

# The Meridian

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## A MESSAGE FROM THE CHAIRMAN

This year has been hard for all of us, both at work and at home and, as I write, we're not quite out of the woods yet. I have, however, been heartened by the response of everyone in the Group to keep our wheels turning despite the obvious difficulties. People have displayed great persistence and ingenuity to maintain activity and secure the future of their businesses and jobs for the long term.

Tridan, for example, has hardly missed a beat despite having to go to extraordinary lengths to secure materials and sub-contracted treatments. At Portland persistence finally paid off and a steady stream of laid up cruise ships are now docking for maintenance and to take on supplies. Travel bans have also severely restricted the ability of engineers at Stone Marine

Services and Shipcare to work on ships docked around the world so the Companies have displayed ingenuity by offering on-line remote guidance to instruct local engineers how to perform the required tasks. These are examples of the efforts that have been made all round the Group for which I'm extremely thankful.

As a result the Group is in good shape and whilst I can't say everything has gone to plan in this tumultuous year, the end result will not be too far adrift from our original budget. We all hope next year brings better news but with the way we have adapted to the new environment we can successfully carry on until the clouds lift as they surely will.

## TRIDAN SPEEDS UP

Tridan Engineering are delighted to be involved in the development and production of parts for Aston Martin's latest project. The Valkyrie, which will be the fastest street-legal hybrid sports car in the world is being built in collaboration with Formula 1 team Red Bull Racing. The combined V12 engine and electric motor produce a staggering 1160hp putting it ahead of rival hypercars being developed by Mercedes and McLaren and sufficient to hit 250mph. The car also uses a Formula 1 inspired energy recovery system when braking to recharge the battery and burnish its green credentials! This exclusive car, of which only 150 road legal cars and 25 track cars will be built, is expected to sell for around £2.5 million.

Tridan are manufacturing high precision, high tolerance parts from aircraft grade aluminium billets using prismatic machining to form the most complex profiles and internal forms. The parts are produced on

Tridan's latest 5 axis machining centres to ensure that tolerances of less than 0.001ums in certain instances can be held on bore diameters and surfaces. The complexity of parts requires the use of the very latest cutting technology, specialist tooling techniques and the experience of the engineers.



*Aston Martin's revolutionary hybrid hypercar, the 'Valkyrie'*

# PORTLAND PORT SUPPORTS CRUISE LINES DURING GLOBAL SUSPENSION

With the coronavirus pandemic, 2020 has been a challenging year for many of us. Many businesses and industries have been affected by the global outbreak, and the cruise industry is no different. Portland Port was expecting a record-breaking year in 2020, as 43 cruise ships were scheduled to arrive in the port during the season. Whilst the Fridtjof Nansen and the Saga Sapphire both made their visits in March as scheduled, the remaining 41 calls were all cancelled, a huge disappointment for everyone at the port.

However, despite the difficulties the pandemic has caused, the port has still managed to secure business from the cruise ships laid up in Weymouth Bay whilst normal cruising is suspended. Even though the vessels have zero passengers onboard they still require dry land so they can carry out crew changes, receive fresh water, and discharge waste. Portland Port has the ideal berthing infrastructure to support these calls and, as such, has seen regular visits by ships from Marella Cruises, Carnival Cruises, RCCL and most recently Norwegian Cruise Lines and Holland America Line.

The negotiations with Norwegian Cruise Lines have led to a layup agreement with the cruise giants that



*Norwegian Bliss alongside OCP at Portland Port*

means the Norwegian Bliss will now stay in and around Portland Port for the remainder of the year, berthing on Outer Coaling Pier whenever it is available. With her overall length at 333 metres and capable of carrying 4,000 passengers and 1,700 members of crew, she is the largest cruise ship to ever visit Portland Port. The port now hopes to see her back again in the future when normal cruise operations have returned.

# STONE MARINE PROPULSION KEEPS THE CANADIAN COAST GUARD MOVING



*New Arctic Class 3 propellers for the Canadian Coast Guard*

Stone Marine Propulsion have delivered two new Arctic Class 3 propellers for The Canadian Coast Guard 1200 series ships. Designed to propel these 98m ships through deep pack ice in the harshest Arctic conditions found around the Canadian coastline and the Great Lakes, these propellers have a diameter of 4.12m, weigh 13 tonnes and are powered by a total of 13,110KW. They are manufactured from Superston 70, a proprietary alloy specifically designed for high impact operation and harsh environments and have been propelling these ships throughout their service life.

Supplied and maintained through a partnership with Service Marine Canada, a company owned by Dominique Plouffe who purchased the assets of Stone Marine Canada, we are able to maintain and support the Stone name with high quality products in Canada and North America.

# 'ENERGY OBSERVER' FITS BRUNTONS AUTOPROP ECO\*STAR PROPELLERS

The first vessel to be self-sufficient in energy, 'Energy Observer', recently completed her first trans-Atlantic passage with high praise given to her newly fitted Bruntons Autoprop Eco\*Star propellers. The propellers replaced the vessel's original four blade fixed pitch propellers and have been responsible for a significant improvement in her performance since a refit was carried out last winter.

Energy Observer is a 30 metre long catamaran which has now sailed over 20,000 miles using renewable energy. This test bed for new technologies combines solar, wind and a hydrogen fuel cell to produce electricity to power the two motors which drive the Autoprops. When generating conditions are good excess power can be used to produce hydrogen which allows much more energy to be stored than is possible with batteries. At night when there's no solar energy the hydrogen is fed into a fuel cell to produce electricity so that Energy Observer can maintain speed in all conditions.

Recently, Energy Observer has been fitted with two 'Oceanwings' which act as small but very efficient

sails and turn Energy Observer into a motor sailing vessel. It was obvious to the team running the project that fitting propellers more suited to motor sailing would offer further improvements by increasing the vessel's speed, by reducing propeller drag when sailing and optimising the production of hydrogen.

After exploring the available options the Energy Observer team took the decision to fit Autoprop Eco\*Stars, assessing them as being the best option to work with the crafts new "wings". They are delighted with the results; "The wings and new propellers, in particular, enabled the boat to reach 14 knots in heavy seas."

Autoprop Eco\*Stars work by using their unique auto pitching abilities to match the constant torque that the electric motors provide throughout their rev range. This ensures that the craft is always obtaining the most efficient propulsion in terms of propulsive energy and economy at the same time. When purely sailing, and if maximum speed is not essential, the Eco\*Stars can be left to turn in the vessels wake providing additional charging for the batteries.



*'Energy Observer', the first vessel to be self sufficient in energy*



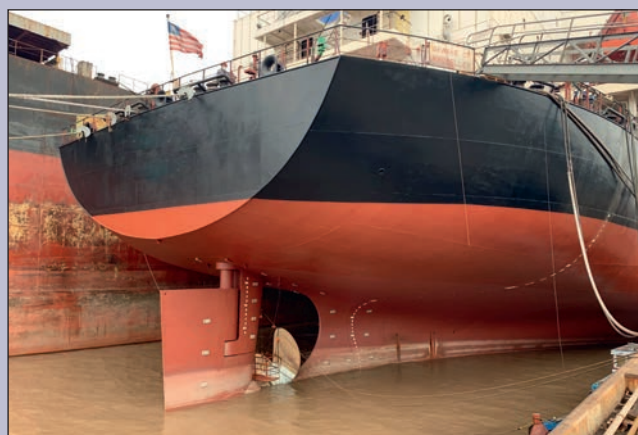
# SHIPCARE GATHERS MOMENTUM AFTER THE LOCKDOWN

It's been a frustrating year for Stone Marine Shipcare with travel bans and quarantine restrictions making life very difficult for a company that relies on being able to travel to ships all over the world.

China, where many ships are dry docked, has been especially difficult to access but after 6 months of negotiations involving embassy attaches, UK government representatives and Chinese officials, two Shipcare technicians finally entered China at the end of October. The first two weeks were spent quarantined in hotel rooms before finally being able to start work on modifying the propellers on two vessels, a 33,000 DWT general cargo vessel with a 5.4m, 13 ton propeller and a 300,000 DWT tanker with a 9.5m, 55 ton propeller.

The purpose of the modifications to restore what is called 'The Light Running Margin' back to the optimum level present when the vessels were new. As vessels age a combination of marine growth and small corrugations in the hull formed by the constant water pressure increase the resistance of the ship as it travels through the water. This coupled with engine wear causes the engine to have to work harder and burn more fuel to achieve the required speed.

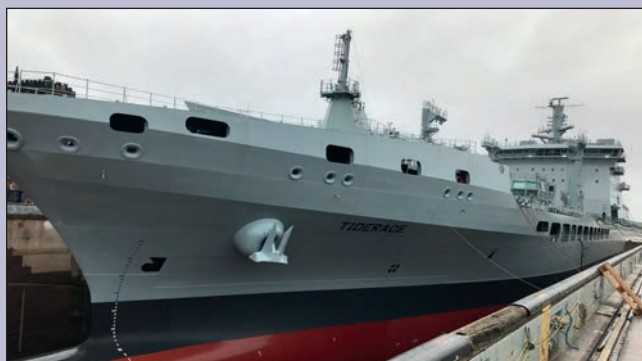
The propeller modifications compensate for these factors by applying a small reduction to the blade pitch. This makes the propeller easier to turn and increases the propeller RPM for the same power output thereby reducing the torque loading on the engine. Shipowners instantly benefit from less engine wear, better fuel economy and lower emissions. This very cost-effective modification has been performed on hundreds of ships worldwide and is a steady source of work for Stone Marine Shipcare.



*33,000 DWT General Cargo Vessel with modified propeller*

## STONE MARINE SERVICES CONDUCTS ESSENTIAL SERVICE ON RFA FLEET

Stone Marine Services has been selected to look after the new Royal Fleet Auxiliary tankers, Tidespring, Tiderace, Tidesurge and Tideforce. These tankers,



*RFA Tiderace*

which regularly visit Portland Port, have entered service over the past four years and supply fuel and other supplies to all Royal Navy vessels whilst at sea including the new aircraft carriers. These 39,000 tonne vessels have to remain at sea for long periods and reliability is vital. Stone Marine Services has been chosen to service and maintain the Schottel controllable pitch propellers, ZF auxiliary propulsion and Van Der Velden steering gear.

This isn't the first time Stone Marine Services has worked on 'grey' ships. The Company is currently overhauling and upgrading all the anchor winches on the Royal Navy's fleet of 13, Type 23 frigates, a multimillion pound contract which is nearing completion.

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