



AUSTRALASIAN INSTITUTE
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September 2026



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- **Report on AIMS biennial conference**
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Thanks to all AIMS members and the Board for allowing us to be part of your 40th anniversary conference. We enjoyed catching up with existing clients and members.

Congratulations to all the nominees and award winners.

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Front Cover: *Global Mercy*, the world's largest purpose-built civilian hospital ship. Tymor Marine recently completed a lightweight survey and inclining test aboard the vessel. (See page 48.)

Back Cover: Marine Rescue Queensland's *Gladstone Rescue 1* at Gladstone, Queensland.



From the Bridge (Page 5.)



CEO: AMSA stakeholder forum. (Page 7.)



Marine Surveyor Symposium. (Page 11.)



Marine incidents report 2025. (Page 22.)



Cyber security risks. (Page 28.)



Incat 096 oversea-bound. (Page 38.)

ADVERTISING AVAILABLE

Advertising is now available in *Shipshape*, the official journal of the Australasian Institute of Marine Surveyors (AIMS). For all the information about advertising in our quarterly magazine, contact AIMS CEO Eric Perez at gm@aimsurveyors.com.au or on +61 492 881 737.

Cargo hatch covers set a challenge

THE following was posted by Kalyan Das on LinkedIn in April and July 2026.

Cargo hatch

What is this cargo hatch cleat trying to tell us?

Take a look at the cleat in the picture:

- ❑ the rod: noticeably bent and heavily corroded;
- ❑ the steel washes: warped and distorted under extreme load; and
- ❑ the rubber washer: crushed and covered in stress cracks.

This isn't just "wear and tear." It's a symptom of a fundamental misunderstanding.

There is a common belief that if a hatch isn't weathertight, you need to tighten the cleats.

But is that how hatch covers are designed to work?

Compression is pre-set: the watertight seal is achieved by a specific amount of rubber compression against the compression bar.

The landing pads: the final position of the hatch cover is controlled by the height of the landing pads. Once the hatch cover touches the landing pads, the hatch is as low as it's going to go.

The cleat's real job: cleats are **not** there "squash" the rubber. Their function is to secure the cover and prevent relative movement between the hatch and the ship's hull during a voyage.

The cost of over-tightening

When we treat cleats like giant clamps to force a seal, we aren't fixing a leak – we are creating a failure.

Over-tightening induces

excessive stress on the cleat assembly, often leading to the damage.

Localised high-stress points on the hatch panel itself, which can lead to permanent structural deformation.

If a hatch is leaking, the solution is rarely a bigger wrench. It's usually about the health of the rubber packing, the condition of the compression bars or the height of the landing pads.

We must truly understand how a component is engineered to function before we attempt to maintain it.

Rust pack versus precision engineering: the physics of hatch cover misalignment

I was walking the deck of a bulk carrier recently with the Chief Officer, inspecting the cargo hatch covers.

The conversation started where most do: "We hose-tested them at the last port. They're 100 per cent watertight."

But, as we looked closer at the inner and outer lips of the rubber sealing channels, a different story emerged.

The mild steel of the lips was exhibiting a classic "rust pack" expansion. (Rusted steel can swell to several times its original thickness.) In this case, the flaking was physically pushing the rubber seal away from its original position.

Looking at the rubber, you could clearly see the permanent set (compression of the rubber) had moved from the centre of the rubber to the side.

The engineering reality: why "static" thinking is dangerous

We have to stop treating hatch covers like simple "lids". They are complex mechanical assemblies with millimetres of tolerance managed by bearing pads, locator and supporters. A hose test is just a static snapshot at the pier. It doesn't account for the dynamic racking and flexing of a hull in a seaway. If the sealing geometry is already fighting a misaligned "set" due to channel corrosion, that seal will struggle the moment the ship starts to work in heavy weather.

The bottom line: if we ignore "swollen" steel because the test passed today, we aren't maintaining a ship – we're just scheduling a more expensive



mechanical failure for tomorrow. When the alignment goes, the bearing pads take the brunt and a “watertight” seal becomes a dynamic failure very quickly.

Hatch cover cross seam lips are corroded

“My hatch cover cross seam lips are corroded but does it really matter? I’ve got rubber seals underneath to protect against water entry!”

I heard this recently and, while the statement wasn’t technically wrong, it surely calls for a closer look at the hatch cover cross seam design.

Let’s visualise how this system is actually supposed to work. Think of your hatch cover cross-seam as a multi-layered defence



system designed to keep your cargo dry.

Layer 1: the metal lip (the first warrior) – this is your primary defence. Its job is to deflect

the vast majority of water that crashes onto the hatch cover (say, during heavy weather).

Layer 2: the drain channel – any water that sneaks past that first lip is funneled into a drain channel located above your rubber seals.

Layer 3: the rubber seal (the final line) – ideally, these seals should prevent any water from passing through. However, as the ship rolls and pitches in heavy seas, the hatch covers experience slight movement. This can break the seal’s contact, allowing water to pass. Furthermore, with aging and the harsh marine environment, the rubber deteriorates over time, creating a high chance of water ingress.

Layer 4: the lower drain channel – because of these risks, there is a secondary drain channel positioned below the rubber seals to finally drain off any water that manages to make it past the seals.

The solution: stop seeing the lips as insignificant. They are your first shield! You need to maintain them to ensure your seals aren’t doing the job of the entire defence system alone.



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