



Australian Government  
Australian Maritime Safety Authority

AMSA **Webinars**

Welcome to our webinar

# Managing operational stability risks in commercial fishing

The session will commence at 2:30pm AEDT



Australian Government

Australian Maritime Safety Authority

AMSA **Webinars**

# Managing operational stability risks in commercial fishing

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# Acknowledgement of Country

In the spirit of reconciliation, the Australian Maritime Safety Authority acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community.

We pay our respect to their Elders past and present and extend that respect to all Aboriginal and Torres Strait Islander peoples today.



'Navigating the Tides of Progress.'

Created for the Australian Maritime Safety Authority by Alysha Menzel, proud descendant of the Samsep people from Erub Island, Torres Strait Islands.

# Housekeeping

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- ✓ 30-second delay
- ✓ To turn on live captioning: Click 'Captions' at the top of your Teams window
- ✓ Post your questions in the Q&A chat
- ✓ You will receive a link to the recording after the webinar.



## We will cover

1. Fishing vessel stability
2. Lightship declarations
3. Fishing gear hook-up
4. Lifting and towing
5. Free surface and water on deck
6. Dynamic stability
7. Emergency preparation
8. Questions.



# Requirements for owners and operators

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Identify risks to vessel stability in the vessel's SMS.



Keep a record of modifications affecting the vessel's stability.

# Fishing vessel stability

## *Unique stability hazards ...*



Fishing vessel stability is complex because it's constantly changing. Unlike most other vessels, fishing boats operate through a complete cycle of weight and balance variations.



# Lightship declarations

## Why accuracy matters ...

**Australian Government**  
**Maritime Safety Authority**  
**VESSEL LIGHTSHIP DECLARATION**  
Marine Order 100 (Certificate of Survey - National Law, 2012)  
 Part 2 of the Transport Administration Act 2008

This declaration is for use by owners and masters of Class 7 vessels less than 12 metres long, or Class 2, 3 or 4 vessels, who are making a declaration under section 10(2) of the Act.

**A. Vessel details**

Vessel name:  Vessel identifier:  Vessel category:

Name and address of person completing this declaration:   
 Person completing this declaration is the:  vessel owner  vessel master

**B. Modifications to vessel**

I declare that since I last had an existing or previous stability test or was last issued a certificate of survey:

no modifications have been made to the vessel  
 only the modifications detailed below in Table 1 have been made to the vessel

**Table 1: Summary of modifications**

Historical lightweight displacement (when tested)	kg
Historical longitudinal centre of gravity (LCG) (when tested)	m
Description of the location (deck/ft) measurements have been taken from	
Description of the location (deck/ft) measurements have been taken from	

Item description and/or change	Added (kg)	Removed (kg)	Longitudinal position (centre line) (m)	Vertical position (centre line) (m)
1				
2				
3				
4				
5				
6				

**C. Declaration**

I declare that to the best of my knowledge, the statements in this declaration are true in every particular  
 I consent to the Australian Maritime Safety Authority using and disclosing the information provided in this declaration for purposes associated with the administration of the Marine Safety (Commercial Vessels) National Law Act 2012

Signature:  Name:  Date:

MSA/TS/100A Page 1 of 2

**10. Modification may include, but is not limited to:**

- Hull and superstructure structural modifications
- Addition, removal or relocation of fixed and movable ballast
- Addition or modifications to trailing, towing or lifting apparatus apart from the replacement of apparatus that is addressed in the stability assessment of the vessel
- Addition of jacks, cranes, derrick
- Addition, removal or modification of the size or location of the following tanks:
  - Fuel
  - Fresh water
  - Waste water
  - Lubricant
  - Ballast water
  - Sludge
  - Low ball
  - High ball
  - Cargo tanks
- Addition, removal, relocation or replacement of machinery including propulsion engines that are not a fire for the replacement
- Addition, removal, relocation or replacement of accommodation fit-out or equipment that would alter the displacement, trim or raise the centre of gravity of the vessel from the lightship condition for which it was previously approved by Customs, registration, air conditioners, compressors, and tanks, not limited to:
- Variation to the operational loading of the vessel including cargo and personnel weights and their location

**Note:** DURING A SURVEY that if a variation in lightweight displacement of 4% or more, or LCG of 2% or more, is identified:

(i) the master must demonstrate that the vessel stability remains adequate to perform its intended operation; and

(ii) where required in order to demonstrate adequate stability, measures the vessel against the relevant stability criteria.

**Further:** in accordance with Schedule 1 of Marine Order 100, a variation in lightweight displacement of 4% or more, or a variation in LCG of 2% or more, would cause the vessel to be a non-compliant vessel and trigger the application of the standards specified in Schedule 2 of Marine Order 100. See Marine Order 100, or contact the National Regulator for more information, where this occurs.

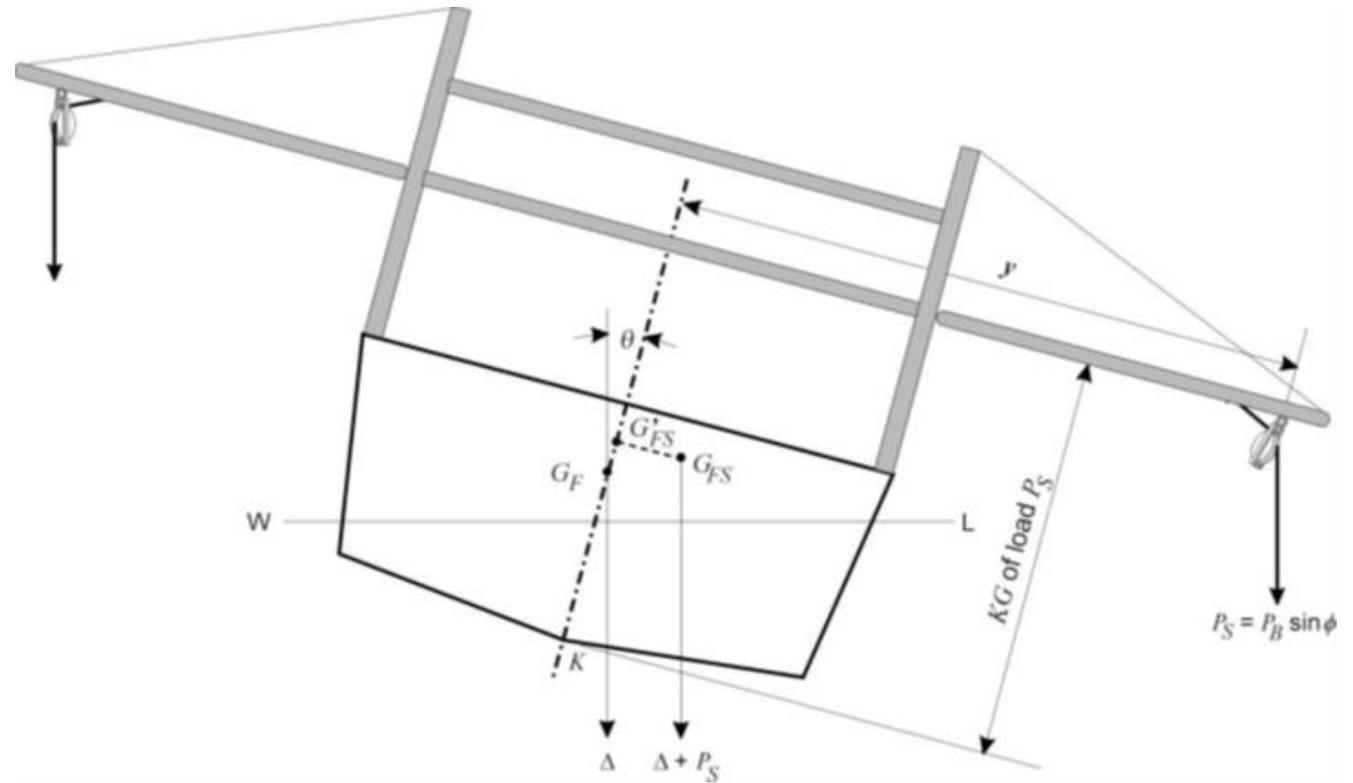
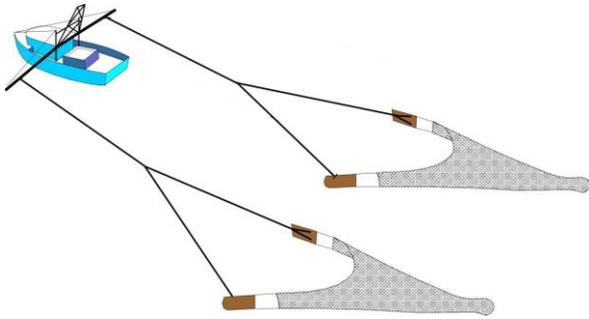
**Privacy notice**  
 The collection of information requested in this declaration is required for the administration of the Marine Safety (Commercial Vessels) National Law Act 2012. It will be used to provide support to the Air and will be provided to Commonwealth or State/Territory government agencies and other government departments for the purposes of marine safety. Failure to provide the information may result in the declaration not being processed. To find out more information or to make an appeal or request your personal information, please refer to the privacy policy on the MSA website or contact the National Regulator for more information, where this occurs.

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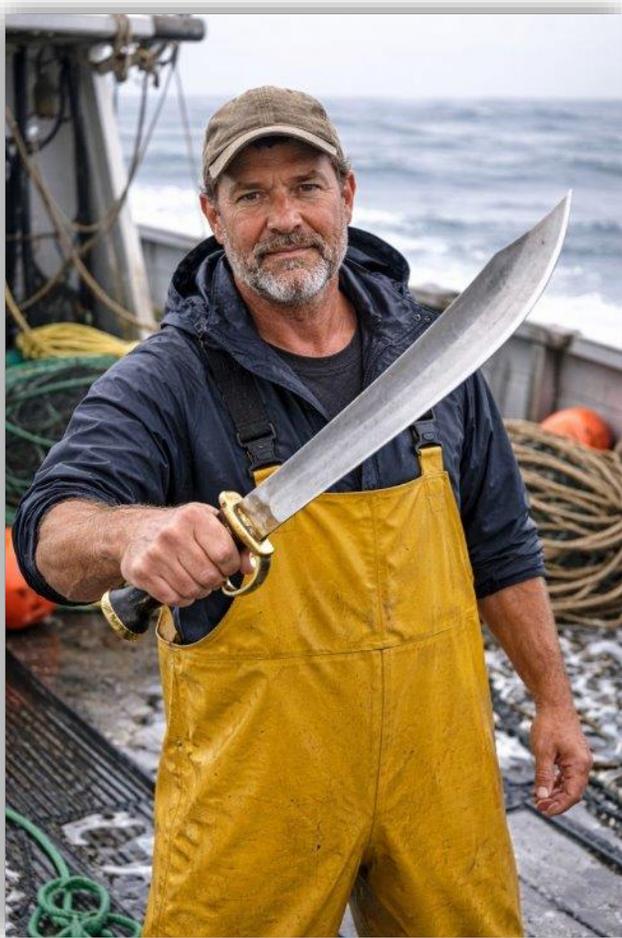
# Hook-up

*Nothing like a bit of unplanned trawl yoga to test your balance.*



# Hook-up recovery

*Cut the cord ..*



**1** Reduce power



**2** All crew on deck & close hatches



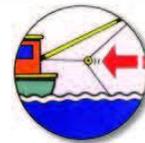
**3** Alert other vessels in the area



**4** Lifesaving equipment in float-free position

Steps 1–4:  
maximum 20 seconds to respond

**! Do not start winching until steps 1–4 are complete**



**5** Move trawl cables to the side of the vessel



**6** Be ready to cut the trawl wires



**7** Move to high side of the vessel



**8** If the vessel rolls, no matter where you are, hold on to an outer edge until it stops

# Risk assessment: Hook-up

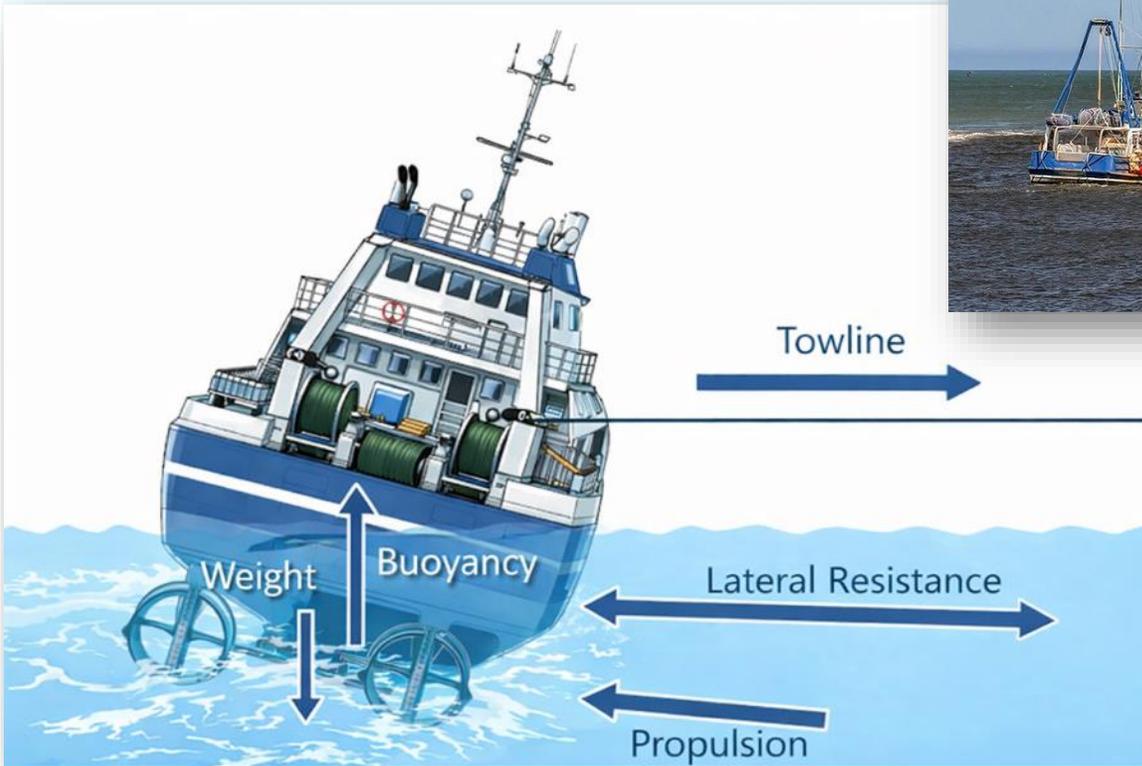
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Risk	Controls
Hook-up	<ul style="list-style-type: none"><li>• Crew training – knowing the risks and emergency steps</li><li>• Stop operations and assess stability before freeing gear</li><li>• Use of quick-release system or weak links in the tow or trawl line</li><li>• Review vessel design and capability – what forces can the vessel withstand.</li></ul>

# Lifting and towing

*Bro, do you even lift?*



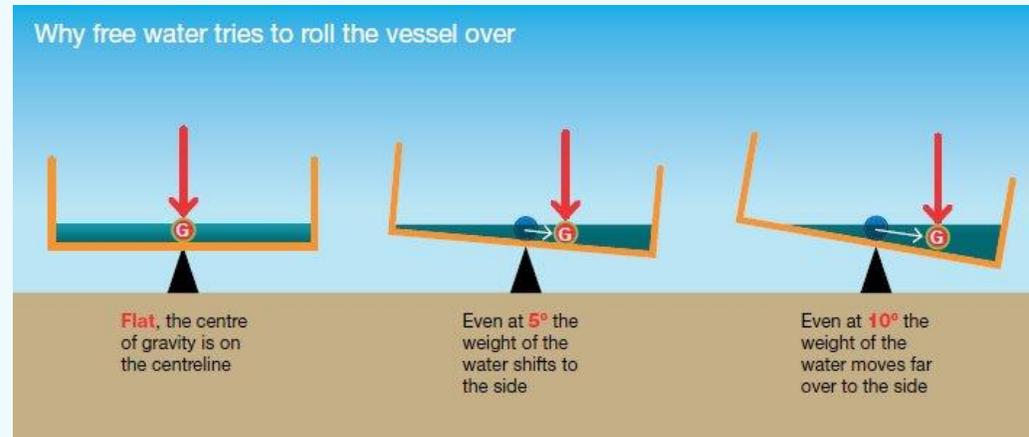
# Risk assessment: Lifting and towing

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Risk	Controls
Lifting	<ul style="list-style-type: none"><li>• Crew training</li><li>• Know crane operating limits</li><li>• Avoid lifting heavy loads in rough seas</li><li>• Factor in vessel condition and sea-state when planning lifts.</li></ul>
Towing	<ul style="list-style-type: none"><li>• Crew training</li><li>• Keep tow point as low as possible</li><li>• Assess sea-state and swell direction before towing</li><li>• Avoid towing in rough conditions when heavily loaded.</li></ul>

# Free surface and water on deck

*A hidden stability hazard.*



# Risk assessment: Free surface and water on deck

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Risk	Controls
Free surface and water on deck	<ul style="list-style-type: none"><li>• Keep freeing ports open and clear – move water off the deck quickly</li><li>• Operational limits in different weather conditions</li><li>• Keep bilge water and melted ice to a minimum</li><li>• Fuel and ballast tanks to be either full or empty – prevents slack tanks from forming</li><li>• Regular maintenance of freeing ports, holds and tanks to ensure they work as intended.</li></ul>

# Dynamic stability

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*There's an app for that ..*





# Other resources

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Inclining experiments and developing stability books:

<https://www.youtube.com/watch?v=03mpZncFTbA>

Fish Safe BC fishing vessel stability:

<https://www.youtube.com/watch?v=hb3KFIHcbn4>

If you fancy learning a bit of stability this video is worth a watch:

<https://www.youtube.com/watch?v=PVn66rotHQs>

Fishing vessel stability video shown earlier:

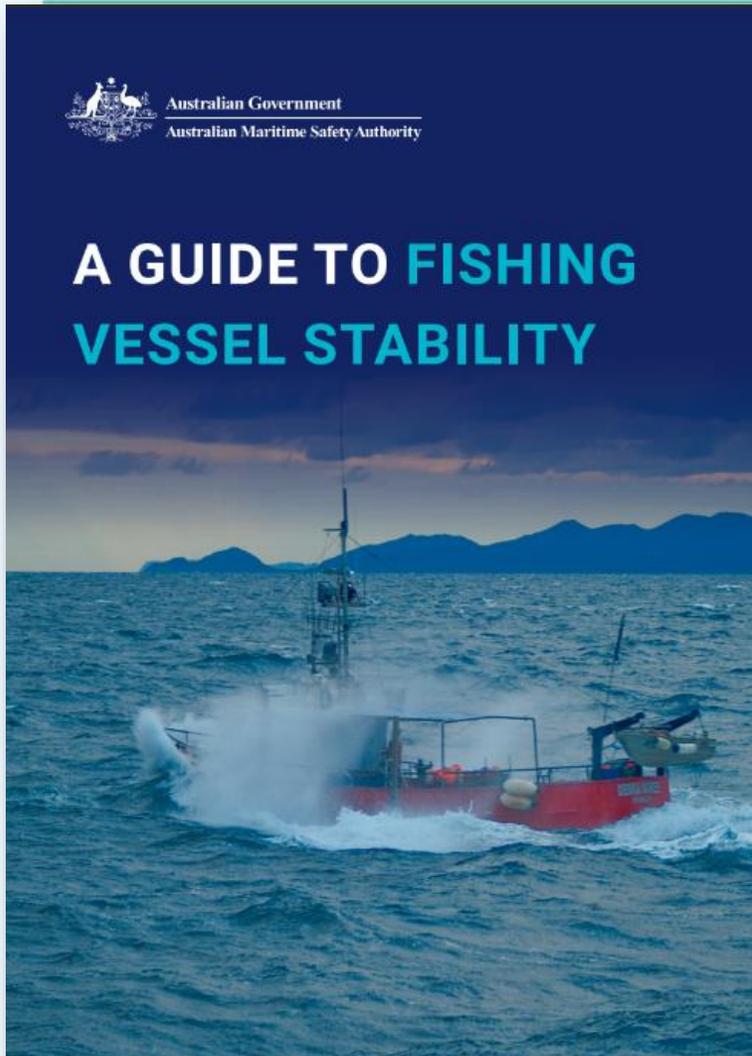
<https://www.youtube.com/watch?v=BdlvefjR0NI>

# Prepare to survive

*What works for your vessel and your operation?*



# Resources available at [amsa.gov.au/stability](https://amsa.gov.au/stability)



## Fishing vessel stability checklist

Fishing vessel operations face a range of stability risks.

You can use this checklist to help identify stability risks and controls in your operation.

**Note:** This is not a full list of risks and controls. You may need to identify others while some may not apply to your operation.

### Vessel modifications and new fishing gear

- Keep weight as low as possible.
- Track any weight added or removed in stability documentation (if available).
- Record modifications that may impact stability in logbook, especially windage and top weight.
- Consult an accredited marine surveyor before making modifications.

### Overloading (catch or gear)

- Follow loading conditions in stability documentation.
- Avoid storing catch on deck or high up.
- Leave margin for poor weather and fuel depletion.
- Make sure there's enough freeboard.

### Swamping of deck and free-surface effect

- Keep freeing ports open and clear.
- Consider operational limits in different weather conditions.
- Minimise bilge water and melted ice.
- Consider free-surface effects of fuel and ballast tanks.

### Water ingress and downflooding

- Fit bilge alarms where crew can be alerted at all times, including sleeping quarters.
- Test bilge alarms and pumps before each trip.
- Keep hatches/doors closed when not in use.
- Make sure all openings are secured and clear.

### Shifting catch or fishing gear

- Secure catch on centreline or balanced port/starboard.
- Use pound boards for bulk fish.
- Lash gear and pots securely to withstand wave and wind impact.

### Use of stabilisers

- Stow plates/birds on deck when not in use.
- Plan operations to allow for reduced stability when raising arms.
- Maintain shackles, pins and connectors regularly.

### Trawling, dredging and towing

- Keep tow point as low as possible.
- Assess sea-state and swell direction before trawling, dredging and towing.
- Avoid trawling, dredging and towing in rough conditions when heavily loaded.

### Fouling or snagging gear

- Fit quick-release or weak links in tow lines.
- Stop operations and assess stability before freeing gear.
- Avoid steep tow angles and too much tension.

### Lifting catch or gear (stern or side)

- Minimise lifting height and load.
- Avoid lifting heavy loads in rough seas.
- Consider vessel condition and sea-state when planning lifts.

### Heavy seas, breaking waves, broaching

- Assess operational weather limits.
- Steer bow into waves when possible.
- Secure all gear and catch before bad weather.
- Make decisions with awareness of stability reserves.

### Fuel depletion during trip

- Plan stability for all stages of voyage.
- Monitor fuel levels and assess stability impact.
- Use inclinometer to monitor roll angles.

### Trawler rigging (stays and shackles)

- Inspect, maintain and replace as required.
- Assess rigging and consider secondary forestays and shackles.

## Extract from risk assessment



Hazards	Risks	Controls
Adding/removing/replacing equipment (e.g. fishing gear,	• Loss of/reduced stability	<ul style="list-style-type: none"> <li>• Identify what is to be added, replaced or removed</li> <li>• Check that replacement</li> </ul>





Answers to your questions

We value your feedback!

Please take a moment to  
complete our survey.

Thank you.





**Australian Government**

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**Australian Maritime Safety Authority**

Safe and clean seas, saving lives



[amsa.gov.au](http://amsa.gov.au)