

Is shipping ready to deal with an alternative fuel vessel accident?

Photo: Republic of Singapore Navy - Facebook page



What happens in casualty involving ammonia-fuelled vessel? What will be the impact? And how do we respond?

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These were some of the issues that speakers grappled with at the Nautical Institute (Singapore) Conference 2024 on Wednesday highlighting the differences in responding to an alternative fuelled casualty and the many unknowns in dealing with such types of incidents.

The recent spate of casualties with fires, explosions, collisions, and oil spills, have brought into focus the question of what would have happened if these incidents had involved alternative fuels.

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Take the tragic incident in March this year where the container ship Dali lost power while sailing from the Port of Baltimore and collided with the Baltimore Key Bridge destroying it in seconds and leaving six dead. “If you think ships don’t lose power in today’s world you’re living in a fool’s paradise – ship’s lose power all the time,” said Mark Cameron, Managing Director (Asia) for Ardmore Shipping. “And that means in a future world where when we’re talking about a nice sustainable environment and everything is good and cosy, it’s great when things are going well, but when things go wrong what are we going to do?”

Responding to a hazardous spill

Responding to an alternative fuel spill will be very different to dealing with an oil spill both in terms of modus operandi and the equipment required.

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David Campion, Senior Technical Advisor and Head of Singapore Office for ITOPF, said that dealing with an oil spill involves tried and tested equipment that has not changed much in 50 years, however, handling an alternative fuel spill would have much more in common with tackling one involving Hazardous Noxious Substances (HNS).

“If you have an HNS spill, obviously, the capabilities are different. The equipment that people require is a lot more expensive. It needs a lot more testing in order to ensure that it's still up to spec and ready to go into the environment. And the people that are using that equipment need to know how to use it properly and also understand the risks they're walking into and make sure they have the right equipment for the potential pollutant. That's not cheap, and that's not easy to do to put in place,” Campion explained.

Capt Jereon Mooji, Master Mariner and Operations Manager with SMIT APAC, said the company would still need the warehouses of equipment that they have today for handling a casualty involving an oil spill, but the equipment would be different for an alternative fuel spill. He said salvors would have to make a lot of additional investments in equipment and training.

Ammonia concerns

Ammonia given its high toxicity and future use as a fuel, as well as being carried as cargo, was both a focus and a source of contention in discussions. “On a personal level I will say I am not supporter of ammonia,” stated Cameron. “I know that ammonia is a big part of the conversation, but you're talking about seafarer interests and seafarer safety, I myself cannot resign myself to understand that this is the solution. I absolutely understand its part of the mix and we're going to be moving more ammonia around the world and we're going to be burning more, but to me it's the devil in disguise.”

Taking a different standpoint was Ros Blazejczyk, CEO of Solis Marine, said, “From our point of view at the moment we are of the opinion that ammonia is the only really valid option as a zero-carbon fuel for long haul [shipping].”

Solis Marine has been involved on the design work for ammonia-fuel test vessel the Green Pioneer for Australian mining company Fortescue, however, Blazejczyk was clear that the company was “fuel agnostic” and working on projects for all types of alternative fuels.

Whatever individuals' views are on ammonia-fuelled vessels were there was no argument that they are coming, and that leaves the question of how to respond to a casualty involving such a vessel.

Danger to human life

Whereas when responding to an oil spill the primary concern is to limit environmental damage, the nature of casualty involving ammonia, or another HNS type substance, is very different. The environmental impact is likely to be very short-lived, but the potential danger to human life is much higher.

“With spills from alternative fuels and other HNS that changes the risk there is to human health and that is the foremost priority, and that's really where the focus needs to be,” said ITOPF's Campion.

The risk to human health changes how responders and salvors would approach a casualty involving an alternative a fuel such as ammonia.

“If one of these alternative fuel cargoes escapes, they are extremely volatile, they're going to be gone in a very, very short period of time, and it's just about understanding what those consequences are going to be and trying to minimise the overall damage. I think what we need to be prepared to do in

event of future incidents is ready to stand back and be able to watch it. And look at the scale of it and understand at what point it's then safe to re-enter and try and ensure the stability of the situation," Campion explained.

Speaking about responding to a casualty that had involved an ammonia cargo Anuj Sahai, Managing Director of T&T Salvage Asia, said it had taken around two weeks for salvage teams to board the vessel.

Solis' Blazejczyk, said, "I think it potentially changes the whole way we respond to casualties because that risk to the environment has largely disappeared, potentially, even by the time you've arrived at the vessel. You might end up with some highly localised effects on sea life but that's probably the worst effect, aside from the potential risk to human life if you're in the vicinity of populated areas."

The latter issue of the impact alternative fuel spills close to shore in the vicinity of populated areas was not an issue that was really addressed during the conference. The question was asked from the audience what would have happened if the 14 June collision between dredger Vox Maxima and bunker tanker Marina Honour at Pasir Panjang Terminal, Singapore resulting a 400-tonne bunker spill had involved an ammonia bunker tanker, but went it largely unanswered. The location of the collision is close to populated areas.

While there are huge unknowns around an alternative fuel casualty much of what we are seeing at the moment in terms of planning for alternative fuels and safety relates to tests around equipment and bunkering procedures rather than a major casualty event. "I think most of the risk assessments right now are, 'What if a hose bursts?' or 'What if a pump fails?', but what if there's a bulbous bow sticking through your bunker room? Those are the scenarios, those are the risks that I think are not being addressed enough at this particular moment," commented Mooji from SMIT.