



CREW WATCH

NOVEMBER 2022

COLLISION REGULATIONS **ANOTHER LOOK**

AMMONIA AS A FUEL **SAFETY RISKS**

EMERGENCY SITUATIONS **COMMUNICATION ADVICE**

IS YOUR SHIP WINTER READY? **ACTION REQUIRED**



BRITANNIA P&I
TRUSTED SINCE 1855



IN THIS EDITION WE ARE PLEASED TO INTRODUCE OUR NEW LOSS PREVENTION POSTER CAMPAIGN WHICH ILLUSTRATES SOME OF THE KEY COLLISION REGULATIONS (COLREGS), ALSO KNOWN AS THE 'RULES OF THE ROAD'. WE HOPE THAT THE POSTERS WILL BE DISPLAYED AS A SERIES ON OUR MEMBERS' SHIPS AND WE WILL BE SENDING OUT HARD COPIES OVER THE NEXT FEW MONTHS.

COLREGS ARE ALSO A REMINDER OF THE NEED FOR EFFECTIVE COMMUNICATION ON BOARD AND WE SET OUT THE KEY POINTS TO REMEMBER WHEN THE BRIDGE AND ENGINE ROOM TEAMS INTERACT WITH EACH OTHER DURING EMERGENCY SITUATIONS.

WE ALSO TAKE THE OPPORTUNITY TO FOLLOW UP ON A RECENT RISK WATCH ARTICLE ON ALTERNATIVE FUELS AND LOOK AT THE STEPS THAT NEED TO BE TAKEN BY CREW MEMBERS WHEN USING AMMONIA AS FUEL.

AND AS WINTER DRAWS CLOSER IN THE NORTHERN HEMISPHERE, WE LOOK AT HOW TO MAKE YOUR SHIP READY FOR EXTREME COLD CONDITIONS. ON THIS NOTE, WE WISH OUR MEMBERS AND THEIR CREWS AROUND THE WORLD A SAFE AND HAPPY REMAINDER OF 2022.

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A stylized, handwritten signature in white ink, which appears to read 'Claire Myatt'.

CLAIRE MYATT
Editor



WE HOPE YOU ENJOY THIS ISSUE OF CREW WATCH. We are looking for ways to maintain and increase the usefulness, relevance and general interest of the articles. If you have any ideas or comments please send them to:
britanniacommunications@tindallriley.com

COLLISION REGULATIONS (COLREGs) – POSTERS

ANOTHER LOOK AT THE RULES OF THE ROAD

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THE CLUB'S LOSS PREVENTION TEAM HAS BEEN LOOKING INTO THE UNDERLYING CAUSES OF PAST COLLISION CASES. THE NUMBER OF COLLISION CASES IS DECREASING. THIS IS LARGELY DUE TO THE ADVENT OF MODERN TECHNOLOGY, SUCH AS AUTOMATIC IDENTIFICATION SYSTEMS (AIS), THE BRIDGE NAVIGATIONAL WATCH AND ALARM SYSTEM (BNWAS) AND THE ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEM (ECDIS). UNFORTUNATELY, COLLISIONS DO STILL OCCUR.

THE SINGLE MOST SIGNIFICANT KEY CONTRIBUTORY FACTOR IN THESE ACCIDENTS HAS BEEN FOUND TO BE VIOLATION BY THE OFFICER OF THE WATCH (OOV) OF ONE OR MORE RULES IN THE CONVENTION ON THE INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA (COLREGS).

Therefore, in light of the Club's experience with collisions, we are producing a new set of COLREGs posters, reiterating the principal parts of some of the rules in Part B of the COLREGs, Section II – Conduct of vessels in sight of one another. The posters will illustrate scenarios in these rules and are aimed at navigational watchkeepers, setting out with simple illustrations the required actions to be taken in order to comply with each COLREGs rule.

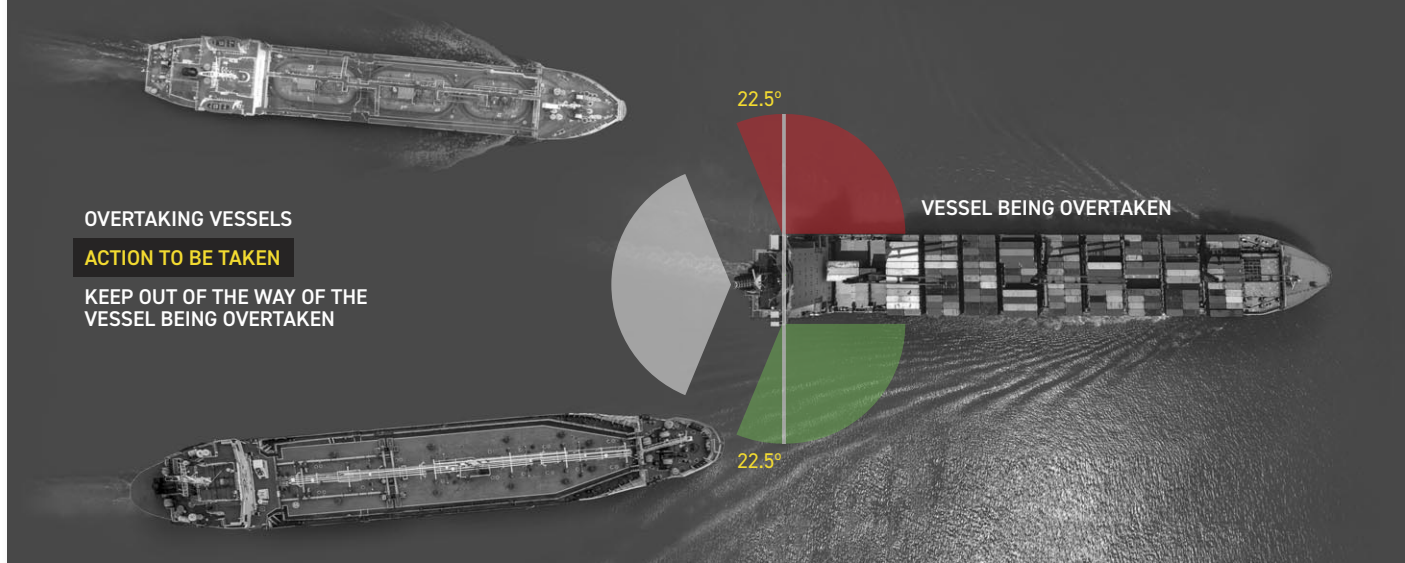
The International Maritime Organization (IMO) produced the COLREGs (also known as Rules of the Road or RoR) as a set of traffic regulations which have been internationally agreed.

These apply to all vessels on the high seas and in all connected waters which are navigable by seagoing vessels. The rules set out the foundations for navigation light colours, the configuration and location of daylight signals, and sound signals for manoeuvring and restricted visibility. They also set out the types of collision avoiding actions for vessels approaching one another, as well as the assignment of responsibilities for taking appropriate actions.

All navigating officers, including the Master, will have undergone training and certification in relation to knowledge of the rules before taking on their independent navigational

COLLISION REGULATIONS (COLREGs) – POSTERS ANOTHER LOOK AT THE RULES OF THE ROAD

RULE 13 OVERTAKING



- (a) Notwithstanding anything contained in the Rules of Part B, Sections I and II, any vessel overtaking any other shall keep out of the way of the vessel being overtaken.
- (b) A vessel shall be deemed to be overtaking when coming up with another vessel from a direction more than 22.5 degrees abaft her beam, that is, in such a position with reference to the vessel she is overtaking, that at night she would be able to see only the stern light of that vessel but neither of her sidelights.
- (c) When a vessel is in any doubt as to whether she is overtaking another, she shall assume that this is the case and act accordingly.
- (d) Any subsequent alteration of the bearing between the two vessels shall not make the overtaking vessel a crossing vessel within the meaning of these Rules or relieve her of the duty of keeping clear of the overtaken vessel until she is finally past and clear.



GUIDANCE ON COLREGS
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RULES 13 AND 14 ARE THE FIRST IN THE POSTER CAMPAIGN.

RULE 13 OVERTAKING ACTIONS – the overtaking vessel should keep out of the way of the vessel being overtaken. The rule also identifies the duties of the overtaking vessel and vessels being overtaken.

The poster illustrates the relationships between the overtaking vessel and the vessel being overtaken when they are in sight of one another. The poster identifies their roles and shows how to distinguish the vessels, from their approach angles and/or aspects relative to their positions. The poster stresses that once a vessel has become an overtaking vessel, it remains an overtaking vessel, and any subsequent alteration of the aspect between the vessels does not relieve the overtaking vessel of its duty to keep clear or result in any change of responsibility from an overtaking vessel to a stand-on crossing vessel, for example.

watch and/or command of the vessel. The officers will have had months, if not years, of training and will have had sea-going experience in accordance with the International Convention on Standards for Training, Certification and Watchkeeping (STCW), before they are certified competent and awarded their Certificate of Competency (CoC) to be able to navigate a vessel.

However, despite all the training and knowledge of the COLREGs, there are often situations when they are not correctly applied or are misinterpreted by the OOW which can lead to a close quarters situation developing, and can even result in a collision.

In some cases, the OOW may encounter situations which they are unsure of and may misread the intentions of other vessels, even when the vessels are in sight of one another. Normally, standard practice would be to determine the risks

of collision by monitoring the relative bearing of the other vessel, using an azimuth mirror and/or the radar/Automatic Radar Plotting Aid (ARPA). The OOW will apply professional judgement after appraising the situation and will then take avoiding actions as dictated by the COLREGs.

A good example is the question of 'give-way' and 'stand-on' vessels within the context of the COLREGs. Situations can occasionally arise and develop in such a way that the give-way vessel is not taking proper actions to keep out of the way as set out in the COLREGs. The stand-on vessel should initially keep its course and speed, but if it finds that the other vessel is not taking sufficient steps to avoid a close quarters situation, the stand-on vessel may take action to avoid such a situation developing. When an imminent risk of collision cannot be averted by the action of the give-way vessel alone, the stand-on vessel shall take all measures that will best help to avoid a collision.

COLLISION REGULATIONS (COLREGs) – POSTERS ANOTHER LOOK AT THE RULES OF THE ROAD

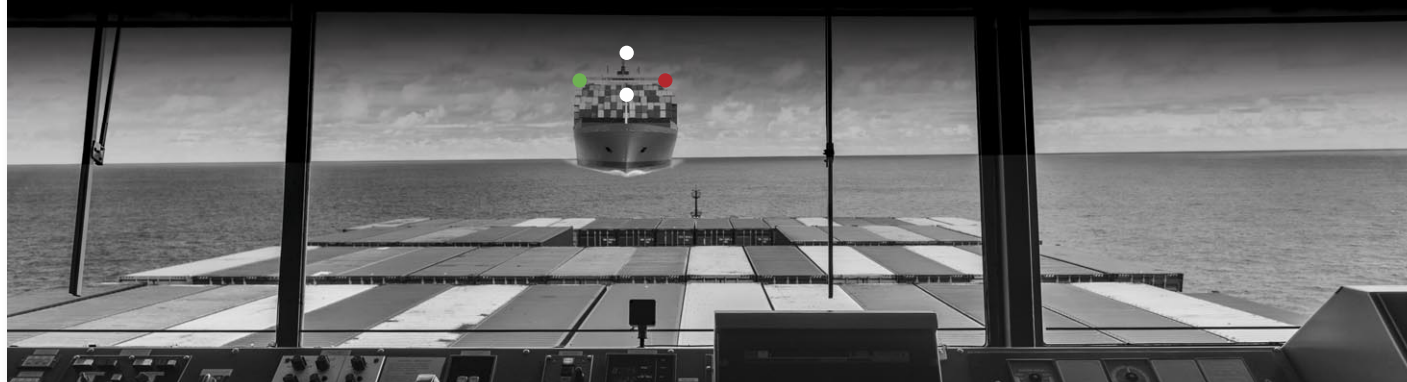
RULE 14 HEAD-ON SITUATION

WHAT ASPECT OR LIGHTS DO YOU SEE ON YOUR BOW?

DAY – OTHER VESSEL AHEAD OR NEARLY AHEAD ON A RECIPROCAL OR NEARLY RECIPROCAL COURSE

NIGHT – MASTHEAD LIGHTS IN A LINE OR NEARLY IN A LINE AND/OR BOTH SIDELIGHTS

TAKE ACTION – ALTER COURSE TO STARBOARD



(a) When two power-driven vessels are meeting on reciprocal or nearly reciprocal courses so as to involve risk of collision each shall alter her course to starboard so that each shall pass on the port side of the other.

(b) Such a situation shall be deemed to exist when a vessel sees the other ahead or nearly ahead and by night she could see the masthead lights of the other in a line or nearly in a

line and/or both sidelights and by day she observes the corresponding aspect of the other vessel.

(c) When a vessel is in any doubt as to whether such a situation exists she shall assume that it does exist and act accordingly.



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RULE 14 HEAD-ON SITUATIONS – when two power-driven vessels are meeting on reciprocal or nearly reciprocal courses while in sight of one another. The poster sets out what action will need to be taken.

The poster illustrates a scene where two power-driven vessels are in sight of one another in a head-on situation. Each should alter course to starboard, so that both vessels can pass on the port side of the other. At the same time, it also shows how to determine if they are meeting in a head-on situation in accordance with the rule, with reference to each other's masthead lights and/ or sidelights at night or by assessing their aspect visually by day.

Although navigators should principally be aware of when and where to apply the specific COLREGs in various situations, sometimes they may become anxious in making decisions or experience uncertainty at that moment, which could impair their judgement call. This may lead them to take shortcuts or apply the COLREGs incorrectly. Where any doubt exists, the OOW should call the Master to the bridge to assist.

Ultimately, the COLREGs are specific and outline the roles, responsibilities, and recommended courses of action that must be followed by the OOW should they ever find themselves in a doubtful situation with other target vessels.

CONCLUSION

It is a misconception held by some that the COLREGs are advisory. In fact, they are a set of rules that a vessel must follow strictly at all times when navigating at sea and in all waters connected therewith navigable by seagoing vessels, and no subsequent external influences should persuade them otherwise. In our series of posters, the Loss Prevention team will continue to look into actions between the vessels when in sight of one another and highlight their responsibilities according to the COLREGs.

We hope that the posters will be useful and will be displayed on board our Members' ships. They will be laminated and are being sent out to our Members in the next few months. If you have not received your posters or require additional copies, please contact us. The images are also available on the Britannia website.

AMMONIA AS FUEL

**GOOD FOR THE
ENVIRONMENT
BUT WHAT
ARE THE
RISKS FOR
THE CREW?**

Jacob Damgaard

Associate Director, Loss Prevention Singapore
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THE DECARBONISATION OF SHIPPING IS PROBABLY THE BIGGEST CHALLENGE THE INDUSTRY HAS EVER FACED. MANY ALTERNATIVE FUELS ARE BEING DEVELOPED AND ARE STARTING TO BE TESTED AND USED. WHILE THE ENVIRONMENTAL BENEFITS OF USING NON-FOSSIL FUELS ARE OBVIOUS, THERE ARE ALSO SAFETY RISKS ASSOCIATED WITH HANDLING SOME OF THE ALTERNATIVE FUELS.

IN THIS ARTICLE WE LOOK AT SOME OF THE RISKS ASSOCIATED WITH THE USE OF AMMONIA.



- **AMMONIA (NH₃) IS A COLOURLESS GAS WHICH IS A COMPOUND OF NITROGEN AND HYDROGEN.**
- **IT IS LIGHTER THAN AIR AT NORMAL ROOM TEMPERATURE AND HAS A BOILING POINT OF AROUND -33.3°C.**
- **IT HAS A VERY DISTINCTIVE ODOUR WHICH IS SIMILAR TO THE SMELL OF HUMAN SWEAT.**

RISKS

Ammonia is highly toxic: 2500 ppm will be fatal in about 30 minutes, and 5000 ppm (about 0.5%) will result in rapid respiratory arrest. At 500-700 ppm, unprotected exposure may result in burns to skin, throat, lungs and eyes (potentially causing blindness). To understand the nature of the health risk, it should be borne in mind that ammonia is attracted to moisture and mucous membranes.

When using ammonia as fuel, when compared to carrying it as a cargo, the main difference is that the gas installation will enter the engine room rather than being isolated in the cargo area. There will, therefore, be a greater chance of contact between the ammonia and the crew. Various class societies are investigating the risks and looking at how best to handle ammonia both in the engine room and also on deck during the bunkering process. They have identified possible problems with the storage of ammonia and also highlighted safety implications in cases of accidental damage to the storage areas or if the heat exchange fails. Another potential problem is the release of toxic vapour when ammonia is vented. The design of the fuel system will have to be adjusted to prevent any such toxic discharges or a recovery system should be installed in the vent line.

Another element to consider is that ammonia is corrosive to materials like copper, copper alloys and zinc. Therefore, utmost care must be taken in the selection of materials chosen to contain ammonia.

TRAINING

To ensure safe operation and prevent incidents, it is essential that the crew undergo additional training and the ship's safety management system (SMS) will need to reflect the additional risks involved. This will include issues such as making sure that ammonia systems are gas free before they are dismantled or before any maintenance work is carried out. And of course, the applicable enclosed space requirements must always be followed.

CONCLUSION

Ammonia does have a distinctive odour and this will often reveal its presence. However, the sense of smell must not be relied on to give a warning of any problems as people can become 'noseblind' to the odour (known as olfactory fatigue) which means they can no longer smell the ammonia and so are not aware of any problem. This is why it is always important to put the appropriate precautions in place before any work is started, in order to provide the crew with as much protection as possible.

In the last edition of Risk Watch, Jacob wrote a longer article on decarbonisation with details of all the alternative fuels currently available. <https://bit.ly/3CsNzVL>

DECARBONISATION

THE SHIPPIING INDUSTRY'S CHALLENGE

The shipping industry will be the largest emitter of CO₂ by 2050, according to a recent report. This means that the industry must find ways to reduce its carbon footprint. One of the most effective ways to do this is by switching to alternative fuels. Ammonia is one such fuel. It is a colourless gas which is a compound of nitrogen and hydrogen. It is lighter than air at normal room temperature and has a boiling point of around -33.3°C. It has a very distinctive odour which is similar to the smell of human sweat.

ALTERNATIVE FUELS

ALTERNATIVE FUEL	DETAILS	PROS	CONS
Liquefied Natural Gas (LNG)	Requires an LNG carrier engine and a gas handling system. Increased engine power.	Safe to use (inert atmosphere). Available at existing ports and bunkering facilities.	Higher cost (LNG is expensive). Limited availability in some regions.
Crude Oil	Requires a crude oil carrier engine and a fuel oil handling system. Increased engine power.	Safe to use (inert atmosphere). Available at existing ports and bunkering facilities.	Higher cost (crude oil is expensive). Limited availability in some regions.
Ammonia	Requires an ammonia carrier engine and a gas handling system. Increased engine power.	Safe to use (inert atmosphere). Available at existing ports and bunkering facilities.	Higher cost (ammonia is expensive). Limited availability in some regions.
Hydrogen	Requires a hydrogen carrier engine and a gas handling system. Increased engine power.	Safe to use (inert atmosphere). Available at existing ports and bunkering facilities.	Higher cost (hydrogen is expensive). Limited availability in some regions.

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EMERGENCY SITUATIONS: COMMUNICATION BETWEEN THE BRIDGE AND THE ENGINE ROOM

Simon Rapley, Divisional Director, Loss Prevention srapley@tindallriley.com



THE ISSUE OF EMERGENCY RESPONSE IS COVERED BY THE SHIP'S SAFETY MANAGEMENT SYSTEM (SMS) IN THE EMERGENCY GUIDANCE MANUAL. HOWEVER, THIS WILL USUALLY FOCUS ON THE INTERACTION BETWEEN THE SHIP AND THE SHORE MANAGEMENT.

WHAT IS OFTEN OVERLOOKED IS THE INTERACTION BETWEEN THE BRIDGE AND THE ENGINE ROOM TEAMS.

REMEMBER THE THREE PRIORITIES THAT SHOULD BE CONSIDERED WHEN DEALING WITH AN INCIDENT AND THESE WILL BE A DRIVER FOR THE FLOW OF INFORMATION BETWEEN THE BRIDGE AND ENGINE ROOM TEAMS AND VICE VERSA:

LIFE

This is your first priority, as it cannot be replaced.

ENVIRONMENT

This is your second priority. Usually pollution incidents can be rectified with time and expenditure.

PROPERTY

Your ship, cargo and third party assets can always be replaced, hence why these are priority number three.

LEP

REMEMBER **LIFE** | **ENVIRONMENT** | **PROPERTY**

WHEN DEALING WITH AN EMERGENCY SITUATION

WHAT TO COMMUNICATE

After an incident, the following factors should be communicated clearly and concisely, using simple language to ensure all involved are aware of what is occurring, so that the most appropriate support from one team to another is put in place. This also enables the most suitable help to be sought from third parties, be it port state authorities or the vessel's managers:

- 1 WHAT HAS HAPPENED?**
- 2 WHERE HAS IT OCCURRED?**
- 3 WHY HAS IT TAKEN PLACE?**
- 4 WHEN DID IT HAPPEN?**
- 5 WHO IS AFFECTED?**

HOW TO COMMUNICATE

CONCISE – at the start just give prompt and sufficient information to enable appropriate action to be taken. Further advice can be provided later, hopefully once a situation stabilises. Keep communication simple and to the point.

OPEN – do not withhold any information as it is important to share all information and trust the other members of your team – holding back information can be unhelpful.

CALM – always remain calm; shouting down the telephone or radio helps nobody. Being calm will show others that you are in control and hopefully provide a peaceful influence at a time of confusion and stress. Remember that teams are busy and so avoid asking for repeated updates as this can hinder the operation.

SHARING – while not wanting to press for updates, it is important to share information between the teams with periodic contact and updates and reassurance. It can help to share an approximate timeline and indicate when further information is expected.

CONSISTENT – it is important that messages are consistent to the bridge or engine room teams, as well as to others onboard, such as an emergency response team, or fire party.

LANGUAGE – it is natural that in times of stress people will often revert to speaking in their mother tongue. This can cause confusion and lead to information not being shared. It is important to highlight in crew training the importance of staying calm and trying to use the working language of the ship, usually English, at all times.

COMMUNICATION – usually telephones are used to communicate between the bridge, engine control room, engine side and steering flat. Back-up communication systems should be available and should be regularly tested as part of the Planned Maintenance System. These could include sound powered telephones, talk-back systems and remote telephone handsets. Walkie talkie systems should be tested in the machinery spaces to find out where any 'dead spots' are and alternative means of communication should be organised in advance of any emergency.



CONCLUSION

Remember that the bridge and engine room teams will need to work together in an emergency situation, and clear, concise and measured communication is a key factor in ensuring a successful outcome for all parties. This highlights the absolute necessity and importance of conducting frequent realistic onboard drills to prepare the crew for stressful emergency situations. Ashore, this would also include the use of simulator training where specific emergency scenarios can be rehearsed.

The full version of this article is available on the Britannia website.
<https://bit.ly/3eMMVup>

Members requiring any further guidance on this matter should contact the Loss Prevention department.

IS YOUR SHIP READY FOR WINTER?

Jacob Damgaard

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WE ARE NOW IN THE LAST QUARTER OF THE YEAR, WHICH MEANS THAT WINTER IS APPROACHING IN THE NORTHERN HEMISPHERE, BRINGING WITH IT THE RISK OF SEVERE COLD IN CERTAIN WATERS. OPERATING A SHIP IN CONDITIONS OF ICE OR EXTREME COLD POSES SEVERAL CHALLENGES FOR THE SHIP ITSELF AND FOR THE CREW – AND IF NOT EVERYONE IS PROPERLY PREPARED, SERIOUS PROBLEMS CAN DEVELOP.

SHIPS OPERATING IN POLAR WATERS MUST FOLLOW THE IMO'S POLAR CODE, WHICH MEANS THEY MUST FULFIL ADDITIONAL REQUIREMENTS SUCH AS CARRYING AN ONBOARD POLAR WATER OPERATIONAL MANUAL (PWOM) AND OBTAINING A POLAR SHIP CERTIFICATE. HOWEVER, COLD WEATHER IS NOT LIMITED TO THE POLAR AREAS AND SO THERE ARE A NUMBER OF PRECAUTIONS THAT ALL SHIPS OPERATING IN EXTREMELY COLD CLIMATES SHOULD TAKE.

CARGO CARE

VENTILATION: proper ventilation is essential for many cargoes to maintain cargo quality. The ventilation system must be able to operate correctly in the cold weather and care must be taken to avoid snow or ice entering the cargo holds during the ventilation process.

HATCH COVERS: these must be able to operate freely during low temperatures. All hatch cover securing components must be maintained, so that they do not become jammed due to the cold weather. Material for hatch cover gaskets must be suitable for the extreme temperatures and must be kept free of ice which may prevent the hatch covers sealing properly.

CRANES: if the ship is fitted with cargo cranes, then care must be taken to ensure that the cranes can operate in the expected weather conditions.

EQUIPMENT

All equipment and machinery essential for the safe operation of the ship, including fire and lifesaving appliances, must be accessible and functional. The crew must also bear in mind that the actual weather conditions may be more severe than predicted. The equipment manufacturers should be consulted to determine the suitability of the equipment for cold weather and to highlight any special maintenance requirements. It may also be necessary to consult the ship's Classification Society to see if any modifications are required. The onboard management system must set out how to prepare the equipment for adverse cold weather conditions, without compromising safety. One example is the drainage of water from the deck. The ballast water system must also remain fully operative in the low temperatures.

Survival equipment must be checked to make sure that lifesaving appliances operate in low temperatures and items such as water, food rations and other essentials are protected and not affected by the cold climate.



PERSONAL SAFETY

Working in cold climates requires an understanding of the interaction between ambient temperature, wind speed, relative humidity, personnel protective equipment and the task being performed. All work activities on deck should be carefully planned and time spent outside should be limited to avoid any frost-related injuries. The crew must have a thorough understanding of wind chill and how it affects exposure, as well as the recommended time limits for working outside at any given temperature.

Precautions to be taken to increase personnel safety include:

- Having a sufficient supply of protective clothing appropriate for extreme cold
- Keeping clothes dry and changing clothes if they become wet
- Covering all exposed skin
- Avoiding contact between bare skin and metal objects
- Being aware of the dangers of frostbite and hypothermia
- Working in pairs and keeping an eye out for each other

Safe passageways should be provided to prevent slip injuries from ice. As some salts used for this can have a corrosive effect on the deck's paint coating, it is important that any salt used is compatible with that coating.

SHIP STABILITY

The applicable IMO stability criteria must be complied with. In extreme cold, there is a risk of the ship's superstructure being coated in ice and this could affect the stability of the ship. The crew should be aware that superstructure icing depends on various factors such as meteorological conditions, condition of loading, and behaviour of the vessel in stormy weather.

CONCLUSION

Navigating in extremely cold environments is a complex matter with various aspects that need to be taken into consideration. We have highlighted some of the risks involved and the precautions that should be taken but we recommend that a comprehensive risk assessment is completed in cases of extreme weather. This should be accompanied by a gap analysis and an action plan to make sure that the necessary safety barriers are implemented to mitigate all identified risks efficiently – this will help to ensure the safety of the crew, the ship and the cargo.



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