

# Powering the future

MPI Adventure and MPI Discovery



# Advanced Wind Turbine Installation Vessels

The latest design, 1,000 tonne capacity main crane demonstrates the ideal combination of lift, load and outreach capabilities. Both cranes are designed for the offshore environment and are capable of operating in wind speeds well above offshore standards.

Both MPI Adventure and MPI Discovery have the ability to jack with 6,000 tonnes of cargo on board, in water ranging in depth from 9 to about 40 metres.

The robust, impressive 6-leg design enables high-speed jacking operations of 1 metre per minute, in winds of up to 14 metres per second.

Economies of scale in offshore wind farming are finally obtainable. Due to their use of the latest technology and high capacity, MPI Adventure and MPI Discovery can load, transport and install a large number of turbines (including their foundations and interconnection array cables) on a single mission.

# Welcome aboard MPI Discovery and MPI Adventure



1

## Bridge

Integrated navigation and control systems, including dynamic-positioning system, control the ship.



2

## Accommodation

Rest-and-relaxation facilities offer comfort for maximum 112 crew and clients.



3

## Galley

In mess room and cafeteria the crew can enjoy fresh and healthy meals.



4

## Engine control room

Engineers operate and control the ship's systems and machinery.



5

## Switchboard room

This centre regulates all electrical systems on board.



6

## Main engines

Six 2,560 kW Rolls Royce generators form the heart of the vessel and provide electric power for propulsion, jacking system and crane.



7

## Workshop

The well-equipped workshop ensures ongoing operations.



8

## Pump room

The pump room contains pipes and pumps for a variety of ship systems.



9

## Store

The availability of spare parts prevents delays at sea.



10

## Hydraulic power pumps

48 large-sized hydraulic motors provide hydraulic oil for the jacking system and main crane.



11

## Crane foundation

This impressive steel foundation enables 100% rotation of the main crane.



12

## Thruster room

Three 1,500 kW bow thrusters and three 3,250 kW stern thrusters offer a unique combination of speed and position keeping.



13

## Jacking system

Six 72 m high tensile steel legs and 48 hydraulic cylinders are capable of lifting the vessel above sea level.



14

## Crane

A view of the main crane with a lifting capacity of 1,000 mt.



15

## Auxiliary crane

Complementary to his big brother, this crane hoists 50 mt at 26 m. Both cranes can operate in wind speeds of up to 21 m/s.

# Exceptional performance and capability



# Impressive engineering



Both MPI Adventure and MPI Discovery are purpose-built for offshore wind farm installation and construction.

Conversion from vessel to stable working platform is achieved quickly and efficiently, which means that as soon as the weather window permits jacking, operations can begin.

MPI Adventure and MPI Discovery are both certified as stable working platforms as well as seagoing vessels.



Visit MPI Adventure wind farming operations at London Array by scanning this code with the QR-app on smart devices.

## SMART FLEXIBILITY

MPI's experience with installing offshore wind turbine components and foundations, has proven vital in developing these state-of-the-art Wind Turbine Installation Vessels.

The dynamic-positioning system holds the vessel in place while the jacking system raises it to operational level, providing a safe, stable working platform. This platform can be utilised well beyond the limits of traditional weather windows.

This stability is the result of the vessels' design that incorporates six robust legs and the use of six thrusters for optimal station keeping. The offshore-designed cranes are able to operate in wind speeds of up to 21 metres per second.

An amusing detail: the MPI Adventure's stability when jacked up is such that the crew can even play pool in the recreation area.

The monopile upending frame is another example of smart technology. It was designed to facilitate the transition of large offshore piles from the horizontal to the vertical transportation position without the requirement for a large capacity crane.

## TAILORING OUR SERVICE

MPI Discovery and MPI Adventure's experienced ship-management teams are able to tailor our service to the needs of individual clients. Operating our own vessels also allows us to control all aspects – from delivery to installation in the field.

## ON TIME AND BUDGET

A solid logistical planning is essential to avoid costly delays at sea. MPI has a second-to-none reputation for delivering projects on time, within budget and to the highest standards of safety and quality.

With their unique design and impressive engineering, MPI Adventure and MPI Discovery offer the smart flexibility that brings sustainable investments in offshore wind farming within reach. We call it, "Powering the Future".

## BEYOND THE LIMITS

MPI Adventure and MPI Discovery each provide a single-vessel solution for the offshore wind sector. After an efficient logistical operation in the port, the WTIVs can set sail to the offshore wind locations for the construction of complete windfarms.

- Total solution offshore wind projects from foundation to monopile handling, rotorblades and interconnection array cables
- Quick conversion from vessel to a platform
- High speed jacking operations of 1 m/min
- Jacked survival at 10 m waves max and 36 m/s wind
- Main crane of 1,000 mt at 25 m radius to 160 mt at 70 m radius
- Auxiliary crane of 50 mt at 26 m radius
- Cargo deck 3,600 m<sup>2</sup>
- Cranes operating in wind speeds up to 21 m/s
- Stern thrusters 3 x 3,250 kW. Bow thrusters 3 x 1,500 kW



→ HELIDECK

→ BRIDGE DECK

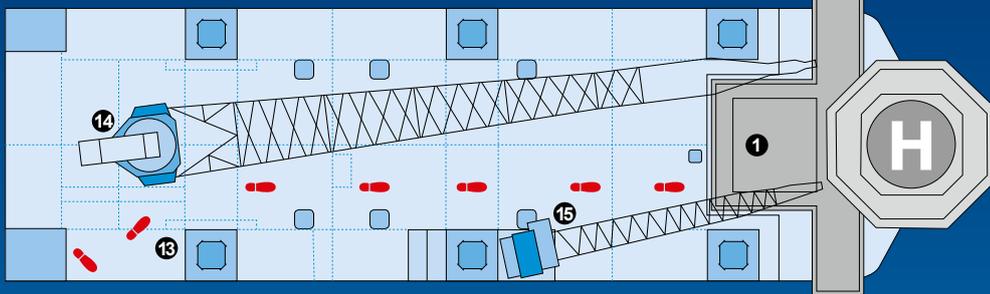
→ A-DECK

→ MAIN DECK

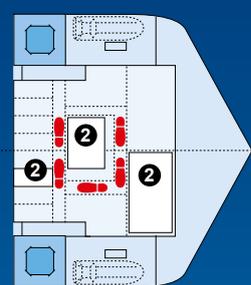
→ TWEEN DECK

→ TANK TOP

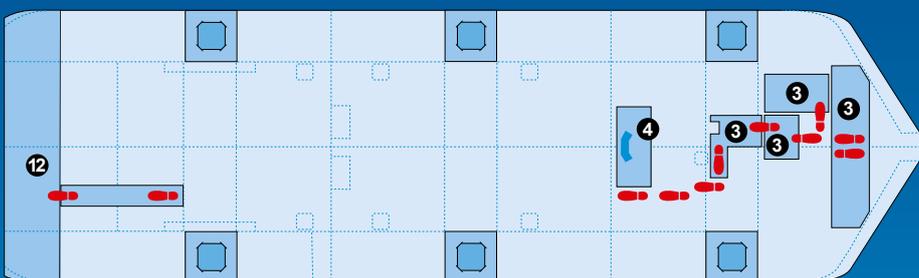
MAIN DECK



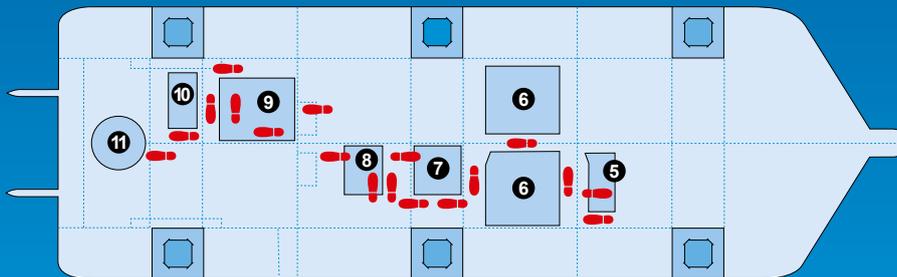
A-DECK



TWEEN DECK



TANK TOP



**TOUR**

Visiting the world's most advanced and efficient Wind Turbine Installation Vessels (WTIVs): in jacking speed, deck space, lifting capacity and station-keeping capabilities.

- 1 Bridge
- 2 Accommodation
- 3 Galley
- 4 Engine control room
- 5 Switchboard room
- 6 Main engines
- 7 Workshop
- 8 Pumproom
- 9 Store
- 10 Hydraulic power pumps
- 11 Crane foundation
- 12 Thruster room
- 13 Jacking system
- 14 Crane
- 15 Auxiliary crane

