ROCK STEADY GUIDANCE

Martin Conway speaks to Beckett Rankine about the publication of the UK's first-ever guidance for static floating ship stability

While the classification of operational ships can be a challenging task, the compliance required to ensure safe navigation is at least well-known, in most cases.

However, when it comes to static floating ships, the regulations become much more ambiguous. As John Monasta, associate director at maritime engineering firm Beckett Rankine, explains, the first key question to ask may be: "When does a ship stop being a ship and become a floating building?"

Data shared by National Historic Ships UK suggests that there are more than 2,000 historic ships around the UK, either moored, under restoration or no longer afloat. As Monasta points out, there is a misconception that, once a retired or historic ship has been moored – and now functions as a tourist attraction, a floating museum or a bar or restaurant – the need to conduct regular stability assessments is diminished.

"There have been instances where historic vessels have capsized and sunk," Monasta tells *The Naval Architect*. He references the sinkings of the 1864-launched naval training ship *City of Adelaide*, in Glasgow, in 1991; the 1888-launched fishing boat *Esther*, in Hull, in 2012; the King's ship HMS *Bronington*, in Birkenhead, in 2016; and a 110-year-old floating restaurant, on the River Thames, in 2024 as just four examples.

"It isn't uncommon, especially when the vessel is neglected or not properly maintained, for it to sink when a pump trips out or a hull fitting springs a leak," Monasta continues. As well as the commercial loss of the ship, this poses an obvious health and safety-related risk to any sightseers or guests who may be aboard at the time. "In reality, from a regulatory perspective, the only people interested in monitoring floating restaurants and pubs are food hygiene inspectors and the fire brigade," he says.

Skills gap

Maintaining historic ships has become increasingly challenging due to a shortage of individuals with the necessary skills, Monasta adds. "Until very recently, we had ex-mariners, ex-naval architects and retired admirals maintaining these vessels," he says, "but, as the industry changes and these people retire, museum curators have taken over this role.

Stability tests are still crucial for static floating ships (image: Dan Jones @LightWithALens)

***LV21*, a 1963-launched lightship transformed into a floating art space and performance facility, is an example of the vessel types Beckett Rankine's guidance addresses (image: Tom Duff)**

"However, these curators often don't have the necessary legacy knowledge. We've noted that historic floating ships owned by societies where the key personnel are naval architects tend to be more aware of the risks; even if they haven't conducted an inclining test in 30 years, they've done stability checks and analysed the risks. On the other hand, many museum staff haven't seen a stability booklet and don't know what GM is." The same can be said for many shore-based owners of floating pubs and restaurants.

This lack of experience has led to some risky ship modifications – for example: overloading the top deck with additional balconies, seats or bar areas; removing heavy items such as engines; decommissioning bilge pumps to create additional space; and cutting through the bulwarks to make

John Monasta, Beckett Rankine: "There isn't enough understanding of the potential risks for static floating vessels"

the interiors more accessible to disabled visitors – all typically done "without a naval architect in sight", and with no follow-up stability testing, Monasta says. He cites the case of one static floating vessel, currently degrading at the waterline, which the vessel owner has addressed by repeatedly removing ballast from the keel to keep the vessel above water to reduce the risk of flooding – while significantly increasing the risk of the vessel toppling over.

"Having no pumps on board is one thing, but many curators don't know that they should have a back-up pump plan – they wouldn't know who to call to supply a pump if flooding did occur," he says. "A lot of these vessels are in waterways where there's some traffic – so, once you've removed the bulkheads, you're in trouble if the ship suffers a leak or impact damage."

In the grey zone

As a naval architect and engineer by trade, Monasta was keen to raise awareness of the need for proper stability checks for floating static vessels. However, he soon found he was dealing with a regulatory "grey zone".

For example, operational ships comply with the standards set by IMO, their local maritime authority (such as the MCA in the UK) and the classification societies. Structures technically classed as 'buildings' in the UK, meanwhile, come under the Construction (Design and Management) 2015 (CDM 2015) regs, introduced 10 years ago to ensure that structures are safe to build and use. Static floating ships, though, tend to fall uncomfortably between both stools.

"There's a whole shade of grey in the middle and an absence of industry standards for these vessels," Monasta notes. "Even shipyards are considered 'factories', and so are not covered by CDM 2015, under UK law. Static floating ships are currently in a vacuum – and it will stay that way until either a serious accident occurs, or someone takes a political interest in this."

"There isn't enough understanding of the potential risks for static floating vessels," Monasta continues. Consequently, a study was developed to clarify what steps the maritime heritage sector could pragmatically take towards safer ship management, while accounting for its already significant operational pressures. Introducing new rules and regulations could place unexpected financial burdens upon museums and curating bodies.

"If a set of new regulations for static floating ships came in tomorrow, and required the vessel owners to have X number of watertight bulkheads and install X amount of pumps on board, and to conduct inclining experiments, most of them would struggle to remain financially viable," Monasta explains. "Some museums don't have the budget to undertake structural maintenance, let alone full maintenance of onboard systems and engines. High-prestige historical vessels like the Royal Yacht *Britannia* would be OK, but most of the smaller vessels couldn't afford to close down for a period to put these changes in place."

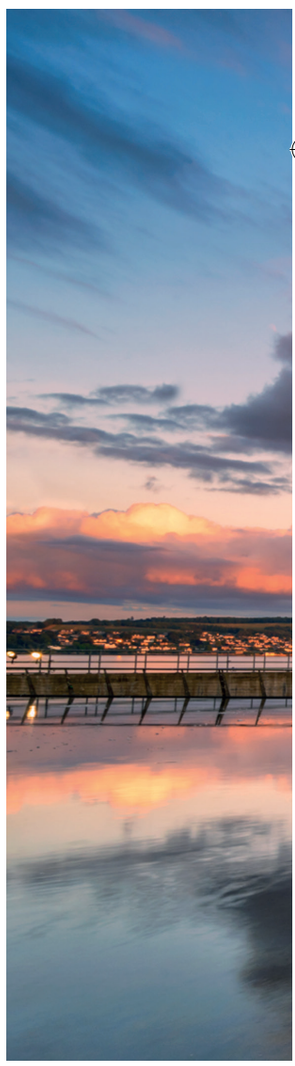
But there can be advantages to this lack of distinct regulation in the UK. Without a regulatory body dictating a strict set of assessment rules for static floating vessels, the maritime heritage sector can take a risk-based approach to its asset management. In turn, "this offers the freedom to put the historic fabric of the vessels at the core of their conservation", Monasta says.

Industry first

So, in collaboration with National Historic Ships UK and supported by funding from Lloyd's Register Foundation, Monasta and Beckett Rankine have co-launched the 'Don't Rock the Boat' project, focusing on static floating ship stability and related risk mitigation.

This initiative has culminated in the publication of the UK's first-ever set of guidelines specifically tailored towards these ship types. Tim Beckett, director of Beckett Rankine, comments: "This new document provides long-overdue and much-needed guidance on best practices for all those who are responsible for the care and maintenance of static floating vessels." The newly released stability guidance also offers practical solutions without compromising each individual vessel's heritage.

Monasta adds that the plan is to use this guidance "as a foundation for conversations with our clients", and as a useful resource for contractors and service providers, particularly in addressing the often-confusing



overlaps between maritime and offshore regulations, UK Common Law requirements and other grey areas related to liability and insurance.

The guidance begins with an introduction to ship stability, including topics such as downflooding and stability assessments, and goes on to provide an overview of existing IMO, MCA and UK health and safety legislation. The document also provides real-life case studies of related incidents, including info on the vessels' public accessibility (or lack of), location and cause of loss of stability.

The guidance then advises on how to best assess these risks, providing a checklist of recommended actions (such as hiring a qualified naval architect and accurately measuring the vessel's heel angle).

Interestingly, National Historic Ships UK comments, the guidance could be extended beyond historic vessels and applied to any static floating structure. Hannah Cunliffe, director of National Historic Ships UK, remarks: "Drawing on research from vessel case studies around the UK, the guidance offers practical advice as well as reviewing existing legislation and its applicability to our sector.

"I look forward to seeing it put to good use and am grateful for the support we received from Lloyd's Register Foundation's small grants scheme, which made this project possible."

As an attempt to counter complex and confusing regulatory uncertainties, Don't Rock The Boat would definitely appear to be a step in the right direction. ■

The new guidance on static floating ships can be accessed free of charge at: www.nationalhistoricships.org.uk/technical-papers/stability-guidance-floating-static-vessels

For more information on Beckett Rankine's maritime heritage expertise: www.beckettrankine.com/maritime-heritage

The guidance aims to provide owners with the tools to reduce the risks to the vessel, staff and public, while accounting for the unique conservation needs of historic ships, such as RRS *Discovery*, pictured (image: John Pow)