PALFINGER

OFFSHORE PASSENGER TRANSFER SYSTEM (OPTS)

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The PALFINGER Offshore Passenger Transfer System introduces a new approach to transfer both personnel and cargo based on a very cost-effective solution. As the far most weight-optimized system available, it is also capable to be used and installed on smaller vessels. With a weight of only 15 tons (fixed installed version), the system is fully capable of being installed and operated from a CTC, a small SOV, and also meets the operational requirements onboard a standard SOV.

The OPTS is a passenger transfer system designed to facilitate safe and efficient transfer of personnel between a moving object like a vessel and a static offshore structure such as a wind turbine or drilling/ production platform.

The PALFINGER OPTS is designed and prepared for specific marine applications based on motion and environmental conditions. It is actively compensated for vessel motions, so that the basket can be kept in the same position close to the fixed structure even though the vessel is moving. The system uses hydraulic actuators for quick and accurate control of all functions. The control system is also redundant for best possible safety.

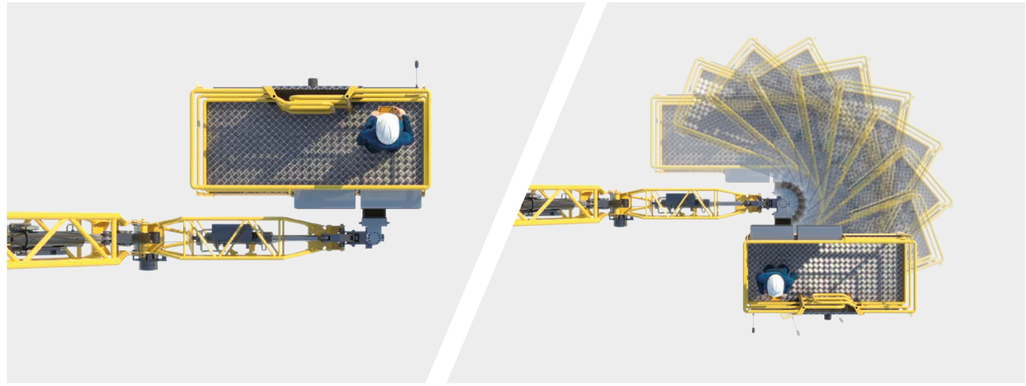
The safe and self-controlled supporting system for moving personnel from a vessel to any kind of offshore structure is an excellent tool to access offshore turbines or other fixed installed platforms offshore. With an outreach of 25 meters (27 meters in non-compensation mode) and the capability of reaching a height of 25 meters (pending on vessel motions), the system meets your operational requirements for personnel transfer and cargo handling in the offshore wind, oil & gas, or other segments. The system is also capable of reaching 6.7 meters (8.7 meters in non-compensation mode) below deck structure onboard the vessel, which gives operational possibilities for rescue purposes.

SYSTEM

The OPTS by PALFINGER is motion compensated, so it is possible to hold the basket still seen from an outer coordinate system as the vessel moves. The motions are measured in real-time using an MRU system, and the control system uses these signals to control the crane motions in anti-phase to cancel the motions.

The slewing column of the PALFINGER OPTS is mounted on a movable frame that can tilt in roll and pitch directions. The actuation is done with hydraulic cylinders controlled by high response proportional valve. This system compensates for vessel roll and pitch and will keep the booms from tilting seen from an outer coordinate system. Heave compensation (movement in the vertical direction) is mainly handled by the two outer booms. The basket is automatically kept horizontal by the control system as the outer booms are operated quickly. This is done through a levelling cylinder on the basket.

The basket is equipped with analogue ultrasonic sensors to detect if fixed objects are near the basket. This acts as an anti-collision system so the basket (and motion compensated “zero” position) automatically moves away from the detected objects if they get close enough. This prevents contact with structures when lifts are made towards wind turbines or fixed installations during decommissioning work.



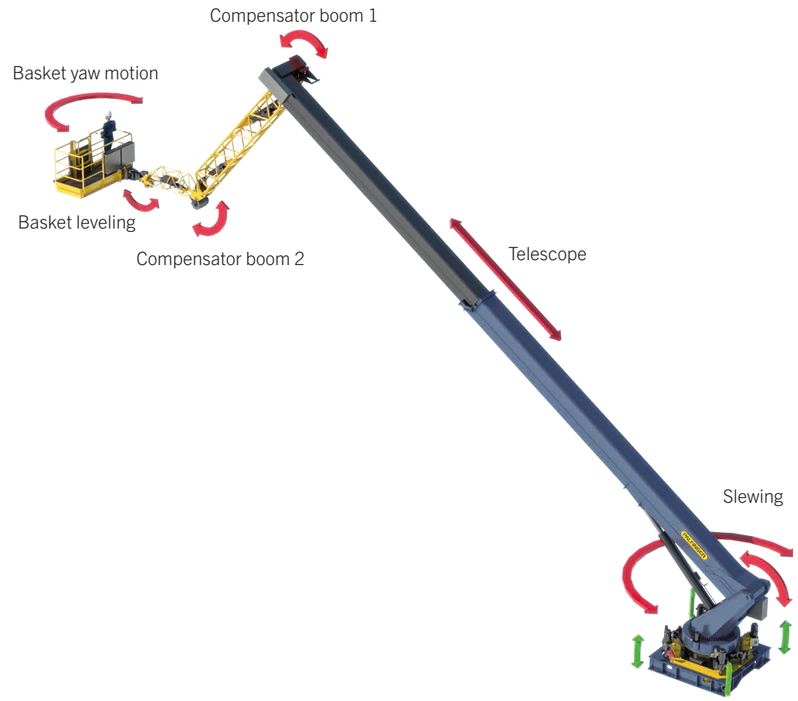
The OPTS is controlled from the hardwired remote-control unit on deck or from the control station on the basket.

GENERAL TECHNICAL SPECIFICATIONS AND OPERATIONAL WINDOW

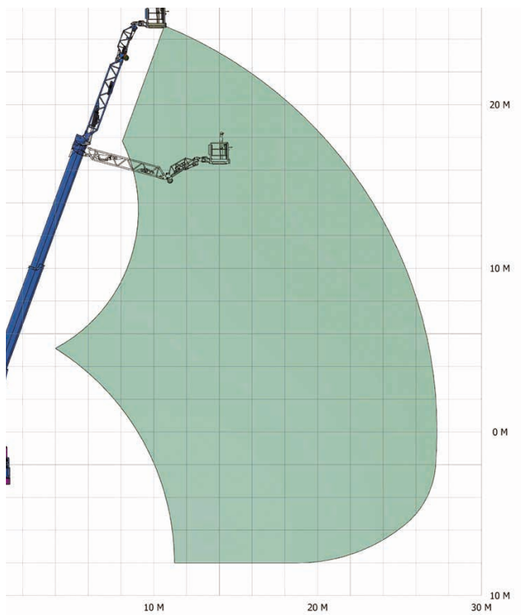
Sea State	Sea State 5 (max) Hs = 2.5 meters (max) Deck motion depending on deck position and vessel RAO
Deck motions	
Roll	± 6°
Pitch	± 6°
Heave	4 meters
Period	T = 6-12 seconds
Personnel transfer time	~60 seconds
Maximum wind speed	20 m/s in operation 63 m/s in parked (sea fastened) position
Operating temperature	Minimum -20 °C Maximum +45 °C
Approx. accuracy	~10 cm
Lifting height	27 meters from deck level at approx. 11 meters outreach (in non-compensation mode) 25 meters from deck level at approx. 9 meters outreach (in compensation mode for max. roll/pitch/heave)
Outreach	27 meters from slewing rotation axis (in non-compensation mode) 20 meters from slewing rotation axis (in compensation mode for max roll/pitch/heave)
Below deck	5.0 meters from deck level (in non-compensation mode) 3.0 meters from deck level (in compensation mode for max roll/pitch/heave)
Slewing range	± 200°
Maximum number of persons in basket	600 kg at 24 meters (corresponding to 6 persons including operator)
Cargo lift capacity	1000 kg at 24 meters (CDYN = 2.0)
Power requirements	2 x 75 kW
E supply	440VAC / 60Hz or 400VAC / 50Hz main power 230VAC / 60Hz or 230VAC / 50Hz auxiliary power
Weight	24 tons (mobile unit) 16 tons (fixed installed unit)
Standards	DNV-ST-0358 “Offshore Gangways” DNV-ST-0378 “Offshore and platform lifting appliances”

SWL 1t - Motion compensated

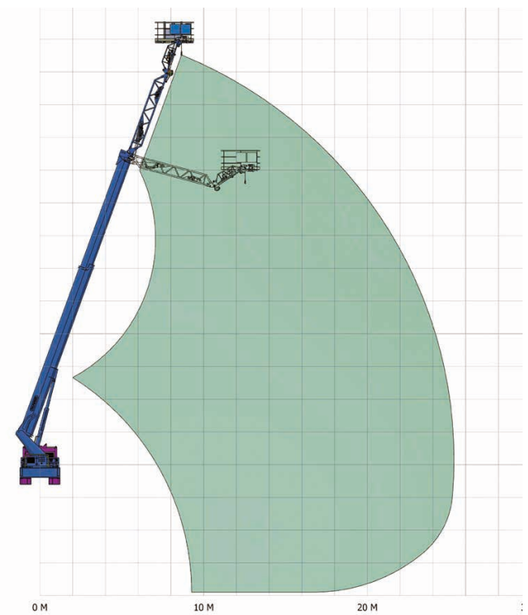
MOTION COMPENSATION



PERSONNEL TRANSFER



CARGO TRANSFER



PALFINGER OPTS CERTIFICATION

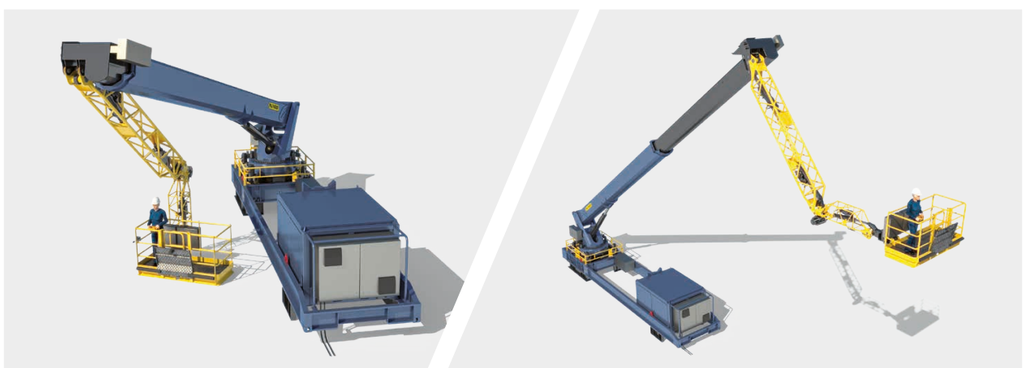
The Offshore Passenger Transfer System is designed, constructed, and tested in compliance with DNV rules for certification of Offshore Gangways (DNV ST-358) and Offshore and Platform lifting appliances (DNV ST-378). By meeting both rules, it is possible to transfer both personnel and cargo to fixed structures. This makes the system ideal for personnel and cargo transfer operations at offshore wind farms, for decommissioning work, pilotage, and any kind off access operation offshore.

INSTALLATION

The OPTS is delivered in two versions, both with a very compact footprint:

- **Fixed installed unit**
  This version is for permanent installation onboard a vessel and has a weight of 15 tons with a base frame of 8’ x 8’. The HPU is delivered as a separate unit for being installed onboard the vessel at a suitable place below deck.

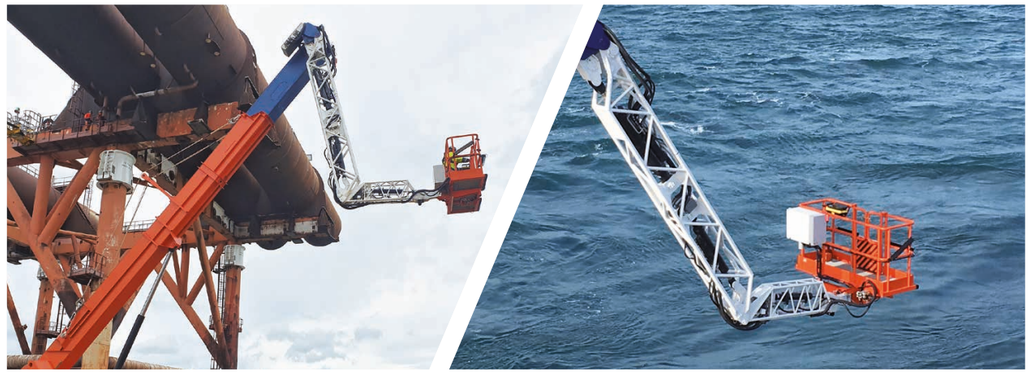
- **Mobile unit**
  This version is for temporary installation onboard a vessel and has a weight of 25 tons. The mobile unit fits into a standard 40“ container making sure that transportations to/from the vessel are handled in a cost-effective way.



HISTORY

PALFINGER acquired the Offshore Passenger Transfer System technology by Lift2Work in September 2021. The Rotterdam-based company was established in 2018 and set up with extensive knowledge and experience in the maritime offshore sector with the aim to develop a mode of smooth and seamless transportation from vessels to offshore platforms.

The OPTS has since the acquisition been fully redesigned based on a steel construction using standard PALFINGER components to meet all requirements from the market. It is now introduced as a unique and innovative solution to take on the booming market of offshore transfer systems.



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