Safety and Emergency Response



Safety and Emergency Response

Topics

- Personal Safety and Risk Management at Sea
- Emergency Procedures and Incident Reporting

Learning Objectives

- Understand common shipboard hazards.
- Learn how to identify and manage risks.
- Understand emergency procedures onboard.
- Know how to report incidents and near misses.
- Promote a positive safety culture.



PART 1

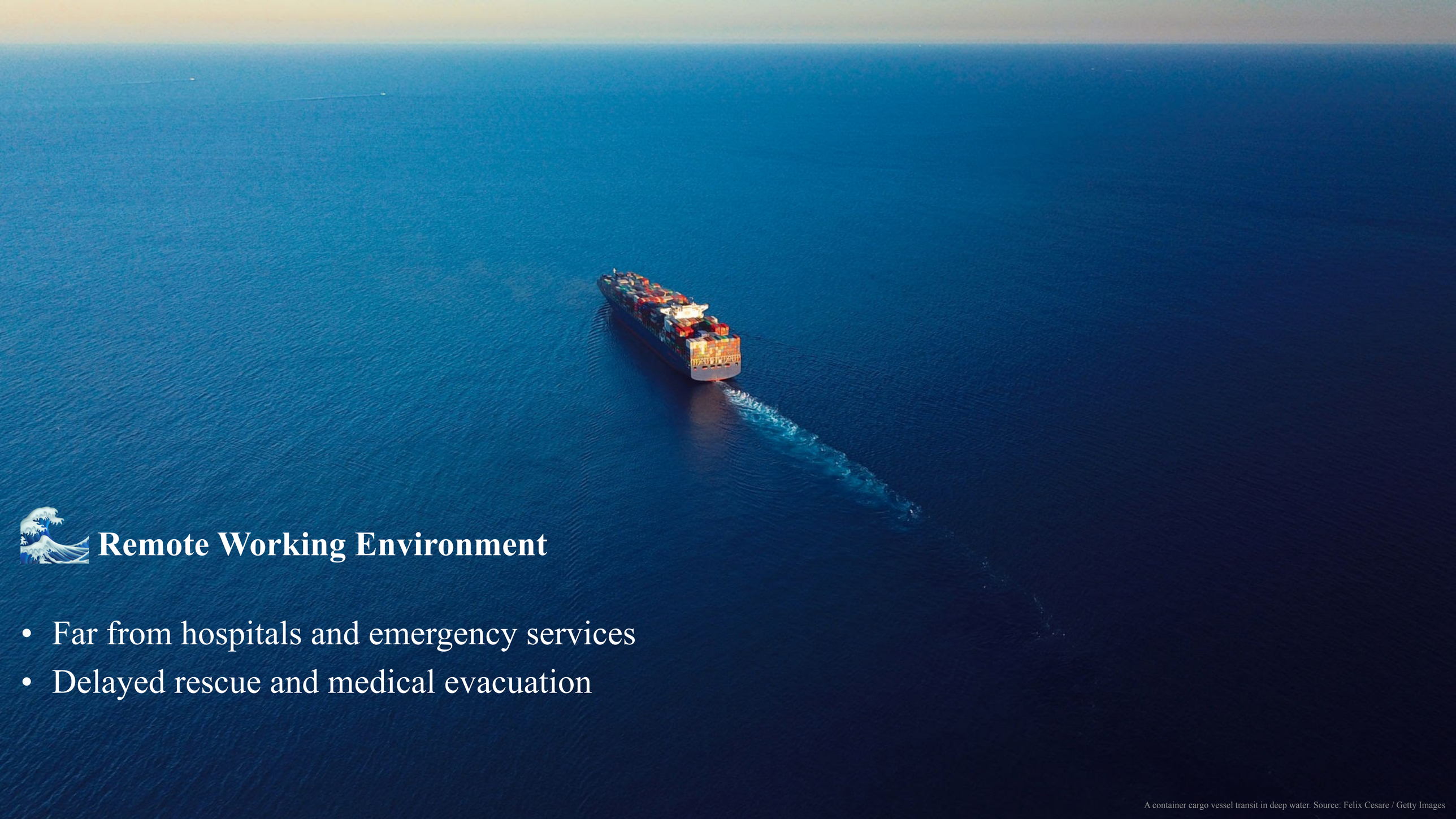
Personal Safety and Risk Management at Sea

Why Safety Matters at Sea

Why Safety So Important ?

Working at Sea is Different from Working Ashore

An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology



🌊 Remote Working Environment

- Far from hospitals and emergency services
- Delayed rescue and medical evacuation

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Limited Medical Assistance

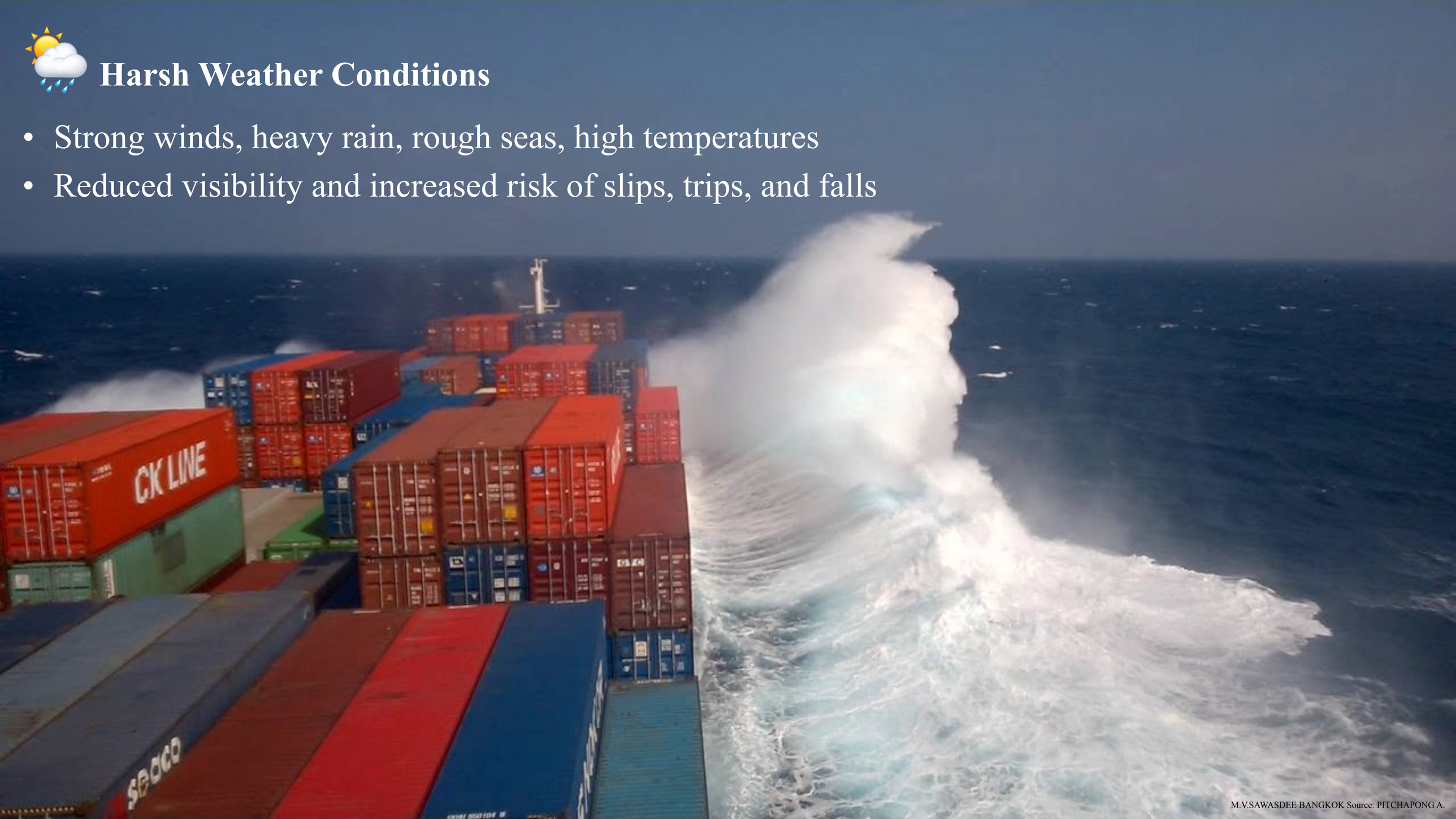
- Only basic medical facilities onboard
- Crew may need to provide first aid until professional help is available



Coast Guard helicopter conducting a hoist rescue at sea. Source: Jerry Ballard / Getty Images

Harsh Weather Conditions

- Strong winds, heavy rain, rough seas, high temperatures
- Reduced visibility and increased risk of slips, trips, and falls

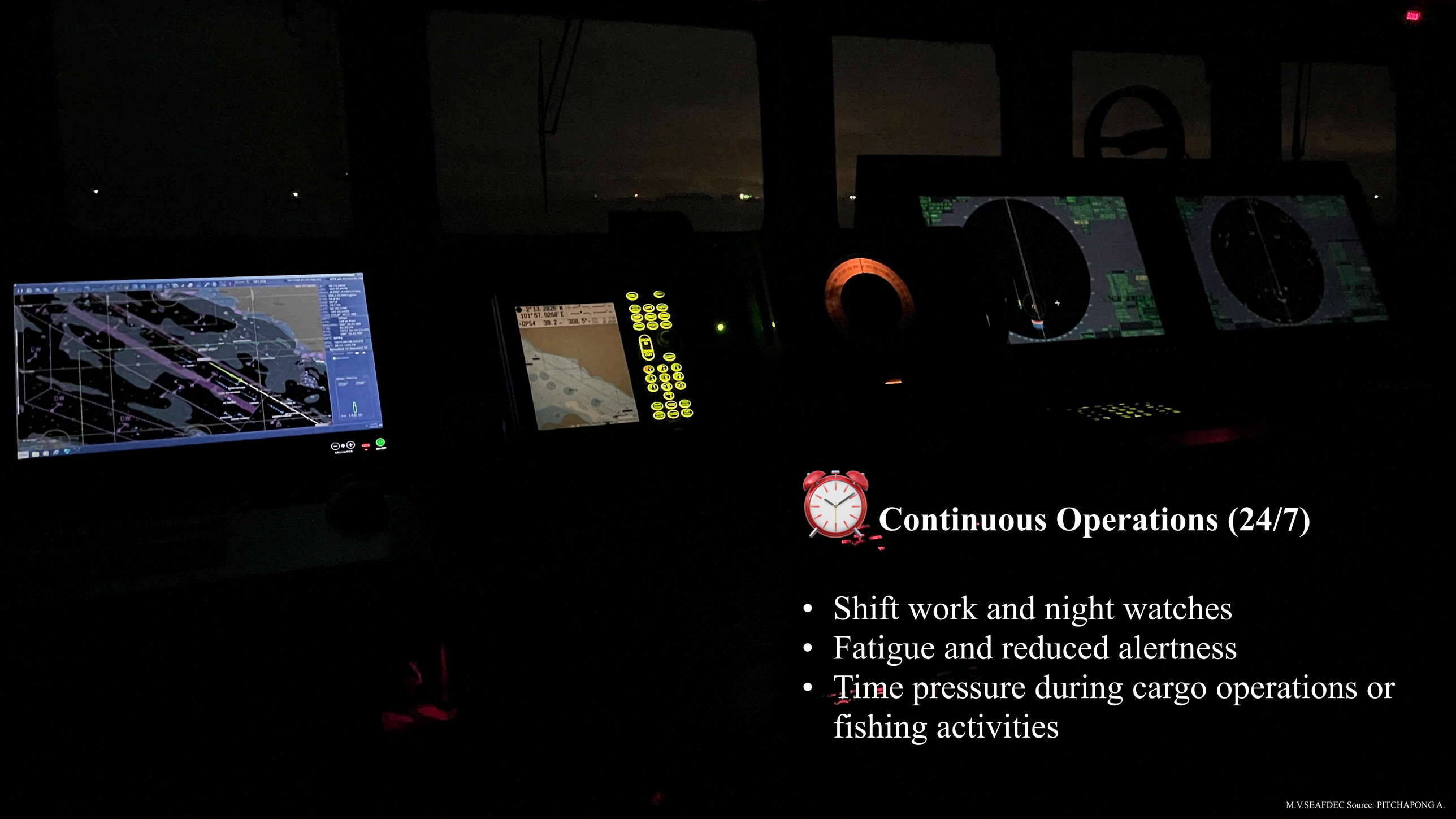


M.V.SAWASDEE BANGKOK Source: PITCHAPONG A.



Heavy Machinery and Hazardous Equipment

- Cranes, winches, mooring equipment
- Rotating machinery
- Electrical equipment
- High-pressure hydraulic and pneumatic systems



Continuous Operations (24/7)

- Shift work and night watches
- Fatigue and reduced alertness
- Time pressure during cargo operations or fishing activities

M.V.SEAFDEC Source: PITCHAPONG A.



👥 Human Factors

- Fatigue
- Complacency
- Poor communication
- Stress
- Lack of situational awareness

Fatigue & Stress: An exhausted officer struggling on watch. Source: Orca AI / Bridge Under-Manning Undermines the Value of Safety Technology

Personal Safety

What is Personal Safety?





Personal Safety

Personal Safety is the responsibility of every seafarer to protect themselves and others from injury by following safe working practices, identifying hazards, and taking appropriate precautions before, during, and after every task.

Protect Yourself and Others

- Think safely before acting.
- Consider how your actions affect your coworkers.





Follow Procedures

- Comply with the Safety Management System (SMS).
- Follow Standard Operating Procedures (SOPs).
- Never take shortcuts.



Wear Appropriate PPE

- Select PPE based on the task and risk assessment.
- Inspect PPE before use.
- Wear PPE correctly at all times.



👀 Maintain Situational Awareness

- Stay alert to changing conditions.
- Watch for moving equipment, weather changes, and nearby personnel.



⚠ Report Hazards Immediately

- Report unsafe acts and unsafe conditions.
- Report near misses before they become accidents.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

🤝 Support Your Teammates

- Communicate clearly.
- Look out for one another.
- Stop unsafe work if necessary.



Common Hazards on board



Physical Hazards

- Slips, Trips, and Falls
- Noise and Vibration
- Extreme Heat or Cold
- Poor Lighting



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Mechanical Hazards

- Hydraulic and Pneumatic Systems
- Rotating Machinery
- Cranes and Winches
- Mooring Equipment



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Electrical Hazards

- Damaged Cables
- Exposed Electrical Parts
- Faulty Equipment
- Electrical Maintenance



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Chemical hazards are substances that can cause harm to people, property, or the environment through inhalation, skin contact, ingestion, or fire and explosion.

CORROSIVE

Can cause severe skin burns and eye damage.

Examples:
Sulfuric acid, Hydrochloric acid, Caustic soda

TOXIC

Harmful or fatal if inhaled, swallowed or absorbed.

Examples:
Ammonia, Pesticides, Hydrogen sulfide

IRRITANT

Causes skin, eye or respiratory irritation.

Examples:
Detergents, Degreasers, Cleaning chemicals



FLAMMABLE

Easily ignite and may cause fire or explosion.

Examples:
Paint thinner, Acetone, Gasoline, Alcohol

OXIDIZING

May cause or intensify fire.

Examples:
Hydrogen peroxide, Sodium hypochlorite, Oxygen

COMPRESSED GAS

Contains gas under pressure; may explode if heated.

Examples:
Oxygen, Acetylene, Nitrogen, CO_2

SAFE HANDLING

- Read the Safety Data Sheet (SDS) before use.
- Understand the hazard labels and symbols.
- Wear the correct PPE.
- Use in well-ventilated areas.
- Do not mix incompatible chemicals.
- Store chemicals properly and separately.
- Clean up spills immediately and dispose properly.
- Report spills, exposures or incidents immediately.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

HIGH-RISK WORK ACTIVITIES

High-risk work activities have a greater potential to cause serious injury, illness, fatality, or major damage. Always plan, assess the risks, and control them before starting any work.

1 WORKING AT HEIGHT



- Risk of fall from height
- Use fall protection and secure tools and materials

2 HOT WORK (WELDING, CUTTING, GRINDING)



- Risk of fire, explosion, burns
- Check for flammables, use fire watch, have fire equipment ready

3 CONFINED SPACE ENTRY



- Risk of asphyxiation, toxic exposure, explosion
- Obtain permit, test atmosphere, ventilate, have standby

4 LIFTING OPERATIONS



- Risk of being struck by falling load
- Use certified equipment, check rigging, keep clear of suspended load

5 WORKING WITH ENERGY / ISOLATION



- Risk of unexpected start-up, electrical shock, release of energy
- Isolate, lock out, tag out and verify before work

6 WORKING OVER WATER



- Risk of falling overboard
- Wear lifejacket, use safety line, maintain 3-point contact

7 PRESSURE SYSTEMS



- Risk of explosion, leaks, injection
- Depressurize, isolate and verify before opening

8 CHEMICAL HANDLING



- Risk of poisoning, burns, environmental harm
- Read SDS, wear PPE, ensure ventilation, handle and store properly

9 WORKING IN HAZARDOUS WEATHER



- Risk of slips, falls, equipment damage
- Monitor weather, secure equipment, postpone if unsafe

10 DRIVING / MOBILE EQUIPMENT



- Risk of collision, overturn, crushing
- Trained operator only, check equipment, follow routes and rules

KEY REMINDERS

- Always obtain a Permit to Work when required.
- Identify hazards and assess the risks.
- Communicate and coordinate with your team.
- Use the right equipment and PPE.
- Inspect equipment and workplace before starting.
- Stop work if unsafe. Report hazards immediately.

SAFETY IS EVERYONE'S RESPONSIBILITY

PLAN • ASSESS • CONTROL • COMMUNICATE • CHECK • ACT SAFE

Risk Management Process



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology

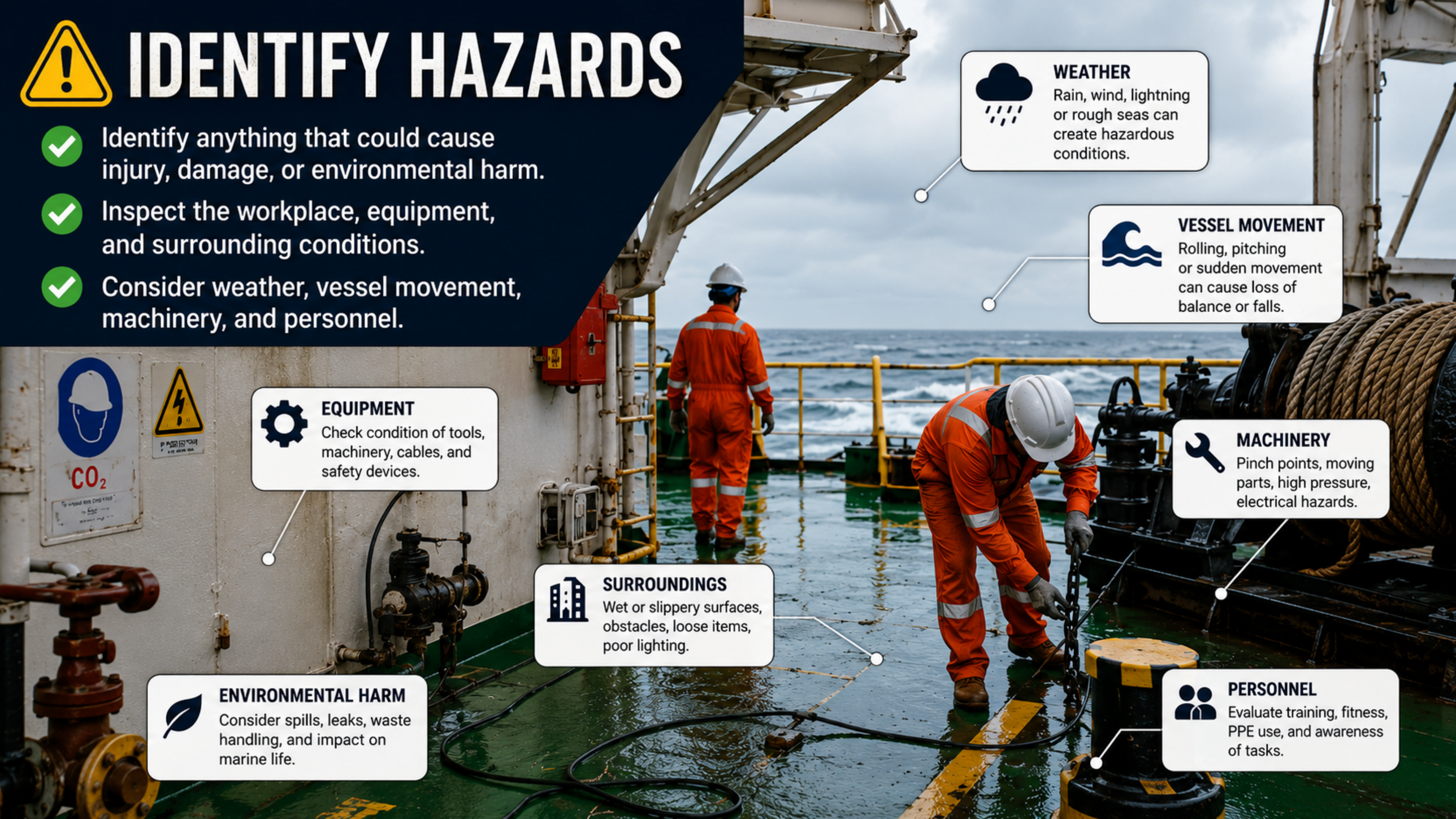


Risk Management is a systematic process used to identify hazards, evaluate risks, and implement control measures to prevent accidents and injuries before work begins.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

IDENTIFY HAZARDS

- Identify anything that could cause injury, damage, or environmental harm.
- Inspect the workplace, equipment, and surrounding conditions.
- Consider weather, vessel movement, machinery, and personnel.



WEATHER
Rain, wind, lightning or rough seas can create hazardous conditions.

VESSEL MOVEMENT
Rolling, pitching or sudden movement can cause loss of balance or falls.

EQUIPMENT
Check condition of tools, machinery, cables, and safety devices.

MACHINERY
Pinch points, moving parts, high pressure, electrical hazards.

SURROUNDINGS
Wet or slippery surfaces, obstacles, loose items, poor lighting.

ENVIRONMENTAL HARM
Consider spills, leaks, waste handling, and impact on marine life.

PERSONNEL
Evaluate training, fitness, PPE use, and awareness of tasks.

ASSESS RISKS

A 3-step process to make informed decisions and keep people, assets, and the environment safe.

1. **DETERMINE HOW LIKELY THE HAZARD IS TO OCCUR.**
   Consider how often and under what conditions the hazard could occur.

2. **EVALUATE HOW SEVERE THE CONSEQUENCES COULD BE.**
   Consider the potential impact on people, assets, operations, and the environment.

3. **DECIDE WHETHER THE RISK IS LOW, MEDIUM, OR HIGH.**
   Use the risk matrix to determine the overall risk level and required action.



LIKELIHOOD

5	**Almost Certain** — Expected to occur in most circumstances.
4	**Likely** — Will probably occur in most circumstances.
3	**Possible** — Might occur at some time.
2	**Unlikely** — Could occur at some time.
1	**Rare** — May occur only in exceptional circumstances.

SEVERITY

5	**Catastrophic** — Death or multiple serious injuries, major damage, environmental catastrophe.
4	**Major** — Serious injury, significant damage, major environmental impact.
3	**Moderate** — Minor injury, moderate damage, some environmental impact.
2	**Minor** — First aid injury, minor damage, minimal environmental impact.
1	**Insignificant** — No injury, no damage, no environmental impact.

RISK MATRIX

LIKELIHOOD	SEVERITY 1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
5 Almost Certain	MEDIUM	HIGH	HIGH	HIGH	HIGH
4 Likely	MEDIUM	MEDIUM	HIGH	HIGH	HIGH
3 Possible	LOW	MEDIUM	MEDIUM	HIGH	HIGH
2 Unlikely	LOW	LOW	MEDIUM	MEDIUM	HIGH
1 Rare	LOW	LOW	LOW	MEDIUM	MEDIUM

LOW RISK

Acceptable.
Continue to monitor.

MEDIUM RISK

Acceptable with control measures.

Monitor and review.

HIGH RISK

Not acceptable.
Implement controls immediately.
Do not proceed until risk is reduced.

A container cargo vessel [illegible] Image: Felix Cesare / Getty Images

APPLY CONTROL MEASURES

Implement the best control measures to eliminate or minimize risks.

01 ELIMINATE THE HAZARD WHENEVER POSSIBLE.

Remove the hazard from the workplace or modify the process to eliminate exposure.

02 USE ENGINEERING CONTROLS, ADMINISTRATIVE CONTROLS, AND APPROPRIATE PPE.

Apply a combination of controls to reduce risk to as low as reasonably practicable.

03 CONDUCT A TOOLBOX TALK AND OBTAIN A PERMIT TO WORK (IF REQUIRED).

Communicate the work, hazards, and controls. Obtain authorization before starting the job.

HIERARCHY OF CONTROLS



- **Physically remove** the hazard.
- **Replace** the hazard with something safer.
- **Isolate** people from the hazard.
- **Change** the way people work.
- **Protect** the worker with Personal Protective Equipment.

APPROPRIATE PPE (USE THE RIGHT PPE FOR THE TASK)



TOOLBOX TALK

Discuss the task, identify hazards, control measures, and emergency procedures with the team.



PERMIT TO WORK

Obtain the required Permit to Work before starting work when required by the process or regulation.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

PERFORM THE WORK SAFELY

Work safely today, go home safely every day.



01 FOLLOW APPROVED PROCEDURES.

- Understand the task and follow procedures.
- Use the right tools and equipment.

02 MAINTAIN COMMUNICATION WITH TEAM MEMBERS.

- Keep everyone informed.
- Speak up if you have questions or concerns.

03 CONTINUOUSLY MONITOR FOR CHANGING CONDITIONS.

- Stay alert to surroundings.
- Reassess hazards throughout the task.

04 STOP WORK IMMEDIATELY IF NEW HAZARDS DEVELOP.

- Do not take risks.
- Report and control the hazard before continuing.

SAFETY IS EVERYONE'S RESPONSIBILITY

Look out for yourself and your team.
Working safely is working smart.

KEY REMINDERS

- BE ALERT
- WORK AS A TEAM
- FOLLOW PROCEDURES
- REPORT HAZARDS

ALWAYS ASK YOURSELF

- Do I understand the task?
- Have I communicated with the team?
- Have I checked the conditions?
- Is it safe to continue?

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

REVIEW AND IMPROVE

Continuous improvement makes our workplace safer.



01 EVALUATE WHETHER THE WORK WAS COMPLETED SAFELY.

- Review the work activities and outcomes.
- Verify that all hazards were controlled.
- Confirm no injuries, damage, or incidents occurred.

02 REPORT HAZARDS, NEAR MISSES, AND LESSONS LEARNED.

- Report all hazards and near misses.
- Share lessons learned with the team.
- Encourage open communication.

03 UPDATE PROCEDURES IF IMPROVEMENTS ARE IDENTIFIED.

- Review and revise procedures as needed.
- Implement improvements to reduce risk.
- Communicate updates to all relevant personnel.

CONTINUOUS IMPROVEMENT. ZERO HARM. SAFETY ALWAYS.

Every review, every report, every improvement makes our workplace safer for everyone.

KEY ACTIVITIES

REVIEW
Review the work and outcomes.

REPORT
Report hazards and near misses.

IMPROVE
Update and improve procedures.

CONTINUOUS IMPROVEMENT CYCLE

1. **REVIEW**
Evaluate the work and outcomes.

2. **REPORT**
Report hazards, near misses, and lessons learned.

3. **IMPROVE**
Update procedures and implement improvements.

4. **COMMUNICATE**
Share updates with the team.

5. **REPEAT**
Continually improve for a safer workplace.

A container cargo vessel transiting the water. Source: Felix Cesare / Getty Images

The Five Steps of Risk Management

- Identify Hazards

Hot surfaces, pressurized piping, electrical isolation, restricted workspace

- Assess Risks

Burns, release of pressure, slips, equipment damage

- Apply Controls

Isolate the system, depressurize the line, Lockout/Tagout (LOTO), wear PPE, conduct Toolbox Talk

- Perform the Work

Follow maintenance procedures, maintain communication, monitor for leaks or changing conditions

- Review & Improve

Confirm proper operation, remove LOTO, record the maintenance, discuss lessons learned



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Hierarchy of Controls



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology



The Hierarchy of Controls is a systematic approach to reducing workplace risks by applying the most effective control measures before relying on Personal Protective Equipment (PPE).

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ELIMINATION

Remove the hazard completely.

- **Remove the hazard completely.**
- **Stop unnecessary work.**
- **Remove damaged equipment from service.**
- **Perform maintenance in a safer location if possible.**

EXAMPLE:
Remove a damaged ladder from use instead of repairing it temporarily.



ELIMINATE THE HAZARD AT THE SOURCE | The most effective control is the one that removes the hazard completely.

SUBSTITUTION

Replace the hazard with a safer alternative.

Choose safer alternatives to reduce risk and protect people.

Replace the hazard with a safer alternative.

Use less hazardous chemicals.

Replace manual handling with mechanical lifting equipment.

Use safer tools or equipment.

EXAMPLE:
Use a water-based cleaning product instead of a highly corrosive solvent.

HAZARDOUS CHOICE	SAFER ALTERNATIVE
 Highly corrosive solvent	 Water-based cleaning product
 Manual handling of heavy load	 Mechanical lifting equipment
 Unsafe or inadequate tools	 Safer tools and equipment
 Maintenance in a hazardous location	 Maintenance in a safer location

SAFER ALTERNATIVES. LOWER RISK. BETTER OUTCOMES.

Substitution is a smart choice for a safer workplace.

ENGINEERING CONTROLS

Isolate people from the hazard using physical or mechanical solutions.

MACHINE GUARDS
Prevent contact with moving parts.

SAFETY BARRIERS
Separate people from hazardous areas.

VENTILATION SYSTEMS
Remove or reduce exposure to airborne contaminants.

EMERGENCY SHUTDOWN SYSTEMS
Quickly stop equipment to prevent or minimize harm.

NOISE INSULATION
Reduce exposure to excessive noise.

EXAMPLES OF ENGINEERING CONTROLS

MACHINE GUARDS

Machine Guard Installed On Rotating Shaft

SAFETY BARRIERS

Handrail Installed To Prevent Access To Hazardous Area

VENTILATION SYSTEMS

Portable Blower Used To Improve Ventilation In Enclosed Space

EMERGENCY SHUTDOWN SYSTEMS


Emergency Stop Button Installed For Quick Shutdown Of Machinery

NOISE INSULATION

Insulation Installed On Walls To Reduce Noise Exposure

ENGINEERING CONTROLS WORK BY ISOLATING PEOPLE FROM HAZARDS.

Safe today.
Safer tomorrow.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ADMINISTRATIVE CONTROLS

Reduce exposure through **procedures and supervision.**



1 RISK ASSESSMENT



Identify hazards, assess risks, and implement appropriate control measures.

2 PERMIT TO WORK (PTW)



Ensure high-risk tasks are reviewed and authorized before work begins.

3 TOOLBOX TALKS



Discuss hazards, controls, and safe work practices before starting the job.

4 SAFETY TRAINING



Provide employees with the knowledge and skills to work safely.

5 WARNING SIGNS



Use clear signs to alert and remind personnel of potential hazards.

6 JOB ROTATION



Rotate tasks among workers to reduce fatigue and minimize overexposure.

7 SAFE WORK PROCEDURES



Establish and follow step-by-step procedures to ensure work is performed safely and consistently.

EXAMPLE

Conduct a **Toolbox Talk** before entering a confined space.



- Review the job scope
- Discuss potential hazards
- Explain control measures
- Confirm everyone understands
- Authorize and start work safely

ADMINISTRATIVE CONTROLS STRENGTHEN SAFETY THROUGH PLANNING, COMMUNICATION, AND SUPERVISION.

Safe today.
Safer tomorrow.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Protect the worker when hazards cannot be completely eliminated.



1 SAFETY HELMET



Protects the head from impact, falling objects and electrical hazards.

2 GLOVES



Protects hands from cuts, abrasions, chemicals, heat and vibration.

3 SAFETY SHOES



Protect feet from impact, puncture, slips and hazardous materials.

4 EYE PROTECTION



Protect eyes from flying particles, dust, chemicals and splashes.

5 HEARING PROTECTION



Protect hearing from excessive noise that can cause hearing loss.

6 RESPIRATOR



Protects lungs from inhaling dust, fumes, gases and other harmful substances.

7 LIFEJACKET



Provides buoyancy and helps keep you safe in the water.

8 SAFETY HARNESS



Prevents falls from height and reduces the risk of serious injury.

REMEMBER:

PPE does **not** remove the hazard—it only reduces the severity of injury if an incident occurs.

WEAR IT CORRECTLY | INSPECT IT REGULARLY | MAINTAIN IT PROPERLY | USE IT EVERY TIME, EVERY TASK

SAFETY IS NOT OPTIONAL. IT'S PERSONAL.

Practical Example
Task: Grinding Rust on Deck

- Elimination

Remove and replace the corroded section during dry docking instead of grinding onboard, if practicable.

- Substitution

Use a low-spark grinding tool or a less hazardous surface preparation method.

- Engineering Controls

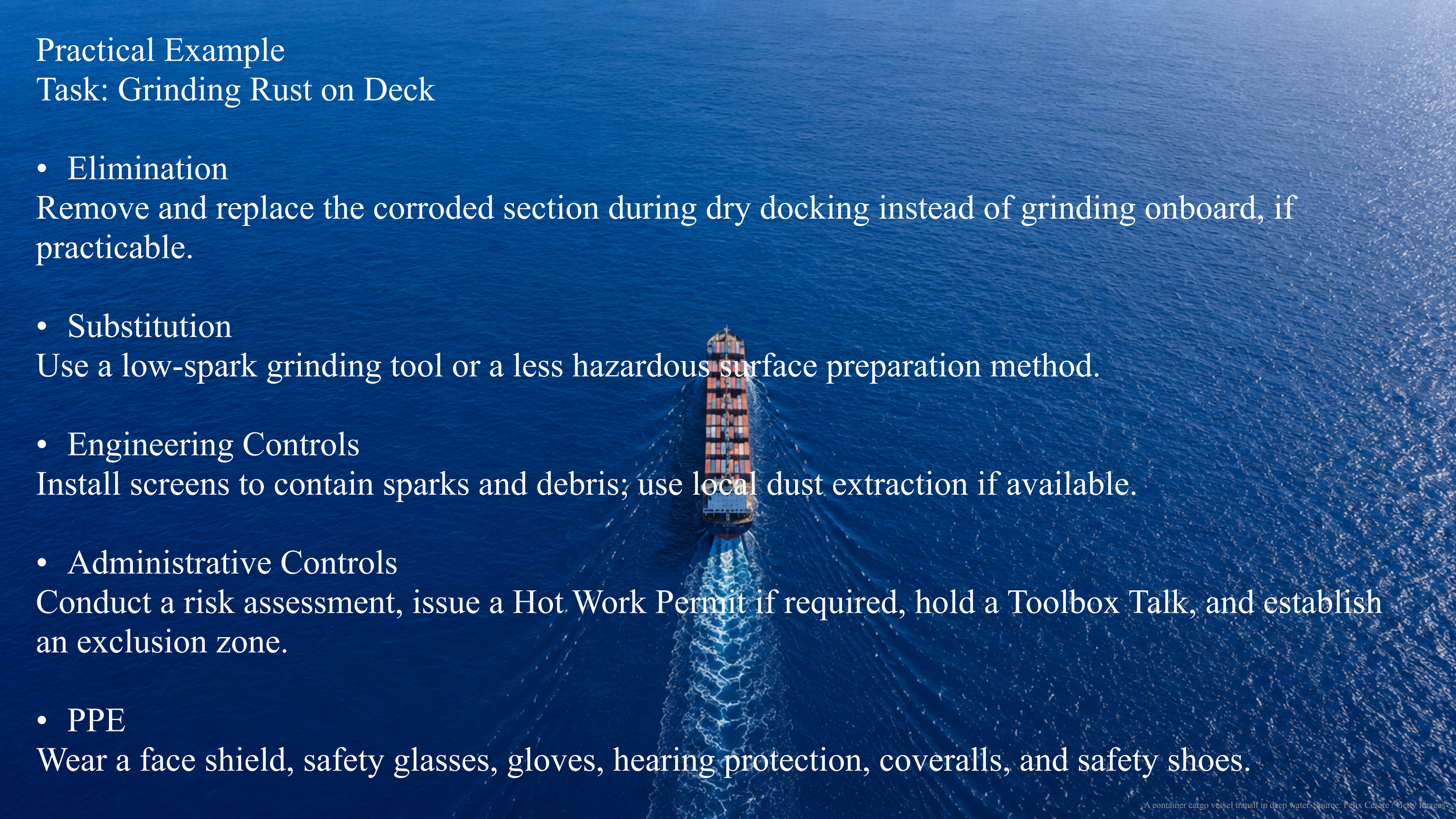
Install screens to contain sparks and debris; use local dust extraction if available.

- Administrative Controls

Conduct a risk assessment, issue a Hot Work Permit if required, hold a Toolbox Talk, and establish an exclusion zone.

- PPE

Wear a face shield, safety glasses, gloves, hearing protection, coveralls, and safety shoes.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Personal Protective Equipment (PPE)



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology



Personal Protective Equipment (PPE) is equipment worn to minimize exposure to workplace hazards that cannot be completely eliminated through engineering controls or safe work procedures.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

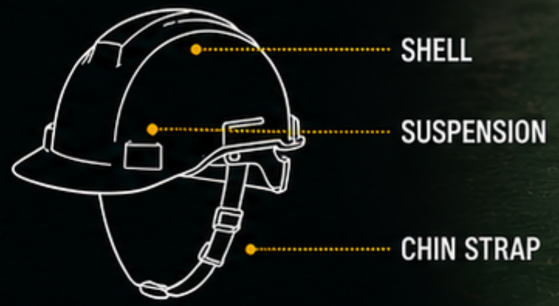
SAFETY HELMET

PROTECTS THE HEAD FROM FALLING OR FLYING OBJECTS.

INSPECT THE HELMET FOR CRACKS OR DAMAGE BEFORE USE.

INSPECTION CHECKPOINTS

- No cracks or dents
- Shell is clean and not brittle
- Suspension system is intact
- Chin strap and adjustment work properly
- Replace if damaged





A SAFETY HELMET IS YOUR FIRST LINE OF DEFENSE.
WEAR IT. CHECK IT. TRUST IT.

SAFE TODAY, SAFE TOMORROW.

REMEMBER

A small impact today can prevent a big injury tomorrow.



SAFETY GLOVES

- Protect hands from cuts, chemicals, heat, and abrasions.
- Select the correct type of gloves for the task.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



SAFETY SHOES

- Protect feet from impact, punctures, and slipping.
- Ensure shoes have slip-resistant soles and steel toe protection.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



EYE AND FACE PROTECTION

- Safety glasses or face shields protect against flying particles, sparks, chemicals, and splashes.
- Required during grinding, cutting, welding, and chemical handling.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



HEARING PROTECTION

- Earplugs or earmuffs reduce exposure to excessive noise.
- Required in engine rooms and other high-noise areas.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



👕 Coveralls

- Protect the body from dirt, minor abrasions, and hot surfaces.
- Wear properly fitted clothing that does not interfere with machinery.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



RESPIRATORY PROTECTION

- Dust masks or respirators protect against dust, fumes, vapors, and harmful gases.
- Use only the correct type specified for the hazard.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



LIFEJACKET

- Required when working over the side, near open water, or during emergency situations.
- Ensure it is correctly fitted and properly secured.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Human Factors in Maritime Safety



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology

FATIGUE

- Long working hours and shift work
- Lack of quality sleep
- Reduced concentration and slower reaction time



FIGHT FATIGUE – STAY ALERT, STAY SAFE

MANAGE YOUR WORK HOURS

Follow hours of rest regulations.
Avoid excessive overtime.

GET QUALITY SLEEP

Aim for 7–9 hours of rest in a quiet, dark, and comfortable environment.

TAKE REGULAR BREAKS

Short breaks improve alertness and performance.

EAT WELL AND STAY HYDRATED

Balanced meals and adequate water help maintain energy and focus.

STAY ACTIVE

Physical activity boosts energy levels and sleep quality.

LOOK OUT FOR EACH OTHER

Recognize signs of fatigue in yourself and others.
Speak up and support your shipmates.

SAFE SHIPS. SAFE CREW. SAFE FUTURE.

BE AWARE. SPEAK UP. LOOK OUT FOR EACH OTHER.
SAFETY IS EVERYONE'S RESPONSIBILITY.

STRESS



Heavy workload
Too many tasks and long hours can lead to physical and mental exhaustion.

Personal or family concerns
Worries outside of work can affect your focus and well-being on board.

Pressure during emergencies or port operations
High-pressure situations can lead to anxiety, poor decisions, and errors.

MANAGE STRESS – PROTECT YOURSELF AND YOUR CREW

PLAN AND PRIORITIZE
Organize your tasks. Focus on what's important.

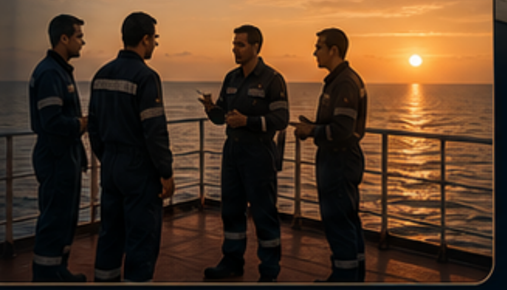
TAKE TIME TO RELAX
Use breaks wisely. Practice deep breathing.

TALK AND SHARE
Speak with someone you trust. Don't keep it inside.

GET ENOUGH REST
Quality sleep improves focus, mood and health.

STAY HEALTHY
Eat well, exercise regularly and stay hydrated.

REMEMBER
Stress is a normal response, but managing it is essential for safe operations and a healthy life at sea.



SAFE SHIPS. SAFE CREW. SAFE FUTURE.

BE AWARE. SPEAK UP. LOOK OUT FOR EACH OTHER.
SAFETY IS EVERYONE'S RESPONSIBILITY.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

POOR COMMUNICATION

Breakdowns in communication can lead to mistakes, delays, injuries, and even accidents.

Misunderstood instructions
Unclear or incomplete instructions can lead to errors and unsafe actions.

Language barriers
Different languages and limited vocabulary can cause confusion.

Failure to confirm critical information
Not confirming important details can result in wrong assumptions and serious consequences.



Always communicate clearly, listen actively, and confirm understanding.

HOW TO IMPROVE COMMUNICATION

SPEAK CLEARLY
Use simple, clear language. Avoid slang and unclear terms.

LISTEN ACTIVELY
Pay full attention and avoid interrupting.

CONFIRM AND CLARIFY
Repeat back important information. Ask questions if unsure.

USE STANDARD TERMINOLOGY
Use agreed terms, codes, and standard phrases.

RESPECT AND BE PATIENT
Respect differences and be patient with others.

GOOD COMMUNICATION SAVES LIVES

- [x] Clear instructions
- [x] Open two-way communication
- [x] Confirm understanding
- [x] Share critical information
- [x] Build a culture of speaking up

When in doubt, speak up! It could prevent an accident.

SAFE SHIPS. SAFE CREW. SAFE FUTURE.

COMMUNICATION IS A TEAM EFFORT.
WORK TOGETHER. STAY SAFE.

COMPLACENCY

OVERCONFIDENCE CAN LEAD TO CARELESS MISTAKES

Becoming overconfident with routine tasks

Ignoring procedures because "I've done this many times before"

BE AWARE

- Follow procedures every time
- Stay focused on the task
- Stop and think – mistakes happen when we let our guard down

STAY ALERT
STAY SAFE



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Complacency

- Becoming overconfident with routine tasks
- Ignoring procedures because "I've done this many times before"

LACK OF TRAINING OR EXPERIENCE

Inadequate training can lead to mistakes, injuries, equipment damage, and delays.

Inadequate knowledge of equipment or procedures

New crew unfamiliar with vessel operations



WHAT CAN HAPPEN?

- Incorrect use of equipment
- Failure to follow procedures
- Increased risk of accidents
- Damage to vessel and environment

TRAIN TODAY
SAIL SAFELY

WHAT CAN WE DO?

- Provide proper training and inductions
- Ensure understanding of procedures and equipment
- Supervise and mentor new crew
- Encourage questions and continuous learning

KNOWLEDGE. TRAINING. EXPERIENCE. THE FOUNDATION OF SAFE OPERATIONS.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

TIME PRESSURE

RUSHING NOW CAN MEAN REGRETS LATER

- **Rushing** to complete maintenance or cargo operations
- Taking **shortcuts** to save time
- **Skipping** safety checks



RISKS OF TIME PRESSURE

- Increased risk of accidents
- Equipment damage
- Environmental harm
- Work rework and delays
- Injury or loss of life

WHAT CAN YOU DO?

PLAN AHEAD
Good planning reduces pressure and stress.

FOLLOW PROCEDURES
Procedures exist to keep you and others safe.

DON'T SKIP CHECKS
Never skip safety checks, even when in a hurry.

COMMUNICATE
Speak up early if deadlines are unrealistic.

STOP AND THINK
A few extra minutes now can prevent a serious incident.

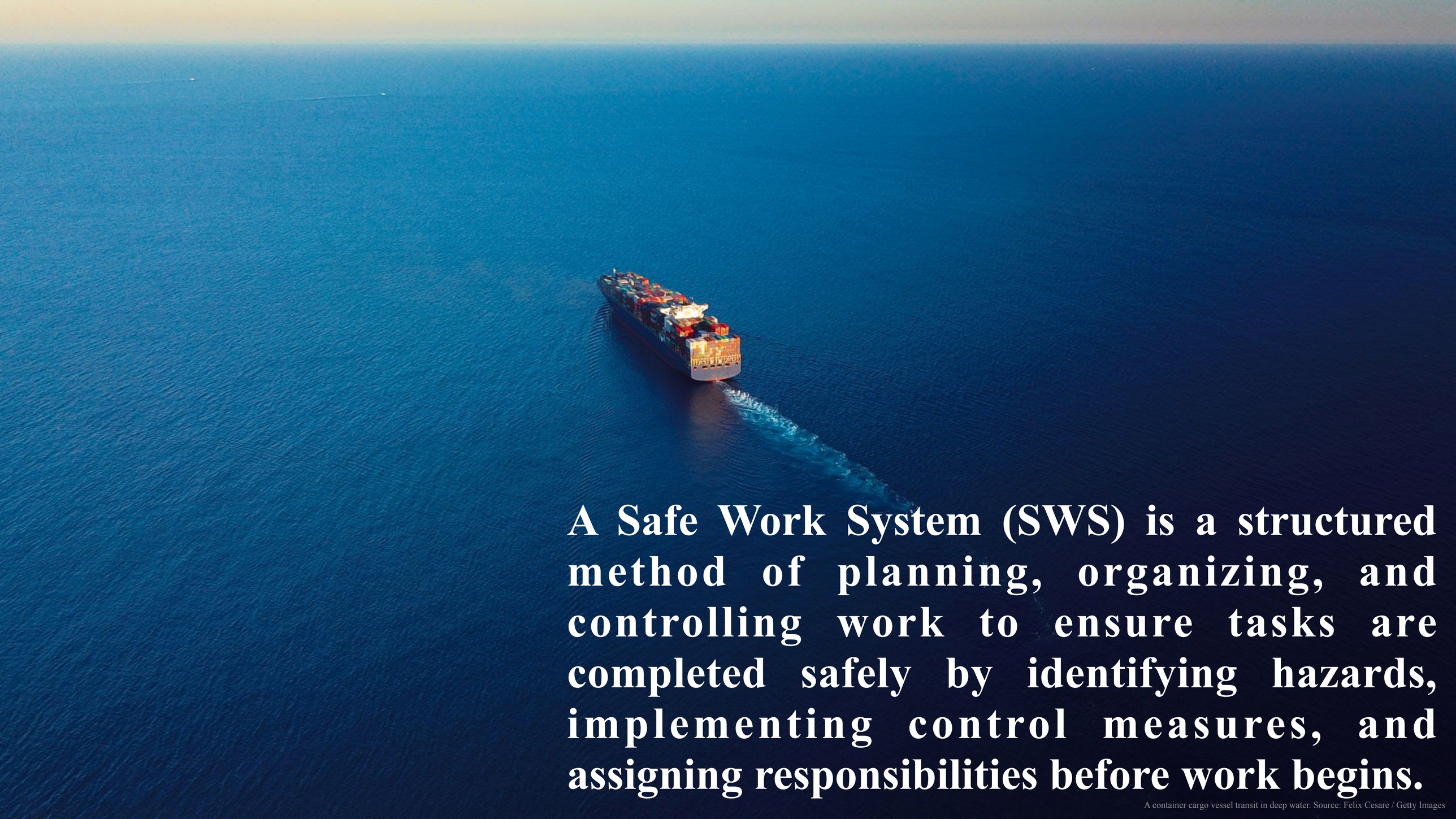
SAFETY IS NOT A RACE.
IT'S A CHOICE.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Safe Work Systems



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology



A Safe Work System (SWS) is a structured method of planning, organizing, and controlling work to ensure tasks are completed safely by identifying hazards, implementing control measures, and assigning responsibilities before work begins.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

RISK ASSESSMENT



THINK FIRST. PLAN SAFE. WORK SAFE.

- Identify **hazards** associated with the task.
- Evaluate the **level of risk.**
- Determine appropriate **control measures.**
- Review the assessment if work **conditions change.**

THE RISK ASSESSMENT PROCESS

1 IDENTIFY HAZARDS

- Look at the task, equipment, environment, and people.
- Identify anything that could cause injury, illness, damage, or loss.

2 EVALUATE THE RISK

LIKELIHOOD

SEVERITY	Rare	Unlikely	Possible	Likely	Almost Certain
Catastrophic					
Major					
Moderate					
Minor					
Insignificant					

- Consider the likelihood and severity.
- Determine the level of risk.

3 DETERMINE CONTROL MEASURES

ELIMINATE	Eliminate the hazard.
SUBSTITUTE	Replace with a safer alternative.
ENGINEERING CONTROLS	Isolate people from the hazard.
ADMINISTRATIVE CONTROLS	Change the way people work.
PPE	Protect the worker with appropriate PPE.

- Select control measures using the hierarchy of controls.
- Implement the controls.

4 REVIEW AND MONITOR

- Monitor the work and check if controls are effective.
- Review the assessment if work conditions, equipment, or people change.

EXAMPLES OF HAZARDS

- Working at height
- Moving machinery
- Slippery surfaces
- Electrical hazards
- Hazardous substances
- Manual handling

A GOOD RISK ASSESSMENT TODAY CAN PREVENT INJURIES, DAMAGE, AND LOSSES TOMORROW.

THINK. ASSESS. CONTROL. WORK SAFELY.

TOOLBOX TALK

TALK TODAY, WORK SAFE EVERY DAY

A short conversation today
can **prevent an accident** tomorrow.

OUR GOAL:
Everyone goes home safe, every day.



A GOOD PLAN. CLEAR COMMUNICATION. SAFE EXECUTION.

1 CONDUCT A PRE-JOB SAFETY BRIEFING

- Gather the team.
- Conduct the talk before starting the job.
- Make safety a priority.

2 DISCUSS THE WORK SCOPE AND SEQUENCE

- Explain what work will be done.
- Go through the steps in order.
- Ensure everyone understands.

3 IDENTIFY HAZARDS AND CONTROL MEASURES

- Identify hazards associated with the job.
- Discuss how to control the risks.
- Use the hierarchy of controls.

4 CONFIRM EACH PERSON'S RESPONSIBILITIES

- Assign roles and responsibilities.
- Confirm that everyone knows their job.
- Ensure competence for the task.

5 ENCOURAGE QUESTIONS AND OPEN COMMUNICATION

- Invite questions and feedback.
- Listen to concerns.
- Speak up for safety.

WHY IT MATTERS

- Prevents accidents and injuries
- Improves teamwork and understanding
- Saves time and reduces delays
- Builds a strong safety culture

SAFETY IS EVERYONE'S RESPONSIBILITY. | **A SAFE TEAM IS A STRONG TEAM.** | **WORK SAFE. GO HOME SAFE.**

PERMIT TO WORK (PTW)

A formal authorization required before carrying out **high-risk work.**

EXAMPLES OF WORK THAT REQUIRE PTW

HOT WORK
Welding, cutting, brazing, grinding, or using open flames.

CONFINED SPACE ENTRY
Entry into tanks, void spaces, or other confined areas.

WORKING ALOFT
Work at heights with risk of falling from one level to another.

ELECTRICAL WORK
Installation, testing, troubleshooting, or repair of electrical systeher.

HAZARDOUS CHEMICAL OPERATIONS
Handling, mixing, or transferring hazardous chemicals.

ISOLAITON OF MACHINERY
Maintenance or repair requiring isolation of energy sources (LOTO).

PTW PROCESS

1. **REQUEST** — Identify the work and submit PTW request.
2. **RISK ASSESSMENT** — Evaluate hazards and determine control measures.
3. **REVIEW & APPROVAL** — Authorize the permit after confirming controls are in place.
4. **EXECUTION** — Carry out the work as per the permit conditions.
5. **MONITORING** — Monitor the work and ensure controls remain effective.
6. **COMPLETION** — Complete the work, close the permit, and restore area.

KEY REMINDERS

- A valid PTW must be obtained before starting high-risk work.
- Work must only be done as specified in the permit.
- If conditions change, stop the work and review the permit.
- PTW does not replace safe judgment and responsibility.

THINK. PLAN. CHECK.
WORK SAFELY.
RETURN HOME SAFELY.

ONE PERMIT. ONE PLAN. ONE TEAM. ZERO ACCIDENTS.

SAFETY IS EVERYONE'S RESPONSIBILITY.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

LOCKOUT / TAGOUT (LOTO)

Control energy. Prevent injuries. Protect lives.



ISOLATE all energy sources

LOCK the isolation device

TAG with a warning tag

VERIFY zero energy before starting work

PREVENT accidental start-up or release of stored energy

FOLLOW THE 5 KEY STEPS OF LOTO

1 IDENTIFY ENERGY SOURCES



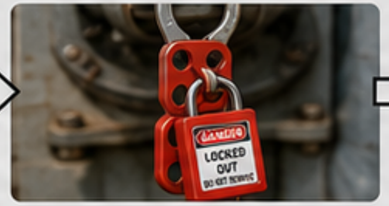
- Identify all types of energy (electrical, mechanical, hydraulic, pneumatic, thermal, chemical, gravity, etc.).
- Understand the equipment and its energy sources.

2 ISOLATE THE ENERGY



- Shut down the equipment.
- Use the designated isolation device (switch, breaker, valve, etc.) to disconnect the energy source.

3 LOCK THE ISOLATION DEVICE



- Apply a personal lock to the isolation device.
- Each worker applies their own lock.

4 ATTACH A WARNING TAG



- Attach a durable, standardized warning tag.
- Clearly write your name, date, and reason for lockout.

5 VERIFY ZERO ENERGY BEFORE WORK



- Try to start the equipment.
- Check for stored energy (pressure, capacitors, springs, elevated loads, etc.).
- Confirm zero energy state.
- Only then begin the work.

REMEMBER

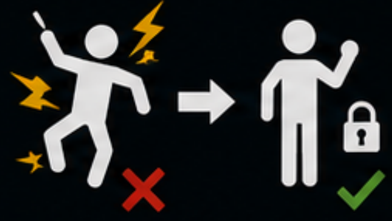
FAILURE TO CONTROL ENERGY CAN RESULT IN:

- Serious injury or death
- Equipment damage
- Production loss
- Environmental harm



WHY LOTO IS CRITICAL

- Prevents unexpected energization
- Prevents release of stored energy
- Protects workers and equipment
- Ensures compliance with safety regulations
- Builds a strong safety culture



LOTO BEST PRACTICES

- Use only approved LOTO devices and tags.
- Never share or remove someone else's lock or tag.
- Apply LOTO every time, even for short tasks.
- After work, ensure the area is clear and tools removed.
- Remove your lock and tag only when the work is complete.

LOCK IT. TAG IT. VERIFY IT.

CONTROL ENERGY. PROTECT LIVES.

CONFINED SPACE ENTRY

Plan Ahead. Work Safely. Save Lives.



BEFORE ENTERING:

- Obtain an approved Entry Permit.
- Test the atmosphere (oxygen, flammable gases, toxic gases).
- Ventilate the space.
- Establish continuous communication.
- Assign a trained standby person.
- Prepare rescue equipment and emergency procedures.

1. ENTRY PERMIT

Work cannot start without an approved Entry Permit.



2. ATMOSPHERE TESTING

Test before entry and continuously as needed.

ACCEPTABLE LIMITS

OXYGEN (O_2)	19.5% – 23.5%
FLAMMABLE GASES (LEL)	< 10%
CARBON MONOXIDE (CO)	< 25 ppm
HYDROGEN SULFIDE (H_2S)	< 10 ppm
OTHER TOXIC GASES	As per applicable standard



3. VENTILATION

Ventilate before entry and maintain airflow throughout the job.



4. COMMUNICATION

Maintain continuous communication between entrant and standby person.



5. STANDBY PERSON

A trained standby person must remain outside the space at all times.

- ✓ Monitors entrant
- ✓ Maintains communication
- ✓ Initiates rescue if needed
- ✓ Does not perform other duties

6. RESCUE & EMERGENCY

Have rescue equipment ready and know emergency procedures.

- Tripod / Davit arm
- Full body harness
- Retrieval device
- Rescue plan
- First aid kit
- Emergency contacts



REMEMBER

- Plan the work. Assess the risks.
- Follow the permit. Follow the plan.
- Verify the atmosphere.
- Stay in communication.
- Be ready to rescue.

IF IT'S NOT SAFE, DON'T ENTER. | NO PERMIT. NO ENTRY. | ZERO HARM. EVERY TIME. | SAFETY IS EVERYONE'S RESPONSIBILITY.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

HOT WORK PERMIT

Control the heat. Protect people, property and the environment.

REQUIRED FOR ACTIVITIES INVOLVING HEAT, SPARKS, OR OPEN FLAMES

WELDING | CUTTING | GRINDING | BRAZING

SAFETY PRECAUTIONS – FOLLOW ALL CONTROLS

REMOVE COMBUSTIBLE MATERIALS
- Remove or protect all flammable materials within the area.
- Floor, bulkheads, overheads and adjacent spaces.

ISOLATE FUEL SOURCES
- Close and isolate all fuel, oil, gas, and hydraulic lines.
- Blank off or cap open lines.

PREPARE FIREFIGHTING EQUIPMENT
- Provide suitable and inspected firefighting equipment.
- Know its location and how to use it.

ASSIGN A FIRE WATCH
- Assign a trained fire watch during the work.
- Fire watch must remain on duty during breaks.

MONITOR THE AREA AFTER WORK IS COMPLETED
- Inspect the area after work for hot spots or ignition.
- Continue monitoring for at least 30–60 minutes.

HOT WORK PERMIT

Permit No. HW-2024-0158

Date:	17 / 05 / 2024	Time:	09:00
Location:	Main Deck – Port Side		
Nature of Work:	Welding		
Description of Work:	Repair of handrail bracket		
Duration of Work:	From: 09:00	To:	13:00

PRECAUTIONS CHECKLIST (To be completed before work begins)	Yes
Remove combustible materials	✓
Isolate fuel sources	✓
Protect adjacent areas	✓
Prepare firefighting equipment	✓
Fire watch assigned	✓
Atmosphere tested (if applicable)	✓
Work area inspected	✓

FIRE WATCH			
Name:	A. Somchai	Contact (Radio/Phone):	Ch. 16

AUTHORIZED BY			
Name:	C. Wirachai	Position:	Chief Officer
Signature:		Date:	17 / 05 / 2024

PERMIT ACCEPTED BY			
Name:	B. Nattapong	Position:	Welding Fitter
Signature:		Date:	17 / 05 / 2024

SAFETY FIRST – PREPARE, PROTECT, PREVENT



HOT WORK PERMIT PROCESS

1. **PLAN THE WORK** – Identify the job, hazards and control measures.
2. **REQUEST PERMIT** – Request a Hot Work Permit from authorized person.
3. **ASSESS & PREPARE** – Inspect area, complete checklist and take precautions.
4. **APPROVE PERMIT** – Authorized person reviews and approves the permit.
5. **DO THE WORK** – Perform the work as per permit conditions.
6. **CLOSE OUT** – Inspect area, cancel permit and monitor the area.

IMPORTANT REMINDERS

- Never start hot work without an approved permit.
- Conditions can change – reassess if needed.
- Stop work if it becomes unsafe.
- Report any fire, smoke or unsafe condition immediately.
- Safety is everyone's responsibility.

THINK SAFETY. WORK SAFELY. GO HOME SAFE.

ONE PERMIT. ONE PLAN. ONE TEAM. ZERO FIRES.

SAFETY IS EVERYONE'S RESPONSIBILITY.

PART 2

Emergency Procedures and Incident Reporting

What is an Emergency?



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology

What is an Emergency?

An **emergency** is any unexpected event or situation that poses an immediate threat to:

- Human life and health
- The safety of the vessel
- Cargo or equipment
- The marine environment

An emergency requires **immediate action** to prevent injuries, loss of life, damage to property, or environmental pollution.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

FIRE AND EXPLOSION

UNDERSTAND THE RISKS. PREVENT THE DISASTER.



ENGINE ROOM FIRE

- High fuel and oil presence
- Hot surfaces and moving parts
- Ventilation can spread fire
- Activate fixed fire suppression system and raise the alarm



GALLEY FIRE

- Caused by cooking, oil or grease
- Keep cooking area clean
- Never leave cooking unattended
- Use suitable extinguishers (Class F / CO_2)



ELECTRICAL FIRE

- Caused by short circuit, overload or faulty equipment
- De-energize the system if safe to do so
- Use CO_2 or dry powder extinguishers



FUEL OR CARGO FIRE

- Highly flammable and hazardous
- Risk of explosion
- Stop fuel transfer if safe
- Use foam or dry chemical extinguishers

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

FLOODING

WATER CAN ENTER FAST. DAMAGE CAN BE SEVERE. ACT IMMEDIATELY.



HULL DAMAGE

- Collision, grounding or impact
- Breach or crack in the hull
- Rapid water ingress
- Inspect and report immediately



PIPE FAILURE

- Corrosion, fatigue or poor maintenance
- Burst or cracked pipes
- High pressure may cause flooding
- Isolate and repair the system



WATER INGRESS

- Openings, hatches or doors left open
- Heavy seas or green water on deck
- Water entering interior spaces
- Close and secure all openings



FAILURE OF WATERTIGHT INTEGRITY

- Watertight doors left open or not secured
- Damaged seals or gaskets
- Structural failure or poor maintenance
- Maintain watertight integrity at all times

ACT FAST. CONTAIN THE WATER. NOTIFY THE CREW. FOLLOW EMERGENCY PROCEDURES.

REPORT | COMMUNICATE | ISOLATE | PUMP OUT | REPAIR

A container cargo vessel [illegible] water. Source: [illegible] / Getty Images

MARINE HAZARDS

COLLISION

A MOMENT OF IMPACT CAN LEAD TO MAJOR CONSEQUENCES



COLLISION WITH ANOTHER VESSEL

- Poor lookout or visibility
- Navigation error
- Excessive speed
- Failure to follow COLREGs
- Can cause injury, fire, flooding and pollution



COLLISION WITH FLOATING OBJECTS

- Containers, logs, fishing gear, ice or other debris
- Can damage hull or propulsion
- May cause flooding or loss of maneuverability



DAMAGE DURING BERTHING OR UNBERTHING

- Impact with pier, quay or structures
- Inadequate fendering or mooring
- Poor communication or timing
- Can cause hull deformation, equipment damage or injury

ALWAYS MAINTAIN A SAFE DISTANCE AND PROPER LOOKOUT.
PLAN AHEAD. COMMUNICATE CLEARLY. NAVIGATE SAFELY.

GROUNDING

RUNNING AGROUND CAN ENDANGER THE SHIP, CREW AND ENVIRONMENT



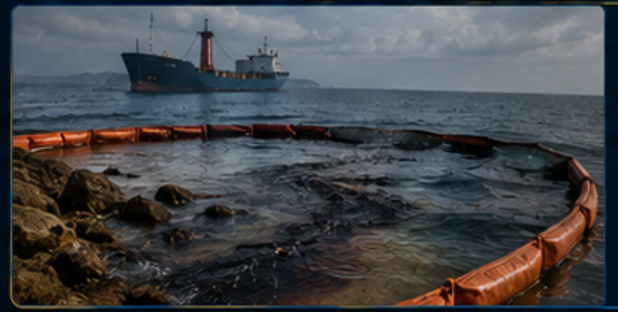
VESSEL RUNS AGROUND

- Navigation error or deviation from intended course
- Poor chart information
- Shallow water or uncharted areas
- Can lead to vessel damage and pollution



DAMAGE TO HULL OR PROPELLER

- Hull deformation, cracks or punctures
- Propeller or rudder damage
- Water ingress and loss of stability
- Expensive repairs and downtime



RISK OF POLLUTION

- Fuel, oil or cargo leakage
- Harms marine life and environment
- Legal penalties and clean-up costs
- Loss of reputation

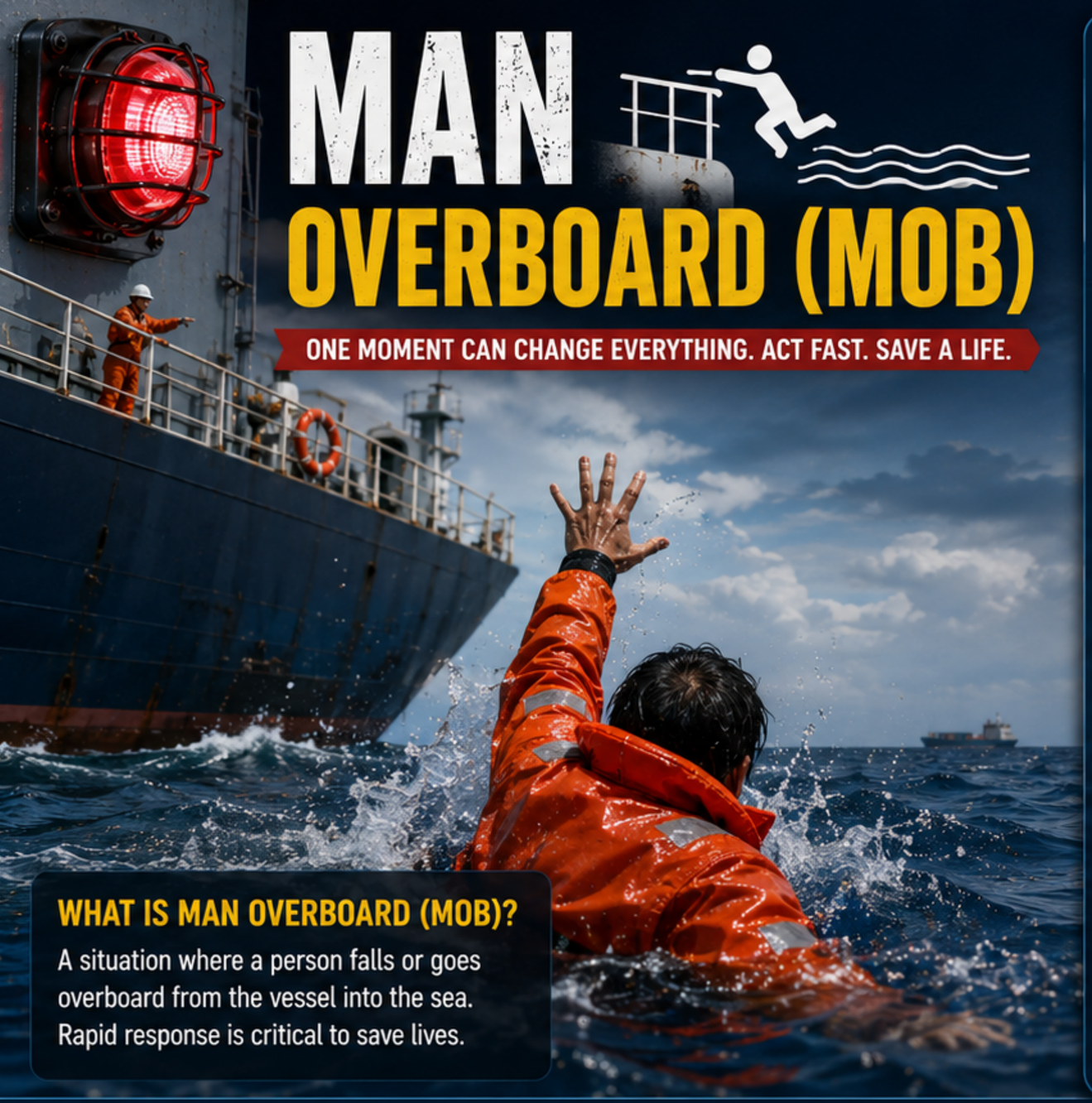
KNOW YOUR LIMITS. CHECK YOUR CHARTS. MONITOR YOUR POSITION.
ACT EARLY TO PREVENT GROUNDING.

LOOKOUT · CHECK CHARTS · MONITOR POSITION · COMMUNICATE

A container cargo vessel transit in deep water. Photo: Felix Cesare / Getty Images

MAN OVERBOARD (MOB)

ONE MOMENT CAN CHANGE EVERYTHING. ACT FAST. SAVE A LIFE.



WHAT IS MAN OVERBOARD (MOB)?

A situation where a person falls or goes overboard from the vessel into the sea. Rapid response is critical to save lives.

MOB SITUATION

- Crew member falls into the sea
- Immediate rescue actions required

IMMEDIATE RESCUE ACTIONS

1	2	3	4	5
SPOT	**ALERT**	**ACTION**	**MANEUVER**	**RECOVER**
Keep the person in sight. Point and shout "MAN OVERBOARD!"	Inform the bridge immediately. Press MOB button if available.	Throw a lifebuoy or buoyant object. Keep the person in sight.	Turn the vessel as per MOB procedure.	Recover the person safely using rescue equipment or boat.

PREVENTION IS BETTER THAN RESCUE

- ✓ Always wear lifejacket in high-risk areas
- ✓ Use safety harness when required
- ✓ Do not work alone on deck
- ✓ Stay alert and maintain a safe watch



ACT FAST. FOLLOW THE PROCEDURES. EVERY SECOND COUNTS.

SAFE CREW. SAFE VESSEL. SAFE OPERATIONS.

MEDICAL EMERGENCY

RAPID RESPONSE CAN SAVE LIVES. STAY CALM. ACT FAST.



SERIOUS INJURY



- Assess the scene and ensure safety.
- Provide first aid immediately.
- Stop bleeding and stabilize the injury.
- Request medical assistance.
- Evacuate the patient if necessary.

ILLNESS



- Monitor the person's condition.
- Give appropriate first aid.
- Ensure rest and keep warm if needed.
- Provide water or oral rehydration.
- Seek medical help if condition worsens.

CARDIAC ARREST



- Check responsiveness and breathing.
- Call for help and activate emergency alarm.
- Start CPR immediately.
- Use AED as soon as it is available.
- Continue until help arrives or recovery occurs.

CHEMICAL EXPOSURE



- Remove the person from the source.
- Rinse affected area with plenty of water.
- Remove contaminated clothing.
- Seek medical assistance immediately.
- Report the incident.

GENERAL ACTIONS

RAISE THE ALARM
Inform the bridge and activate the alarm.

COMMUNICATE
Give clear information about the situation.

ASSIST THE CASUALTY
Provide first aid within your capability.

RECORD & REPORT
Document the incident and inform as required.

SAFETY FIRST
Ensure your safety and the safety of others.

BE PREPARED. BE TRAINED. YOUR ACTION CAN MAKE THE DIFFERENCE.

EMERGENCY CALL: CONTACT BRIDGE

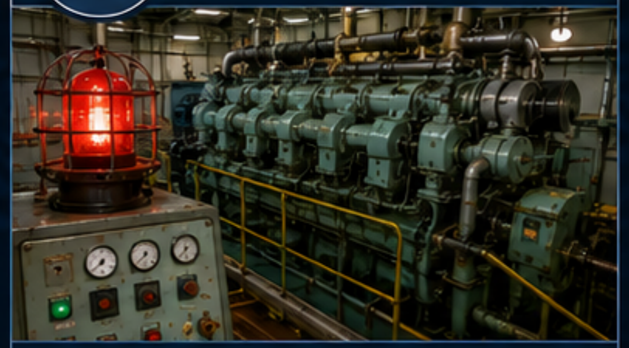
A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

MACHINERY FAILURE



MACHINERY CAN FAIL WITHOUT WARNING.
PREPARE. PREVENT. RESPOND.

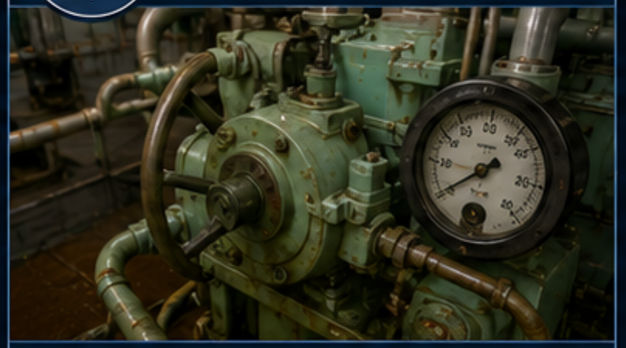
MAIN ENGINE FAILURE



- Engine fails to start or shuts down unexpectedly
- Loss of power and ship's movement
- May be caused by mechanical, electrical, fuel or control system failure
- Immediate action and troubleshooting required

REPORT IMMEDIATELY.
FOLLOW EMERGENCY PROCEDURES.

STEERING GEAR FAILURE



- Loss of steering control or limited response
- May result from hydraulic failure, power loss or mechanical damage
- High risk in narrow waters or bad weather
- Immediate action and manual backup may be required

NOTIFY THE BRIDGE IMMEDIATELY.
HAND STEERING MAY BE NECESSARY.

GENERATOR BLACKOUT



- Loss of electrical power on the entire vessel
- Affects all essential systems and equipment
- May be caused by generator failure, switchboard trip or fuel supply issue
- Switch to emergency source if available

ACTIVATE EMERGENCY POWER.
RESTORE POWER SAFELY.

LOSS OF PROPULSION



- Ship unable to move ahead or astern
- May be caused by engine, shaft, propeller or control system failure
- Risk of drifting, collision or grounding
- Immediate assessment and action required

INFORM THE BRIDGE.
MAINTAIN SITUATIONAL AWARENESS.

EARLY DETECTION CAN PREVENT MAJOR INCIDENTS.
REPORT. RESPOND. RESOLVE.

MONITOR SYSTEMS | FOLLOW CHECKLISTS | COMMUNICATE CLEARLY | REPORT IMMEDIATELY | MAINTAIN EQUIPMENT | STAY SAFE STAY PREPARED

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

OIL SPILL / POLLUTION



PROTECT THE ENVIRONMENT. PROTECT OUR FUTURE.

IMPACTS

- Harms marine life and ecosystems
- Pollutes air, water and shorelines
- Affects human health and safety
- May result in legal penalties and clean-up costs

FUEL OIL LEAKAGE



- Leakage from fuel lines, tanks or fittings
- Risk of fire and explosion
- Spreads quickly on water surface
- Contain immediately

HYDRAULIC OIL SPILL



- Leakage from hydraulic system or equipment
- Can make decks slippery and cause injuries
- Contaminates water and soil
- Clean up and dispose properly

CHEMICAL SPILL



- Leakage or release of harmful chemicals
- Toxic to people and marine life
- May cause corrosion or equipment damage
- Containment and neutralization required

ENVIRONMENTAL CONTAMINATION



- Long-term damage to marine ecosystems
- Affects wildlife and biodiversity
- Shoreline and habitat pollution
- Everyone is responsible for prevention

ACT IMMEDIATELY

PREVENT. CONTAIN. CLEAN UP. REPORT.

Quick action can minimize damage and protect lives and the environment.

1. SPOT

Identify the spill assess the situation.

2. CONTAIN

Use spill kits, booms or other means to contain the spread.

3. CLEAN UP

Recover the spill using appropriate materials and equipment.

4. REPORT

Report to the bridge immediately. Record details of the incident.

GOOD PRACTICES

- ✓ Regularly inspect equipment and pipelines
- ✓ Maintain machinery and prevent leaks
- ✓ Store chemicals properly
- ✓ Never discharge oil or chemicals overboard
- ✓ Follow procedures and MARPOL regulations

A CLEAN SEA IS A SAFE SEA

POLLUTION PREVENTION IS EVERYONE'S RESPONSIBILITY. | **THINK BEFORE YOU ACT.** | **A SMALL LEAK CAN CAUSE A BIG DISASTER.** | **PROTECT OUR OCEANS. PROTECT LIFE.**

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

KEY PRINCIPLES
DURING AN EMERGENCY

BE PREPARED. BE ALERT.
YOUR ACTIONS SAVE LIVES.

SAFETY FIRST | TEAMWORK | FOLLOW PROCEDURES | BE RESPONSIBLE



1 STAY CALM.



- Take a deep breath.
- Think clearly.
- Panic can make the situation worse.
- A calm mind helps you make the right decisions.

YOUR CALMNESS CAN SAVE LIVES.

2 RAISE THE ALARM IMMEDIATELY.



- Activate the nearest alarm (manual call point or phone).
- Use the general alarm.
- Early warning gives everyone time to respond.

ALERT EARLY. ACT FAST.

3 INFORM THE BRIDGE OR DUTY OFFICER.



- Report what happened.
- Provide the location and type of emergency.
- Give accurate information.
- Keep communication open.

INFORM CLEARLY. HELP RESPOND EFFECTIVELY.

4 FOLLOW THE MUSTER LIST AND EMERGENCY PROCEDURES.



- Go to your assigned Muster Station.
- Know your duties.
- Follow instructions from your team leader.
- Do not return to the hazard area.

KNOW YOUR ROLE. FOLLOW THE PLAN.

5 PROTECT YOURSELF BEFORE ASSISTING OTHERS.



- Assess the hazard.
- Use appropriate PPE.
- Do not become another victim.
- You can't help others if you get hurt.

YOUR SAFETY IS ESSENTIAL.

EMERGENCIES CAN HAPPEN ANYTIME. | YOUR PREPARATION. YOUR ACTION. OUR SAFETY.

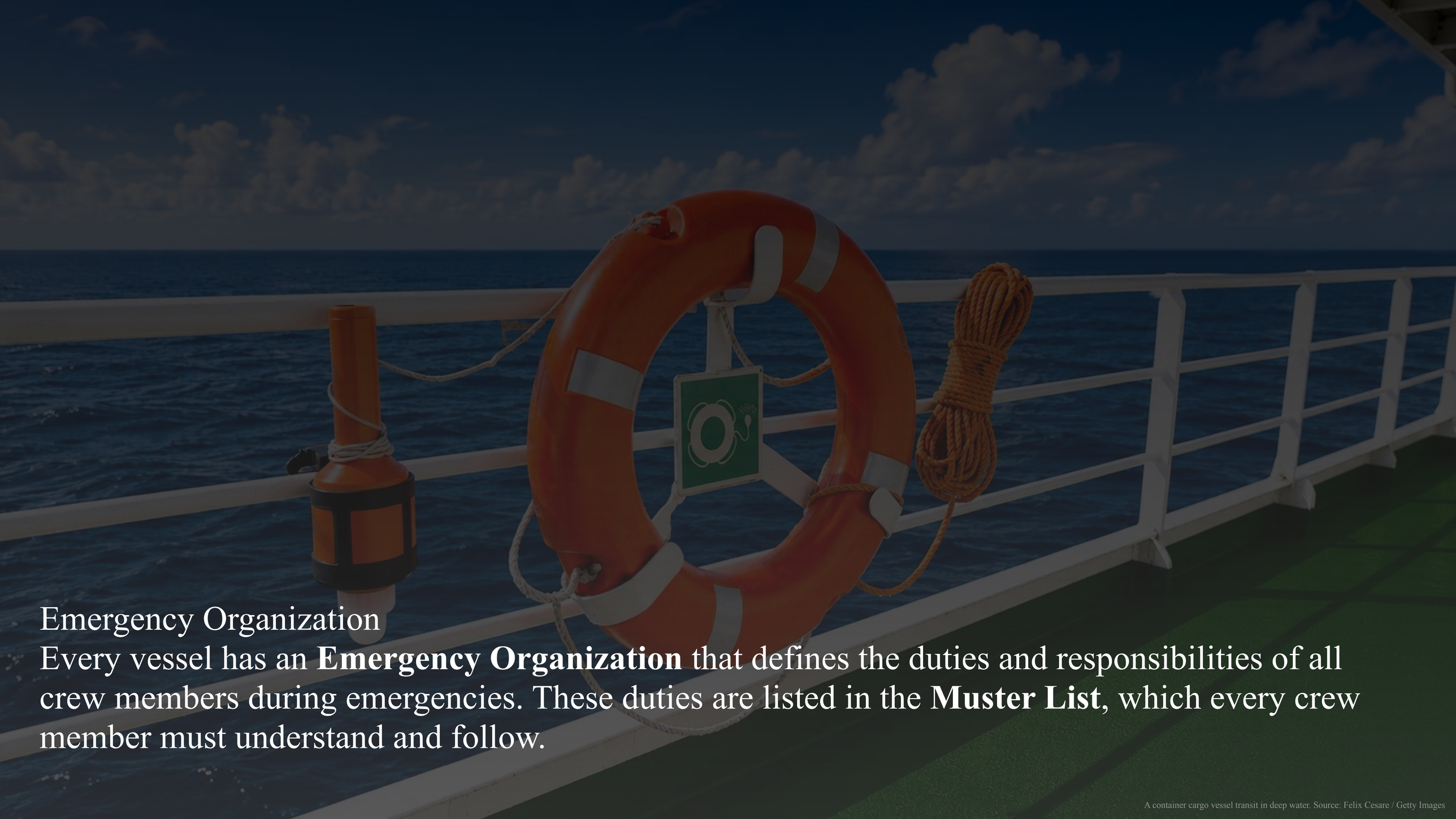
STAY ALERT. STAY SAFE. SAVE LIVES.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Emergency Organization



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology



Emergency Organization

Every vessel has an **Emergency Organization** that defines the duties and responsibilities of all crew members during emergencies. These duties are listed in the **Muster List**, which every crew member must understand and follow.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

MASTER (OVERALL COMMAND)

THE MASTER HAS OVERALL COMMAND DURING ANY EMERGENCY ON BOARD.

TAKES OVERALL COMMAND
Takes overall command of the emergency and assumes full responsibility.

ASSESSES THE SITUATION
Assesses the situation and makes critical decisions.

COORDINATES EXTERNALLY
Coordinates with shore authorities and rescue services.

ENSURES SAFETY
Ensures the safety of personnel, the vessel, cargo, and the environment.



THE MASTER'S PRIORITY IS TO PROTECT:

PERSONNEL
The lives and well-being of all people on board.

VESSEL
The seaworthiness and integrity of the vessel.

CARGO
The safety and security of the cargo.

ENVIRONMENT
The protection of the marine environment.

LEAD. DECIDE. COORDINATE. PROTECT.

SAFETY IS OUR HIGHEST PRIORITY.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

EMERGENCY RESPONSE TEAM

TRAINED. PREPARED. RESPONDING. PROTECTING LIVES, VESSEL AND ENVIRONMENT.



RESPONDS IMMEDIATELY
Responds immediately to the emergency.

ASSESSS THE SITUATION
Assesses the situation at the scene.

CARRIES OUT DAMAGE CONTROL
Carries out damage control and emergency actions.

REPORTS TO THE BRIDGE
Reports progress to the bridge.

ALARM RAISED → TEAM MOBILIZES → ASSESS THE SCENE → TAKE ACTION & CONTROL → REPORT PROGRESS → INFORM THE BRIDGE

CLEAR COMMUNICATION. COORDINATED ACTION.

EFFECTIVE RESPONSE. EVERY TIME.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ENGINE TEAM

POWERING THE SHIP. PROTECTING THE MISSION.

MAINTAINS PROPULSION AND ESSENTIAL MACHINERY.

Ensures main engine and auxiliary systems are operational.

OPERATES EMERGENCY GENERATOR AND FIRE PUMPS IF REQUIRED.

Provides power and pumping capacity during emergencies.

CONTROLS MACHINERY-RELATED EMERGENCIES.

Quickly responds to machinery failures, leaks, fires, and other incidents.

SUPPORTS DAMAGE CONTROL OPERATIONS.

Assists in isolating systems, securing machinery spaces, and restoring services.



RELIABLE MACHINERY. SAFER VOYAGE.

KEEP SYSTEMS RUNNING

ENSURE POWER AVAILABILITY

RESPOND QUICKLY TO EMERGENCIES

WORK TOGETHER. PROTECT ALL.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

FIRE TEAM

FIGHT FIRE. SAVE LIVES. PROTECT THE SHIP.

LOCATES AND EXTINGUISHES FIRES.

Rapidly locates the fire and takes effective action to extinguish it.

OPERATES FIREFIGHTING EQUIPMENT.

Uses hoses, extinguishers, and firefighting systems effectively.

ESTABLISHES FIRE BOUNDARIES.

Closes doors, dampers, and ventilation to contain the fire.

PREVENTS THE SPREAD OF FIRE AND SMOKE.

Controls the spread to protect personnel, critical equipment, and the vessel.



OUR TOOLS. OUR PROTECTION.

- FIRE HOSE
- FIRE HYDRANT
- FIRE EXTINGUISHER
- BA (BREATHING APPARATUS)
- COMMUNICATION
- TEAMWORK SAVES LIVES

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

RESCUE TEAM

READY TO RESPOND. COMMITTED TO SAVE LIVES.

CONDUCTS RESCUE OPERATIONS.

Responds quickly and safely to rescue personnel in danger.

ASSISTS WITH CONFINED SPACE RESCUE OR MAN OVERBOARD (MOB) RECOVERY.

Performs specialized rescue operations in high-risk situations.

EVACUATES INJURED PERSONNEL FROM HAZARDOUS AREAS.

Provides first aid and carries out safe evacuation to medical care.

SUPPORTS ABANDON SHIP PREPARATIONS IF NECESSARY.

Assists in mustering, launching lifeboats, and ensuring a safe evacuation.



OUR EQUIPMENT. OUR READINESS. YOUR SAFETY.

- LIFE RING
- RESCUE ROPE
- STRETCHER / SPINE BOARD
- VHF RADIO
- RESCUE BAG
- SAFETY HARNESS
- LIFE JACKET

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

MEDICAL TEAM

CARE. STABILIZE. COMMUNICATE. SAVE LIVES.

PROVIDES FIRST AID AND EMERGENCY MEDICAL CARE.

Delivers immediate care to injured or ill personnel.

ASSESSES INJURIES AND STABILIZES CASUALTIES.

Evaluates the condition and provides treatment to stabilize the patient.

MAINTAINS COMMUNICATION WITH TELEMEDICAL ASSISTANCE SERVICES (TMAS), IF REQUIRED.

Consults medical professionals ashore for guidance and support.

PREPARES CASUALTIES FOR EVACUATION WHEN NECESSARY.

Packages and prepares the patient for safe transfer to shore medical care.



WE CARE.
WE RESPOND.
WE SAVE LIVES.

ASSESS THE PATIENT

PROVIDE FIRST AID AND TREATMENT

COMMUNICATE WITH TMAS IF REQUIRED

STABILIZE AND PREPARE FOR EVACUATION

EVACUATE TO MEDICAL FACILITY

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

EVERY CREW MEMBER MUST KNOW

BE PREPARED. BE ALERT. BE AWARE. SAVE LIVES.

YOUR ASSIGNED EMERGENCY STATION (MUSTER STATION)

Go directly to your Muster Station when the alarm sounds.



YOUR DUTIES IN EACH TYPE OF EMERGENCY

Know your role and follow instructions from your Team Leader.



THE LOCATION OF EMERGENCY EQUIPMENT

Be familiar with the location and proper use of all essential equipment.



EMERGENCY ALARM SIGNALS

Recognize the alarm signals and what they mean.

GENERAL ALARM
7 Short Blasts
1 Long Blast

PRIMARY AND SECONDARY ESCAPE ROUTES

Know all escape routes.
Keep them clear at all times.

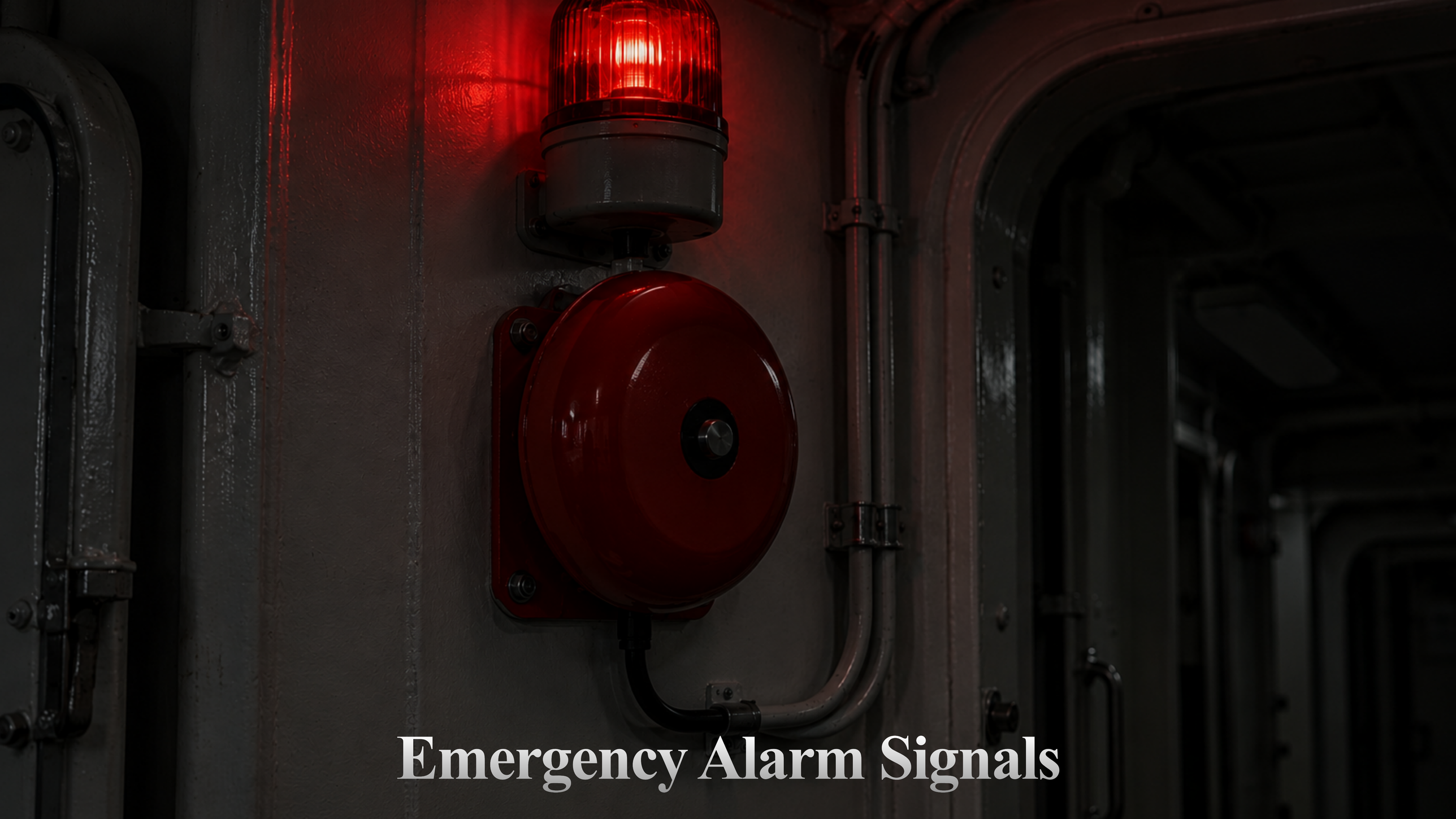
PRIMARY ROUTE →
SECONDARY ROUTE - - - →



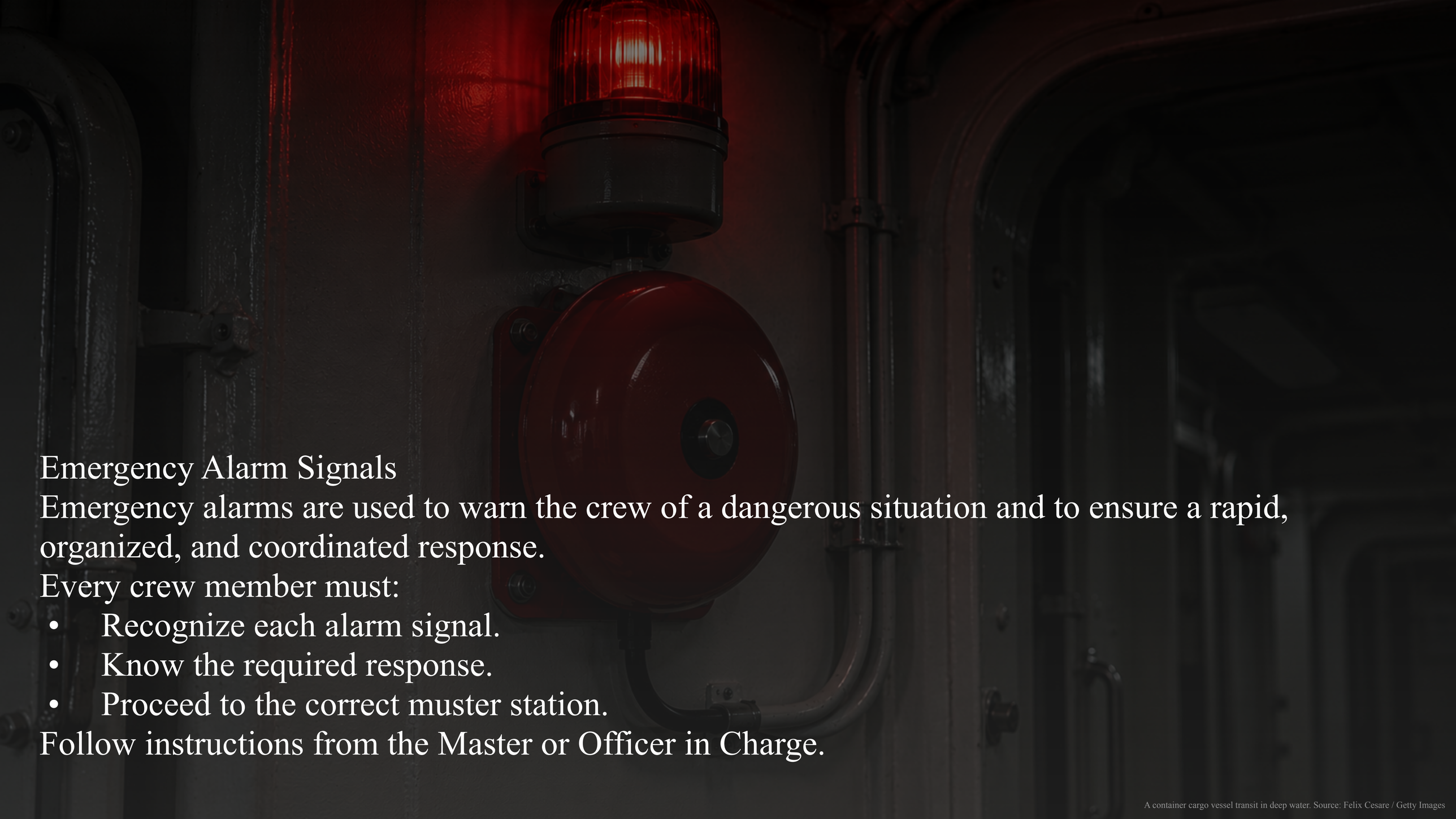
YOUR KNOWLEDGE. YOUR ACTIONS. OUR SAFETY.

KNOW YOUR STATION | KNOW YOUR DUTIES | KNOW THE EQUIPMENT | KNOW THE ALARMS | KNOW THE ROUTES

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



Emergency Alarm Signals



Emergency Alarm Signals

Emergency alarms are used to warn the crew of a dangerous situation and to ensure a rapid, organized, and coordinated response.

Every crew member must:

- Recognize each alarm signal.
- Know the required response.
- Proceed to the correct muster station.

Follow instructions from the Master or Officer in Charge.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

GENERAL EMERGENCY ALARM

When you hear the signal, **ACT IMMEDIATELY.**



PURPOSE:

Alerts all crew members to an emergency onboard.

TYPICAL SOLAS SIGNAL:

Seven short blasts followed by one prolonged blast on the ship's whistle and internal alarm bells.

REQUIRED ACTION:

- ✓ Stop work safely.
- ✓ Secure equipment if it is safe to do so.
- ✓ Proceed immediately to your assigned muster station.
- Report to your team leader and await further instructions.

MUSTER STATION





1. STOP WORK SAFELY
2. SECURE EQUIPMENT
3. PROCEED TO MUSTER STATION
4. REPORT TO YOUR TEAM LEADER

YOUR IMMEDIATE RESPONSE CAN SAVE LIVES – DO NOT IGNORE THE ALARM.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

FIRE ALARM

When you hear the signal, **ACT IMMEDIATELY.**

PURPOSE:

Indicates a fire or suspected fire onboard.

REQUIRED ACTION:



1. Raise the alarm if you discover the fire.
2. Inform the bridge immediately.
3. Follow firefighting procedures if trained and it is safe to do so.
4. Report to your assigned emergency station.















NOTE: The method of indicating a fire alarm may vary depending on the vessel's alarm system and company procedures.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ABANDON SHIP

Verbal order and general alarm



PURPOSE:

Ordered only by the **Master** when remaining onboard presents a greater danger than leaving the vessel.

SIGNAL:

Seven short blasts followed by one prolonged blast on the ship's whistle and internal alarm bells and verbal order by **Captain**.

SHIP'S WHISTLE

1 2 3 4 5 6 7 LONG

INTERNAL ALARM BELLS

REQUIRED ACTION:

- ✓ Wear your lifejacket and appropriate PPE.
- ✓ Bring your immersion suit if instructed.
- ✓ Proceed to the assigned lifeboat or liferaft station.
- ✓ Follow launching procedures under the direction of the officer in charge.



WEAR YOUR LIFEJACKET AND APPROPRIATE PPE.



BRING YOUR IMMERSION SUIT IF INSTRUCTED.



PROCEED TO THE ASSIGNED LIFEBOAT OR LIFERAFT STATION.



FOLLOW LAUNCHING PROCEDURES UNDER THE DIRECTION OF THE OFFICER IN CHARGE.

FOLLOW THE ORDER. ACT CALMLY. WORK TOGETHER. | **YOUR ACTIONS CAN SAVE LIVES.**

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

MAN OVERBOARD (MOB)

3 LONG RINGS



3 LONG RINGS

PURPOSE:

Alerts the crew that a person has fallen into the sea.

IMMEDIATE ACTIONS:

- Shout "Man Overboard!"
- Throw a lifebuoy if possible.
- Keep the person in sight.
- Notify the bridge immediately.
- Assist with recovery only when instructed.





SHOUT "MAN OVERBOARD!"



THROW A LIFEBUOY IF POSSIBLE.



NOTIFY THE BRIDGE IMMEDIATELY.



ASSIST WITH RECOVERY ONLY WHEN INSTRUCTED.

QUICK ACTION AND TEAMWORK CAN SAVE A LIFE. SAFETY IS EVERYONE'S RESPONSIBILITY.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

EMERGENCY STEERING

TAKE CONTROL. STAY ON COURSE. ENSURE SAFETY.

MAIN STEERING SYSTEM FAILURE → EMERGENCY STEERING → SAFE NAVIGATION MAINTAINED

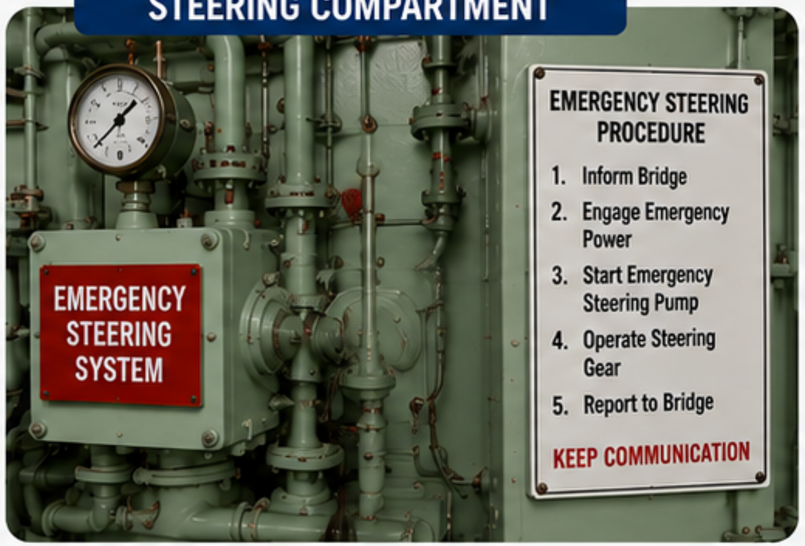
PURPOSE:

Activated when the main steering system fails.

REQUIRED ACTION:

- Engineering and bridge teams prepare the emergency steering system.
- Maintain communication between the steering compartment and the bridge.
- Follow emergency steering procedures and the Master's instructions.

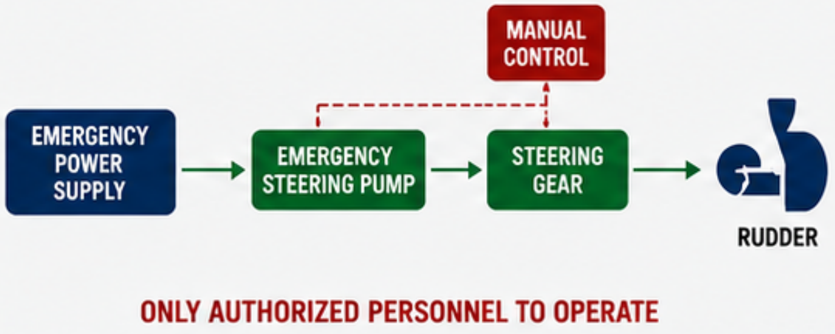
STEERING COMPARTMENT



BRIDGE



EMERGENCY STEERING SYSTEM



ONLY AUTHORIZED PERSONNEL TO OPERATE

IMPORTANT REMINDERS

- Act promptly and calmly.
- Follow posted procedures.
- Maintain clear communication.
- Report any anomalies immediately.

PREPARE – COMMUNICATE – FOLLOW PROCEDURES – STAY IN CONTROL

A container cargo vessel passing deep water. Source: Felix Cesare / Getty Images

CREW RESPONSIBILITIES
DURING ANY ALARM

- **STAY CALM.** — Keep a clear mind and think before you act.
- **DO NOT PANIC OR RUN.** — Panic can cause injury and put others at risk.
- **STOP WORK SAFELY.** — Secure equipment if it is safe to do so.
- **PROCEED DIRECTLY TO YOUR MUSTER STATION.** — Use the nearest safe route. Do not stop to gather personal belongings.
- **REPORT TO YOUR SUPERVISOR OR TEAM LEADER.** — Allow headcount to be taken and receive further instructions.
- **FOLLOW INSTRUCTIONS FROM THE BRIDGE OR MASTER.** — They are in command. Your cooperation ensures everyone's safety.



1. **ALARM SOUNDS** — Listen for the alarm signal or announcement.
2. **STOP WORK SAFELY** — Secure equipment if safe to do so.
3. **PROCEED TO MUSTER STATION** — Go directly to your assigned muster station.
4. **REPORT TO YOUR SUPERVISOR** — Report in and await further instructions.
5. **FOLLOW ORDERS FROM THE BRIDGE OR MASTER** — Follow all instructions. Stay alert and be ready to assist.

YOUR ACTIONS CAN SAVE LIVES – STAY ALERT, STAY SAFE, WORK TOGETHER.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Emergency Procedures



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology



Emergency Procedures

During any emergency, every crew member should follow a structured response to protect lives, minimize damage, and prevent the situation from escalating.

RAISE THE ALARM

Activate the nearest alarm or emergency call point.

Shout for assistance if necessary.

Do not assume someone else has already reported the emergency.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

INFORM THE BRIDGE

Provide clear and accurate information:

- **What** happened?
- **Where** did it happen?
- Are there any **injuries**?
- What immediate **assistance** is required?



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ASSESS THE SITUATION

Evaluate the hazard only if it is safe to do so.

Determine whether the emergency is increasing or under control.

Never place yourself in unnecessary danger.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

FOLLOW EMERGENCY PROCEDURES

Follow the vessel's **Safety Management System (SMS).**

Carry out your assigned duties according to the **Muster List.**

Follow instructions from the **Master or Officer in Charge.**



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

MUSTER

- Proceed immediately to your assigned muster station.
- Report to your team leader.
- Confirm personnel accountability.
- Await further instructions.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

USE EMERGENCY EQUIPMENT

When trained and authorized:

- Fire extinguishers
- Fire hoses
- Emergency breathing apparatus (SCBA/EEBD)
- Lifebuoys and rescue equipment
- First aid equipment
- Emergency pumps

Use only the equipment appropriate for the emergency.













A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

MAINTAIN COMMUNICATION

Keep communication **clear, accurate,** and **concise.**

Report changes in **conditions** immediately.

Confirm that important **messages** are understood.

Continue providing updates until the emergency is over.

Good communication saves lives.
Stay calm. Stay connected.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

REMEMBER

Think of the emergency response as:

ALARM



Raise the alarm immediately.

REPORT



Inform the Bridge clearly and accurately.

ASSESS



Evaluate the situation safely.

RESPOND



Follow procedures and use the right equipment.

MUSTER



Go to your muster station and check in.

COMMUNICATE



Maintain clear communication until the emergency is over.

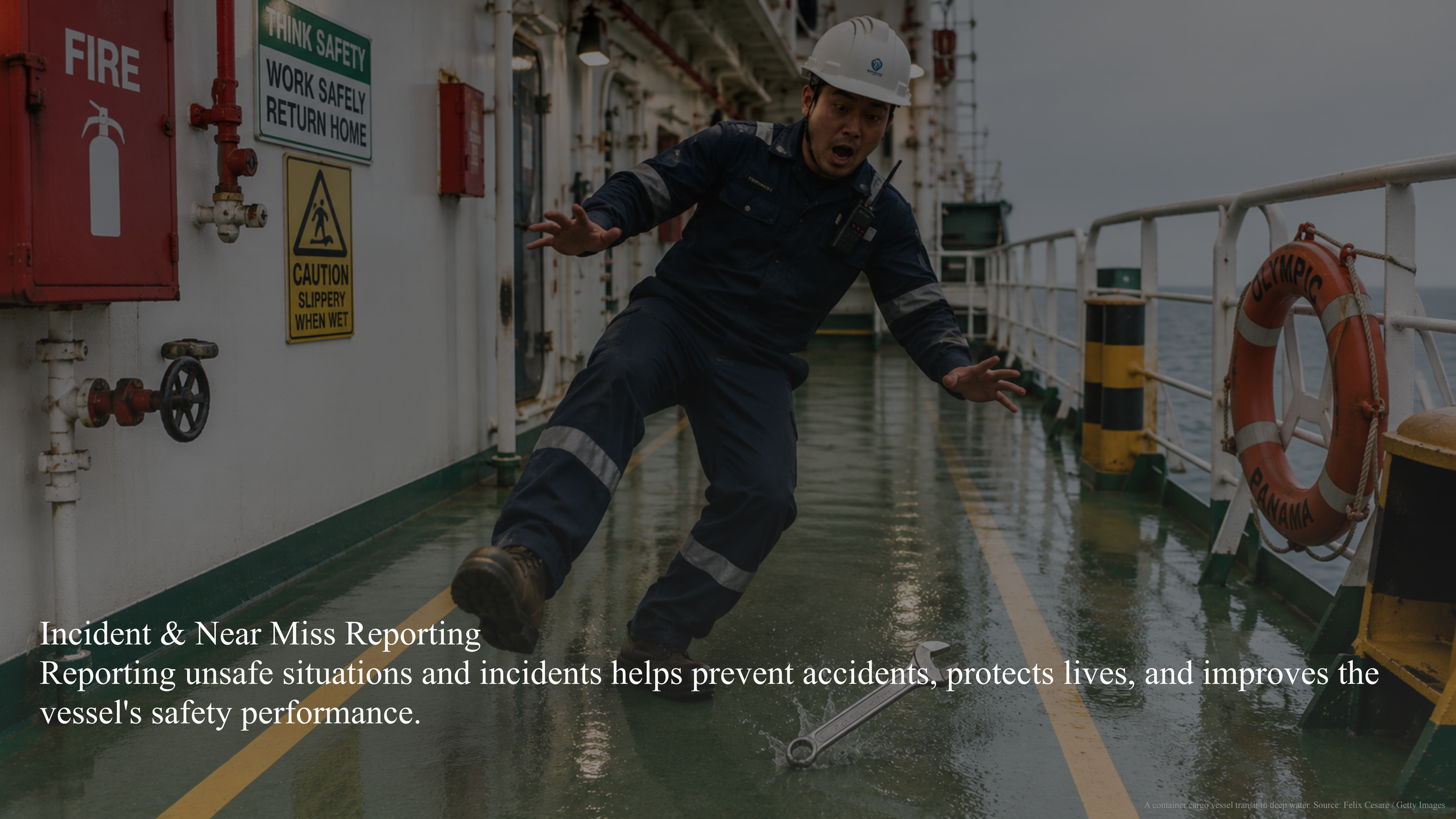


A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images



Incident & Near Miss Reporting

Traffic below of the Singapore Strait [illegible] vessels align into [illegible] traffic channels. Source: Port Technology



Incident & Near Miss Reporting

Reporting unsafe situations and incidents helps prevent accidents, protects lives, and improves the vessel's safety performance.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

UNSAFE ACT

An unsafe action or behavior that could lead to an accident.

EXAMPLES



Not wearing required PPE.



Bypassing safety guards.



Ignoring Lockout/Tagout (LOTO) procedures.



Using tools incorrectly.



Taking shortcuts during work.



NO SAFETY GLASSES
Risk of eye injury from flying particles.

NO GLOVES
Risk of cuts, burns, or injury.

WRONG TOOL
Using incorrect tool for the job can cause damage or injury.

UNSAFE ACTS CAN CAUSE ACCIDENTS.

Work safely. Think before you act.

SAFETY IS EVERYONE'S RESPONSIBILITY

STOP UNSAFE ACTS.
PREVENT INJURIES.

UNSAFE CONDITION

A hazardous physical condition in the workplace.

EXAMPLES



Oil spilled on deck.
Risk of slips and falls.



Damaged ladder or handrail.
Risk of falls.



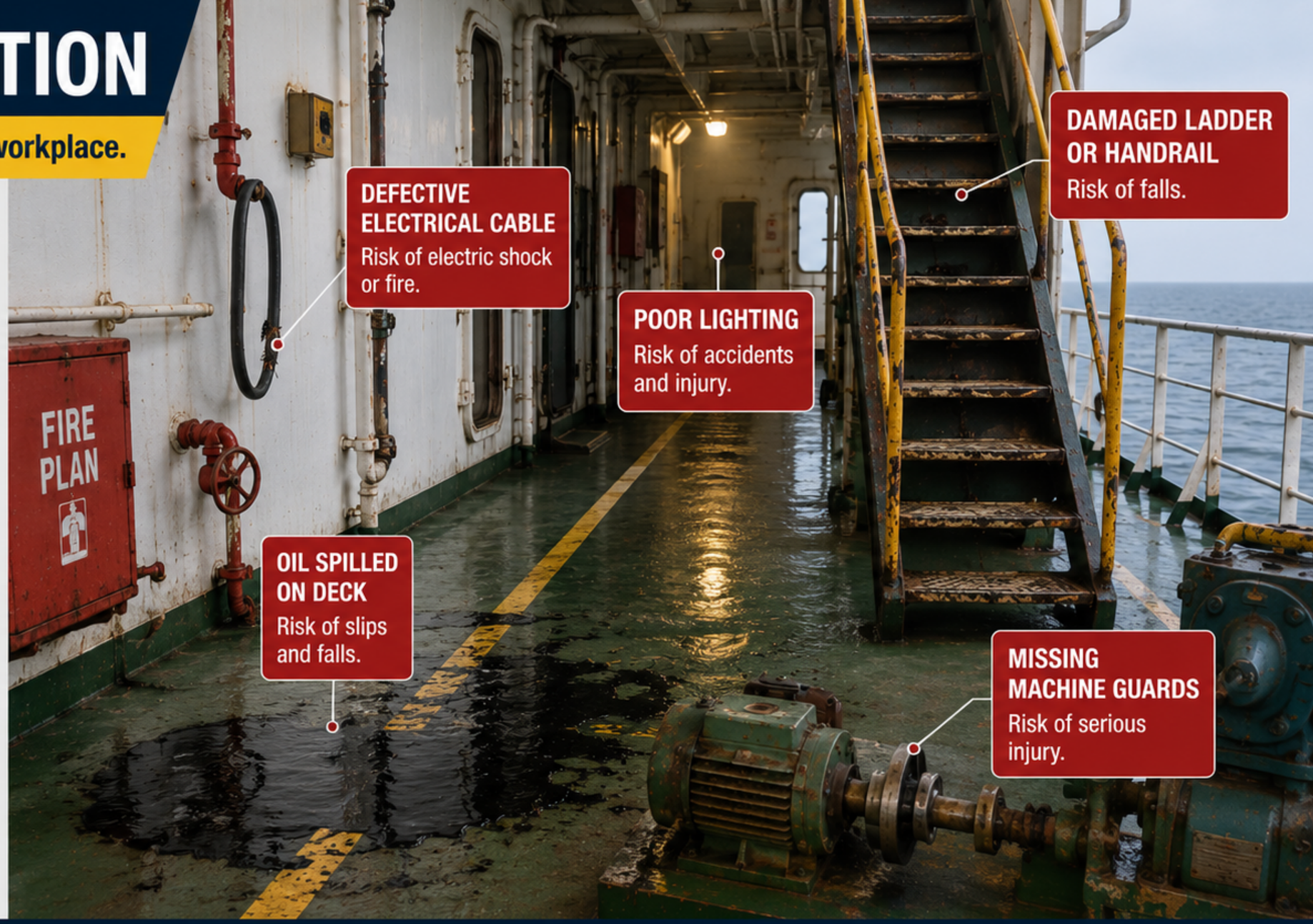
Defective electrical cable.
Risk of electric shock or fire.



Poor lighting.
Risk of accidents and injury.



Missing machine guards.
Risk of serious injury.



HAZARDS IN THE WORKPLACE CAN CAUSE INJURIES.

IDENTIFY. REPORT. FIX.
WORK SAFELY, STAY SAFE.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

NEAR MISS

An unplanned event that
did not cause injury or damage,
but had the potential to do so.

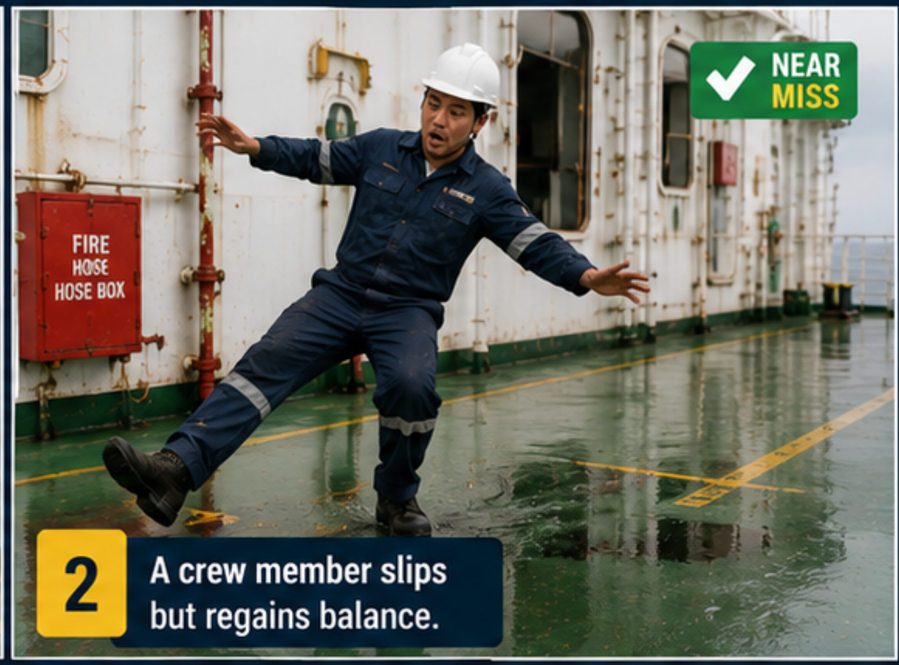
EXAMPLES

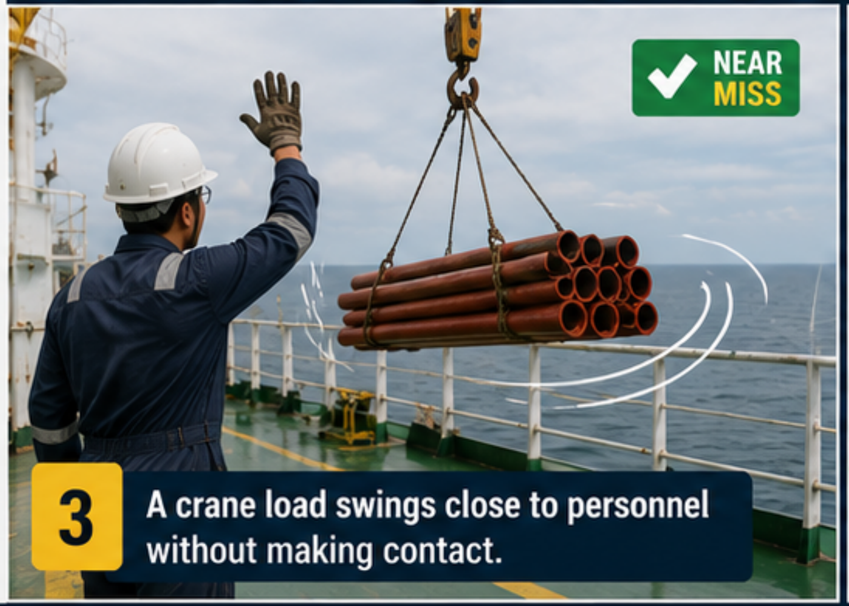
REPORT NEAR MISSES.
Prevent accidents
before they happen.

SPEAK UP.
It could save a life.

SEE IT. REPORT IT.
PREVENT IT.









NEAR MISSES ARE WARNING SIGNS.
REPORT THEM TODAY, PREVENT ACCIDENTS TOMORROW.

YOUR REPORT CAN
SAVE LIVES.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ACCIDENT / INCIDENT

An event that results in:

INJURY OR ILLNESS
Physical harm or health effects.

DAMAGE TO EQUIPMENT OR PROPERTY
Loss or damage to assets or facilities.

ENVIRONMENTAL POLLUTION
Release of harmful substances to air, water, or land.

OPERATIONAL DISRUPTION
Delay, shutdown, or interruption of operations.

ALL ACCIDENTS ARE PREVENTABLE.
REPORT, INVESTIGATE, LEARN, PREVENT.



EXAMPLES

FIRE
Fire on board causing smoke, heat and damage.



FALL FROM HEIGHT
A person falls from a height and suffers injury.



ELECTRICAL SHOCK
Contact with electricity causing shock, burns, or injury.



MACHINERY DAMAGE
Equipment failure leading to damage and repair downtime.



OIL SPILL
Release of oil into the sea causing pollution and clean-up.



REPORT ALL ACCIDENTS AND INCIDENTS IMMEDIATELY.
YOUR ACTION CAN PREVENT THE NEXT ONE.

SAFETY IS EVERYONE'S RESPONSIBILITY.
WORK SAFE. STAY SAFE.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

INCIDENT INVESTIGATION

Systematic Investigation • Find Root Causes • Prevent Recurrence



OUR GOAL:
LEARN FROM EVENTS
PREVENT FUTURE INCIDENTS

FOCUS ON LEARNING, NOT BLAME

THE PURPOSE IS TO:

1 DETERMINE WHAT HAPPENED

- Collect facts and evidence.
- Interview witnesses.
- Establish the sequence of events.

2 IDENTIFY WHY IT HAPPENED (ROOT CAUSES)

- Analyze contributing factors.
- Use tools such as 5 Whys, Fishbone Diagram, etc.
- Focus on identifying root causes, not just symptoms.

3 RECOMMEND CORRECTIVE ACTIONS

- Address root causes.
- Define responsible persons.
- Set target dates.
- Ensure actions are effective and practical.

4 PREVENT SIMILAR INCIDENTS FROM OCCURRING AGAIN

- Implement corrective actions.
- Share lessons learned.
- Continuously improve.

INVESTIGATION PROCESS

RECEIVE REPORT → PLAN INVESTIGATION → GATHER EVIDENCE → ANALYZE CAUSES → RECOMMEND ACTIONS → FOLLOW UP & VERIFY EFFECTIVENESS

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

WHY REPORTING MATTERS

Every report makes our workplace safer.

PREVENTS FUTURE ACCIDENTS.
Reporting helps stop the same incidents from happening again.

IMPROVES PROCEDURES AND TRAINING.
Reports provide valuable lessons to improve our procedures and training.

IDENTIFIES HIDDEN HAZARDS.
Helps discover hazards before they cause an accident.

STRENGTHENS THE VESSEL'S SAFETY CULTURE.
Encourages open communication, teamwork, and trust.

PROTECTS PEOPLE, PROPERTY, AND THE ENVIRONMENT.
Keeps our crew safe, protects assets, and prevents environmental harm.



SEE IT. REPORT IT. PREVENT IT.

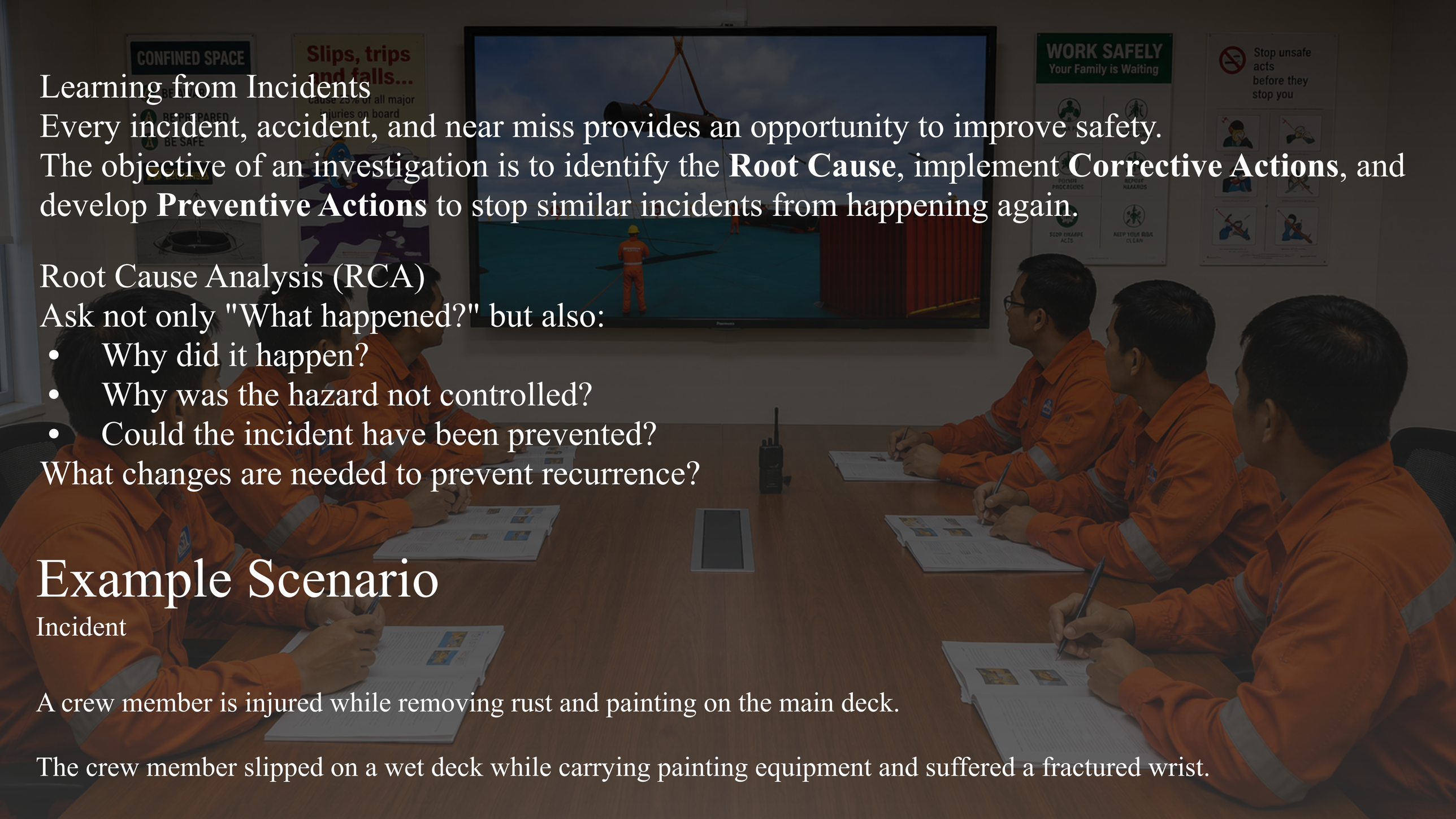
TOGETHER, WE CREATE A SAFER VESSEL FOR EVERYONE.

A container cargo vessel transits in deep water. Source: Felix Cesare / Getty Images

Learning from Incidents



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology



Learning from Incidents

Every incident, accident, and near miss provides an opportunity to improve safety.
The objective of an investigation is to identify the **Root Cause**, implement **Corrective Actions**, and develop **Preventive Actions** to stop similar incidents from happening again.

Root Cause Analysis (RCA)

Ask not only "What happened?" but also:

- Why did it happen?
- Why was the hazard not controlled?
- Could the incident have been prevented?

What changes are needed to prevent recurrence?

Example Scenario

Incident

A crew member is injured while removing rust and painting on the main deck.

The crew member slipped on a wet deck while carrying painting equipment and suffered a fractured wrist.

INVESTIGATION

Slip and Fall Incident on Deck



IMMEDIATE CAUSE

(What directly caused the injury?)



- Wet and slippery deck.
- Loss of balance while carrying equipment.
- Fall onto the deck surface.

ROOT CAUSE

(Why did the incident occur?)

Possible root causes include:

- Risk assessment did not identify the slippery surface.
- Work continued despite changing weather conditions.
- Poor housekeeping and water accumulation.
- No anti-slip control measures in place.
- Inadequate supervision.
- Toolbox Talk did not discuss slip hazards.
- Crew member was carrying too much equipment at one time.

- Inadequate Risk Assessment
- Changing Weather Conditions
- Poor Housekeeping / Water Accumulation
- No Anti-slip Measures
- Inadequate Supervision
- Toolbox Talk Did Not Address Slip Hazards
- Carrying Too Much Equipment

LESSONS LEARNED

- Identify hazards before starting work.
- Follow procedures and use control measures.
- Keep the workplace clean and dry.
- Communicate hazards during Toolbox Talks.
- Supervise and look out for each other.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

CORRECTIVE ACTIONS

Actions taken immediately after the incident.

1. Provide first aid and medical treatment.
2. Stop the work immediately.
3. Clean and dry the work area.
4. Review the risk assessment.
5. Conduct a safety briefing with the work team.











ACT NOW, PREVENT NEXT TIME.

Taking immediate corrective actions helps prevent further injury, protects our people, improves our workplace, and ensures operations can continue safely.

Protect People | Improve Workplace | Enhance Safety | Protect Environment | Ensure Safe Operations

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

PREVENTIVE ACTIONS

(Long-term improvements to prevent recurrence.)



Implementing strong preventive measures today ensures a safer workplace tomorrow.

1 Improve housekeeping standards.



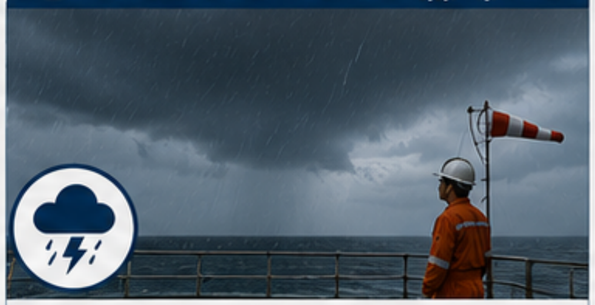
- Keep decks clean, dry, and free from clutter, oil, and loose items.
- Establish regular cleaning schedules and assign responsibilities.

2 Update risk assessment procedures.



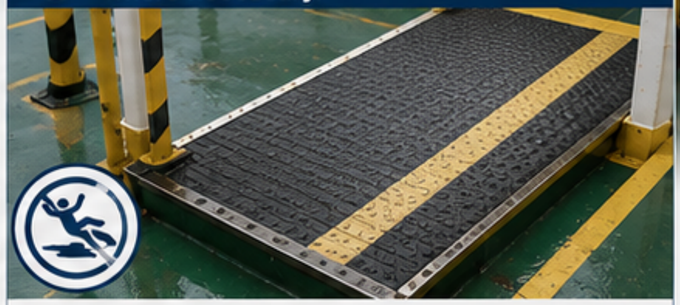
- Review and update risk assessments regularly.
- Ensure all hazards are identified before work begins.

3 Suspend deck work during unsafe weather conditions when appropriate.



- Monitor weather forecasts and sea conditions.
- Stop work if conditions become unsafe.
- Safety takes priority over schedule.

4 Install anti-slip surfaces where necessary.



- Apply anti-slip coatings, mats, or coverings on high-risk areas.
- Ensure surfaces are maintained and in good condition.

5 Reinforce Toolbox Talks before deck maintenance.



- Discuss hazards, control measures, and safe work practices.
- Encourage crew participation.
- Make it a routine before every job.

6 Provide refresher training on slip, trip, and fall preventann.



- Conduct regular training sessions.
- Use real examples and lessons learned.
- Ensure all crew understand and apply.

7 Increase supervisory monitoring during hazardous work.



- Supervisors must be present and engaged.
- Monitor compliance with safe work practices.
- Intervene immediately if unsafe acts or conditions are observed.

OUR GOAL

ZERO ACCIDENTS

A SAFE VESSEL,
A STRONG TEAM,
A SUCCESSFUL VOYAGE.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ROOT CAUSE ANALYSIS FLOW

A systematic approach to identify causes, take actions, and prevent recurrence.











1. INCIDENT

An unwanted event that caused injury, damage, or potential loss.

2. IMMEDIATE CAUSE

The direct reason or action that resulted in the incident.

3. ROOT CAUSE

The underlying cause(s) that allowed the incident to occur.

4. CORRECTIVE ACTION

Immediate actions taken to address the incident and minimize impact.

5. PREVENTIVE ACTION

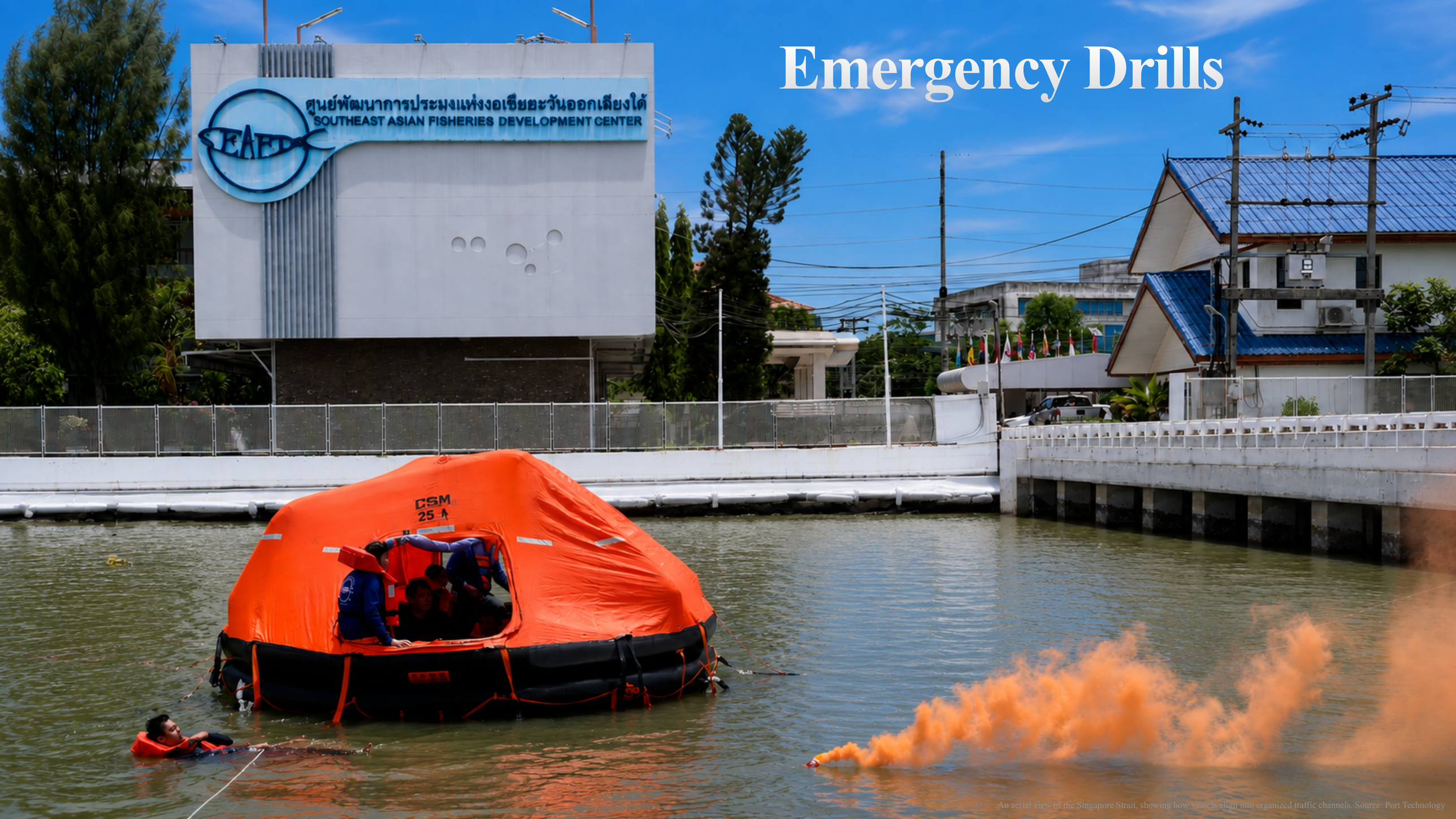
Long-term measures implemented to prevent recurrence.

6. SAFER FUTURE OPERATIONS

A safer workplace, protected people, and continuous improvement.

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

Emergency Drills



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology

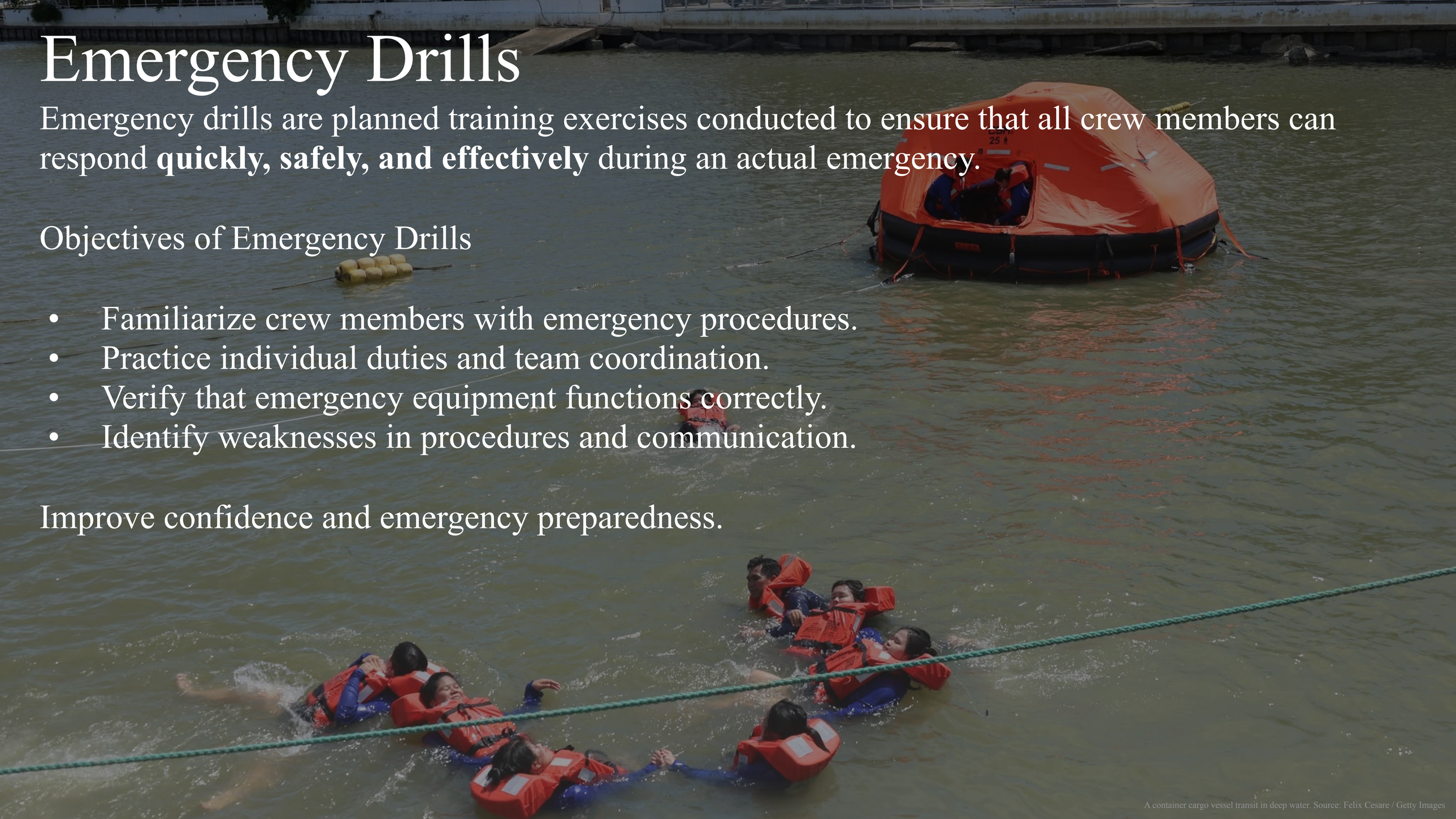
Emergency Drills

Emergency drills are planned training exercises conducted to ensure that all crew members can respond **quickly, safely, and effectively** during an actual emergency.

Objectives of Emergency Drills

- Familiarize crew members with emergency procedures.
- Practice individual duties and team coordination.
- Verify that emergency equipment functions correctly.
- Identify weaknesses in procedures and communication.

Improve confidence and emergency preparedness.



A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

FIRE DRILL

Be Prepared. Work as a Team. Stay Safe.

PURPOSE

- Practice responding to fires onboard.
- Test firefighting equipment and communication.
- Train the fire team in firefighting procedures.

ACTIVITIES

1. Raise the alarm.
2. Muster the crew.
3. Locate the simulated fire.
4. Deploy fire hoses and extinguishers.
5. Use Self-Contained Breathing Apparatus (SCBA).
6. Establish fire boundaries and communication.

1. RAISE THE ALAM



2. MUSTER THE CREW



3. LOCATE THE SIMULATED FIRE



4. DEPLOY FIRE HOSES AND EXTINGUISHERS



5. USE SCBA



6. ESTABLISH FIRE BOUNDARIES AND COMMUNICATION



TEAMWORK, TRAINING, AND PREPARATION SAVE LIVES AND PROTECT OUR SHIP.

Know your role

Follow procedures

Communicate clearly

SAFETY FIRST AT ALL TIMES

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ABANDON SHIP DRILL

Be Prepared. Stay Calm. Follow Orders. Save Lives.

PURPOSE

Prepare the crew
to leave the vessel safely
if ordered by the Master.

ACTIVITIES

1. Proceed to muster stations.
2. Wear lifejackets and immersion suits.
3. Check lifeboats and liferafts.
4. Practice boarding procedures.
5. Review launching procedures and survival equipment.

REMEMBER:

- Follow the Master's orders.
- Do not panic.
- Help others.
- Keep calm and act safely.



1 PROCEED TO MUSTER STATIONS



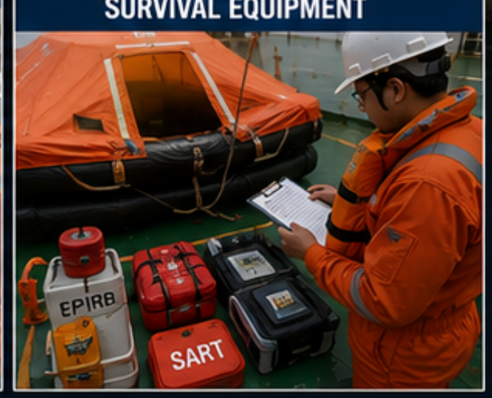
2 WEAR LIFEJACKETS AND IMMERSION SUITS



4 PRACTICE BOARDING PROCEDURES



5 REVIEW LAUNCHING PROCEDURES AND SURVIVAL EQUIPMENT



PREPARATION TODAY ENSURES SURVIVAL TOMORROW.

- Know your muster station
- Wear your lifejacket
- Check equipment before use
- Communicate clearly
- Safety is everyone's responsibility

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

MAN OVERBOARD (MOB) DRILL

Be Alert. Act Fast. Every Second Counts.

PURPOSE

Practice the rapid recovery of a person who has fallen into the sea.

ACTIVITIES

1. Raise the MOB alarm.
2. Throw a lifebuoy or marker buoy.
3. Maintain visual contact with the casualty.
4. Conduct recovery maneuvers.
5. Practice rescue and first aid procedures.



IMPORTANT REMINDERS

- Act immediately.
- Never take your eyes off the casualty.
- Communicate clearly with the bridge.
- Safety of the rescuer is the priority.

1 RAISE THE MOB ALARM



2 THROW A LIFEBUOY OR MARKER BUOY



3 MAINTAIN VISUAL CONTACT WITH THE CASUALTY



4 CONDUCT RECOVERY MANEUVERS



5 PRACTICE RESCUE AND FIRST AID PROCEDURES



TEAMWORK, QUICK ACTION, AND CLEAR COMMUNICATION SAVE LIVES.

Raise the alarm | Throw floatation | Keep visual contact | Recover the casualty | Provide first aid | Debrief and improve

OIL SPILL RESPONSE DRILL

Act Quickly. Protect the Environment. Everyone's Responsibility.



REMEMBER

- Act immediately.
- Prevent the spill from spreading.
- Protect the marine environment.
- Follow SOPEP procedures.

PURPOSE

Minimize environmental pollution.

ACTIVITIES

1. Report the spill immediately.
2. Deploy SOPEP equipment.
3. Contain the spill using absorbent materials.
4. Protect nearby drains and overboard discharge points.
5. Practice notification and reporting procedures.

1 REPORT THE SPILL IMMEDIATELY



Notify the bridge and follow communication procedures.

2 DEPLOY SOPEP EQUIPMENT



Bring SOPEP equipment to the spill location without delay.

3 CONTAIN THE SPILL USING ABSORBENT MATERIALS



Use absorbent pads, booms, and pillows to contain the spill.

4 PROTECT NEARBY DRAINS AND OVERBOARD DISCHARGE POINTS



Block drains and scuppers. Prevent oil from entering the sea.

5 PRACTICE NOTIFICATION AND REPORTING PROCEDURES



Record details of the spill and actions taken. Report as per procedure.

OUR GOAL

ZERO POLLUTION.
PROTECT OUR OCEANS.
PROTECT OUR FUTURE.

ACT FAST | WORK AS A TEAM | USE EQUIPMENT CORRECTLY | PROTECT THE ENVIRONMENT | FOLLOW PROCEDURES | CONTINUOUS IMPROVEMENT

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

EMERGENCY STEERING DRILL

Stay Prepared. Stay in Control.



PURPOSE

Prepare for steering system failure.

ACTIVITIES

1. Transfer steering control to the emergency steering station.
2. Establish communication between the bridge and steering compartment.
3. Verify emergency steering operation.
4. Practice steering commands and response.

REMEMBER

- Act quickly.
- Communicate clearly.
- Follow procedures.
- Stay calm and in control.

1 TRANSFER STEERING CONTROL TO THE EMERGENCY STEERING STATION



Move to the emergency steering station and take control.

2 ESTABLISH COMMUNICATION BETWEEN THE BRIDGE AND STEERING COMPARTMENT



Maintain constant communication. Confirm instructions and status.

3 VERIFY EMERGENCY STEERING OPERATION



Check power, pumps, alarms, and rudder response.

4 PRACTICE STEERING COMMANDS AND RESPONSE



Execute steering commands. Confirm ship's heading changes.

PREPARED TODAY,
IN CONTROL TOMORROW.

SAFE SHIP. SAFE CREW. SAFE VOYAGE.

KNOW YOUR ROLE | WORK AS A TEAM | FOLLOW PROCEDURES | COMMUNICATE CLEARLY | SAFETY IS EVERYONE'S RESPONSIBILITY

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

ENCLOSED SPACE RESCUE DRILL

Stay Prepared. Save Lives.

PURPOSE

Prepare for emergencies inside confined spaces.

ACTIVITIES

1. Simulate rescue from a confined space.
2. Test communication procedures.
3. Practice atmospheric monitoring.
4. Use rescue equipment correctly.
5. Review casualty recovery procedures.



KEY POINTS

- Obtain permit before entry.
- Test atmosphere before and during entry.
- Maintain continuous communication.
- Standby person must remain outside.
- Use proper rescue equipment and PPE.

1 PREPARE & PLAN



Review the plan, assign roles, and inspect equipment.

2 CHECK ATMOSPHERE



Test oxygen, combustible gas, and toxic levels.

3 SET UP RESCUE SYSTEM



Install tripod, winch, and fall protection.

4 COMMUNICATION CHECK



Confirm communication between entrant and standby person.

5 ENTRY & MONITORING



Allow entry and continuously monitor atmosphere and entrant condition.

6 RESCUE SIMULATION



Perform rescue using proper techniques and equipment.

7 RECOVER & REVIEW



Recover casualty, provide first aid, and conduct debriefing.

SAFETY REMINDERS

THINK SAFE. ACT SAFE.
TEAMWORK SAVES LIVES.

- WORK AS A TEAM
- COMMUNICATE CLEARLY
- FOLLOW PROCEDURES AND PERMIT
- USE CORRECT PPE
- BE READY TO RESPOND
- STANDBY PERSON STAYS OUTSIDE

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

WHY EMERGENCY DRILLS ARE IMPORTANT

Be Prepared. Stay Safe. Protect Lives, Vessel and the Environment.

- **Improve teamwork** and coordination.
- **Increase familiarity** with emergency procedures.
- Verify that **emergency equipment** is operational.
- **Identify weaknesses** before a real emergency occurs.
- **Build confidence** and reduce panic during actual emergencies.



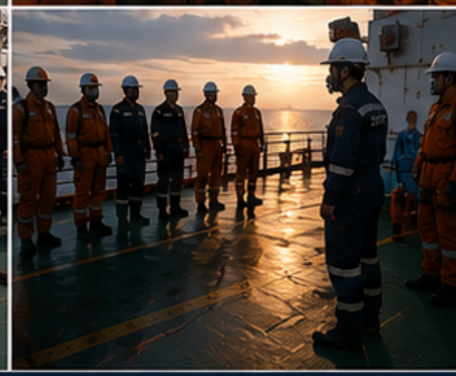












DRILLS TODAY, SAFETY TOMORROW.

Prepared Crew
Resilient Vessel

Every Drill Makes Us
Stronger and Safer

Protecting Lives,
Property and
the Environment

Summary



An aerial view of the Singapore Strait, showing how vessels align into organized traffic channels. Source: Port Technology

SUMMARY

Be Prepared. Stay Safe. Protect Lives, Vessel & Environment.



PERSONAL SAFETY & RISK MANAGEMENT

- Safety begins **before** the job starts.
- **Think** before you act—identify hazards before starting work.
- Conduct a **Risk Assessment** for every task.
- Follow the **Hierarchy of Controls** to reduce risk.
- Wear the correct **PPE** and inspect it before use.
- Follow the **Permit to Work (PTW)** system and **Lockout/Tagout (LOTO)** procedures.
- Communicate clearly and participate actively in **Toolbox Talks.**



EMERGENCY RESPONSE

- Know your emergency duties and **muster station.**
- Recognize emergency **alarm signals.**
- **Stay calm** and follow emergency procedures.
- Maintain effective **communication** during emergencies.
- Participate seriously in emergency **drills and exercises.**



SAFETY IMPROVEMENT

- **Report** all hazards, unsafe acts, unsafe conditions, incidents, and near misses.
- **Learn** from investigations and apply corrective and preventive actions.
- Support your teammates and promote a positive **safety culture.**
- Everyone has the authority and responsibility to **stop unsafe work.**



SAFETY IS EVERYONE'S RESPONSIBILITY.

TOGETHER, WE PREPARE. TOGETHER, WE SUCCEED.

WORK AS A TEAM | COMMUNICATE CLEARLY | FOLLOW PROCEDURES | USE CORRECT PPE | PROTECT LIVES, VESSEL & ENVIRONMENT

A container cargo vessel transit in deep water. Source: Felix Cesare / Getty Images

"Always think as if an accident has already happened"