



# PUCCINI

## HOLLAND SHIPYARDS DELIVERS SELF-SUPPORTING LIVING QUARTER BARGE IN RECORD TIME

*Builders:*  
Holland Shipyards BV,  
Hardinxveld-Giessendam, The Netherlands

*Owners:*  
Roborg BV, Delfzijl, The Netherlands

**H**olland Shipyards, based in Hardinxveld-Giessendam on the former Shipyards K. Damen grounds, has recently delivered an accommodation barge called *Puccini*, to her owners Roborg BV. This is a newly established company, jointly owned by Wagenborg Kazachstan and Chevalier Floatels. Chevalier Floatels was established in 2003 by Marcel Roelofs and is specialised in floating accommodations. Previous projects include a floating prison and a floating detention centre for asylum seekers, both for the Dutch Ministry of Justice. After completion of these, Marcel Roelofs found a market demand for floating accommodation vessels in the off-shore industry in the Caspian Sea and he established a joint venture with Wagenborg Kazachstan for the purchase of no less than five accommodation vessels, of which the *Puccini* is one.

**Composers**  
Each of the five accommodation vessels

is named after a classic composer. *Puccini* is a new-build vessel based on an existing barge from a pushboat-barge combination called Dakota. The *Kurmangazy* is a conversion of the passenger ship *London Night* to increase the sleeping capacity to 320 single cabins. This conversion was also done by Holland Shipyards BV. The three other vessels were rebuilt at Shipyards De Hoop: the *Verdi* is built on a barge, while *Debussy* and *Ravel* share former lives as river cruise vessels. The first oil from the Caspian Sea has yet to start flowing, but already the prospect has created a lot of work for Dutch shipyards and suppliers. The accommodation vessels will provide living quarters to the workers on various off-shore working islands.

Principal particulars	
Length o.a.....	115.95 m
Beam o.a.....	11.45 m
Beam mld.....	11.40 m
Depth at side.....	4.50 m
Draught.....	2.00 m
Accommodation.....	320 persons

**Creative thinking**  
The *Puccini* is the result of creative thinking and the use of available sources. The hull is based on the push barge of an inland waterway pushboat-barge combination, which became available as a consequence of the current economic crisis. The hull was originally 80 meters long, but it was lengthened to 116 meters. Inside the hull are the tank deck and the first deck, which are both occupied by public spaces. Above these two decks, along the top of the original coamings of the cargo hold, is a half-height deck of 1m20 where all the cabling and piping is run. On top of this deck, the accommodation modules are placed. These modules contain the crew cabins on two levels.

**Layout**  
The double bottom stretches the entire length of the vessel. The lower 2.800 mm of the barge has been arranged as tank space for sewage, ballast and fresh water and fuel oil. In the aft is an engine room housing the three generator sets



The buffet is located in a corner of the dining room



Each cabin sleeps 4 in two bunk beds

and the boilers. Just forward of the mid-ship is another technical space with the watermakers, the UV water treatment and the sewage treatment plant. Above this tank deck is the lower deck, which houses from aft to fore:

- engine room;
- cold stores;
- galley and scullery;
- messroom with buffet corner;
- sanitary facilities;
- the stairwell covering all decks;
- a day room with 50 seats;
- a meeting room;
- linen stores and laundry;
- a gymnasium.

Between the lower deck and the main deck is the 1m20 "tech deck" which has enabled the fast construction time and usage of removable accommodation modules on deck.

### Superstructure

Above the engine room is a small open aft deck with a funnel, a crane and a staircase. For easy provisioning, a 10-foot container can be lowered with the crane into a large deck hatch. The crane from HS Marine type AFB170/10 can lift 10 tons at its maximum reach of 10 meters. It was supplied by Promac. The 10-foot container is immediately placed in a lobby right next to the provision stores, so the handling of supplies can

entirely be done inside. The access from the main aft deck to the accommodation leads to the reception with three offices, a shower room and public toilets and a large changing room with 280 lockers. In the changing room, PronovaCT has installed drying equipment for 280 pairs of boots and for 30 jackets. This gives a longer lifetime to the equipment and the crew benefits from dry clothes at the beginning of their shift, resulting in a better atmosphere and less sick leave. The rest of the main deck is taken up by forty 4-person cabins and a treatment room with three beds and a separate quarantine area.

The upper deck features a large lounge aft with 104 seats, consisting of four lounge corners, 13 four-person games tables and two larger tables to seat six persons. Another forty 4-person cabins, each with an individual bathroom, and an internet café with 16 workstations complete the upper deck.

### Limited time

The build and transfer of the *Puccini* was no small feat. Time was limited, as the Caspian sea can be frozen by mid-November and the vessels had to be in place before that. The contract for the vessels was signed on 10 June 2009. The workers of Holland Shipyards managed to complete both vessels on time in a

mere 17 weeks. The *Puccini* and *Kurmangazy* were delivered on 6 and 8 October 2009. Because of the transfer route by the river Donau with its low bridges, the accommodation units of the *Puccini* were designed and built in such a way that they could easily be taken off and placed back onboard. Right after the delivery, the accommodation units were lifted off and shipped to Constanta in Romania on barges, where they were re-installed in just four days. The arrangement with the intermediate service deck for piping and cabling made this possible.

### Zero-discharge area

The Caspian Sea is the largest enclosed body of water in the world by area. Either classed as the world's largest lake or as a sea, the Caspian Sea has no effluents. This means that water is only leaving the Caspian Sea by evaporation or by human activity. The salinity is about one third of that of most seawater and the water level is about 28 metres below sea level. Because of environmental reasons, the Caspian Sea is a zero-discharge area. The region's oil reserves are estimated at more than 200 billion barrels, second in the world only to the Middle East.

### Self-supporting

While not self-propelled, the *Puccini* is

Three Veth gensets provide onboard power



Hatenboer Water supplied 5 Demitec water makers





The 1.2 m high technical space above the main deck proved essential in achieving the speedy delivery



The aft deck crane can lower a 10-foot container right into the provisioning store.

fully self-supporting and can go without supplies for fourteen days. Three 500 kW generator sets were supplied by Veth.

The pumps onboard are Spanish Azcue pumps, supplied by Reikon. Given the extremely short delivery time, the watermaker capacity is achieved by 5 smaller Demitec Sea Standard Reverse Osmosis units from Hatenoer Water. The sewage treatment system is a combined biological treatment unit type MSP VIII C S/S from Qua-vac with a capacity of 70 m<sup>3</sup>/day. The incinerator is a TeamTec type GC500CGSW.

### Harsh winter conditions

The northern part of the Caspian Sea is known for its harsh winters where temperatures can drop below minus 40 degrees, and the *Puccini* is built to deal with that. This means ample insulation and heating capacity inside. The HVAC installation was done by De Haan from Hoogezand, and is with fancoil units in the cabins. Ice class strengthening was

investigated as an option, but it was deemed prohibitively costly, given that the vessel will always be used in sheltered waters, where ice class is not required.

### Market potential

Holland Shipyards believes there is a growing market potential for living quarter barges. The yard, which was established in 2007 by Instalho and Concordia, is actively pursuing orders for accommodation vessels in the wake of the *Puccini* but is also ready to take on different projects. With *Puccini*, the yard has again demonstrated their ability to deliver quality, even when only a very limited amount of time is available.

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

- Atlas Ship Delivery**, Hoofddorp ..... logistics
- ASD Shipdesign**, Alblasserdam ..... engineering
- Bakker Professionals**, Berlicum ..... galley inventory
- Concordia Shipyards**, Werkendam ..... hull delivery

#### Dyvlr Materiaal,

Hardinxveld-Giessendam ..... winch

#### Holland Shipyards,

Hardinxveld-Giessendam ..... completion and supervision

**Bureau Veritas**, Rotterdam ..... classification

**C-Job & Partners**, Hoofddorp ..... engineering

**Cornet Service**, Werkendam ..... conservation/wWorkdeck

**Droste Elektro**, Tolkamer ..... electrical installation

**Haan v/h Gebr., De**, Hoogezand ..... HVAC

**Hatenboer-Water**, Schiedam ..... watermakers

#### Hoogendoorns Maritieme

#### betimmeringen en Interieurbouw,

Werkendam ..... interior carpeting

**Miele Nederland**, Vianen ..... laundry equipment

**Promac**, Zaltbommel ..... *HS Marine Crane*

**Qua-Vac**, Almere ..... sewage plant

**Reikon**, Spijkenisse ..... pumps

#### Stout Technisch Installatie Bureau,

Hardinxveld-Giessendam ..... sanitary systems

#### Stout Pijpleidingen,

Hardinxveld-Giessendam ..... piping

**Team Tech**, Gjeving, Norway, ..... incinerator

**Trinnox**, Hardinxveld-Giessendam ..... hatches, ceilings, walls, windows and doors

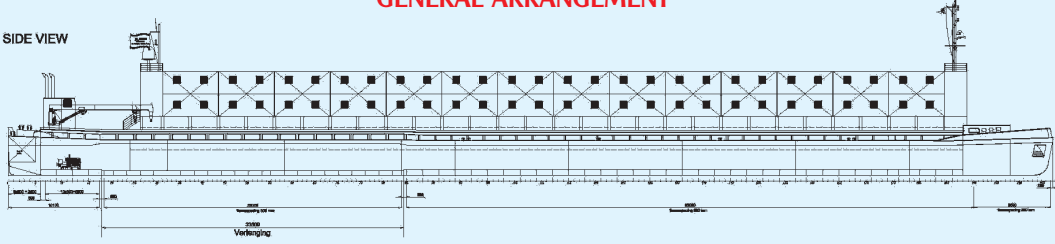
**Veth Propulsion**, Papendrecht ..... generator sets

The aft deck crane can lower a 10-foot container right into the provisioning store

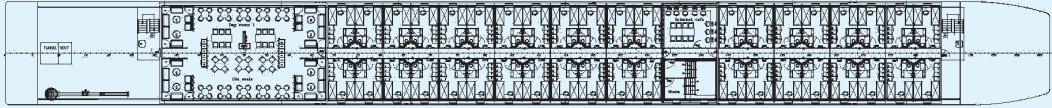


## GENERAL ARRANGEMENT

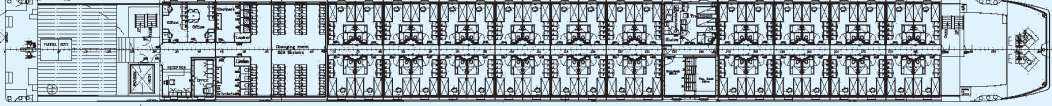
SIDE VIEW



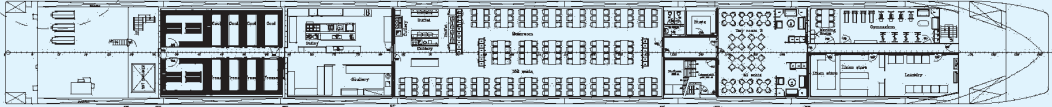
UPPER DECK



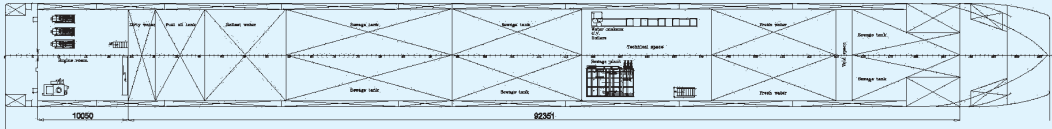
MAIN DECK



LOWER DECK



TANK TOP



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