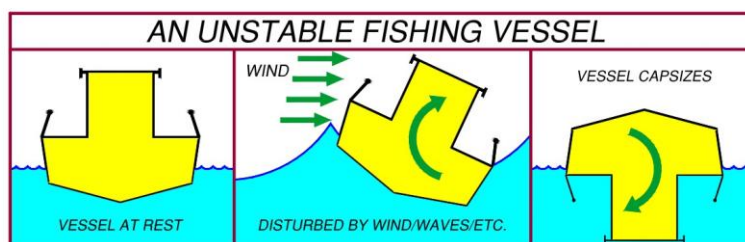


What is Stability?

Important Lessons

1. Stability is the ability of a fishing vessel to return to its upright position after being heeled over by any combination of wind, waves, or forces from fishing operations.
2. A stable fishing vessel has sufficient stability to counter the current external forces generated by weather and sailing conditions and return to its upright position.
3. An unstable vessel does not have sufficient stability to counter the current external forces generated by weather and sailing conditions and capsizes.
4. A vessel's stability is constantly changing during its voyage. An originally stable vessel may become unstable from changes in the weather, the vessel's loading or sailing operations.
5. The key to having a stable vessel is making sure there is always be sufficient stability to counter the capsizing moments from the current weather, waves, and fishing conditions during the entire voyage.

A fishing vessel is called **stable** when it has enough positive stability to counter the external forces generated by current weather and fishing conditions and will return to its upright position.



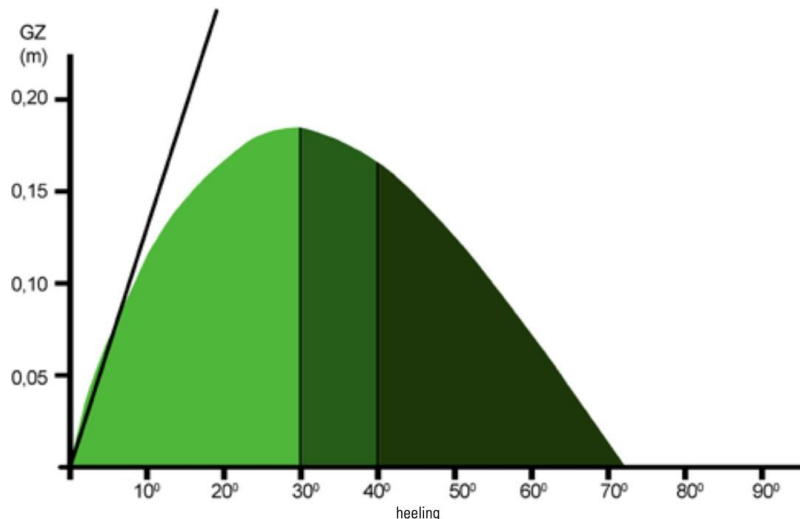
A fishing vessel is called **unstable** when it does not have enough positive stability to counter the external forces generated by current weather and fishing conditions and capsizes.

Important Lesson - Since a vessel's stability is constantly changing during its voyage due to changes in the weather, the vessel's loading or seagoing operations, an originally stable vessel may become unstable along the way.

Solomon Island Maritime Authority
NAVAL ARCHITECT MISSION

Stability Criteria

In order to assess whether a vessel has sufficient stability, all Regulatory Authority has a number of requirements, all of which are obtained from the governing IMO regulations that have to be met. The GZ curve is used for this purpose -



The requirements ensure that the vessel has:

1. Sufficient beginning stability (stability at small heeling)
2. Sufficient extent (stability at large heeling). For new vessels, the vessel must be able to straighten up after heeling up to 65 degrees
3. A peak where the heel must not be less than 25 degrees

In order to approve the vessel stability, the Regulatory Authorities have listed a number of minimum requirements that must be met under all conditions.

There are required values for e.g.

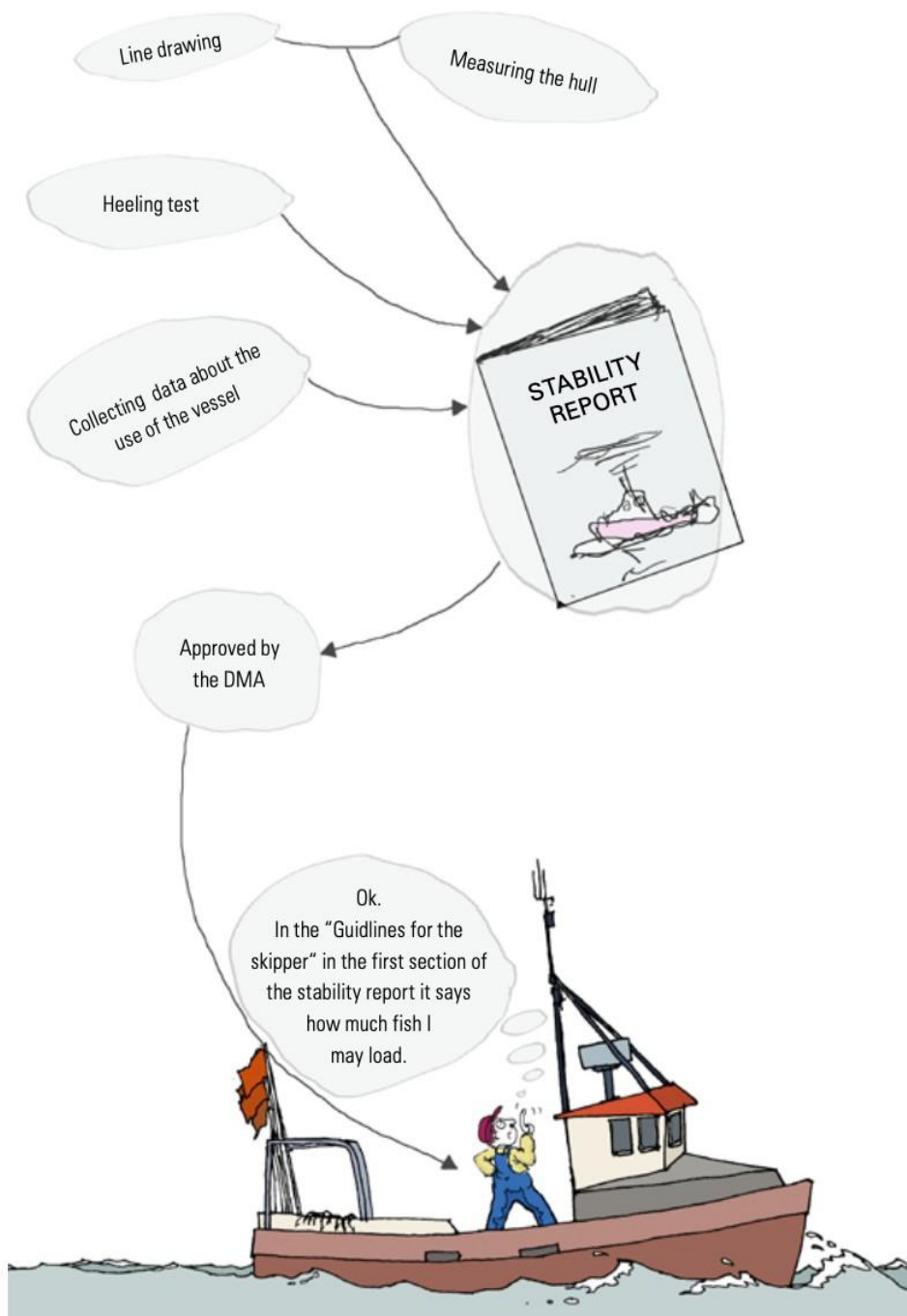
- Areas under the GZ curve between a
 - 0 – 30° heel
 - 0 – 40° heel
 - 30 – 40° heel
- Minimum value for GM
- Minimum value for GZ at 30° heel
- The minimum permissible heeling angle at the peak of the curve

All requirements must be met before the report can be approved by the Regulatory Authority.

Stability Booklet Information

What can the stability report be used for?

At the end of the process that started with providing a line drawing / measuring the hull, carrying out the heeling test and collecting further data, the approved stability report is sent to the skipper.



Freeboard

Freeboard

The freeboard is the distance from the water surface to the top edge of the deck.



Vessels with low freeboard



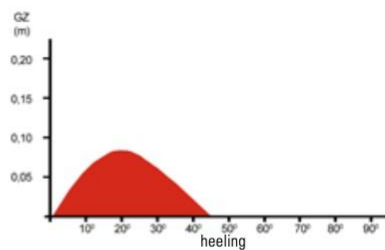
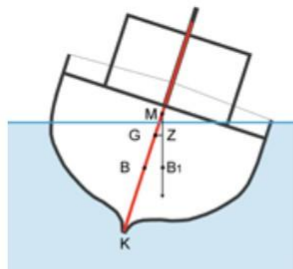
Vessel with reasonable freeboard

When a vessel has a low freeboard, its sheer plank will be under water already at small heeling.

When the sheer plank is submerged, there is no further volume to submerge at rising heel, thereby nothing that can further contribute to the buoyancy. The buoyancy centre B can move further out to the side to which the vessel is heeled.

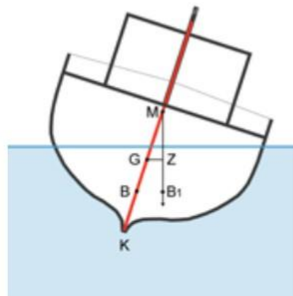
When the buoyancy centre B cannot move further out at an increasing roll, the GZ achieves its maximum value at a low heel. The GZ value then begins to decline.

A vessel with a low freeboard can rarely be improved significantly by loading additional ballast. This vessel can be improved through different means that increase the vessel's buoyancy.



Vessels with low freeboard and small GZ value

Before additional ballast is used, it is a good idea to check if there are other possibilities to reduce the vessel's centre of gravity.



Vessel with high freeboard and high GZ value

Procurement of Vessels

Phase 1: Feasibility Study & Vessel Identification

1. Define Requirements: Clearly outline your operational needs.
2. Market Research: Understand market trends and vessel availability.
3. Initial Screening: Identify potential vessels that meet your requirements.
4. Feasibility Study: Evaluate technical and economic feasibility.

Phase 2: Pre-Purchase Survey & Due Diligence

1. Select a Surveyor/Regulatory Official: Appoint a reputable marine surveyor.
2. Pre-Purchase Survey: Conduct a thorough inspection.
3. Survey Report: Receive a detailed report outlining the vessel's condition.
4. Due Diligence: Verify ownership, financial, and legal aspects.

Phase 3: Contractual & Sale Form (MOA)

Phase 4: Protocol of Delivery, Exchange of Documents, & Closing Meeting

The Internal Debate- NEW VS. USED

Newbuilding Contracts: The Gold Standard

When shipowners order new vessels, they enjoy comprehensive protections:

- ▶ Detailed specifications covering every technical aspect
- ▶ Supervision rights throughout construction
- ▶ Performance guarantees for speed, consumption, and capacity
- ▶ Trials and testing before acceptance
- ▶ Post-delivery warranties typically lasting one year
- ▶ Financial guarantees protecting stage payments

Second-Hand Reality Check

The second-hand market operates on entirely different principles:

The Good:

- ▶ Lower purchase prices (market dependent)
- ▶ Quick delivery timelines
- ▶ Reduced market risk due to shorter contract periods

The Not-So-Good:

- ▶ No supervision during the vessel's operational history
- ▶ No trials or performance testing
- ▶ Minimal post-delivery protection
- ▶ Often dealing with single-purpose company sellers
- ▶ Limited pre-purchase inspection opportunities

The Reality:

Trade practices typically allow only superficial inspections. Buyers can't open up machinery, test equipment, or travel with the vessel. Access to cargo holds may be restricted, and the entire evaluation must be completed while the ship is afloat and potentially loading/discharging cargo.

Shipbrokers and **Regulatory Authorities** play a central role, guiding both sides from initial marketing to final delivery.

- Ensures compliance to standard requirements and regulations
- Provides information on the desired type of ship aspects and characteristics
- Technical information analysing
- Advice on critical key areas, certifications to confirm or tests to undertake so as to ascertain status of equipment and machinery
- A quick survey of the regional and international market

PROPOSED RECOMMENDATION AS WORKSHOP OUTCOME

Recognised the importance of ship stability and to ensure initial review of stability and loadline are conducted before certification of ships.

Thank You Tumas & Vinaka

