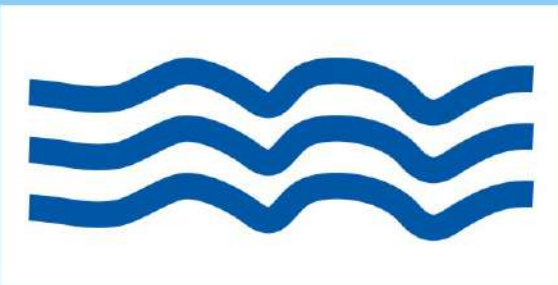


CONFEDERATION OF EUROPEAN SHIPMASTERS' ASSOCIATIONS

# CESMA NEWS



**MARCH 2023**



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# CESMA NEWS

MARCH 2023

## CONFEDERATION OF EUROPEAN SHIPMASTERS' ASSOCIATIONS

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*Opinions expressed in articles are those of the sources and/or authors only*

## 2023 IN THE CONTINUITY OF 2022?

What was 2022:

The beginning of the conflict in Ukraine, with its overflows on the Black Sea, as well as and above all the indescribable difficulties of relief and life for the seafarers, and not only Ukrainians and Russians.

The resurgence of the Covid virus, mainly in China, and therefore new difficulties in reliefs, life, shore leaves for seafarers.

A record year for the abandonment of seafarers by pseudo ship-owners who really care little about human value.

For these three reasons, an improvement in 2023 would be welcome and beneficial to seafarers.

2022 was also, and more, cyber attacks against vessels, shipping companies, ports, terminals. And at the same time, more or less serious opinions on ship automation and MASS, more cyber attacks, fewer (or no more) people on board, or how we tackled the problem backwards.

But 2022 was also the effort made against pollution, mainly atmospheric pollution. The commissioning of the CII on January 1 of this year 2023 can be considered a step forward in this area. Current advances in sailing propulsion, alternative fuels, and trials of new types of propulsion carried out and to come, all of this can only promote the attractiveness of the seafaring profession. A huge need for officers, skills, including ecological and digital, can only attract young people educated in respect for the environment.

And, wonderful new, following the ICC International Maritime Bureau, incidents of maritime piracy and armed robbery attacks in 2022 fell to the lowest recorded level in almost three decades. The IMB's report recorded 115 incidents (piracy and armed robbery together) in 2022 against 132 incidents in 2021. However half of them occurred in Southeast Asian Waters, where incidents are still rising; mainly in Singapore Straits, a third of global incidents were reported. More important, probably, the Gulf of Guinea saw a continued reduction of incidents, from 35 in 2021 to 19 in 2022; even if it is evident that the situation remains dangerous. For a fourth year in row, there were no incidents reported in Somali, Gulf of Aden waters.

If same result could be repeated in 2023 and after, what great news that would be. Of course, all merchants vessels, and their captains, are encouraged to adhere to the latest BMP. This is important as from January 1, this year, the shipping industry has removed its "High Risk Area" designation for the western Indian Ocean, Gulf of Aden, and southern Red Sea.

In 2023, following the last year General Assembly in Genoa, we will meet again in Varna, Bulgaria, on May 18 and 19 for our Council and Annual General Assembly. In addition to the various operational questions that are usual and inherent to this type of meeting, a seminar will allow us to hear from experts and probably to speak on Environment, Green Solutions, and Maritime Innovation. The Council and the Assembly will take place in the Naval Academy Nikola Vapstarov in Varna. In addition, Varna, a Bulgarian port on the Black Sea, although probably a little less easy to access for a Western European, is a very beautiful city, worth the trip on its own. May we find there most, if not all, the Associations of Captains who are members of CESMA. This is the wish of the Board at the start of the year.

**Capt. Hubert ARDILLON**  
**CESMA Secretary General**

## CESMA BOARD MEETING

On February 13, Board members met for a Board Meeting, by video. All Board Members were present, Capt. Dimitar DIMITROV, President, Capt. Giorgio RIBARIC, Deputy President, Capt. Mariano BADELL, Vice President, Capt. Hubert ARDILLON, Secretary General, Capt. Hans AMMERLAAN, Administrator, Capt. Damir LAKOS, CESMA Webmaster, and Capt. Ivan CONEV, President of BSMA, who was invited in order to present and to confirm the organization of the next Council and AGA which are scheduled at Varna in May.

### On the agenda:

Membership fees: except one Association, all fees were received for 2022; concerning 2023 which were claimed only few days ago, already seven associations made the transfer.

CESMA web addresses: the addresses with “@cesma-europe.org” are well working, and more and more used. For those Associations who did not make the change in their address book, please note that the address “cesma-eu@introweb.nl” should be canceled probably in the coming year.

### CESMA activities:

European Maritime Days are planned at Brest, France, on May 24 and 25. Secretary General has already scheduled to be present. Despite the dates to be near after our Assembly at Varna, it is possible for other Board Member to come. For the time being, the agenda of conferences is not yet known, and following the planning, it could be necessary to be more than one member to assist to all conferences of any interest for Captains. Decision will be taken when program known.

Visit to EMSA. A letter was sent to EMSA, for a meeting date, but not answered at the time of Board Meeting. However in the evening, after BM, dates proposal were sent. Normally President DIMITROV and Secretary General ARDILLON should go to EMSA Lisbon on 20th April. We are trying now to be in contact with our Portuguese colleagues from SINCOMAR in order to meet them by the same occasion.

### Next AGA at Varna:

Capt. Ivan CONEV presented the programme. Both Council and AGA will be hold in the Naval Academy “Nikola XXX”. 18<sup>th</sup> will see the usual Council Meeting and 19<sup>th</sup> the AGA. The 19<sup>th</sup> Morning, there will be different presentations:

“LNG: An environmentally friendly growth market” by Mirtcho Spasov, CFA, Manager Decarbonizing shipping, Eastern Pacific Shipping Pte. Ltd. (EPS)

“Green transition in shipping” by Dr. Daniel Struckmeier Senior Manager MAN Energy Solutions

“Legal Status of artificial islands” by Deyan Dimitrov, PhD, – layer, lecturer in Military Academy “G. S. Rakovski” and Naval Academy “Nikola Vaptsarov”), expert in International Maritime Law, winner of the “Young Lawyer of the Year” award – 2022

“Recent BSHC contributions to Maritime Innovation” by Nick Markov PhD, Head of Bulgarian Ship Hydrodynamic Center, Institute of Metal Science Equipment and Technologies” Academy A. Balevski, Bulgarian Academy of Sciences

“New European ENDORSEMENT Project” by Captain Ivan Conev, Chairman of Bulgarian Shipmasters’ Association

Board members are really hopping that Associations will be represented by one (or more) member at Council and AGA.

**Capt. Hubert ARDILLON**  
**CESMA Secretary General**



[www.skillsea.eu](http://www.skillsea.eu)  
Future-proof skills for the maritime transport sector

Co-funded by the  
Erasmus+ Programme  
of the European Union 

## SkillSea seminars

**16<sup>th</sup> December 2022 – online**

### **The Educational Package (EP) ‘Digital Skills 1’, how does it work and can your institution benefit from it.**

The Educational Package ‘Digital Skills 1’ aims to provide maritime professionals with the knowledge and skills required to use the information infrastructure on board modern ships. After the course, the maritime professional will be able to assess the available data and to act on basis of this data.

*By Alex Barlow, Programme Leader FDNS, School of Maritime, Blackpool and The Fylde College*

#### **The problem**

Tradition and Adventure?

Digital Transformation, Environmental Protection and STEM?

For a lot of seafarers, they might not naturally think of those concepts when they think about their career at sea, but those are the skills that industry now is looking for.

Shipping is rapidly undergoing a major digital transformation

To what extent does STCW specify the digital skills required by seafarers?

Condition Monitoring

- Integrated Navigation Systems
- Vessel Performance Optimisation
- Networked Computers

At Fleetwood Nautical Campus in England, we have trained seafarers for over 125 years and it is not unusual to see alumni of organization return to help train the next generation.

We are lucky to have long experienced seafarers wanting to “give back” to an industry that gave them a lifelong career. But the traditional skills they acquired may not automatically equip those ex-seafarers with all the skills needed for the 21<sup>st</sup> Century ship.

#### **The solution**

Basic introduction to the digital landscape of a ship and useful skills for interacting with technology.

This EP is aimed at operational level seafarers (cadets and junior officers)

There is perhaps a perception that “the youth of today”, having grown up with technology, have lots of digital skills. However, in our experience, there is not a strong correlation between age and familiarity with tech beyond general use.

At the heart of the EP is the ‘toolbox’:

- Course specification
- Outline of Programme



- Constructive Alignment
- Sample Lesson Plans
- Directions to latest research and online materials.

The coverage: UK Cadets with no sea experience and around 3 months of maritime education, and also maritime-experienced 3rd Year university students.

Digital Transformation:

The context, how is shipboard data used? Weather routing, Condition monitoring, Predictive maintenance

Where are we headed? We asked students to think about how key tasks on a ship were / will be done 20 years ago, 5 years ago, 5 years in the future, 20 years in the future. This quite indicated how fast the world is changing. And how their responsibilities are also likely to change.

What Powers the Transformation: Shipboard Sensors, Specialised OT Networks, General IT Networks, Communication to Shore.

Shipboard IT Networks:

How do shipboard computers get connected to the internet (common topologies, network devices, basic principles of IP networks)

Who has to be hands-on on board for IT when things go wrong?

Shipboard OT:

Modern ships are full of digital equipment that talk to each other and sometimes to the office, or even to other ships. This concerns bridge as well as engine control room and cargo system.

In the Event of Failure:

Detection, Expectation to fix it themselves, Shipboard consequences of sensors errors or failures, Consequences ashore.

**Our experience**

With the EP:

The team that piloted the EP had mixed levels of knowledge of technology

Our students were aligned to the specified audience

The EP was aimed more towards the shipboard environment

The EP gave structure to the field and highlighted key areas to address

The EP suggested activities to help teach the specific subjects

The EP signposted relevant up-to-date resources and materials

Of the Students:

The students had a range of backgrounds and experiences

Attendance was mandatory for one pilot optional for the other

The course was delivered as online, self-guided lessons

The students reported that the course had opened their eyes to aspects of the maritime industry they had not previously considered.

The opportunities:

Ideal for ship-shore collaboration

Create company-specific approach ashore

Send the resources of the ship

May identify gaps in knowledge

May help crew understand how the data is used to support office matter

**The benefits**

The EP is an education and industry collaboration

It is freely available to anyone

You can use it in educational contexts

You can also use it in the workspace

It is flexible for your needs

**The Educational Package (EP) ‘Green Skills 2’, how does it work and can your institution benefit from it.**

The Educational Package ‘Green Skills 2’ aims to explain vessel performance management systems, data collection and interpretation, calculation and documentation of emissions, key performance indicators in relation to environmental performance and key elements of the green regulatory process.

*By Orestis Schinas, Professor of Shipping and Ship Finance, Hamburg School of Business Administration*

**The need**

Changing external environment  
Challenging internal conditions  
Adapt, change, or die – strategic dilemmas  
Attract young professionals  
Increase employability  
Governance issues

**Our approach**

Market – Industry friendly  
Based on experience and models used in other industries  
Based on widely acceptable tools  
Considering our insight and experience  
Identifying multiple criteria that determine the result  
Enabling collective decision making

**The developed tools**

Strategy Direction Location: Facilitates the selection of strategic options to open all MET. It allows the mapping by MET/MTCs themselves given their internal and external attributes and allows the selection of internationalization partners.

Transcript International Transfer: Supports the transferability and recognition of modules. It is useful for assessing the similarity of modules.

The Employability Model: It is a self-assessment model for professional to evaluate the ‘employability’ of their profile. The model can also serve the needs of MET/MTCs to assess how ‘employable’ are the graduates of the facility.

The Stakeholders Model: Supports the decisions of MET/MTCs related to cooperation with stakeholders based on the PESTEL model (Politic, Economic, Social, Technology, Environment, Legal – a tool which permit a company to identify external factors impacting its activity).

**Benefits**

Online tools freely available  
New management concept – approaches / New governance practices  
Group decision-making possible  
Flexible and ajustable  
Closer to the client, the society, and the industry

**Note:** The Educational Packages ‘Digital Skills 1’, ‘Green Skills 1’, and ‘Green Skills 2’ are freely loadable on: <http://www.skillsea.eu/index.php/maritime-education-training-portal/educational-packages>

**Capt. Hubert ARDILLON**  
**CESMA Secretary General**

## DEATH OF CAPTAIN RIGOLET

Most probably, numerous Captains at sea and/or members of one of our ShipMasters' Associations do not know even the name of Captain RIGOLET.

However, all of us have heard something, and even have trained the immersion (or survival) suit, and Captain RIGOLET was the man who created such a suit.



On 1971, November 9, the M/V Maori, French flag, sunk. On the 39 crew members, only one was rescued; the one who thought and had time to wear his diving suit. Beyond the 38 others, the Chief Engineer was the neighbor of Captain RIGOLET. Apart of the cause of sinking, what was the problem for those who disappeared? The sea temperature. Then he had the idea. Maybe we can say: the IDEA, in capital letters.

But the idea is not enough. Technically, the immersion suit was created less than one year later. And tested when he made himself a conclusive first test, 24 hours in the water!

A long fight. Then to try to convince the maritime administration of the merits of his creation, he multiplies the tests: jumping into the water from a tower in the port of La Rochelle, from the Alexander III bridge in Paris into the Seine, to dive and stay in the water in the raz Blanchard, off Cherbourg, for 24 hours in the middle of January, when the water is not the hottest of the year. Despite all this, the maritime administration and ship owners will refuse the obligation to carry these suits on board ships flying the French flag. And it was not until 1983 that the survival suit became compulsory on French flagged ships, 10 years later!

In the meantime, he will also have been the first president of AFCAN when it was founded in 1979, at the time he was captain of one of the four 550,000-tonne ULCCs, the Pierre Guillaumat.

Captain RIGOLET died on January 31, 2022. He was 92 years old.

Active captains, when you will require your crews to train putting on the survival suit on board, have a thought for Captain RIGOLET. You can even tell them that it is to a seaman, a Captain, that we owe this magnificent and saving invention.

**Hubert ARDILLON**  
**Secrétaire Général CESMA**



**TRIESTE SEAMASTERS' ASSOCIATION AWARDS  
THE SAN GIUSTO PLAQUES AND SCHOLARSHIP GRANTS.  
December 16<sup>th</sup>, 2022  
TRIESTE, WÄRTSILÄ ITALIA AUDITORIUM**

The Trieste Sea Masters' Association organized the annual ceremony for the award of the San Giusto plaques to the best graduates of the local Nautical Institute for the school year 2021/2022.

The event took place in the auditorium of the Wärtsilä plant in San Dorligo della Valle in the presence of Institutional representatives, guests and family members – finally, after that in the past two years the traditional public ceremony had to be put on hold!

The Trieste Sea Masters' Association was established in March 1946.

Our not-for-profit association is devoted to helping students who graduate from the local Nautical Institute and young people starting their career, particularly to the aim of finding opportunities for embarkations and supporting in the related administrative procedures.

During the ceremony, as it has been done for 30 years now, we awarded on behalf of our more than 200 members nine San Giusto plaques to the best graduates of the Nautical Institute. The awards acknowledge the quality of their training and are also a testimony of our commitment in supporting them in their careers. Our Vice-President Chief Eng. G. De Cubellis, today a Manager at Wärtsilä Italia, was also one of the first award students in 1992. Especially exciting for him, as he acted as host of the ceremony in his very same corporate headquarters.

Over the years the Trieste Sea Masters' Association welcomed the opportunity to share the ceremony with the local Nautical Institute, which has awarded itself over thirty scholarships among their best students of the various courses. Stella Maris Trieste also participated by awarding the best graduates "Naval Builders Technicians" and, last but not least, "Airplane Pilots", a new technical course of the Nautical Institute of Trieste.

Many authorities attended the event, among them the President and CEO of Wärtsilä Italia M. Cafagna; CV(CP) F. Poletto, Deputy Commander of the Harbour Masters Office; the Secretary General of the Port Authority V. Torbianelli; don L. Magarelli to represent the Archbishop of Trieste and Commander G. Ribaric, Vice-President of CESMA.

Besides Wärtsilä, among the sponsors of the event were present: S. Beduschi, Vice-President of Italia Marittima; A. Cattaruzza, representing Tripmare, Ocean and Seafarers Welfare Group of the Eastern Adriatic ports; P. Pasin, for SIOT-TAL; A. Sferch, treasurer of the International Propeller Club Trieste; D. Stinco representing Agentimar and, not least Confindustria Alto Adriatico.

Many among authorities and sponsors addressed the students with nice words of encouragement. Furthermore, a testimony of real life was brought by our active partner Dino Sagani, Captain of MSC Cruises and two former students, Virginia Cilio – Academy graduate and Wärtsilä employee, and Francesca Vogrig – Nautical graduate and intern at Wärtsilä.

The Trieste Sea Masters' Association is very grateful to their Benefactors and namely, Gramenuda Family in memory of Commanders Guido and Fausto, for keeping on with the tradition started by the late Commander Guido Gramenuda, Member and Councilor of the Association from 1959 to 2011; Zadro Family in memory of Evelina and Captain Claudio Zadro; Lussi Family in memory of Captain Boris Lussi and his wife Laura.



## **TSG 2022 AWARDS**

– Captains – diploma: “Transport and Logistics” “Merchand vessel management”;

- 1) MARKEZIC Jury 95/100 = Best graduate plaque =
- 2) DIMINICH Lorenzo 92/100
- 3) DONNINI Anouk 92/100
- 4) BOSCAROL Matteo 90/100
- 5) GOSDAN Simone 90/100

– Engineers – diploma: “Transport and Logistics” “Management of maritime plants and machinery”;

- 1) GIONECHETTI Costantino 100/100 = Plaque for best graduate ex-aequo =
- 2) MURARO Gabriele 100/100 = Best graduate plaque ex-aequo =

– Adriatic Nautical Academy – TSG2022 assignee – DeckCadet

- 1) RAPISARDI Marco

– Adriatic Nautical Academy – TSG2022 assignee – EngineerCadet

- 1) DE VITA Roberto

– Builders – diploma: “Transport and Logistics” “Naval Builders”;

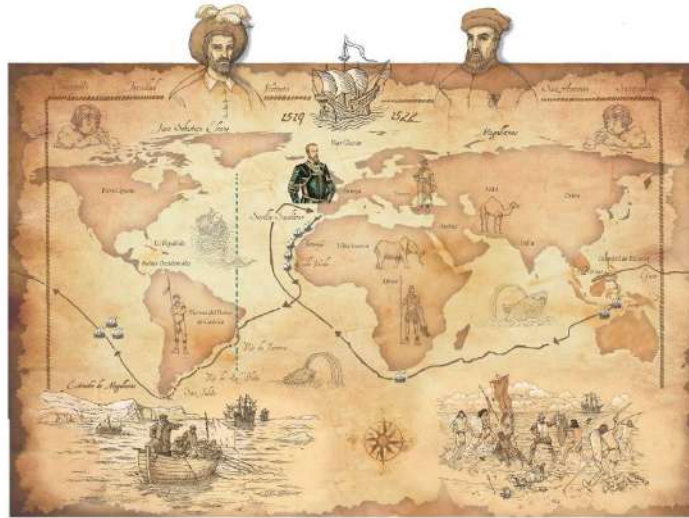
- 1) IACCARINO Nicola 100/100 = Best graduate plaque ex-aequo =
- 2) ROCHELLI Alessio 100/100 = Best graduate plaque ex-aequo =
- 3) SESSANTA or SANTI Francesco 100/100 = Plaque for the best graduate ex-aequo =

– Builders – diploma: “Transport and Logistics” “Aircraft Pilots”;

- 1) BENCICH Deborah 100/100 = Plaque for the best graduate =

**Capt. Mario CAROBOLANTE**  
**CTPC President**

**III INTERNATIONAL CONGRESS**  
**BILBAO – 17<sup>th</sup> to 19<sup>th</sup> May 2022**  
**500 YEARS OF THE FIRST ROUND THE WORLD**



Organized by our colleagues from the AVCCMM (Asociacion Viscaina de Capitanes de la Marina Mercante), the CESMA was invited to speak on the last day. Below is a report of all the presentations we attended as representatives of CESMA (Vice President Captain Mariano Badell and Secretary General Captain Hubert Ardillon).

This is the third and final part of the presentations with two main titles: Salvage and Crew.

**Thursday, May 19<sup>th</sup> (part 3 on 3)**

**SALVAGE AND MARITIME SAFETY**

**18 – The Titanic and the SOLAS regulation**

by D. Jose Antonio Reyero. Retired Principal Inspector and Chief Metallurgical Officer for Spain of Lloyd's Register and Managing Director for Spain, Portugal and Cuba of Lloyd's Register Quality Assurance.

Whereas since 1760 all ships leaving or arriving in London were inspected, qualified and therefore classified (conditions of safety and seaworthiness) by experts (builders or retired captains authorized to carry out ship inspections) belonging to an association of shipping agents, charterers, insurers and insurance brokers founded in the famous Edward Lloyd café in London, surprisingly, the Titanic was unclassified. All vessels inspected were registered (including her captain) in "Lloyd's Registry Book". The 1764 Register contains detailed data on over 4100 ships, of which over 2000 were built outside Britain. The ships were rated and the rating could vary after inspections and repairs. In the early 19th century, these surveyors formed a new, independent association under the name of Lloyd's Register of Shipping, international and independent of Builders, Shipowners, Brokers, and Insurers. The association had already defined construction and maintenance standards for the classification. In these rules, it was established that, in order to classify a ship, it must be examined and inspected at all stages of construction, from calculations and the preparation of plans, to the verification and approval of the resistance elements. structure and main steering, propulsion and mooring equipment.

## **So why was the Titanic not classified?**

Strange situation, because at the beginning of the 20th century, almost all ships built in the United Kingdom were inspected, certified and classified by Lloyd's. In fact, the designers, builders and owners of these Titanic-type ships, the largest and most luxurious of the time, considered that the classification brought them no added value, and also avoided the inconvenience caused by the rigorous checks by Lloyd's experts. They also said that the features of these ships were so advanced that they exceeded Lloyd's rules. On the other hand, all important equipment manufactured outside the shipyard such as rudders, sternposts, anchors, and engines, had to obtain Lloyd's certification of conformity, in accordance with the Rules in force (1909) before sending to the shipyard.

But during the collision with the iceberg, it was the hull that gave way. The hull rivets, recovered from the wreckage (nearly 4000 meters deep) and then metallurgically tested showed internal defects which would not have met Lloyd's requirements had they been inspected. Worse, there was no revision of the construction plans. Thus the height of the watertight bulkheads did not reach the watertight deck, they only reached deck E and not deck D, which would have made them truly watertight.

Subsequently, aware of the cause of Titanic's rapid sinking, the White Star Line suspended Olympic's voyages, and returned her to the shipyard. There, a thorough inspection of the hull and the rivets was carried out and if the resistance of the double bottom and the hull was increased, the bulkheads were also modified, "Bottom to the Top".

Of course, the issue of the lack of classification caused a stir in the press and technical journals. Two official investigations into the causes of the tragedy were carried out immediately after the incident. The first, by the US Senate, began the day the Carpathia arrived with survivors in New York. 86 witnesses were heard during the 18-day inquest, during which many survivors freely, spontaneously and openly recounted what they had seen and felt, which then became one of the most important sources of information on the sinking. The second inquiry was held in London, chaired by Lord Mersey. It lasted 36 days with dozens of testimonies from the survivors, the crew and the White Star Line Shipping Company, but the answers of the witnesses, well advised by the Company's lawyers, were no longer so spontaneous.

The subject of classification featured prominently in both surveys, and the Company, the owner and the British maritime authorities insisted that Lloyd's Rules did not cover such large and sophisticated vessels.

Similarly, Lord Mersey, on the issue of the insufficient number of lifeboats, came to say: "Unfortunately, since the boats were never filled, having more lifeboats would not have saved more lives ". As if he wanted to conceal the very serious circumstance that the insufficient capacity of the lifeboats complied with the obsolete British regulations of 1894, not updated for large ships such as the Titanic.

Lord Mersey in his final report was inclined to protect the "Board of Trade", then the White Star Line (staff and directors), at the expense of Captain Smith of the Titanic for whom he declared: "He made a mistake, a very grievous mistake, but one in which, in face of the practice and of past experience, negligence cannot be said to have had any part, and in the absence of negligence it is impossible in my opinion to fix Captain Smith with blame"

It is this word "negligence" that opened the door to the claims of the victims.

And the same word "negligence" was used to refer to the behavior of Captain Lord of the ship California, who arrived late to the rescue, when he was (supposedly) much closer to the Titanic than the Carpathia.

The controversial subject of Classification obviously also reached the British Parliament, where some of the conclusions of Lord Mersey's report were judged harshly, which was broadcast by the press. The structure was highlighted by Lloyd's Register; the investigation was only based on the rules of 1885, while those of 1909 already covered ships larger than the Titanic and were already applicable during its construction.



In the end, however, the main conclusions of the two surveys were quite similar:

- Iceberg warnings were ignored (telegrams received, not sent).
- Watchmen were not equipped with binoculars.
- The vessel was going at full speed at the time of the collision.
- There were no alarms or adequate communication.
- There were not enough lifeboats for everyone (passengers and crew).
- No boat drills were conducted.
- The distribution of responsibilities in the rescue has been improvised.
- The lifeboats were only partially occupied and were insufficiently equipped (no compasses, lights, water, etc.).

It can, unfortunately, be said that we owe the creation of the greatest international commitment to protect the safety of life at sea to the many victims of the Titanic.

### **Birth of SOLAS**

Faced with the scandal caused by the tragedy of the TITANIC and in the hope that it would not happen again, an international conference was convened in London in January 1914 on the initiative of the United Kingdom, to draw up new safety rules on navigation. .

The 16 countries present, including Spain (a single representative, Captain Rafael Baussa), signed an agreement called and known since then as SOLAS, an acronym for Safety Of Life At Sea.

For this, each country sent to the convention its leading experts in shipbuilding and maritime safety who debated and confronted their expert opinions which finally resulted in a document made up of 74 articles, divided into 8 chapters. We can note a curiosity: unanimously, and on the proposal of Lord Mersey, the official version of the document was written in French and not in English.

#### 1914.– Convention for the Safety of Life at Sea. SOLAS

Chapter. I Commitment and deadlines of the parties to adopt the agreement

Chapter II. Scope. Type, size of vessels and traffic.

Chapter. III Safety in navigation. Ice field detection patrols. Intense Morse lamps. Changed speed on ice fields.

Chapter IV Construction. Subdivision and height of watertight bulkheads and firewalls. Regulations for the construction and inspection of hull and machinery.

Chapter V Radiotelegraphy.

Chapter. VI Rescue and fire fighting. Lifeboats for all, equipment. Additional rafts. Derelict crew training and firefighting, drills.

Chapter. VII Safety inspection and certification by the State or by Recognized Organizations.

Chapter. VIII Legislative provisions, entry into force and penalties.

The SOLAS Convention was adopted on January 20, 1914 with the commitment that it would enter into force in July 1915, but there was, before, the First World War, and it was not until 1929 that SOLAS entered into force, with already modifications imposed by the achievements of the war.

Over time, maritime traffic has changed as have vessels, types, sizes, propelling energy, cargo stowage, and dangerous goods. So the 1914 SOLAS, which focused on saving “life at sea”, had to adapt not only in terms of saving life but also reducing the problems that ship breakdowns can cause to the economy and the environment, hence hundreds of modifications incorporated. And to this, we must also add the difficulties of consensus and approval of the countries concerned since, of the 16 countries originally, more than 150 countries have ratified the Convention.

Consequently, there were several revisions with the incorporation of hundreds of new requirements. Note that of 1960, carried out under the aegis of the International Maritime Organization, United Nations Agency, founded in 1959.



SOLAS 1960 is the first meeting of the SOLAS committee, within the IMO, with the adoption of a new chapter applicable to nuclear-powered ships.

SOLAS 1974 is the current SOLAS, all subsequent editions being edited on the basis of the consolidated text of 1974 with successive incorporation of adopted revisions and amendments.

SOLAS 1998, with the appearance of a new chapter IX on the ISM code.

However, if we refer to the Titanic disaster, SOLAS, aided by technology, responded on several points:

The radio range is no longer limited to 200 nautical miles.

There is now the SAR Convention.

Lifeboat launching drills are mandatory.

There are now evacuation slides, passengers on the Titanic have jumped out of portholes, windows and access doors in the boats, injuring themselves and other passengers.

Thanks to distress beacons, the position of a sinking ship is automatically located.

All vessels must maintain continuous monitoring of alert and safety frequencies.

All ships are now equipped with enough lifeboats (some can be replaced with rafts) for everyone on board, plus 25%.

There are a specific number of immersion suits on board, mainly for the crew of the lifeboats, in order to combat hypothermia.

For the same reason, SOLAS fully or partially enclosed lifeboats.

Each crew member should participate in regular lifeboat launching practice and be trained.

All ships must have a public communication system.

As early as SOLAS in 1914, patrols were established to monitor ice in the North Atlantic.

SOLAS imposes, when the presence of ice is reported on or near the ship's course, to change the course or to continue it at moderate speed.

**19 – Scope of action in the Aquatic Environment of the SAR Section of the Ertzaintza** by D. Aitor Gonzales Arteagabeitia. Skipper of the aquatic section in SAR unit of Ertzaintza

The SAR section of Ertzaintza covers 132.8 km, corresponding to the provinces of Guipuzcoa and Vizcaya. The section has both human and material resources (sea and air) for intervention, storage and training. There are 37 people for the sea/river section, 41 people for the mountain section, helicopter and drone pilots, several sea and river boats, 2 helicopters and 11 drones. These resources are located at the base of Iurreta, the different ships are strategically positioned along the coast, based on minimizing response times to achieve better coverage and effective action.

We work in conjunction with the Red Cross.

The Training Center is associated with the Arkaute Pays Basque Police Academy.

When the coordination center receives a notification, it activates us, and we go there to verify the fact.

**Activities:**

- Collaboration with the Fisheries Inspectorate.
- Cases of flooding.
- Monitoring, control and support of sporting events.
- Surveillance and prevention, beaches, jet skis, pollution at sea, rivers or swamps, natural and archaeological areas.
- Assistance to the Judicial Police in the Rescue of drowned persons.
- Collection of evidence for investigation purposes.

**Assignment:**

Our work is based on article 268 of the Consolidated Text of Law and State Ports and Merchant Navy, approved by Royal Legislative Decree 2/2011.

This concerns the saving of lives at sea, the prevention of pollution at sea, the aid to maritime traffic (safety and navigation, towing, and preventive functions in inland waters (dams, swamps, rivers), therefore the safety of people and protection of marine and plant life For the protection and conservation of the marine environment: monitoring of maritime pollution, recovery of plastics and driftwood, monitoring on the coast is done from helicopters and drones.

Supervision is daily from 8 a.m. to 8 p.m.

Calls for help, to 112, are made by people in difficulty, including without immediate vital risk. The most frequent calls concern pleasure boats (engine failure, loss of control of the boat becoming dangerous in bad weather near the coast, lack of fuel, propeller caught in a rope), crew members falling off the water (more common on sailboats, often without lifejackets), fire on a boat (highly flammable construction materials, toxic smoke), fires usually being caused by poor maintenance or human error.

Interventions must be rapid; the aquatic environment is a hostile environment, with a high risk of hypothermia.

### **20 – 50 years anniversary. The Red Cross at Sea**

by D. Benjamin Romero Cobas. Volunteer at the Red Cross, Regional Head of Maritime Rescue.

#### **A humanitarian mandate**

##### Statutes of the Spanish Red Cross (Art 5)

1. The protection and relief of people affected by accidents, disasters, public calamities, social conflicts, diseases, epidemics and other risks or collective accidents
2. The Red Cross, within the framework of its institutional object, can develop any type of activity related to its specific objectives, and in its achievement, provide the following services: rescue; rescue and maritime assistance.

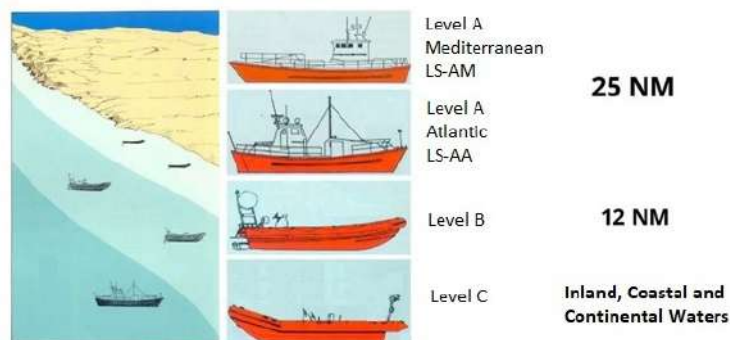
##### Historical

During the cantonal war of 1873, the steamer Buenaventura was chartered by the Red Cross of Cartagena to assist the shipwrecked and wounded during the clashes between the cantonal and government fleets

Then in 1971, the Spanish State subscribed to SOLAS, which led to the creation of the Naval Rescue Brigade, better known as the Red Cross of the Sea

1992 saw the creation of the Maritime Rescue and Safety Society (SASEMAR), as well as a national plan for maritime rescue and the fight against marine pollution.

Three levels of intervention with different vessels:



##### Characteristics of a typical Level B boat

Semi-rigid, length from 7 to 9.5 m, width from 2.3 to 3.4 m, displacement 3 tons, propulsion 230 hp, speed 23 to 25 knots, removable roof, self-righting, range of 100 NM, 4 crew.

Interventions in coastal areas: search, approach, rescue and evacuation of shipwrecked people.

These boats are manned by trained and multipurpose volunteers, accustomed to this task. Actions are coordinated by SASEMAR Control Centers. And they are used primarily for training.



### **SASEMAR-Spanish Red Cross (CRE) Framework Agreement**

In 1991, an agreement was signed between the Ministry of Transport, Tourism and Communications (Direction Générale de la Marine Marchande) and the Spanish Red Cross.

#### Areas of collaboration:

Search and rescue of people in danger at sea. Fight against marine pollution. Facilitate the progressive deployment of SASEMAR units. Renew the CRE fleet by replacing Level A units with Level B units. Complete and improve the response of the maritime emergency assistance system. Participation in training exercises.

The annual action plans (since 1996) regulate the collaboration between the two entities on an annual basis:

Identification of CRE high availability locations and resources

Description of concrete actions.

Establishment of operating procedures.

Collection of the financing scheme and its regulations.

In 2006, units specializing in psychosocial intervention were set up to care for relatives of victims of maritime accidents.

Currently, this represents care for people in danger at sea who have recently arrived on our shores in the maritime areas of the Strait, the Alboran Sea, the Levant and the Canary Islands. The means deployed are 42 high-availability vessels (20 owned by SASEMAR and 22 by CRE), 47 additional vessels at different levels of availability owned by CRE, 16 immediate emergency response teams specializing in psychosocial intervention, and the implementation of preventive measures on some 300 beaches during the summer.

The challenges: ship replacements, creating shared spaces for defining and improving ship training and shipping processes, integrating new technologies on ships to improve the level of adaptability to tasks.

### **21 –Maritime Rescue: Past, present and future, the human factor**

by D. Miguel Felix Chicon Rodriguez. Head of the Rescue Coordination Centre of Palma

#### **Past: The value of life**



Between 1520 and 1599, 22 miracles are attributed to the Virgin of Begona, 7 concern rescues.

Then in 19<sup>th</sup> century, the National Institution for the Preservation of Life from Shipwreck, Royal National Lifeboat Institution was created, followed after years by the Société espagnole de sauvetage des naufragés, the Red Cross, and in Spain SASEMAR.

**Présent:**

The presentation showed the means and tools of SASEMAR and CRE, illustrated by a number of cases where they came for salvage and rescue.

**Future:**

Renewal of different salvage boats, helicopters, drones and the use of satellite in SAR operations and communications.



**Thursday, May 19th**

**THE CREWS**

**22 – Life in a sixteenth century nao**

by D. Marcelino Gonzales. Captain, Vice-President of the Royal Naval League

The nao Victoria, a small Spanish ship that left Sanlucar de Barrameda in September 1519 and returned laden with spices three years later in September 1522 under the command of Juan Sebastian de Elcano, achieved one of the greatest feats of humanity: the first round the world.

What did this type of ship look like, what was she used for, and how did people live there?

There are few chroniclers of the time who tell us how life was lived on a 16th century ship, but among the few that exist it is worth highlighting three, who sailed and left their writings: Fray Antonio de Guevara, who in 1539 published a small book on life on a galley; Fray Tomás de la Torre, who wrote the chronicle of a trip between Salamanca and Chiapas (New Spain) from 1544 to 1545; and Eugenio de Salazar, a high official who in 1573 wrote a detailed letter recounting his journey on a ship across the Atlantic.

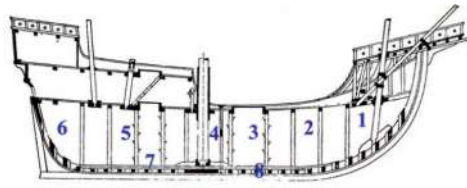
**Nao.**

The term “nao” means “vessel”, “ship”, “boat”, or “canoe”. But this term, from the 15th century, was also used in Spain to designate a specific type of sailboat dedicated to the transport of passengers and goods, light, without oars, and with high gunwales, a rounded stern, a single exterior deck, longitudinal and vertical reinforcements, an axial rudder, and a tonnage of 100 to 600 tons.

The rig, over time, became standardized with a bowsprit and three vertical masts: foresail, with a square sail; mainmast in the center with two square sails and the topsail; mizzen, at the stern, with a sail of triangular or latin type; plus an axial rudder at the stern.

Ships of the early 16th century normally had a single main deck running from bow to stern, with some sheer, the ends of the bow and stern being higher than the centre. On the main deck were firewood, a stove, and few barrels of drinking water, spare wood, anchors, trunks, canoes and heavy weapons, as well as live animals.





Below deck: 1– Mooring and mooring lines, 2– Food locker, 3– Fore hold, 4– Armory and ammunition store, 5– Aft hold, 6– Tackle store, 7– Ballast (stones and gravel), 8.– Bilge.

The ballast consisted of stones and gravel, on which planks were placed to secure materials and cargo. Under the ballast was the hold, where the water that could enter on board accumulated.

Above, between the castle and the main mast, was a large loading hatch to the holds, covered with logs and oilcloth for waterproofing. To get into the hold, there was another hatch under the awning cover.

Each ship had two auxiliary crafts. A canoe about 8 m long and a 5 m longboat, used to transport personnel, food, equipment, water and to tow the ship in the port area. At sea, these crafts were either stored on deck or in tow at the stern.

For mooring, the ships had at least four anchors of about 500 kg with their cables: two at the bow, a third at the stern, a fourth, makeshift, under the castle or in the hold. There were also other smaller anchors, or four-armed grapnels weighing from 45 to 90 Kg. And a windlass to raise the anchors.

To pump water from the hold, there were two pumps forward of the mainmast.

### **Armament**

Even if, in principle, these ships were not warships, they embarked some firearms, weapons with a blade and defensive weapons. Firearms were smooth-bore and short-range, and used for self-defense, signaling, and saluting.

For hand-to-hand combat there were swords, spears, pikes, halberds. The armament was completed with cuirasses, helmets, visors.

For the warships, the armament was more important, in artillery pieces and portable weapons, with fire and blades.

### **The crew**

A Captain or first authority on board. A Second Captain who commands sailors and oversees administrative and maintenance tasks. A Pilot, in charge of the route and the position. A Bosun, responsible for the rigging and the sails. A Notary, to register discoveries, possession of land and administration of justice. A Bailiff, lower officer of justice, acting as a policeman. A Keeper or assistant to the bosun. A Pantryman, in charge of the care, administration and distribution of food, water and wine. A Carpenter. A man in charge of waterproofing. A Barber-Surgeon, expert in medicine and surgery. A Constable, in charge of the maintenance and management of the artillery. Gunners, in charge of ammunition and artillery under the orders of the constable. A Tailor for clothes, sails and flags. A Cooper for barrels. A Blacksmith. Sailors, between 20 and 40 years old. Novices, from 16 to 20 years old, sailor apprentices. Pages, children aged 12 to 16, serving as servants. Servants, young people at the service of a person on board. And sometimes young people of noble origin who were looking for adventure or military and maritime experience. For a warship, there was also a garrison of soldiers under the command of an officer.

The hierarchical order: captain, second captain and pilot, who could also have other offices, such as representative of the Royal Treasury, responsible for the money of the ship or the crew, chaplain or priest, and chronicler, in charge of write the adventures of the expedition.

### **Life on board**

Life on board was complicated and difficult, as there was very little space for 50 or more



people. Life on deck was very hard due to cold, sun, heat, rain or sea spray, and below deck due to humidity, sweltering heat, insects and the stench of bilge water. So a great overcrowding and a total lack of privacy, since the available space was also occupied by canoes, anchors, personal effects, barrels, cannons, live animals, etc.

The captain slept either alone or with the other officers depending on the space available. Crewmen generally slept flat on deck wherever they could, on mattresses or mats, which served as shrouds if necessary.

The crew members kept their personal effects in chests; depending on the rank, a chest for one person, for two or three. These chests were also used as seats, tables, or for playing. No uniform dress on board, everyone dressed as they could. Poor clothing and footwear gave rise to many diseases.

### Meals

At the start of the expedition, the ships were well supplied with food. But due to the poor conditions on board, the food rotted, fermented, was contaminated or eaten by rats, cockroaches and other vermin. Drinking water was also corrupted in a short time. And the lack of salt made it impossible to keep fresh meat or fish.

During the long crossings, great nutritional deficiencies occurred, which caused various diseases and could lead to death. For these reasons, when passing near a coast and whenever possible, one of the canoes was sent ashore to try to obtain water and food.

There were mainly dried legumes on board, which can be stored for a time, as well as other fresh, dried, smoked and salted foods (vegetables, cheese, fruit, fish, and meat). There were also cookies: unleavened, dehydrated, rock-hard bread that could last up to two years. To eat it, you had to break it up and put it in a bowl with water or wine, resulting in a soft soup.

Three meals a day: breakfast, lunch and dinner; usually only one hot meal a day, at midday, depending on the weather and the sea. set fire to the ship or the sails and ropes.

Three meals a day: breakfast, lunch and dinner; usually only one hot meal a day, at midday, depending on the weather and the sea. In bad weather, it was very dangerous to light the stove, as yaws or wind could either knock it over or blow embers flying, capable of setting fire to the ship or the sails and ropes.

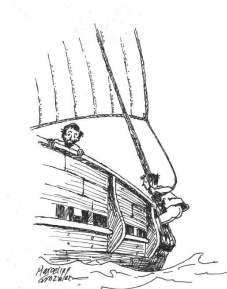
The captain, the mate and the pilot and certain senior officers ate at the table, the others where they could.

### Live animals.

The ships left with live animals, either to be eaten or for transport to other lands, horses, pigs, cows, chickens and ducks, kept in cages or enclosures.

### Physiological needs.

To relieve themselves, the crew members used tanks which they emptied into the sea, or a type of latrine, installed forward, or even overboard by holding on to the shrouds, which, depending on the weather, could be very dangerous.



### **Work on board**

Three shifts with defined tasks: the helm, the rigging, the service and safety rounds, plus the times when the whole crew was needed: repairs, cleaning, ship maneuvers, sails or guns,

anchorage. Other hard work: the careening of the hull, or repair of its submerged part, which required emptying the ship, then beaching it on a beach at high tide.

The crew could receive training for these tasks.

The maneuvers were done in silence so that only the bosun's whistle could be heard, short and precise blows, easy to hear and understand by the sailors.

### **Hygiene.**

Due to overcrowding, hygiene was very poor and sometimes non-existent, with fresh water being reserved for drinking. The stench of the body, as well as that of the live cattle and that of the holds, contributed to create a harsh and unpleasant atmosphere.

And we had to reckon with the presence of unwanted passengers, such as rats, mice, lice, bedbugs, cockroaches, fleas, scabies, ticks, ants and others.

The torrential rains and strong winds swept away the bad smells, carrying a lot of dirt towards the sea and leaving the decks more or less damp.

So an unsanitary environment. Lack of hygiene, scarcity of food, bad clothing and overcrowding, plus cold, heat, dirt, pestilential air, humidity, parasites, malnutrition, all this caused many diseases: cholera, scurvy, smallpox, yellow fever, scabies, others; and made it difficult for wounds to heal, even leading to death. The sick were taken to covered areas of the ship to be attended to by the barber and the priest, if there was one.

In the event of death on the high seas, the corpse was thrown overboard wrapped in its mat, with a stone or a cannonball as ballast so that it would sink, the priest, if on board, or failing that, the ca-pitaine, presiding over a simple funeral act.

### **Wages**

On board, all the staff had a salary. By way of example, some of the monthly salaries of the Magallanes-Elcano expedition, in maravedis, were as follows: captains, 3,300; crew masters, 2,000; sailors, 1,200; cabin boys, 800. At that time, the purchase prices, still in maravedis, were 2,000 for a cow, 400 for a pig, 400; and 35 for a duck.

### **Religion**

Very present at sea, ships once bore the names of saints and the lands discovered often received the name of the saint of the day. The difficult and precarious life on board could give rise to strong religious manifestations.

If there was a priest on board, the masses were held only on land. If there was no priest on board, which was normal on merchant ships, religious matters were the responsibility of the captain.

### **Discipline.**

At that time, there were ordinances and regulations that characterized misdemeanors and crimes: murder, theft, loss of arms, blasphemy, misuse of fire, gossip, sleep on duty, homosexual relations, desertion, fight, rebellion, insubordination, etc., as well as the punishments and penalties to be applied in each case: irons, beating, cutting off a hand or a foot, galleys, bread and water, abandonment on desert island, prison, whipping, passage through the keel, death, etc.

On board, sexual activities were very difficult. It was forbidden to embark women, except passengers, in which case they were closely watched by their relatives. The fact that an all-male crew spent a lot of time at sea encouraged homosexual relations, an infamous sin, which, when discovered, was severely punished, even the death penalty.

### **Free time.**

When they had free time, the crews had fun as they could: writing for themselves, or for others not knowing it, those who could read did so aloud for others to enjoy. Another distraction was music, playing instruments, singing, even dancing.

Fishing could be another good entertainment, as well as wrestling.

Playing cards, dice and other games of chance, but gambling being prohibited, they were most often done in secret.

### **Safety on board. Risks and accidents.**

In addition to low pressures, shoals, adverse weather conditions, storms, fires, collisions and fighting, there were other factors that could affect the ship's safety such as hull tightness and rotting water from hold. Water entered on board through rain, spray, waves, washes, etc. A leak could be easily detected if the level of the bilge rose rapidly, or if the smell of putrefaction disappeared, which indicated that the bilge was communicating with the sea.

The atmosphere in the hold could be very suffocating, due to lack of oxygen and the presence of toxic gases. The bad smell indicated a good sealing of the hull. Before descending into the hold, a candle was lowered there which must have remained lit.

Another enemy of the hull: the shipworm, marine mollusk, bivalve, xylophagous, in the shape of a worm, feeding on the wood of the hulls, until causing their shipwreck.

There was also the risk posed by fire on board, which led to very controlled use.

And if a ship was wrecked, the first thing that was saved was the king's gold and the most valuable goods. Since there was no full escape capability, when abandoning ship, the main officers and/or passengers and the strongest to handle the canoes took priority. The others remained on board, doomed to almost certain death.

### **Conclusion**

Life on ships was very hard and full of deprivation, long journeys, loneliness, melancholy, uncertainty, fear, boredom, fatigue and illness. Despite everything, people embarked, sometimes pushed by misery or famine ashore, since on board they were more or less guaranteed three meals a day, they received a salary and could learn a profession, and could be promoted on the social ladder. Some wanted to go on an adventure, to colonize new lands, but many traveled in the exercise of their professions: civil servants, monks, soldiers, merchants.

## **23 – Changes for the captain of a current merchant ship compared to a captain in the days of Magellan**

by Capt. Hubert Ardillon. Retired master, Secretary General of CESMA

### **How to become captain**

In Magellan's time, and again thereafter, few could afford a scientific, maritime, medical or social education. So to become a captain depended a lot on family or personal fortune. Nowadays, it is much easier to study, and then in the case of maritime studies to find contracts on board vessels, to get an experience of the sea and ships, then to be promoted as captain on a vessel.

The consequences of this change in status, family or education, can be seen. The seafarers on our ships are part of a maritime community, each knowing that the others have been educated for their role. And each one knowing what are most of the duties of other crew members. And consequently, we know on board that the captain owes his position not because his name or his fortune, but because his years of experience at sea. Hence probably a greater respect for him. And this also could explain why, nowadays on our vessels, there is much less, not to say none, mutiny on board. To obey to orders from captains is much easy when you understand the order. And crew and officers understand better because they have also the same maritime education.

Magellan came from a Portuguese gentry family, but at that time that was enough to open some doors. Even though the actual captains are certainly less adventurous than Magellan was.

## The crew: recruitment



In Magellan's time, with a few exceptions, those essential to the ship's set-up and running, the crew members were mostly used as arms. There was therefore a need for men, many men, to maneuver the sails, climb the masts, and above all not to ask "technical" questions. These men, often lost, were recruited at the end of a boozy evening at the back of a bar. There were also those who wanted to disappear for a moment, because wanted by law enforcement or the family of a girl conquered for a moment. Not or few could read and write. Sometimes they would wake up when they were at sea, so it was impossible to come back to shore. They were not sailors, but would be, or had to die very quickly. Of course the captain was not, in the majority of cases, the one who did the recruiting himself. He would ask a few trusted men on board, or an "agent" to do it, but either way he endorsed how to enlist. He therefore found himself de facto responsible for the quality of his crew. And he had absolute power over these men, even over life and death.

The captain no longer enlists anyone directly. Especially in bars. Everyone on board must have valid license and a lot of certificates, up-to-date medical examination. Each crew member must therefore have a maritime education; have at least theoretical knowledge before joining a ship. But one thing that has not changed is still the captain who is responsible for the quality of his crew. There is nothing he can do about it, there are manning companies for to recruit and send to the ships, but if a crewmember doesn't do the trick, whether for false certificates or false papers, it is the fault of the captain. So he must check all of this before this man embarks. But sometime it is not feasible. You see the problem when the vessel arrives in a bay for a relief, with no official stop. How to land back this man? It is impossible, but at the next port, upon arrival, there is a great "chance" that the crew certificates would be checked by a PSC or vetting inspector. And a remark will be issued.

### **The crew – Knowledge**

Modern ships are much bigger than in Magellan's time. But the crews are smaller. Few differences.

Every crew member must be a technician, in his own part, deck, engine, cargo, passengers; and safety for all crewmembers. Everyone must be ready to observe, to report, to understand what is happening on board which could be found abnormal or unusual. This requires more or less advanced technical knowledge.

Magellan sailed as an adventurer, only with an idea. So navigation, positioning, weather study, how to operate sails, I will say « old navy fashion», all these knowledges could be enough.



And if I think that it is still recommended to have this knowledge. In addition, in actual days, the captain should have skills on more subjects. Still navigation, positioning and weather, of course, but also of engineering for motors, steam, chemistry which could help for the safety of the vessel, medicine, administrative on the different laws, international and nationals, papers works and from now digital skills.

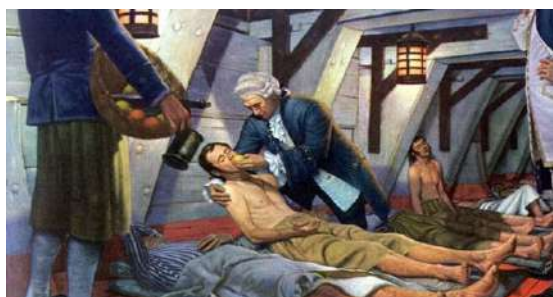
It is true also that the knowledge of the ocean, the associated currents, the weather routing, all that give a better approach to the navigation. Think that now we are able to know the position of the vessel by few centimeters. Even if at sea who can see the interest of such a precision. And for the other knowledges, it is now easier to be educated on, and every body has the opportunity to search for a better skill, this is the good side of internet. But it should cover a lot of different domains.

### **The crew – Health**

Centuries ago, the seamen left for periods of long months and years, and also for long transoceanic crossings, since the knowledge of currents and coasts was not yet well known. This could cause desertions when the ship had the opportunity to call a port in an enchanting land. These days calls in enchanting places no longer really exist. The ships are moored in highly industrialized port areas, far from city centers. In addition, the calls are much shorter than before, the crew members work on 6/6 shifts most of the time, and unfortunately do not have the opportunity to be able to go ashore.

Certainly shorter contracts, although sometimes under certain flags they still last too long, but with fewer opportunities to go ashore. Life is completely changed on board.

Subject the health of the crew; here too the difference with ancient times is important. To be sure, medicine in general has made tremendous progress since the days of Magellan. We then groped there. One could eventually experiment with medicines, but above all there was no knowledge of the diseases inherent in the absence of vitamin. Think that scurvy, for example, was deemed due not to a vitamin deficiency, but to the humidity, the promiscuity, the melancholy as it was said then, which reigned on board. And when, by chance, it was discovered that the lemon prevented the scurvy, this was put down to the acidity of the fruit, not the vitamins it contained. It took centuries before to understand it. Then there was the period of the on-board doctor. Who did what he could with often what little medicine he had. Now the captain and a few of his officers are still not knowledgeable doctors, but they are trained to provide first aid, and above all, there is the possibility to contact a real doctor, to take his advice, and to act under his advice. So of course the drugs are always in number sometimes limited on board, but thanks to this contact, the captain can work small miracles.



Medicinal treatment, minor surgery, diversion of a ship for emergency disembarkation of a crew member in need, all with the assistance of a qualified doctor on shore. There is even talk now about the psychological health of the sailor. Big difference: before a patient, one tried two or three things, it did not work, patient died and then overboard; it worked, it was considered as miraculous. Not anymore. Crew member have more probability to stay alive. First he is medically controlled before to join the vessel, and in case one crew member falls sick, the captain or one of his officers



is able to give him some medicine, after shore advice, to ask for the vessel to be diverted from his route in order to land the sick crew member. Do not say that to die on board is difficult, of course no. But we have the tools and some knowledge to keep the full crew in good and safe condition.

### **Commercial agent**

Historically, the merchant vessel has belonged to a ship-owner. He could and still can be a ship-owner captain. But when the owner is on land, the captain is his representative. He is also the representative of the charterer of the vessel. And whereas before, the captain set out to look for goods, either known and under contract or at random as it could be found. Now, leaving the port, in a large majority of cases, we know where we are going to, the cargo that is going to be loaded there and where it will have to be unloaded. There is much less room for improvisation, the little extra thing that will make money for crew and captain.

In old times, the captain had not only to represent a charterer, but even more to replace him, to take commercial initiatives. Now the captain is in charge of the charterer. And thanks, or because of, the ease of actual communications, there is no room for a possible extra. Even the consumption of the vessel is known instantly and therefore speed, heading and course are closely monitored and leave virtually no opportunity for the captain to deviate from what is planned and needs to be accomplished.

### **Communications:**

What a significant change. 5 centuries ago, the ship left the port. For how long time? Nobody knew. And no news or rare if you were lucky enough to cross another ship whose destination was the port you just left. 285 years after Magellan in 1793, when the king of France Louis XVI climbed on the scaffold to be guillotined there by the revolutionaries, his last question was to know if we had any news from Mr. de La Pérouse who left 7 years before for a tour of the world and whose latest news were already 4 years old. No news. Both ways of course.



Now there are too much news. The number of emails received and sent by a merchant ship daily is eloquent. Everyone wants to know where the ship is, what she is doing, weather encountered, when she will arrive, etc. And let me make a parenthesis, every day, at sea, the vessel should send the «noon position message», a message with a lot of informations that owners, managers, charters, sub-charters, agents, etc. need absolutely (position, speed, distance run, distance to go, ETA, weather encountered, etc.). Ok, with the email, it is easy to do. Not exactly. Because every correspondent wants the same informations but with the datas displayed in a certain order. And of course each correspondent has his own display.

The vessel is under survey, she is spied. And someone from shore can dictate her conduct instantly: too fast, too slow, too much to the left or to the right, why are you stopped at sea. I remember once when we stopped at sea, because the weather permitted and also because on this Atlantic crossing between US Gulf and Africa, light vessel, we had large enough spare time due to the laycans. So we decided with the chief engineer to make a short stop, for main engine small maintenance. What was my surprise when the satellite phone rang and the ship's superintendent asked me how the ship was doing? Everything is played on the spot, not on the average of a crossing. Shore is even capable of controlling a ship, and increasingly will be. That is the purpose of the autonomous vessel. A question can no longer remain in abeyance; an almost immediate

answer is needed. You don't hesitate to hold a captain to account for damage or problem, which sometimes he is not yet fully aware of. Imagine Magellan regularly calling his owner to tell him that he was going to try to pass through the strait which now bears his name, not knowing where he was going to, what he was going to meet, even not knowing if the strait is open on the other side, how long it might take him to go where his dream spurred him on.

The other aspect of this change in communication means is for the crew. Even if the communications via satellite is not yet so cheap, this possibility offered while using the email or the social networks is wonderful for those who would like to be in touch with family and friends. No news from the vessel is quite difficult to be supported by the family, but it is the same feeling by crewmember from family. And yes, it is some thing very nice to have news time to time while at sea, not to wait the calls and the agent with the mail. However it is necessary for the crew members to use this facility cautiously. Every one is on board for work, and the maritime and cargo environments are so dangerous that we should maintain enough high our level of concentration. Too many, or too easy, communications may have a negative effect.

### **To conclude**

One of the most important changes between Magellan and an actual captain is the status of the communications. The adventure is gone. Contrary to Magellan, an actual captain is under spy's eyes. I spoke already about the speed, the position. But the survey is for all datas. The vessel should send a lot of reports, every month, week, even daily. All is under shore control: navigation of course, but maintenance, spares and stores, trainings of the crew, safety datas, work and rest hours, health (and what about the medical secret), the number of beer cans issued (when beer is allowed on the vessel of course), and so on. And it is more and more possible to pick up the datas without the vessel being informed.

Magellan was a captain; he was the man who decided all, or almost all, on board. Nothing could be done without his approval. He was what we name «Master after God». With the reponsibility included in this sentence.

I was a captain, not so many years ago. Navigation? I was under the orders of a charterer. Maintenance? I was under the orders of a technical manager. Safety and security? There are also managers and DPA for that. Crew? I could not choose my crew members; I was not able to relieve some if deemed necessary even for the wellbeing of crew members or vessel, there were crewing managers, and unions above to decide. And sometimes, that still happens, a captain can received, by phone only – no written traces – a special order to do something particular, at the border of the safety or the law. However for the people ashore, including the press, I was still «Master after God». But I can tell you, not just after God. Between God and me, there were a lot of shore people who decided what the best for the vessel was. And who sometimes can push a captain to do something he would prefer not to do, but without any responsibilities for them. The pressure on a captain's shoulders really exists. And the consequence is that the captains feel that they are considered as a scapegoat.

### **24 – Crews in the current era and their future**

by D. Jose Maria Jimenez. Ex Captain of the Merchant Navy, Founder and Director of the Ibernor Maritime Agency

The composition of a ship's crew is decided in 2 ways:

- Minimum crew: by the Maritime Authority of the flag (Safety Manning Certificate).
- Operational crew: the minimum crew plus the personnel necessary for the proper management of the vessel.

The composition of the crew takes into account the cargo, the area of maritime traffic and the level of automation of the vessel. So it is necessary to take into account the navigation experience, the professional qualifications according to the transported goods and also the possible requirements of the charterer (matrix), requirements resulting in an increase in certain relevant positions.

In addition, on certain types of vessels (tankers, offshore, cable ships, etc.), the contractual boarding times (from 10 months reduced to 6 or 4 months) have led to an increase in crew requirements.

In 2022, the estimated need for STCW (World Fleet) qualified seafarers is 875,000 officers and 1,041,000 juniors. That is a deficit of 31,000, a deficit which increases annually by 2.8%.; mainly senior officers, engine and electrotechnical officers. It will therefore be necessary to increase the number of students on board to train them, especially for companies with prospects of increasing their fleet, such as LNG-type ships (6.7%), cruise ships (4.2%), LPG (2.7%), Oil (2.8%).

Currently, new construction exceeds decommissioning of vessels. In 2021, there were 74,505 vessels in operation, of which approximately 6,000 were newly built and, due to their technical and/or propulsion characteristics, they require special training requirements for the crew (Chapter V of STCW). It is estimated that in 5 years there will be a 105% increase in officers and a 185% increase in ratings.

The main countries supplying seafarers are the Philippines, Ukraine, India, Russia, Indonesia and China. In 2021, the percentage of fully qualified female seafarers is 1.28%.

It is more difficult to recruit engine engineers and electrotechnical officers than deck and engine juniors. Similarly, there is a shortage of senior officers in the tanker and off-shore sector.

The main causes of shortage of officers are the increase in the number of ships, the reduction of embarkation times, the time spent ashore in special training. Conversely, the reason why there is an excess of subordinates is the ease of obtaining competency certificates.

Future demand depends on several factors:

- Increase in the fleet by 1.25%, or even more for certain types of ships (LNG ships – 6.7%, cruise ships – 4.2%, LPG ships – 2.7%, oil tankers – 2.8%), therefore with more specialized seafarers who will need to be trained.

- Changes in the operational system on board.

- Reduced boarding times.

- External factors affecting the shipping industry: eg COVID.

This request will be weighted if the MASS ships (Maritime Autonomous Surface Ships) meet expectations.

**Capt. Hubert Ardillon**  
**CESMA Secretary General**

## FROM THE EDITOR

### 0. Navigation



UKHO to Extend Timetable for Paper Chart Withdrawal

Published Feb 02, 2023 by

**UK Hydrographic Office – [www.gov.uk/government/news/](http://www.gov.uk/government/news/)**

In July last year, we announced our intention to withdraw from the production of paper charts. Following consultations with the Maritime and Coastguard Agency and national user groups, we set a target date of late 2026 to complete the process. This was subject to the development of digital solutions for those remaining users of ADMIRALTY Standard Nautical Charts (SNCs) and Thematic Charts, ensuring that they have viable, official alternatives, as well as meeting the technical and regulatory steps required to achieve this.

We also made a commitment to consult closely and more widely with our UK and international stakeholders on this proposal and to listen to their feedback, stating that ‘we would leave no

one behind'. We have met this promise, engaging with many groups and organisations in recent months, including our distributors, defence customers, commercial and leisure users, international regulatory authorities, and colleagues in the global hydrographic community.

These conversations have highlighted a number of important transnational and regulatory factors that need further consideration, and we are grateful to every organisation that has engaged in this process. It has become clear that more time is required to address the needs of those specific users who do not yet have viable alternatives to paper chart products, so we will continue to provide a paper chart service until at least 2030.

Peter Sparkes, Chief Executive of the UK Hydrographic Office, commented:

As we further develop digital navigation solutions, our long-term intention to withdraw from paper chart production remains unchanged and we will continue to withdraw elements of our chart portfolio over the coming period, on a case-by-case basis. However, having listened to the feedback we have received and in light of the consequential impact of the international technical and regulatory steps required to develop digital alternatives, we will be extending the overall timetable for this process. Please be assured that the elements of our paper chart portfolio necessary to support safe navigation for our customers will be maintained throughout this transitional period as we increase our focus on digital navigation products and services.

Listening and responding to our customers and partners is at the core of our approach and we are committed to ensuring no party is left behind in the digital transition. We will be working with our international colleagues and partners, including through the IMO and the IHO, to move forward at an appropriate pace together.

The UKHO's guiding principle is the provision of trusted, official ADMIRALTY navigation solutions that support the safety of life at sea. It is clear that the future of navigation is digital, as shown by the rapidly declining demand for paper products. Digital solutions offer significant safety and operational advantages to mariners, including the potential for near real-time updates, which greatly improve the accuracy of navigation and ease of use. These benefits will be further enhanced as we bring forward the next generation of navigation solutions, underpinned by the S-100 data standards.

We will continue to keep our stakeholders informed throughout this process and work with them every step of the way. More details will be made available as a revised course of action takes shape, as we continue to develop our next generation of digital ADMIRALTY services, further enhancing our already strong commitment to promoting safe, secure and thriving oceans.

## 1. Masters



### **Captain Presumed Dead After Cargo Ship Burns off Turkey**

Published Dec 21, 2022 by **The Maritime Executive**

Turkish authorities and a local fishing boat responded to reports of a dry cargo ship on fire approximately five miles off the coast of Turkey. The crewmembers were rescued with several taken to a local hospital while the captain of the vessel, an Egyptian, is reported missing and believed to have either died in the fire or possibly drowned after jumping from his burning vessel.

There was some initial confusion over the identity of the ship with local officials in Sinop in northern Turkey first reporting that it was a Maltese-flagged vessel and using an alternate name. The General Director of Maritime Affairs at the Ministry of Transport and Infrastructure however later identified the vessel as the Panama-flagged Beata. Equasis lists its manager as the Malta-based Intercoastal Shipping Company.



AIS data shows that the 92,00 dwt cargo ship was sailing from Constanta, Romania to the Turkish port of Trabzon on the eastern coast of Turkey along the Black Sea. The 21-year old vessel has a spotty safety record. Inspection reports on the Equasis database show the vessel was detained in late 2021 in Greece and held for nearly six months with 18 deficiencies. Among the grounds for detention were problems with the fire pumps, fire damper remote controls, problems with the fire fighting equipment, unsafe electrical conditions, and problems with the auxiliary engines which were listed as “not as required.” Before that, in June 2021 an inspection in Jordan identified 11 issues although none were cause for detention.

The source of the fire is unknown although some local sources are suggesting there was an explosion. The fire was reported at around 20:30 local time on December 20. A fishing boat assisted with the evacuation with 16 of the 17 aboard recovered and transferred to Sinop. Reports said at least three of the crew suffered from burns but other reports said as many as 10 of the crew were injured. The captain was officially listed as missing, but the Sinop Governor’s Office is reporting that the captain of the ship is considered to have lost his life.

The fire appears to have been contained in the area of the bridge and accommodations. Today, the Ministry of Transport sent a tug equipped with firefighting equipment to cool the vessel. After being abandoned by the crew, the vessel drifted for up to 15 miles. In the last report, it was said to be offshore near Gerze, Turkey, east of Sinop. The General Directorate of Maritime Affairs said that a salvage plan would be clarified with the ship’s authorities.

## 2. Incident



### **Pilot Busy on His Cell Phone Led to Ever Forward’s Grounding**

Published Dec 6, 2022 by **The Maritime Executive**

The U.S. Coast Guard completed its investigation into the grounding of the Ever Forward in Chesapeake Bay finding a clear case of human error with a pilot that was distracted as the vessel was due to make a critical turn. The Maryland pilot who was guiding the vessel on its voyage from Baltimore has had his license suspended and is potentially facing civil liabilities for causing the grounding.

In the parlance of the U.S. Coast Guard, they identified the key issues in the grounding as “the failure to maintain situational awareness and attention while navigating, and inadequate bridge resource management.” The report highlights the actions of the pilot but also the failure of the bridge team to directly alert the pilot to his error possibly preventing the grounding.

The Hong Kong-flagged containership Ever Forward (127,000 dwt) departed Seagirt Marine Terminal in Baltimore, Maryland bound for Norfolk, Virginia on March 13, 2022, shortly after 6:00 p.m. local time with a licensed Maryland State Pilot on the bridge. The 1,095-foot vessel, which has a capacity of 11,850 TEU, was slightly delayed departing due to rope handling issues but was making a regular transit of the waterway with the U.S. Coast Guard investigators citing no weather or other circumstances. It had 4,964 containers aboard when it departed Baltimore.

The master left the bridge around 7:30 p.m. for dinner with the bridge team consisting of a third officer, an able body seaman, and a deck cadet as well as the pilot. At 8:17 p.m., the Ever Forward crossed a predetermined waypoint position that called for the vessel to initiate a turn to approximately 180 degrees from its current heading of 161 degrees.

The investigators determined that no order to turn was given by the pilot and apparently recognizing the error the third officer repeatedly called out the speed and direction of the vessel. The third officer told the investigators that the pilot was looking at his cell phone at this time. It would take nearly a minute till the pilot detected that the pilot’s electronic navigation device and the ship’s Electronic Chart Display and Information System (ECDIS) were showing different information.



The pilot ordered an immediate 15 degrees turn followed 20 seconds later with a command hard to starboard. It was too late and the Ever Forward grounded outside of the Craighill Channel. The master and second officer were summoned to the bridge and attempts were made to reposition the containership before they determined the vessel was aground and began the normal safety protocols. The vessel remained stuck for over a month before it was finally refloated.

Investigators reviewed the vessel's Voice Data Recorder, which was archived by the second officer moments after the grounding, as well as other data and interviews. They found that the pilot placed or received five phone calls from his personal cell phone lasting in total approximately 61 minutes of the 126-minute voyage up to the grounding as well as being observed texting and writing an email. The pilot was writing an email when the turn was missed.

The Coast Guard also highlights that the pilot distrusted the equipment aboard the vessels he was navigating and preferred to use his Portable Pilot Unit for all the navigation. "He was in the practice of intentionally not using any other navigation equipment while underway, citing a distrust of vessel equipment that was not his own and instances of equipment breaking while a pilot was using it," the report states. He was unaware that there were paper charts in use in addition to the vessel's electronic systems.

Because the Ever Forward was a foreign-flag vessel, the pilot was operating under his Maryland license, which has been suspended and he has requested a hearing. However, the Coast Guard could not take action on his federal license because he was not functioning under his federal license at the time.

"A grounding raises a presumption of negligence," the Coast Guard writes based on a decision from the commandant. As such, they note that the pilot "may be subject to civil penalty enforcement action for negligently performing duties related to commercial vessel navigation."

They issued two recommendations based on the finding of the Ever Forward case. First concerns vessel owners and marine operators developing and implementing effective policies outlining the use of cell phones and other portable electronic devices.

The second recommendation applies to the vessel's operators. The investigators found that the third officer, a Chinese national, did not directly alert the pilot when he believed they were missing the turn. The recommendation is for owners and operators to ensure and promote crew awareness of policies regarding the duties and obligations of officers on watch for the safety of the ship, even when a pilot is embarked.

### 3. Crew



#### **Seafarer Happiness Shows Steady Upward Trend**

Published Feb 1, 2023 by **The Maritime Executive**

After prolonged periods of despair occasioned by the COVID-19 pandemic, 2022 marked a year of recovery for seafarer welfare with happiness levels rising across the board to new highs according to the latest Seafarers Happiness Index.

The Mission to Seafarers index, which is the commercial shipping industry's barometer of sentiment at sea, shows that seafarer happiness has sustained an upward trend throughout the year, reaching an average of 7.69 on a scale of 10 in the last quarter of last year, up from 7.3 in the third quarter.

The rebound in sentiment is being described as something of a high-water mark considering that at the beginning of the year seafarers' happiness, job satisfaction and morale was at the lowest level ever recorded with an overall average of 5.85, reflecting the negative impact of the COVID pandemic on the welfare of seafarers.

Other issues such as conflict and contracts also contributed to the low morale and deflated mood, with many seafarers feeling that their welfare was not being properly addressed and that

their work conditions were becoming increasingly difficult.

By the last quarter of the year, seafarers were recording a change of fortunes in their welfare with even historically problematic areas such as shore leave and access to welfare ashore being on a recovery trajectory. During the quarter, crew members continued to express their relief at the return of freedom of movement as well as their increased sense of certainty and stability.

The index shows that the only area in which there was a decline in satisfaction was connectivity, with quality and cost continuing to impact social life at sea.

“We were pleased and relieved to see increased happiness levels onboard throughout the year, and our reports show significant positive progress. While there remain complexities and challenges in the industry, The Mission to Seafarers continues to highlight the importance of fair treatment, reasonable pay, compassion and understanding in fostering a positive outlook for seafarers,” said Ben Bailey, The Mission to Seafarers’ Director of Program.

He noted that complex issues still need to be addressed, like abandonment, non-payment or delayed payment of wages and arbitrary decisions about immigration.

The index shows that seafarers sentiments at sea started to take a positive trajectory during the second quarter of last year rising from 5.85 to 7.21, an encouraging development that suggested the worst period of despair had finally come to an end.

The third quarter saw further improvement with the overall average climbing to 7.3, something that was attributed to improvements in shore leave, access to welfare facilities and initiatives, as well as companies investing in their people on board that all contributed in making life better at sea.

The Mission to Seafarers believes that despite the positive progress, there are still persistent issues that need to be addressed including workload, mental health impacts and the stresses of a difficult job characterized by too few people aboard ships.



## **Reporting Sexual Misconduct on U.S. Vessels**

Published Feb 9, 2023 by **The U.S. Coast Guards – MSIB Number 1-23**

Sexual misconduct that occurs onboard U.S. flagged vessels harms mariners, interrupts safe operations, and often leads to accidents, lost careers, and a lifetime of trauma for the survivors who endure the abuse. The Coast Guard is committed to investigating and pursuing appropriate enforcement actions for all reports of sexual misconduct on U.S. flagged vessels. This MSIB supersedes the Assistant Commandant for Prevention Policy’s MSIB 11-21 “Reporting Sexual Assaults on U.S. Vessels” issued on December 16, 2021.

Recent changes to the law now require the responsible entity of a vessel, defined as the owner, master, or managing operator, to report any complaint or incident of harassment, sexual harassment, or sexual assault to the Coast Guard that violates company policy. To help facilitate reporting, the Coast Guard has consolidated reporting for all types of sexual misconduct and established multiple reporting options as detailed in the attached graphic. The reporting options include a CGIS Tips App, and/or one email address which can be used by all reporting sources, including bystanders and survivors, who have access to a smart phone or the internet. The reports, which can be anonymous or for attribution, are received and reviewed by the Coast Guard Investigative Service (CGIS). An investigation will be initiated for all reports received and someone will provide follow-up communications with all reporting sources who provide contact information. The Coast Guard also maintains a 24/7 watch, which can field reports of sexual misconduct via the National Command Center (NCC). CGIS will leverage all available resources to immediately initiate a criminal investigation for a sexual crime occurring on a U.S. flagged vessel anywhere in the world. The Coast Guard will respond to any reports of sexual misconduct with trained investigators and will hold offenders accountable through criminal prosecution and/or actions against U.S. Coast Guard issued merchant mariner credentials (MMCs).

If the responsible entity in charge of a U.S. flagged vessel makes a report, including providing detailed contact information for further follow-up, of a sexual misconduct incident through CGIS Tips, via the CGIS email, or the NCC's phone line the report will satisfy the reporting requirements of 46 U.S. Code § 10104(a).

(CESMA Note: Above concerns U.S. flagged vessels only. For nowadays. There is no reason to think that the USCG procedure should never be copied by EU Authorities and/or IMO on an International level.)

#### **4. Environment**

##### **Place of Refuge: Lessons from the MT Prestige Disaster**

Published Feb 16, 2023 by **Nautical Institute – Anstralia Branch**

A 'port of refuge' is a maritime safety principle as old as seafaring itself. Without it, a marine casualty can turn into a much larger problem, as illustrated by the notorious case of the tanker Prestige.

On November 13, 2002, the Prestige was navigating the Bay of Biscay carrying 77,000 tonnes of heavy fuel oil. She would soon become the source of Spain's worst ever ecological disaster.

Prestige encountered a powerful winter storm off Spain's Costa da Morte (the 'Coast of Death'). Captain Apostolos Mangouras reported a loud bang from the starboard side, and the ship began to take on water. Her engines shut down, and Capt Mangouras called for help from the Spanish Coast Guard. The crew were evacuated by helicopter, and the ship drifted within 4 miles of the Spanish coast, already leaking oil.

A Spanish salvage master, Captain Serafin Diaz, was dispatched to the ship. Captain Diaz saw a gaping 15 meter hole on the starboard side. He argued that Prestige should be towed into a Spanish port where the leaking oil might be confined, but the Spanish Navy denied her entry. The French government pressured Prestige to change her course and head south into Portuguese waters, in order to avoid endangering France's southern coast.

Fearing for its own shore, the Portuguese Navy intercepted Prestige and prevented her from approaching further. The decision to tow the damaged tanker offshore, rather than escort to a sheltered anchorage was later described as a criminal act and the reason why such a large area was polluted.

The governments of France, Spain and Portugal all refused Prestige entry in her hour of need. After several days under towage, she broke up and sank 160 miles from the Spanish coast. She spilled over 64,000 cubic meters (17 million US gallons) of oil into the sea. The captain of the Prestige was taken into custody, accused of not cooperating with marine salvage crews and of harming the environment

When a ship has suffered an incident, the best way of preventing damage or pollution from its progressive deterioration is to transfer its cargo and bunkers, and then to repair the casualty. Such an operation is best carried out in a place of refuge. However, to bring such a ship into a place of refuge near a coast may endanger the coastal State, both economically and environmentally, and local authorities and populations may strongly object to the operation.

Granting access to a place of refuge is ultimately a political decision, which must be taken on the merits of each case. Consideration must be given to balancing the interests of the affected ship with those of the environment and the local people.

Ships shouldn't have carte blanche rights of entry to ports when suffering an accident. Unscrupulous shipowners could rely on this option as an excuse for lackluster maintenance, knowing their vessel could seek governmental help at any time. Nonetheless, greater principles of cooperation should be found between nations to assist ships in distress. As the Prestige incident proved, a failure to do so could have devastating environmental consequences for everyone involved.

## 5. Safety

### **Seafarers Desperately Need Training to Handle Explosive Lithium-ion Batteries**

Published Jan 10, 2023 by **Splash**

Simon Hodgkinson, head of loss prevention at West P&I, believes dedicated courses are a must to safeguard mariners' lives.

Transporting potentially explosive lithium-ion batteries on vessels is a dangerous business, as incidents in recent years have shown. An investigation by the United States Coast Guard into a freight container that caught fire on a US highway in 2021 attributed the blaze to a batch of lithium-ion batteries. The cargo ignited while enroute to the Port of Virginia, where it was to be shipped to China aboard a container vessel.

The dangers of carrying lithium-ion batteries on ships has been highlighted in an Allianz Global Corporate & Speciality report, which ranks fire and explosion as the number one cause of marine insurance losses by value from 2017 to 2021. The research, issued in November 2022, also reveals the growing threat of fires caused by lithium-ion batteries that are not stored, handled or transported correctly.

In damaged lithium-ion batteries, individual cells are prone to overheating, expelling flammable and toxic gases, and affecting surrounding cells as part of an explosive chain reaction called thermal runaway. While such perils have been widely reported, there is little talk in the maritime industry about the inconsistent training methods for dealing with fires caused by lithium-ion batteries onboard vessels.

The biggest concern is that firefighting crews do not have a standard approach for quelling a blaze originating from a lithium-ion battery. Some firefighters recommend throwing a blanket over the fire, while others suggest plunging a burning electric vehicle into a huge tank of water.

The lack of consensus on how such fires should be dealt with means that few, if any, STCW firefighting training programmes cover lithium-ion batteries. That creates a gap in expertise, making it incredibly difficult to know what type of training seafarers should receive.

It also puts the lives of crewmembers – many of whom have limited knowledge about thermal runaway and the warning signs before an electric vehicle battery explodes or ignites – at risk. Without training, seafarers cannot be expected to attempt to prevent damaged lithium-ion cells from creating a thermal runaway chain reaction, which could spark an electric vehicle fire so powerful that it would need 150,000 litres of water to extinguish.

In the near-term, modules that address the dangers of lithium-ion batteries should be added to existing STCW firefighting courses. We then need specific training programmes set up globally and run by experts who can teach seafarers how to deal with this potentially life-threatening hazard.

Establishing what type of training mariners need is the first challenge. The next is ensuring vessels have the right equipment on board to handle a lithium-ion battery fire in line with what they have been taught. For example, crew members may learn that the best approach for dealing with a burning electric vehicle is to submerge it in a tank of water. But what is the point in teaching them this if the ship lacks the right kit or machinery for doing that safely?

Another issue is that electric vehicles are loaded onto carriers in the same way as cars with combustion engines. Petrol or diesel cars that ignite are relatively easy to deal with as each tank has a small amount of fuel that will quickly burn out. With electric vehicles, each lithium-ion battery needs about 50% charge to ensure it does not go flat while being shipped.

Loading electric vehicles with lithium-ion batteries, each carrying a substantial amount of energy, in the same way as standard cars is recipe for a potential catastrophe. If one battery ignites, it can cause a chain reaction, sparking a huge blaze that mariners will struggle to contain. As part of any training courses, specialists need to think about how electric vehicles are loaded onto car carriers and whether crew members have enough room around burning vehicles to contain the blaze.



A definitive solution for dealing with lithium-ion batteries that overheat, catch fire or explode will likely come from chemistry experts or firefighters. Until that happens, our advice to shipowners and operators is to invest in the latest fire-protection systems such as infrared cameras and heat sensors that can detect issues before a thermal runaway occurs. By installing modern detection systems, maritime companies can safeguard the lives of seafarers who lack the knowledge or training to handle blazes caused by highly volatile lithium-ion batteries.

## **6. Security**

### **Cybersecurity Risk Remains the Leading Concern for Autonomous Shipping**

Published Nov 21, 20223 by **The Maritime Executive – Ziaul Haque Munim**

Since the commencement of the EU-backed Maritime Unmanned Navigation through Intelligence in Networks (MUNIN) project, Maritime Autonomous Surface Ship (MASS) technologies, infrastructures, and the overall ecosystem have developed rapidly. Norway has been leading the MASS development race, and the autonomous electric container ship Yara Birkeland has received international attention. Recently, other countries – including Japan, Korea, Finland, the United Kingdom and the United States – have been catching up with MASS development.

[...]

Cyber security risks

While MASS will increase navigational safety in oceans, cyber security risks are likely to increase significantly. We conducted a cyber risk assessment study of five MASS systems and their sub-systems. Navigational systems followed by remote control center and shore-based management offices are most vulnerable to cyber threats. On the sub-system level, Global Navigation Satellite System (GNSS), Electronic Chart Display and Information System (ECDIS), communication devices, Automatic Identification System (AIS), and phishing emails are most vulnerable.

Level 02 MASS in the near future

The consensus from several of my research papers is that the level 2 MASS is the most feasible currently for both commercial shipping and ferry routes as well as for Arctic shipping routes. While autonomy is going to increase safety and reduce operational costs, cyber security risk mitigating approaches need to be explored further. Early deployment of MASS in a commercial context is expected as early as 2023, initially in regional shorter trade-routes. New short-distance routes are likely to emerge through shifting road cargo to sea routes, which will contribute to reducing the environmental impacts of the transport sector. Concerns over seafarers' jobs may also disappear over time since MASS will merely trigger a shift in job roles rather than the total elimination of seafarers in Level 02 autonomy.

### **Cameroon Adopts Maritime Security Law to Fight Gulf of Guinea Piracy**

Published Jan 1, 2023 by **The Maritime Executive**

Almost six months after the UN Security Council adopted a text compelling Gulf of Guinea countries to criminalize piracy and armed robbery at sea, Cameroon has adopted a law on suppression of piracy and general safety of maritime navigation within its waters.

President Paul Biya signed the law on December 27, making Cameroon the second country in the region to enact a national legal framework on suppression of piracy and maritime offenses. Nigeria was the first after it adopted a similar law back in 2019.

The law is a critical milestone in the Gulf of Guinea's maritime security, with Cameroon's national maritime authorities empowered to punish any illegal activities threatening safe navigation within its territorial waters.

Notably, the law takes a harsh stance to offenses related to piracy, terrorism onboard ships, pollution of waterways and financing acts of piracy. For all these offenses, the sentence is life imprisonment if a conviction is successful. Fines range from \$16,000 to \$4 million depending on the crime.



While Cameroon’s territorial waters have remained relatively safe, a few incidents of piracy recorded since 2019 prompted the government to take action. The primary goal has been to guarantee security of ships at the Doula anchorage, mainly using local armed guards onboard vessels. The legal framework now in place should act as a credible deterrent to pirate gangs.

Most importantly, as Gulf of Guinea piracy evolves into other maritime offenses such as oil theft, countries in the region are encouraged to strengthen their national capacities in maintaining maritime security. Hence, Cameroon’s move to harmonize a national legal framework for prevention of piracy and armed robbery at sea is a step in the right direction.

Indeed, regional frameworks such as Yaoundé Code of Conduct have been instrumental in curbing piracy. However, a shift to national approach is even more effective.

“It is amazing news for Cameroon and the entire region. It will surely come in handy as Economic Community of Central African States (ECCAS) region works to adopt their Supplementary Act for the Transfer of Piracy Suspects,” commented Dr. Ifesinachi Okafor-Yarwood, a maritime security specialist based at University of St. Andrews, Scotland.

## 7. Technical



### **Michelin Receives Design AiP for First Inflatable Wing Sail** Published Feb 10, 2023 by **The Maritime Executive**

France’s Michelin Group has been awarded an Approval in Principle (AiP) for its design for a wing sail system designed for commercial ships and pleasure crafts. Unlike other sail concepts, the Michelin design is an inflatable wing sail that is automated and full retractable. The design approval comes as Michelin is moving forward with tests of the system on an in-service Ro-Ro operating in Europe.

Introduced in 2021, the system which is known as WISAMO (Wing Sail and Mobility) was developed jointly by Michelin’s research and development department in collaboration with two Swiss investors and involves famed French long-distance sailor, Michel Desjoyeaux, the only person to twice win the Vendée Globe race. They said the design is suitable both for retrofits and new construction and especially suited to ro-ro ships, bulk carriers, and oil and gas tankers.

The initial tests of a WISAMO sail were carried out on a sailing yacht in late 2021 and early 2022. In the second phase of the testing, they are installing a 100 sq. meter prototype which will help them to refine the technical aspects of the concept.

The first technical tests demonstrated, Michelin reports, that the wing sail system offers a wide range of use, including “close-hauled” (headwind), providing what they believe is one of the widest operating ranges for modern sail technology. They project that it can be used on all maritime routes and because it is retractable, it provides easy access for navigation in ports and under obstacles such as bridges. The company expects to achieve up to a 20 percent energy saving from the use of the sail and reduce emissions.

“We are very pleased to receive this AIP for the WISAMO solution,” said Gildas Quemeneur, Initiative Leader at Michelin. “It is a very important step forward the further development of this innovative solution to contribute to maritime transport decarbonization. We are now ready for the wing sail usage on MN Pelican Ro-Ro that will allow experimental tests in heavy maritime conditions. All returns of experience will now contribute to build the larger WISAMO wing sail.”

The first installation on a commercial vessel, the 8,600 dwt Compagnie Maritime Nantaise ro-ro cargo vessel Pelican began in late 2022. The 508-foot-long vessel operates under charter to Brittany Ferries and sails between Poole, Great Britain and Bilbao, Spain. This installation will allow testing of the system under commercial maritime navigation conditions.

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(abridged)

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