mit

The Driveline Experts

ATZ MARINE TECHNOLOGIES

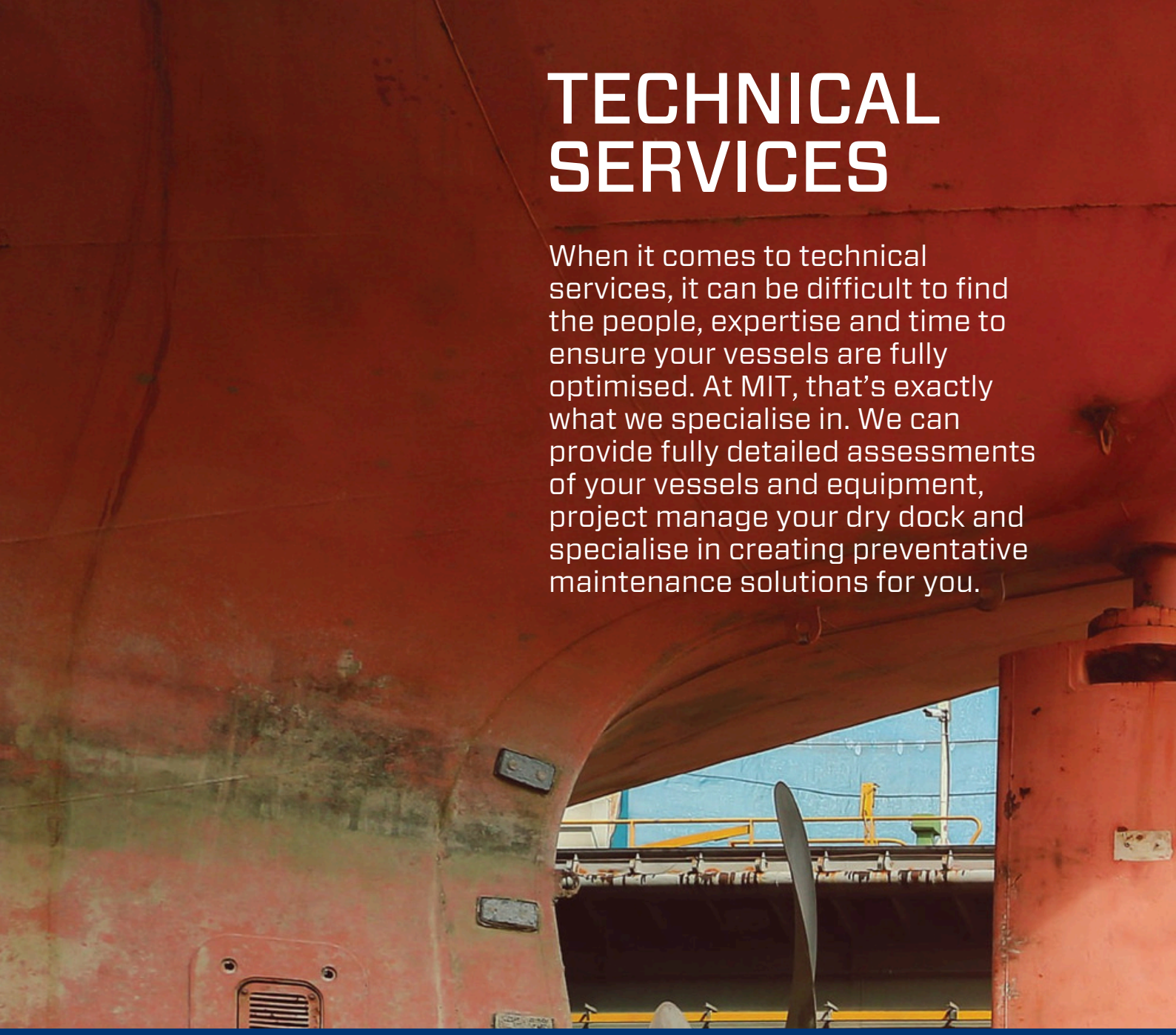
A TRADING DIVISION OF MIT

Marine Projects and Mechanical Engineering Services

Contents

TECHNICAL SERVICES

When it comes to technical services, it can be difficult to find the people, expertise and time to ensure your vessels are fully optimised. At MIT, that's exactly what we specialise in. We can provide fully detailed assessments of your vessels and equipment, project manage your dry dock and specialise in creating preventative maintenance solutions for you.



Over 50 years of industry experience.

Our team. Our Knowledge

Ourteam ofhighlyexperienced technical engineers offer industry knowledge gained throughout their time at several multi-national marine propulsion design and service providers.

From desk to dock

Witha wealthof project management and technical experience, we plan and deliver. We work with you from design specification to onsite installation.

Your industry is our industry

Our knowledge isbuiltonbusinesses likeyours. We understand your vessels and the importance of remaining fully operational. We are an extension of your team.

We find your best fit

Ourimpartial guidanceandmulti-supplier approach mean we are focused on finding you the best solution meaning you can be confident in both our services and products.

Equipment Survey

MIT vessel and equipment surveys

MIT understand the importance of having your vessel at sea and the requirement for ship owners and operators to seek independent vessel maintenance, docking or pre contract technical expertise.

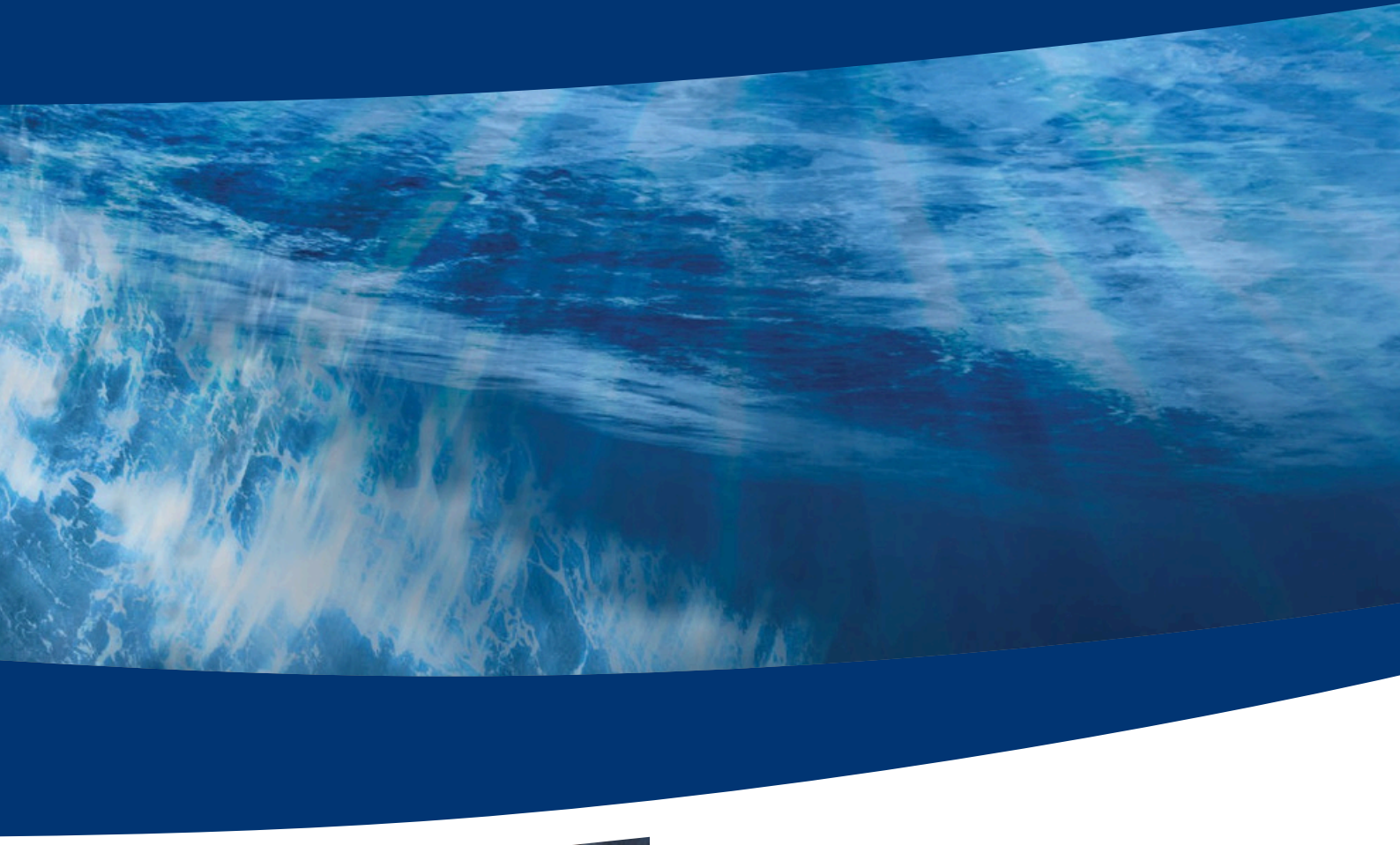
On behalf of our customer, we can provide full and detailed condition assessment of a vessel's propulsion systems and anti-pollution, oil monitoring equipment. This can help prevent unexpected down-time and expenditure.

Analysing data, equipment and installation of:

- Stern tube and rudder seals
- White metal and composite stern tube bearings
- Deckma Hamburg oily water monitoring equipment
- Bilge water overboard discharge filtration.

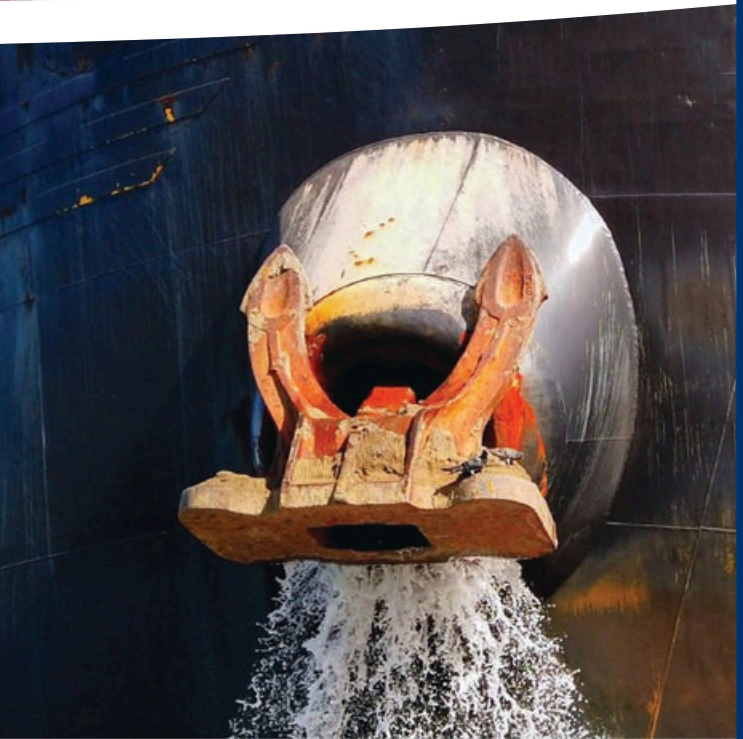
Through our partner network, we can assist in undertaking surveys for:

- Thruster, steering and stabiliser systems
- Repair, upgrade or retrofit of control systems
- Underwater dive inspections
- Boroscope inspection
- Non-destructive testing (NDT)
- Shaft and equipment alignment
- Propellers.



MIT have wide ranging and time-served experience in the operation, maintenance and repair of key vessel propulsion and anti-pollution systems. Engaging our services, we can provide an expert and efficient means to:

- Review drawings and historical maintenance reports and summarise recommendations
- Attend vessel to perform equipment survey and functional equipment tests to assess condition
- Prepare risk analysis of equipment failure and recommend contingencies
- Collate repair and maintenance estimates to create complete proposals for rectification or maintenance budgeting.



Case study

Bilge Water Filtration Upgrade Survey

Afleetof RoRovessels neededto upgrade their bilge water filtration system to enable overboard discharge.

MIT surveyed the vessels and provided a detailed report of:

- Assessment of existing arrangement and performance issues
- Equipment upgrade proposal
- A detailed piping and installation plan.

Head over to our **website** to read this case study in full, along with other examples of how MIT have helped our customers.

Project Management and Dry Dock Services

MIT understand docking is a significant part of ship maintenance. When operators or management companies lack the resources to manage work independently, we're able to provide project management, technical support, supervision and expertise, supporting all dry dock activities.

Pre-dock project management

Procurement assistance

- Alternative supply sourcing and assessment
- Define parts scope Define work scope.
-

Detailed work plan for each piece of equipment

- Project software utilisation and reporting
- Risk assessment and contingency planning ("what if" scenarios)
- Classification society, yard and contractor liaison
- Plan integration to overall dock plan.

Technical Services

Supporting your dry dock experience

Our technical experience allows us to best represent your organisation in both the preparation and execution of docking activities. Many of our projects will include close liaison with a wide range of other partners and suppliers on your behalf, allowing you to focus on business-critical activities.

Our team are able to support docking in locations around the world, and where appropriate, are able to recommend both OEM and alternative aftermarket solution providers.

Recent docking works include Cruise, Naval and Bulk vessels within mainland Europe and the Far East.

Dry Dock Project Management of Propulsion Equipment

- Shaft lines
- Thrusters
- Steering gear
- Stabilisers.

Post-dock project management

- Sea trial attendance
- Reporting
- Wash up and lessons learnt.

Case study

Dry dock propulsion refit project management

AlargeUK cruiseoperatorneeded our expertise, specifically for planning and procurement management, along with onsite project management of a propulsion refit in dry dock.

Head over to our **website** to read this case study in full, along with other examples of how MIT have helped our customers.

Oil In Water Calibration, Preventative Maintenance and Service Contracts

Total compliance. Guaranteed

An uncalibrated or faulty oily water monitor can result in operational and unexpected downtime, along with substantial fines or impounding if discharge water contamination exceeds legal limits.

With a wealth of Oily Water Separator (OWS) monitoring system experience, MIT are able to fully manage your calibration schedule as well as manage complete system lifecycle through upgrades and extension measures.

MIT offer calibration services or annual calibration and maintenance contracts as a flexible, cost-saving option to ensure your systems continues to operate effectively and meets legislation at all times.

Why is it right for you?

A calibration and maintenance contract is ideal for customers who may not have the capacity to manage their annual calibration needs and who are looking at controlling maintenance costs, while maximising system efficiency and ensuring compliance.

Benefits

- Compliance assured - your calibration schedule managed.
- Scheduled calibration and service inspection, ensuring reading accuracy
- Service exchange units, meaning no lengthy downtime
- Onsite engineer visits, no matter your vessel's location
- Budget control through fixed prices and reduced maintenance costs
- Priority response for service calls and spare parts
- Regular preventative maintenance.

Service Exchange

In the event of a failed OWS monitor, could your business afford operational downtime? Another way MIT can keep your business at sea is with our OWS Monitor Service Exchange programme.

Should you encounter a problem, the MIT Service Exchange programme could have a new monitor in transit to your vessel within 24 hours of you reporting the problem. Which means your vessel stays at sea whilst ensuring industry compliance.

Then you simply return your faulty OWS monitor to our team for inspection and if viable, repair and recalibration.

Benefits

- Continuous availability for your OWS monitor, meaning no operational downtime
- Peace of mind should you encounter a fault
- Your unit, stocked, ready for your call
- Same day despatch
- Priority response for service calls and spare parts.

PROPULSION EQUIPMENT, SPARES AND SERVICE

Whether it's seals and bearingsoran

overhaul of your propulsion system, we work with some of the best brands in the industry to get you the parts you need.

Seals and Bearings

MIT specialise in the supply, maintenance, repair and technical support for a range of marine vessels. From systems that can stop unexpected oil leaks to advanced white metal and composite seals and bearings, we work with the best brands to ensure a longer lifecycle for your vessels.

Prime Blue Water Lubricated Seals

The environmentallyfriendly stern tube sealing solution

AEGIR's PrimeBlue is a waterlubricatedseal thatoffers a reliable and durable alternative to oil lubricated solutions. Supplied partially split as standard, it can be easily maintained and changed whilst the vessel remains afloat.

AEGIR Marine

Key features

- A complete water lubricated seal assembly
- Fully split version available on request
- Can be serviced without docking
- For retrofit purposes, can be supplied with adaptor flanges or in non-standard versions
- Class approved by most major classification societies
- Available immediately from stock.

Prime Standard Oil Lubricated Seals

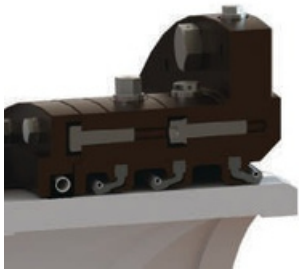
Compatiblewith a widerange of mineral oil and EALs

AEGIR'soillubricated sealsconsist ofthree seal rings and a rotating shaft mounted liner. Dirt, particles and other debris cannot penetrate, seawater is kept out and oil is prevented from leaking into seawater.

AEGIR Marine

Key features

- Compatible with a wide range of EALs
- Protection ring prevents the ingress of foreign matter. Seawater is kept out and oil is prevented from leaking
- Fully split version available on request
- 3 or 4 lip configurations
- Class approved by most major classification societies
- Available immediately from stock.



PRIMAIR Air Seals

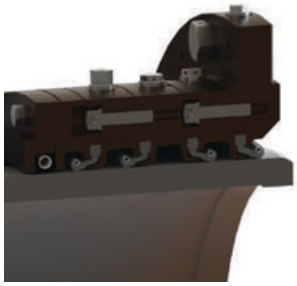
Themostreliablesealing system

AEGIR's next generationstern tubesealing technology physically seals the stern tube oil from the sea via an air space.

AEGIR Marine

Key features

- Works on constant air flow/variable pressure technology
- Maintains a perfect balance inside the seal box, reducing stress on the seal ring material
- Physically separates the stern tube oil from the seawater by means of an air space, eliminating a seawater oil interface
- A monitored air space removes the risk of cross contamination
- Meets VGP requirements even when using conventional mineral oils
- Class approved by most major classification societies.



Composite Bearings

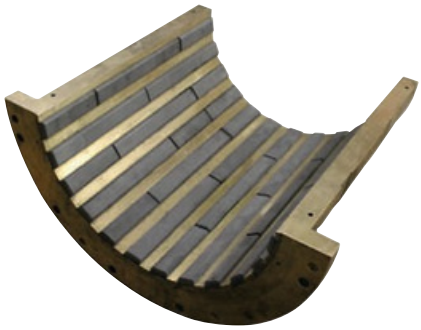
Outstandingperformance in stern tube and rudder applications

ACM's composite bearingshave beenformulated from a high load composite bearing material constructed from a synthetic fibre reinforced thermoset resin and incorporates lubricating additives. This provides excellent mechanical strength, together with a low coefficient of friction, delivering excellent performance in marine environments.

acm
ACM COMPOSITES

Key features

- High load capability and very low swell
- Low wear characteristics ensure long life
- EAL compatible
- Resistant to particle embedding and excellent shock resistance
- Can be freeze fitted
- Short delivery time – less than one week.



White Metal Bearings

Specifying themostsuitable bearing for your vessel

Asthe seals andbearings experts, MIT can specify and supply white metal aft and forward stern tube bearings, along with intermediate shaft bearings. Made of cast iron lined with white metal, they're suitable for a variety of applications.

Key features

- Supplied pre-machined for ease of installation on site
- Suitable for new applications and retrofit projects
- Fully customisable for specific applications
- Excellent sliding properties
- Soft lining material lowers edge pressure sensitivity
- Emergency running properties and protection of the shaft material.

Technical Services

Field Service Installation and Repair

Bearings

MIT have a long history in the supply, maintenance and technical support of both white metal, composite stern tube bearings and rudder stock bearings and liners to commercial, cruise and military vessels.

We offer a full and comprehensive consultative service, ranging from technical specification and supply to onsite supervision of final machining and installation.

We can undertake a carefully planned procedure during a vessel docking, taking ownership throughout the process and working in close partnership with the yard, class and vessel superintendents. This assures completion of planned operations to time and to budget. We also help in root cause analysis and technical investigations if a performance issue is identified, working from start to finish to understand and address any unexpected problem.

Seals

With seals commonly being replaced every five years, we understand that, at times, schedule or circumstance means you are unable to undergo your routine maintenance or repair while in dry dock. That's why we can supply alternatives to dry dock seal repair. Our expert team can complete this work in dock, in situ afloat or as underwater dive repair.

Wherever your location, MIT has you covered. We have associated service stations in Europe, Asia, Africa and the Americas, meaning we have a global reach so we can get to you quickly.

Propulsion Overhaul

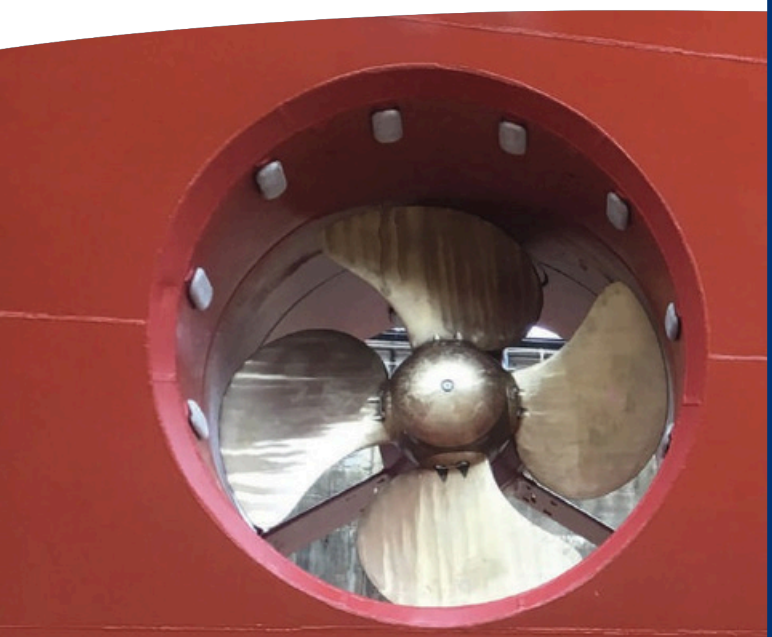
We're the experts in propulsion overhaul engineering

Whether part of routine maintenance, emergency breakdown due to damage at sea or in any dock worldwide, our team can assist.

Not only is MIT your propulsion service partner, we are also able to provide full project management of overhaul maintenance, and supply a full and comprehensive stock of propulsion spare parts. MIT are your full turnkey solution provider.

Our propulsion engineering services include inspection, maintenance, repair and overhaul of FPP, CPP, thrusters, stabilisers, steering gear, shaft seals and stern tube bearings. We can also service, test, adjust and retrofit complete propulsion control systems.

MIT also have an expert team of underwater repair engineers.



Case study

Propulsion Equipment Refit

For an upcoming cruise ship refit, a large cruise operator required assistance with the overhaul of the four Wärtsilä Thrusters but wanted to investigate alternatives to OEM supplied parts and field service engineering expertise.

Head over to our **website** to read this case study in full, along with other examples of how MIT have helped our customers.

MARINE ENVIRONMENTAL MONITORING AND FILTRATION

We understand theimportance of

adhering to environmental regulations and ongoing compliance. Our environmental monitoring and filtration services are specifically designed to help our customers achieve regulatory standards on board their vessels.

Bilge Water Monitoring

Asthe official UK supplier of Deckma oil-in-water monitors, we support our customers to ensure their vessels are fully legislation compliant with units certified as 15-ppm Bilge-Alarm according to IMO-Resolution MEPC.107(49)

Certified by the US Coast Guard, the German authority BG-Verkehr, and by other Canadian, Chinese, Russian and European authorities.

MIT understand the importance of keeping your vessel at sea and the impact large fines can have to an organisation should bilge water discharge not meet minimum environmental legislation.

As the official Deckma agent, MIT have the technical expertise to not only supply a unit, but have a range of pre and aftermarket support services to ensure your operational downtime is kept to a minimum.

Key features

- Designed specifically for use in conjunction with oil-water separator units
- Commissioning and calibration
- Repair and maintenance
- Full lifecycle support
- Upgrade specification and design
- Service contracts (see page 8)
- Service exchange program (see page 8).

DECKMA HAMBURG

Case study

Increasing the accuracy and efficiency of bilge water monitoring

We helped an international commercial fleet ensure the efficiency of their bilge water monitoring, checking all on-board Deckma monitoring equipment and ensuring it was environmentally compliant.

Head over to our **website** to read this case study in full, along with other examples of how MIT have helped our customers.

Customer testimonials

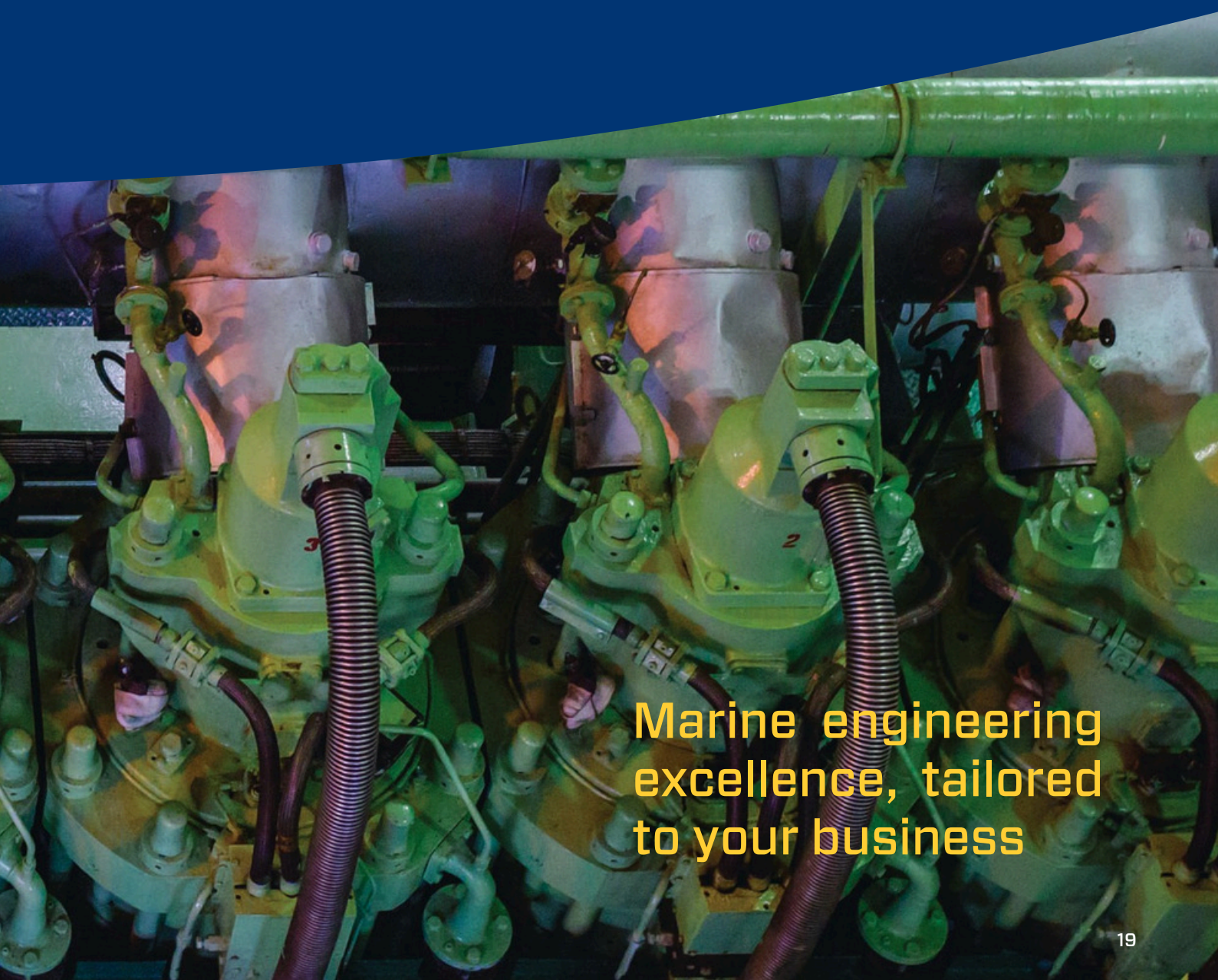
"Carisbrooke Shipping Gold Fleet has a long-lasting relationship with MIT Marine Technologies. From their wealth of knowledge to their extensive stock holding, a solved problem is never more than a phone call away.

Over the last year, we have docked five vessels without issue, even after an ordering error on our part. MIT had the correct items on the shelf and had them shipped to the yard in no time at all. A great company, with excellent service and strong values."

Alex Allen **Carisbrooke Shipping**

"I would definitely make use of MIT again, even for a basic docking and tail shaft work. MIT supply a full range of seals and bearings."

Gerard Deeney
Senior Fleet Manager,
MTM Maritime PTE Ltd.



Marine engineering excellence, tailored to your business

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AtZ MARINE TECHNOLOGIES LTD

Axel Johnson International

MIT is part of Axel Johnson International, a privately owned Swedish industrial group of more than 110 companies in 27 countries, with combined annual sales of EUR 960 million. Axel Johnson International drives business development and growth through a long-term approach to ownership in strategic niche markets, primarily technical components and solutions for industrial processes. Axel Johnson International is organised in five business groups: Fluid Handling Solutions, Industrial Solutions, Lifting Solutions, Power Transmission

Solutions and Transport Solutions.

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