PLANCIUS

Dutch Oceanographic Research Vessel converted to Expedition Cruise Vessel

Builders:
Oceanwide Expeditions,
Vlissingen, The Netherlands
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In the beginning of 2007, Dutch cruise operator Oceanwide Expeditions acquired the Hr. Ms. Tydeman from the Dutch government. The ship, built in 1976, had been in service for the Royal Dutch Navy as an Oceanographic Research Vessel until 2004 and had been laid up since then. Oceanwide Expeditions saw potential in the vessel and prepared for an extensive refit which started in August 2007.

Adventurous

The ship, named Plancius, doesn't follow the bigger-is-better trend in cruise ships. On a smaller vessel, guests appreciate a much more personal experience. They are more in contact with the sea and the surroundings.

The vessel is deliberately not built as a very luxurious ship, but more as a rugged explorer for adventurous travellers. The interiors are modern, but do not detract the attention from the stunning scenery seen through the windows. Ample outside space at various deck levels is provided, letting each of the 118 passengers discover their own preferred spot.

Scope of refit

To describe the extent of the refit, it is more fitting to state what was kept than what was replaced. The Tydeman's ice-class 1D hull and the engine room were conserved, but the entire interior and all systems were stripped.

The existing superstructure was extended with new deckhouses fore and aft. The wheelhouse was repositioned on top of a new deckhouse. New staircases were added and extra watertight bulkheads were put in place. When asked why the cruise operator decided not to have a new vessel built, Hans Heuvel, project manager for Oceanwide Expeditions, responds: "Newbuilding was not an option. Every shipyard had their order books filled until 2012 in those days." The company decided to carry out the conversion under their own management.

Principal particulars	
Length o.a.	89.30 m
Waterline length	84.80 m
Breadth o.a.	14.45 m
Depth to main deck	7.3 m
Draft	5.00 m
Displacement	3211 ton
Gross tonnage	3434 GT
Net tonnage	1080 NT
Propulsion power	3 x 617 kW
Bowthruster	1 x 400 kW
Max. cruising speed	15 knots

Subcontractors

The construction of the new parts of the superstructure, all the internal steelwork and all work in drydock was subcontracted to Shipyard Reimerswaal from Hansweert, which also rented out the outfitting quay to Oceanwide for the entire duration of the refit. Other main subcontractors include Hoogendoorn for the carpentry, Windex for the HVAC installation, Bremen Shipping Installation for the sanitary installations and PCN for piping in the engine room areas and an entirely new bilge system. The electric installation was a joint effort from Valmira and Relax (Romania).

Conversion

A large part of the work was the stripping of the vessel. The entire accommodation was taken out, including the wheelhouse. The hull was sandblasted and repainted by Hillary Maintenance Service. The original ice-breaking bow and ice-class structure were a strong selling point for the fishermen. Bilge keels reduce the rolling, but there is no active stabilization system.

SOLAS

A lot of modifications were required to bring the *Pieridae* up to SOLAS passenger ship standards. To compensate for the added weight of the superstructure and, former diesel tanks were filled with 218 tons of concrete in total as fixed ballast. Other modifications include a new sewage treatment plant, a new bilge system including oilpewater separator, watertight bulkheads and doors for damage stability, a voyage data recorder, fire detection and fire door control systems, new fire fighting systems throughout the vessel and local fire application in engine room spaces. Lifeboats and the davits to launch them were added, as well as an AJAX sprinkler installation throughout the accommodation. Four lifecrafts were supplied by Cosalt. The two 60-person lifeboats are also certified for use as rescue boats. The *Pieridae* sails under the Dutch flag and is registered in Vlissingen, hometown of Oceanwide Expeditions.

Autonomy

Provisioning is not often possible in the Arctic and Antarctic regions were *Pieridae* will sail. That's why ample fridge and freezer storage is provided in the forward part of the vessel, along with a spacious laundry. A large cooled garbage store is situated on the aft deck. To ensure a steady supply of fresh water on

long voyages, two seawater reverse osmosis plants from Veolia were installed with a capacity of 15 m3/day each. An Aquamar evaporator, supplied by Parker, with a capacity of 15 m3/day can also produce fresh water by recuperating the heat of the exhaust gases. Hot water is made in two Fröhling boilers of 580 kW each.

Excursions

Ten Zodiac MK V inflatables are stored on the aft deck. They can be launched on either side of the vessel with a long fixed-length crane located on the centreline. On the main deck on starboard side, an open-air area is provided for the boarding of the Zodiac's when guests make excursions from the anchored *Plancius*. Two side boarding ladders from superyacht-supplier Opacmare can retract into the bulwark for this purpose.

Accommodation

The maximum of 115 passengers onboard *Plancius* is accommodated in the following cabin types, all with ensuite bathrooms:

- 4 triple cabins
- 39 twin cabins with two single beds
- 10 superior cabins with double beds

The public spaces include a large dining room with buffet on the main deck aft and an observation lounge with a bar and an adjacent library forward on the boat deck. On the main deck, a small hospital is provided with a separate treatment room. The galley is located next to the buffet in the dining room. A provision lift ensures the flow of food from the stores in the forward sections to the galley. The *Plancius* will be sailed with a crew of 43, which includes 17 nautical crew, 19 hotel staff (6 chefs, 1 hotel manager and 12 stewards), 6 expedition staff and 1 doctor.

* The new wheelhouse features 360-degree visibility

Zero-discharge

Because the vessel will sail in environmentally sensitive areas, an entirely new sewage treatment plant was installed. The Aquamar system is based on a bioreactor and was supplied by Quaver. It can cope with 25 m3 of black water per day. The toilets are on a vacuum system, also supplied by Quaver. Black and grey water are stored in separate tanks, which were ballast tanks in the vessel's previous life.

The bilge water is also cleaned before overboard discharge. For this, a new RWO bilgewater separator was purchased from Rossmark. The MEPC 107 unit has a capacity of 2.5 m3/h and a 15 ppm alarm.

Propulsion

The *Tydeman* had a diesel-electric propulsion installation with three large gensets driving a single propeller. This arrangement has remained unchanged. The original six-bladed propeller from Lips, with diameter 3,400 mm was kept in service. The electric propulsion motor, rated at 2100 kW at 750 V, was taken out of the hull for drying of the windings, cleaning and re-impregnation, which brought it back in condition. The propulsion engines, 3 Stork Werkspoor 8 FCHD 240 engines good for 1230 mP each, were completely overhauled and put back in service. Each of these engines drives a AEG Rotadont DKBL 58/4/08 generator of 1132 kVA. The main power grid runs on a 440 Volt network at 60 Hz.

Two additional generator sets are in place. A Perkins BPMV genset with 327 kVA power is the harbour generator. It can also be used to drive the main propulsion motor as a get-me-home solution in emergency situations, for example when the engine room is flooded. An emergency genset is located on the one but highest deck.

* The D.E. propulsion installation was completely overhauled

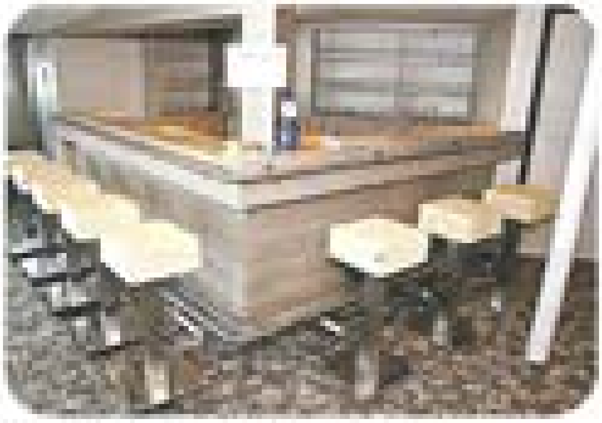
Wheelhouse

The wheelhouse benefited from a complete make-over. It is now divided into four areas: a safetystation and a navigation desk aft, communications on portside forward and steering on starboard forward. The open wing stations were maintained as original and feature a fold-down platform to give improve the view over the ship's sides. The wheelhouse has practically unobstructed views throughout 360 degrees. The navigation and communication equipment was supplied by Radio Holland and an ice sonar installation was fitted by Wesmar.

Astronomer

The *Plancius* is named after the Dutch astronomer, map-maker and geologist Petrus Plancius (1552 - 1622), who postulated the existence of a northern passage to Asia. His theory provoked seven

* The porthole interior places the focus on the surrounding landscapes



* A bar is located in the forward observation lounge

at northern discovery voyages at the end of the 16th Century. A Dutch expedition under Willem Barentsz discovered Spitsbergen, but got stuck in the pack ice of Nova Zembla. Today, that route is known as the Northeast Passage.

At the time of writing, the Plancius had just left Ushuaia in Southern Chile for her first cruise to the Antartic.

In June, the vessel will transfer to the artic regions to follow the summer season. Oceanwide Expeditions now operates a fleet of five explorer cruise vessels. The company was elected the world's leading polar expedition operator in 2008.

*Photos by Zees en Wil, The Netherlands

Subcontractors and suppliers of equipment fitted on board the 'Plancius'
(partial list)

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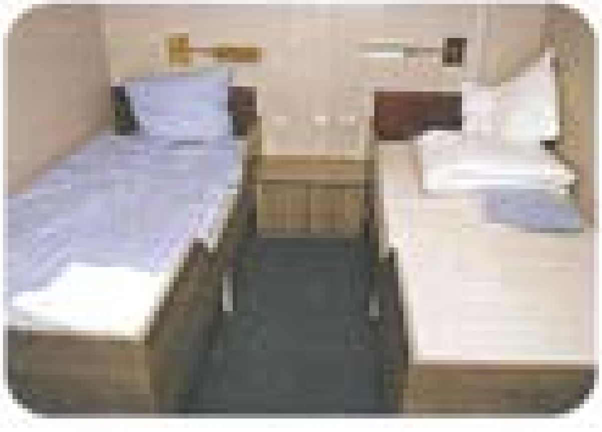
* Most of the cabins feature two single beds



* An entirely new galley was built to the latest standards