

Standard Safety: Seafarer Wellbeing

October 2018

The Standard
for service and security



Standard
Club



Yves Vandeborn
Director of Loss Prevention
T +65 6506 2852
E yves.vandeborn@ctplc.com

Introduction

Welcome to this special edition of Standard Safety on seafarer wellbeing

Contents

2	The Standard Club enhanced PEME scheme - three years of operation
6	Seafarer health and operational effectiveness
8	Food for thought
10	Calorie control
12	Victualling in the modern maritime industry
14	Keeping fit to succeed
16	Keeping in shape on board
18	Incentivisation, motivation and wellbeing
20	Seafarer mental health: A rising tide
22	Post-traumatic stress disorder (PTSD) and the seafarer
24	Why screening does not work but peer support does
26	The risks and rewards of seafaring in the digital age
28	The human element - the effects of fatigue on ship safety
30	Charities which can provide support for seafarers
31	Commercial organisations which can provide services related to seafarer welfare

Over the last couple of years, the club has been working on a variety of projects related to seafarer wellbeing, culminating in this special edition.

Seafarer wellbeing is a holistic concept combining physical, mental and social wellbeing, and our mix of articles reflects this. People regularly forget how mental and physical wellbeing are linked. If you don't feel good in your body, you are likely not going to be happy either and any small additional stress may quickly result in a depressed feeling. The Standard Club's 'people claims' statistics indicate a clear upward trend of mental health related illnesses. We start off this special edition with an analysis of The Standard Club's enhanced PEME scheme over its first three years of operation. This flows directly into an article on the effects of untreated diabetes, hypertension or obesity on a seafarer's performance and how this may impact the safe operation of a ship.

The next three articles delve deeper into the nutritional aspects of physical wellbeing. What effect has the MLC 2006 had on the quantity and quality of food for seafarers? What is an ideal calorie count for different seafarers? What are the benefits or disadvantages of the different types of victualling available to shipowners?

Apart from eating healthily, seafarers should be encouraged to carry out sufficient exercise on board, and our next three articles discuss different ways of keeping fit on board and how seafarers can be incentivised.

As mentioned, the club sees a clear rising tide when it comes to mental health related illnesses. We discuss this problem in our next article, and look at the risk factors involved and what resources exist to help seafarers suffering from mental illness or post-traumatic stress disorder.

We are frequently asked whether screening for mental health prior to joining ship would help in reducing the risk of incidents. We discuss this and suggest a better alternative in the form of mental health champions.

Concurrent with the rise of mental health related illnesses, we have seen onboard communication and connectivity become more widely available for seafarers. Are these two linked? How does social media affect the mental wellbeing of seafarers?

Finally, our last article gives practical advice to seafarers on managing and dealing with fatigue on board.

We hope you will enjoy reading our special edition on seafarer wellbeing and that we can work together on improving the wellbeing of our seafarers!

The Standard Club enhanced PEME scheme – three years of operation

The club's pre-employment medical examination scheme has conducted thousands of PEME examinations since its establishment in 2015. But what were the drivers which led to the creation of the scheme and what have we learned after nearly three years of the scheme's operation?



Richard Bell
Loss Prevention Executive
 T +44 20 7680 5635
 M +44 7919 492 718
 E richard.bell@ctplc.com

Drivers of the scheme

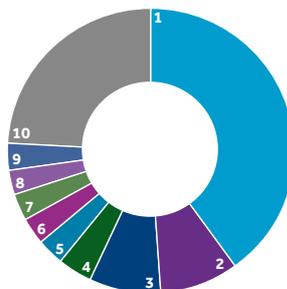
In 2014, The Standard Club's loss prevention department analysed the club's personal illness claims for the prior five policy years, in order to establish how these could be reduced. This provided valuable insight into the club's personal illness trends.

Unsurprisingly, because of the composition of seafarer supply worldwide, Filipino seafarers had the highest number of personal illness claims.



The club's enhanced PEME scheme is designed to give members the confidence that they are aware of all of the risks associated with employing a particular crewmember.

Number of crew claims 2010–2015



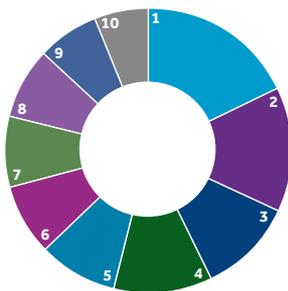
1	Filipino	40%
2	Italian	9%
3	Indian	8%
4	Chinese	4%
5	Ukrainian	3%
6	Turkish	3%
7	German	3%
8	American	3%
9	Indonesian	3%
10	Others	24%

Every P&I club's personal illness statistics will comprise a mixture of illnesses that could not be predicted or prevented and manifestations of chronic treatable illnesses. Claims analysis was undertaken to identify how many Filipino claims were the result of the chronic, detectable, treatable illnesses.

Approximately 50% of the most commonly recorded conditions may have been detected by an enhanced PEME scheme, provided the condition was present at the time of the PEME, particularly in the case of claims involving:

- cardiac-related problems
- heart attacks
- hypertension
- kidney stones.

Filipino crew claims causation 2010–2015



1	Appendicitis	18%
2	Abdominal pain	14%
3	Back pain	11%
4	Cardiac related	11%
5	Hernia	9%
6	Hemorrhoids	8%
7	Heart attack	8%
8	Kidney stones	8%
9	Hypertension	7%
10	Muscular/skeletal	6%

These four conditions alone represented 34% of claims amongst the top ten most commonly recorded conditions for Filipino seafarers.

Based on this claims evidence, The Standard Club engaged with Medical Rescue International (MRI) to create an enhanced PEME scheme comprising 11 clinics in the Philippines. The main objectives of the scheme were to:

1. ensure that seafarers with detectable and treatable conditions were identified at the PEME stage so that they could seek medical treatment before suffering irreversible damage to their health.
2. ensure that members could make an informed decision on the employment of their seafaring staff.
3. achieve an accumulative improvement in the health of participating members' seafarers over time.



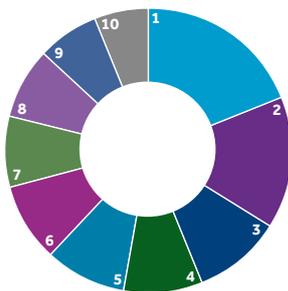
What have we learned?

Since the scheme's inception, around 5% of seafarers have failed the enhanced PEME test. Many more seafarers were identified as having pre-existing conditions that required treatment but that were not severe enough to prevent their continued sea service. The detection of their conditions made treatment and management possible prior to joining a ship, where it would have been much more difficult.

Anonymised data gathered by MRI reveals an interesting picture of who is failing to obtain an enhanced PEME certificate:

- Seafarers over the age of 45 dominate nearly all the condition groups, outnumbering the younger seafarers.
- The majority of the top ten conditions can be directly linked to lifestyle. A healthy lifestyle is key to preventing conditions that may cause disruption to members' activities. Diet and levels of exercise are decisive factors – this is especially true for older seafarers.
- Several ranks are overrepresented within the statistics, including chief cook, bosun and chief engineer. Many job roles on board ships are more sedentary, exposing those staff to greater risk of lifestyle-related medical conditions.

Unfit group, job role: years 1 to 3



1	Able Seaman	19%
2	Chief Cook	15%
3	Oiler	10%
4	Chief Engineer	9%
5	Engine Fitter	9%
6	Bosun	9%
7	Ordinary Seaman	8%
8	Messman	8%
9	Second Officer	7%
10	Third Engineer	6%

This data provides the basis for ship managers to create health and lifestyle programmes which can be tailored to high-risk groups on board their ships.

The top ten reasons for failing the enhanced PEME include a large number of medical conditions that were observed in the claims data research. This is the best indication of the positive impact an enhanced PEME scheme can have on personal illness claims.

Conclusion

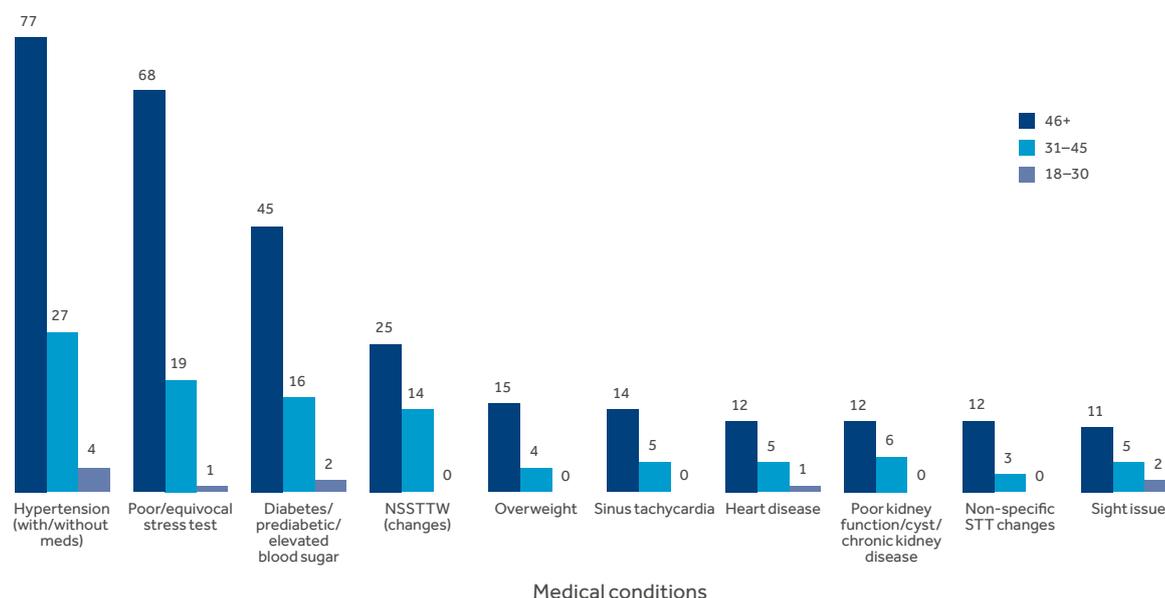
Data collection and analysis is a crucial tool in the fight against preventable personal illness claims. Claims data analysis indicated that many personal illness claims could have been prevented by enhanced pre-employment examinations.

Data drawn from the club's enhanced PEME scheme has shown that many of those who fail to obtain a certificate within the club's enhanced PEME scheme are suffering from very similar conditions as those observed in the club's personal illness claims. This correlation is crucial to understanding why the club's enhanced PEME scheme is such an important initiative and how it delivers value for money for club members.

The data is also useful for members who can use it to develop their own policies and initiatives designed to reduce the likelihood of their seafarers presenting a personal illness claim.

Unfit group, medical conditions by age group: years 1 to 3

Frequency





Seafarer health and operational effectiveness

A combination of two or more chronic diseases may pose a high risk of impairing a seafarer's ability to fulfil their role on board. In this article, we look at some specific conditions and the ways these may affect the seafarer's ability to carry out their duties or respond to an emergency situation.



Dr Dafna Givati
Senior Flight Medical Officer
and PEME Clinic Auditor,
Medical Rescue International
T +972 52 420 9889
E dafna2200@gmail.com



The Standard Club PEME scheme is designed to facilitate diagnosis of chronic conditions before they become dangerous so that seafarers' health may be improved, and shipowners and managers may be reassured that they are doing all they can to look after their crew and maintain the operational effectiveness of their vessels.

Imagine a notional seafarer who is suffering from three conditions or diseases which have either been untreated or poorly treated for some years.

His profile:

- He is obese – Body Mass Index (BMI) of 33
- He suffers from hypertension (high blood pressure)
- He has type 2 diabetes.

He has not, up to now, had any real problems carrying out his duties.

Why therefore may he be a threat to the safe operation of his ship?

Obesity

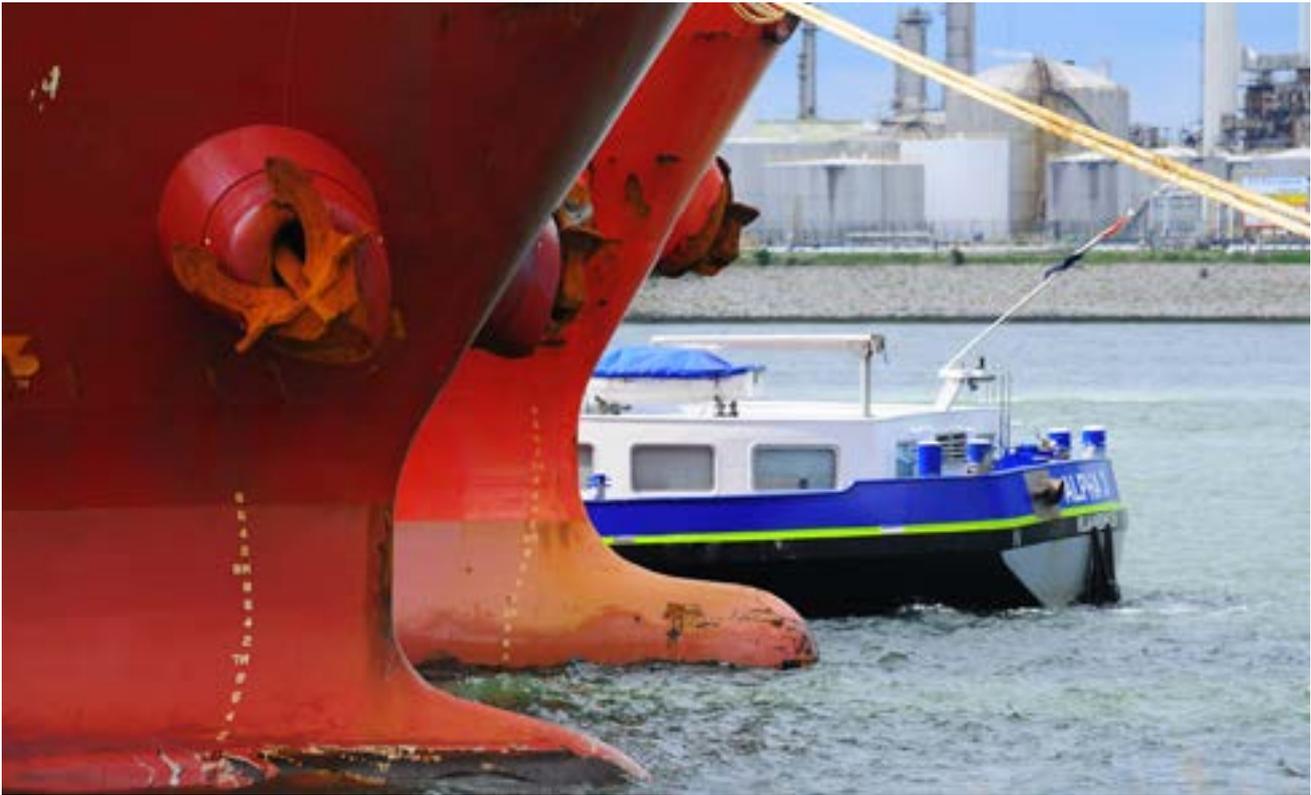
Obesity is one of the major causes, not only of hypertension and diabetes, but also of many other conditions, including coronary artery disease.

Obesity itself affects the ability to carry out duties when speed of reaction and agility may be required to use ladders, enter hatches or access confined machinery spaces, particularly in an emergency or bad weather.

Hypertension

Hypertension, if untreated, can quietly damage the body for years before symptoms develop, acting as a 'time-bomb' ticking away. The areas that it can damage include:

- The arteries: Hypertension can increase the pressure of the blood flowing through the arteries, which can damage the cells of the arteries' inner lining. The artery walls may become less elastic, limiting the blood flow and further increasing pressure. This can lead to an aneurism, where a section of the wall forms a bulge which can rupture and bleed, most commonly in the aorta, the body's largest artery.
- The heart: Hypertension can lead to coronary artery disease, enlarged left heart or heart failure. These conditions increase the risk of heart attack and sudden cardiac death.
- The brain: Hypertension can lead to a stroke, where the blood vessels in the brain may narrow, rupture, leak or form an aneurism. In the longer term, it is suspected that hypertension leads to dementia and cognitive impairment when there is reduced blood flow to the brain.



- The kidneys: Hypertension is one of the most common causes of kidney failure, scarring of the blood vessels in the kidney or an aneurism of an artery leading to the kidney. There can be dangerous internal bleeding or significant failure of the kidneys such that dialysis may be required.
- The eyes: High blood pressure can damage blood vessels leading to the retina, cause fluid build-up under the retina or optic nerve damage. In all cases, there can be blurred and impaired vision, or even total loss of vision.

A seafarer with untreated hypertension is therefore at high risk. As the condition develops, he will clearly become less able to carry out duties and, in the worst case, may fail in his duties in a safety-critical situation. Having fallen seriously ill, the ship may have to divert significantly from the planned voyage to obtain treatment or arrange repatriation.

Diabetes

Type 2 diabetes is becoming more common among seafarers, and is often linked to obesity, but not always. It also contributes to high blood pressure. Prolonged uncontrolled diabetes can lead to:

- problems with the retina of the eye, resulting in poor vision

- digestive problems
- kidney disease
- skin problems
- nerve damage
- lack of blood circulation, resulting in:
 - dry skin
 - slow healing of cuts, burns and wounds
 - fungal and bacterial infections
 - loss of feeling in the foot.

The symptoms of diabetes can be quite subtle and seemingly harmless, but if left untreated, can lead to any or all the diabetic complications.

A combination of conditions

To return to our notional seafarer, if his conditions are undetected or he is aware but has not sought treatment, he may be in danger of suffering any one of the following problems:

- heart disease leading to heart failure and heart attack
- stroke involving a brain aneurism or haemorrhage
- fatigue
- kidney failure
- lack of co-ordination
- pain and depression
- degraded ability to use the hands and feet
- poor vision.

Depending on his role on board the ship, any of these problems may affect his ability to carry out his duties to varying degrees and detract from the operational efficiency of the vessel. He could be a bridge watchkeeper with deteriorating eyesight or a boatswain who has lost feeling in one of his hands or feet, or both; an engineer who suffers a heart attack or a stroke whilst the engineer officer of the watch is at standby; or an officer whose fatigue is such that he is unable to keep up with his administrative duties.

Conclusion

The good news is that, if detected early, the conditions of obesity, hypertension and type 2 diabetes can be controlled by a combination of medication, lifestyle changes and regular medical check-ups. This means that many seafarers with such conditions can complete a full seagoing career provided that early diagnosis is coupled with compliance with medication and medical advice.

Food for thought

Food quality and quantity are key elements in ensuring the health of a seafarer. But has the introduction of the MLC had an impact on the quality of the food or the health of seafarers?



Glenda Canlas, MD
President/Medical Director,
Halcyon Marine Healthcare Systems
T +632 864 0213
E Glenda.canlas@gmail.com



Global obesity has nearly tripled since 1975. According to the 2016 statistics of the WHO (World Health Organization), more than 1.9 billion adults, 18 years and older, were overweight and 650 million were obese.¹

As of June 2018, cardiovascular diseases accounted for the most deaths in the category of non-communicable or 'lifestyle' diseases, with 17.9 million dying every year.²

Regulatory considerations

The introduction of the Maritime Labour Convention (MLC) 2006 set clear responsibilities for shipowners/managers in relation to food for seafarers. It has three basic principles/minimum standards regarding the provision of food on board:

1. Catering staff shall undergo the necessary training for their positions.
2. Meals provided should be adequate, varied, nutritious and served under hygienic conditions.
3. Food should meet religious requirements and cultural practices, and 'shall be suitable in respect of quantity, nutritional value, quality and variety'.

These guidelines are quite general and open to interpretation in their implementation depending on the degree of training and experience of the cook, and their cultural background.

Enforcement and training

Cooks are undergoing formal training courses that highlight nutrition. However, will this be an assurance that the seafarers they cook for will choose to eat the prepared food that is good for them? Is it an assurance that the seafarer will not only eat the right food but the right amount as well and avoid overeating when tired, hungry and stressed?

In addition to the training of cooks, shipping companies are also investing in the education of their seafarers by including health topics in officers and crew conferences, and providing educational material prior to departure and while on board.

1 <http://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>

2 <http://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>



The impact (or lack)

Among seafarers, being overweight or obese and the presence of other cardiovascular risk factors (ie smoking, eating an unhealthy diet) remain common problems that appear to be on the rise.

Currently, there is no evidence showing the effect of MLC 2006 on the quality of food or the health status of seafarers. It may be more realistic to look at regulations such as the MLC 2006 as supportive of these choices rather than relying on them to be the engine that powers the change that makes our seafarers healthier.

What is certain is that MLC 2006 alone will not solve the health issues amongst seafarers relating to food and lifestyle.

What can seafarers do?

Ultimately, the health of each seafarer remains primarily with the seafarer making a personal choice to live a healthy lifestyle, such as avoiding unhealthy foods that are high in sugar, salt, and saturated and trans fats; eating the right amount to fuel the body without overeating; choosing to be more physically active; ceasing smoking; and dealing with stress and fatigue in positive ways.

What can shipowners/managers do?

Shipowners/managers can aid seafarers in their efforts by ensuring that both the spirit and the letter of MLC 2006 is implemented on their vessels and by promoting behaviours that will benefit the seafarer, such as moderation and healthy eating.

Calorie control

The old adage goes that 'you are what you eat'. It certainly is true as our food intake is responsible for our growth, maintenance, reproduction and health. So how do you make sure your crew eat the right quantity of the right things?



Jason Roland N Valdez, MD, MPH
Medical Director
CarePoint Medical Diagnostic
and Wellness Clinic
T +632 354 7022
E carepoint@carepoint.com.ph



Investing in training for the chief cook will surely pay dividends in reduced healthcare costs.

What to eat?

Food is a mishmash of sugars (carbohydrates), fats (lipids), proteins, vitamins and minerals. Carbohydrates and lipids give us energy, the former providing ready fuel and the latter storage. Proteins do most of the work in our cells and are required for the structure, function and regulation of the body's tissues and organs. Vitamins and minerals are substances in food that are necessary for physiological processes in the body. According to the *Dietary Guidelines for Americans 2015–2020*, a healthy eating plan:

- emphasises fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products
- includes lean meats, poultry, fish, beans, eggs and nuts
- is low in saturated fats, trans fats, cholesterol, salt (sodium) and added sugars
- stays within your daily calorie needs.

A balanced diet is a healthy diet.



To encourage a healthy lifestyle, captains can get creative with 'biggest loser' contests, crew daily exercise sessions, and the like.

Ideal body weight

There are many ways to determine your ideal weight – from a simple percentile weight-for-height chart to the more complicated, using calipers to measure body fat in different areas of the body. The most common method is by Body Mass Index (BMI), which can be derived by the equation: $BMI = \text{Weight in kilograms} / (\text{Height in metres})^2$. Below is a table of BMI ranges from the World Health Organization and specific ranges for Asians – who make up the majority of seafarers.

	WHO (BMI)	Asia-Pacific (BMI)
Underweight	<18.5	<18.5
Normal	18.5–24.9	18.5–22.9
Overweight	25–29.9	23–24.9
Obese	≥30	≥25

How much to eat to maintain ideal weight?

We can measure food intake by calorie consumption. Different foods have a different number of calories per gram of weight. On average, males need 2,400 to 2,600 calories per day, whereas females need 1,600 to 2,000 calories per day. These averages are affected by physical activity. For example, the captain on the bridge takes fewer steps per day than an able seaman, so will need fewer calories. Other factors that determine calorie expenditure are gender, age and metabolism. From a survey of marine officers, here are some examples of the level of activity required to perform different roles on board:

Rank	Sedentary or light activity (eg, an office worker)	Active or moderate activity (eg, a construction worker)	Vigorously active (eg, a farmer)
Master	○		
Chief officer		○	
Second officer		○	
Third officer		○	
Bosun			○
Able seaman			○
Ordinary seaman			○
Chief engineer	○		
Second engineer		○	
Third engineer			○
Fourth engineer			○
Oiler/fitter/machinist			○
Wiper			○
Activity correction factor	1.5	1.7	2.2

How many calories should you consume to maintain your current weight?

- Men: (weight in pounds x 11) x activity correction factor
- Women: (weight in pounds x 10) x activity correction factor

A healthy lifestyle

Consuming more or less than your body needs will lead to unhealthy consequences. Calorie intake should match your activity level to maintain weight or be rebalanced accordingly to help reduce or gain weight.

Climbing a flight of stairs will burn five calories while walking one kilometre will burn about 60 calories. A fried chicken drumstick is about 120 calories, so it is equal to running four laps around a VLCC tanker. A cup of white rice is 200 calories, so how many laps would your crew need to do to burn that?

Junk food will just add to the daily caloric intake without much added nutritional value, so should be avoided. Deep frying in oil will certainly add calories; thus, the chief cook is key in improving the health of all on the ship. Steamed food, grilled vegetables or Japanese sashimi are healthy alternatives.

Conclusion

Maintaining a healthy body weight will reduce risk of heart disease, stroke, diabetes, some forms of cancer and joint pains. It will increase energy levels and optimise the immune system. Make your crews aware they need to watch what they eat, but, as with all medical advice, do everything in moderation.



A 2,000 calorie meal plan for one day from www.eatingwell.com

Breakfast (417 calories)

- Avocado-egg toast
- 1 slice whole-grain bread
- ½ medium avocado
- 1 large egg, cooked in ¼ tsp olive oil or coat pan with a thin layer of cooking spray (1-second spray) Season egg with a pinch of salt and pepper.
- 1 medium banana

Morning Snack (305 calories)

- 1 medium apple
- 2 tbsp peanut butter

Lunch (468 calories)

- 2 cups ravioli and vegetable soup
- 2 diagonal slices baguette (¼ inch thick), preferably whole-wheat
- 3 tbsp shredded cheddar cheese Top baguette slices with 1½ tbsp cheese each and a pinch of pepper. Toast until cheese is melted.
- 1 medium orange

Afternoon Snack (220 calories)

- 5 tbsp hummus
- 1 cup sliced cucumber
- 2 medium carrots

Dinner (584 calories)

- Salmon and vegetables
- 4 oz baked salmon
- 1 cup roasted Brussels sprouts
- 1 cup brown rice
- ⅛ tsp salt
- ⅛ tsp pepper
- 1½ tbsp walnuts
- Vinaigrette
- Combine 1½ tsp each olive oil, lemon juice and maple syrup; season with ⅛ tsp salt.

Victualling in the modern maritime industry

Most shipowners now recognise that the provision of good-quality food is vital to both the physical and mental wellbeing of their crews. But who should be providing the ship with provisions to ensure that it meets these needs?



Yves Vandenberg
Director of Loss Prevention
T +65 6506 2852
E yves.vandenberg@ctplc.com

Several thousand seafarers put food near the top of their list of things that currently make them happy, according to The Mission for Seafarers' latest *Seafarers' Happiness Index* (Q1 2018). Food scored 6.73 out of 10, up 8% since last quarter and above average for happiness rankings.

However, there are still issues relating to the food chosen that need to be addressed.

Seafarers' problems with food

Cultural problems

Regulation 3.2 of the Maritime Labour Convention (MLC) 2006 requires that on-board food 'takes into account the differing cultural and religious backgrounds' of the crew. But according to The Mission for Seafarers: 'There is little evidence, from the responses received, that this is happening, with nationals of a range of countries complaining that their diet did not reflect the norms of their homelands.'

Nutritional issues

The Mission has also received complaints about excessive amounts of fried food and a complete absence of a policy on volume of fruit and vegetables. While cooks may have been 'trained and qualified', as required by MLC, they are clearly not always serving food of 'appropriate quality, nutritional value and quantity', which may be related to the provisions available on board.

Tight budgets

There are calls from seafarers to impose a minimum acceptable spending limit on crew victualling, which currently languishes at around \$6.00–\$8.50 per head per day. No matter how good the cook, 'they need to be supported, resourced and properly budgeted', says The Mission. 'They need to combine their own skills with the ability to buy good-quality ingredients.'

Victualling

This raises the question: who should buy the food to ensure it meets the cultural, nutritional and budgetary requirements? In reality, the shore-based operations departments of most major ship managers contract all provisioning to one or more specialist ship supply companies. Others, however, allow self-purchase, with masters managing the ship's food budget directly and sending the cook out on shopping trips at each port of call.

Self-purchase

Certainly, there are potential advantages to the self-purchase option. In theory, it means that all the victualling budget is being spent on food rather than on paying fees to supply companies. It also allows the chief cook to take full advantage of low local market prices and to negotiate deals and discounts directly. Above all, the cook can pick and choose what they buy, ensuring only the freshest, highest-quality produce comes on board.

A win-win, one might think. The reality is that today's tight operating schedules and concerns over port security means that modern ships rarely spend long in port, leaving very little time for shopping trips. Cooks will also need to find additional time in their already busy daily schedules for such trips. Furthermore, local markets vary widely in the range and quality of food they have available – and may not even be open on the day a ship calls.

And finally, masters would need to keep and constantly account for significantly more cash than usual in the ship's safe. There is, of course, a risk that not all the food cash will actually get spent on meals for the crew, leading to further administrative burdens on ship or shore staff to investigate shortfalls.

Provisioning companies

The major provisioning companies argue that their bulk-buying of food and streamlined delivery makes their prices very competitive. They can guarantee food quality and quantity, on-time delivery, MLC compliance and financial transparency. They also offer online victualling systems, menu planning services and catering staff training, and some even provide the catering staff.

On the downside, using a provisioning company requires a significant amount of planning. Menus need to be planned well before the ship sails and reordering needs to be done significantly ahead of a port call. This gives cooks very little flexibility to change menus in response to feedback from crewmembers.

Above all, the provisioning companies exist to make a profit. Given the relatively low cost of victualling, spending this profit on food instead could make a significant difference to the size and quality of meals on board.

Conclusion

A happy, well-fed crew will form the basis for a safe and well-run ship. Shipowners must weigh the pros and cons of each approach to supplying their vessels with the necessary provisions and make a choice that maximises the opportunity for the crew to enjoy good-quality food. The key to success is to employ a great cook who serves sufficient healthy food that the crew enjoys eating.



Keeping fit to succeed

A seafarer's lifestyle choices will directly impact their health. Exercise is a key component of this equation. Dr Abaya of Health Metrics Inc. draws on his great experience of seafarer health matters to make the case for exercise on board ship. He also provides details of simple exercises that can be used by seafarers to help maintain their fitness.



Antonio Roberto M Abaya
Medical Director, Health Metrics Inc
T +632 795 1234
E aabaya@healthmetrics.com.ph



Changes in lifestyle include both diet and exercise in order to prevent these so-called lifestyle diseases.

Keeping fit or staying healthy are difficult propositions for seafarers, considering the amount of labour one goes through on a daily basis. Physical activity is difficult, and resting or relaxing seems the easier option in down-time. A shift in attitude is required to make seafarers decide to start exercising, and keep going.

Why exercise

The seafarer must realise that there is a purpose in keeping fit. So-called lifestyle diseases can be life-threatening: hypertension, diabetes, hyperuricemia and fatty liver disease. Scientific evidence (Harvard Medical School, National Institute of Health, American Heart Association, European Association for the Study of Diabetes) has shown that changes in lifestyle can help to prevent and even slow down or stop the progression of these diseases.

In addition, when one exercises, there is a release of the 'happy hormones' serotonin and endorphins, promoting a sense of happiness, well-being and contentment. Exercise increases physical and mental stamina, and is an immediate energy booster.

Hence, with the knowledge that both diet and exercise may lead us to the greater good (being disease-free), it may be easier to appreciate the sacrifices one endures and make all the effort seem worthwhile.

How to exercise

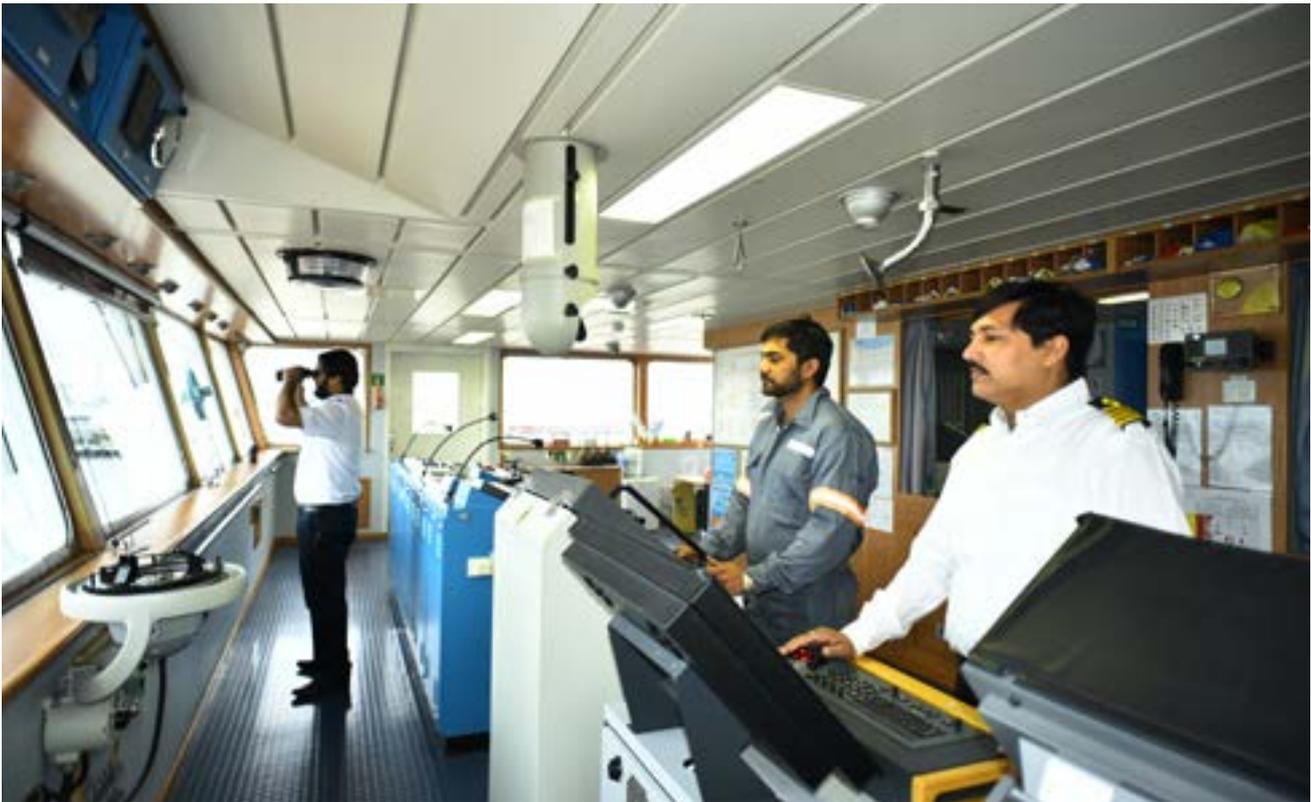
One should engage in at least 30 minutes of exercise a day to improve physical fitness and to provide a mental break from the daily routine. A basic cardio workout maintains the cardiovascular fitness by increasing heart rate and improving muscle tone.

Where to exercise

Useful basic equipment in the gyms on board ships includes:

- a treadmill
- basic weights from 2kg up to 10kg
- stretching mats and balls.

Doing exercise with others can help to maintain motivation and commitment. Team sports provide a good physical and mental workout, as these both improve the cardiovascular system and promote camaraderie from team-building in these competitive sports. Examples could include cricket (on a large enough ship), basketball, tug of war or ping pong. However, one can still do exercises alone.



Example routine

Here are eight simple exercises which managers could promote amongst their crew. These exercises are easy and good for confined spaces such as a cabin. They should take around eight minutes a day if done properly.



Do each activity for 45 seconds, resting 15 seconds between each one and remaining hydrated throughout:

- running on the spot
- jumping jacks
- lunges
- push-ups
- mountain climbers
- squats
- leg raises
- planks.

If advanced age or the presence of physical limitations restricts one's capacity to do all of these exercises, walking 10,000 steps a day has been shown to improve cardiovascular health. One burns calories and walking these distances also increases exercise tolerance. Walking the length of the ship many times a day can easily bring one close to the 10,000 steps or 9 kilometers. If crew members stick to this goal of 10,000 steps a day, it adds up to burning about 3,500 extra calories a week, which is a steady, realistic and achievable goal. However, any amount of activity beyond what crew are currently doing will likely benefit their health.

Conclusion

Whilst seafarers are restricted in what activities they can engage in because of the limitations of their environment, there are many ways to keep fit on board a ship. These activities can help reduce the risk of lifestyle-related diseases. Managers should encourage seafarers to consider their activity levels and take the necessary steps to ensure that they retain a reasonable state of fitness during their contracts.

Even moderate increases in activity levels can have a positive impact on the state of an individual's health. Simple exercises such as those listed can mean the difference between a long career or one that is cut short by ill health.

Keeping in shape on board

The drilling contractor Maersk Drilling has implemented gyms and exercise facilities for employees on board all its drilling rigs. The facilities are frequently used and contribute to the overall welfare of the fleet.



Benjamin Nehammer
Editor & Journalist, Maersk Drilling
T +45 2921 2604
E benjamin.moller.nehammer
@maerskdrilling.com

Exercise in the ocean

For offshore workers, working on board means you won't always have access to the luxury of a gym.

But, for a number of years, Maersk Drilling has offered gym facilities on board all of its rigs, including dumbbells, bench press equipment and exercise bikes. The facilities are popular with offshore crews and are widely used.

Fostering a healthy lifestyle

'It is important for Maersk Drilling to ensure that we have a healthy workforce,' says Kasper Sottrup-Jensen, Deputy Asset Manager of International Jack-ups in Maersk Drilling. 'Not only does it help our employees' health here and now, it also helps them lead healthy lives by creating healthy exercise habits and routines.'

In addition to gyms, some Maersk Drilling rigs offer a sauna, and all rigs offer a healthy meal choice for every meal. Several rigs also have their own initiatives, such as forming a team to participate in local running events.

Some of Maersk Drilling's larger rigs have unique facilities. The Maersk Guardian, for instance, has a small basketball court, and the Maersk Giant is equipped with a badminton court. Although not all rigs have room for that kind of exercise facility, every Maersk Drilling rig offers ample opportunity for the crew to meet their exercise needs.

The benefits

'We know that exercise is a great contributor not only to physical, but also to mental wellbeing. Quite simply, exercise contributes to people's happiness and health,' says Erik Roesen Larsen, Head of Health, Safety, Security and the Environment in Maersk Drilling. 'In a way, exercise is a kind of basic insurance for people, something that helps us stay healthy and engaged for years to come.'



Incentivisation, motivation and wellbeing

How can we best motivate our seafarers to maintain a healthy lifestyle whilst on board? Seafarers have a greater chance of obtaining their health and fitness goals if properly motivated.



Richard Bell
Loss Prevention Executive
T +44 20 7680 5635
M +44 7919 492 718
E richard.bell@ctplc.com

Enduring habits

Seafarers, like most humans, are creatures of habit. The habits or lifestyles they lead on board ships have developed over years of service at sea, making them comforting and hard to change. The club's research regarding lifestyle-related illness indicates that poor habits/lifestyles will often result in medical conditions that endanger the health and career of a seafarer. Strategies to change these habits and alter these patterns of behaviour can have many benefits.

Why change habits?

Organisations which employ human beings, regardless of whether they are shore-based or sea-based, suffer from the same types of issues. Ill health and days lost due to sickness are a drain on an organisation and reduce operational effectiveness. It is in the interests of organisations to promote healthy living to reduce the incidence of ill health and sick days. Many shore-based organisations have been incentivising such behaviour for years and have been very successful at reducing these problems.

Incentivisation – reward?

Reward

Many shore-based companies employ competition, teamwork and the natural drive to win, in combination with financial incentives, to promote specific desired behaviours. These often take the form of initiatives or elements of wellness programmes, for example:

- Weight loss challenges
 - Teams of employees compete to reach specific weight-loss goals
 - Identifiable rewards for the winners
- Team sports events
 - Team sports that are suitable for ships can offer excellent entertainment for participating crewmembers
 - Teams drawn from different departments add an extra element of competition
 - An organised regular programme of matches over the course of a voyage will help to improve levels of activity, fitness and social interaction

- Fitness-based challenges
 - Teams of employees compete to attain specific goals designed to improve fitness
 - Held over a number of weeks
 - Goals could include, pedometer steps, or miles cycled or run on exercise bikes/treadmills
 - This type of challenge can be referenced to a particular recognisable feature, such as the first group to cycle the combined length of 'Route 66'.
 - Identifiable rewards for the winners and runners-up
 - An example of this is the International Seafarers' Welfare and Assistance Network's (ISWAN's) [Training on Board](#) initiative, which allows different ships to compare activity levels and compete with each other via the internet
- Smoking cessation programmes
 - Organised programmes to help workers quit smoking
 - Often involving team-based programmes for mutual support
 - Various organisations provide guidance on how to launch such programmes
 - The British Heart Foundation's [We quit at work](#) materials are an excellent example of such guidance.

Disincentives

A [recent trial](#) involving 281 obese adults showed conclusively that human behaviour is motivated in predictable ways. Each of the 281 participants was tracked for 13 weeks and each was required to meet a 7,000 steps per day objective. The participants were rewarded for successfully meeting their objectives in different ways:

1. Some participants were simply told that they had met their goals.
2. Some were entered into a cash lottery.
3. Another group were given \$1.40 dollars each time they met their goals.
4. A further group was given an initial payment of \$40 dollars at the start of the study and were penalised \$1.40 for every day they failed to meet their objective.

When the results were collated, it was found that participants in the first three groups met their goal 30%–35% of the time, whilst the participants who 'lost' money for their failure to achieve their objective were successful 45% of the time. The higher achievement rate for the latter group has been attributed to participants' perception of having experienced a loss, rather than a gain, and that such negative incentives may serve to motivate people in a slightly more effective way.

Studies such as these should provide food for thought for those organisations which are considering ways to reduce obesity and increase the exercise levels of seafarers. In this case, the negative incentive could take the form of deductions from a cash bonus provided at the start of a contract for each failure to meet a specific objective. On the face of it, \$1.40/day appears to be a relatively inexpensive way to motivate crewmembers and the theory is backed by solid science.

Conclusion

Seafarers use many methods to adapt to the rigours of life at sea, some of these adaptations can be negative, such as comfort eating. Research has shown that human behaviour can be altered by incentives, team spirit and feelings of accomplishment. Organisations can harness rewards or disincentives to get their crewmembers exercising, eating better or to quit smoking. If crewmembers are successfully engaged in such programmes, it is hoped that the costs of organising them will be offset by the reduction in lifestyle-related illnesses suffered by the crew and therefore the associated costs for their employers.



Seafarer mental health: A rising tide

It is a sad fact that despite the many advances in the area of seafarer welfare in the last 30 years, the number of seafarers suffering from mental illness is on the rise. There is a pressing need to address this problem.



Ray Barker
Head of Operations, ISWAN
T +44 20 8253 0160
E ray.barker@iswan.org.uk

Over the last four years, ISWAN has noticed an increase in the number of seafarers calling our helpline suffering from a variety of mental health issues. There is also a consensus that the number of seafarer suicides has increased. However, no single organisation collates such information and existing data is not regarded as particularly accurate. One P&I club has reported that suicide among seafarers with mental health issues has tripled since 2014 and that 40% of those who died were cadets. This trend should be of grave concern to all stakeholders within the maritime industry. Tackling this problem and reversing this trend should be at the top of the agenda for those with the power to affect change in the lives of seafarers.

Risk factors

ISWAN's experience shows that working at sea exposes seafarers to a number of factors that can push them towards the higher-risk areas for mental health problems.

These factors include:

1. Social isolation: Long periods of time spent alone in cabins allows seafarers to ruminate over perceived problems.
2. Long voyages: The rigours of life at sea without a break can take a toll on even the most robust seafarer.
3. Fatigue due to the watch system: Lack of rest has been linked to a host of physical/emotional problems.
4. Separation from family and friends: Lack of contact with loved ones who can provide a sympathetic ear in times of stress can have a profound impact on some individuals.
5. Increased pressure: Lower crewing levels places the burden of on-board tasks on the shoulders of fewer seafarers, who will inevitably feel the strain.



The International Seafarers' Welfare and Assistance Network (ISWAN) is a UK-based charity which works to promote and support the welfare of seafarers globally.

6. Lack of crew cohesion: Crews often do not mix socially as they did only 20 years ago; problems concerning language and culture may also exacerbate this problem.
7. Lack of shore leave: Shorter turnaround times often deprive seafarers of the benefits of a run ashore.
8. Harassment and bullying: Seafarers subjected to bullying and harassment live in close proximity to those who are bullying and harassing them.
9. Precarious employment: With employment after the completion of their contracts not guaranteed, many seafarers experience anxiety when their current contracts come to an end.

The good news is that help is out there

Organisations such as ISWAN cannot resolve the problems of smaller crew sizes or lack of shore leave, but we can provide support for seafarers in need. An effective tool for seafarers suffering from mental health problems is emotional support (and if necessary, counselling) provided remotely. ISWAN delivers support via a helpline called 'SeafarerHelp', which operates 24 hours per day, 365 days per year for seafarers and their families. It is available to any seafarer, or their family, globally.

SeafarerHelp will try to assist with any kind of a problem and can be contacted by email, Facebook, LiveChat, telephone, Skype, WhatsApp, Viber, SMS text and vk.com. We speak 12 different languages including Filipino, Hindi, Russian, Chinese, Spanish and Arabic. Operatives have been trained by the Samaritans, counsellors and a clinical psychologist to further enhance their skills in these areas.

How can companies help

1. Stigma: General educational programmes for ship staff to help remove the stigma around mental health
2. Training: To help ship staff to be aware of the signs when someone is having a mental health problem, particularly for officers/senior officers
3. Awareness of resources: Companies can help promote knowledge of ISWAN's SeafarerHelp service and other organisations that can provide counselling to seafarers on board their ships – a list is provided at the end of this publication.
4. Taking steps to try to address some of the risk factors that are known to contribute to mental health problems amongst seafarers.

Conclusion

Whilst there is no easy solution to tackle mental health issues amongst seafarers, a combination of action by employers and access to services such as SeafarerHelp could hopefully address the trend of increased mental illness at sea.



Post-traumatic stress disorder (PTSD) and the seafarer

Exposure to traumatic events, be they road traffic accidents or machinery space fires, may have lasting consequences. A minority of people exposed to traumatic events will develop psychological problems, including post-traumatic stress disorder (PTSD), whilst most will remain resilient.



Professor Neil Greenberg
Managing Director,
March on Stress Ltd
T +44 7775 677 859
E info@marchonstress.com

What is PTSD?

PTSD is a mental health disorder which follows exposure to actual or threatened death, serious injury or sexual violation. The disorder may follow a single significant incident or come on as a result of an accumulation of traumatically stressful incidents over time. Some occupations, such as military personnel or emergency service workers, are at increased risk of suffering from PTSD. How common PTSD is in seafarers is unknown.

What are the symptoms?

There are four groups of PTSD symptoms:

- a) intrusion symptoms such as recurrent trauma-related thoughts, nightmares or becoming anxious/ aroused when reminded of the event
- b) avoidance of reminders of the incident
- c) negative alterations in cognitions and mood, which include feeling emotionally numb or unjustifiably feeling guilty, shameful or angry
- d) alterations in arousal and reactivity, which include poor sleep, irritability, jumpiness and being especially aware of potential threats.

Diagnosis

PTSD may be diagnosed when the above symptoms are present for at least a month and they substantially interfere with someone's ability to function. PTSD may cause impulsivity and poor decision-making, and interfere with sleep leading to fatigue.

Personnel in safety-critical roles who experience PTSD may inadvertently cause significant harm; for example, they may miss warning indicators, ignore or misinterpret instructions, or fail to carry out essential safety checks correctly.

Symptoms that are not functionally impairing do not amount to a diagnosis of PTSD. In some cases, PTSD sufferers may recover without the need for treatment, but it can also be a chronic and debilitating condition associated with significant social impairment and a range of other mental and physical health problems, as well as substance abuse.



Case study

A crewmember unsuccessfully tries to resuscitate a colleague crushed by a container after a hydraulic lift failure. The crewmember quickly finds that they cannot stop thinking about the incident and have nightmares about it, often waking in a sweat.

They avoid going on the upper deck anywhere near the location of the accident. They cannot concentrate on their usual tasks, and are constantly jumpy and on edge in case another incident might occur.

They do not speak to their colleagues about the incident because doing so distresses them. Also, they begin covertly drinking spirits in an attempt to get some sleep.

Over time, their symptoms get worse. Two months after the incident, they ask to be landed at the next port. It is only when an officer asks what's wrong that the individual, uncharacteristically, breaks down in tears and explains the reasons for their predicament.

Conclusion

Shipowners should be aware that trauma-exposed crew may develop PTSD. Officers should monitor the behaviour of trauma-exposed crewmembers and sensitively ask about their well-being a month or so after an incident. Those who might be affected should be encouraged to seek a professional assessment. Unfortunately, evidence shows that most people with PTSD do not seek help until their life falls apart or a crisis occurs. However, effective treatment can improve health and maintain someone's ability to work at sea.

Why screening does not work but peer support does

Mental health issues amongst seafarers seem to be increasing. While screening for potential vulnerability may seem like an attractive option, it may simply not work.



Professor Neil Greenberg
Managing Director,
March on Stress Ltd
T +44 7775 677 859
E info@marchonstress.com

Seafarer mental health

Mental health in the workplace is currently a hot topic. Evidence collected from maritime organisations has highlighted that seafarers may be considered an especially 'at risk' group. For instance, between 1960 and 2009, around 6% of seafarer deaths were due to suicide¹. This figure excludes those who 'disappeared' at sea, many of whom are likely to have taken their own life.

However, whilst tragic, suicide is likely to be only the tip of the mental health iceberg, with cases of depression, post-traumatic stress disorder (PTSD) and other anxieties disorders (together referred to as common mental health disorders or CMHDs) being likely to both be a cause of sickness absence and poor performance on board.

The importance of screening

Given the increasing awareness of mental health disorders in seafarers, it is perhaps not surprising that screening personnel for potential vulnerability to develop mental health problems may seem like an attractive option. Selection screening refers to the administration of some combination of questionnaires and/or formal assessments by a mental health professional in order to identify who is, or is not, suited to be at sea.

Valid and reliable pre-screening would allow unsuitable prospective seafarers to avoid risking their mental health, help avoid costly mental health repatriations and reduce the risk of mental health related poor performance, and the consequential risk of accidents.

The failure of screening

However, evidence² from high-quality studies carried out in other occupational groups, most notably the armed forces, has shown that selection screening processes do not work. For instance, a screening trial of British military personnel deployed to the Iraq War in 2003 found that a pre-screening process to prevent troops developing PTSD was wrong four times out of five.

Importantly, screening failed to identify the majority of those who went on to suffer PTSD and was equally ineffective for other CMHDs. The reasons for the failure of a pre-screening process are varied but include personnel not wishing to answer questions about their psychological health honestly because they fear being stigmatised or suffering a career foul.

1. Iversen RTB. The Mental Health of Seafarers. International Maritime Health 2012;63(2):78-89
2. Rona R, Jones M, Hooper R, Hull L, Browne T, Horn O, Murphy D, Hotopf M and Wessely, S. Mental health screening in armed forces before the Iraq war and prevention of subsequent psychological morbidity: follow-up study. BMJ 2006; 333: 991-995

Also, pre-screening does not take account of the strong evidence that good social support and effective supervision whilst on board a vessel are far more important predictors of mental health status than whether someone had a poor childhood, is poorly educated or has a prior history of a mental health disorder.

There is very good evidence that effective social support provided by colleagues, and more importantly a seafarer's day-to-day supervisor, strongly influences their mental health.

For instance, evidence from British troops deployed to Afghanistan over the last ten years showed that personnel who reported being well led/supervised experienced one-tenth the rate of PTSD when compared with less well-led colleagues.

Structured peer support programmes, and managerial mental health training, have been shown to be effective in numerous challenging occupations such as the emergency services, the media, diplomatic service and the military.

Perhaps now is the time for maritime organisations to invest in similar initiatives and reap the benefits for both shipowners and the crews who man the vessels.

Conclusion

Gone should be the attempts to screen out vulnerable individuals; such efforts are ineffective and highly imprecise. Instead, there should be investment in ensuring that a ship's crew is enabled to properly support each other and to identify those who need professional help, which is a powerful approach to improving team resilience and one backed by strong scientific evidence.



The risks and rewards of seafaring in the digital age

It is impossible to ignore how much the proliferation of the internet and social media has changed the way people interact and communicate. Seafarers are not immune to these changes. How has the introduction of internet on board ships changed the social cohesion between seafarers?



Yves Vandeborn
Director of Loss Prevention
T +65 6506 2852
E yves.vandeborn@ctplc.com

In just 25 years, the number of internet users has grown from a few million to more than four billion – over half the total population. Advances in satellite communications mean that the proportion is even higher on ships, with 75% of the world's seafarers now online.

When you set sail back in the 1990s, keeping in touch with family and friends usually meant a brief but expensive long-distance telephone call from port every few weeks or receiving a stack of 'snailmail' once a month. Socialising on board was not just limited to a drink with other crewmembers in the bar before dinner, but also included a video or ping-pong match afterwards. Not to forget about karaoke!

But with on-board wi-fi, you can now stay in constant contact with your loved ones, sharing every moment of each other's lives. You can also watch television and download new books, music, films and games without leaving your cabin.

Importance of connectivity

Certainly, seafarers like connected ships. According to Futureonautics' [Crew Connectivity 2018 Survey Report](#), internet access strongly influences the decision of 92% of seafarers on where to work. Most (95%) see connectivity as having a positive effect on on-board safety too.

The Mission to Seafarers' latest [Seafarers' Happiness Index](#) (Q1 2018) confirms that being in contact with their family while at sea makes seafarers happier than anything else. They scored it 7.12 out of 10, 7% higher than for the last quarter.

However, in terms of importance, seafarers rank internet provision just fifth out of six services provided by shipowners. Pay, benefits, training and food are all considered more important, with only entertainment less so.

Effect on social interaction

On the down side, over half (53%) of seafarers now believe that increased connectivity has led to a decline in social interaction with their fellow crewmembers. Indeed, happiness from interaction with other crew has fallen 13% over the last quarter to 7.08 out of 10.

The Mission to Seafarers is quick to point out that correlation is not the same as causation; 'With ever smaller crew numbers, with single occupancy cabins and the fact that ships do not always have a bar anymore to serve as the hub of activity, then it is perhaps too easy to think that online access is the reason for people retreating into isolation.'

Cultural differences, gender and racial discrimination, and increased separation of shipboard work areas are cited as more obvious barriers to interaction.

Opportunities for shipowners

There is no doubt from a shipowner's perspective that the opportunities offered by increased connectivity are many – and go well beyond the original aim of improving crew communications.

Shore-staff can become far more involved with the operation of permanently connected ships, from real-time monitoring of engine and machinery performance to visual feeds of mooring and loading. They are also one step closer to unmanned ships.

In the meantime, maintaining the health and welfare of the dwindling population on each ship remains vital. Any concerns about the negative impact of connectivity on mental well-being need addressing as a matter of urgency.

Ideas for improvement

One suggestion that surfaced in the Futureonautics report is reviving the idea of the 'internet cafe'. Restricting online access to communal areas (and possibly certain times of day) would create a link between communicating with home and communicating with colleagues.

It would definitely help prevent seafarers being constantly distracted by their mobile devices while working, particularly if there is an ongoing problem back home. It would also mean good and bad news can be immediately shared and discussed, rather than bottled up or forgotten.



It should be clear that access to personal devices to check emails or social media apps or communicate with family/friends should be prohibited on the bridge, engine room, cargo control room or other sensitive areas where the crew's attention should be 100% focused on the job.

Communal internet areas could also be fitted out with bigger, higher-quality screens, which are still more enjoyable to watch than those on hand-held devices. Online entertainment such as live sports coverage, new movies or multi-player video games can then be enjoyed as a group activity.

Last but not least, consideration could be given to controlled provision of low-strength alcoholic drinks (together with non-alcoholic equivalents) in communal internet areas as a further incentive for crewmembers to emerge from the isolation of their cabins.



Cyber resilience

Just under half (46%) of seafarers say they have sailed on a vessel that has been compromised by a cyber attack¹. This is a threat that will only grow as connectivity increases.

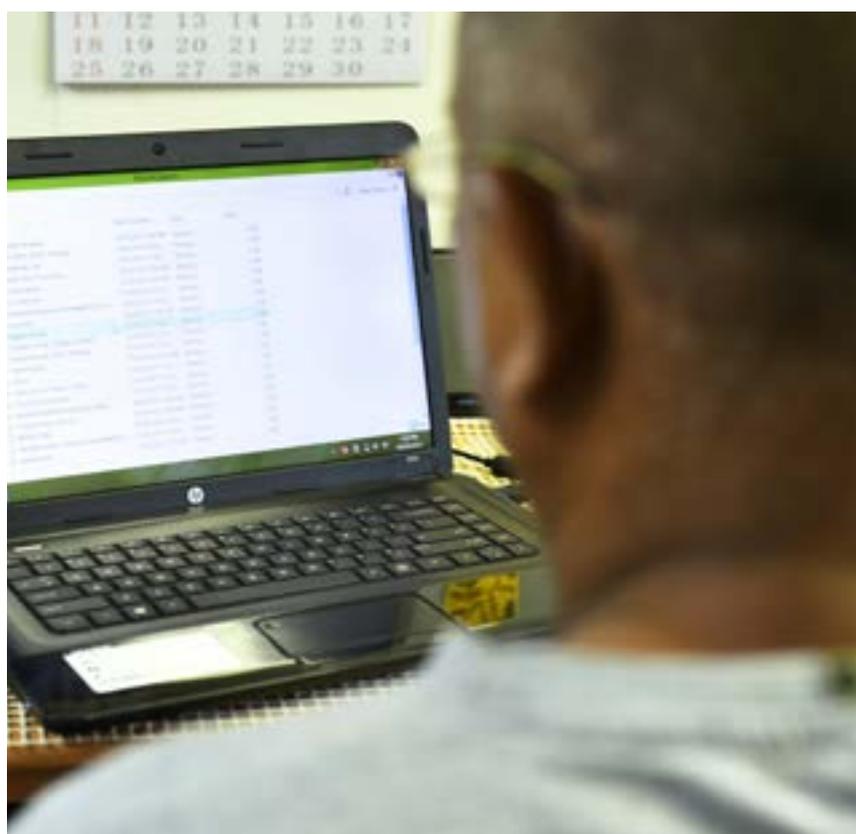
It is essential for cyber security and resilience to be embedded in all shipboard operations, systems and training, with full advantage taken of free industry initiatives such as 'Be Cyber Aware at Sea'.

Conclusion

The world is only just beginning to experience the transformative and disruptive effects of the digital age. Far bigger changes are just around the corner, which for the shipping sector could mean fully autonomous vessels that can do everything for themselves.

These transitions will not be painless – each new technology will require an adjustment to how we do things. For example, on-board connectivity makes seafarers much happier but appears to undermine social cohesion. This might be fixed by using technology to control where and when online access is available and to bring seafarers together.

As Futureonautics head, K D Adamson, points out, 'the real value of technology comes when you deploy it intelligently'.



1 Futureonautics, *Crew Connectivity 2018 Survey Report*

The human element – the effects of fatigue on ship safety

PART 2 – Practical advice to the seafarer

The human element is often cited as a major cause of marine incidents. Fatigue is the main contributory factor in such incidents. 82% of the recorded groundings and collisions occurring between 0000 and 0600 hours are caused by fatigue.¹



Andrew Russ

Introduction

Fatigue is not a new issue for seafarers. However, in recent years, it has increased due to:

- greater commercial pressure
- quicker turnarounds
- more efficient port facilities
- reduced manning
- the depressed economic state of the marine industry.

It is paramount for all seafarers to fully understand fatigue, how it is caused and what can be done to prevent or at least minimise its effects.

What is fatigue?

Fatigue is considered as 'A reduction in physical and/or mental capability as the result of physical, mental or emotional exertion which may impair nearly all physical abilities including: strength; speed; reaction time; co-ordination; decision making; or balance'.²

The effect of fatigue on human performance

Medical research has proven how dramatically fatigue can influence an individual's ability to carry out day-to-day duties. Approximately 22 hours of wakefulness is equivalent (in relation to impairment of performance) to having a blood-alcohol concentration of 0.1%.³

This is double the legal driving limit in most EU member states. It can also lead to long-term health conditions such as obesity, cardiovascular disease and diabetes.⁴ It is clear that eliminating fatigue is paramount for both the shipowner and the crewmember.

What action can be taken by the ships' staff to prevent or reduce levels of fatigue?

Outside of efforts undertaken by shipowners and industry bodies, there are measures that can be taken by the seafarers themselves to reduce occurrences of fatigue, which should be encouraged by managers.

Management of work periods

Although responsibility for a ship's compliance to STCW has now been placed on shipowners (to provide the necessary resources and manning levels), final responsibility stills remains with the ship's master.

The use of the '6 on 6 off' watch system has proven to increase fatigue and stress levels.⁵ Forward planning by masters, whenever possible, to minimise periods where this watch system is required is essential.

- 1 UK Marine Accident Investigation Branch (MAIB), *Bridge Watchkeeping Safety Study, 2004*
- 2 International Maritime Organization (IMO), MSC/Circ.813/MEPC/Circ.330, *List of Human Element Common terms, 1997*
- 3 *Comparison of the relative effects on performance of sleep deprivation and alcohol*, by A.M. Williamson & A-M Feyer, 2000
- 4 National Health Service, UK (NHS), *Sleep and tiredness, why lack of sleep is bad for your health, 2018*
- 5 Warsash Maritime Academy, Southampton Solent University and the Stress Research Institute, University of Stockholm, *Investigation of the 8-hours on/8-hours off seafarer watch keeping system, a final report to the UK Maritime and Coastguard Agency, 2016*

Management of rest periods

Modern technology allows seafarers to readily communicate with friends and family ashore, watch movies and play video games in the comfort of their own cabin. Whilst this is an advantage, seafarers should take care to ensure that they don't unduly disrupt their rest hours with such diversions. The ease of communication with home can result in unfiltered news, sometimes bad, being received, leading to increases in stress levels.

Optimum contract lengths

Individual seafarers' contracts vary considerably, despite all being compliant with MLC 2006 limitations.⁶ An optimum contract length would be three to six months, significantly less than the MLC limitation. Contracts of over six months may result in sleeplessness, loss of sleep quality and reduced motivation, leading to fatigue and stress.^{7,8}

Seafarers, not only owners/managers, should be active in determining the length of their contract. The extension of contracts to over 11 months should be discouraged.⁹

Suitable vacation periods between contracts

Seafarers need to take accountability for ensuring suitable leave periods to avoid stress or fatigue-related long-term illnesses. Research indicates that leave periods cannot be calculated from a generic equation, as recovery time between voyages is dependent on many variables such as rank, watchkeeping patterns, ship design,

trading pattern and workloads, and ultimately the well-being of the individual seafarer.^{7,8,9}

Fully embrace and utilise new innovations to help reduce fatigue

These schemes need seafarers' support for shipowners/managers to be able to identify where any significant beneficial changes can be made.

Weather routing

Utilising effective weather routing to avoid adverse weather provides a more comfortable living environment, ensuring that crewmembers get sufficient sleep during rest periods.

Fatigue Risk Management Systems

Fatigue Risk Management Systems (FRMSs) are being introduced into the marine industry, having already had considerable success in other safety-critical industries. FRMSs are designed to assist in identifying shortfalls in existing company procedures as well as international regulations and what amendments should be made to address them.

FRMSs use a comprehensive, systematic approach by reviewing all aspects of the workplace, including operational requirements/restrictions, quality assurance as well as company procedures. The standard core elements being implemented across the industry are:^{7,8}

- fatigue awareness training and cultural change programmes
- a fatigue reporting system within a just culture

- data-driven analysis for operational fatigue risk assessment, workload management and monitoring of adequate sleep for seafarers

For FRMSs to be truly effective, it will require full commitment from shipowners, shoreside personnel as well as seafarers.

Maintaining seafarers' standard of health

Seafarers need to understand the link between fatigue and ill health. Long-term fatigue can lead to reduced work performance, ill health and reduced lifespan. Seafarers can take positive steps to help minimise the effects of fatigue on their health by prioritising rest during off-watch periods over other on-board activities.

Conclusions

A full understanding of fatigue, how it is caused and the ability to recognise the symptoms is of paramount importance for all seafarers and particularly the master. Pre-emptive action should be encouraged:

- maintain a healthy diet and exercise routine
- ensure prejoining medicals are comprehensive and all, if any, medicines being taken are disclosed
- ensure a good understanding of fatigue and know how to identify the symptoms
- ensure that crew feel able to advise senior officers if they believe they are suffering from fatigue
- avoid extensions past 11-month contracts
- ensure adequate leave to allow crew to fully regain normal physical health before returning to sea.



6 MLC 2006

7 Project Horizon, 2012

8 Project Martha, 2013–2016

9 Occupational Safety and Health Research Institute, USA, *Sleep and Fatigue Among Seafarers: The Role of Environmental Stressors, Duration at Sea and Psychological Capital*, 2016

Charities which can provide support for seafarers

International Seafarers Welfare and Assistance Network

Web: www.seafarerhelp.org

Mission to Seafarers

Tel: +44 20 7248 5202 (will redirect to an on-call number if out of hours)

Email: crewhelp@mtsmail.org

Web: www.missiontoseafarers.org

Seafarers Hospital Society

Web: <https://seahospital.org.uk/mental-health-and-wellbeing-2/>

Sailors Society

Trained chaplains can be contacted on:

Africa Rev J.D. van Schalkwyk: +27 31 266 0695

Asia Gavin Lim: +65 9222 4600

Europe Alexander Dimitrevitch: +380 503 366 790

India Manoj Joy: +91 9884 140 950

The Philippines Iris Picardal: +63 9175 782 118

Email: crisis@sailors-society.org

The Standard Club has no affiliation with the above organisations. The listing of organisations should not be regarded as a recommendation, rather an indication of the types of charities/organisations available to support seafarers.

Commercial organisations which can provide services related to seafarer welfare

March on stress

Email: info@marchonstress.com

CONOVAH ApS Health and Safety Solutions

Tel: +45 4014 1084

Email: info@conovah.com

Web: conovah.com

WellAtSea

Email: info@wellatsea.com

Tel: +45 2714 0707

Future Care Inc.

Caring for the Crew® Program – Global Medical Advice Contact Center:

Email: firstresponse@futurecareinc.com

This email address is monitored by first responders 24/7 and should be utilized to request non-emergency port side medical appointments

Call line: +1 917 579 0257

Alternate line: +1 917 432 2400

Call line phone numbers are for medical emergency assignments only

The Standard Club has no affiliation with the above organisations. The listing of organisations should not be regarded as a recommendation, rather an indication of the types of charities/organisations available to support seafarers.

The Standard Club issues a variety of publications and web alerts on topical issues and club updates. Keep up to date by visiting the news section on our website www.standard-club.com

 **@StandardPandi**
 **The Standard P&I Club**

This Standard Safety is published on behalf of The Standard Club Ltd by the managers' London agents: **Charles Taylor & Co. Limited.**

Registered in England No. 02561548
Authorised and regulated by the Financial Conduct Authority FRN 785106.
Registered address: The Minster Building, 21 Mincing Lane, London, EC3R 7AG

The information and commentary herein are not intended to amount to legal or technical advice to any person in general or about a specific case. Every effort is made to make them accurate and up to date. However, no responsibility is assumed for their accuracy nor for the views or opinions expressed, nor for any consequence of or reliance on them. You are advised to seek specific legal or technical advice from your usual advisers about any specific matter.

Telephone: +44 20 3320 8888
Emergency mobile: +44 7932 113573
E-mail: pandi.london@ctplc.com
Website: www.standard-club.com

Please send any comments to the editor, Yves Vandeborn. E: yves.vandeborn@ctplc.com T: +65 6506 2852

The Standard Club Ltd is regulated by the Bermuda Monetary Authority. The Standard Club Ltd is the holding company of The Standard Club UK Ltd and The Standard Club Asia Ltd. The Standard Club UK Ltd is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. The Standard Club Asia Ltd is regulated by the Monetary Authority of Singapore.

**Charles
Taylor**