



Navigating to 2050

A safe and sustainable maritime future

#NavigatingTo2050



Carien Droppers

Coordinating Specialist Advisor Shipping,
Rijkswaterstaat Sea and Delta
The Netherlands



Commissioners of
IRISH LIGHTS

Navigation
and Maritime
Services



Rijkswaterstaat
Ministerie van Infrastructuur en Waterstaat

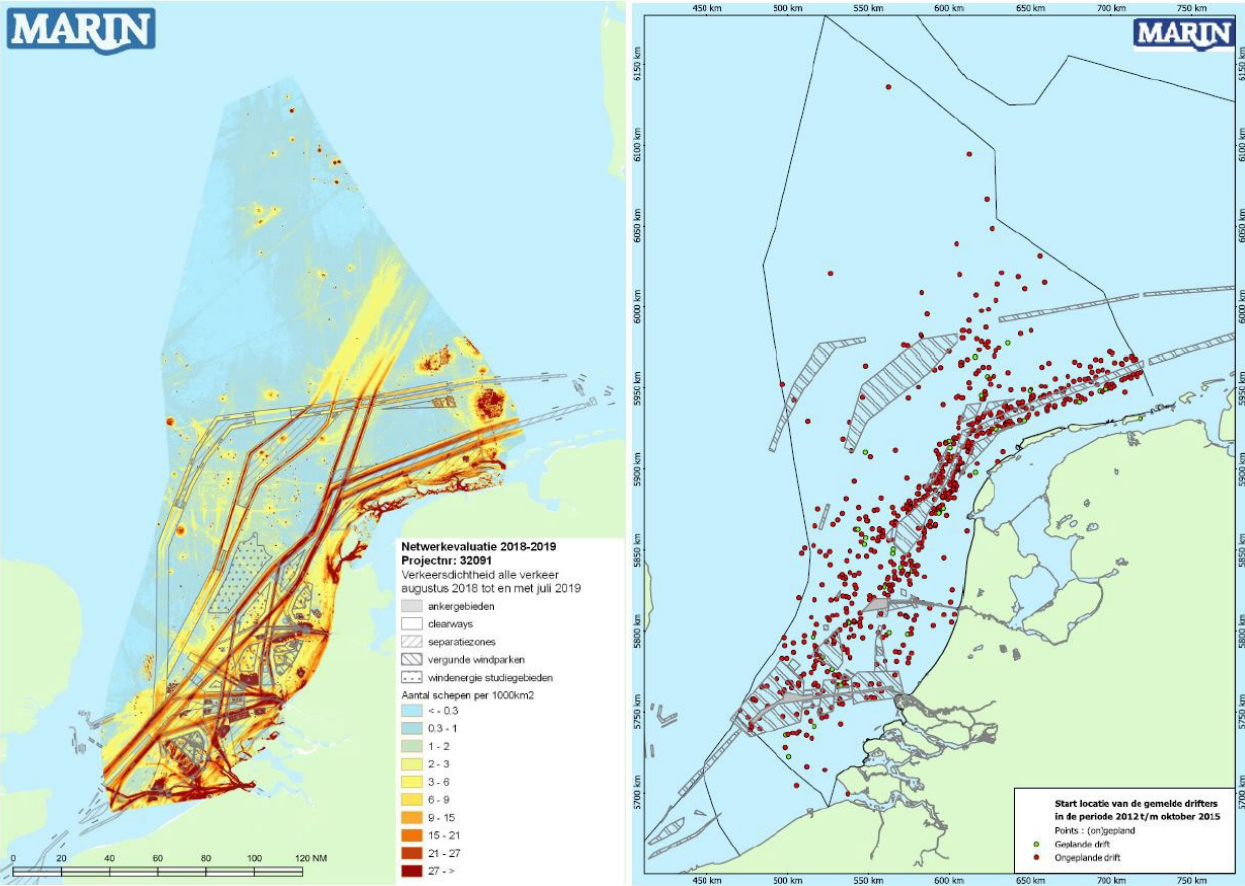
Development and implementation of a safety regime for shipping in relation to offshore wind

A Safe and Sustainable
Maritime Future

16 November 2022



Density maps

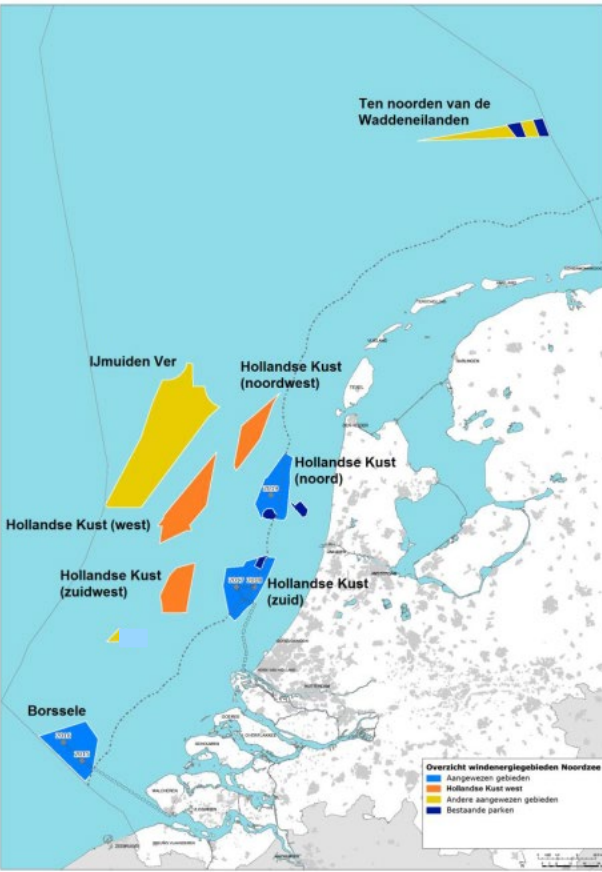


Local authorities:

- Green energy
- Port expansion
- Off shore activities
- Nature areas
- Local communities

Shipping:

- Safe port clause
- Zero accidents, will act accordingly
- Many different types of shipping





Maneuvering space (Traffic separation scheme)

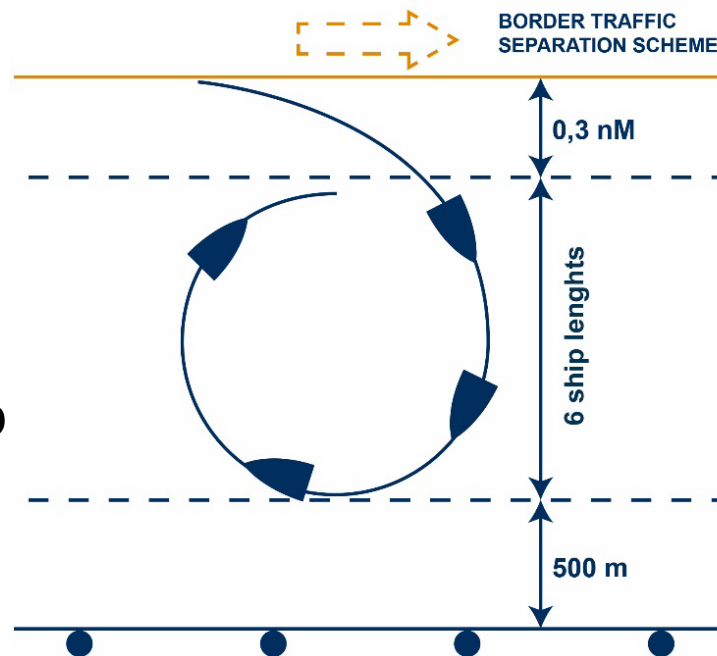
Space that ships can use under normal circumstances for normal avoidance maneuvers e.g. passing and overtaking (traffic lane).

UNCLOS Part V, Article 60, clause 5

- Specifies a safety zone of up to 500 meters around single objects

Width of lane:

- 2 ship lengths per vessel
- Traffic density
- Design vessel 98.5% of largest vessel



A space that is not normally used by shipping, but which may be used in an emergency to avoid an accident. Space between path and the outer limit of the safety zone of an obstruction.

Based on:

- Ship's Routeing
- Col regs
- IMO ship maneuvering
- UNCLOS
- Good Seaman ship



Shipping safety and offshore wind energy

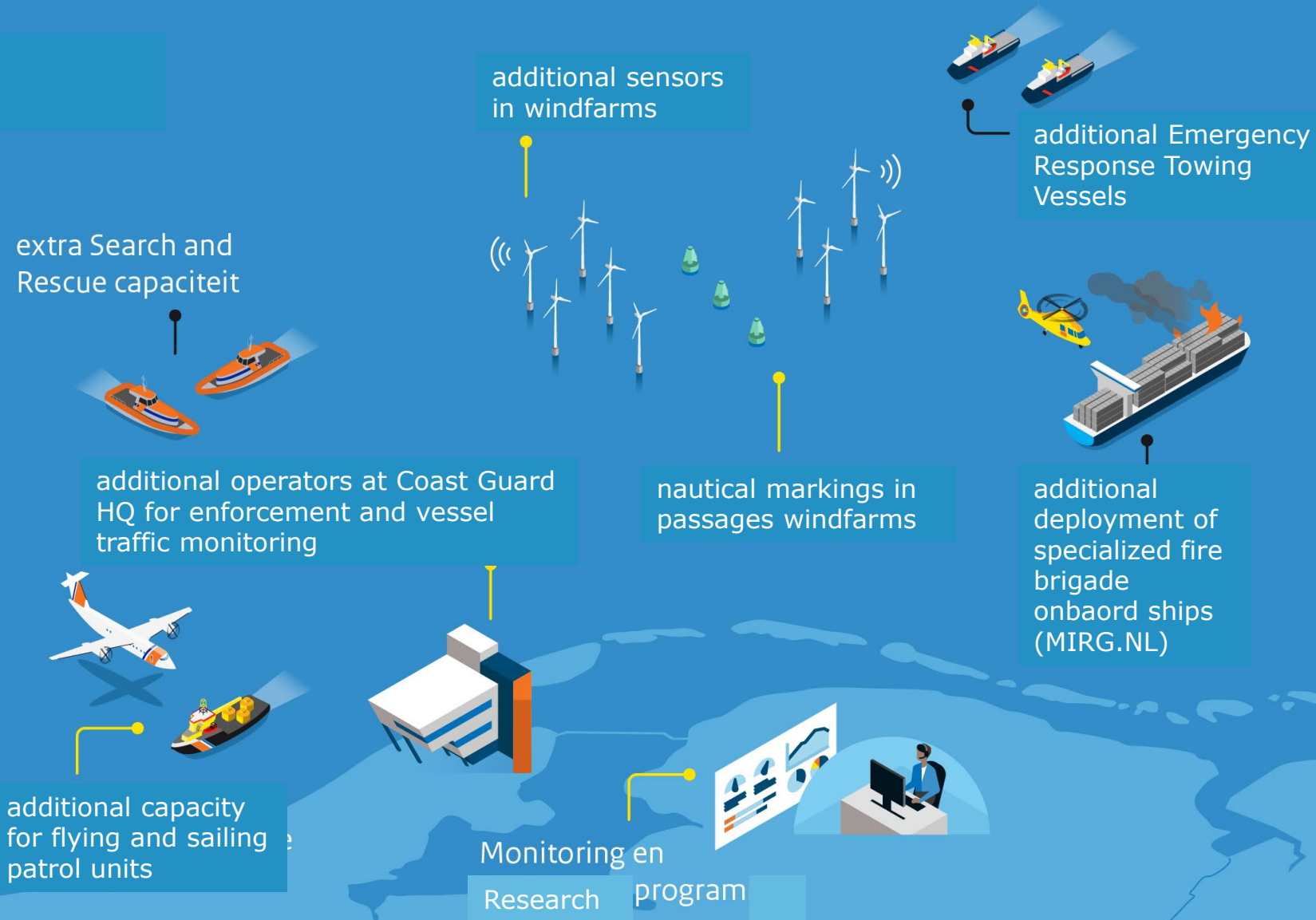


<https://www.noordzeeloket.nl/en/functions-and-use/offshore-wind-energy/>

Measures

With preventive and repressive measures we keep the North Sea safe for shipping. We monitor developments and effectiveness of measures taken in order to advise and correct in case the situation develops differently than expected.

- preventieve maatregel
- repressieve maatregel



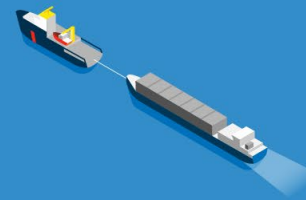
Themes MOSWOZ

The monitoring and Research program (MOSWOZ) is based on themes, where each theme deals with several subquestions.

Hydro/Meteo



Emergency Response Towing Vessel



Vessel Traffic Monitoring (VTM)



Passages (and co-use)



Safety / Collisions



Monitoring



Future themes to be addressed: Anchorages, incident response organisation, foreign benchmarking



Shipping safety

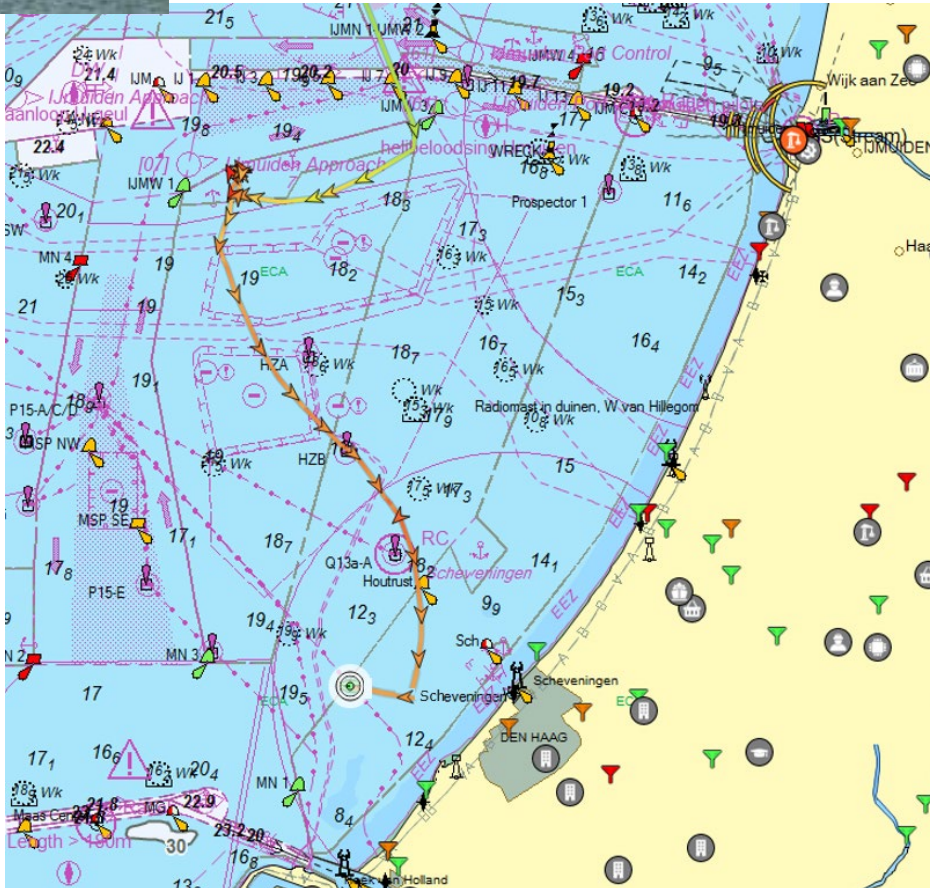


Damaged vessel (crew cabin)
after collision with turbine
foundation in German windfarm
under construction.





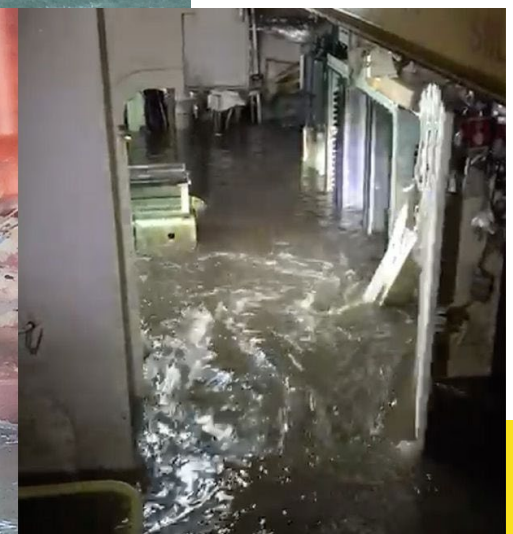
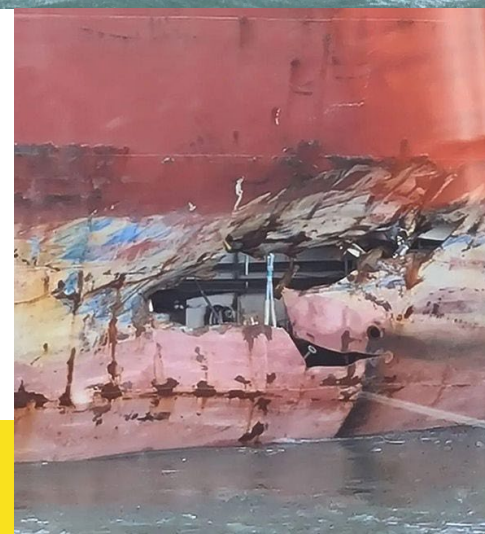
Windfarm Hollandse Kust zuid incident 31 January 2022



- Bulk carrier, in ballast
- Dragging anchor at IJmuiden anchorage
- 1st allision with tanker at the anchorage -> hole in engineroom, taking in water
- All crew evacuated by SAR-helicopter
- 2nd allision with windturbine foundation piece
- 3rd allision OHVS -> 2nd hole in PS hull
- Under commercial tow to R'dam for repairs



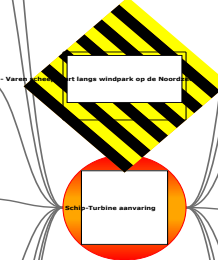
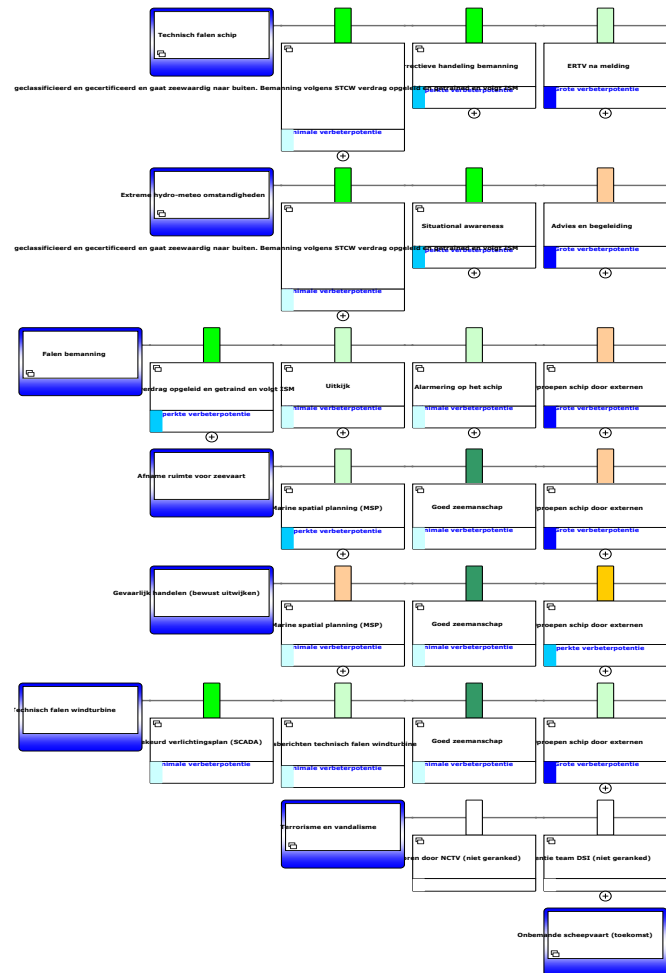
Windfarm Hollandse Kust zuid incident 31 January 2022



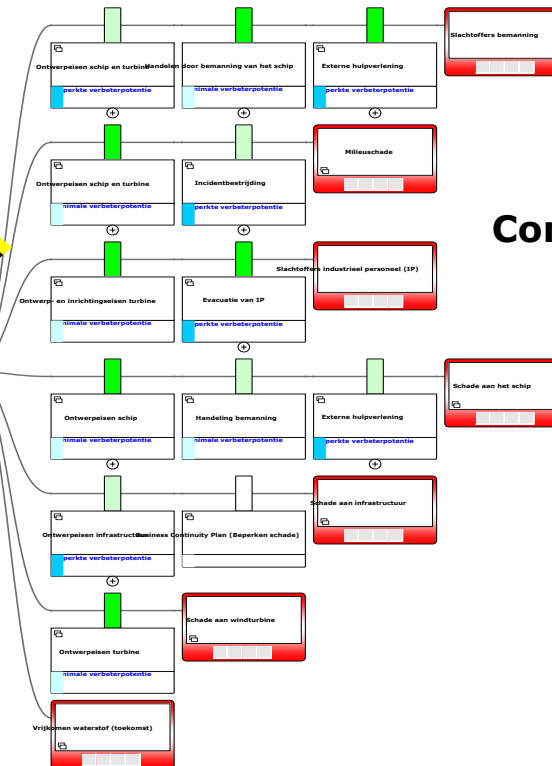


BowTie diagrams

Threats

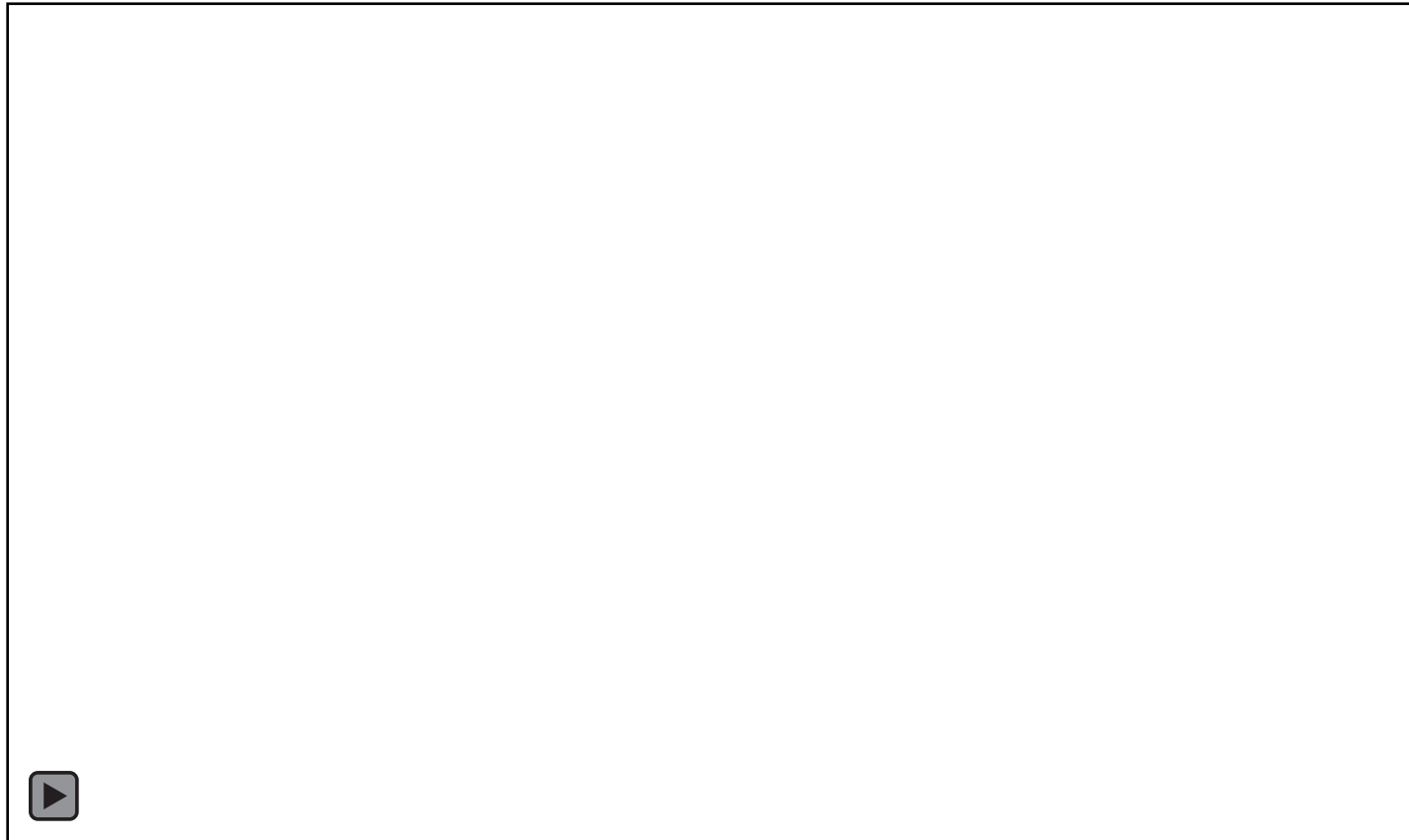


Consequences





Ship impact: passenger vessel – Drifting, weak ship, high velocity



Failure in the tower first, nacelle moves towards the ship, and next foundation failure inside the soil, causing nacelle to move away from the ship.





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