



Recently Shipyard De Hoop delivered their tenth river cruise vessel to Lüftner Cruises. This new flagship of Austria's river cruise specialist, named *Amadeus Silver*, will bring the number of vessels in the Amadeus fleet to eleven. For De Hoop this realises a milestone in their ambition of producing more than one kilometre of ships for this customer.

Amadeus Silver was formally delivered in Amsterdam on 12 April 2013. Immediately after the ceremony the vessel went straight into service and will operate for the entire season in Europe, mainly on the rivers Rhine and Danube.

The Lüftner/De Hoop Concept

The first vessel De Hoop built for Lüftner was the 110 metre-long *Amadeus*, in 1996/1997. Its design was characterised by simplicity in construction, efficiency in operation, the use of high quality materials and the application of new technologies. The underwater hull was the very first shallow draught, canoe-shaped design and set a new standard in the industry. De Hoop then built five vessels to this first basic design, each with a different interior layout.

After the first five, it was time to evaluate the basic design concept. At the time these vessels were built, extra requirements and regulations dictated a maximum length of 110 metres. Inventive as they are, De Hoop designed the 'Cadillac Bow', which was squarer in shape, thus creating more volume for additional cabins. This second generation also had three full-height decks, instead of the 2.5 decks of the first generation.

However successful this second generation was, the unconventional bow shape was soon to be replaced by the 'Folding Bow'. With this third generation design, Shipyard De Hoop created a new cruise concept with a traditional bow shape, while conserving the extra space created with the

AMADEUS SILVER

SHIPYARD DE HOOP DELIVERS TENTH SYMPHONY IN THE LÜFTNER REPERTOIRE

Builder	Shipyard De Hoop, Foxhol, the Netherlands
Owner	Lüftner Cruises, Innsbruck, Austria
Principal particulars	
Length o.a.	135.00 m
Breadth o.a.	11.45 m
Depth	3.25 m
Draught, operational	1.45 m
Draught, ballast	2.10 m
Air draught	6.00 m
Speed, service	13.5 kn
Passenger accommodation	
Double berth cabins	180 persons
Crew accommodation	
Double berth cabins	52 persons
Single berth cabins	4 persons
Tank capacities	
Fuel oil	105 m ³
Fresh water	230 m ³
Ballast water	900 m ³
Power	
Main propulsion drives	2x 746 kW
Jet bow thruster	1x 350 kW
Main generators	2x 500 kVA & 1x 450 kVA
Emergency generator	1x 156 kVA



Fine dining in open air

square front. Its length with the bow deployed is approximately 114 metres, but with the bow hinged up above deck, it measured precisely 110 metres. This new concept was used for the next three (number seven, eight and nine) Lüftner ships.

With the current rapidly changing markets, new designs and new features are following each other at an even more increasing rate, ship number ten demanded for some innovative thinking again. The 135 metre *Amadeus Silver* is the stunning result, leaving the 110 metre limitation behind for the first time. However the basic principles remained: low fuel consumption, environmentally friendly, (even) more passengers, more public spaces and more comfort at a 'conventional' price.

State-of-the-art features

Whilst the vessel looks refreshingly modern on the outside with a noteworthy fish gills appearance, the very latest technologies are also featured inside the vessel. This latest-generation Lüftner ship boasts several innovative features. For instance its propulsion system, combined with the sophisticated hull shape, is very fuel-efficient. This results in reduced emissions levels and allows the vessel a 'green ship' designation. To further economise, energy-saving LED lighting has been adopted throughout the ship. A state-of-the-art audio system has been installed in the public areas, whilst entertainment-on-demand, full WiFi and a GPS tracking system are available in the cabins. Furthermore iPod/tablet capacity is provided for every passenger. The internet

connection can be established either through satellite receivers or through UMTS antennas.

Passenger accommodation

The Amadeus fleet of ships, including *Amadeus Silver*, are renowned for their sophisticated design, spaciousness and first-class interior fixtures and fittings. However, even in such elegant company, *Amadeus Silver* still stands out in the crowd. Not only, as stated above, is it longer than its predecessors, but it also features an Art-Line interior by Frank Pieterse, which is characterised by the use of much lighter coloured woods and fabrics.

Amadeus Silver offers its passengers a total of 90 cabins. The enlarged standard cabins, 78



Inside dining in the Panorama restaurant on Strauss deck

in total, have French balconies and top quality equipment. The twelve luxurious suites each have an accessible exterior balcony with seating, a large panoramic window and a comfortable bathroom with separate toilet and shower. The glass partition between the cabin and the balcony is partially at an angle, thus creating the effect of fish gills on the side of the vessel. All wet cells are prefabricated units from Wetcab with the fancoil units for air-conditioning fitted and relevant plumbing prepared.

Public spaces

For the first time in the Lüftner history the passengers will be welcomed on board in an asymmetric entrance and reception area. Not only is this feature unique for Lüftner, but also for inland cruise vessels in general. Whereas all previous vessels had a staircase on the centreline of the vessel, for this ship it was decided to have a more modern approach and move the staircase to one side, offering a new 'experience' to the regular guests. When then describing the public spaces from top to bottom: on top the vessel features the sun deck with deck-chairs, a bar, golf putting green, chess board and walking track.

The aft Mozart deck is well furnished with the full-width Amadeus-Club, a massage room and hairdresser (both on starboard side). The forward area of this deck is provided with the Panorama-bar/-lounge, Café Vienna and, on the far end, the River terrace. This area, designated for 'fine dining in free air', is shielded against wind by partially transparent screens and has a sun awning overhead. On Strauss deck, where people board the vessel, we find the main reception, the Panorama restaurant and shop. A second entrance for guests is provided on Mozart deck. When passengers board here, the counter on Vienna deck can be used as check-in desk.

Another highlight in the design is the fitness studio, which extends over two decks, Mozart and Strauss deck, on port side aft and provides ample space for passengers to exercise. On the first level, full use has been made of the available space, while the second level features an internal balcony, giving it an enormous spacious feeling. Larger public spaces, like the Panorama-bar/-lounge are multi-functional and can easily be separated into smaller spaces with integrated sliding partition walls.

Guest suites with large panoramic windows and a comfortable bathroom with separate toilet and shower



Lounging in the full-width Amadeus-Club on aft Mozart deck



Technical spaces & catering facilities

The engine room is located all the way aft and is protected with a gas fire extinguishing system (FM200). Forward of the engine room is a technical space, the bulk of which is occupied by a sewage treatment plant, chiller units and ballast pumps. The laundry and linen store separates the aft technical spaces from the crew and passenger accommodation on Haydn deck. The pumps, accumulators and bottles for the fire fighting and sprinkler system for the accommodation, a traditional low-pressure 'wet' sprinkler system, occupy a technical space amidships. For provisioning, two shell doors are provided on either side of Strauss deck near the bow above the galley. The galley itself, built by Metos, is one large space with a separate scullery, cold food preparation area, patisserie and cooking space. The electrical installation on board *Amadeus Silver* was designed and installed by Droste Electrotechnik, while Imtech took care of the HVAC and sprinkler systems.

Deck lay-out

A small tender boat for the crew is located on the aft mooring deck (Strauss deck) on a cradle. The crane, mounted above, can lower the tender into water or lift it back on board. Furthermore this aft deck, as well as the fore deck, is outfitted with the regular bollards and mooring/anchor winches. On both sides of the vessel, above the entrances, davits are fitted for lowering and lifting the gangway.

Propulsion & power systems

The *Amadeus Silver* features an economically designed hull shape, combined with a straightforward propulsion system. The propulsion system and hull design are well balanced and matched to accomplish low fuel consumption and reduced exhaust emission levels. As a result, using the two Caterpillar C32 ACERT main engines, rated at 746 kW, the ship can achieve a service speed of 25 km/h (13.5 knots). The engines directly drive two Veth Z-drives with contra-rotating propellers.

These main thrusters are recessed, limiting the minimum operational draught to only 1.45 metres and allowing the vessel to cruise most European rivers where the water depths are often critical. The water-cooled exhausts lines, with the Axces silencers, leave the ship through the transom by means of Venturi nozzles. This assembly accelerates the exhaust gases to avoid nasty smells and 'smog' on the aft deck, whilst at the same time reducing noise levels.

The bow thruster of 350 kW, a Veth 4K-1200, is directly driven by a C18 diesel engine from Caterpillar. This thruster is a jet-type with four thrust channels, allowing for 360° of thrust at a minimum immersion. This sophisticated Veth system can not only be used for steering (even at full speed), but also for emergency brake or propulsion purposes, which is a fundamental requirement in the areas where the vessel operates.

In the aft engine room we also find two of the three Caterpillar C18 generator sets, each providing 500 kVA. A shaft generator, capable of providing 450 kVA, is mounted forward, between the C18 diesel engine and the bow thruster, allowing the diesel to be used either for power generation or manoeuvring. This solution allows for a complete shutdown of the aft engine room during the night when moored along a quayside and guarantees even less engine noise with lower exhaust emission. The emergency diesel generator, a 156 kVA C6.6 from Caterpillar, is also housed in the bow thruster room.

Design Restrictions & Challenges

Amadeus Silver is built to Bureau Veritas Class requirements for inland waterway vessels, concerning (longitudinal) strength and construction aspects. All other items, such as technical standards, maritime safety and European Union certification are covered by the European Directive 2006/87/EC. As stated above, the vessel will be used on the Rhine and



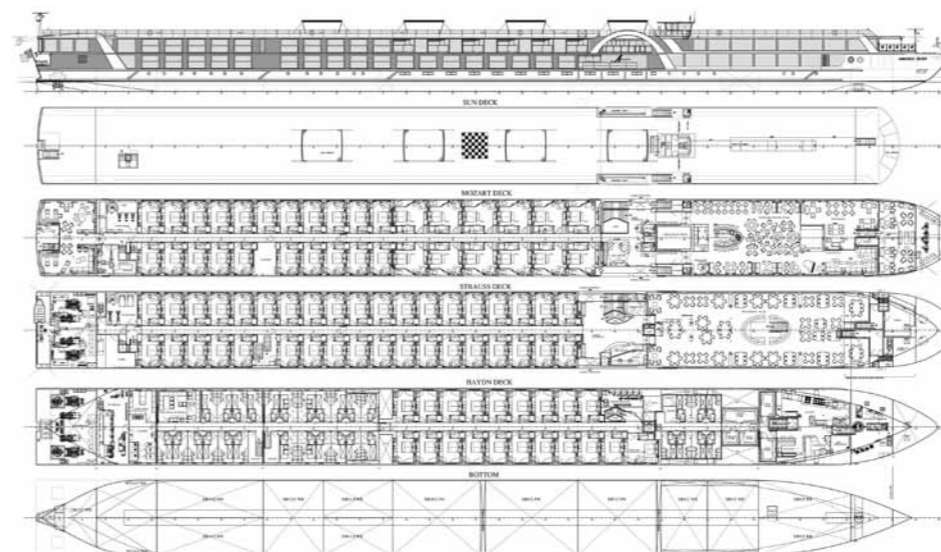
Passengers will be welcomed on board in a modern asymmetric entrance, with a staircase on one side and the reception area on the other

Danube, from Amsterdam to the Black Sea, restricting the air draught to six metres to allow safe passage under bridges. This is achieved with water ballast, hinged masts and by removing the sun awnings on sun deck. In ballast condition, the draught will increase to 2.1 metres, with an air draught reduced to exactly six metres, and the vessel still complies with all the damaged stability requirements.

Conclusion

Sustainability was an imperative issue of this extra-length vessel when it was being designed and then built in the De Hoop shipyard. Absolute priority was given to achieving an optimum reduction in the ship's energy consumption and air pollution. Lüftner Cruises, which was awarded the 'Green Globe Certification Highest Achievement Award' for its sustainability efforts and resource-management measures aboard its *Amadeus* ships in 2011, is optimistic that the *Amadeus Silver* will also obtain Green Globe certification in the course of 2013.

Tom Oomkens



Subcontractors and suppliers of equipment fitted on board the *Amadeus Silver* - YN 452

Axces, Tholen	: silencers
Beerens, Werkendam	: masts
Bovi, Tubbergen	: upholstery
Bouwbedrijf Theo Konijnenberg, Bennekom	: ceiling systems
Deba Marine, Tolkamer	: MOB boat
Desmi, Utrecht	: pumps
Dijvler, Hardinxveld-Giessendam	: anchor winch
Dilago, Hendrik-Ido-Ambacht	: winch and steel wires
Distrimex Pomen & Service, Doelnicheem	: boosterset and pumps
Droste Elektro, Tolkamer	: electrical installation
Econosto Nederland, Rotterdam	: valves
Grunbach, Baarn	: elevator
Hendrik Veder, Rotterdam	: steel wires
Imtech Marine Netherlands, Rotterdam	: HVAC; sprinkler system
Iskall Bedrijfskoeling, Ede	: cooling stores
Kieboom-Werkendam, Werkendam	: <i>Helmsman's</i> seat
Kramp Nederland, Varseveld	: hydraulic powerpacks
Liemers Brandbeveiliging, Lobith	: safety equipment
MarleQ, Rotterdam	: gangway
Metos, Amsterdam/Ruurlo	: galley equipment
Miele Nederland, Vianen	: washing machine and dryer
Minimax, Rotterdam	: FM200 fire extinguisher system
Nicoverken, Schiedam	: fittings
NRF Nederland, Mill	: coolers
Pon Power, Papendrecht	: <i>Caterpillar</i> main engine
PPG Marine & Protective Coating, Uithoorn	: coatings
Qua-Vac, Almere	: sewage plant
Reikon, Spijkenisse	: <i>Azcue</i> pumps and Ueberall UV Sterilizer
Rubber Design, Heerjansdam	: flexible suspensions
Smits Neuchatel, Utrecht	: underfloors
Stretchdesign, Amsterdam	: <i>Barrisol</i> ceiling
Trinox, Hardinxveld-Giessendam	: interior doors; modular bulkheads
Neffen Deurtechniek, Van, Oosterhout	: automatic revolving door
Wijk Werkendam, Van, Werkendam	: davit for MOB/rescueboat
Wingerden & zn, HK van, Vuren	: <i>Wigo</i> windows
VDI Isolatie, Ridderkerk	: insulation
Veth Propulsion, Papendrecht	: <i>Veth-Jet</i> bow thrusters; <i>Veth-Z</i> contra-rotating Z drives
Visser, Duiven	: mirrors and glass
Wessels, Haren, Germany	: wheelhouse interior
Wetcab, Gdansk, Poland	: sanitary units/cabins
Wijmoco, Huissen	: sliding doors
Winkel, Assen	: <i>Eagle</i> watertight sliding doors
Wortelboer, Rotterdam	: anchor; chains and steel wire