

Risk Assessment

Risk assessment has been made mandatory by the amendments 6 to the ISM Code in force from July the 1st 2010. Formal Safety Assessment (FSA), as part of IMO rule-making process, was adopted in 2002, with the goal to ensure that action is taken before a disaster occurs, unlike the more common practice in the past that the new regulations are adopted as a consequence or answer to the serious accidents. We can remember “Titanic” or “Estonia” only as examples of the reactive regulatory approach. FSA is used to evaluate proposals for new regulations or to compare proposed changes with existing standards enabling a balance to be found between the various technical and operational issues, including the human element, and between safety and costs of implementation of the new

rules, as “a rational and systematic process for assessing the risks associated with shipping activity and for evaluating the costs and benefits of IMO’s options for reducing these risks.”

FSA consists of five steps:

1. identification of hazards (a list of all relevant accident scenarios with potential causes and outcomes);
2. assessment of risks (evaluation of risk factors);
3. risk control options (devising regulatory measures to control and reduce the identified risks);
4. cost benefit assessment (determining cost effectiveness of each risk control option); and
5. recommendations for decision-making (information about the hazards, their associated risks and the cost.

What is the Difference between Fatigue and Sleepiness?

Fatigue is commonly described as a state of physical and/or mental exhaustion that can be caused by a wide range of factors, including long hours, shift work, inadequate rest and international travel. It can result in a progressive decline in alertness and performance, a loss of energy and slowed movements and reactions.

Sleepiness is often used to describe the state of fatigue.

Influence of fatigue

Laboratory research and studies in other transport modes have demonstrated that severe sleepiness (and even sleep onset) and performance deterioration is common amongst workers undertaking night shifts.

Fatigue is an important health issue, with significant



From the movie *Modern times*.

Source: Flickr.com

evidence to show the way in which long-term sleep loss can be a risk factor in such conditions as obesity, cardiovascular disease and diabetes.

The increasingly intensive nature of shipping operations means that seafarers frequently work long and irregular hours. And factors such as noise, vibration, sailing patterns, port calls, cargo handling and other activities can all reduce the ability of seafarers to gain quality sleep during their rest periods. Seafarers are already usually covered by company, sector specific, flag state or IMO rules banning or severely restricting alcohol use at sea. Studies have shown that around 22 hours of wakefulness will have a similar effect upon the impairment of an individual's performance as a blood-alcohol concentration of 0.10% -- double the legal driving limit in most EU member states.

Is safety always first?

The role of fatigue and sleepiness in other safety-critical industries and in other modes of transport has been extensively researched. In contrast, there has been very little shipping based research and studies of seafarers' working hours and it has been largely over the past 20 years that an increasing weight of evidence gathered from research among seafarers and analysis of the role of fatigue in accidents at sea has begun to emerge.

Project Horizon was established in response to growing concern about the increased evidence of the role of fatigue and sleepiness in maritime accidents. The project is therefore closely aligned to the FP7 (Sustainable Surface Transport 2008 RTD-1 call) aims of increased safety and security, and reduced fatalities. Over the past 20 years, the shipping industry has become increasingly aware of the importance of the 'human factor' in safe shipping operations. The increased complexity of ships' systems and the growing technological sophistication of onboard equipment have placed greater emphasis on the performance of seafarers – and watch keepers in particular. The marked increase in the size of passenger ships and cargo vessels has also highlighted

the potential for substantial loss of life or pollution in the event of an accident. As awareness of the importance of the human factor in shipping has grown, recognition of the role of fatigue in maritime safety has also increased. There have been a number of high-profile and often costly and damaging casualties in which seafarer fatigue has been shown as a key causal factor.

These include:

- the *Exxon Valdez* tanker disaster in 1989. The US National Transportation Safety Board found that in the 24 hours prior to the grounding of the ship, the watch-keeper had only had five or six hours of sleep;
- the grounding of the general cargo ship *Jambo* in Scotland in June 2003, after the chief officer fell asleep and missed an intended change of course;
- the grounding of the bulk carrier *Pasha Bulker* near the port of Newcastle in Australia in June 2007, in which an investigation report stated that 'the master became increasingly overloaded, and affected by fatigue and anxiety;
- the grounding of the feeder containership *Cita* in the Isles of Scilly in March 1997, after the mate fell asleep and the ship sailed for two and a half hours with no one in control;
- the death of a Filipino AB in a fall onboard the Danish-flagged general cargo ship *Thor Gitta* in May 2009. Investigators who used FAID fatigue assessment software found that the seafarer's 6-on/6-off work pattern was at a score of 111 on the morning before to the accident – a level considered to be in the very high range;
- the grounding of the bulk carrier *Shen Neng 1* on the Great Barrier Reef in April 2010. The Australian Transport Safety Bureau investigation found that the grounding occurred because the chief mate did not alter the ship's course at the designated position. His monitoring of the ship's position was ineffective and his actions were affected by fatigue. Investigations showed that he had only two and a half hours sleep in the 38.5 hours prior to the casualty.

Fatigue and Performance Results

Mike Barnett

The full results can be found at www.project-horizon.eu. However, the following general conclusions can be drawn:

- The data supports previous research findings and circadian theory. Watch keepers are most tired during the night watches and also show signs of tiredness in the afternoon;
- Sleepiness and neuro-behavioral performance, as measured by the EEG electrodes, are particularly affected towards the end of the 00.00-06.00 watch. Sleepiness and fatigue are enhanced and brain performance reduced. In addition, there is a gradual increase of fatigue during the work periods as the week progresses;
- Occurrences of small periods of sleep have been shown through analysis of the EEG recordings, both on the bridge and in the engine room. About 20% of participants fell asleep at some point during the 6/6 watch regime;
- From the evidence of the sleep diaries, The 6 hours on /6 hours off watch regime is more tiring than the 4on/8off;
- The onset of tiredness on the 6on/6off was apparent over a shorter time frame than might have been predicted by previous research;
- "Disturbed" rest periods produce significantly higher levels of tiredness: the quality of sleep is more significant than the workload;
- The data appears to be robust enough to provide input to future marine-validated fatigue prediction models.

This final point is an important one. It is hoped that HORIZON, in addition to providing guidance to individual seafarers and managers on ensuring good quality sleep, will be able to make a major contribution to the welfare of seafarers by contributing data to the production of fatigue prediction software. Such technology will help seafarers to plan their work schedules and disturbances to the normal watch keeping patterns in such a way as to mitigate the risk of fatigue.

The analysis of "naturalistic" performance is still ongoing but a number of problems and issues have been encountered, which may be of interest to future researchers. These include:

1. Some "events" were not as repeatable as others, for example, although some events involving repetitive procedural responses are easily initiated, other events such as collision avoidance situations are not so easily set up on every occasion.
2. Some performance criteria for measuring performance during these events are more valid and reliable than others.
3. Watch handovers were a significant source of data for checking alertness and the overall performance of watch keepers. As noted before, in the light of the Shen Neng1 grounding, handovers represent a major opportunity for errors to occur. There appeared to be a significant deterioration in watch handover performance as the week progressed, and this will need to be verified.
4. There was significant variability in the competence displayed by watch keepers. This was due to the randomness of the candidate selection process. Although there were good performers, there were also some watch keepers who seemed barely competent.
5. Social interaction and levels of communication appeared to be related. When bridge and engine room watch keepers got on well in the mess room, this translated into effective communication on watch. When personality or other differences between participants were apparent, communication suffered.
6. Some procedural tasks (drills) seem more resilient to fatigue than novel situations requiring thought (cognitive skills). In addition, some watch keepers were apparently more resilient to fatigue, but we need to investigate what factors might influence this.

How to Control Working Hours of Seafarers?

Under International Labour Organisation regulations (social provisions) it is permissible for seafarers to work up to 91 hours a week – and, under the International Maritime Organisation’s Standards of Training, Certification & Watch-keeping (STCW) 2010 amendments (safety provisions), a 98-hour working week is allowed for up to two weeks in ‘exceptional’ circumstances. The 2010 ‘Manila Amendments’ require a minimum of 77 rest hours in any seven-day period. The hours of rest may be divided into no more than two periods per day, one of which shall be at least six hours in length, and the intervals between consecutive periods of rest shall not exceed 14 hours. Exceptions to the requirements are permitted in the case of an emergency or in other overriding operational conditions. A party to STCW (usually the administration of the flag state) may also allow exceptions from the required hours of rest provided that the rest period is not less than 70 hours in any seven-day period – and these exceptions cannot be permitted to extend for more than two consecutive weeks. The intervals between two periods of such exceptions shall not be less than twice the duration of the exception.



Auckland Seafarers Maritime Union of New Zealand members at Fullers, Ports of Auckland, August 2008.

Source: Flickr.com

IMO Agrees Guidance for Private Security Guards

The Maritime Safety Committee (MSC) of the International Maritime Organization (IMO) has agreed on interim guidance for private maritime security companies, increasingly used by shipping transiting the pirate-infested waters of the Gulf of Aden and Indian Ocean. The use of onboard armed security guards is one factor that appears to have cut the rate of successful pirate hijacks – although pirate activity continues.

In order to recommend private maritime security companies to be certified under relevant national and international

standards, when these are agreed, and comply with all relevant laws, the guidance also covers the use and role of private guards on board ships, including the management of firearms and ammunition.

The MSC also approved interim guidance on measures to prevent and mitigate Somalia-based piracy, as well as repeating its call on governments and the shipping industry to intensify and coordinate efforts to eradicate piracy and armed robbery against ships.

According to figures for 18 May from the International Maritime Bureau (IMB) worldwide piracy reporting centre, Somali pirates currently hold captive about 13 vessels and 197 hostages. Hostages continue to include seven Indian seafarers from the Asphalt Venture and four South Koreans from the Gemini, still held captive despite the payment of ransoms.

Involvement of a security company for protection of vessels passing area considered dangerous looks as new business in maritime trade. Armed guards use a weapon which has to be paid by shipper. After passing threatened area and before arriving in the next port of call, the weapon has to be destroyed. This is usually to be done by dropping the same into the sea of Gulf of Aden which is already considered as polluted with weapons before piracy appearing. The price of arms is estimated at 20,000-40,000 USD. It is supplied anew for each trip. It seems that once again benefit everyone except seamen.



IMO agrees guidance for private security guards.

The Latest Piracy Incidents

The latest survey of piracy worldwide shows a worrying increase in incidents off West Africa. Figures from the International Chamber of Commerce (ICC) International Maritime Bureau's (IMB) global piracy report show that 102 incidents of piracy and armed robbery were reported in the first quarter of 2012. In this period, 11 vessels were reported hijacked worldwide, with 212 crewmembers taken hostage and four crew killed. A further 45 vessels were boarded, with 32 attempted attacks and 14 vessels fired on.

Although there has been a decrease in attacks by Somali pirates – down from 97 incidents in the first quarter of 2011 to 43 in the same period of 2012 – there has been an increase in attacks by Nigerian pirates, from 10 for the whole of 2011 to the same number in just the first three months of 2012. Nigerian pirates are also extending their range of operation following the tactics of Somali pirates in using mother-ships from which to launch attacks. In one case, two crewmembers were killed when armed pirates boarded their vessel 110 nautical miles off Lagos, Nigeria.

Despite the fall in Somali pirate attacks, due largely to the presence and intervention of navies in the region, Somali piracy will diminish in the short to medium term unless further actions are taken”.

As of 31 March 2012, suspected Somali pirates still held 15 vessels with 253 crewmembers as hostages, with an additional 49 crew held hostage on land. Hostages continue to include seven Indian seafarers from the Asphalt Venture and four South Koreans from the Gemini, still held captive despite the payment of ransoms.

Prosecutions of suspected pirates are now succeeding in many countries. The Kenyan court has now found 11 suspects guilty of piracy; they face potential 20 years in jail. The pirates had been detained by a French warship in 2009 when they had tried to escape from a suspected mother-ship, and were handed over to the Kenyan authorities for prosecution.

There have been two recent examples of naval intervention to prevent pirate activity. On 15 April, a coordinated naval operation led to the rescue of a Yemeni dhow from pirate control. On 18 April, a Spanish warship rescued six Sri Lankan fishers and their fishing vessel 50 miles off the coast of Tanzania. The vessel had been captured in November 2011 and reported to have been used as a pirate mother-ship. Seven suspected pirates were released to the Somali coast as there is currently no agreement on the transfer of suspect pirates between the European Union and Tanzania.

There has been a welcome development for the crew of the Italian tanker *Enrico levoli*, hijacked off the coast of Oman on 27 December. Somali pirates are reported to have released the tanker and its 18 crew – seven Indians, six Italians and five Ukrainians.

The latest incidents worldwide reported to the IMB

Robbers boarded a container ship anchored in the Singapore Strait on 24 April and escaped with ship's stores.

Pirates attempted to board a chemical tanker in the Red Sea on 22 April but abandoned their attack after the onboard security team fired warning shots.

A fishing vessel and two skiffs were reported to have been hijacked 17 nautical miles off Ras Fartak, Yemen on 21 April.

Eight robbers boarded a bulk carrier anchored at Samarinda, Indonesia on 20 April, tied up the duty crewmember who managed to escape and raise the alarm, and escaped with ship's stores and property.

Robbers boarded a tanker anchored in Port Suez, Egypt on 15 May and escaped with ship's stores. There had been a similar theft from a tanker in the port the previous day.

Four robbers boarded a bulk carrier off Isla La Palma, Buenaventura, Colombia on 13 May. After the crew mustered and approached them with steel pipes, the robbers jumped overboard and escaped with ship's stores.

About 12 pirates chased a tanker in the Red Sea on 12 May but moved away after the vessel enforced anti-piracy measures, increased speed and the armed onboard security team displayed their weapons.

Robbers boarded a bulk carrier anchored at Muara Jawa, Samarinda, Indonesia on 12 May and escaped with ship's stores.

Six pirates in a skiff approached and fired on a tanker

around 260 nautical miles off Socotra Island, Yemen on 10 May, but abandoned their attack after the armed onboard security team returned fire.

Robbers boarded a bulk carrier anchored at Taboneo, Indonesia on 10 May and escaped with ship's stores.

Pirates armed with AK47 and rocket-propelled grenade approached and fired on a tanker around 345 nautical miles off Socotra Island, Yemen on 9 May. They moved away after the vessel applied effective anti-piracy measures, but the tanker was damaged by the firing.

Two robbers boarded a bulk carrier berthed at Alger, Algeria on 29 May and dropped the ship's life raft overboard, but escaped empty-handed after the alarm was raised. The crew recovered the life raft.

Four robbers armed with knives boarded a container ship at Contecon Guayaquil terminal, Ecuador on 27 May during a formal inspection. The alarm was raised and the robbers jumped overboard and escaped on a waiting boat.

Two robbers armed with knives boarded a bulk carrier in El Dekheila, Egypt on 25 May and escaped with ship's stores on a fishing boat that had been anchored nearby.

A robber armed with a knife boarded a chemical tanker anchored at Mombasa, Kenya on 24 May, attacked and injured the duty officer, stole his personal belongings and escaped.

Robbers armed with knives boarded a tanker anchored off Patenga Point, Bangladesh on 22 May and escaped with ship's stores. The incident was reported to the coastguard who sent high-speed boats to search the area, catching three robbers and recovering the stolen stores.

Ten small boats surrounded a laden barge being towed by a tug off Talicud Island, Philippines on 17 May. About 30 robbers boarded the barge, transferred the cargo to their waiting boats and escaped.

Airstrikes against Pirates in Somalia

European Union (EU) naval forces made their first attack against pirate bases in Somalia on 15 May. The air attack, launched from naval warships, followed the decision of the EU in March to allow its forces to make strikes against pirate supplies and equipment in Somalia. The move to take action to disrupt piracy on its home ground has the backing of a United Nations Security Council resolution and the transitional federal government of Somalia.

The pre-emptive strike to disrupt pirate activity came in the same week that the International Maritime Organization (IMO) agreed to issue guidance and international standards for private maritime security companies, whose use has cut the number of successful pirate hijacks. The IMO's move came from its maritime safety committee's first high-level policy debate on armed guards.

The meeting also led to the signing of five strategic partnerships between the IMO, UN agencies and the EU to build capacity to counter piracy off the coast of Somalia.

The joint international efforts to counter piracy come as the attacks continue. On 11 May, an EU warship released a fishing dhow and her Iranian crew off the coast of Somalia 10 days after it had been pirated and used to carry out pirate attacks. After surveillance identified the dhow, a boarding team from the Dutch warship, HNLMS Van Amstel, found weapons on board along

with the 17 Iranian crewmembers and 11 suspected pirates.

According to the most recent figures from the International Maritime Bureau (IMB) worldwide piracy reporting centre, Somali pirates currently hold captive about 12 vessels and 173 hostages. Hostages continue to include seven Indian seafarers from the Asphalt Venture and four South Koreans from the Gemini, still held captive despite the payment of ransoms.



Airstrikes against pirates in Somalia.

Source: Flickr.com

Seafarers at Balance of Justice

Seafarers who have dealings with the criminal justice system are likely to have a very poor experience, according to new research from Seafarers' Rights International (SRI). A 12-month survey of 3,480 seafarers worldwide found that those facing criminal charges complained of unfair treatment, intimidation, and a lack of legal representation and interpretation services.

18 countries and 68 different nationalities of seafarers found that eight per cent of respondents had faced criminal charges,

four per cent had been witnesses in criminal prosecutions, and 33 per cent knew of colleagues who had faced criminal charges. Among masters, almost 24 per cent had faced criminal charges.

Those who had experience of facing criminal charges relating to the discharge of their professional duties had received very poor support – 87 per cent said that they did not have legal representation, 91 per cent who needed interpretation services did not receive them, and 89 per cent did not have their rights

explained to them.

The majority of seafarers who had faced criminal charges – 80 per cent – said they felt intimidated or threatened, and 81 per cent did not consider that they had received fair treatment.

As well as the survey of seafarers, SRI reviewed all incidents involving criminal charges against seafarers reported in the maritime media for the 12 years 2000 to 2011. It found 415 incidents involving 1,580 seafarers, with an increase in the numbers of maritime criminal incidents and detained seafarers over this period.

It is an inherent risk in the working lives of seafarers that they may be subjected to criminal charges either of a professional or a non-professional nature. Seafaring is transnational by nature. As seafarers transit from port to port, they are subject to the entire range of criminal laws of those port states. They cannot know and they are unlikely to have been warned about local criminal laws, and hence they are at risk of committing an offence without any awareness or intention to do so. Further, in recent years, several legal developments at international, regional and national levels have criminalized a number of previously considered lawful seafaring activities and created a blame culture, particularly in relation to environmental incidents such as oil pollution.

In an era where 'human rights' are considered sacrosanct and 'fairness' a right in itself, seafarers sometimes seem to be excluded from the entitlements accorded to others. They may be foreign nationals, and after an incident there is often a reluctance to release seafarer defendants or witnesses who are deemed to be a 'flight risk', and who might not appear at a subsequent trial. They are, therefore, treated differently and less fairly than nationals, and are often discriminated against. They might have the continued support of their employers, but if they are less fortunate once the ship itself is released, they may find themselves friendless in a strange land, facing charges that are incomprehensible to them under a wholly alien system of justice, and with defence counsel unfamiliar with the technical nuances of the maritime scene. Language, and the lack of adequate translation facilities, might well be a serious handicap.

The fear of liability

In any survey conducted to determine the attitudes of seafarers, in order to establish and rank their concerns about contemporary issues, the risk of facing criminal proceedings because of their particular employment will be found high on the list of their worries.

There have been some notorious cases in recent years which have been given wide publicity for the clear injustices they have represented. These cases have served to encourage a climate in which there is a very real fear of criminalization among seafarers all over the world. Crews are also concerned about the practice of holding seafarers for months on end to serve as witnesses in

a subsequent trial, hence they are forced to remain away from home without remission. (View high profile cases)

Whatever the age, nationality, rank or seniority of the seafarers, the fear of criminalization, which probably would not have featured in a similar survey undertaken 20 years ago, is both real and sincere. And while it can be statistically argued that the chances of such a fate befalling any seafarer remains very low indeed, perception is a powerful driver.

The consequences are already apparent, in that otherwise ambitious and well-qualified officers are declining promotion to senior ranks, believing that this would leave them more exposed to the risks of prosecution and a subsequent criminal conviction. There are documented cases of senior officers electing to terminate their careers because of a brush with the law, or deciding to seek alternative employment that would leave them less vulnerable to criminal prosecution.

Right across the shipping industry, there is a strong belief that somehow the tide which increasingly threatens seafarers with criminal sanctions and discriminates against them must be turned. Seafarers' organizations, their employers, regulators and non-governmental bodies – in addition to seafarers themselves – agree that this important body of essential workers needs protection from unfairness and injustice and, moreover, to reassure seafarers that they will be treated properly should they become involved in an incident or accident, particularly under a foreign jurisdiction. It has been suggested on more than one occasion that the continued detention of crew members in the past, whether criminal charges have been laid against them or not, has been used as a bargaining chip in a subsequent case over liability and compensation.

In May 2004, the Legal Committee of the IMO endorsed the proposal to establish a joint IMO/ILO Working Group on Fair Treatment of Seafarers. In 2006, the IMO and the ILO promulgated the "Guidelines on the Fair Treatment of Seafarers in the event of a Maritime Accident". The objective of the Guidelines is "to ensure that seafarers are treated fairly following a maritime accident and during any investigation and detention by public authorities and that detention is for no longer than necessary." The Guidelines, which now must be read in the light of the Casualty Investigation Code, "do not seek to interfere with any State's domestic, criminal or civil law processes..." They are limited to the investigation of "maritime accidents", although there is a general invitation "to take note of the principles contained in these Guidelines when considering the fair treatment of seafarers in other circumstances where innocent seafarers might be detained."

But the criminalization cases that have seized the attention of the global industry have encouraged the strong belief that something more than codes or recommendations must be produced to protect seafarers from the injustices which they can suffer when they are involved in incidents and accidents. The situation, it is suggested, will impact upon both recruitment and

retention at a time when both are important for the industry's future.

SRI has made Seafarers' Rights and the Criminal Law a priority subject. Its project will analyze international maritime legal instruments, competing criminal jurisdictions and human rights protection for seafarers in order to get a full picture of how seafarers are exposed to criminal charges. It will also promote a structure of assistance to seafarers at a practical level which may involve unions, ship owners, lawyers, charities and others concerned with the welfare and rights of seafarers.

The Filipino captain and navigation officer of the Greek-owned *Rena*, which grounded on a reef off New Zealand on 5 October 2011 causing the worst maritime environmental disaster

in the country, have been jailed for seven months each for their role in the container ship's oil spillage.

Captain Mauro Balomaga and navigation officer Leonil Relon were found guilty of operating a vessel in a manner likely to cause danger, and of altering ship documents.

Maritime New Zealand said the two senior officers had breached basic principles of safe navigation. A Transport Accident Investigation Commission interim report suggested that the *Rena* took several shortcuts before it hit the reef.

The *Rena's* owner, Daina Shipping Co, has also been charged with the discharge of harmful substances in the coastal marine area and faces a maximum fine of NZ\$600,000 and \$10,000 for every day the offending continues.

Seafarers' Rights



The view from the deck of a ship surrounded by barbed wire against pirate attacks.

Seafarers' Rights International is a unique and independent centre dedicated to advancing seafarers' interests through research, education and training in the law concerning seafarers.

"Seafarers are the lubricant without which the engine of trade would simply grind to a halt... Seafarers are the unsung heroes of an unsung industry," said Efthimios Mitropoulos, secretary general of the International Maritime Organization.

Approximately 1.5 million seafarers daily serve on a worldwide fleet of over 100,000 ships that transport over 90% of world trade – manufactured goods, fuel, foodstuffs and commodities that we all rely on but generally take for granted.

Seafarers operate in one of the most dangerous occupations

in the world. They are mobile workers and are highly vulnerable to abuse, exploitation, ill treatment and injustice.

Seafarers' Rights International (known as SRI) is the first pan-industry initiative in the maritime sector that seeks to bring together expertise in the shipping industry and the legal world to advance the rights and legal protection of seafarers.

"The SRI is an ambitious, long-term project. If it is successful in meeting its declared objectives, it could make a major contribution to enhancing seafarers' rights worldwide and help counteract recent negative publicity deterring potential recruits that are vital to the (shipping) industry's future." Lloyd's List, September 2010

Disembarkation of seafarers

The problem of signed off seafarers is a stark one of human hardship. The International Labour Organization (ILO) keeps a database of cases of signed off and, given the vital role of shipping in the global economy, the figures should be a source of concern.

According to ITF, between 2001 and 2010, 136 ships and 1,612 seafarers were signed off. In 2009 alone, at the height of the global economic downturn, a total of 57 vessels were signed off affecting 647 seafarers.

The number of cases of abandonment reported in the ILO database has fallen since 2009, but the ILO list is far from definitive. Signing off is not easily defined and a crew may have been forsaken even though officially the ship has not been abandoned.

Each instance of a seafarer being signed off far from home and without the means to get back is an individual story of enormous hardship. The real extent of the problem has never been accurately measured.

Signing off can happen for a number of different reasons. It is often a calculated economic decision by a ship owner facing bankruptcy, insolvency or the arrest of its vessel by creditors. In many cases, vessels are abandoned after they are detained by port state control inspectors as unseaworthy. The global economic downturn has hit some operators hard, but it is often the crews who come off worst.

When a crew on a merchant ship has been signed off in a foreign port, there is very often a depressingly familiar pattern of things that start happening. They run out of fuel for generators, sometimes also food and water. Often the ship owner stops answering his phone and cannot be traced. On other occasions, the ship owner remains in the background, sometimes threatening the crew, more often making false promises that he cannot keep. Onboard, phone cards run out of credit and seafarers cannot call home. The mood sinks and tempers flare, a potent

mix exacerbated by boredom. And the impact of abandonment stretches far beyond the ship itself. When seafarers have not been paid for months and cannot get back home, their families suffer too. Crew onboard and their families back home, are left begging for handouts in order to survive.

For those left to pick up the pieces in a case of abandonment, the lack of a framework to adequately protect seafarers is frustrating. "We see this time and time again, yet nothing is ever done to stop it," said Jose Manuel Ortega, National Coordinator for the International Transport Workers' Federation in Spain, and a man who has dealt with numerous such cases over the years. "How is it possible that a ship owner can just walk away from his crew?"

International efforts

The international community has worked on a regulatory framework designed to protect seafarers and geared to their very specific circumstances. But the efforts have been painfully slow (international efforts). The ILO Maritime Labour Convention (MLC), which was adopted in 2006, could go a long way to improving working conditions for those who earn their living at sea. But its immediate impact on the issue of abandonment remains to be seen, whereas an amendment to the convention dealing specifically with the issue of abandonment is heralded in some quarters as the solution to abandonment. The aim is to create a mandatory financial security net for abandoned seafarers, thereby removing abandonment as a viable business decision. But while this potential international solution unfolds, crews will continue to be abandoned, their basic rights breached and their family life strained at best, destroyed at worst.

For the shipping industry and the global economy that it serves, tackling this problem should be of paramount importance. It is not just about the abandoned crews and their families, but about the future of the industry itself.

Women Seafarers

It's still rare to find women workers at sea but, largely thanks to trade unions, more women are confronting prejudice and becoming valuable members of ships' crew.

Women make up only an estimated 2% of the world's maritime workforce. Women seafarers work mainly in the cruise and ferries sector, often for Flags of Convenience (FOC) vessels. These are among the worst paid and least protected of jobs at sea. Women also tend to be younger, and fewer are officers than their male crew mates.

Their low number means that women can be subject to discrimination and harassment. The maritime unions are alert to these dangers and strive to protect the interests of women members – who now number about 23,000 worldwide.

Women can face discrimination even getting into seafaring work. In some countries, for example, maritime education and training institutions are not allowed to recruit women to nautical courses. Women tend to enrol on navigation rather than engineering courses. Even once trained, they may have to face prejudice from ship owners who won't employ women.

Once employed, women seafarers may also face lower pay even though they are doing work equivalent to that of male colleagues. Women may also be denied the facilities or equipment available to male workers, which is a form of discrimination.

If you are a woman seafarer facing such discrimination, contact your trade union for support and advice.

Bullying and harassment are problems for male and female seafarers alike. Such unacceptable behaviour may come from colleagues or managers, and are known causes of ill health. Although these are issues for many workers, they can be a particular problem if you are employed at sea, where you are isolated from family and friends and other sources of support.

Women seafarers may also have to deal with sexual harassment or even abuse while at sea. Many maritime unions now have policies covering sexual harassment.

Pregnancy should never be treated as a disciplinary offence. Pregnancy testing before you are employed may violate International Labour Organisation (ILO) Convention 183.

Cruise

Approximately 150,000 people currently work on cruise ships around the world. Many are drawn to the industry, as it is a way to visit distant places, meet new people, and earn money at the same time. But the job isn't always as glamorous as it sounds.

Why is working on a cruise ship stressful?

On many cruise ships the crew totals over 1,000 people and there are generally three or even four passengers to every crew member. It's a lot of bodies – from many different backgrounds – in a relatively small space. ITF surveys show that cruise ship

crews are working harder, for longer hours than ever before. But, whatever the pressures, if you are in contact with the passengers, you have to keep smiling at all costs.

Relaxation can also be a problem. Most cruise ship workers are at sea for many months at a stretch, and only get a few hours on shore when the ship is in port. Sharing a small cabin over a long period can create good friendships but it can also be a source of great stress, especially if the ship's managers turn a blind eye to sexual predators among the crew or passengers. Safe procedures for reporting any sexual intimidation should exist on board.

Cargo Handling by Seafarers

Seafarers are increasingly being asked to stow or secure cargo but this is dangerous work that should only be done by trained and experienced dockers. Although there may be some extra cash for seafarers – tempting, as it boosts low pay – the larger incentives are often for the officers on-board who get the seafarers to handle the cargo. Seafarers are even being asked to start unlash containers before entering port, with the aim of speeding up port operations, which is very dangerous.

There are great risks to safety at sea and to individual seafarers if untrained workers handle cargo – it's a job for port workers not seafarers:

- It's dangerous unless you're properly trained
- It means longer working hours and more fatigue
- It's another way the operator makes money out of you
- Port workers respect the skills of seafarers and their fellow workers and, in turn, ask that cargo-handling be left to the experts.

Cargo-handling by seafarers is part of the wider deregulation and liberalization of the maritime industry being pushed by many employers and the governments that support them. Their aim is to compete by lowering cost. They want to squeeze more from seafarers and dockers through 'flexible' working practices, longer working hours and/or less pay. In the process they undermine the protective regulations that workers have fought long and hard for. They are trying to displace the trained, experienced and registered port workers. In some cases they take on casual, unregistered and inexperienced labour in the terminals. Or they get seafarers to do the job. Employers are especially keen to weaken the trade unions of dockers. Organized dockers have the power, which they do use from time to time, to refuse to load or unload goods. They can bring to a halt the just-in-time supply chain that is vital to the production and distribution of goods around the world. Dockers take such action to stand up for their own rights. But they also do it to support others, especially seafarers. In fact, the solidarity shown by port workers refusing to load or unload a vessel has often been critical in the struggle to win better working terms and conditions for the seafarers onboard. Dockers are seafarers' natural allies.

Why is cargo-handling by seafarers bad for seafarers?

Cargo-handling is dangerous for seafarers because you are not trained for the work. In January 2007, a Filipino seafarer was crushed to death by an eight-ton container on an Antigua and Barbuda-flagged vessel berthed in the port of Rotterdam in the Netherlands. The tragedy happened while crew members were



Cargo Handling by Seafarers.

Source: Flickr.com

lash cargo. As well as deaths among seafarers, there have been accidents at sea among vessels made unsafe by badly lashed containers. Cargo-handling also adds to the stress and fatigue that seafarers already suffer through long working hours, tight sailing schedules and fast turnaround times. It means even less rest time in port, when you hope to make contact with family and friends back home. Fatigue has also been highlighted as a major factor behind accidents in port and at sea. On top of this, eroding the power of unionized dockers is not good for seafarers, because dockers often give you solidarity when you need it.

Why is cargo-handling by seafarers bad for dockers?

If you do the work, it takes jobs away from qualified dockers. Cargo-handling is work for professionals. It should only be done by those who have been specifically trained to do it, so that it is done in a safe and efficient way. It is dangerous, too, for dockers when they have to unload cargo that has been loaded by untrained workers. It erodes the power of dockers' trade unions, your natural allies.

New Technology of Catamaran Shipbuilding

“PlanetSolar” is a catamaran that runs solely on energy found in light. The additional removable parts allow it to expose a total of 537 m² of photovoltaic surface (solar panels) to the sun. This impressive data make it the biggest solar-run ship in the world. The designer of PlanetSolar, Craig Loomes from New Zealand, has already imagined numerous innovative ships around the world. Several months of research enabled to finish the ideal dimensions and design of this double hull vessel with respect to the chosen journey. Engineers had to optimise the energy collection and stocking but also the aerodynamics, the ship’s propulsion and the choice of materials.

The incredibly light carbon structure of this futuristic vessel with electric motorisation is extremely durable.

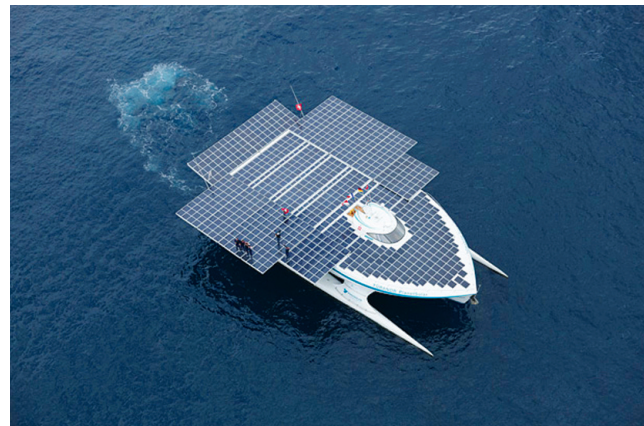
PlanetSolar is the biggest solar ship in the world

On its round-the-globe expedition, the TÛRANOR PlanetSolar will pioneer the use of sustainable energy technology on water. It is different from anything that has happened in the field of mobility to date. This solar catamaran uses the very latest cutting-edge technology available on the market. Their intention is to demonstrate that high-performance solar mobility can be realised today by making innovative use of existing materials and



Krilo Carbo catamaran making way.

Source: <http://krilo.hr/>



Catamaran powered by photovoltaic cells.

Source: <http://www.planetsolar.org/>

technology. The name TÛRANOR is derived from the “Lord of the Rings” saga by J.R.R. Tolkien and translates as “the power of the sun” and “victory.”

Challenges

Energy management: mobility shall not use more energy than that provided by the power of the sun.

Efficiency: S-mobility (smart and solar mobility) only makes sense if the costs are reasonable and competitive. Therefore, we are mainly using materials and technology available today which have the potential to be mass-produced, thus lowering prices and operating costs considerably over time.

Gleaming with more than 500 sq meters of photovoltaic panels and packing 11 tons of batteries (with chassis), including the 388V lithium-ion battery, TÛranor is a showcase for solar power advancements and sustainable transport. To support the multi-hull ship’s planned average speed of 7.5 knots over 31,069 miles and 140 days, WAGO supplied three 758 Series IPCs with control functionality and electrical components (Source: planetsolar.org/the-boat).

IMSC 2013: Upcoming Conference on Maritime Science



Topics of interest

- ~ Marine Engineering,
- ~ Navigation,
- ~ Safety Systems
- ~ Marine Ecology,
- ~ Hydrography,
- ~ Marine Automation and Electronics,
- ~ Transportation and Modes of Transport,
- ~ Marine Information Systems,
- ~ Maritime Law,
- ~ Management of Marine Systems,
- ~ Maritime Health,
- ~ Marine Finance,
- ~ Up-To-Date Technologies,
- ~ Safety and Security,
- ~ Ecology and Sea,
- ~ Intelligent Transport Systems,
- ~ Human Resources in Transport,
- ~ Education in Transport.

Conference Proceedings

Authors are invited to submit abstracts on e-mail imsc@pfst.hr. Abstracts should be text only up to 250 words long, and should be written in English and Croatian language. Immediately after abstract, please provide at least 4 keywords. Single author may participate in up to two papers, irrespectively of number of co-authors per paper. The abstracts should be sent until 1st December 2012. The authors will be informed about acceptance no later than 18th December 2012. All accepted abstracts will be published in the Book of Abstracts.

Official Language of the Conference

Papers should be submitted in English. Presentation slides should be given in English, and oral presentation can be made in either English or Croatian.

Registration

Conference registration deadline is 8th April 2013. Conference participation fee is 1.000,00 HRK or 150,00 EUR (VAT included). Registration form should be sent to imsc@pfst.hr.

Contact

University of Split
Faculty of Maritime Studies
INTERNATIONAL MARITIME SCIENCE CONFERENCE

Zrinsko-Frankopanska 38,
21000 Split, Croatia
Tel: +385 (0)21 380-762;
Fax: +385 (0)21 380-759
E-mail: imsc@pfst.hr
www.pfst.hr/imsc

Location

HOTEL PRESIDENT SOLIN
Ulica kralja Petra Krešimira IV 11, HR-21210 Solin
phone: +385 (0)21 685 300,
fax: +385 (0)21 685 301,
e-mail: solin@hotelpresident.hr,
web: www.hotelpresident.hr/solin/