demands on an individual’s physiological and psychological resources: occupational medicine and health psychology. Both disciplines point out that fatigue is a multi-dimensional phenomenon and needs to be differentiated from sleepiness. Figure 2 shows graphically how the two are related.

Sleepiness

Sleepiness is defined as, “the lack of ability to maintain a wakeful state of attention without the aid of situational factors” (Jepsen et al., 2015; pp. 107). Sleepiness has a simple cause and a simple cure. It occurs when people have had insufficient quality sleep and is remedied by sleep of sufficient duration and quality to replenish the sleep debt. It is acute, meaning that it is usually of short duration – a day or two – and one good episode of sleep is sufficient to replenish several recent episodes of sleep deprivation.

Shift work, watchkeeping and on-call duties are specific instances of work scheduling practices that can have a significant impact on sleep duration and thus sleepiness. Our bodies operate according to a circadian rhythm – a sleep-wake cycle that means we are programmed to sleep at night and be awake during the day. Shift work interferes with this sleep-wake cycle, either by forcing us to be awake when we would naturally be asleep, such as on the 0400 to 0800 watch in a three-watch system, or does not give us the opportunity to have a long enough sleep when we are off duty, as in the 6on 6off watch pattern.

Another cause of sleep deprivation that has become apparent in modern times is technology; smart phones, tablets and laptops that give us access to social media, news, music and games 24 hours a day impacts our sleep in two ways. First, we choose to engage with the technology when we should be sleeping thereby staying awake too long to get sufficient sleep. Second, these technologies emit blue light, which is one of the signals to our brains that it is daytime and therefore time to be awake.

Sleepiness is particularly problematic for safety on account of the fact that lack of sleep or short sleep duration robs us of our cognitive faculties. Depending on the extent of the sleep deprivation, the consequences can range from momentary lapses of attention through to difficulty making decisions and a complete inability to focus our minds on the tasks that we need to perform. Without restorative sleep, eventually a person will be unable to stay awake and will fall asleep while working.

Fatigue

Fatigue is a phenomenon that has been difficult to define because it contains many things, from how much energy we feel we have to how motivated we feel to do things. It can be experienced as lethargy and physical weariness or mental tiredness and people can have both physical and mental symptoms concurrently. It affects many systems of the body, such as our digestive system, our body clock, our

immune system, our cardio-vascular system and our nervous system (Jepsen et al., 2017) with excessive or chronic exposure to fatigue hazards leading to sleep disorders, diabetes, coronary heart disease, gastro-intestinal disorders, obesity, depression, cancer, and greater susceptibility to infections (Jepsen et al., 2015).

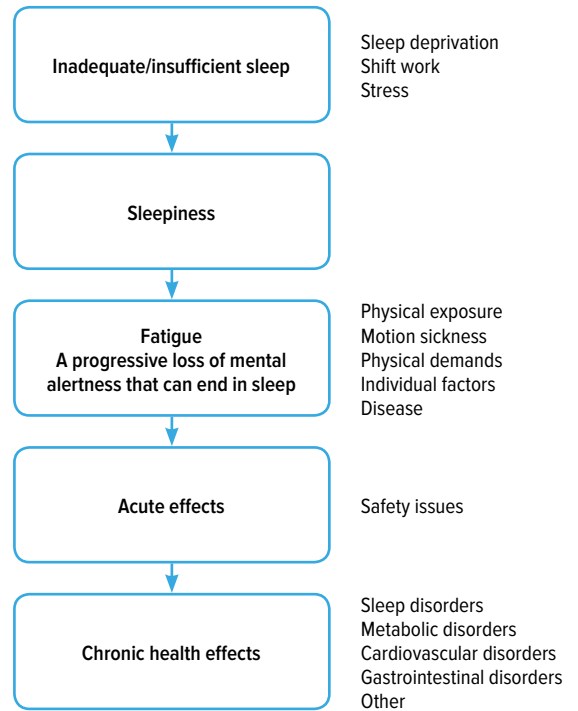


Figure 2. The relationship between sleepiness and fatigue (Source: Jepsen et al., 2015; p.108)

Fatigue may only be experienced after many weeks and months of exposure to the fatigue inducing hazards. It is often insidious in nature with people reporting signs of weariness or disease when it is too late to prevent it from happening or considerably more difficult to rectify its consequences.

When it comes to the causes of fatigue in working people, work stress, shift work and physical workload are important risk factors (Åkerstedt et al., 2002). Repeated episodes of sleep deprivation associated with shift work, incomplete recovery from working such as lack of weekends off, and working more than two 6 hour periods in 24 hours all increase the risk of fatigue for seafarers in particular. Individuals who work excessive hours or shifts are more likely to consume problematic amounts of alcohol, smoke more, exercise less and consume high calorific foods thereby adding to the assault on their bodies.

Due to its insidious nature, fatigue is difficult to treat and thus it is better to avoid the risk factors than to try and remedy their effects. Jepsen and colleagues suggest that companies are advised to consider a range of measures from proper work scheduling, to improving individuals’ sleep hygiene through education – e.g. recommending going to bed promptly, avoiding stimulants before bed time, etc., However they also have a stark warning, advising us that, “...there seems at present to be

no way of eliminating most negative effects of shift work on human physiology and cognition (Jepsen et al., 2015, p. 117). In effect, the only way to reduce its effects on workers is to reduce their exposure.

Stress

Another phenomenon predictive of poor health outcomes and associated with modern-day working practices is stress. As with fatigue, stress is a complex topic, not helped by the fact we use it to describe both the causes of our emotional state “Trying to plot a target using this ARPA is very stressful” and to describe the consequences of our work experiences “I was completely wound up after my watch and didn’t get any sleep last night. Now I feel completely stressed”. The UK’s Health and Safety Executive define stress as, “The adverse reaction people have to excessive pressures or other types of demand placed on them at work.”

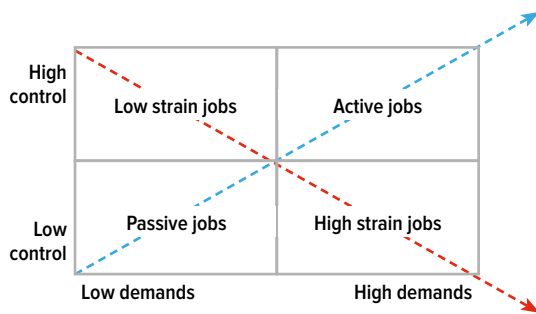


Figure 3. High Strain Jobs. (Adapted from Karasek, 1979).

Researchers and academics who have studied stress at work suggest that there are a number of work characteristics or job demands (see Table 1.) that can overwhelm an individual’s resources leading them to experience stress or strain. A prominent Swedish researcher in the 1970s, Robert Karasek, studied the effects of these work characteristics on workers and taught us a lot about work-related stress. Karasek concluded that excessive demands such as the amount of work, pace of work, the extent of risk associated with the work combined with little discretion over how one responds to these demands, leads the worker to experience job strain (see Figure 3.), which in turn can lead to cardiovascular disease (Karasek, 1979).

Contrarily, we can also suffer if we are deprived of sufficient stimulation or suffer from a lack of ‘stress’ at work. A series of studies that looked at the consequences of assembly-line work in the 1990s showed that boring, repetitive work that gave the worker no control over the pace and method of work also leads to poor mental health outcomes (e.g. Mullarkey et al., 1997). Thus both under-utilisation as well as over-utilisation of our resources can have negative consequences for our physical and mental health, although the most critical factor appears to be our sense of control over what is asked of us and the choices that we have over how to respond.

Jepsen and colleagues list the principal

characteristics of seafarers’ jobs that cause strain as follows:

“Separation from family, loneliness on board, fatigue, multi-nationality, limited recreation activity and sleep deprivation ” (Jepsen et al., 2015, p. 108).

Table 1. Characteristics of work that can lead to job stress or strain

Job Demand Type	Example
Quantitative	<ul style="list-style-type: none"> • The amount of work • The pace of work • The time available to complete the work • The significance of the work
Cognitive	<ul style="list-style-type: none"> • How abstract or unclear information for decision-making is • How complex the task is
Emotional	<p>The effort required to manage difficult emotions; e.g.</p> <ul style="list-style-type: none"> • Dealing with difficult ‘others’, such as customers, inspectors, officials • Breaking our promises to our families because of work commitments • Missing out on social interactions • Feeling isolated and lonely • Having to endure boring, repetitive work • Dealing with the fear of being injured or getting sick
Physical	<ul style="list-style-type: none"> • The amount of load placed on the musculo-skeletal system of the body

Source: Adapted from European Foundation for the Improvement of Living and Working Conditions (2007). ‘Work-related stress’. Retrieved 9 April 2020, from www.eurofound.europa.eu

Supports

In more recent times, researchers have also included the idea that we need to consider the supports available to workers in their workplace in order to understand how and when demands translate into job strain. Demands are extended to include jobs that place the worker in emotionally demanding situations and the extent to which it places them in conflict with their family obligations, the so-called work-life balance. Supports include, having autonomy or choices about how to do the work, having good support from colleagues and management and the appropriate levels of training and development to perform one’s job (e.g. Schaufeli & Bakker, 2004).

The Maritime Context

The consequences for maritime safety of overwork and inadequate rest have been a subject of concern in the maritime industry for many years. In 2001, the IMO published its *Guidelines on Fatigue*, non-

mandatory guidance on the cause, consequences and the management of fatigue at sea. These guidelines have been updated recently in MSC.1/Circ1598 and contained therein is IMO's definition of seafarer fatigue (IMO, 2019; Annex p. 1)

“A state of physical and/or mental impairment resulting from factors such as inadequate sleep, extended wakefulness, work/rest requirements out of sync with circadian rhythms and physical, mental or emotional exertion that can impair alertness and the ability to safely operate a ship or perform safety-related duties.”

This IMO document acknowledges that fatigue is indiscriminate and affects seafarers regardless of their skill, knowledge or training. It also warns that the attitude that fatigue “comes with the job” is no longer acceptable given the risk this hazard poses to safety of life, property, health, security and protection of the marine environment.

Seafarers' Risk Factors

The particular circumstances of seafarers that can exacerbate fatigue are now recognised and the IMO guidance enumerates a number of these that set this industry apart from other enterprises (IMO, 2019; Annex pp. 3-4)

The demanding nature of shipping means that:

1. *seafarers may be required to work long and irregular hours;*
2. *seafarers may spend an extended period of time working and living away from home, on a ship that is subject to unpredictable environmental factors (i.e. changing weather conditions);*
3. *the ship is both a seafarer's workplace and their home while on board; and*
4. *while serving on board the vessel, there may not be a clear separation between work and recreation, which can influence their mental and emotional well-being.*

Within the confines of a ship, the causes of fatigue are many, ranging from lack of sleep to disruption of the body's clock, personal worries and poor nutrition. The IMO Circular MSC.1/Circ1598 provides a comprehensive list of seafarer-specific and management-specific factors that might bring on or exacerbate symptoms of fatigue and these are listed below (IMO, 2019; Annex pp. 4-5).

Seafarer-specific factors

The seafarer-specific factors are related to lifestyle behaviour, personal habits and individual attributes. Fatigue varies from one person to another and its effects are often dependent on the particular activity being performed.

- .1 sleep and rest:
 - .1 quantity, quality and continuity of sleep;
 - .2 sleep disorders/disturbances; and
 - .3 recovery rest/breaks;
- .2 body clock/Circadian rhythms;
- .3 psychological and emotional factors:
 - .1 fear;
 - .2 monotony and boredom; and
 - .3 loneliness;

- .4 health and well-being:
 - .1 diet/nutrition/hydration;
 - .2 exercise and fitness; and
 - .3 illness and onset of illness;
- .5 stress:
 - .1 skill, knowledge and training as it relates to the job;
 - .2 personal issues of concern in personal life; and
 - .3 interpersonal relationships at work or at home;
- .6 medication and substance use:
 - .1 alcohol;
 - .2 drugs (prescription and non-prescription);
 - .3 supplements; and
 - .4 caffeine and other stimulants;
- .7 age;
- .8 shift work and work schedules;
- .9 workload (mental/physical); and
- .10 jet lag.

Management-specific factors

Management factors relate to how ships are managed and operated. These factors can potentially cause stress and an increased workload, ultimately resulting in fatigue. These factors include:

- .1 Organizational factors:
 - .1 manning policies, levels, and retention;
 - .2 role of riders and shore personnel;
 - .3 administrative work/reporting/inspection requirements;
 - .4 economics;
 - .5 duty schedule-shift, overtime, breaks;
 - .6 company procedures, culture and management style;
 - .7 shore-based support;
 - .8 rules and regulations;
 - .9 other resources;
 - .10 maintenance and repair of the ship; and
 - .11 drill schedules and training of crew;
- .2 Voyage and scheduling factors:
 - .1 frequency and duration of port calls;
 - .2 time between ports;
 - .3 routing;
 - .4 weather and sea condition on route;
 - .5 traffic density on route;
 - .6 nature of duties/workload while in port and at sea; and
 - .7 availability of shore leave.

Seafarer Mental Health

Such is the growing concern about the decline in seafarer wellbeing in recent decades, in 2019, two large scale projects were commissioned. One, carried out by Yale University funded by the ITF Seafarers' Trust and the other, carried out by the Seafarers' International Research Centre in Cardiff, funded by the Institute of Occupational Health (IOSH). Both studies report disturbing statistics and describe worrying trends in the incidence of poor mental health amongst seafarers.

Key findings from the ITF Seafarers Trust and Yale University study (Lefkowitz et al., 2019, p. 5):

- 25% of seafarers completing a patient health questionnaire had scores suggesting depression (significantly higher than other working and general populations).
- 17% of seafarers completing a generalised anxiety disorder questionnaire were defined as seafarers with anxiety.
- 20% of seafarers surveyed had suicidal ideation, either several days (12.5%), more than half the days (5%) or nearly every day (2%) over the two weeks prior to taking the survey.
- Incorporating all demographic, occupational, and work environmental factors, final determinants of seafarer depression, anxiety, and suicidal ideation included work environmental factors (non-caring company culture, violence at work), job satisfaction, and self-rated health (the strongest predictor of anxiety and depression).
- The most significant factor associated with workplace violence was seafarer region of origin. Seafarers from the Philippines and Eastern Europe were most likely to report exposures to workplace violence.
- Depression, anxiety, and suicidal ideation were associated with increased likelihood of injury and illness while working on board the vessel.
- Seafarer depression, anxiety, and suicidal ideation were associated with increased likelihood of planning to leave work as a seafarer in the next 6 months.
- **Periods in work/life cycle associated with high-risk of mental health issues included, most notably, during extension of a voyage.**

The Yale University study found that significant numbers of the 1572 seafarers surveyed – up to one-quarter on some indicators – were suffering from depression, anxiety and suicidal ideation (Lefkowitz et al., 2019) – thought to be an important precursor to someone taking their own life.

Lefkowitz and colleagues also report that the most ‘at-risk’ time for a seafarer experiencing an episode of mental ill-health is when their voyage is extended beyond the time they were expecting to be relieved.

The document produced by the Seafarers’ International Research Centre in Cardiff contains informative and insightful analyses into the plight of many of the world’s seafarers and reports that, “There is evidence of an increase in recent-onset anxiety and depression among serving seafarers” and that, “Employers do not recognise the importance of mental health and welfare on board to the same extent as maritime charities and stakeholders”(Sampson & Ellis, 2019, p. 4).

Impact of the COVID-19 Pandemic on Seafarers

The World Health Organisation categorised the COVID-19 as a pandemic on 11 March of this year. Like a domino effect, country after country went into lockdown and airline companies started to ground their planes. By 16 March, shipping companies were reporting that all crew changes, world-wide, were stopped. Since this time, most seafarers have been unable to leave their ships to go home and new relief crews have been unable to join their ships to relieve those on board. Some estimates suggest that 150,000 seafarers are trapped at sea who were due to sign off have had their leave cancelled and remain on board (e.g. Safety4Sea).

At the time of writing, with a few exceptions (e.g. the UK), in many places around the world seafarers are not yet recognised as key workers, a designation which might afford them some dispensations to travel on account of the vital role they fulfil in maintaining the supply chains helping to keep countries’ stocks of medicines, food, and raw materials replenished.

Seafarers are subject to the same restrictions on movement within their countries as other citizens are and are unable to leave their ship to travel home because airlines have grounded their fleets and nation states have stopped the flow in and out as well as the transit through their countries for non-native individuals. Seafarers are also prevented from getting off the ship for shore leave when in port because of the virus transmission risk they may pose. Those on board have to remain on board. Those ashore have to remain on shore. Those in port have to stay on the ship. Those in transit have to stay where they are no matter how near or far they are from home.

Negotiations are taking place at an international level between IMO, the ILO, ITF and the ICS to try and open corridors into and out of hub ports so that crew changes can take place, but as yet, the international maritime community has not managed to get key nation states to lift the travel restrictions they have levied.

Analysis of the Impact of COVID-19 using the Job Demands Model

Using the Job Demands – Resources model to analyse the impact on seafarers’ on board, we can conclude that the likely consequences of the pandemic on seafarers is to increase their exposure to the aspects of their jobs that cause harm and to remove or reduce the supports that can give them relief from their daily toil and anxiety about COVID-19. Table 2 identifies the type of impact that COVID-19 is likely to have by increasing the job demands and reducing the seafarers’ sense of control over their situation.

Added to this, seafarers, like all humans will be affected on a personal level by the crisis: they will be scared of the disease and getting infected; fearful for their families and loved ones; worried about the financial implications of the pandemic, particularly if they are unable to work; and feeling a sense of

Table 2. Potential Impacts of COVID-19 on Seafarers

Job Demand Type	Job Characteristic	Impact of COVID-19
Quantitative	Amount of work	<ul style="list-style-type: none"> Length of on board service extended beyond contractual arrangements Increased exposure to effects of shift work Continuing exposure to work schedules in excess of 60 hours
	Speed of work	<ul style="list-style-type: none"> Increased demand for quicker port turnaround times to keep communities supplied
	Significance of work	<ul style="list-style-type: none"> Obligation to maintain performance standards even if suffering from distress or fatigue because of the consequences for safety Obligation to deliver cargo in compliance with contract despite distress or fatigue as commercial pressure to keep ship trading
Cognitive	Unclear situation	<ul style="list-style-type: none"> Normal ship routines of inspections and training etc., disrupted Lack of information or answers regarding crew relief Unclear whether ship and crews are in compliance with rules and obligations as certificates about to expire, inspections unable to be performed
	Complexity	<ul style="list-style-type: none"> Unknown risk posed by visitors to ship and those coming on board such as pilots, port officials, stevedores etc. Normal activities to support life on board and vessel operability increasingly challenging, such as victualing, bunkering, garbage disposal Increased anxiety making it difficult to concentrate and make decisions
Emotional	Fear	<ul style="list-style-type: none"> Fear of contracting the virus from visitors to the ship Fear of their loved ones contracting the virus and being unable to protect them
	Anxiety	<ul style="list-style-type: none"> Worry about keeping one's self healthy Worry about access to medications for already-diagnosed health conditions Financial worries if ashore and on agency contract with no income coming in
	Isolation	<ul style="list-style-type: none"> Trapped on board with people who are not from their community Lack of, or restricted access, to broadband and the internet so cannot communicate with friends and family how and when choose Increased feelings of loneliness as disconnected from communities and loved ones
	Conflict	<ul style="list-style-type: none"> Increasing stress, frustration and irritation leading to conflict to break out on board Having to break promises and deal with distressed family and friends Dealing with unhelpful or difficult officials
	Low mood	<ul style="list-style-type: none"> Worries leading to uncontrollable thoughts which disrupt sleep and sap energy levels
	Depression	<ul style="list-style-type: none"> Having to cope alone with the loss of family members who have succumbed to the virus Feeling helpless and unable to support sick / bereaved family members
Physical	Musculo-skeletal	<ul style="list-style-type: none"> Increased exposure to physically demanding work
	Environmental	<ul style="list-style-type: none"> Increased exposure to working in extreme physical environments, e.g. engineers in engine room, deck crew in tropics etc.,
	Health	<ul style="list-style-type: none"> Lack of facilities, PPE and equipment for preventing infections and treating infections on board Unable to evacuate sick or injured seafarers due to ship denied port access

isolation and powerlessness to make the situation better thus adding to the stresses and strains that they normally experience as part of their work.

Supporting Seafarers through COVID-19

As the two reports cited above suggest, at the best of times, seafarers’ work can be very damaging to their health and well-being, particularly if they are not given adequate support through proper work scheduling, reasonable job demands, support from colleagues and management, access to social activities, time away from the ship, opportunities and time for contacting loved ones ashore, and support in the form of training and development to help meet the demands of their role.

As the Yale study identified, a critical event important for seafarers’ wellbeing is to be relieved on time. One of the principal impacts of the COVID-19 is to deny seafarers timely relief at the end of their contracts. All seafarers who were already on board at the time of the outbreak will have to stay on board, potentially indefinitely or until such times as restrictions on travel are eased.

The international maritime community is working together to try and overturn travel bans for seafarers and to open up transport hubs to get seafarers on and off ships. However, these are likely to be several weeks away and many seafarers’ contracts may have already long expired. Therefore, there may be many individuals whose situation is placing them at risk of experiencing a mental ill-health episode.

There are actions that can be taken by individuals, by ship’s teams and by management to help alleviate the suffering and stress that seafarers on board might be experiencing in these most difficult of times. Shipping companies, seafarers’ employment agencies and the seafarers themselves may not have the power to overturn government restrictions on their travel, but there are constructive actions that they can take to tackle many of the challenges that COVID-19 presents.

We will present the information that can be used to help seafarers through this crisis using a framework, called the Six Category Intervention Analysis, developed by John Heron in 1976, a researcher at the University of Surrey (Heron, 1976) . This framework is used in many settings, both clinical e.g. counselling and non-clinical e.g. policing, for guiding people who are helping those who face challenging circumstances. It defines and describes six categories of intervention, divided into two groups, that can be used to help people with difficult problems. The six categories of intervention are listed in Table 3.

The interventions are divided into two groups, *Authoritative* and *Facilitative*. The former group is more directive in nature, where the helper may command, guide, or instruct the individual to follow particular problem-solving strategies and solutions. The latter group is more collaborative in nature where the helper works with the individual to discover problem-solving strategies and solutions. The circumstances of the individual or group of individuals affected will dictate the choice of intervention strategy that is most appropriate and

likely to be the most effective. It is worth noting that each intervention needs to be offered in such a way that the recipient feels free to acknowledge that it does, and equally acknowledge that it does not, meet with his or her true needs or interests.

A list of sources and resources structured according to Heron’s intervention categories follows in a series of tables. These sources and resources are chosen if they aim or are designed to reduce the demands on seafarers’ resources and / or alleviate any accompanying or consequential reduction in psychological capacity and increase in emotional distress.

Table 3. Heron’s Six-Category Interventions (Heron, 1976)

Intervention Category	Description
Authoritative	
i) Prescriptive	Give advice, be judgemental/ critical/ evaluative, seek explicitly to direct the behaviour of the other person
ii) Informative	Be didactic, instruct/inform, interpret; seek to impart new knowledge or information to the other person
iii) Confronting	Challenge, give direct feedback; challenge the restrictive attitudes, beliefs, behaviour of the other
Facilitative	
i) Cathartic	Release emotional tensions in; enable the other person to abreact; i.e., get out of their system – painful emotions
ii) Catalytic	Encourage self-directed problem-solving, elicit information from; enable the other person to learn and develop by self-direction and self-discovery
iii) Supportive	Be approving, confirming validating – affirm the worth and value of the other person

Guidance and Advice organised using Heron's Six-Category Interventions Analysis

Prescriptive Interventions

Many of the international bodies representing shipping companies are producing guidance to help direct seafarers' behaviour to prevent them from being harmed, to enable them to remain in compliance with their contractual obligations and to avoid coming into conflict with port authorities. Primarily, these are aimed at protecting seafarers from contracting COVID-19 and providing advice

on what to do in the event of a seafarer showing symptoms on board a ship.

International trade bodies, such as INTERTANKO and INTERMANAGER, are providing instructions and advice to their members on how to navigate through the commercial and legal challenges posed by the pandemic. Only those that are publicly available are listed in the table below.

Prescriptive: Resources that seek explicitly to direct the behaviour of the other person			
Title	Description	Support	Source
International Health Regulations (2005)	Directions to port States: e.g. ships shall not be refused 'free pratique' Directions to Masters to cooperate with authorities	Directions	World Health Organisation (WHO)
Outbreak of COVID-19 on board ship	Directions on the management of an outbreak on board ship	Directions	WHO
Protection against COVID-19	Accurate advice on when and how to wear medical masks to protect against coronavirus	Advice	WHO
INTERTANKO Covid-19 ('Coronavirus') Clause – Time charterparties	A model clause for inserting into a time charter party agreement	Legal Advice	INTERTANKO
Best practice precautions for carrying out the pre-transfer conference during the COVID 19 Pandemic	Ship-shore safety checklist for completion by both tanker and terminal personnel including a range of precautions to safeguard against COVID-19 infections	Directions	OCIMF
10 Commandments of Sleep	A short video on getting good sleep aimed at shift workers	Directions on good sleep hygiene	The Sleep Council

Informative Interventions

International bodies, trade associations, unions and charities are all doing the best they can to support seafarers through this crisis with information, instructions, and helplines where experts can be contacted to provide advice with a range of issues.

Additionally, charitable bodies have developed a

range of resources over recent years to inform and guide companies and on board management teams on how to promote wellness and deal with mental health issues should they arise. These resources provide useful advice that is as relevant to the current crisis as it is to 'normal' operations.

Informative: Resources that seek to impart new knowledge or information			
Title	Description	Support	Source
Information note on maritime labor issues and Coronavirus (COVID-19)	Information about seafarers' labour rights during the current pandemic. Emphasises seafarers' Rights – Downloadable document	Information	ILO
Fatigue Guidelines	Information about mitigating fatigue risk on board ship contained in MSC.1/Circ.1598	Information	IMO
Crew changes and the ship-shore interface	Guidance on protection of the health of seafarers during port entry. Instructions and information on what to do when entering port	Information	International Chamber of Shipping
World map of COVID-19 Port Restrictions	Live map of ports placing restrictions on port entry. Up-to-date information on ports where seafarer exchanges may be possible.	Information	Wilhelmsen Ship Services
Worldwide Lawyers Directory	Telephone numbers and addresses of lawyers who provide free specialist advice to members in the event of an incident	Advocacy	Nautilus International
Nautilus Coronavirus FAQs	Webpage with answers to Frequently Asked Questions regarding Coronavirus and Seafarers Employment Agreements	Advocacy	Nautilus International
World map of ports with ITF representatives	Interactive map with helpful information about travel restrictions and contact details of ITF representatives in ports around the world	Advocacy	International Transport Federation (ITF)
Mental Health First Aid	Website detailing web-based mental health first aid training courses available for shore-based staff	Training	Illuminate
Wellness at Sea	A coaching programme that seeks to enable seafarers to improve their on board health and well-being by exploring five different aspects of wellness and the impact that they can have on the safe running of a ship	e-Learning	Sailors' Society

Title	Description	Support	Source
Mental Health First Aid “ALGEE” Action Steps	Gard P&I club online article	Briefly outlines the “ALGEE” action steps for rendering mental health first aid. A: Approach, Assess and Assist the person with any crisis L: Listen and communicate non-judgementally G: Give support and Information E: Encourage the person to get appropriate professional help E: Encourage other supports	GARD
Six ways to improve your sleep at sea	A web article offered by the Marine Society on actions that people can take to improve their sleep quality at sea	Guidance on good sleep habits	The Marine Society

Confronting Interventions

In stressful situations, particularly those that appear inescapable, people can very easily become trapped into a cycle of thinking that spirals downwards into a well of despair. Resources

that challenge unhelpful thought processes and encourage people into more constructive thought patterns are presented in the next table.

Confronting: Resources that challenge, give direct feedback; challenge the restrictive attitudes, beliefs, behaviour of the other			
Subject	Description	Support	Source
Digital Technology and Seafarers' Mental Wellbeing	A report on the pros and cons of digital technology on board ship by Drs Olivia Swift and Rikke Jensen of Royal Holloway, University of London	Unbiased information about digital technology on board that challenges some of the assumptions regarding its benefits and ill effects	ISWAN
Seafarers Coronavirus FAQs	Downloadable pdf containing seafarers' FAQs and responses in regards Coronavirus	Information / instructions promoting constructive thoughts and behaviours in response to Coronavirus	ISWAN
Mindfulness-based Stress Reduction Online	Web-based course in how to retrain our minds to deal with stress, anxiety and uncertainty	8 week web-based learning for shore-based people	The Mindfulness Project
COVID-19 Resource Page	Downloadable pdf short guides to managing anxieties around COVID-19, from Hunterlink – a provider of Employee Assistance Programmes	Guidance on dealing with anxiety and help to change mindset and thinking	Hunterlink

Cathartic Interventions

Cathartic interventions are a collection of actions and services that can be offered to enable the person who is distressed to release emotional

tensions. These are usually face-to-face, but can be accessed via the telephone or internet in real-time or asynchronously via email.

Cathartic: Interventions that are designed to release emotional tensions and help people get painful emotions out of their system			
Title	Description	Support	Source
Wellness at Sea	For subscriber shipping companies, online training with coaching, a telephone helpline, the Wellness at Sea app and peer-to-peer support	One-to one, and group counselling sessions facilitated by a Sailors' Society counsellor via internet	Sailors' Society
SeafarerHelp	Free, confidential, multilingual helpline for seafarers and their families available 24 hours a day, 365 days per year dial +44 20 7323 2737 email help@seafarerhelp.org	Talking / Listening service	ISWAN
National Suicide Prevention Lifeline	The Lifeline provides 24/7, free and confidential support for people in distress, prevention and crisis resources Based in America	Talking / Listening service	National Suicide Prevention Lifeline
National Hopeline Network: IMALive:	Crisis intervention chat line for people contemplating suicide or others worried about someone's intentions Based in America	Online Chat Talking / Listening service	IMALive
Nautilus 24/7 Helpline	Help for members in emergencies via SMS, Skype or Online Chat	Crisis support	Nautilus International
Seafarers Assistance and Information Line (SAIL)	Help for UK seafarers in financial hardship via email, Skype or phone	Financial crisis support for UK seafarers	SAIL
Global Mental Health Resources Guide 2018	A pdf document produced by The American Club and available on the Safety4Sea web pages, listing all the crisis helplines around the globe available to seafarers and their families	Emotional support Crisis support	Safe4Sea

Catalytic Interventions

As the name suggest, these interventions act as catalysts for individuals to change their situation for themselves. Primarily, these resources are provided

by seafarers' charities, but there are also resources available around the globe from health services and other charities that are concerned with mental health.

Catalytic: Resources that enable the other person to learn and develop by self-direction and self-discovery			
Subject	Description	Support	Source
Seafarers mental health and well-being	Online video on how to maintain good mental health	Training / Instructions Self-help	ISWAN
Coronavirus – how to beat it	Online video with instructions on how to prevent COVID-19 infections	Training / Instructions	Seagull Maritime and Videotel
Good mental health guides <ul style="list-style-type: none"> • Steps to Positive Mental Health • Psychological Wellbeing at Sea • Managing Stress and Sleeping Well at Sea 	Information guides on how to promote good mental health including infographics and audio relaxation soundtracks	Self-help guides to prevent sleepiness, fatigue and stress	ISWAN
Managing your mental health during the COVID-19 Pandemic	Online Video containing information and guidance from clinical psychologist Dr Kate Thompson	Emotional support Self-help guidance	ISWAN
Mental Health Self-help Leaflets	A series of 29 downloadable self-help leaflets covering a range of subjects from Abuse, through Eating Disorders to Sleep Problems and Stress	Targeted self-help on a range of mental health issues	UK National Health Service
Preventing social isolation	A series of articles from Sea Health & Welfare, Denmark containing suggestions and advice for reducing social isolation on board	Ideas to prevent social isolation	Sea Health & Welfare
Preventing Conflict	An article from Sea Health & Welfare on how managers can keep conflict from escalating beyond disagreements	Ideas and advice to prevent conflict escalating	Sea Health & Welfare

Supportive Interventions

Support can come in many forms, from companies writing to their seafarers and their families to express their gratitude for the continued service during the COVID-19 crisis, to the setting up of Facebook

pages and Twitter campaigns. These interventions communicate to those who might be having a difficult time that they are not alone and the work that they do is valued.

Supportive: Resources, campaigns, support groups that affirm the worth and value of the other person			
Subject	Description	Support	Source
Coronavirus advice and support <ul style="list-style-type: none"> • Podcasts • Facebook support community • Top Tips • Travel Advice 	Webpage listing resources that seafarers can access; including podcasts downloadable tips and links to Facebook pages	Emotional support Self-help advice	Sailors' Society
Sailors' Society Find a Chaplain	Webpage providing contact details of Chaplains available for support via telephone and email	Emotional and spiritual support for all	Sailors' Society
Mission to Seafarers	The Mission to Seafarers' offers an email response to seafarers and their families who need help during the COVID-19	A contact email that is monitored by the Mission's chaplains: crewhelp@mtsmail.org	Mission to Seafarers
#Isupplytheworld	International Maritime Employers' Council Twitter campaign to raise awareness of seafarers' key role in keeping supply chains open	Championing seafarers Moral support	IMEC

Summary

There is a vast array of resources available to seafarers, whether designed to be proactive and prevent problems from occurring, to those containing advice on how to deal with situations as they arise, to reactive measures that help people to deal with their own and other's reactions to the circumstances that they find themselves in.

The above compendium is far from exhaustive and is offered to give an indication of the many ways in which people can be helped, or help themselves,

to manage their way through the COVID-19 pandemic. They have been chosen because they offer affirmations that endorse people's worth and capability to see their way through the crisis and can countermand the job demands associated with seafarers' work and exposure to physical and mental health challenges. No doubt more resources will continue to be made available as the pandemic unfolds and likely will be added to those outlets identified above.

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Web Resources

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