



# **Efficient implementation of the minimum safe manning level**



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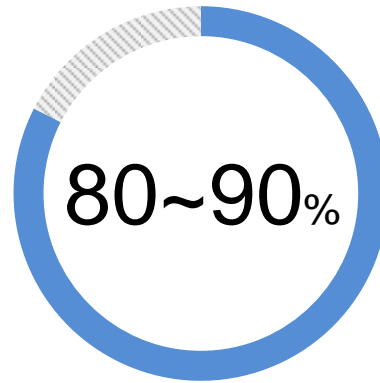
# BACKGROUND



## Marine Accidents

Accidents including sinking, running aground, the loss of ship, and other casualty on the board

# HUMAN ERROR



**Human error**

## Details of the causes of accidents caused by human error

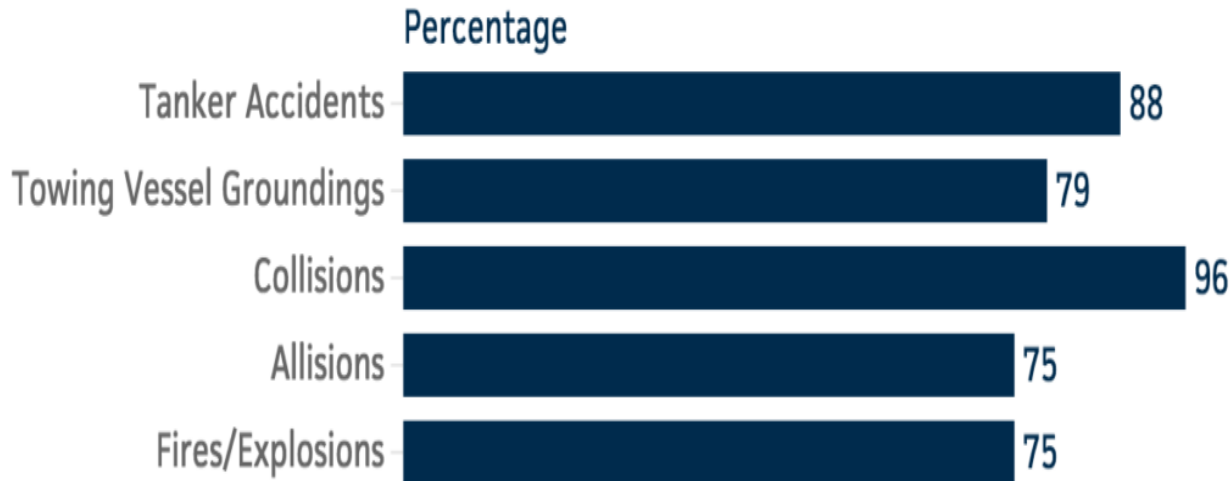
- Insufficiency of continuous deterioration when poor weather
- Inadequate personnel commitment during the main task
- Insincere working attitude due to drinking or drugs
- Omission of updated information about sailing waters
- Lack of caution in hazardous areas
- Lack of inspection about hull structure
- Improper use of personal electronic equipment

- Between 80 and 90% of the causes of maritime accidents are attributable to human error

# HUMAN ERROR

Studies have shown that human error contributes to:

## Incident of Human Error in Shipping Accidents



About 75-96% of marine casualties are caused, at least in part, by some form of human error.

Made by BRINK

Data: US Coast Guard Research

The maritime system is a *people system*,  
and human errors figure prominently in casualty situations.

# FOCUS OF IMO

The Maritime Safety Committee (MSC), considered **the issue of human fatigue** and the direction where IMO efforts should be focused.



## Fatigue

MSC/Circ.493



## Competence

STCW Manila Amendments



## Education

STCW Manila amendments

MLC Regulation 2.3  
Hours of work and hours of rest

STCW A-VIII/1  
*Fitness for duty*

MSC/Circ.1014.  
Guidelines on Fatigue Mitigation and  
Management

STCW Manila Amendments

# QUESTION

**Nevertheless, why marine accidents  
due to human error do not be  
decreased ?**

# CURRENT

## SAFE MAINNING LEVEL

**Resolution A.481(XII)**  
PRINCIPLES OF SAFE  
MANNING

**Resolution A.890(21)**  
PRINCIPLES OF SAFE  
MANNING

**Resolution A.955(23)**  
AMENDMENTS TO THE  
PRINCIPLES OF SAFE  
MANNING



**Ch.V Regulation13**  
MANNING

**Regulation 2.7**  
MANNING LEVELS





# Comparative Analysis

## Flag State



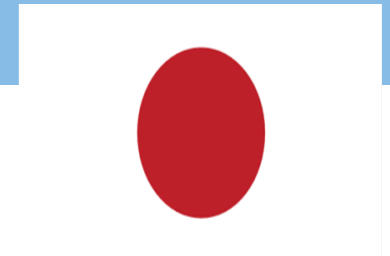
Marshall Is.



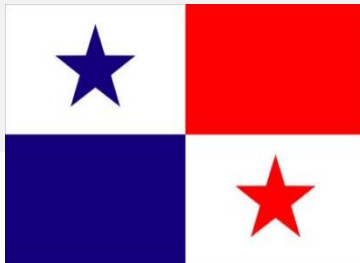
United Kingdom



Republic of Korea



Japan



PANAMA



Liberia

Flag State with the highest political convenience is PANAMA(18.1%), LIBERIA(10.9%)and MARSHALL ISLANDS(10.2%) followed.

Clarkson, 2016/01/01

# Comparative Analysis

Sea voyage / Merchant / Deck department officer

Size of Ship(GT)	Marshall Is. & Liberia	United Kingdom	Republic of Korea	Japan
~200t	Master Chief Mate	Master Two (2) OOW	Master , Chief Mate	Master , Chief Mate
200t~500t			Master , Chief Mate, One (1) OOW	Master , Chief Mate, One (1) OOW
500t~1600t	Master Chief Mate One (1) OOW	Master Chief Mate One (1) OOW	Master , Chief Mate, Two (2) OOW	Master , Chief Mate, One (1) OOW
1600t~3000t			Master , Chief Mate, Two (2) OOW	Master , Chief Mate, Two (2) OOW
3000t~5000t	Master, Chief Mate Two (2) OOW	Master Chief Mate Two(2) OOW	Master , Chief Mate, Two (2) OOW	
5000t~6000t	Master , Chief Mate Two (2) OOW		Master , Chief Mate, Two (2) OOW	
6000t~8000t				Master , Chief Mate, Two (2) OOW
8000t~	Master, Chief Mate Two(2) OOW			

# Comparative Analysis

## PANAMA



[Student]

Where is the clear minimum safe manning level requirement by Panama domestic law?



[Embassy in Panama]

There isn't a clearly defined, but we follow MLC Convention about safe manning level.

This is because it is hard to consider all options, for example, size of the ship and type of the ship.



# Suggestion

## STCW Convention CHAPTER I [General provisions]

### **Regulation I/1**

Definitions and clarifications

### **Regulation I/2**

Certificates and endorsements

.....

### **Regulation I/6**

Training and assessment

.....

### **Regulation I/15**

Transitional provisions

### **Regulation I/16**

Verification of compliance



### **Regulation I/6 bis**

SAFE MANNING LEVEL

### **STCW Code Part A**

: Mandatory standards regarding provisions of the annex to the STCW Convention

### **STCW Code Part B**

: Recommended guidance regarding provisions of the STCW Convention and its annex

# Amendment

## Regulation I/6 bis : **SAFE MANNING LEVEL**

1. The safe manning level shall be established to ensure the safe operation and the security of the ships and the prevention of pollution from ships.
2. The safe manning level shall be ensured the hours of rest of the seafarers, Chapter VIII/1 of the Convention.
3. The safe manning level shall be adequate at all times and in all respects, including meeting peak workload situations, conditions, with due regard to the number of hours of shipboard duties and rest periods assigned to seafarers;
4. Application and approval procedures for the minimum standards on safe manning shall be established.
5. Administration shall establish the minimum standards on safe manning level in accordance with the provisions of this regulation and of section A-I/6 bis of the STCW Code

# Amendment

## Section A- I/6 bis

1. The vessel that period of voyage is more than 24hours shall be onboard more than three deck officers.
  - .1 Deck officer shall be onboard by any of the following sub-paragraphs, if the vessel is operated to temporarily exceed the standard time
    - .1 Three Deck officer when the vessel is within the standard time 16 hours (18 hours, including shifts) operated in excess of 20 hours.
    - .2 Two Deck officer when the vessel is within the standard time 8 hours (9 hours, including shifts) operated in excess of 12 hours and three persons when exceed 18 hours.
  - .2 It is proposed that this regulation is applied to passenger ships and cargo ships of 500 gross tonnage and above engaged on international voyage.
  - .3 Administrations shall determine the applicability of this requirement to passenger ships and cargo ships of less than 500 gross tonnage engaged on domestic voyage.

# Amendment

## Section A- I/6 bis

2. The safe manning level shall be considered the calculation method of period of the voyage based on the following.
  - .1 Duty personnel should consider the number that is divided continuous working time of the watchers by 8 hours or 9 hours. If the seafarer engaged in loading and unloading operations, It should be counted in the working hours.
  - .2 Estimate whether the integration of the deck department, engine department and radio department including whether that should be the duty work at the same time according to construction or equipment of the ship.
  - .3 Based on the number of time that is average time of summing the six period of the voyage from the longest order (standard time), during the six months before the date of application of deck duty officer, one day alternately number of officer of watch is destined (If it has not operated during normal voyage in heavy weather, failure of engine, such as errors are excluded.)

# Amendment

## Section A- I/6 bis

2. Minimum manning level shall be considered the calculation method of period of the voyage based on the following.
  - .4 One day alternately number of duty engineer is destined by a choice of 'One day average time' that is the average of the actual working days during the six months before the date of application of duty engineer, or 'The maximum period of the voyage times'
  - .5 Estimate the continuous personnel required in a day to duty schedule during voyage or berthing according to the convention A-VIII/1



# Amendment

## Section A- I/6 bis

3. The personnel required number to handle the day-to-day operations of the ship excluded navigational duty is calculated by following paragraph.
  - .1 Nor not-call personnel during sailing or berthing the day-to-day work is calculated in the range that meets the standard set of STCW A-VIII/1. In case it decided separately by working and rest hours, estimate the personnel according to the criteria,
  - .2 To calculate the additional necessary personnel for the work at the time of berthing and berthing of the ship, estimate excluding the personnel of the third term or the first term of the law.
4. Each member shall give **due consideration** to implement its responsibilities in the manner provided for **in section B-I/6 bis**

# Amendment

## Section B- I/6 bis

1. The following principles shall be observed in determining the minimum safe manning of a ship:
  - .1 the capability to:**
    - .1.1 maintain safe navigational, engineering and radio watches in accordance with regulation VIII/2 of the 1978 STCW Convention, as amended, and also maintain general surveillance of the ship;
    - .1.2 moor and unmoor the ship safely;
    - .1.3 manage the safety functions of the ship when employed in a stationary or near-stationary mode at sea;
    - .1.4 perform operations, as appropriate, for the prevention of damage to the marine environment;
    - .1.5 maintain the safety arrangements and the cleanliness of all accessible spaces to minimize the risk of fire;
    - .1.6 provide for medical care on board ship;
    - .1.7 ensure safe carriage of cargo during transit; and
    - .1.8 inspect and maintain, as appropriate, the structural integrity of the ship; and

# Amendment

## Section B- I/6 bis

1. The following principles shall be observed in determining the minimum safe manning of a ship:
  - .2 the ability to:**
    - .2.1 operate all watertight closing arrangements and maintain them in effective condition, and also deploy a competent damage control party;
    - .2.2 operate all on-board fire-fighting and emergency equipment and life-saving appliances, carry out such maintenance of this equipment as is required to be done at sea, and muster and disembark all persons on board; and
    - .2.3 operate the main propulsion and auxiliary machinery and maintain them in a safe condition to enable the ship to overcome the foreseeable perils of the voyage.

# Amendment

## Section B- I/6 bis

2. The minimum safe manning level of a ship shall be established taking into account all relevant factors, including the following:
  - .1 size of ship; tonnage follow the standards of STCW.
  - .2. type of ship
  - .3 number, size and type of main propulsion units and auxiliaries;
  - .4 construction and equipment of the ship;
  - .5 method of maintenance used;
  - .6 cargo to be carried;
  - .7 frequency of port calls, length and nature of voyages to be undertaken;
  - .8 trading area(s), waters and operations in which the ship is involved;
  - .9 extent to which training activities are conducted on board; and
  - .10 applicable work hour limits and/or rest requirements.

# Amendment

## Section B- I/6 bis

3. In the Regulation 1, states should refer to the standard of hours of work and hours of rest in the MLC Convention Reg. 2.3.
4. In the Regulation 4, If there are any disagreements, It should be taken by the dispute settlement procedure in accordance with the MLC Convention guideline 2.7
5. the minimum standards on safe manning level should be established taking into account the following table.

# DREAM SHIP

Trading Area	period of the voyage	standard time	standard time	standard time	standard time	standard time
	Size of ship (GT)	Within 8 hours	Within 8 hours More than 12 hours navigation	Within 16 hours	Within 16 hours More than 20 hours navigation	More than 16 hours
Unlimited	3000 or more	Master(II/2)	Master(II/2), Chief Mate(II/2)	Master(II/2), Chief Mate(II/2)	Master(II/2), Chief Mate(II/2), OOW(2) (II/1)	Master(II/2), Chief Mate(II/2), OOW(2) (II/1)
	500 or more but less than 3000	Master(II/2)	Master(II/2), Chief Mate(II/2)	Master(II/2), Chief Mate(II/2)	Master(II/2), Chief Mate(II/2), OOW(2) (II/1)	Master(II/2), Chief Mate(II/2), OOW(2) (II/1)
	Less than 500	Administration decided separately				

II/1 : officers in charge of a navigational watch on ships of 500 gross tonnage or more

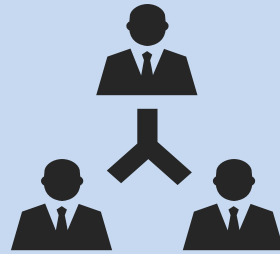
II/2 : masters and chief mates on ships of 500 gross tonnage or more

(a) This may be one people, if the captain on duty

(b) It does not require the seafarer if the captain on duty

# Conclusion

“Everyone can be proper persons in proper group”



**Thank you**

