

Just Transition & Safety for Seafarers

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Challenges

External environment is in focus - internal environment forgotten!

- especially for the engine crew and emergency personnel who will operate and process all types of “green energy”

Safety Culture, Risk & Hazard Understanding

New Energy Sources

GHG

Competence

Certification

Manning

Fatigue, **Mental Health**

Design, Weight, Safe Storage, Stability

Fire & Explosion Barriers

General Operation and Scrubbers

- Internal air and contact contamination
- Extended maintenance
- Pressure & Temperature

High Voltage, Pressure and Temperature

Toxic

Break down

Fire Fighting Systems - Evacuation

Systems

Bunker – Charge

Derating

Criminalisation

Flash Point

Frankenstein Fuel (Chemicals & Plastic)

Ballast water (Chemicals)

The strategy
- to achieve the common goal



Sustainable Manning

Employment
Opportunities
Education/Training

Safety
Security

New Energy
Effectiveness



Marine environment

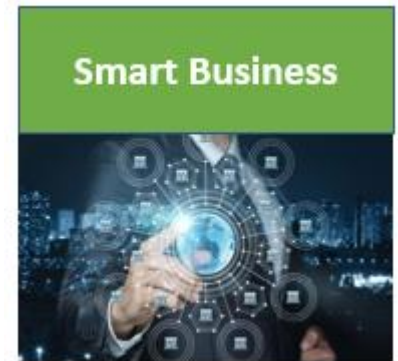
Ship-shore interface

Pilotage

Interactions with ports

Just Transition

Relocation



Environment and issues affecting seafarer safety

No innovative news - it's only the hull & propellers design changed, to complying with marine environment, ships operation, maintenance, and navigation

New types of energy sources for ships' propulsion, maneuvering and operation with innovative engine technologies to improve the protection of the marine environment have led to New Environmental Regulations, while Human Element SAFETY aspects have been overlooked.

The regulatory regime must fully take into consideration the safety aspects for maritime workers and its practical viability for shipboard working and living ecosystems.

Engineer officers and crew will face the greatest safety challenges with energy sources for propulsion such as high temperature, high pressure, high voltage, toxicity and corrosivity. Furthermore, maneuvering, maintenance, explosion hazards and firefighting are also challenges in terms of safety and competence.

Energy source storage, fuel efficiency, bunkering, charging, construction, evacuation design, firefighting, and Search and Rescue (SAR) must also be considered to close the safety and competence gaps.



Pesse Dugout Canoe
~ 8,000 BCE



Reports & Publications



09 Nov 2022
Posters - Task Force 10-point Action Plan to Achieve a Just Transition for Seafarers (2022)

Global shipping urgently needs to decarbonise. The world is facing a climate emergency. Urgent action is needed to limit global warming to 1.5C or we will face...

THE MASS HUMAN ELEMENT – COLLATING SEAFARERS' VOICES: PERSPECTIVES AND EXPECTATIONS



09 Nov 2022
Mapping a Maritime Just Transition for Seafarers - Maritime Just Transition Task Force (2022)

Global shipping urgently needs to decarbonise. The world is facing a climate emergency. Urgent action is needed to limit global warming to 1.5C or we will face...



08 Nov 2022
DNV Research (2022): Seafarer training and skills for decarbonized shipping

The report offer an initial assessment of the impacts decarbonization of the international shipping industry will have on crewmembers. Collaboration and engagement...



29 Oct 2021
ITF's Sustainable Shipping Position Paper

Widespread and systemic change is needed to speed up the maritime industry's transition to a zero-carbon future. Seafarers are already seeing the dangers of...



20 Sep 2020
Beyond the Limit

How Covid-19 corner-cutting subjects too much risk in the international shipping system.



21 May 2020
Sub-Committee: Human Element, Training and Watchkeeping (HTW) Submission

Sub-Committee on Human Element, Training and Watchkeeping (HTW): deals with issues regarding human in the maritime, in particular education and training, validation...



29 Apr 2020
SKILLSEA project: Future Skill and Competence Needs

Technology and digitalisation are transforming the shipping industry. 'Smart' ships are coming into service, creating demand for a new generation of competent,...

New fuels and seafarers' competences



Seafarers' Section
Maritime Safety Committee

Safety dynamics of ship's energy sources

- A robust training scheme that guarantees the highest level of safety culture;
 - appropriate training that covers communication, risk analysis, operation and emergency situations;
 - knowledge about construction and design and relevant regulations;
 - adequate fire detection and fire-fighting equipment;
 - availability of proper lifesaving appliances; and
 - provisions of adequate personal protection equipment (PPE) for all personnel
- + career paths for ALL maritime workers

- The ITF MSC Safety dynamics of ship's energy sources document contains a table which includes the following topic:
- Identify technical characteristics and Environmental Effectiveness of fuels and energy sources
 - Identify hazards related to safety and health and operation, including bunkering and storage;
 - Identify safety and health issues for lives and cargo on board related to construction and design of a ship, and
 - Recommendations to close the safety gap.

Subjects:
Hydrogen - Ammonia - Low Sulphur Heavy Fuel Oil (LSHFO) - Marine Gas Oil (MGO) - Biofuel - Liquefied Nature Gas (LNG) - Liquefied Petroleum Gas (LPG) - Liquefied Ethylene Gas - Ethanol- Methanol - Lithium-ion Battery - Fusion energy, Thorium Molten Salt reactor, Fuel cell - Scrubbers



- ✓ ITF Manning policy
- ✓ Reference addition
- ✓ Checklist



20 Aug 2019
ITF guidelines on the IGF Code

The IMO has adopted a mandatory safety code for ships using gases or other low-flashpoint fuels. The booklet provides a brief information on the IGF Code and what...



11 Dec 2018
Are seafarers indispensable?

On 3 December 2018, the International Maritime Organization (IMO) convened the 100th session of Maritime Safety Committee (MSC) – first held in 1948. To mark the...

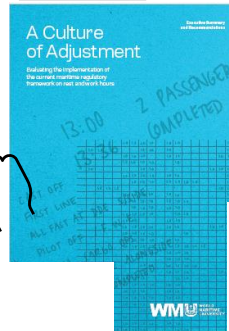


05 Oct 2018
Presentation of ITF Seafarers' Section Automation Working Group (SSAWG) Vice Chair at Norwegian Engineer Officers' Conference 2018



23 Aug 2018
Autonomous ship 'Yara Birkeland' - how far has the industry reached?

The world's first seagoing autonomous ship, called Yara Birkeland, was expected to be launched and to set sail in 2018, delivering fertiliser along a 37-mile...

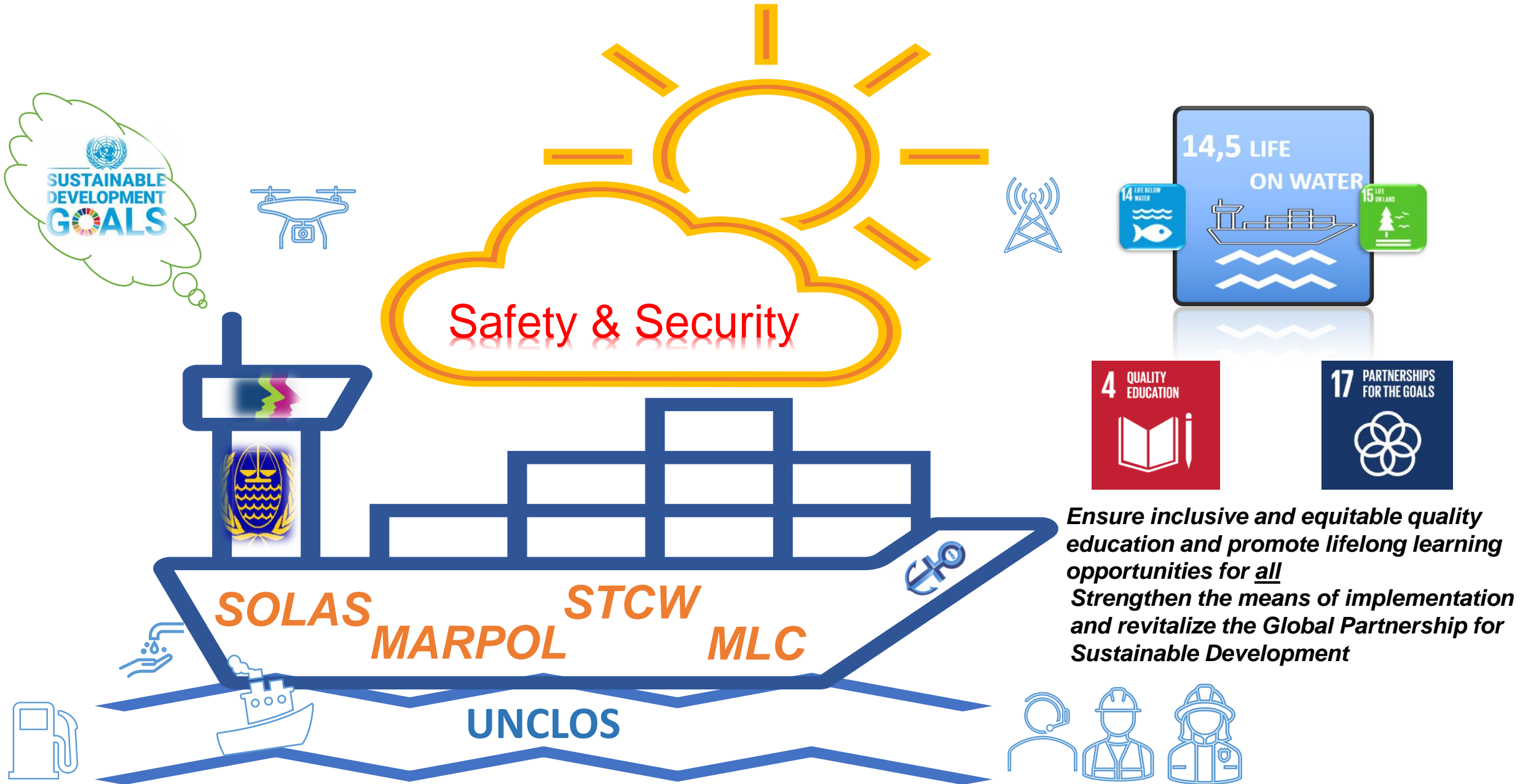


A 10-Point Action Plan to achieve a Just Transition for Seafarers

Skills and training to support a decarbonized shipping industry



The context between regulations, political decisions and the work force



UNCLOS ARTICLE 94 *Duties of the flag State*

Every State shall effectively exercise its jurisdiction and control in **administrative, technical and social matters** over ships flying its flag. In particular, every State shall:

- (a) maintain a register of ships containing the names and particulars of Ships flying its flag, except those which are excluded from generally accepted international regulations on account of their small size; and
- (b) assume jurisdiction under its internal law over each ship flying its flag and its **master, officers and crew** in respect of administrative, technical and social matters concerning the ship.

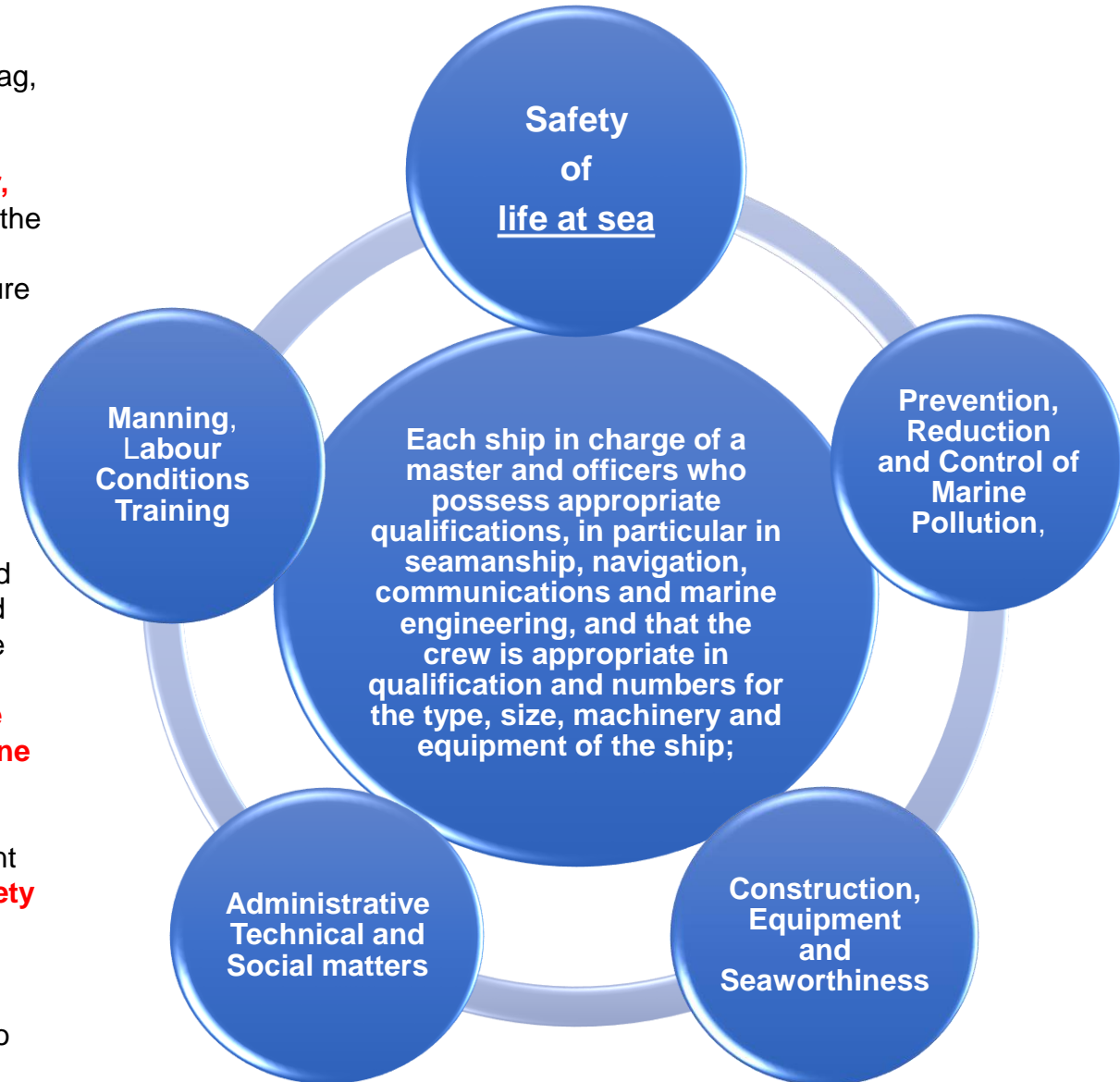
3. Every State shall take such measures for ships flying its flag as are necessary to ensure safety at sea with regards, inter alia, to:

- (a) the **construction, equipment and seaworthiness** of ships;
- (b) the **manning** of ships, **labour conditions and the training of crews**, taking into account the applicable **international instruments**;
- (c) the use of signals, the maintenance of **communications** and the prevention of collisions.

4. Such measures shall include those necessary to ensure:

- (a) that each ship, before registration and thereafter, at appropriate intervals, is surveyed by a qualified surveyor of ships, and has on board such charts, nautical publications and navigational equipment and instruments as are appropriate for the safe navigation of the ship
- (b) that **each ship** is in the **charge of a master and officers** who possess **appropriate qualifications, in particular in seamanship, navigation, communications and marine engineering, and that the crew is appropriate in qualification and numbers for the type, size, machinery and equipment of the ship**;
- (c) that the **master, officers** and, to the extent appropriate, the **crew** are fully conversant with and required to observe the applicable international regulations concerning the **safety of life at sea**, the prevention of collisions, **the prevention, reduction and control of marine pollution**, and the maintenance of communications by radio.

5. In taking the measures called for in paragraphs 3 and 4, each State is required to conform to generally accepted international regulations, procedures and practices and to take any steps which may be necessary to secure their observance.



Tripartite regulations - developed for protect the human environment

Maritime Labour Convention 2006 (MLC 2006)

MLC Standard A2.7 – Manning levels

Each Member shall require that all ships that fly its flag have a **sufficient number of seafarers on board** to ensure that ships are **operated safely, efficiently** and with due regard to **security**. Every ship shall be manned by a crew that is adequate, in terms of **size and qualifications**, to ensure the safety and security of the ship and its personnel, under all operating conditions, in accordance with the minimum safe manning document or an equivalent issued by the competent authority, and to comply with the standards of this Convention.

MLC Standard A2.8 - Career and skill development and opportunities for seafarers' employment

Each Member shall have national policies that encourage career and skill development and opportunities for seafarers, in or- to provide the maritime sector with a stable and **competent workforce**.

2. The aim of the policies referred to in paragraph 2. 1 of this Standard shall be to help seafarers strengthen their **competencies, qualifications** and employment opportunities. 3. Each Member shall, after consulting the ship owners' and seafarers' organizations conetacerned, establish clear objectives for the vocational guidance, **education and training** of seafarers whose duties on board ship primarily to the safe operation and navigation of. the ship, including **ongoing training**.

Guideline B2.8 Guideline B2.8.1 Measures to promote career and skill development and employment opportunities for seafarers.

Measures to achieve the objectives set out in Standard A2.8 might include: agreements providing for career develop- and skills training with a shipowner or and organization of shipowners promoting employment Through the establishment and maintenance of registers or lists, by categories, of **qualified seafarers**; or promotion of opportunities, both on board and ashore, for further training and education of seafarers to provide for skill develop ferment and portable competencies in order to secure and retain decent work, to improve individual employment prospects and **meet the changing technology** and labour conditions of the maritime industry

International Standard for the safe Management and operation of ships and for pollution prevention (ISM Code)

Implement – Practice – Maintain – Training – Communicate – Development

The purpose is to provide an international standard for the **safe management and operation of ships and for pollution prevention**.

..take the necessary steps to **safeguard the shipmaster** in the proper discharge of his **responsibilities with regard to maritime safety and the protection of the marine environment**.

..need for appropriate organization of management to enable it to respond to **the need of those on-board ships** in order to **achieve and maintain high standards of safety and environmental protection**.

Recognizing that **no two shipping companies or shipowners are the same**, and that ships operate under a wide range of different conditions, the Code is based on general principles and objectives, which include **assessment of all identified risks to one Company's ships, personnel and the environment and establishment of appropriate safeguards**.

..Clearly, different levels of management, whether shore-based or at sea, **will require varying levels of knowledge and awareness of the items outlined**.

.. In matters of safety and environment protection it is **the commitment, competence, attitudes and motivation of individuals at all levels that determines the end result**.

1.2.3 The safety-management system should ensure:

- .1 compliance with mandatory rules and regulations; and
- .2 that **applicable codes, guidelines and standards recommended by the Organization, Administrations, classification societies and maritime industry organizations** are taken into account

6. RESOURCES AND PERSONNEL

6.1 The Company should ensure that the master is:

- .1 properly qualified for command;**
- .2 fully conversant with the Company's SMS; and**
- .3 given the necessary support so that the master's duties can be safely performed.**

6.2 The Company should ensure that each ship is:

- .1 manned with qualified, certificated and medically fit seafarers in accordance with national and international requirements; and**
- .2 appropriately manned in order to encompass all aspects of maintaining safe operation on board.***

** Refer to the Principles of minimum safe manning, adopted by the Organization by Resolution A.1047(27)*

IMO MSC 107 June 2023: ISM is designed to be goal-based, generic and flexible, and it's a clear link through **human element** between the ISM Code and the STCW Convention



Specific and technical regulation to protect the maritime environment



International Convention for the Prevention of Pollution from Ships MARPOL

Protocol I - Provisions concerning reports on incidents involving harmful substances (in accordance with Article 8 of the Convention)

Article I Duty to report

1. **The Master** or other person having charge of any ship involved in an incident referred to in Article II of this Protocol shall **report** the particulars of such incident without delay and to the fullest extent possible in accordance with the provisions of this Protocol.

ROLE OF CHIEF ENGINEER IN IMPLEMENTATION OF MARPOL 73/78

MARPOL 73/78 deals with pollution caused by merchant vessels. The **Chief Engineer** has huge responsibility that vessel is **complying with** all the regulations of MARPOL.

Certificates

Energy Efficiency Design Index ([EEDI](#)), Energy Efficiency Existing Ship Index ([EEXI](#)), IOPP Certificate (MARPOL I) NLS Certificate (MARPOL II) ISPP Certificate (MARPOL IV) Garbage Certificate of Compliance (MARPOL V) IEE Certificate (MARPOL VI), IAPP Certificate (MARPOL VI) EIAPP Certificate (MARPOL VI and NOx Technical Code) for marine diesel engines

- ✿ RECORD KEEPING
- ✿ SURVEYS
- ✿ CONTROL OF OPERATIONAL POLLUTION
- ✿ BUNKERING
- ✿ RECEPTION FACILITIES
- ✿ EMERGENCY PREPAREDNESS



MARPOL AT 50
OUR COMMITMENT GOES ON

Mandatory absolute minimum competence

STCW / STCW – F

Competence to operate the function of the ship



Standard Training - Vessel Specific Training - Familiarization

Hardware

Software

Customizations

Education / Competence like now (STCW)

- **with further education :**

- Energy and environmental competence:
- Characteristics
- Construction & Design
- Environmental Effectiveness
- Fire and Explosion Risks
- Health and Safety issues
- First Aid knowledge
- UNCLOS, SOLAS, MARPOL, Polar Code

MSC 107 June 2023: Comprehensive review of the STCW Convention and Code
Competency to prevent and respond to bullying and harassment, including sexual assault and sexual harassment (SASH).

Address any inconsistencies and to improve the provisions based on experiences and new technologies. Accommodate the use of electronic certificates and documents for seafarers
STCW-F Convention containing training, certification and watchkeeping provisions for fishing vessel personnel. (Safety regulations, Certificate, competence more like STCW)

- **Communication, Risk & Hazard analysis, operation and emergency situations, major accident risk- Third-Party Risk**
- **Analyze digital information** (instead of human senses)
- **Override the logarithms and operate the ship manually**
- **Simulator operations**
- **Simulator use of Failure Mode and Effects Analysis** (FMEA or System Theoretic Process Analysis)
- **Multidisciplinary communication**
- **Leadership**
- **Cyber security**
- **Condemnation of terrorism** (inc. stowaways)

In relation to regulatory gaps on energy sources for propulsion and manoeuvring, or ships with reduced, zero crew or remotely controlled ships, the ISM Code 1.2.3 and 6.2.2 require the participation of the Chief engineer in the team* to ensure that technical competence on all operational safety aspects - regarding construction and engineering in order to obtain the necessary certificate for the ship expected operation.

The **Risk and Hazard** analysis must consider UNCLOS 94 and the Chief engineer's responsibility to comply with SOLAS and MARPOL specific emission requirements in relation to the ship specific construction, design, characteristics for all energy sources on board, including environmental efficiency, as well ensure that all equipment and competence to safeguard the ships, the human and the environment is present - under all conditions, to avoid loss of life and criminalisation.

*** 4 - Design team 4.1** A design **team acceptable to the Administration** should be established by the owner, builder or designer and may include, as the alternative design and arrangements demand, a representative of the owner, builder or designer, and **expert(s)** having the **necessary knowledge and experience in safety**, design and/or **operation** as necessary for the specific evaluation at hand. Other members may include marine surveyors, ship operators, safety engineers, equipment manufacturers, **human factors experts**, naval architects and **marine engineers**.

Why don't we practice this safety regulations?

Regulation	Failure modes	Cause of failure modes (Hazards)	Preventing and mitigating functions (measures)	Functional requirement	EP	Paragraph
52 Safety system	<ul style="list-style-type: none"> - Inability to stop equipment - Significant damage to machineries - Breakdown of engine 	<ul style="list-style-type: none"> - Failure of automatic shutdown systems - Failure of overriding shutdown of main propulsion systems - Automatic shutdown of main propulsion systems 		FR52-1: A safety system shall be provided to ensure that serious malfunction in machinery or boiler operations shall initiate an alarm and automatic shutdown of that part of the plant. Shut down of the propulsion system shall not be automatically activated except in cases which could lead to serious damage, complete breakdown or explosion. or A safety system shall be provided to ensure reliable shutdown of machinery and boiler operations in case of that serious malfunction, taking into account the criticality for continued operation of propulsion.		

SDC 9/ WP.4 01.23

Hazard: something that could potentially cause harm. Risk: the degree of likelihood that harm will be caused.

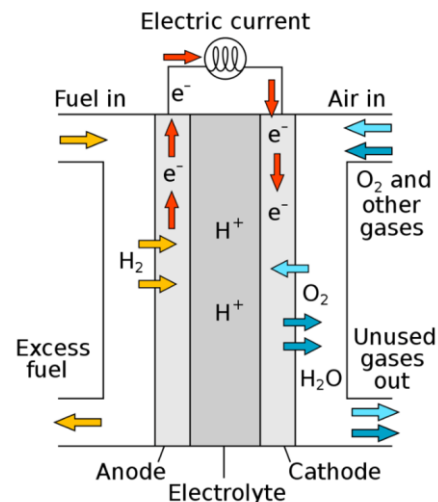
Safety dynamics of ship's energy sources

The purpose of this document is to highlight the imminent need to put in place measures for those involved in direct on-the-job operations and provide recommendations to close the safety and competency gaps that may exist. When introducing alternative energy sources, the following are **crucial**:

- **A robust training scheme that guarantees the highest level of safety culture;**
- **appropriate training that covers communication, risk analysis, operation and emergency situations;**
- **knowledge about construction and design and relevant regulations;**
- **adequate fire detection and fire-fighting equipment;**
- **availability of proper lifesaving appliances; and**
- **provisions of adequate personal protection equipment for all personnel.**

What information available?

- **Characteristics**
- **Construction & Design**
- **Environmental Effectiveness**
- **Fire and Explosion Risks**
- **Health and Safety issues**
- **Recommendations**



IMO MSC 107 June 2023: SOLAS Chapter II-2, oil fuel shall not jeopardize the safety of ships or adversely affect the performance of the machinery or be **harmful to personnel**.



Safety dynamics of ship's energy sources Feb.2022

Energy sources covered

- **Hydrogen**
- Ammonia
- Low Sulphur Heavy Fuel Oil (LSHFO)
- Marine Gas Oil (MGO)
- Biofuel
- Liquefied Nature Gas (LNG)
- Liquefied Petroleum Gas (LPG)
- Liquefied Ethylene Gas
- Ethanol
- Methanol
- Lithium-ion Battery
- Fusion energy-Thorium Molten Salt reactor
- Fuel cell
- Scrubbers

IMO MSC 107 June 2023 : *Develop a safety regulatory framework to support the reduction of GHG emissions from ships using new technologies and alternative fuels*_{Part II}

Safety dynamics of ship's energy sources

Energy	Characteristics	Construction & Design	Environmental Effectiveness	Fire and explosion risks	Health and safety issues	Recommendation
Hydrogen	Storage temperature - 253°C Storage pressure 700 Bar boiling point -252.8°C Flash point -252.8°C Energy density 142.0 MJ/kg Energy density table	6 to 10 times more storage space, few bunkering ports Stores tank and Fuel cell shall be on top deck CH2 tank bundle(s), Isolated lines. pressure-relief system artificial ventilation to provide continuous air changes to the tank hold space Pressure regulating unit(s). Fire protection system. H2 detection system.	Virtually zero exhaust emissions But to produce 1 kg hydrogen 48 kWh is needed And Transport using carbon fuel is a challenge	Low density, low ignition energy, wide flammability range, and potential explosiveness. Structural fire protection (insulation towards neighbouring spaces). Safety systems (fire detection, firefighting system, emergency shutdown system).	Bunkering possesses Extreme high pressure Extreme low Temperatures If hydrogen is inhaled in small concentrations it can cause symptoms like headache, nausea, irritation in skin and eye, convulsions. Inhalation of high concentration of hydrogen can cause asphyxiation.	Amendment to IGF Code crew training /competency requirements and amendments to STCW Focus on Ships specific training and Familiarisation First aid competence Amendments to engine certification requirements, such as NOx Code and MARPOL VI depending on possible local emissions from hydrogen fueled engines. Five lessons to learn on hydrogen as ship fuel

IMO OUTCOME

The 107th session of the IMO's Maritime Safety Committee 31 May to 9 June 2023.

ISM CODE

No comprehensive review of the ISM Code and related guidelines. Challenge is effective implementation. ISM is designed to be goal-based, generic and flexible, and it's a clear link through **human element** between the ISM Code and the STCW Convention

Safety of ships relating to the use of fuel oil

SOLAS Chapter II-2, oil fuel shall not jeopardize the safety of ships or adversely affect the performance of the machinery or be **harmful to personnel**.

Develop a safety regulatory framework to support the reduction of GHG emissions from ships using **new technologies and alternative fuels**.
(ITF MSC Safety dynamics of ship's energy sources)

Maritime autonomous surface ships (MASS)

Goal-based code for MASS, "Remote Operations Centre" (ROC) will be used to designate the place where the remote **master** and remote **operator(s)** are located. **COLREG** would be relevant and applicable regardless of how a ship is operated

Comprehensive review of the STCW Convention and Code

- ✓ Competency to prevent and respond to bullying and harassment, including sexual assault and sexual harassment (SASH).
- ✓ Address any inconsistencies and to improve the provisions based on experiences and new technologies.
- ✓ Accommodate the use of electronic certificates and documents for seafarers
- ✓ STCW-F Convention containing training, certification and watchkeeping provisions for fishing vessel personnel. (Safety regulations, Certificate, competence more like STCW)

ANNEX 1

RESOLUTION MEPC.377(80)

Adopted on 7 July 2023

2023 IMO STRATEGY ON REDUCTION OF GHG EMISSIONS FROM SHIPS

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38(e) of the Convention on the International Maritime Organization concerning the functions of the Marine Environment Protection Committee (the Committee) to consider and take appropriate action with respect to any other matters falling within the scope of the Organization which would contribute to the prevention and control of marine pollution from ships,

HAVING CONSIDERED, at its eightieth session, the draft 2023 IMO strategy on reduction of GHG emissions from ships,

3 ALSO ACKNOWLEDGES the importance of addressing the human element, including the impact on seafarers and other maritime professionals, in the safe implementation of the 2023 IMO GHG Strategy;

MEPC 80 Successes:

- A recognition of the importance of seafarers and maritime workers in achieving the goals of the GHG Reduction Strategy.
- Recognizing that the Strategy will have an impact on seafarers and maritime workforce and the importance of addressing those impacts.
- The need to regulate and ensure a safe implementation of the strategy
- Promoting a Just Transition in the implementation of the strategy

- highlight Intensity.
- Fuel intensity is an energy efficiency measure allowing for a comparison of the technological fuel performance of certain processes, vehicles etc. Fuel intensity can be expressed relying on indicators such as the fuel consumption per specified unit (e.g. unit of production).

✿ *What amount you burn*

✿ *More efficient utilization*

✿ Fuel cycle /well-to- propulsion, is the overall greenhouse gas (GHG) impacts of a fuel, including each stage of its production and use.

✿ Biofuel which in a Fuel lifecycle can prove an emission reduction (NOx/Co2/Methane) of 65% is the fastest and most affordable solution until 2030

✿ **Nuclear onshore /barges to produce electricity can be established quickly, as fuel on ships it will take longer.**

✿ It is important to get an internationally mandatory Fuel regulations as quickly as possible.

5.3 When developing candidate mid- and long-term GHG reduction measures, due account should be taken to ensure a **just and equitable transition** that leaves no country behind, including supportive measures.

5.5 The Committee recognizes the need for a broad approach to regulating **safety** of ships using zero or near-zero GHG emission **technologies, fuels and/or energy sources**, including addressing the **human element**, to ensure the **safe implementation** of this Strategy.

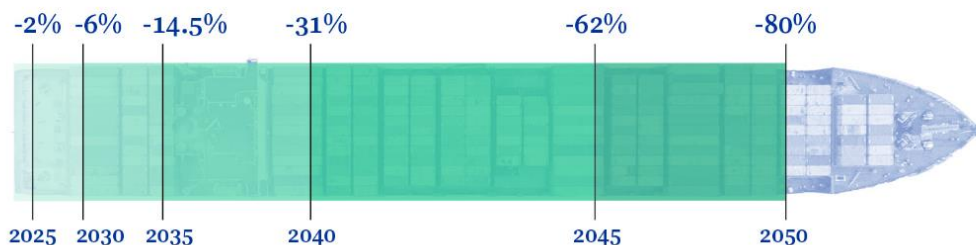
5.6 Recognizing the **impact this Strategy will have on seafarers and other maritime professionals**, the Organization is further requested to assess its **instruments, guidance and training standards** to help ensure a **just transition for seafarers and other maritime workforce** that leaves no one behind.

Fit for 55

EU's target of reducing net greenhouse gas emissions by at least 55% by 2030. The package of proposals aims at providing a coherent and balanced framework for reaching the EU's climate objectives, which:

- ensures a just and socially fair transition

Annual average carbon intensity reduction compared to the average in 2020



Setting the Scene

$$GHG\ intensity = f_{wind} \times (WtT + TtW)$$

$$\frac{\sum_i^{n\ fuel} M_i \times CO_{2eq\ WtT,i} \times LCV_i + \sum_k^c E_k \times (CO_{2eq\ electricity,k} = 0)}{\sum_i^{n\ fuel} M_i \times LCV_i \times RWD_i + \sum_k^c E_k}$$

$$\frac{\sum_i^{n\ fuel} \sum_j^{m\ engine} M_{i,j} \times \left[\left(1 - \frac{1}{100} C_{slip\ j}\right) \times (CO_{2eq,TtW,i,j}) + \left(\frac{1}{100} C_{slip\ j} \times CO_{2eq\ TtW,slip,i}\right) \right]}{\sum_i^{n\ fuel} M_i \times LCV_i \times RWD_i + \sum_k^c E_k}$$

Units are $\frac{gCO_{2eq}}{MJ}$, basically

Fuel converted into WtW CO_{2eq}
Total Energy

Compliance balance = (GHG target intensity – GHG actual intensity) x Total Energy



ITF MSC 11.10 2023 ;

The ITF MSC SG encourages the ITF MSC members that seafarer's organizations and maritime unions have an important role to play at the IMO by supporting ITF technical statements and policies and positions to your national administrations.

Using resources provided by the ITF and implementing these technical statement and policies in your Unions and organizations you can bring awareness of the health, safety and welfare of your members to your national administrations.



Safety

1. Yourself
2. Your College
3. The Ship
4. and the Environment as determined in UN/IMO /ILO /EU



Security

STCW Medical examination to be medically fit for duty on ships.

STCW Certificate of Proficiency (COP) and Competency (COC)

Respect regardless of gender, nationality, sexual orientation, gender identity or religion

Career and competence development as well as employment opportunities for maritime positions, 24/7 Ref. MLC 2006, Regulations 2.7 and 2.8



Sustainable?

Political understanding on “green” energy sources with, extreme pressure, temperature, corrosive, toxic and High Voltage for propulsion, manoeuvring and operation of the ship shall be **HUMAN SAFE**.

Emissions calculation from well to propell is crucial to reach the sustainability goal

Use current regulations and technical competence – IMPLEMENT

- don't wait until the IMO has developed the regulations, - influence them!



SEAFARERS have deal with automation since 1965, and prevention, reduction and control of marine pollution since 1973 (MARPOL)

Seafarers' competence shall safe and secure the OPERATION OF THE SHIP'S FUNCTIONS

- and ensure ALL safe and healthy return to the port facility and their family.



ENERGY

- ✓ a robust training scheme that guarantees the highest level of safety culture
- ✓ appropriate training that covers communication, risk analysis, operation and emergency situations
- ✓ knowledge about construction and design and relevant regulations
- ✓ adequate fire detection and fire-fighting equipment
- ✓ availability of proper lifesaving appliances
- ✓ provisions of adequate personal protection equipment for all personnel.



ENVIROMENT

Human Competence, Construction, Design, Equipment, Safe energy Sources and environmental effectiveness is the key to achieve common goals on sustainable manning, greening the economy, fair and inclusive, decent safe work and **leaving no one behind.**

SAFE



Play The Card's – Thank You!