



## RIVER DISCOVERY II: first generation river cruise vessel for US owner

Shipbuilder: ..... **De Hoop Lobith**  
 Vessel's name: ..... **River Discovery II**  
 Hull No: ..... **444**  
 Owner/operator: ..... **Vantage Delux Travel**  
 Country: ..... **USA**  
 Designer: ..... **De Hoop Lobith**  
 Country: ..... **The Netherlands**  
 Model test establishment used: ..... **Development Centre for Ship Technology and Transport Systems (DTS)**  
 Flag: ..... **Germany**  
 MMSI: ..... **211563860**  
 Total number of sister ships already completed (excluding ship presented): ..... **nil**  
 Total number of sister ships still on order: ..... **1**

*River Discovery II* is the first of a series of three vessels De Hoop is building for Vantage Travel. The first two ships measure 135m, while the third will be 110m, allowing access to smaller rivers such as the Moselle. The company caters primarily for a North-American clientele. Initially, the plan was to build a third 135m vessel for delivery in 2013, but this has been postponed for the time being.

These ships have a classic retro look, but feature the very latest technologies. Never before has De Hoop designed a 135m ship for this customer, the maximum length allowed by EU regulations. The second ship, *River Splendor* is currently under construction and will be delivered in early 2013. For the third ship, *River Venture* (110m), the preparatory work is in progress and it is expected to be delivered in the course of 2013.

*River Discovery II* features a hydrodynamically efficient hull, based on the hull lines and construction of a previous vessel *S.S. Antoinette*, for which a model testing programme was carried out in the towing tank. As a result, the ship can attain a service speed of 11.87knots with its two Caterpillar C32 ACERT main engines, rated at 746kW, coupled to Veth rudder propellers with contra-rotating propellers. The thrusters are located in recesses of the hull, which allows operation with a shallow draught of 1.45m. Moreover, the low resistance and smart construction make for fewer vibrations and less noise, resulting in more comfort for passengers.

The bowthruster is driven directly by another C18 diesel engine from Caterpillar. A shaft generator is mounted between the diesel engine and the thruster, allowing the diesel to be used either for power generation (for a quieter aft ship) or for manoeuvring. This solution allows for a complete shutdown of the aft engine room, provided one generator is enough, during night stays on the quayside. To save on electrical power, the entire ship

has LED lighting. The emergency diesel generator, a 156kVA C6.6 from Caterpillar is also housed in the bowthruster room. The bowthruster is a jet-type thruster from Veth with a rotating grid, allowing for thrust in every direction. During river trials, *River Discovery II* achieved a speed of 5.39knots on the bowthruster alone, making it a very effective emergency propulsion system.

The compact engine room is located in the aft, with exhausts exiting through the stern. Venturi nozzles give the exhaust gases an acceleration to avoid smells on the aft deck. Two main engines and two generators are all cooled with a LI circuit circulating through boxcoolers which are placed in the skeg. Using the ballast tanks, the vessel can be trimmed in such a way that the boxcoolers can be pulled out for cleaning without drydocking. Between the main engines is a diesel-fired boiler for the hot water onboard, which is stored in four 500-litre insulated tanks in the aft.

*River Discovery II* will be used on the entire length of the Rhine and Danube, from Amsterdam to the Black Sea. For a significant portion of the Main-Danube Canal, the air draught must be reduced to six metres to allow passage under bridges. It takes eight hours to fill the ballast tanks to achieve the required air draught. Even at the draught of 2.1m, *River Discovery II* complies with all the damaged stability requirements. During the passage through the Main-Danube Canal, the upper deck will not be accessible for a long period. To create an open space during those times, the lounge on the aft upper deck has a roof section which can be opened by hydraulics. Furthermore, to ensure an open-air experience.

### TECHNICAL PARTICULARS

Length oa: ..... 135m  
 Breadth moulded: ..... 11.1m  
 Depth moulded  
 To main deck: ..... 3.25m  
 Draught  
 Operational: ..... 1.4m  
 Ballast draught: ..... 2.1m  
 Block co-efficient: ..... 0.85  
 Bunkers  
 Diesel oil: ..... 120m<sup>3</sup>  
 Water ballast: ..... 850m<sup>3</sup>  
 Classification society and notations: ..... BV I 5 IN (0.6) Z  
 Passenger Vessel/Fire \*MC  
 Main engines  
 Design: ..... Caterpillar  
 Model: ..... Caterpillar C32 Ditta Acert  
 Manufacturer: ..... Caterpillar  
 Number: ..... 2

Type of fuel: ..... MGO  
 Output of each engine: ..... 746kW  
 Propellers  
 Designer/manufacturer: ..... Veth VZ-900 CR  
 Number: ..... 2  
 Fixed/controllable pitch: ..... Fixed  
 Diameter: ..... 1.5m front, 1.35m aft  
 Speed: ..... 340rpm  
 Special adaptations: ..... Flexible suspended  
 Diesel-driven alternators  
 Number: ..... 3  
 Engine make/type: ..... Caterpillar C18 Acert Ditta  
 Type of fuel: ..... MGO  
 Output/speed of each set: ..... 500kVA  
 Alternator make/type: ..... Leroy Somer  
 Output/speed of each set: ..... 439kW x 1500rpm  
 Boilers  
 Number: ..... 1  
 Type: ..... Elprex 420  
 Make: ..... Unical with Riello oil burner  
 Output, each boiler: ..... 360kW  
 Other cranes  
 Number: ..... 2  
 Make: ..... Van Wilk  
 Type: ..... Hydraulic telescopic  
 Tasks: ..... Operation of gangways  
 Performance: ..... SWL 750kg  
 Mooring equipment  
 Number: ..... 2 x anchor/mooring winches,  
 1 x stern anchor/mooring winch  
 Make: ..... Dijkstra  
 Type: ..... Electric  
 Complement  
 Crew: ..... 49  
 Passengers  
 Total: ..... 176  
 Number of cabins: ..... 92  
 Bow thrusters  
 Make: ..... Veth Compact Jet CJ-1200  
 Number: ..... 1  
 Output: ..... 350kW  
 Fire detection system  
 Make: ..... Eltek  
 Fire extinguishing systems  
 Cargo holds: ..... Seafix  
 Engine room: ..... FM200  
 Cabins/public spaces: ..... Imtech  
 Radars  
 Number: ..... 2  
 Make: ..... Alphatron  
 Model: ..... JMA-610  
 Waste disposal system  
 Sewage plant: ..... Gertsen & Olufsen/ BR-37000  
 BG-G Bio compact  
 Contract date: ..... 01 October 2010  
 Launch/float-out date: ..... 14 December 2011  
 Delivery date: ..... 01 February 2012





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