

# ONLY THE STRONG SURVIVE

TWIN FIN PROPULSION



**CAT**<sup>®</sup>



# **WE MEASURE UPTIME IN YEARS AND DOWNTIME IN HOURS**

**Steam rises from the sea, the wind chill is a bone-aching  $-47^{\circ}\text{C}$ , and all you hear is the relentless groaning, banging, and breaking of sea ice against the hull.**

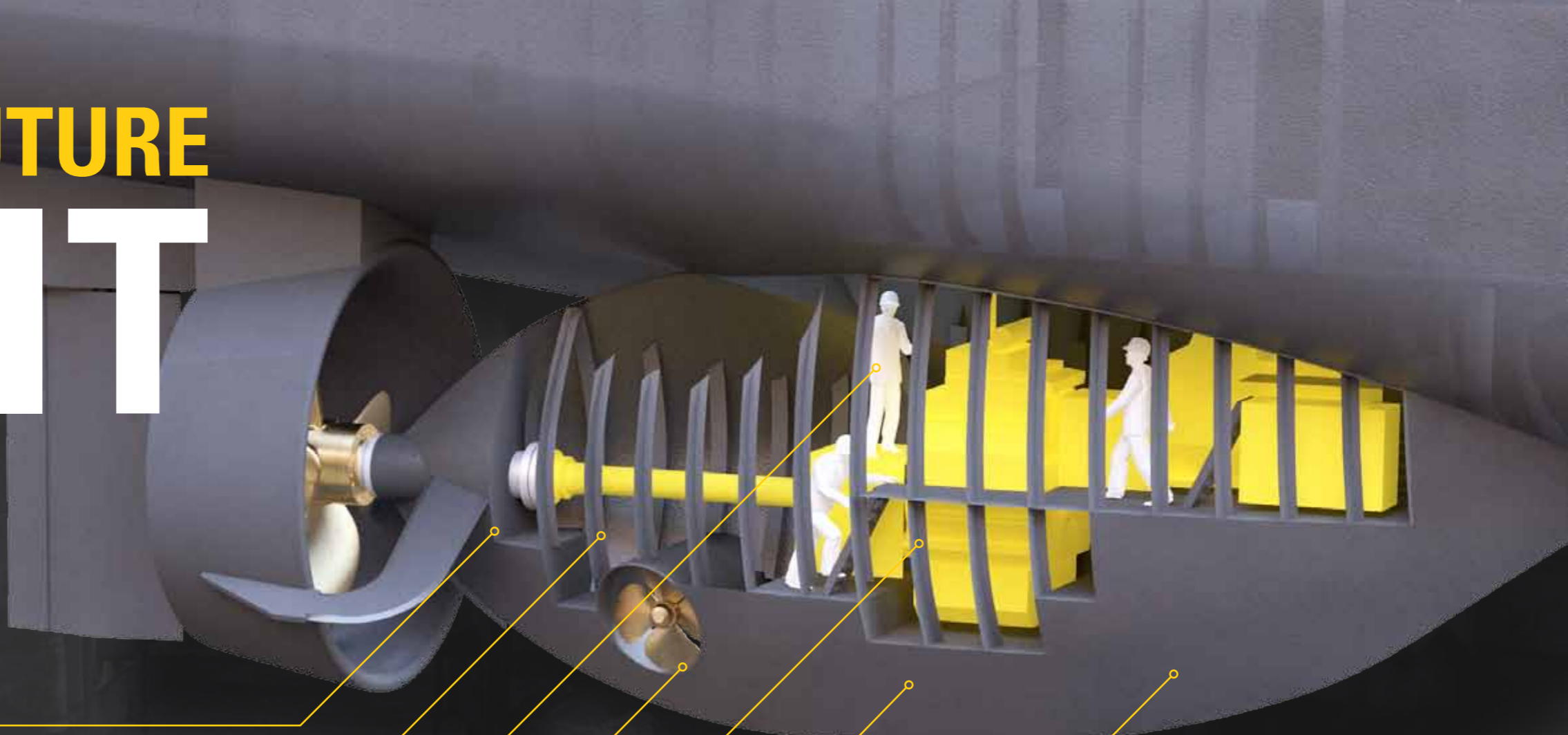
**It's a brutal environment to work in yet mechanical failure and downtime are still unacceptable. When the stakes are high and you're weeks away from home, only the best and most reliable equipment will do.**

**Meet the new twin fin propulsion system.**

**"Twin fin gives us huge confidence  
in our ability to perform"**

Peter Zickerman, Executive VP and Head of Strategic Investments, Polarcus DMCC

# DON'T PREDICT THE FUTURE SHAPE IT



## ➤ Increased thrust and efficiency

Twin fin gives higher thrust – and requires lower input power – thanks to larger propellers running at low shaft speed plus minimal mechanical loss.

## ➤ Reduced maintenance and easy access for service

The compartment is easily accessible from inside the hull for inspection and service.

## ➤ No need to dry dock in case of repairs

The gear and electric motor(s) as well as stern tube inner sealing can be exchanged through the deck above – ideal for remote areas like the arctic.

## ➤ Increased reliability and flexibility

Components and techniques are well proven in the harshest environments, and tailored to any vessel thanks to the flexibility in designing and positioning the fins.

## ➤ Reduced fuel consumption and green concept

Hydrodynamically designed fins in combination with the high performance propulsion system ensure homogenous water flow to the propellers for lower fuel consumption plus lower emissions and noise radiation.

## ➤ Increased cargo space and deadweight

With the engines placed in the fins rather than in the hull, there is extra cargo space, buoyancy, and therefore extra deadweight.

## ➤ Well-proven for safety in the arctic

The design is comparable to single-screw vessels that have proven to be extremely reliable even in the harshest environments. The fins protect the propulsion system and can also be fitted with ice knives.

## ➤ Easy to retrofit with very short yard stay

Pre-fabricated, fully equipped fins tailored specifically to the vessel make retrofit simple and ultrafast.

## TWIN FIN CONVENTIONAL WITH A TWIST

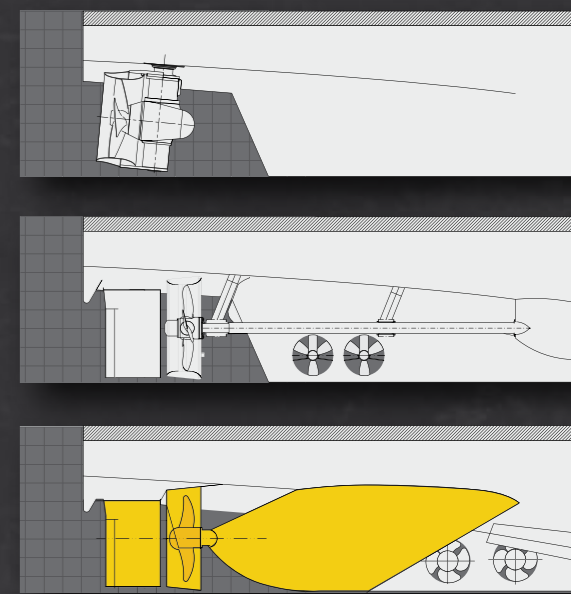
For modern offshore vessels, azimuth thrusters are the most common diesel-electric propulsion system. But this makes the vessel more vulnerable, especially in tough arctic seas, as a breakdown to the angle gears and other mechanical parts often means heading to dry dock for repair.

A more reliable alternative can be conventional diesel-electric or diesel-mechanical propulsion with long shaft-lines and machinery positioned inside the hull. But the gear and the engines take up valuable space, and is also difficult to retrofit on an azimuth-fitted vessel.

The solution?

Caterpillar Marine, Odense Maritime Technology and Scandinavian Marine Group got together to develop the compact twin fin design based on well-proven and robust components.

Either as new builds or ultrafast, uncomplicated retrofits on existing azimuth-fitted vessels, the system is presently aimed for vessels with diesel-electric propulsion facing the harshest demands. But the potential is unlimited – talk to us about how you see your future.



# UNIQUE DEMANDS? **WE'LL DELIVER YOUR BEST SOLUTION**

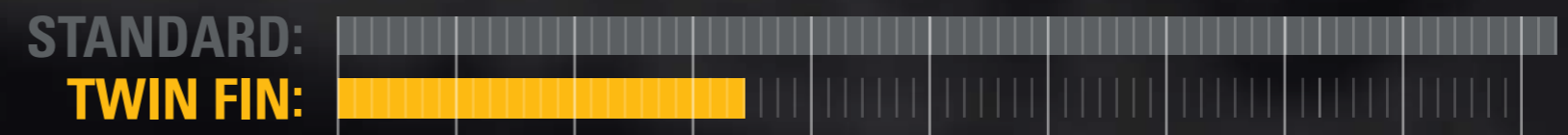


Caterpillar Marine's expertise and experience lead to propulsion systems including engines, services, and support that help you meet even the toughest demands. And we meet these demands through deep dialogue with you.

Together with you and our partners, we'll study the vessel's design, the waters it travels, the job at hand – anything and everything that affects the hydrodynamics, engine demands, and your operational performance. Using all our expertise, we're not finished until you are completely satisfied and our solution is as optimized and reliable as possible.

We welcome the opportunity to meet with you and start exploring how twin fin can deliver long-lasting performance and peace of mind – now and in the future.

## RETROFIT IN WEEKS – NOT MONTHS



If your vessel is currently fitted with azimuth thrusters, retrofitting the twin fin propulsion system couldn't be simpler or quicker. The system is pre-fabricated so the work and downtime at the shipyard is reduced to a bare minimum – possibly even as little as a third of the time of a standard refit! After all, every hour is important.

# BUILT FOR IT.™

If you expect the highest standards of quality and need the greatest long-term value, choose Caterpillar Marine's high-performance, customized solutions and dedicated services.

That's how we are built – and you deserve nothing less.

## TALK TO US

[marine.cat.com](http://marine.cat.com)  
[catpropulsion.com](http://catpropulsion.com)

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