



An ABL Group Company

NAVIGATIONAL RISK ASSESSMENT

Understand and manage navigational risk when change occurs.

When operations evolve, new developments are proposed, risk signals emerge, or organisations need clarity, ABL's Navigational Risk Assessments (NRAs) give our clients the evidence and confidence to make confident, defensible decisions - operationally, strategically, and in line with recognised guidance.



NRAs provide a structured, evidence-based understanding of the marine risks present across operations. They bring clarity to where hazards exist and how they can be managed across vessel traffic, operational practises, and metocean constraints. ABL's work combines analytical expertise with real-world operational insight, prioritisation of mitigation measures that are both practical and effective.

How we work

ABL brings depth and breadth of experience without overwhelming our clients with technical detail.

Our NRA approach is designed to be robust, proportionate, and fully aligned with recognised good practice. This includes:

- Structured assessment aligned with PMSC and recognised risk-management methods.
- Quantitative and qualitative techniques appropriate to the questions you need answered, e.g. traffic modelling and expert workshops.
- Engagement with pilots, VTS teams, mariners, and local stakeholders.
- Clear outputs focused on operational, regulatory, and strategic decisions.
- Data-focused analysis using AIS, GIS, and in-house bespoke software to provide findings you can act on.
- Processes aligned with best practice through procedures including Formal Risk Assessment (FRA), Formal Safety Assessment (FSA), Simplified IALA Risk Assessment (SIRA), IALA Waterways Risk Assessment Software (IWRAP), and Ports and Waterways Safety Assessment (PAWSA).
- Navigational simulation: fast-time and real-time manoeuvre modelling.

What an NRA Provides

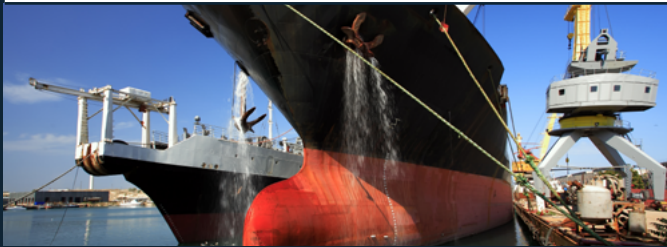
Evidence-based insights to support informed decision making. This includes:

- A clear understanding of today's navigational risk.
- Evidence to justify changes to operations, procedures, or Risk Control Measures (RCMs).
- Independent assurance for regulators, boards, and stakeholders.
- A defensible basis for decisions that aligns with recognised good practice.
- Practical recommendations directly tied to your operational reality.

When an NRA is required and how ABL can support

Common challenges that require navigational risk clarity and real life scenarios ABL has supported with:

1. Managing Change



- Introduction of new or larger vessels.
- Changes to traffic mix or overall volumes.
- Construction, dredging, or temporary works affecting navigation.
- Navigational simulation of manoeuvres.

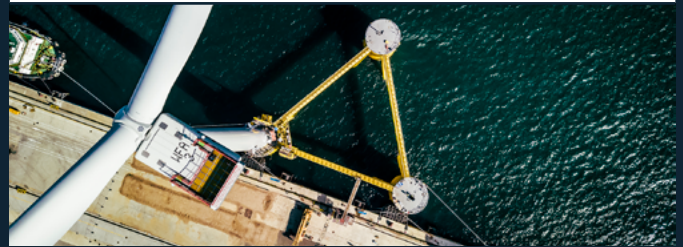
What we do:

Help you understand how changes affect risk and what actions will keep operations safe and efficient.

Our work in action:

ABL assessed whether Newcastlemax vessels can safely access the terminal by conducting a feasibility study, a Simplified IALA Risk Assessment, and navigational simulations of berthing and unberthing.

2. Supporting Development & Planning



- New offshore wind farm (OWF) developments or extensions.
- Port, terminal, or berth expansion feasibility.
- Temporary works impacting navigational channels, including constraints during construction.

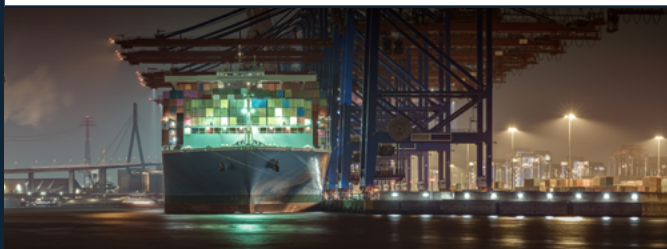
What we do:

Provide the evidence needed to assess feasibility and design safe future operations.

Our work in action:

A European Ministry engaged ABL to evaluate navigational risks from new offshore wind farm sites by analysing traffic, metocean conditions, and regulatory criteria to quantify collision and allision risks and recommend measures to keep risks manageable or ALARP.

3. Responding to Risk Signals



- Increases in incidents or near-misses.
- Emerging risks identified through audits or inspections.
- Shifts in the type, frequency, or location of incidents.

What we do:

Help identify the causes, evaluate their significance, and recommend proportionate and practical improvements.

Our work in action:

ABL conducted an extensive review of a Middle Eastern port's Marine Department, spanning operations, governance, marine services, analytics, and policy, to deliver priority recommendations, guidance for capability-building, and KPIs to enhance efficiency and align with international best practice.

4. Regulatory & Assurance Needs



- Alignment with PMSC guidance.
- Review and justification of existing Risk Control Measures (RCMs).
- Independent assurance for regulators, stakeholders, or boards.

What we do:

Deliver robust, evidence-based assessments that support your obligations.

Our work in action:

ABL independently assessed a UK LNG terminal's five-tug towage service from pilotage point to berth, analysing data, contracts, performance, and governance. This identified efficiency opportunities, recommend a potentially leaner four-tug model subject to risk validation, and outline improvements in transparency, KPIs, digital monitoring, and long-term resilience.

⚡ 5. Emergency Response & Resilience



- Emergency Towing Vessel (ETV) provisioning.
- Assessment of response capability against credible scenarios.

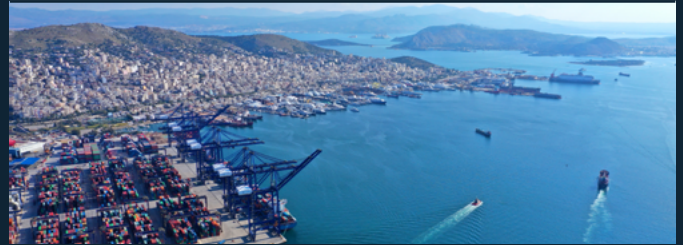
What we do:

Help ensure your emergency preparedness is proportionate and aligned with your risk conditions.

Our work in action:

ABL assessed how growing offshore wind development in the German EEZ will affect future navigational risk and emergency towage needs, modelling current and 2045 scenarios to recommend ETV additions, repositioning, and other risk controls, culminating in a clear government roadmap for safe navigation.

⚡ 6. Improving Operational Performance



- Long vessel waiting times or idling.
- Inefficiencies in pilotage operations.
- Congestion or close-quarters interaction impacting throughput.

What we do:

Support operational improvements that enhance efficiency and reduce unnecessary risk.

Our work in action:

ABL conducted a comprehensive assessment of pilotage operations at a Middle Eastern port, analysing manpower, competency, traffic, sustainability and best-practice alignment to modernise standards, improve efficiency, and deliver strategic recommendations for safer, scalable operations through to 2044.

⚡ 7. Looking Ahead



- Forecasting future traffic volumes and associated risks.
- Benchmarking against peer ports, harbours, or marine facilities.

What we do:

Help you plan for future demand and continually improve your navigational safety system in a structured, evidence-based way.

Our work in action:

ABL produced the first integrated, data-driven forecast of North Sea shipping to 2050, modelling how OWF growth, climate change, fisheries shifts, and regulatory drivers will reshape vessel density and routing, supported by AIS analysis, multi-driver adjustments, and site-specific case studies.

Read more information about each of these case studies

Scan below



[Or click the link](#)



Safety



Technical Excellence



Innovation

ABL's Risk Services



How ABL supports our clients with Ports & Marine Facilities Safety Code (PMSC) requirements:

The ABL Ports & Harbours team goes beyond the minimum requirements of the PMSC by tailoring each risk assessment to the specific operational needs of the client, complemented by a suite of quantitative navigational risk assessment methods that can offer greater robustness and reliability than the purely qualitative approach outlined in the Guide to Good Practice (GtGP).

6 Stages of a Risk Assessment:

- 1. Consultation and Data Gathering** - Informed by a comprehensive and representative evidence base.
- 2. Hazard Identification** - What and where are the risks?
- 3. Risk Analysis** - What is the likelihood and consequence of the risks?
- 4. Risk Assessment** - What level is the risk? Is it As Low As Reasonably Practicable (ALARP)?
- 5. Risk Control** - What risk mitigation measures could be implemented? How would this impact the risk level?
- 6. Monitoring** - Regular review of the suitability of existing risk controls.