

SIGNIFICANT SHIPS OF 2019

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CSBC CORPORATION, TAIWAN
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Welcome to Significant Ships of 2019, the 30th edition in this long-running series. As is customary, the following is a selection of some of the most notable vessels over 100m in length delivered during 2019. By significant we mean ships that are the first in a series or type for a particular shipowner or builder, vessels that may be one-offs or those which differ in some important way from an earlier sister ship.

At some point in what may be the not too distant future, the first autonomous ships and those powered solely by fuel cells or with zero carbon emissions will begin appearing in this publication. However, while there are vessels within that feature cutting-edge power systems or which run on alternative fuels, the majority have what would be considered conventional power arrangements.

A very large number of the ships in the following pages have been constructed in compliance with the 2020 global sulphur cap as a prime consideration. This means that the number of dual-fuel and LNG-fuelled vessels is quite high this year, reflecting the growing popularity of gas-fuelled vessels, but there are also many scrubber-fitted ships. In some cases, shipowners have kept their options open so that ships may be LNG or scrubber ready. Alternative fuels have not been overlooked, with ships able to run on methanol, ethane or LPG also making an appearance.

This year's crop of significant ships contains a wide spread of vessel types. There are bulk carriers, crude oil tankers, chemical tankers, FSRUs, LNG and LPG carriers, ore carriers, cruise ships, passenger ferries and freight ro-ros. Container ships are heavily featured, ranging in size from 1,800TEU feeder

vessels to 23,000TEU mega ships and including specialised reefer container ships, wood chip and wood pulp carriers, general cargo ships and even a rare reefer ship included in the following pages.

The vessels come from yards around the globe with examples from China and South Korea, of course, but also from Azerbaijan, Australia, Germany, Romania, Turkey and Russia, to name just some. The owners are based in an even wider range of nations. In some instances the ships represent a breakthrough for a yard that has constructed the first ship of a type and for some owners, the divergence into new markets and industry sectors.

No selection of significant ships will please everyone and without doubt some readers will find that one ship or another which they would expect to be included is not there. Those involved in producing this publication have spent much of the year identifying candidates and asking the yards and owners to provide the technical details that make up the accompanying text. Unfortunately, some of those yards and owners have declined to participate, which explains the absence of some of the ships that are, by any definition, significant.

So, what of the ships which have been included? There is *MSC Gulsun* for a start – delivered as the world's largest container ship, a title which has changed hands with monotonous regularity over recent years. It is just one of several of the included ships that will be using an exhaust gas cleaning system to meet the 2020 sulphur rules.

There is a certain cachet about being the largest of a type. Among this year's selection there is *Bow Orion*, the chemical tanker claimed as the world's largest stainless steel vessel of the type, *Express 4*, the

largest vessel by gross tonnage ever produced by Austal, and *Zhong Hua Fu Xing*, claimed to be the largest luxury cruise ferry in Asia. The freight ro-ro *Tasmanian Achiever II* earns its place for various reasons, including being the largest vessel under the Australian flag.

At the other end of the scale, *Lachin* is one of the smallest ships to feature in this year's selection. But size isn't everything and as the first ever tanker built in Azerbaijan few would argue that it is not a significant ship. Its importance was certainly recognised by the government of Azerbaijan, with the country's president performing the launching ceremony.

Innovation, and being the first ship to feature a new development, is another way of being considered as significant. *Hourai Maru* meets that criteria by being a new type of LPG carrier, with the world's first IMO type B independent prismatic cargo tanks. So too does *Maran Gas Andros*, the first ever LNG carrier fitted with an air lubrication system and *Saga Dawn*, the world's first LNG carrier to feature the LNT A-BOX gas containment system. *Samnøy* – a hybrid ferry built in Turkey for Norwegian owners – is included on its merits as a ship, but also as it is the first ship, along with its sister, to bunker with LNG at the Spanish port of Ferrol.

Malcolm Latarche
Associate Editor,
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Notes

In the tables which form part of each ship description, all dimensions, also deadweight and displacement tonnages, are metric unless otherwise stated. Machinery powers have been specified as 'bhp' or 'kW' in accordance with information received from the shipbuilder or owner. Emergency alternators are not normally included in the number of alternators. When a dash (-) has been included against an item, this generally denotes lack of information but where it is known that features have not been included, this is indicated by 'nil'. The number of sister ships completed or on order does not include the ship presented. Some ships shown as 'on order' may have been delivered by the time this publication appears.



HISTRIA ATLAS: Product tanker

Shipbuilder:Santierul Naval Constanta S.A. (Constanta Shipyard)
 Vessel's name:*Histria Atlas*
 Owner/Operator: **Histria Shipmanagement Srl**
 Country:Romania
 Designer:**Ship Design & Consult GmbH**
 Country:Germany
 Model test establishment used:CFD optimization & Model Test by HSWA, Germany
 Flag:Liberia
 IMO number:9800790
 Total number of sister ships already completed (excluding ship presented):Nil
 Total number of sister ships still on order: ...3 + 3

Constructed by Romanian builder Santierul Naval Constanta (SNC), *Histria Atlas* is the first in a series of three plus three EcoMax-class MR1 product tankers. The vessel was developed as a project by the builder, the shipowner Histria Shipmanagement and Italian classification society RINA. Histria Shipmanagement has also owned the yard since 2002.

The ship has been designed for a maximum cargo intake while still being able to operate in ports with a relatively shallow draught limitation. With a length of 179.99m, a beam of 32.26m and a draught of 11.1m, combine with a deadweight of 40,000tonnes and a liquid capacity of 46,995m³ at 98%, the vessel falls in the middle of the MR1 size range.

The EcoMax name reflects the design philosophy to build a vessel with a lower lightship weight but high cargo capacity. The ratio of cargo to ship weight is some 10% to 20% better than typical ships of the same type and fuel consumption around 30% lower. The assigned EEDI rating of 4.7 is significantly below the required 6.23.

Histria Atlas has 10 cargo and two slop tanks and can carry seven grades. The pumping arrangements are covered by 10 500m³/hour Framo hydraulic pumps plus two 300m³/hour pumps for the slop tanks. This flexibility is further enhanced as the vessel can carry IMO 2 and 3 chemical cargoes as well as clean or dirty products.

Power for *Histria Atlas* is provided by a Doosan-built MAN B&W 6S50ME-C9.5 producing 6,480kW at 89rpm. The propeller is a 6.5m fixed pitch type supplied by Wärtsilä. The arrangement allows a service speed of 14.5knots on the consumption of 20tonnes of MDO per day. As there are no plans for the vessel to trade within US ECAs, the engine only needed to meet NOx Tier II emission standards.

TECHNICAL PARTICULARS

Length oa:180.00m
 Length bp:173.30m
 Breadth moulded:32.26m
 Depth moulded to main deck:17.00m
 Width of double skin side:2.00m
 bottom:2.150 – 2.265m (slanted)

Draught scantling:11.20m
 design:summer draught 11.116m
 Gross:26,310gt
 Displacement:49,762t
 Lightweight:9,762t
 Deadweight scantling:40,000t
 design:summer draught 40,000t
 Block co-efficient:approx. 0.78 at scantling draught
 Speed, service (–%MCR output):14.00knots (88% SMCR)
 Cargo capacity (m³)
 Liquid volume:49,500
 Bunkers (m³)
 Heavy oil:1,335
 Diesel oil:410
 Water ballast (m³):18,500
 Tankers – percentage segregated ballast: ...100%
 Daily fuel consumption (tonnes/day)
 Main engine only:20.0
 Auxiliaries:2.8
 Classification society and notations:RINA
 C HULL MACH Oil Tanker ESP – CSR / Chemical Tanker ESP AUT-UMS; BWM-T; COAT-WBT; CARGOCONTROL: DMS; GREEN PLUS; INERTGAS-A; MLCDESIGN MON-SHAFT; PMA; SPM; SYSNEQ1; VCS
 % high-tensile steel used in construction:70% approx.

Propulsion
 Design:MAN Diesel
 Model:MAN B&W 6S50ME – C9.5 Tier II
 Manufacturer:DOOSAN – MAN B&W
 Number:1
 Type of fuel:HFO
 Output of each engine:SMCR 6,480kW
 Is this a diesel-electric or hybrid?:No
 Propeller(s)
 Material:Cu-NI-Al
 Designer/Manufacturer:Wärtsilä Marine Solutions
 Number:1
 Fixed/Controllable pitch:Fixed
 Diameter:6,500mm
 Speed:90rpm

Diesel-driven alternators
 Number:3
 Engine make/type:Yanmar 6EY22ALW
 Type of fuel:HFO
 Alternator make/type:TAYO FE 547C-8
 Output/speed of each set:900kW 900rpm

Boilers
 Number: ...1 oil fired boiler + 1 ME exhaust gas economizer
 Type:Vertical
 Make:Kangrim
 Output, each boiler:12t/h 10bar +400kg/h 7 bar

Stern appendages/special rudders:Spade rudder with bulb

Bow thruster(s)
 Make:Wärtsilä Marine Solutions
 Number:1
 Output (each):850kW

Deck machinery
 Cargo cranes/cargo gear
 Number:2 cargo hose cranes
 Make:Techflower
 Type:Electrohydraulic
 Performance: 1 x 100kN, 22m & 1 x 25kN, 7.5m

Mooring equipment
 Number:7
 Make:MacGregor Pusnes
 Type:Hydraulic

Special lifesaving equipment
 Number of each and capacity:1 free-fall lifeboat, 30 persons
 Make:Hatecke
 Type:GFF 6.6 C17-T

Cargo tanks
 Number:10 cargo + 2 slop
 Grades of cargo carried:7
 Product range:oil products, chemical cargoes IMO type 2 and type 3
 Coated tanks – make and type:Jotun epoxy tank coating
 Stainless steel – structure/piping:Cargo piping AISI 316L

Cargo pumps
 Number:10 + 2
 Type:Hydraulic
 Make:Framo

Stainless steel:AISI 316L
 Capacity (each):10 x 500m³/h + 2 x 200m³/h

Cargo control system
 Make:Framo; Hoppe

Ballast control system
 Make:Framo; Hoppe

Ballast water treatment system
 Make:Alfa Laval PureBallast 3.1
 Capacity:2 x 1,000m³/h

Complement
 Officers:8
 Crew:15
 Supernumeraries/Spare:1
 Suez/Repair Crew:Suez 6
 Single/double/other rooms: .. Single rooms/ 6 beds Suez room

Navigation and other equipment
 Bridge control system
 Make:Wärtsilä Lingso
 Type:EMS 2200

Is bridge fitted for one-man operation?Yes
 Integrated bridge system:No

Radars
 Number:2
 Make:JRC
 Model(s):JMR 9225 6XN, JMR 9230 SN

Fire detection system
 Make:Salwico
 Type:Salwico Cargo

Fire extinguishing systems
 Cargo holds; cargo tanks area: ..Water foam, low expansion
 Make/Type:Minimax
 Engine room:CO₂
 Make/Type:Minimax

Waste disposal plant
 Incinerator
 Make: DETEGASA Model: IRLA 50
 Waste compactor
 Make: Delitek Model: DT 200 MC
 Sewage plant
 Make:Detegasa
 Model:DELTA BIO STPN 630

Efficiency
 Attained EEDI value:4.70
 Required EEDI value:6.23

Installed Fuel Meters:Conventional
 Other installed monitoring tools:Torque propulsion power monitoring

Energy Saving Technologies*: Rudder bulb, LED lighting

Performance Monitoring Regime:In-house developed system / ship management system

Contract date:15 December 2015

Launch/float-out date:3 February 2019

Delivery date:24 April 2019

