Analysis of the Implementation of *Abandon ship drill* to Face Emergency Situations on the MV Pacific Bulk Ship

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Abstract.
Abandon ship drill is a mandatory safety exercise conducted on board a ship to improve crew readiness in facing emergencies according to SOLAS 1974 Chapter III Regulation 19. A common problem is that the exercise implementation has not been optimal, especially related to the understanding of tasks based on the muster list, the readiness of safety equipment, and crew coordination. This study aims to analyze the implementation of abandon ship drill and assess the level of readiness and understanding of crew on MV. Pacific Bulk in facing emergencies. The study used a qualitative method with the Miles and Huberman analysis model which includes data reduction, data presentation, and drawing conclusions. Data were obtained through observations during sea practice, interviews with officers and crew, and documentation of drill activities. The results of the study indicate that the abandon ship drill has been carried out routinely every month and follows basic safety procedures such as sounding the emergency alarm, gathering the crew at the muster station, and briefings from the captain. However, the implementation has not been fully optimal because the lifeboat during the exercise was only lowered to the embarkation deck and there were still delays in crew, uneven understanding of tasks, and less than optimal post-drill evaluation. Therefore, it is necessary to increase crew familiarization, implement more disciplined and sustainable training, and conduct a comprehensive evaluation after the drill as a preventive measure to improve crew readiness.
Keywords: *Drill and Abandon Ship,*Emergency state.

I. INTRODUCTION

Maritime transportation plays a strategic role in supporting national trade and economic activities, particularly in the transportation of large cargoes such as coal, cement, and other bulk materials transported by *bulk carrier*s. In addition to serving as a means of maritime transportation, ships also serve as temporary accommodations for crew members during voyages. Therefore, maritime safety is a top priority to protect human life, the ship, and the cargo being transported.

During shipping activities, various potential hazards can occur that can lead to emergencies on board ships, such as fires, leaks, collisions, or grounding. These emergencies can be caused by external factors such as bad weather or internal factors such as human error. Several studies have shown that more than 80% of accidents at sea are caused by human error, while the remainder are caused by ship technical factors or environmental conditions. This situation demonstrates the importance of crew preparedness in dealing with emergencies through regular safety drills.

One form of safety training that must be carried out on board is the *abandon ship drill*. This exercise aims to train the crew to understand the procedures for abandoning the ship quickly, orderly, and coordinated in the event of an emergency that cannot be handled. The implementation of *abandon ship drill*s has been regulated in the International Convention for the Safety of Life at Sea (SOLAS) 1974 Chapter III Regulation 19 concerning Emergency Training and Drills, which requires every ship to conduct safety drills periodically. In addition, in Indonesia, the implementation of safety drills is also regulated in the Regulation of the Minister of Transportation Number 45 of 2012 which requires shipping companies to develop training programs and conduct emergency preparedness training on board.

However, in practice, *abandon ship drill*s on some ships are still not running optimally. This can be caused by crew members' lack of understanding of the duties and responsibilities outlined in the muster list, lack of familiarity with the use of safety equipment, and inadequate post-drill evaluation. These conditions

can lead to delays in the evacuation process and unpreparedness for actual emergencies, especially for new crew members and cadets who lack sufficient experience.

One example of a ship accident that demonstrates the importance of safety training is the 2018 accident on the KMP Lestari Maju in the waters off the Selayar Islands. According to a report by the National Transportation Safety Committee (KNKT), the accident resulted in 34 deaths and one missing person out of a total of 139 passengers. Investigations revealed that the lack of safety training on board was a contributing factor to passenger panic and a suboptimal evacuation process.

Based on these issues, efforts are needed to improve crew readiness in dealing with emergencies through effective safety training in accordance with applicable procedures. Therefore, the author conducted research on the implementation of *abandon ship drill*s on the MV Pacific Bulk to determine the procedures for conducting such drills and assess the level of crew readiness and understanding in dealing with emergencies on board.

This study aims to analyze the implementation of *abandon ship drill*s and assess the level of preparedness and understanding of the crew on board the MV Pacific Bulk in dealing with emergencies. The results are expected to provide an overview of the implementation of safety drills on board ships and serve as evaluation material for crews and shipping companies in improving emergency preparedness in accordance with international shipping safety standards.

II. METHODS

This study employed a descriptive qualitative research method, where the data obtained was analyzed and systematically described based on the conditions occurring in the field. According to Yusanto (2020), qualitative research has various approaches that can be adapted to the object of study, allowing researchers to understand the phenomenon more deeply. This aligns with Yulianto's (2020) opinion, which states that data analysis in qualitative research must be conducted meticulously so that the data obtained can be properly narrated and produce valid research.

Qualitative research aims to describe or explain a situation realistically, as it exists at the time of the research. This approach emphasizes the collection and analysis of narrative, non-numerical data, thus providing a deeper understanding of the research object [Purwanto, 2022]

In this study, data collection was conducted through observation and interviews to obtain direct information regarding the implementation of the *abandon ship drill* on the MV Pacific Bulk. This method allowed researchers to understand the actual conditions in the field in greater detail and depth, thus providing a description of the implementation of safety drills and the crew's preparedness in dealing with emergencies.

The main research instruments include observation, interviews, and documentation to obtain information regarding the implementation of *abandon ship drill*s and the level of crew preparedness in facing emergencies. Observations were conducted by directly observing *abandon ship drill* activities on board the ship to determine the stages of the exercise implementation, crew responses, and the compliance of procedures with applicable safety regulations. Interviews were conducted with several informants directly involved in safety drill activities, namely the Captain, Third Officer, Chief Engineer, and Cadet, to obtain information regarding the implementation of drills, division of tasks according to the muster list, and crew preparedness in facing emergencies. In addition, documentation was used as supporting data in the form of safety drill logbooks, drill implementation reports, muster lists, crew lists, and photos of training activities related to the implementation of *abandon ship drill*s on the MV. Pacific Bulk.

The population in this study was the entire crew of the MV. Pacific Bulk involved in the *abandon ship drill* with duties according to the muster list in Taboneo, South Kalimantan, during the period of August 2024. The sample was purposive, focused on key informants such as the captain as the drill leader, the third officer as the person in charge of safety, the chief engineer for technical aspects, as well as cadets and new crew to assess the understanding of the muster list tasks. This sample selection ensured the representation of the ship's organizational hierarchy and variety of experiences, in accordance with the principle of qualitative sampling that emphasizes depth over quantity.Sugiyono, (2019) recommends a purposive approach to extract rich data from key actors in natural contexts [Creswell, JW 2014]

The research procedure began with a literature study on maritime safety and the provisions of SOLAS 1974 Chapter III Regulation 19 regarding *abandon ship drill*, followed by primary data collection during sea practice from ship sign-on July 8, 2024, to sign-off July 27, 2025. Furthermore, data collection was carried out during sea practice on the MV. Pacific Bulk through observation of drill implementation, interviews with the Captain, Third Officer, Chief Engineer, and Cadet, as well as documentation of training activities. Supporting data were obtained from muster lists, crew lists, logbooks, and drill implementation reports. The collected data were then analyzed using the Miles and Huberman model, through the stages of data reduction, descriptive data presentation, and drawing conclusions to determine the implementation of *abandon ship drill* and the readiness of the crew in facing emergencies.

Data analysis in this study was conducted iteratively through several stages. The first stage is data reduction, which is selecting and focusing data from observations, interviews, and documentation related to the implementation of the *abandon ship drill*. Through this process, researchers identified patterns or discrepancies that occurred, such as the suboptimal simulation of lowering the lifeboat or the understanding of the crew's duties according to the muster list. The next stage is data presentation, which is organizing the data systematically in the form of descriptive narratives and tables to facilitate understanding of the implementation of safety training on the ship. The final stage is drawing conclusions to describe the implementation of the *abandon ship drill* and the level of crew readiness in facing emergencies on the MV. Pacific Bulk. Emzir, (2016) emphasized this iterative method to create hypotheses based on field data, researcher reflection is very important to integrate the findings [Creswell, JW 2014].

III. RESULTS AND DISCUSSION

Location and Subject Overview

Pig. 1. KM Pacific Bulk Ship
Source: Author's Documentation

MV. Pacific Bulk is a *bulk carrier* owned by PT. Deli Pratama Angkutan Laut which transports coal on the fixed route of Kalimantan-Sulawesi (ports: Taboneo, Muara Berau, Muara Jawa, Bunati, Satui, Tanjung Merpati, Morowali, Morosi, Bahodopi).

Ship specifications: LOA 189.80 m, LBP 181.00 m, width 32.26 m, depth 16.90 m, GRT 27,986, NRT 17,077, molded draft 10.75 m, scantling draft 11.76 m (medium *bulk carrier* category, 4 cranes, 5 hatches). Author's observation: Direct implementation of *abandon ship drill*, period 8-27 July 2025.

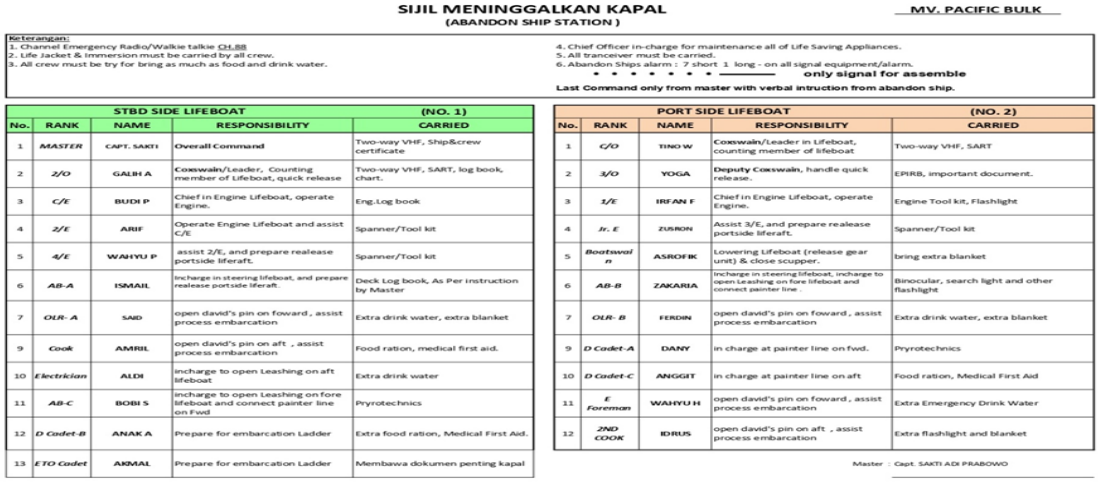
Observation Results

1. Conditions for implementing *abandon ship drill*

On August 18, 2024, the MV. Pacific Bulk docked in Taboneo, South Kalimantan, for loading and unloading activities and underwent a Safety Inspection by the port authorities along with Port State Control (PSC) representatives to ensure compliance with safety requirements according to Safety of Life at Sea (SOLAS). After the operational inspection was completed, the inspector ordered the Captain to conduct an abrupt *abandon ship drill* without prior notice to assess the crew's preparedness and spontaneous response to emergency situations. When the emergency alarm sounded with a pattern of seven short and one long beeps as a sign of the order to abandon ship, the entire crew moved to the muster station according to the division

of tasks in the muster list. However, some crew members did not show optimal responses. There were delays in gathering and some crew members appeared less than responsive in using safety equipment, and coordination was not yet effective.

This situation drew the inspector's attention due to the suboptimal level of emergency preparedness on the MV Pacific Bulk. As a follow-up to the investigation, the Captain received a warning regarding the need to improve crew discipline and preparedness in conducting emergency drills.



SIJIL MENINGGALKAN KAPAL
(ABANDON SHIP STATION)

MV. PACIFIC BULK

Keterangan:
1. Channel Emergency Radio/Walkie talkie CH.88
2. Life Jacket & Immersion must be carried by all crew.
3. All crew must be try for bring as much as food and drink water.
4. Chief Officer in-charge for maintenance all of Life Saving Appliances.
5. All tranceiver must be carried.
6. Abandon Ships alarm : 7 short 1 long - on all signal equipment/alarm.
• • • • • • • ——— only signal for assemble
Last Command only from master with verbal intruction from abandon ship.

STBD SIDE LIFEBOAT (NO. 1)

No.	RANK	NAME	RESPONSIBILITY	CARRIED
1	MASTER	CAPT. SAKTI	Overall Command	Two-way VHF, Ship&crew certificate
2	2/O	GALIH A	Coxswain/Leader, Counting member of Lifeboat, quick release	Two-way VHF, SART, log book, chart.
3	C/E	BUDI P	Chief in Engine Lifeboat, operate Engine.	Eng.Log book
4	2/E	ARIF	Operate Engine Lifeboat and assist C/E	Spanner/Tool kit
5	4/E	WAHYU P	assist 2/E, and prepare realease portside liferaft.	Spanner/Tool kit
6	AB-A	ISMAIL	Incharge in steering lifeboat, and prepare realease portside liferaft.	Deck Log book, As Per instruction by Master
7	OLR- A	SAID	open david's pin on foward , assist process embarcation	Extra drink water, extra blanket
9	Cook	AMRIL	open david's pin on aft , assist process embarcation	Food ration, medical first aid.
10	Electrician	ALDI	incharge to open Leashing on aft lifeboat	Extra drink water
11	AB-C	BOBI S	incharge to open Leashing on fore lifeboat and connect painter line on Fwd	Pryrotechnics
12	D Cadet-B	ANAK A	Prepare for embarcation Ladder	Extra food ration, Medical First Aid.
13	ETO Cadet	AKMAL	Prepare for embarcation Ladder	Membawa dokumen penting kapal

PORT SIDE LIFEBOAT (NO. 2)

No.	RANK	NAME	RESPONSIBILITY	CARRIED
1	C/O	TINO W	Coxswain/Leader in Lifeboat, counting member of lifeboat	Two-way VHF, SART
2	3/O	YOGA	Deputy Coxswain, handle quick release.	EPIRB, important document.
3	1/E	IRFAN F	Chief in Engine Lifeboat, operate Engine.	Engine Tool kit, Flashlight
4	Jr. E	ZUSRON	Assist 3/E, and prepare realease portside liferaft.	Spanner/Tool kit
5	Boatswain	ASROFIK	Lowering Lifeboat (release gear unit) & close scupper.	bring extra blanket
6	AB-B	ZAKARIA	Incharge in steering lifeboat, incharge to open Leashing on fore lifeboat and connect painter line	Binocular, search light and other flashlight
7	OLR- B	FERDIN	open david's pin on foward , assist process embarcation	Extra drink water, extra blanket
9	D Cadet-A	DANY	in charge at painter line on fwd.	Pryrotechnics
10	D Cadet-C	ANGGIT	in charge at painter line on aft	Food ration, Medical First Aid
11	E Foreman	WAHYU H	open david's pin on foward , assist process embarcation	Extra Emergency Drink Water
12	2ND COOK	IDRUS	open david's pin on aft , assist process embarcation	Extra flashlight and blanket

Master : Capt. SAKTI ADI PRABOWO

Fig.2.Muster List

source: author's documentation

Table1Conformity Observation Results

o	Position	Task	Level of Compliance	Information
	Master(Captain)	Overall command of the *abandon ship drill* implementation	In accordance	Commands are given and drills are carried out according to instructions.
	Chief Officer, and Second Officer	Safety coordination, lifeboat coxswain, crew calculation, quick release	Not fully compliant	There are still crew members who are late and do not immediately carry out their duties.
	Third Officer	Deputy coaxswain, carrying important documents and EPIRB	Not quite right	Documents are not fully prepared according to the task and lack of maintenance of safety equipment
	Chief Engineer and First Engineer	Lifeboat engine operation and technical readiness	Not fully compliant	The machine can be operated, but requires warming up. This indicates less than optimal technical readiness due to the infrequent routine checks.
	Second Engineer and Fourth Engineer	Assisting with engine operation and preparation for liferaft release	Not fully compliant	The task was partially carried out, but not optimally and understanding of the procedure still needs to be improved.
	Electrician	Open the rear davit pin and carry emergency logistics and medical first aid kit.	In accordance	Gather at the muster station on time and bring complete emergency logistics.
	AB and Oiler	Opening davit pins, steering lifeboats, and assisting with the embarkation process	Not quite right	Some do not carry out the muster list, there are delays and confusion in carrying out tasks.
	Boatswain	Lowering lifeboats, closing scuppers and	Not fully compliant	The lifeboats were not fully lowered due to weather and crew safety factors.

o	Position	Task	Level of Compliance	Information
		assisting with embarkation		
	Cook	Bring additional emergency food and drinking water	In accordance	Tasks are carried out according to instructions and on time to the muster station.
0	*Cadet*	Prepare embarkation ladders, carry pyrotechnics and emergency equipment.	Not quite right	Tasks are not fully carried out because they do not understand the roles and responsibilities according to the muster list.

Drill observation: Not according to muster list—crew did not respond simultaneously, arrived late to muster station, confused about evacuation procedures; new crew/cadets did not understand emergency signals (assembly location, lifeboat route). Inspector asked Captain: Cause of lack of alarm response, drill routine? Indication of unfamiliarity with ISM Code.

Recommendation: Captain evaluation, improve discipline and familiarization with emergency procedures.

Fig.3.Drill Simulation

source: author's documentation

2. Condition and Suitability of Safety Equipment on Board Ships

MV. Pacific Bulk drill findings: Damaged safety equipment—life jackets (loose straps, lights out, whistles off); expired life rafts, requiring maintenance/certification. Implications: Suboptimal maintenance oversight, reducing the effectiveness of emergency evacuations.

Recommendation: Periodic inspection per ISM Code Section 10 (Maintenance of Ship & Equipment) for readiness for use.

Fig.4. Liferaft Check

source: author's documentation

3. Technical Problems in the Implementation of *Abandon ship drill*

During the *abandon ship drill* on the MV Pacific Bulk, the lifeboat encountered technical difficulties: the engine was difficult to start (it needed warming up due to infrequent use), and the davit was rusty/corroded, making lowering difficult. The exercise only went as far as deck embarkation (not a full water simulation), a decision the Captain made for safety reasons and because the equipment was not yet in optimal condition.

Fig. 5. Lifeboat Operation
source: author's documentation

Interview Results

Researchers interviewed the Captain (overall ship responsibility), Third Officer (safety equipment readiness/maintenance), and Chief Engineer (engineering systems during training) on the MV Pacific Bulk—conducted after the observation to discuss safety procedures, emergency crew understanding, and management follow-up on findings.

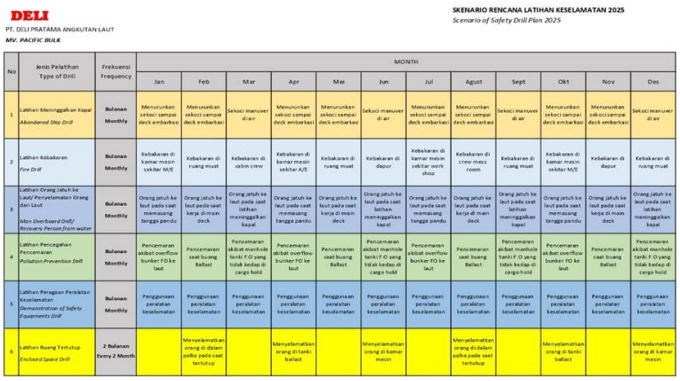
Figure 6 Captain Evaluation
source: author's documentation

Table2Interview Results

No	Question	Respondents' Answers	
1	How is the *abandon ship drill* on the MV Pacific Bulk being carried out? Has it been carried out according to procedure?	*Captain*	The implementation has been quite good, although not yet fully compliant with SOLAS procedures. We still conduct monthly drills. Upon the sound of the alarm, the crew assembles at the muster station, then performs a roll call and simulates boarding a lifeboat. However, sometimes the lifeboats are not fully lowered due to weather and safety considerations.
		Third Officer	Training is conducted routinely. Before each exercise, I check safety equipment like life jackets, lifebuoys, and lifeboats. When the alarm sounds, all crew members gather at the muster station, and I check the muster list. However, sometimes time is limited, so training doesn't go all the way to the final stage.

No	Question	Respondents' Answers	
		Chief Engineer	We also actively participated in each drill, ensuring the main engine was safely shut down and the emergency generator was ready. The drills went quite well and followed procedures. However, sometimes the drills were conducted concurrently with engine room work or loading and unloading, resulting in slightly shorter durations.
		Cadet	The drill was carried out according to procedure. When the alarm sounded, we immediately went to the muster station. I assisted the officer in checking life jackets and recording crew attendance. Sometimes the drill didn't reach the stage of lowering the lifeboats.
	Based on the views of the four informants, the implementation of *abandon ship drill* on MV. Pacific Bulk has been carried out periodically and quite well. The main stages such as sounding the alarm, gathering the crew at the muster station, and the attendance checklist have been carried out. However, the exercise has not fully complied with SOLAS procedures because the lowering of lifeboats is not always carried out, due to considerations of weather, safety, and ship operational activities.		
2	What is the level of preparedness and understanding of the ship's crew in dealing with emergencies on board?	*Captain*	The crew's readiness was quite good, understanding their respective positions and duties based on the muster list. Several new crew members needed guidance to better respond to the alarm.
		Third Officer	The readiness of the ship's crew is classified as good, especially for experienced crew who understand their roles and responsibilities. Meanwhile, new ship crews and cadets are still confused and need training on safety procedures.
		Chief Engineer	In the engine section, all crew members understood their respective roles according to procedures, such as shutting down the main engine, shutting off the fuel system, and ensuring the emergency generator was operational. This training was deemed effective in improving discipline in the event of an emergency.
		Cadet	The entire crew actively participated and understood their respective roles during the training. Although some were confused due to not understanding their positions at the muster stations.
	Overall, the crew's readiness and understanding were considered good, especially among experienced crew members. They understood their duties and responsibilities as outlined in the muster list, including emergency procedures in the engine room. However, new crew members and cadets still needed further training to improve their alertness to alarms, use safety equipment, and determine muster station positions.		
3	What obstacles often arise during the implementation of *abandon ship drill*s?	*Captain*	The main obstacles to this drill are weather and the ship's busy operational activities. When ships are loading and unloading or encountering adverse weather conditions such as strong winds and large waves, activities are often postponed or only partially implemented to avoid endangering the crew's safety.
		Third Officer	A common obstacle during this drill is a lack of coordination between the deck and engine room departments. This is caused by ongoing work activities and communication disruptions, such as unstable walkie-talkie signals. Proper planning and regular post-exercise evaluations can address these issues, ensuring more effective implementation in the next exercise.
		Chief Engineer	Technical constraints that commonly occur during *abandon ship drill*s, especially with lifeboat engines. Because they are rarely used under normal operational conditions, lifeboat engines sometimes require maintenance and warm-up before starting, thus requiring longer time. To overcome this, all safety equipment is routinely checked and maintained to ensure that all systems are functioning properly and ready for use.
		Cadet	Obstacles encountered in carrying out abandon ship operations are usually bad weather, time constraints, and lack of commu-

No	Question		Respondents' Answers
			nication between departments. Furthermore, cadets and new crew members are sometimes confused about using life jackets or getting to the nearest muster station. However, this drill can improve the crew's understanding and preparedness when facing emergencies.
	The main obstacles to the *abandon ship drill* included bad weather, time constraints due to the ship's busy operational schedule, and a lack of coordination and communication between departments. Furthermore, technical issues with the lifeboat engines and the limited experience of the new crew also impacted the smooth running of the exercise.		
4	Do all crew members know their respective duties and responsibilities according to the muster list?	*Captain*	Administratively, the entire crew had been familiarized with the division of duties on the muster list, including responsibilities at the muster station and in the lifeboats. However, during the impromptu drill, several crew members were still not fully performing their duties and required additional guidance.
		Third Officer	The division of duties was clear and posted in strategic, easily visible areas, and explained during safety meetings. However, during the impromptu implementation, it was apparent that not all crew members immediately took the initiative to fulfill their responsibilities, resulting in ineffective initial coordination. This is reflected in the delays in gathering and the need for additional direction from officers.
		Chief Engineer	In the engine room, all personnel were familiar with the muster list, including the emergency shutdown procedure. However, before leaving the engine room, time was required to ensure the machinery was safe. This process delayed the crew's arrival at the muster station. Nevertheless, this measure was taken to ensure the ship's operational safety.
		Cadet	I had studied the muster list and understood my role in assisting officers in preparing safety equipment. However, when an alarm suddenly sounded, I briefly checked the type of alarm before heading to the muster station. This demonstrated that I had some understanding, but my experience and response time still needed improvement.
	In general, the crew has understood the division of tasks according to the muster list through familiarization activities and safety meetings. However, during the implementation of the sudden drill, there were still delays in response and a lack of spontaneous reflexes from the crew, so that preparedness was not fully optimal. Therefore, although the understanding aspect has been fulfilled, it is necessary to improve operational preparedness through more consistent and continuous training to develop a spontaneous response to the sound of the emergency alarm.		



DELI

PT. DELI PRATAMA ANGKUTAN LAUT

MV. PACIFIC BULK

SKENARIO RENCANA LATIHAN KESELAMATAN 2025

Scenario of Safety Drill Plan 2025

No	Jenis Pelatihan Type of Drill	Frekuensi Frequency	MONTH											
			Jan	Feb	Mar	Apr	Mei	Jun	Jul	Agust	Sept	Okt	Nov	Des
1	Latihan Meninggalkan Kapal *Abandened Ship Drill*	Bulanan Monthly	Menurunkan sekoci sampai deck embarkasi	Menurunkan sekoci sampai deck embarkasi	Sekoci manuver di air	Menurunkan sekoci sampai deck embarkasi	Menurunkan sekoci sampai deck embarkasi	Sekoci manuver di air	Menurunkan sekoci sampai deck embarkasi	Menurunkan sekoci sampai deck embarkasi	Sekoci manuver di air	Menurunkan sekoci sampai deck embarkasi	Menurunkan sekoci sampai deck embarkasi	Sekoci manuver di air
2	Latihan Kebakaran *Fire Drill*	Bulanan Monthly	Kebakaran di kamar mesin sekitar M/E	Kebakaran di ruang muat	Kebakaran di cabin crew	Kebakaran di kamar mesin sekitar A/E	Kebakaran di ruang muat	Kebakaran di dapur	Kebakaran di kamar mesin sekitar work shop	Kebakaran di crew mess room	Kebakaran di ruang muat	Kebakaran di kamar mesin sekitar M/E	Kebakaran di dapur	Kebakaran di ruang muat
3	Latihan Orang Jatuh ke Laut/ Penyelamatan Orang dari Laut *Man Overboard Drill/ Recovery Person from water*	Bulanan Monthly	Orang jatuh ke laut pada saat latihan meninggalkan kapal	Orang jatuh ke laut pada saat memasang tangga pandu	Orang jatuh ke laut pada saat kerja di main deck	Orang jatuh ke laut pada saat memasang tangga pandu	Orang jatuh ke laut pada saat kerja di main deck	Orang jatuh ke laut pada saat latihan meninggalkan kapal	Orang jatuh ke laut pada saat memasang tangga pandu	Orang jatuh ke laut pada saat kerja di main deck	Orang jatuh ke laut pada saat latihan meninggalkan kapal	Orang jatuh ke laut pada saat memasang tangga pandu	Orang jatuh ke laut pada saat kerja di main deck	Orang jatuh ke laut pada saat latihan meninggalkan kapal
4	Latihan Pencegahan Pencemaran *Pollution Prevention Drill*	Bulanan Monthly	Pencemaran akibat overflow bunker FO ke laut	Pencemaran saat buang Ballast	Pencemaran akibat manhole tank F.O yang tidak kedap di cargo hold	Pencemaran akibat overflow bunker FO ke laut	Pencemaran saat buang Ballast	Pencemaran akibat manhole tank F.O yang tidak kedap di cargo hold	Pencemaran akibat overflow bunker FO ke laut	Pencemaran saat buang Ballast	Pencemaran akibat manhole tank F.O yang tidak kedap di cargo hold	Pencemaran akibat overflow bunker FO ke laut	Pencemaran saat buang Ballast	Pencemaran akibat manhole tank F.O yang tidak kedap di cargo hold
5	Latihan Peragaan Peralatan Keselamatan *Demonstration of Safety Equipments Drill*	Bulanan Monthly	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan	Penggunaan peralatan keselamatan
6	Latihan Ruang Tertutup *Enclosed Space Drill*	2 Bulanan Every 2 Month		Menyelamatkan orang di dalam pelka pada saat tertutup		Menyelamatkan orang di tanki ballast		Menyelamatkan orang di kamar mesin		Menyelamatkan orang di dalam pelka pada saat tertutup		Menyelamatkan orang di tanki ballast		Menyelamatkan orang di kamar mesin

Fig.7. Monthly Report

source: author's documentation

Research results (observation + interviews with Captain, Third Officer, Chief Engineer, Cadet) on MV. Pacific Bulk: *Abandon ship drill* is generally good, involving the entire crew, in accordance with SOLAS 1974 Ch. III Reg. 19 (minimum monthly).

However, it is not yet completely procedural: Several times it only reached the embarkation deck (without water maneuvers) due to weather and busy operations.

Data analysis

Implementation of the *abandon ship drill* on MV. Pacific Bulk: Good and routine efforts (SOLAS 1974 Ch. III Reg. 19), improve understanding of emergency/safety procedures—although effectiveness varies, does not meet international standards (especially simulation of lowering lifeboats).

PT. Deli Pratama Angkutan Laut

LAPORAN LATIHAN MENINGGALKAN KAPAL
Abandoned Ship Drill Report

Instruksi:
1. Lakukan Latihan Meninggalkan Kapal setiap bulan.
2. Checklist ini harus diisi oleh Mualim III dan disetujui oleh Nakhoda.

Instructions:
1. Conduct Abandoned Ship Drill monthly.
2. This checklist must be completed by 3rd Officer and approved by Master.

Nama Kapal : Vessel's Name	MV. PACIFIC BULK	Tanggal Laporan: Reporting Date	18 August 2024
Pelabuhan Asal : Port of Departure	Taboneo	Pelabuhan Tujuan : Port of Arrival	Morosi Anchorage
1 Tanggal Latihan: Drill Date	18 August 2024	5 Posisi kapal saat latihan: Ship position during drill	05° 02,46' U/S N/S N; 114° 15,25' T/B E/W E
2 Mulai Jam: Start (Hour)	10.00 LT	6 Posisi sekoci yg dipakai: Lifeboat's position in use	PORT & STBD
3 Selesai Jam : Finish (Hour)	10.30 LT	7 Nomor sekoci: Lifeboat No.	1 & 2
4 Total Waktu Latihan : Total Drill Hour	30 MINUTES	8 Komandan sekoci: Lifeboat commander	MASTER

9 Simulasi latihan (secara kronologis): Drill simulation (chronologically)

Carried out Abandon Ship Station Drill, simulated by all crew members to abandon ship when ship gets the emergency situation. Sounded Emergency general alarm and verbally announce to abandon the ship. All crew mustered at each boat, carrying equipment as per duties, simulated how to launching & start lifeboat engine. Drill was conducted satisfactory and good working order.

Drill also including as follows:
1. Checking all crew are suitably dressed and lifejackets are correctly used.
2. Starting and operating engine lifeboats.
3. Tested all emergency lighting system.
4. Explanation about launching procedure of liferaft.
5. Explanation about LSA (SART, pyrotechnic, etc.)

10 Total waktu yang diperlukan sejak sinyal penurunan sekoci dibunyikan s/d kesiapan Team di lokasi sekoci / Total time needed since Lifeboat's signal sounded until all Teams gathered on lifeboat location: 5 Menit / Minutes

11 Total waktu yang diperlukan sejak di lokasi hingga posisi penurunan / Total time needed since all Team gathered on Lifeboat's location until Lifeboats deployed: 10 Menit / Minutes

12 Kondisi sekoci / Lifeboat condition: ✓ Baik / Good; ☐ Rusak / Broken

13 Kondisi motor sekoci / Lifeboat's engine condition: ✓ Baik / Good; ☐ Rusak / Broken

14 Kelengkapan peralatan sekoci / Lifeboat's equipments: ✓ Lengkap / Complete; ☐ Tidak lengkap / Not complete

15 Keadaan tangki bahan bakar / Fuel tanks condition: ☐ Kosong / Empty; ☐ 1/2 / Half; ✓ Penuh / Full

16 Start motor sekoci (jam) / Lifeboat's engine turn on (hours): 10.10 LT

17 Stop motor sekoci (jam) / Lifeboat's engine turn off (hours): 10.20 LT

18 Jumlah ABK yang terlibat dalam latihan / Total crew involved in drill: 25 Orang / Person

19 Jumlah ABK yang absen karena tugas jaga / Crew absent due to watch keeping duty: 1 Orang / Person

20 ABK yang tidak mengikuti latihan karena alasan lain / Crew absent during exercise due to other reason: NIL Orang / Person

Sebutkan nama, jabatan dan alasannya : / Please mention name, position and reasons: NIL

21 Pemeriksaan kondisi dewi-dewi dan perlengkapannya / Check david's condition and its equipments: SATISFACTORY

22 Tanggal rencana latihan meninggalkan kapal berikutnya : / Next abandoned ship drill planned date: 18 September 2024

23 Evaluasi hasil latihan (diisi Nakhoda): / Drill evaluation (filled by Master)

CONTINUE IMPROVEMENT SHOULD BE DONE FROM TIME TO TIME

Dibuat oleh, Prepared by,	Disetujui oleh, Approved by,
Mualim III 3rd Officer	Nakhoda Master

K-080(6.1-6.4)K/SET

Figure 8 ***Abandon ship drill*** **Report**

source: author's documentation

Table3Compliance Indicators

No	SOLAS Chapter III Indicators	SOLAS Chapter III Regulation 19	Compliance with the rules
1	*Familiarization training*(Introductory training)	Under marine safety regulations, familiarization training is provided for new crew and cadets before starting work on board. This training is led by an officer and includes an explanation of the location of muster stations, evacuation routes, the use of personal safety equipment such as lifejackets and lifebuoys, and an understanding of the roles of each crew member as outlined in the muster list.	Familiarization training on board the MV Pacific Bulk was conducted in accordance with SOLAS Chapter III Regulation 19, particularly regarding the delivery of safety materials and supervision by authorized officers. However, to improve productivity and preparedness for the entire crew, especially cadets, the training still requires strengthening elements of evaluation and ongoing practical simulation.
2	*Abandon ship drill* procedure	In accordance with SOLAS Chapter III Regulation 19, ships are required to carry out *abandon ship drill* at least once a month, and are attended by all crew members. This includes sounding alarms (7 short, 1 long), gathering the crew at the muster station, checking attendance, using safety equipment such as lifejack-	The *abandon ship drill* on the MV. Pacific Bulk is carried out in accordance with the provisions of SOLAS Chapter III Regulation 19. The exercise begins with an emergency alarm of 7 short and 1 long. Then the crew is gathered at the muster station and their attendance is checked by officers. Furthermore, the use of personal safety equipment is carried out. However, the implementation is sometimes postponed and adjusted to operational schedules and weather conditions, so it is not always car-

No	SOLAS Chapter III Indicators	SOLAS Chapter III Regulation 19	Compliance with the rules
		ets, checking and simulating the lowering of lifeboats.	ried out on time.
3	Drill implementation reports and documentation	According to the provisions of SOLAS Chapter III Regulation 19, every ship is required to record and report all safety drill activities in the Logbook in a complete and detailed manner.	On the MV. Pacific Bulk, this administrative obligation is carried out by the Third Officer, who is responsible for recording training data periodically. Each *abandon ship drill* activity is recorded in the logbook, including the date, time, type of exercise, and a list of participating crew members. This is then verified by the Captain.

DISCUSSION

Procedures for carrying out *abandon ship drill* on the MV. Pacific Bulk

The research "Analysis of the Implementation of *Abandon ship drill* to Face Emergency Situations on Board the MV. Pacific Bulk" is based on observations + interviews during sea practice. *Abandon ship drill*: Emergency preparedness training that is fast, safe, and organized. Results: Routine monthly on the MV. Pacific Bulk, but not yet fully in accordance with SOLAS 1974 Ch. III Reg. 19..

1. Drill Implementation Stages

Fig.9. Drill Simulation
source: author's documentation

Procedure for abandoning the drill ship MV. Pacific Bulk: 7 short alarms + 1 long alarm → crew to muster station (muster list), roll call, check lifejacket/immersion suit → inspect lifeboat/davit/equipment (water, food, lights, communication); SART/EPIRB explanation; end with Captain's evaluation (crew response, repair instructions).

Observation constraints: Lifeboat lowering simulation was not comprehensive (only preparation), due to weather, work safety, busy operational schedule.

2. Suitability and inhibiting factors for the implementation of *abandon ship drill*

a. Time and operational limitations of the ship

Figure 10 Loading and Unloading Activities
source: author's documentation

*Drill*Often delayed due to loading and unloading schedules or busy shipping activities. This results in training not being conducted at fixed times, and sometimes covering only a portion of the procedures.

b. Weather conditions and work safety

External factors such as high waves, rain, and strong winds prevented the lifeboat launch simulation from being fully implemented. Crew safety concerns were the primary reason for the delay.

Level of Crew Readiness and Understanding in Facing Emergency Situations

MV. Pacific Bulk crew readiness/understanding level: Adequate; officers/seniors are good (alarm response, crew direction, command duties). Not optimal according to SOLAS 1974 Ch. III Reg. 19 & ISM Code Sect. 6 (resources/personnel).

Problem: Lack of familiarization of new crew/cadets → late muster, confused muster list assignments, uneven evacuation preparation; drills are considered a formality → reduce seriousness/emergency preparedness.

Figure 11 Safety Meeting
source: author's documentation

Raising awareness through regular safety meetings and training is necessary to ensure all crew members understand their roles and responsibilities in emergencies. This underscores the importance of ongoing familiarization and training to ensure effective emergency procedures and compliance with international safety standards.

Figure 13 Familiarization
source: author's documentation

IV. CONCLUSION

Based on the results of research conducted through observations and interviews on board the MV. Pacific Bulk, it can be concluded that the *abandon ship drill* has been carried out routinely every month in accordance with the provisions of SOLAS 1974 Chapter III Regulation 19, which includes sounding the emergency alarm, gathering the crew at the muster station, checking crew attendance, and briefings from the Captain and safety officer. However, the results of the study indicate that the implementation of the drill has not been fully optimal. This is evident from several obstacles found during the drill, such as the simulation of lowering the lifeboat that was not fully carried out, the condition of some safety equipment that was not well maintained, and the understanding of the duties of the crew that was not evenly distributed, especially among new crew and cadets who were still unfamiliar with the contents of the muster list and emergency procedures. These conditions indicate that the level of crew preparedness in facing emergencies still needs to be improved through increased safety familiarization, regular equipment maintenance according to ISM Code Section 10, and the implementation of post-exercise evaluations. Thus, the implementation of *abandon ship drill* on the ship is expected to run more effectively so that the crew's readiness in facing emergencies can be in accordance with international shipping safety standards.

The level of crew readiness and understanding is quite good, especially among experienced crew who understand the procedures and responsibilities in the muster list. However, some new crew and cadets still show a lack of discipline and seriousness in participating in training and do not actively participate in post-drill evaluation activities. Therefore, limited equipment, lack of discipline during training, and weak evaluation are key factors that need to be addressed to improve crew preparedness for emergencies overall and ensure implementation is more effective and runs according to international standards.

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