The dangers of working at sea: analysis of accidents of fishermen, causes and consequences

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Harnessing today without compromising tomorrow...
Introduction
Types of marine accidents
Causes of marine accidents
Consequences of marine accidents
Preventive measures of marine accidents
Recommendations
The sea is the most dangerous workplace. Marine accidents have been occurring ever since men started to set sail.

By the middle of the 19th century, the navigational standards emerged primarily as regulations for preventing collisions at sea.

Since the beginning of the last century, marine accidents have resulted in maritime industry efforts to improve:

- ship construction,
- ship systems reliability
- onboard operations organization

AIMING AT REDUCTION OF MARINE ACCIDENTS

- Any accident at sea, in harbor or on inland waters involving loss of life results in pain and suffering.
- The survivors, the families and the community endure grief, loss and confusion.
Fisheries is still one of the sectors with the **highest risk of accidents**

- Work is not done on land, but rather on a **moving space**
- Harsh and **dangerous environment**
- Causes of accidents vary widely
What is a marine accident?

- **Damage to a vessel** or facilities other than those related to the operations of a vessel

- **Death or injury** of the people concerned with the construction, equipment or operation of a vessel
On 26 September a trawler named "Brothers" registered under No. 5-340 was involved in a collision that caused the destruction of the boat and the loss of 11 of its 16 crew members.

After being hit by a Panamanian-registered merchant ship, MONTELAURA MMSI: 355855000-PANAMA

The accident occurred at the coordinates of 23° 51' and 016° 40'

50 miles northwest of the port of Dakhla.

Location of the Dakhla and Cintra bays of the Dakhla Oued Eddahab region in the southern zone of the Kingdom of Morocco.
Fishing vessel involved in marine accident

Allianz: Key figures from shipping losses 2008–2017
Fishing vessel involved in marine accident

Number of Vessels Involved in Marine Accidents in 2019
as of August 31, 2019

- Passenger ship: 6
- Cargo ship: 30
- Tanker: 31
- Fishing vessel: 109
- Tug boat, Push boat: 29
- Recreational fishing vessel: 167
- Fishing ferry: 8
- Work vessel: 18
- Barge, Lighter: 17
- Public-service vessel: 24
- Pleasure boat: 3
- Personal water craft: 8
- Others: 230

Total vessels: 680
Types of accidents involving fishing vessels

- Engine room: 22%
- Propeller/Rudder: 4.7%
- Outside decks: 23.3%
- Others: 26.8%
- Cargo areas: 3.1%
- Forecastle deck: 2.4%
- Accommodation: 2.6%
- Wheel house: 2.6%
- Over side: 11.1%
Types of marine accidents

Japan Transport Safety Board

Number of Marine Accidents in 2019
as of August 31, 2019

- Collision: 129 cases
- Contact: 98 cases
- Grounding: 41 cases
- Sinking: 130 cases
- Flooding: 53 cases
- Capsizing: 20 cases
- Fire: 6 cases
- Explosion: 18 cases
- Vessel missing: 17 cases
- Facility damage: 41 cases
- Fatality/Injury: 130 cases
- Others: 53 cases
Types of accidents involving fishing vessels

LEARNING FROM ACCIDENTS THROUGH EMCIP

What can we learn from the analysis on fishing vessels?

2,404 occurrences analysed
196 completed investigations
June 2011 - July 2017

Areas investigated:
- Fire/Explosion
- Flooding
- Collision
- Grounding
- Foundering
- Listing
- Damage to ship/hull failure
- Loss of control/container

Areas of concern:
- Dealing with emergency
- Knowledge of on board equipment and procedures
- Training and drills
- Safety assessment
- Inspection and compliance with safety provisions
- Applicable standards
- Watch-keeping
- Operating beyond safety limits
- Maintenance
- Inspection and testing of equipment

"Fishing at sea is probably the most dangerous occupation in the world. UN FAO"
The recurring causes of accidents

- **Human factors**
  - Fatigue
  - Stress
  - lack of maintenance, negligence
  - Routine
  - addiction or alcoholism
  - navigation errors
  - working conditions

- **Technical factors**
  - No equipment or malfunction
  - use of unsafe fishing gear
  - lack of safety equipment or survival

- **External factors**
  - Weather situation
The shipping and fisheries industries are run by people, for people.

- People design ships
- Build them
- Own them
- Crew them
- Maintain them
- Repair them
- Salvage them
- Regulate them
- Survey them
- Underwrite them
- Investigate them when things go wrong

While these people vary in all sorts of ways—they are all people—with the same basic set of capabilities and vulnerabilities.
Machinery failure or the extremes of the weather may in some cases be the cause of incidents at sea, but human error remains a stubborn contributing factor.

Human failure contributes to most fishing vessel casualties, fatalities, and injuries.

If not the direct cause, human factors are an element in accidents and complicate implementation of safety improvement alternatives.

Human factors frequently associated with marine casualties are:
- Inexperienced,
- Inattention,
- Fatigue,
- Judgmental errors,
- Navigational errors.
The Human factor as recurring causes of accidents

**TEAMWORK**
How Well Do You REALLY Work Together?
- Ensure shared mental model
- Beware “group think”
- Encourage challenge
- You can be in more than one team at a time

**LOCAL PRACTICES**
Efficiency OR Dangerous Shortcut?
- Don’t cut corners
- Follow procedures – they are there for a reason!
- Beware local norms becoming the “new standard”
- Poor or inadequate procedure? – report them
- Be alert to efficiency-Thoroughness Trade Off

**FIT FOR DUTY**
Are you REALLY fit to work?
- Avoid alcohol and drugs – they are major killers
- Illness can impair judgement and thinking
- Injuries can be distracting

**DISTRACTIONS**
Multi-Tasking OR Dangerously Distracted?
- It happens very easily
- Personal as well as job distractions
- Use checklists and “Red Zone” techniques
- If distracted – go back 2 steps
- Be assertive – insist on calling back when convenient

**ALERTING**
Do You REALLY Speak Up When You Should?
- Vital skill – use it effectively – encourage it
- Be positive and constructive – propose solutions
- Some may find it difficult to do
- It’s not a threat – it’s teamwork
- Be assertive – it can save lives

**FATIGUE**
Just Tired OR Dangerously Fatigued?
- DON’T accept it – it’s a killer
- Leads to accidents and ill health
- Ever present danger at sea
- Learn about cause, effect and prevention
- Recognise it, report it, manage it – effectively!

**COMPLACENCY**
Is Everything REALLY OK?
- Never assume all is OK
- Follow procedures – they work!
- Use checklists
- Seek input from others
- Early action avoids later difficulties
- Check your situation – CONSTANTLY

**CULTURE**
Do You REALLY have good safety culture?
- Applies to individuals and whole teams/organisations
- Does everyone really care about safety?
- Do you have a Just Culture?
- Do you strive for continual improvement?

**CAPABILITY**
Is Your Team REALLY Capable?
- Check training and qualifications and experience
- Regularly assess capability
- Provide on-board training, mentoring, coaching
- Ensure any capability gap is addressed

**SITUATIONAL AWARENESS**
Do You REALLY Know What’s Happening?
- The big picture AND the detail
- Constantly update your awareness
- Actively seek input from others
- Never assume another’s intentions
- WHIM – ask: “What Have I Missed?”

**COMMUNICATION**
Do You Really Understand Everyone?
- Message understood? DON’T assume – Check
- Use closed loop communications
- Words are only 30% of communications
- Remember effect of tone and body language
- Different cultures may interpret things differently
- Watch out for accidentally causing offence

**PRESSURE**
Just Busy OR Dangerously Overloaded?
- Good pressure can improve performance
- Too much leads to stress – always bad
- Don’t let pressure lead to taking short cuts
- Ensure adequate resources – people, time, tools
The consequences of accidents

OVERVIEW OF KEY FIGURES
Key figures for the period 2011 - 2016

18655
SHIPS INVOLVED

16539
CASUALTIES

253
SHIPS LOST

5607
PERSONS INJURED

600
FATALITIES

869
INVESTIGATIONS
LAUNCHED BY
EU MEMBER
STATE AI BODIES
Article 6, paragraph 6.17, of the Code of Conduct for Responsible Fisheries recognizes that “States should ensure that fishing facilities and equipment, as well as all fishing activities, allow for **safe, healthy and fair working conditions** and meet **internationally agreed standards adopted by relevant international organizations**.”

- The completion of the FAO / ILO / IMO security recommendations in 2010 and the FAO / ILO / IMO implementation guidelines in 2011
- Adoption of the Cape Town Agreement on Fishing Vessel Safety in 2012 and subsequent regional seminars on its implementation and ratification
- The adoption of instruments to support the implementation of the ILO Work in Fishing Convention, such as guidelines for port and flag inspectors
- Safety study of international commercial fisheries management regimes (FAO)
Safety-improvement options include these alternatives:

- Establish risk communication/safety awareness programs
- Publish and distribute safety publications
- Require emergency preparedness measures
- Develop and promulgate standard operating procedures
- Develop competency standards
- Promote education and training
- Require education and training with certification
- Establish vessel manning and watchkeeping criteria
Recommendations

Define some possible lines of action
Envisage the implementation of a complete framework of prevention/safety measures including in particular:
- Guarantee of good working conditions
- Development of professional training programs
- Renewal and modernization of the fleet
- Construction of vessels from good quality and resistant materials
- Maintaining protection equipment against fire, smoke and shipwreck and life-saving equipment in good condition
Recommendations

- Improvement in navigation aids
- Monitoring of maritime traffic
- Meteorological information for fishing
- Increased safety standards for equipment
- Improvement in vessels’ life-saving equipment
- co-ordination of all departments/administration/agencies associated with health and safety in the fisheries sector.
Thank you for your attention