**Shipyard De Hoop delivers innovative expedition cruise vessel to Celebrity Cruises**

Shipyard De Hoop has recently completed successful sea trials with *Celebrity Flora*, an innovative expedition cruise vessel for Celebrity Cruises, daughter of RCCL. *Celebrity Flora*, the first seagoing cruise ship built in the Netherlands for many years, is also the first expedition ship tailored in design and build to provide high-end luxury cruising in the Galapagos area. In Amsterdam next month, the 100-passenger ship will be handed over to Celebrity Cruises before sailing to Ecuador in South America, where the naming ceremony will be held in June. Recognised globally for her championing of sustainable development and environmental biodiversity preservation, godmother Yolanda Kakabadse, will attend the ship’s naming ceremony. Yolanda Kakabadse is the former president of the World Wildlife Fund (WWF) and also a former Ecuadorian minister of environment. After the ceremony, *Celebrity Flora* will be making year-round cruises to the Galapagos Islands, beginning in Baltra - one of the smaller islands of the Galapagos - at the start of the 2019 cruise season.

Despite dynamic international competition, Shipyard De Hoop secured the prestigious contract as a result of their accumulated experience of technically advanced features on high-end offshore vessels, combined with the knowledge of developing luxury cruise interiors (for smaller inland cruise vessels). It took almost a year from the initial discussion with Celebrity Cruises before the first block sections were erected.

The management at De Hoop are certain that more than a decade of participating in smaller seagoing cruise vessel projects, with the associated design development and investment in knowledge, has now paid off. De Hoop’s CEO, Patrick Janssens, states that this was the ideal basis for entering the growing market of expedition cruise vessels - their designers were fully prepared when the Celebrity Cruises challenge arose. Furthermore, with many Dutch suppliers and subcontractors on the client-approved ‘makerslist’, this project presented a great opportunity for the Dutch shipbuilding industry as a whole.

**A turning point in the approach to VIP-cruise ship design**

*Celebrity Flora* marks a turning point in the approach to ship design. Developed in close collaboration with the client and a number of co-makers/sub-contractors, the project is a fresh approach to marine exploration of the Galapagos Islands, aiming to create a feeling of being immersed in the environment, rather than just being a tourist to the area. Although a number of expedition cruise vessels were ordered in recent years, none were optimised for the open water experience in warmer climates, or in such a unique and diverse environment.

Designed and Lloyd’s classed for worldwide service, Celebrity Flora is the first vessel to be built according the latest probabilistic damage stability regulations and therefore already complies with the relevant Rules and Regulations for 2020; this is supplemented with the client’s constraint to comply with a two-compartment damage stability regulation. The amendment, stipulating these regulations, was implemented by IMO in June 2017, under protest of many ship designers and builders, who considered these rules to be impossible. Moreover, along with compliance with future international rules and regulations, the vessel also commits to specific Galapagos National Park Directorate Regulations, whereby specific environmentally low-impact features were applied.

As this vessel is expected to be stationary - in a bay or near one of the islands - for 66% of the operational time, considerable thought went into the design and selection of equipment, allowing the ship to perform efficiently under DP (Dynamic Positioning). Combined with a zero-speed stabiliser system, the DP system will choose a heading to minimise the roll and heave motions on the vessel, significantly improving passenger comfort. To achieve a high level of redundancy and to meet the Class requirements (PSMR\* and DP1 / DP-AM notation), the power and propulsion plant of Celebrity Flora is duplicated and housed in two separate engine rooms.

**Reduced environmental footprint as a result of energy efficiency**

The power supply for two rudder propellers, two bow thrusters and other consumers, is supplied by four caterpillar C32 diesel generator sets. The diesel engines are equipped with an SCR (Selective Catalytic Reduction) installation, whereby the emission of nitrogen oxide (NOx) is greatly reduced. The rudder propellers, type 20 CRP of 1450kW each, were supplied by Steerprop from Finland, while the 400kW bow thrusters are provided by Veth from the Netherlands. With this configuration a 12-knot cruising speed can easily be achieved and a high-manoeuvrability is guaranteed.

The introduction of this advanced propulsion system, the hull configuration (improved with CFD calculations) and the specially developed diesel engine arrangement, guarantee an average 25% reduction in hull resistance, 15% reduction of fuel consumption and equivalently fewer exhaust emissions. These characteristics make this cruise ship one of the most energy-efficient ships in its class, in addition to being IMO Tier III compliant. One glance at the ship’s profile reveals the sophisticated bow shape - featuring a straight, wave-piercing stem, with an integrated bulb. This characteristic bow both reduces resistance in waves when in transit and saves energy when staying in position, similarly due to the higher efficiency of the bow thruster.

To further reduce the environmental footprint, the cruise ship accommodates an enhanced sewage plant to improve the quality and reduce the amount of wastewater; an improved HVAC system and improved thermal insulation, as a result of energy-efficient low-emissive glazing leads to 50% less energy consumption. It almost speaks for itself that the HVAC equipment is capable of handling the challenging environmental parameters, warmer seawater and higher outside air temperatures of the Galapagos.

In the electric system, many more energy saving measures have been taken.

**Ergonomics meets comfort meets culinary experiences**

Aside from its state-of-the-art design and use of eco-friendly technology, the vessel will feature the largest and most luxurious accommodations in the Galapagos region. The raw materials for carpentry, upholstery, finishing and decorations of all eight accommodation decks consist of sustainable, natural, regionally inspired materials. With 50 staterooms divided over decks five and six and a capacity to host a total of 100 passengers. *Celebrity Flora* transports its guests in spacious all-suite cabins, featuring generous bathrooms, connected to the outside world through outward-facing layouts and integrated balconies, including two Penthouse Suites - the largest in the Galapagos - with separate indoor and outdoor living areas. All of the vessel’s luxurious cabins (as well as the Penthouse suites there are two Royal Suites, one Ultimate Sky Suite, seven Premium Sky Suites, 16 Sky Suites and 22 Sky Suites with veranda) feature full room automation that allows you control everything with just the touch of a button.

Also accommodated onboard, divided over 52 cabins, are the 80 crewmembers and personal suite attendants, to attend to the guests’ every need.

Characteristic for this vessel is the large variety of public areas, to be found on decks 3, 4, 7 and 8 - including a choice of seven different seating locations including a floor to ceiling glass-wrapped observatory and the open-air hideaway in The Vista, on the forward respectively aft part of deck seven. Guests can relax in the Sunset Lounge or enjoy naturalist presentations and excursion information sessions in the Discovery lounge, both to the stern of deck four. On deck three, Darwin’s Cove and the Naturalist Centre, are home to the tourist offices and there is also a Stargazing Platform on deck eight. Breakfast, lunch and dinner are served in the Seaside Restaurant on deck four, while the Ocean Grill on deck seven offers a more casual dining space, panoramic views and dinner under the stars. Celebrity Cruises believe eating and drinking on board Celebrity Flora is an integral part of the total cruise experience.

The Marina, the embarkation area located aft on deck three, is the primary point of access to the ship and the guests will be brought on board over water, in one of the three available Ridged Inflatable Boats (RIBs). *Celebrity Flora*’s transom features integrated aft stairs, combined with a foldout stern platform with special boarding facilities, to allow safe and easy boarding for the passengers.

Behind the scenes, the dry/cold/freeze stores, galleys, pantries and eateries up to and including the scullery and the waste/sewage management, are unique in their layout, allowing seamless service in the restaurants. On lower deck (deck 3), a RIB garage with hydraulic hull doors, hatches and dedicated cranes is provided for storage of the tenders. To allow for swift and unseen provisioning logistics by the crew, to starboard side - near the dry, cool and freeze stores in the fore ship - a loading bay is provided. This unique RIB handling, in combination with the dedicated stern boarding facilities for passengers, is the money-maker of this design.

Shipyard De Hoop has put a lot of effort into decreasing noise and vibrations, the result of which can be seen in floating floors, flexibly mounted equipment and anti-vibration panels in walls and ceilings. The practical implementation of this was supported by theoretical frequency analysis of the ship and its interior construction. With Comfort Class 1 notation achieved (the highest possible Class notation), quiet and comfortable passenger areas are assured. In addition, thorough wind tunnel tests on the vessel’s superstructure shape ensure passengers on deck will not be subjected to exhaust gasses.

**Principal particulars**

Length, over all : 101.50m

Length, between perpendiculars : 97.43m

Beam, moulded : 17.00m

Depth, moulded (maindeck) : 6.50m

Draught, moulded : 4.50m

Propulsion power : 2x 1450kW

Bow thruster power : 2x 400kW

Speed, max : 14.5kn

Deadweight (T = 4.50m) : 1200t

Gross tonnage : 5922t

Passengers : 100 persons in 50 suites (of six different sizes)

Crew & Personal suite attendants : 80 persons in 52 cabins

**Tank capacities**

Fuel oil 255 cu.m

Fresh water 175 cu.m

Sewage grey 150 cu.m

Sewage black 45 cu.m

Treated water holding 140 cu.m

Urea 16 cu.m

Water ballast 530 cu.m

**Classification**

Lloyd Register of Shipping

 ✠100A1, Passenger Ship, \*IWS,

EC0 (BWT, IHM, OW, P, SEEMP),

✠LMC, PSMR\*

UMS, DP(AM), NAV1, PCAC 1, 3

**ABOUT CELEBRITY CRUISES**

 Celebrity Cruises' iconic "X" is the mark of modern luxury, with its cool, contemporary design and warm spaces; dining experiences where the design of the venues is as important as the cuisine; and the amazing service that only Celebrity can provide, all created to provide an unmatchable experience for vacationers’ precious time. Celebrity Cruises' 13 ships offer modern luxury vacations visiting all seven continents. Celebrity also presents incredible Cruisetour experiences in Alaska and Canada. Celebrity is one of six cruise brands operated by global cruise vacation company Royal Caribbean Cruises Ltd.

**ABOUT SHIPYARD DE HOOP**

 Shipyard De Hoop is a successful Dutch designer, engineer and builder of custom-built vessels. Each and every ship that is built is unique and built in-house, which means no standard processes, but customisation. De Hoop has a positive approach to trends and developments in the industry, allowing them to quickly embrace change and even anticipate future developments.

 Shipyard De Hoop is a medium-sized shipyard headquartered in Lobith, in the east of the country, with 250 to 500 employees depending on the workload. The yard offers slipway facilities for vessels up to 200 metres length, has a combined quay length of 450 metres locally and a further 200m in the Rotterdam harbour area available for outfitting.

 Shipyard De Hoop has an impressive track record in designing and constructing custom-built ships. This comprises both seagoing vessels and inland vessels, including river cruise vessels, passenger vessels, as well as high-end work and accommodation vessels for the offshore industry and renewables markets. Having their own design and engineering department, together with all other disciplines (not only hull building, but also prefabrication, carpentry/interior manufacturing, installation facilities, piping, etc.) allow them to build a complete ‘turn-key’ ship. The company is characterised by its flexibility and quality, whilst offering fast delivery dates at the same time.

Shipyard De Hoop will celebrate its 130st anniversary with the turn of the year from 2018 to 2019!

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