New approach to HSBO Safety training

A proactive approach to safety training for high-speed boat crews

HSBO 2025
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Disclaimer

- I am not on behalf of any organisation.
- My opinions do not represent the position of any set rescue organization.
- I am just a volunteer coxswain with 29 years of experience as a part of a sea rescue organization.
- All the pictures have been generated with AI tools from actual pictures.

Objectives of the presentation

To activate or generate reflection about safety and training.

To exchange ideas about aspects of training related to safety.

Some “innocent” questions

How many of you have taken part in a safety training for high-speed boat operators?

How many of you have arranged a safety training for high-speed boat operators?

How many of you have designed a safety training for high-speed boat operators?

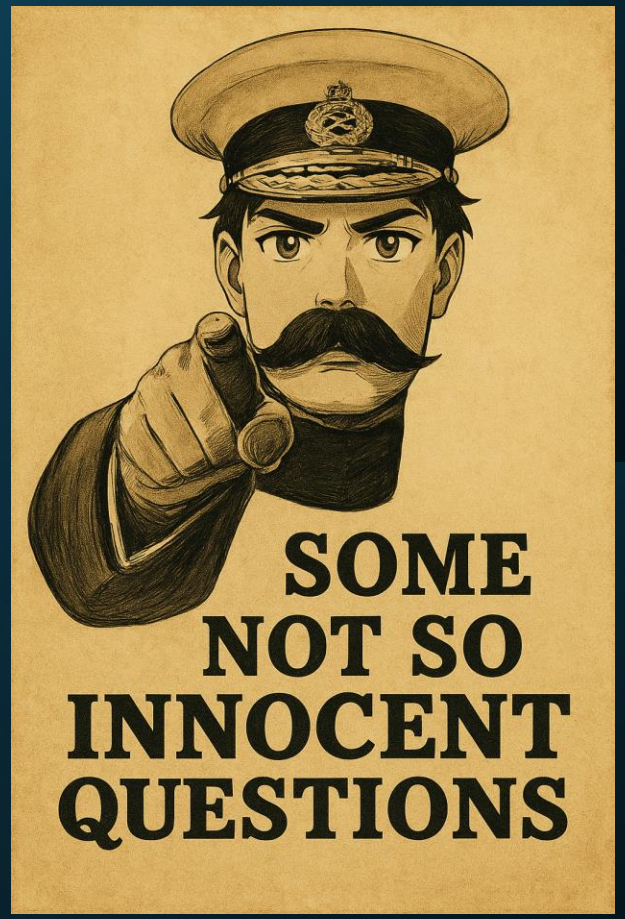
How many of you has done any of the previous activities in the previous de four years?

But what is safety training and what should it include?

It is any training activity that is related to the safe operation of the boat during its specific activities. And includes the following aspects:

- Hardware:
  - Aspects related to the physical safety of the vessel.
  - Aspects related to the physical safety of the vessel's equipment.
- Software:
  - Aspects related to the physical safety of crew and passengers.
  - Aspects related to the psychological safety of the crew.

Some not so “innocent” questions



How many of you have taken part in a physical safety training of the boat or equipment in the last four years?

How many of you have taken part in the last four years in a training on the physical and psychological safety of the crew?

How many of you have arranged them?

How many of you have designed them?

What is the physical safety of the vessel?

Its main purpose is to prevent physical damage to the vessel and its main equipment.

- Navigation and manoeuvring in harsh conditions and/or high speed, narrow spaces, with reduced draught, high traffic, reduced visibility, knowledge of local conditions…
- Deployment and retrieval of personnel, collection and removal of objects, animals or corpses.
- Interactions with other vessels such as interception, boarding, towing, assistance…
- Firefighting, flood control, capsize righting…

What is the Physical safety of equipment?

Its objective is to prevent damage to the additional mission equipment that goes on the boat.

- Handling, deployment and stowage of auxiliary vessels, rescue nets or other similar devices.
- Handling, deployment and stowage of first aid kits, firefighting equipment and dewatering pumps.
- Handling, deployment and stowage of ***mission-specific*** tools.

How do we perform the safety training?

Many times, the training in physical safety of the boat and the equipment is included in the training in the use of these.

- But do we really take it into account when designing such training?
- Do we perform a risk analysis?
- What information do we use to perform that risk analysis?
- Do we document and evaluate the outcome training?

What is the physical safety of the crew?

Its objective is to protect the health and physical integrity of the crew and potential passengers. Some of its aspects are regulated by international conventions such as the STCW.

- Survival at sea, firefighting, first aid.
- Prevention of infectious diseases? For everyone or just for Frontex staff?
- Manual handling of loads and suspended loads.
- Operations with ropes, such as moorings, towing…
- Boarding operations, transfer of objects or personnel.
- Deployment and recovery operations of personnel, equipment and “other objects”.
- But…

But, what about the risks related to exposure to shocks, vibrations, and accelerations?

Do we make an analysis of these?

Do we consider the short-term risks?

Do we consider long-term risks?

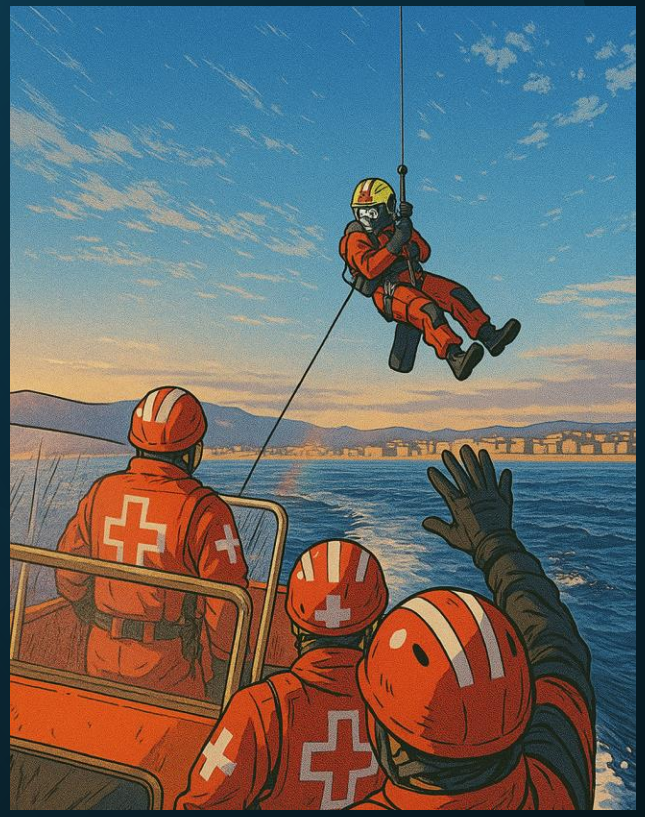
Do we include them in the training curriculum?

What is the psychological safety of crews

Its objective is to reduce the psychological impact and to mitigate the effects of the situations experienced by the crews during operations and to provide tools to help and provide emotional support to them.

- Anxiety and stress caused by high cognitive load and fatigue during operations.
- Post-traumatic stress caused by complex operations such as rescuing severely injured people, recovering corpses…
- Care for psychiatric patients on board the vessel itself or outside it during operations.

How do we deal with these hardware safety challenges?



In the process of selecting and acquiring the vessel and materials.

In the process of incorporating the boat and the materials.

During the lifespan of the boat and materials.

During the equipment replacement programs.

What should we do deal with it?

Statistical analysis of the type of actions.

Statistical analysis of the type of areas of action.

Statistical analysis of the of the time and season of the operations.

How do we deal with these “software” safety challenges?

Before:

- Selection/recruitment process.
- Physical requirements/health.
- Previous training.

During:

- Continuous training / training exercises.
- Physical and mental fitness.
- Physical training.

After:

- Physical and mental assessment upon discharge from the service.
- Support and accompaniment mechanisms.

What can we do to improve training design?

Data analysis:

- Identification of risk patterns.
- Identification of mechanisms affecting safety.
- Incident and accident analysis.

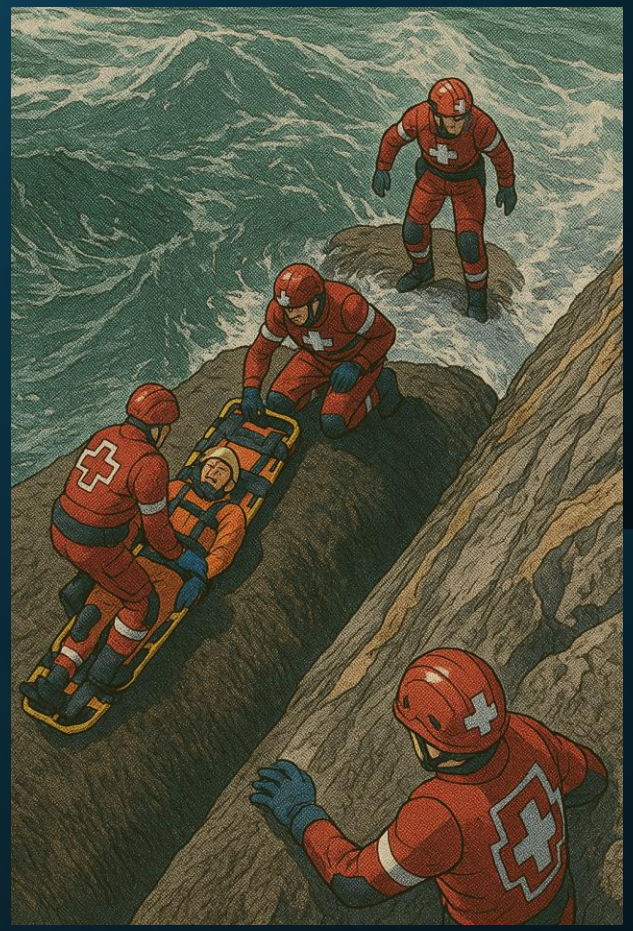
Design of corrective measures.

Tailoring training to address identified risks.

Analysis of the impact of the training:

- Short term.
- Long term.

Under what conditions do we operate?



Metrological and oceanographic analysis of our area of operations, local and general.

Type and condition of the equipment used by our organization.

Analysis of the conditions in which the personnel operate.

- Stable vs changing crews.
- Experience/Training levels.
- Fatigue and mental load/Length of operations.

How can we do it?

Analysis of own and others' procedures.
We learn together.

International standards vs. re-inventing the wheel.

What has happened to us? Because shit happens

We should perform statistical analysis of incidents, accidents, and injuries.

- From our own organization.
- From other organizations with similar activities.
- From other organizations operating in similar environments.

Why has it happened?

Why has it happened and what can we do to prevent it from happening or if it does happen, how can we minimize the consequences?

Identify risk factors and behaviours.

Generate an adequate incident and accident reporting system:

- Agile, efficient and that allows the subsequent processing of data.
- Honest and constructive:
  - With a constructive non-punitive philosophy.
  - Re-educate vs. punish.
- Free access to general data with due data protection. Sharing is caring, let's not reinvent the wheel…

Why don't we address properly the safety risk on our HSBO organizations?

- In the process of selecting and acquiring the vessel and materials.
- In the process of incorporating the boat and the materials.
- During the life span of the boat and materials.
- During the equipment replacement programs.

Why don't we properly address the safety risk on our HSBO organizations?

- Lack of knowledge.
- Inertia of the organization.
- Fear of injury claims or insurance issues.
- Fear that the activity will be considered as too dangerous abandoned.

How can we address the lack of knowledge?

Research:

- About accidents and incidents with or without injuries or damage to learn not to punish.
- Effects of long-term exposure of both equipment and people.
- Previous training and its impact.
- Knowledge sharing: a global and freely accessible database in which all the information collected is dumped. Open knowledge. **#SaferSAR - SAR Unit Safety Reporting**
- Generate and promote exchange forums such as the HSBO.

How can we address the inertia of the organizations?

Educate the organization starting from the top by training and raising awareness among the management bodies of the organisations..

Generate and strengthen networks of organizations, organize research groups within them.

Generate organizational cultures focused on **correction** and **not punishment**.

- Every **mistake** is a **learning opportunity** for us, our colleagues, our organization and the rest of the related organizations.
- Correcting, **forgiving** and "**absolving**" help a culture of transparency, co-responsibility and positive governance.

What about the materials and equipment?

Selection processes that include the end user.

Testing under realistic conditions in operating environments.

Improved boat ergonomics and personal protective equipment.

Realistic data-driven analysis of the operating parameters of all materials. How many G loads and vibrations can a FLIR, a radar antenna, an AED or an oxygen cylinder withstand?

What can we do about staff selection and training?

Medical check-ups before, during and after service.

Establishment of minimum physical parameters.

Training and awareness on the risks involved that are responsibly assumed.

Design of physical training suitable for the tasks to be carried out on board.

Generation of minimum standards of training in safety and injury prevention at an international level. Based on scientific evidence analysis.

Stablish a sistematic staff care system.

Back to the basics, rethink. Have we really changed the way we have been training?

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