

## Crew Transfer

# Offshore Access Systems – Revolutionising Marine Personnel Transfer

Steven Beales

More than 10 million crew transfers take place annually across the world in the offshore oil and gas industry and whether these are by helicopter, vessel or crane basket, personnel transfer remains one of the highest risk activities. This, added to growing pressure on operators to increase productivity while reducing operational costs has led to more intense scrutiny of current personnel transfer methods.

For a number of years, operators have been looking at transfer methods that are inherently safe, operationally efficient, proven, reliable and also capable of handling the changeable conditions that occur in the offshore environment.

## Is there a Viable Alternative?

Offshore Solutions B.V. (OSBV), based in IJmuiden the Netherlands, has recognised this need and in 2003 developed the Offshore Access System (OAS) that is now revolutionising offshore personnel transfers.

OSBV developed the Offshore Access System (OAS) in 2003. In appearance, a straightforward walkway, installed on the aft deck of a vessel, linking with an installation by way of a patented connection, it was trialled in Amsterdam harbour before commencing work in the Middle East.

The success of this first OAS was proof that the OSBV concept offered an efficient and safe transfer method for calmer conditions. The next stage in the progressive development of the OAS was the series of operations and engineering enhancement to produce a reliable system that could continue to offer safe transfer in varying sea states of up to 2.5 meters significant wave height (equivalent to a most probable maximum wave height of 4.8m).

In these conditions, the motions of the vessel would have to be addressed and developing a system that could negate this without undermining the integrity of the walkway, vessel, or the platform would be fundamental.

To overcome this, the OAS, which is in operation today, is a 21m hydraulically operated telescopic walkway fitted with an active heave-compensation system. Weighing just over 23 tonnes, it has been designed for operation in sea states up to 2.5

metres significant wave height, but has achieved connections over 3m significant wave height during recent trials.

The OAS requires to be installed on a class 2 (minimum) DP (Dynamic Positioning) equipped vessel, which allows its position relative to the platform to be maintained. The safety record of DP vessels is well known and by stipulating a class 2 system, availability and reliability can be assured, as well as satisfying the requirements of multiple regulatory authorities when connecting to an installation.

As a result, the first Southern North Sea operation of the OAS commenced in 2006. Since this time a further 3 systems have been operational in the North Sea making more than 5,000 connections and transferring in excess of 60,000 personnel with a 100 percent safety record.

#### How does it work?

In spite of its simple concept, the operation of an OAS is not as easy as it looks – it requires skill and coordination to make smooth connections. OSBV has trained a pool of specialised operators at its facility in the Netherlands, who support the units Worldwide. The operators perform both connection activities, and the routine maintenance of the OAS. The operators have played a vital role in maintaining the safety record of the OAS, particularly in the changeable conditions of the North Sea.

When the vessel is holding station, the OAS is slewed outboard from its cradle, the heave compensation system is automatically engaged and the walkway is extended to make contact with a vertical pole on the installation.

To maintain contact, a constant torque system ensures that pressure is exerted against the pole. This is required before the walkway is retracted to engage the patented latching mechanism and 'land' the walkway. This mechanism ensures a robust and secure connection that is designed with fail-safe systems for emergency disconnection if necessary.

It is at this point that the reliance upon technology stops. The heave-compensation system is disengaged resulting in the walkway establishing floating mode between the vessel and the installation. The walkway is robustly connected to the fixed structure and by nature of its 'free floating' passive condition automatically compensates for the motions of the vessel, thereby allowing the safe transfer of personnel to commence without reliance upon any active technological system. Designed to support a load of up to 300 kg, among its many benefits is that the OAS is also suitable for evacuation of immobilised workers by stretcher.

Supplied with its own independent power source, should a power failure, black ship scenario, or serious malfunction of the DP system occur, a safe and controlled disconnection can

still be carried out.

#### Proven Capability

The OAS should not be viewed simply as a walkway to transfer personnel but when installed on a suitable vessel, it essentially offers a whole new concept in undertaking offshore construction, maintenance and de-commissioning work.

#### The benefits, which the OAS vessel combination can provide include

- Accommodation for construction and maintenance crews
- Plant and material storage
- Platform supply
- Workshops
- Facility for ROV or dive spread
- Safety vessel coverage

#### The Opportunities

There are further opportunities to explore in the development of marine personnel transfer and Offshore Solutions is committed to the continuous development of marine access.

Most recently, Offshore Solutions has pre-commissioned free-standing OAS package that can be installed on a vessel within twenty-four hours and a connection that will not require a permanent landing platform installed on the offshore structure. These major developments to the OAS concept are anticipated to keep OSBV at the forefront of safe marine access and designed to meet the differing client requirements across the marine personnel transfer sector.

In addition, OSBV has also developed a 40 metre OAS that can operate in up to 5m significant wave height, which has recently been installed on the Edda Accommodation (Malta) Ltd. (part of the Østensjø group) 600 person accommodation vessel, the Edda Fides, and the 11metre non-heave compensated Offshore Transfer System that is designed to transfer personnel from fast crew vessels.

Delivering flexible and safe marine access solutions is the goal for OSBV, as well as continuing to maintain its reputation for providing a credible, efficient and cost effective alternative to current transfer methods. ■



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