

Workplace Safety and Health Guidelines

Personal Flotation Devices — Life Jackets



WSHCOUNCIL

Tripartite Alliance for
Workplace Safety and Health

Contents

1.	Introduction	4
1.1	Objectives and Scope	4
1.2	Managing Life Jackets	5
1.3	Roles and Responsibilities	5
1.4	Relevant Legislation	6
1.5	Risk Assessment	6
2.	Life Jackets	8
2.1	Types of Life Jacket	8
2.2	Types of Activation Mechanism for Gas Inflation	10
3.	Selection of Life Jacket	11
3.1	Differences between Inflatable and Foam Life Jackets	11
3.2	Life Jacket Performance Level	11
3.3	Life Jacket Accessories	12
3.4	Selection During Procurement	15
4.	Pre-use Inspection	16
5.	Life Jacket Use	20
6.	Life Jacket Storage and Maintenance	22
6.1	Cleaning before Storage	22
6.2	Storage	22
6.3	Servicing	22
7.	Case Studies	24
	Case Study 1: Technician fell into the sea while crossing from tanker to service boat using an accommodation ladder	24
	Case Study 2: Shore technician fell into the sea when disembarking a vessel to board a launch boat using a pilot ladder	26
	Case Study 3: Worker drowned after falling into river	28
8.	References	29
9.	Acknowledgements	30
10.	Annexes	31
	Annex A: Roles and Responsibilities	31
	Annex B: Life Jacket Selection Guide for Users	33
	Annex C: Sample pre-use inspection checklist	34

1. Introduction

A Personal Flotation Device (PFD) is a form of Personal Protective Equipment (PPE). It is a garment or device which, when correctly worn and used in water, provides the user with a specific amount of buoyancy, increasing the likelihood of survival should a person fall into water. Proper selection, inspection, use, and maintenance of the PFDs are important to ensure their reliability and effectiveness during emergencies.

PFDs can be classified into the following classes:

- Life jackets
- Buoyancy aids
- Special application PFDs

A life jacket keeps the user in a face-up floating position without additional action, with various levels of performance suitable for sheltered¹ and non-sheltered waters. A life jacket has a buoyancy distribution sufficient to turn most users to a position where the user's mouth is clear of the water even when exhausted or unconscious.

On the other hand, a buoyancy aid² does not provide significant face-up flotation ability and thus requires active manoeuvring by the user to position one's face clear of the water.

Finally, special application PFDs offer performance equivalent to that of a life jacket or buoyancy aid, but with additional features and specific application requirements.

In general, all persons who are exposed to the risk of falling into water and of drowning at work should use life jackets. Buoyancy aids, which are not suitable for work, should only be used with supervision for recreational purposes or by rescuers performing water rescue.

1.1 Objectives and Scope

These Guidelines are intended for any person working in and near water in Singapore, including but not limited to workers involved in mooring operations, vessel transfers, launch boat operations and workers working next to water bodies such as reservoirs and ponds. They apply to all works in Singapore where there is a possible risk of a worker falling into water and drowning while carrying out such works.

The objectives of these guidelines are to provide Workplace Safety and Health (WSH) guidance on (i) the selection of life jackets for the different work environments in line with international standards, and (ii) good practices on the use and maintenance of life jackets.

¹ Reference to ISO 12402:2020, sheltered water means water with protection from significant breaking waves, current, or strong winds, where the possibility of being blown or carried away from shore or a place of safety is minimal.

² Buoyancy aid (level 50) should not be used by persons at work at workplaces.

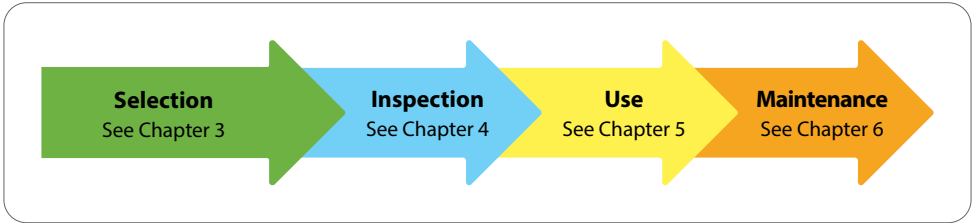
In line with ISO 12402 — Personal Flotation Devices, these Guidelines do not cover the requirements for life jackets on seagoing ships, which are regulated by the International Maritime Organization (IMO) under the International Convention for Safety of Life at Sea (SOLAS)³. Throwable devices, flotation cushions, buoyancy aids and special application PFDs are also excluded from these guidelines.

Additionally, equipment used in non-work related, recreation or leisure activities (e.g., water sports)⁴ will not be covered in these Guidelines.

1.2 Managing Life Jackets

The process of managing life jackets involves several stages, from selecting the right life jacket for the job to inspecting it before use and to maintaining it properly. Readers may refer to the relevant Chapter of these Guidelines for details of each stage of Figure 1.

Figure 1: **Systematic approach to managing life jackets**



1.3 Roles and Responsibilities

It is important for all workers and their employers working in or near the water to understand their roles and responsibilities in ensuring safety and preventing accidents or incidents.

The stakeholders defined in this Guidelines are:

- Employer
- Principal
- Self-employed
- Employee
- Manufacturer/Supplier of PFDs

[Annex A](#) outlines the roles and responsibilities of the above stakeholders.

³ Life jackets that comply with SOLAS standards are designed and tested to meet specific criteria to enhance safety at sea. Amongst the various accessories and features found in SOLAS life jackets, of special mention is the inclusion of two independent chambers that can inflate separately, providing redundancy in the event of failure.

⁴ For water sports and recreational activities, refer to SS 701:2023 Code of Practice for inland and open water sporting activities, which specifies requirements that are aimed at preventing injuries and fatalities from recreational, competitive, and educational activities planned by the public and organised groups in inland and open waters.

1.4 Relevant Legislation

The following WSH legislations and Guidelines by the Maritime & Port Authority of Singapore (MPA) are relevant to the use of life jackets while at work. The list provided below is non-exhaustive, and organisations should proactively identify other relevant regulatory requirements that apply to their work activities.

Workplace Safety and Health (WSH) Act

The WSH Act and its subsidiary legislations cover the safety, health, and welfare of persons at work in a workplace. The Act states that employers, self-employed persons, and principals are responsible to take reasonably practicable measures necessary to ensure the safety and health of the persons at work and of others who may be affected by the work being carried out.

WSH (Risk Management) Regulations

The WSH (Risk Management) Regulations state that employers, self-employed persons, and principals are responsible for identifying safety and health hazards at workplaces and taking measures to eliminate or reduce the risks.

WSH (General Provisions) Regulation 23 — Measures to be Taken to Prevent Falls

Employers shall provide their workers who are at risk of falling and drowning in the water with equipment and means of rescuing and resuscitating drowning persons. They shall also provide suitable life jackets or other equipment for keeping such persons afloat in the event they fall into the water.

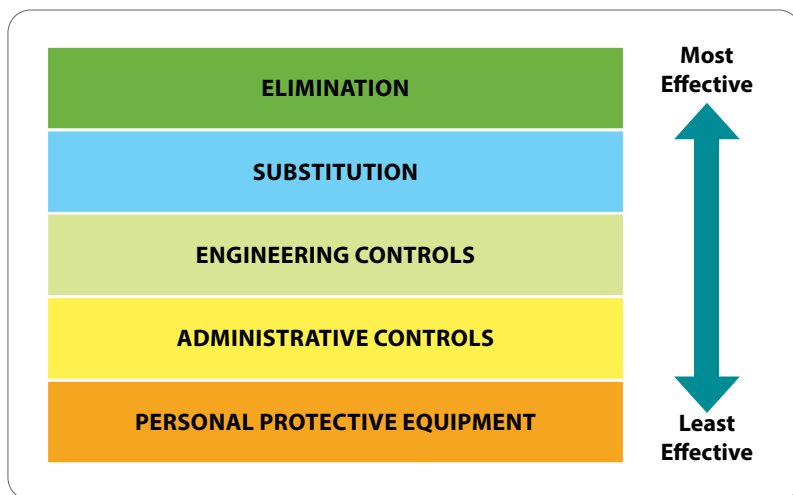
Port Marine Circular on Guidelines for Safe Transfer of Persons between Vessels at Anchorages

The MPA Guidelines for Safe Transfer of Persons between Vessels at Anchorages recommend the use of a working SOLAS type-approved life jacket or a life jacket meeting ISO 12402 performance level.

1.5 Risk Assessment

Risk assessment (RA) is the process of identifying, evaluating, and controlling risks at the workplace. RA is a proactive approach that can help prevent accidents and injuries. For example, where the risk of drowning cannot be eliminated in a work process, conducting an RA before starting work can help in identifying the control measures to mitigate the risk of drowning. The control of hazards and the reduction of risk can be achieved through the WSH Hierarchy of Control (see Figure 2). These controls are not usually mutually exclusive. For example, engineering controls can be implemented concurrently with administrative controls.

Figure 2: WSH Hierarchy of Control



Elimination refers to the total removal of the worker’s exposure to the hazards, effectively making all the identified possible accidents, incidents, and ill-health impossible. It is a permanent solution and should be attempted first. Once the exposure to hazard is eliminated, all other controls, such as the use of life jackets would no longer be required. For example, adopting technologies such as using robotic equipment for inspections or tele-consulting with shore technicians for shipboard technical support.

Substitution involves replacing a process or product with a less hazardous process or product to mitigate the risk. For example, doing work in dry docking facilities instead of traditional wet docking methods.

Engineering controls are physical means that reduce the likelihood of occurrence or severity of consequence of the mishap. For example, installing guardrails or barriers along the edges of docks, piers or other water bodies to prevent workers from accidentally falling in.

Administrative controls eliminate or reduce exposure to a hazard by adherence to procedures and instructions. Documentation should emphasise all the steps to be taken and controls to be used to carry out the activity safely. An example would be the safe work practices for working near water bodies.

Personal protective equipment should be considered only as a last resort; after all other control measures have been considered. The success of this control depends critically on the PPE being chosen, and whether it is fitted correctly, always worn and maintained properly. Appropriate PPE such as suitable life jackets of the appropriate performance level should be used as an additional safeguard as long as there is a potential risk of drowning.

In general, detailed risk assessments should be performed and approved for all works in and near water bodies before the tasks commence. For more information on RA, refer to [WSH Council’s Code of Practice on Workplace Safety and Health \(WSH\) Risk Management](#).

2. Life Jackets

Life jackets are essential PPE for workers who are exposed to the risk of falling into water and drowning. Workers who work in and near water should wear a life jacket that is appropriate for the task, as it can significantly increase the chances of survival should they fall into the water.

2.1 Types of Life Jacket

There are two main types of life jacket:

- **Foam-type:** A life jacket filled with foam material that provides natural buoyancy without the need for inflation.

Figure 3: Example of a Foam Type Life Jacket



- **Inflatable-type:** A life jacket containing a compressed gas [usually carbon dioxide (CO₂)] cartridge that will inflate the bladder of the life jacket when activated. Both automatic and manual life jackets are equipped with an oral inflation tube as a backup to inflate the life jacket by blowing air into it, should the rest of the inflation mechanisms fail.
 - Automatic inflation: An automatic inflatable life jacket typically has two inflation mechanisms –
 - i an automatic mechanism that inflates the life jacket by puncturing a gas cartridge once submerged in water, and
 - ii a backup pull cord that can be used to manually puncture the same gas cartridge to inflate the life jacket in the event of automatic mechanism failure.

Figure 4: Example of an Automatic Gas Inflation Type Life Jacket



- Manual inflation: These are life jackets that are designed with only the manual inflation pull cord to puncture the gas cartridge for inflation, so it is important to familiarise with the operation of a life jacket before using it.

Figure 5: Example of a Manual Gas Inflation Type Life Jacket



Note

Automatic inflatable life jackets are recommended for activities where users might unexpectedly enter the water and become unconscious. Manual inflatable life jackets must be inflated by a user who is conscious and is able to remain afloat before the life jackets is activated.

Users may assume that their manual life jackets will automatically activate upon entering the water. They, in fact, do not. This assumption usually stems from the lack of familiarity with the life jackets, or from unclear or indistinguishable markings. It is important to understand the inflation mechanism of your inflatable life jackets. Users are to check with the supplier if unsure.

2.2 Types of Activation Mechanism for Gas Inflation

The following are examples of the activation mechanisms in automatic inflatable life jackets:

Water-soluble capsule

A bobbin pill is a small water-soluble capsule found in the activation mechanism. Once it is submerged in water, the bobbin pill will dissolve. This releases a spring-loaded firing pin which punctures the cartridge that releases gas to inflate the life jacket. Note that the bobbin pill is designed to be dissolved by water that flows into the activation mechanism, such as when a person falls into water. Rainwater or sea spray will not dissolve the bobbin pill unless excessive water fills the activation mechanism.

Hydrostatic valve

A pressure-sensitive hydrostatic valve is designed to activate when submerged in 10cm of water. Once submerged, the valve releases a spring-loaded firing pin which punctures the cartridge that releases gas to inflate the life jacket. Rainwater or sea spray will not activate the mechanism as submergence is necessary for activation.

Pull Cord

When pulled, the pull cord activates or triggers the gas inflation, which then fills the life jacket rapidly with gas to provide buoyancy for the user. In manual life jackets, pulling the cord is the sole method for inflation, whereas in automatic inflatable life jackets, it serves as a backup method in case the automatic mechanism fails.

3. Selection of Life Jacket

Employers must select the appropriate type of life jackets for their employees based on their specific work activity. Life jackets are also available under different performance levels, so it is important to select the one best suited for the work environment and activity.

3.1 Differences between Inflatable and Foam Life Jackets

Inflatable life jackets are more comfortable to wear over longer periods of time as compared to foam life jackets as they are less bulky and allows better movement while at work. Inflatable life jackets will also contour closer to the user’s body shape when inflated.

The advantage of foam life jackets is that they do not need to be inflated to provide flotation. They are made of naturally buoyant materials, such as closed-cell foam, that will keep the user afloat without the need for activation mechanisms or gas cartridges. Foam life jackets provide consistent buoyancy as the foam material does not absorb water. However, foam life jackets may impede the work activity as they are generally bulkier and less comfortable to wear when compared to inflatable life jackets.

3.2 Life Jacket Performance Level

The performance level of a life jacket specifies its degree of buoyancy and the conditions under which it can be used. The three common life jacket performance levels are 100, 150 and 275. Note that life jackets with higher performance levels are more buoyant and are designed for more demanding conditions.

The table below summarises the different performance levels of life jackets:

Table 1: Performance level of life jackets and its application

Performance Level	Application and Suitability
100	• For use in sheltered or calm waters (e.g., swimming pools, reservoirs, or ponds). Not suitable for rough water conditions or when there is wave splash. • For lightly clothed users (e.g., sports attire, single layer clothing without equipment or attachment). • Intended for those who may have to wait for rescue in sheltered or calm waters. • Give reasonable assurance of safety from drowning in relatively calm waters, where users remain capable of helping themselves. • Not guaranteed to self-right an unconscious user and should not be expected to protect the airway of an unconscious person in rough water.

Performance Level	Application and Suitability
150	- For use in non-sheltered (e.g., anchorages), rough or offshore waters. - For fully clothed user or heavy weather clothing. - Give reasonable assurance of safety to people not fully capable of helping themselves due to injury or exhaustion. - Able to turn an unconscious user into a position where one's mouth and nose is clear of the water without active participation, but with limitations for wearers of special protective clothing or heavy equipment.
275	- For use in offshore waters under severe weather or sea conditions. - For users who don special protective clothing. - For users who are wearing items of significant weight (e.g., tool belt) and thus requires additional buoyancy. - For users with clothing which may trap air and adversely affect the self-righting capacity of the life jacket. - Able to turn an unconscious user into a position where one's mouth and nose is clear of the water without active participation, even when they are wearing heavy clothing or weather gear.

For work at non-sheltered waters, ISO 12402 recommends the use of life jackets with a performance level of at least 150 and above. Employers and life jacket users are advised to conduct a thorough risk assessment that is specific to their nature of their work before selecting a life jacket of appropriate performance level for the work activity.

3.3 Life Jacket Accessories

Below are examples of accessories that life jackets can be provided with:

Table 2: Examples of life jacket accessories

Reflective material		Designed to raise the visibility of users in low light condition.
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Whistle		Attached to life jackets to enable users to signal for help in an emergency.
Lifting loop		Provides a secure attachment point for rescuers to hook onto for retrieving a person from the water.
Indicator light		Attached to life jackets to make users more visible and easier to locate.
Personal Locator Device (also commonly referred to as a Personal Locator Beacon)		Used as part of a system to assist in finding users who have fallen overboard. Particularly useful in areas with strong current and tides or while working at night.

Ride-up prevention system		A device attached to a life jacket. When worn and adjusted correctly, the life jacket will be prevented from riding-up users' torsos in the event of entering the water and due to effect of wave action. Commonly a crotch-strap or thigh-straps. It is recommended to purchase a life jacket that includes a device that will prevent a life jacket from riding-up.
Spray Hood		A hood that can be pulled over users' heads to protect their airway from sea spray. Useful in rough weather or water conditions when immediate rescue is not an option.
Deck Safety Harness integrated with a Life Jacket	 Deck safety harness with either textile or metal D-ring	Designed to allow users to be securely attached to an anchor point or lifeline on a vessel or boat, to protect users from falling overboard.

The mandatory accessories for conformance to ISO 12402 are as follows:

Table 3: **Mandatory ISO 12402 life jacket accessories**

Performance Level	Reflective Material	Whistle	Lifting Loop
100	✓	✓	✗
150	✓	✓	✓
275	✓	✓	✓

3.4 Selection During Procurement

Employers are advised to acquire life jackets that are either SOLAS type-approved or meet ISO 12402 standards.

Employers/purchasers should also consider the following in the procurement plan:

- **Trusted source:** Purchase directly from manufacturers and/or authorised distributors and request the certificate/declaration of conformity for the life jackets.
- **Comfort and sizing:** Acquire a variety of sizes so that workers can find a life jacket that fits them well. The selected life jackets should be comfortable to wear throughout the duration of work and should not restrict the worker’s movement.
- **High visibility:** Select brightly coloured life jackets with reflective strips for improved visibility, especially in low light condition.
- **Worker training:** The life jackets should come with an instruction manual, and training should be conducted for workers to learn how to use the life jackets correctly. This is especially important for inflatable life jackets and those with special accessories.
- **Service date:** The life jackets should come labelled with a service date so that employers can keep track of when the life jackets need to be sent for maintenance.
- **Overall value:** The procurement of life jackets should be viewed as a long-term investment to protect workers from harm. While initial cost is a concern, prioritising product quality and features that enhance protection can lead to fewer replacements over the long term and better overall value.
- **Accessories:** Additional life jacket accessories may be necessary in accordance with the work environment and the possible emergency situation(s). An example is appropriate protective cover used by workers performing welding activity in a marine environment, to protect the life jacket against molten metal splashes and sparks.

Please refer to [Annex B](#) for a basic guide on selecting a life jacket.

Note

During the issuance of life jackets, the issuing officer should inform users about the type of life jackets they are receiving and ensure they are trained to use them.

4. Pre-use Inspection

Before putting on a life jacket, it is important to conduct a pre-use visual inspection to ensure the life jacket is in good condition and can be relied upon in the event of an emergency. This inspection involves examining all components of the life jacket, including straps, buckles, zippers, and inflation mechanisms (which include gas cartridges and firing mechanisms), if applicable. Additionally, users should confirm the type of life jackets they will be using (i.e., automatic or manual inflation mechanism).

Do not use any life jacket found to be damaged or in poor condition. Below are examples of worn-out and damaged life jackets, as well as those that have been inflated prior to use. These should be taken out of service and replaced immediately.

Figure 6: Corroded gas cartridges



Figure 7: Red indicator — incorrect fitting or a compromised activation mechanism (may vary depending on the type of inflatable life jacket)



Figure 8: Indication of activated life jackets (may vary depending on the type of inflatable life jacket)

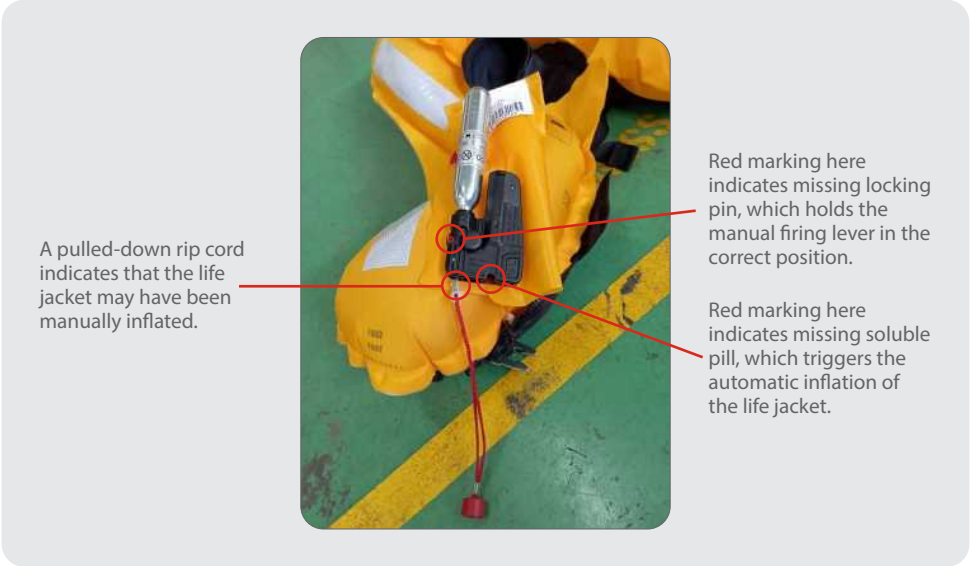


Figure 9: Damaged stitches on an inflatable life jacket

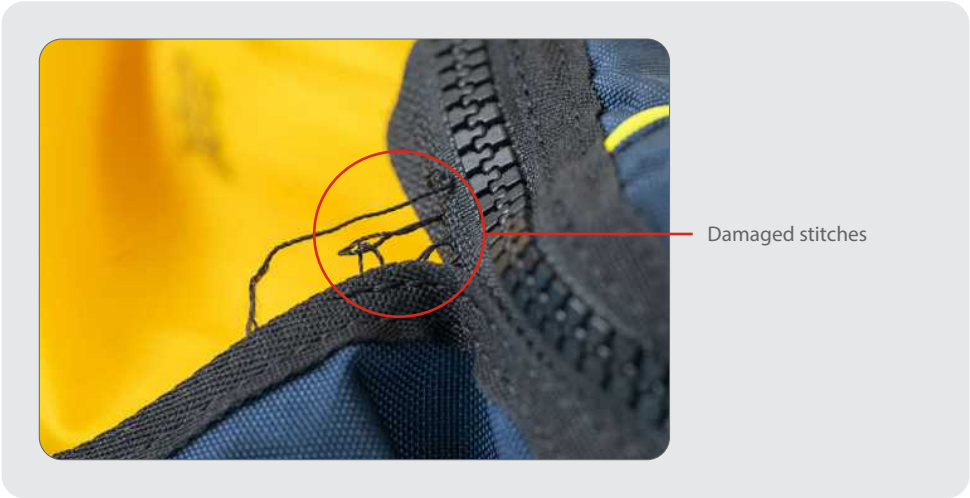


Figure 10: Discoloured and torn foam life jacket



A sample checklist that outlines the key elements for inspection before putting on a life jacket can be found in [Annex C](#).

Users are advised to refer to the respective life jacket user manual for model-specific instructions on pre-use checks, and to customise or expand the above inspection checklist accordingly.

Figure 11: **Example of a life jacket label**

Information on the life jacket

Users can find out more about the life jacket to be used by referring to the labels and/or markings on the life jacket, which typically indicate its performance level, size, basic instructions for use, and whether it is certified to ISO 12402 standard or is SOLAS type approved.



The image shows a white label with black text and icons. At the top, it reads '> 43 kg', 'Type: 608', and 'EN ISO 12402-2/A1:2010'. Below this are five icons in a grid: 1. A person in a life jacket with the number '275'. 2. A silhouette of a person with a checkmark and the text 'kg' and '> 43'. 3. A CO2 cylinder with the text 'g CO2' and '60g/60g'. 4. A person with a checkmark and the text 'cm' and '< 175'. 5. A person with a checkmark and the text '275'.

Step 1: Choose the right size life jacket.

Refer to the sizing chart provided by the manufacturer and ensure that the user falls within the specified ranges.

Step 2: Put the life jacket over clothes.

Wear the life jacket like a vest. Do not wear an inflatable life jacket under any clothing.

Step 3: Fasten all buckles.

Fasten the buckles. Check that the manual inflation pull cord is hanging out from the bottom of the life jacket.

Step 4: Adjust the straps.

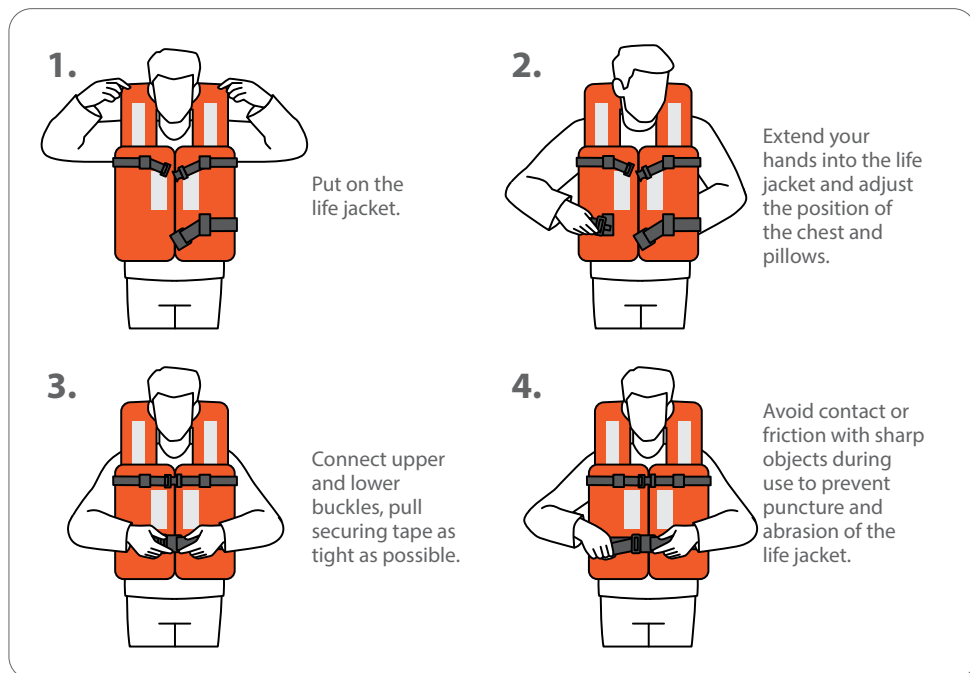
Pull the straps to customise the fit to the body.

Step 5: Check for comfort.

Adjust the life jacket so that it is comfortable yet secure. Ensure that it does not impede movement.

Below are the step-by-step instructions on how to use the foam life jackets:

Figure 13: Typical steps for donning a foam life jacket



6. Life Jacket Storage and Maintenance

To prolong the lifespan of a life jacket, it is important to clean it before storage and to store it in an environment that does not cause the life jacket material(s) to degrade.

To ensure that the life jacket is reliable and functions properly during emergencies, regular life jacket maintenance is crucial. Refer to the life jacket user manual and adhere to the maintenance schedule specified by the manufacturer.

6.1 Cleaning before Storage

In general, life jackets may be hand-washed with clean water to remove seawater, sand, and other contaminants from its surface. Refrain from using abrasive chemicals or cleaning agents which may damage the life jacket. Air-dry the life jacket in a well-ventilated area and once the life jacket is dry, check for any shrinkage or puckering before storage. Refer to the life jacket user manual for specific cleaning instructions which may differ based on the material(s) used in the life jacket.

6.2 Storage

Store life jackets in a well-ventilated area, away from direct sunlight. Do not store life jackets in locations with extreme temperatures as this can cause material degradation. Also, do not store life jackets under high humidity conditions as this can result in mould or mildew growth. In the case of inflatable life jackets, high humidity may also result in gas cartridge corrosion, as well as unwanted early release of the automatic inflation device caused by condensation. Avoid folding the life jacket or placing heavy objects on top of the life jackets as this can cause physical damage.

6.3 Servicing

Send life jackets to an authorised service station based on the maintenance schedule specified by the manufacturer. Typically, inflatable life jackets are required to undergo yearly servicing. Maintenance checks carried out during servicing include subjecting the inflation mechanism and bladder to a functionality test, checking valve and seal integrity, replacing worn or expired components, and proper repacking.

A typical life jacket that has been serviced can be identified easily by the presence of a service tag or badge:

Figure 14: Example of a service tag

The last date of servicing was November 2023 and the next servicing to be carried out in 2024.

Figure 15: Example of a service badge

The next servicing should be carried out within December 2024.

Note: The number “24” on the badge indicates the year, while the notch’s position on the rim at the number “12” indicates the month for the next servicing. Typically, the month is marked out or punctured to enhance clarity.

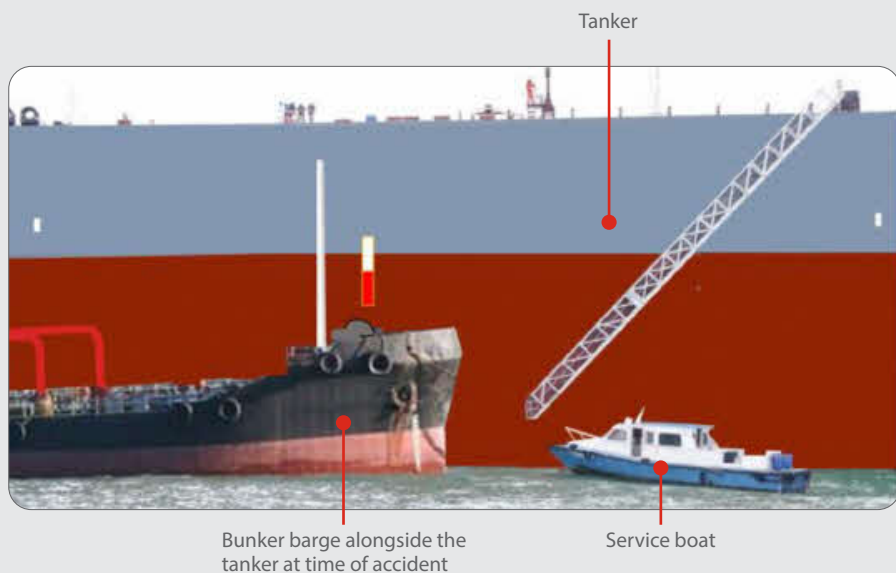
7. Case Studies

Case Study 1: Technician fell into the sea while crossing from tanker to service boat using an accommodation ladder

Accident Description

On May 17, 2022, a technician was disembarking from a tanker to a service boat using an accommodation ladder. The sudden sway of the service boat caused the technician to lose balance, causing him to fall overboard. Lifebuoys were deployed immediately, but the technician did not manage to grab onto any until about 10 minutes later, when he managed to hold on to one lifebuoy. However, the technician soon let go of it and subsequently went out of sight. His body was recovered four days later.

Profile view of the vessels involved (not to scale) (Photo source: Transport Safety Investigation Bureau)



Investigation Findings (relevant to life jacket use)

- The technician was wearing a manual inflatable life jacket at the time of the accident, but it was not inflated.
- It is unclear if the technician was disoriented or in a state of panic, unfamiliar with how to manually inflate the life jacket, or influenced by the misleading label, which included instructions for both manual and automatic inflatable life jacket.

Recommendations

- Ensure all personnel involved in transfer operation wear suitable life jackets to stay afloat if they fall into the water.
- Ensure that users know the type of life jackets being used and to be familiar with how the life jackets work.

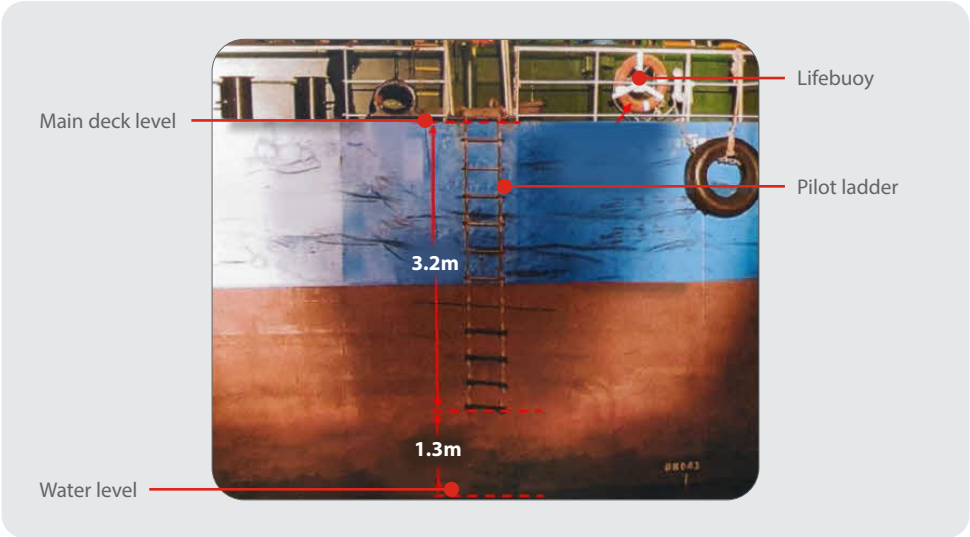
For more information and recommendations on Case Study 1, see the [final report from Transport Safety Investigation Bureau \(TSIB\)](#).

Case Study 2: Shore technician fell into the sea when disembarking a vessel to board a launch boat using a pilot ladder

Accident Description

On 16 February 2021, a Shore Technician (ST) was disembarking a vessel to board a launch boat via a pilot ladder. While descending the pilot ladder, he fell into the sea. Efforts to bring him out of the water were not successful. He was eventually brought out of the water by the port authority's patrol boat which responded to the man overboard call. The ST was sent to the hospital where he was pronounced dead.

View of port side pilot ladder rigged for disembarkation (Photo source: Transport Safety Investigation Bureau)



Investigation Findings (relevant to life jacket use)

- The life jacket worn by the ST may have been equivalent to performance level 100, which is only suitable for use in sheltered or calm waters.
- The life jacket model was not suitable for non-swimmers as stated in the user manual, which was in Japanese.
- The backpack that the ST carried weighed about 8kg, which may have affected his ability to stay afloat.

Recommendations

- Bags can prevent a worker from staying afloat or obstruct the proper inflation of the life jacket. Lift or lower bags separately. Workers embarking or disembarking a vessel must keep their hands free for the climb and not be carrying any bags.
- Use a life jacket of the correct performance level for the work environment and know the limitations of the life jacket in use.

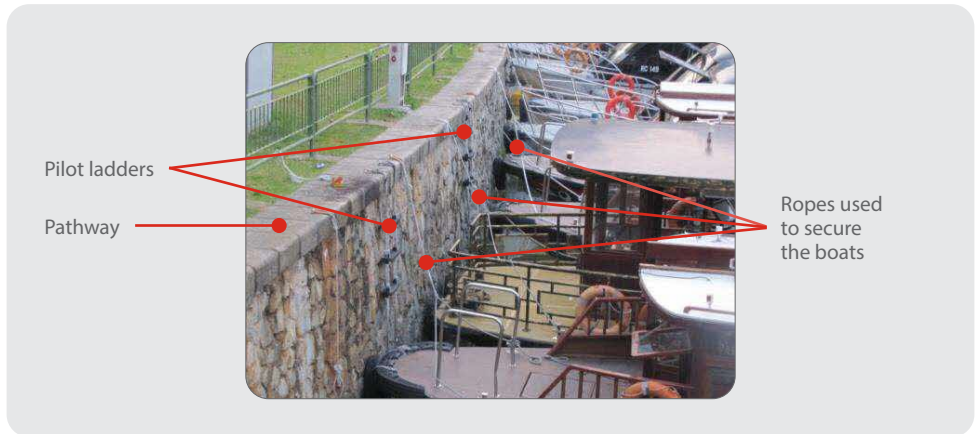
For more information and recommendations on Case Study 2, see the [final report from Transport Safety Investigation Bureau \(TSIB\)](#).

Case Study 3: Worker drowned after falling into river

Accident Description

On 12 March 2019, two river cruise workers reported for their night shift duty to berth and charge the electric boats at the jetty. While one of the workers was doing his rounds, he noticed his co-worker resting on board a boat. About two hours later, the worker could not locate his co-worker. The police were notified, and the co-worker's body found about 16 hours later, floating near the location where he was last seen. The co-worker could have slipped and fell into the water when he was making his way from the boat back to land. He could also have been moving from the boat to the pathway or from one boat to another to access the landing point.

Photograph showing boats berthed at the jetty, and the pilot ladders used by the workers to transfer between the boats and the pathway.



Investigation Findings

- The worker did not know how to swim and was not wearing a life jacket.
- The worker likely exited the work area through an unsafe path.

Recommendations

- Conduct RA before starting work, for all activities on a boat or near a body of water to control any foreseeable risk that may arise during the work. The RA should include slip, trip, and fall hazards along access routes, falling hazards while getting on or off a boat, health condition of workers as well as an assessment of each workers' ability to swim.
- Put on a suitable life jacket when working near water.

For more information and recommendations on Case Study 3, refer to WSH Council's [Case Studies on Working In and Around Water](#).

8. References

- Workplace Safety and Health Act
- WSH (General Provisions) Regulations
- WSH (Risk Management) Regulations
- Code of Practice on Workplace Safety and Health Risk Management
- Code of Practice for Working Safely at Heights
- ISO 12402: 2020 Personal Flotation Devices (Life jackets and Buoyancy Aids)
- International Convention for the Safety of Life at Sea (SOLAS), 1974
- LSA Code – International Life-Saving Appliance Code – Resolution MSC.48(66)
- Maritime And Port Authority's Guidelines for Safe Transfer of Persons Between Vessels at Anchorages
- WSH Council's Guide to WSH for Service Providers on Safe Working on Ships at Anchorages
- WSH Council's Guide to WSH Obligations for Shipmasters and Contractors for Anchorage Works
- WSH Council's Case Studies on Working in and Around Water
- SS 701:2023 Code of Practice for inland and open water sporting activities

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10. Annexes

Annex A — Roles and Responsibilities

This table outlines the roles and responsibilities of different stakeholders in ensuring the safe and proper use of life jackets in a workplace, with a focus on adherence to safety standards, regular inspections, and training to promote water safety in addition to the roles and responsibilities of the stakeholders as mentioned in the WSH Act 2006.

Roles	Organisations
Employer	• Conduct RA of the relevant works which has the potential risk of workers falling into water and drowning. • Select the appropriate performance level of the life jacket according to the job requirement. • Use and maintain life jackets in accordance with the manufacturer's instructions. • Develop the Safe Work Procedures and mandate the use of life jackets for working in and near water. • Train workers on life jackets selection, inspection, maintenance, and usage. • Ensure regular inspections, maintenance, and replacement of life jackets as needed. • Encourage a safety culture that emphasises the importance of life jackets usage and compliance. • Keep records of life jacket inspections and maintenance. • Ensure that RA is conducted on all the WSH risks, associated with selection, inspection, use and maintenance of life jackets. • To take, so far as is reasonably practicable, measures as are necessary to ensure the safety and health of persons (not being the employer's employees) who may be affected by any undertaking carried on by the employer in the workplace.
Principal	• Ensure that any contractor engaged by the principal and any direct or indirect subcontractor has conducted RA of the relevant works which has the potential risk of workers falling into water and drowning. • Ensure that the employee of any contractor engaged by the principal and any direct or indirect subcontractor has been issued a life jacket which is suitable for the works engaged for. • Ensure that the persons at work have been trained to use the life jackets. • If the Principal instruct the contractor or the workers on how work is to be carried out, the Principal's duties will include that of an Employer.

Roles	Organisations
Self employed	• Conduct a thorough RA of the work activities which have the potential risk of falling into water and drowning, before undertaking the work. • Select the appropriate performance level of the life jacket according to job requirement. • Use and maintain the life jacket in accordance with the manufacturer's instructions. • Regularly inspect the life jacket to ensure that it is in good condition and functioning before each use. • Familiarise with the proper use and inflation mechanism of the life jacket. • Keep records of life jacket inspections and maintenance.
Employee	• To wear a life jacket of the correct size, type, and performance level depending on the works to be carried out. • Assess the risk and exercise caution when working near water. • Visually ensure that the life jacket is in serviceable condition before use. • Follow the manufacturer's instructions for cleaning, maintenance, and storage. • Report any issues or concerns regarding the life jacket to the employer or safety personnel.
Manufacturer/ Supplier	• Ensure that appropriate labelling and adequate instructions are provided with each life jacket. • Offer customers with different sizes and types of life jackets suitable for specific working conditions. • Educate customers about the importance of proper use and maintenance of life jackets.

Annex B — Life Jacket Selection Guide for Users

Factor to Consider	Recommendation	
Certified life jacket	Select a life jacket that is SOLAS type-approved and/or certified to ISO 12402 or any other equivalent standard.	
Foam or inflatable	Choose between a foam or inflatable life jackets based on the task to be performed and its potential for interfering with the work activity.	
Manual or automatic inflation	Decide on automatic or manual inflation based on the work activity: Automatic inflatable life jackets are suitable for work situations where a worker may lose consciousness as these will inflate automatically in water. Manual inflatable life jackets can only be activated by a worker who is conscious and is able to remain afloat before the life jackets is activated. These are a good choice for work or emergency situations where there is ample time for users to react.	
Performance level (to be determined via risk assessment)	100	For use in sheltered or calm waters (e.g., swimming pools, reservoirs, or ponds). Not suitable for rough water condition or when there is wave splash.
	150	For use in non-sheltered (e.g., anchorages), rough or offshore waters.
	275	For use in offshore under severe weather or sea conditions.
Comfort and sizing	Select a life jacket of the right size with adjustable straps so that you can customise it for better comfort and fit.	
Visibility	Choose a brightly coloured life jacket with reflective strips for improved visibility.	
Accessories	Decide on the life jacket accessories necessary for the work environment and the possible emergency situation(s).	

Annex C — Sample Pre-use Inspection Checklist

The checklist serves as a reference and may vary depending on the type, model, and brand of life jackets. Users must adhere to the supplier or manufacturer’s guidelines and the user manual when conducting pre-use inspection checks.

	Y	N
All life jackets		
1. Cover is not damaged		
2. The stitching of the cover is not worn or frayed		
3. Straps, fasteners and buckles are in good condition		
4. Reflective strips are firmly attached and not faded		
5. Whistle is securely attached and working		
Inflatable life jacket		
1. Manual inflation pull cord is hanging freely from the cover and easily accessible		
2. Quick bursting elements (e.g. zippers, Velcro straps, press studs) of the cover are working as they should		
3. Bladder shows no signs of damage		
4. Oral inflation tube is present and in good condition		
5. Gas cartridge is not punctured or corroded (Check the user manual or with the supplier on the correct way to open the cover.)		
Punctured gas cartridge Gas cartridge that is not punctured		
Foam life jacket		
1. Foam is not damaged (e.g., no signs of crumbling, water damage or mould)		
2. Foam is evenly distributed and not lumpy or compressed in any area		

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