

# WALK-TO-WORK GANGWAY AND SAFETY ASPECTS

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Seas, are the base for global marine and offshore businesses. These industries while being important for our economy, face many challenges. A big one is moving workers between offshore platforms and ships. To tackle this considerable concern, Walk-to-Work gangways have surfaced as fundamental engineering innovations, blending technology with safety guidelines.

Historical methodologies for offshore personnel transfer were often replete with logistical challenges and risks. W2W gangways combine design and safety to tackle risks. They're not just walkways; they result from deep research, careful, and the latest technology.



## STRUCTURAL COMPONENTS

The primary segment, the main bridge, connects the vessel to the offshore structure. Manufactured with high-strength materials, it is meticulously designed to withstand the immense weight of multiple personnel and equipment. It serves as a safe bridge, which allows people, our crew, and supplies, usually tools and spare parts, to move easily between the ship and the offshore platform. It has a very strong construction, made of galvanized steel and aluminium, which guarantees safety and smooth operations in tough sea conditions.

Anchoring the gangway to the vessel, the pedestal base plays a pivotal role in maintaining stability during the transfer process. Made carefully, it has special rotating parts that let it adjust to the ship's movements. This means the gangway will always stay tightly connected to the ship, no matter how it moves, making sure there's a steady bridge between them.



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The gangway can also stretch out or pull in, thanks to its sliding parts. Whether the offshore structure is within close proximity or situated at a considerable distance, these telescopic extensions effortlessly bridge the gap, providing a seamless connection.

The grip system is the unsung hero of the gangway structure, responsible for ensuring the secure attachment between the gangway and the offshore structure. This smart system always works to make sure nothing unplugs by accident when people are moving. Thanks to its strong build and modern tech, people can trust and feel safe when walking on the gangway.

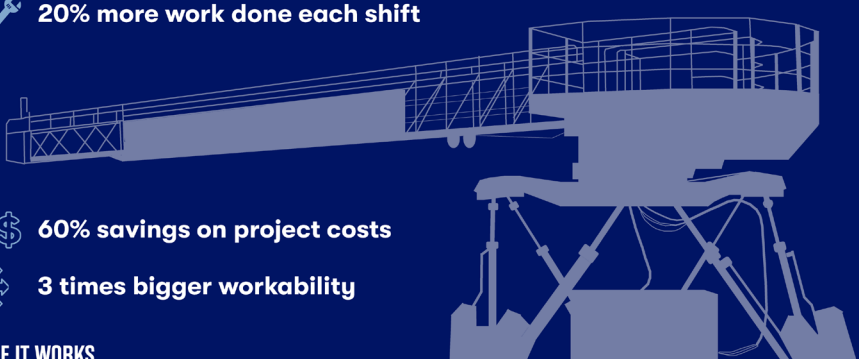
All these parts are essential for the gangway to work well. Together, they make a sturdy system that lets people and goods move safely from the ship to the platform. Whether it's the main bridge, pedestal base, telescopic extensions, or grip system, each component has been meticulously engineered to meet the highest standards of quality and performance, ensuring the smooth and safe movement of personnel and equipment in the challenging offshore environment.


## MOTION COMPENSATION SYSTEMS


One of the key technological features of W2W gangways is their capability to adjust to the vessel's movements, maintaining a secure link. This steady feel comes from smart motion compensation systems that use a mix of both active and passive methods.


Let's start with Active Motion Compensation which utilizes sensors strategically placed on the gangway and vessel to detect the slightest movements. These sensors constantly track the ship's movement and send the information to a main control centre. The motion compensation system adjusts in real-time to the gangway's position by adjusting and ensuring that it remains stable and secure. By actively counteracting the vessel's movement, active motion compensation technology guarantees a safe and reliable connection between the vessel and the W2W gangway.


### MOTION COMPENSATING GANGWAYS



 **withstand up to 3 meters waves**

 **20% more work done each shift**

 **60% savings on project costs**

 **3 times bigger workability**

**BECAUSE IT WORKS**

**CREW COMPANION**  
IDENTEC SOLUTIONS

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In contrast to active motion compensation, the passive one relies on hydraulic or mechanical systems to absorb the motion of the vessel. Though passive motion compensation does not actively adjust the gangway's position, it plays a crucial role in maintaining stability.

Both of these solutions are important parts of W2W gangways. Whether it's the precise adjustments made by the active motion compensation or the reliable dampening provided by the passive motion compensation, these systems are at the forefront of enhancing the offshore experience, enabling seamless operations in challenging conditions.

## NOT THAT SLIPPERY

In offshore operations, it is crucial to prioritize safety for personnel welfare but it requires understanding the various elements. In the middle of creating a safe workspace is the implementation of slip-resistant flooring. This type of floor effectively reduces potential slip incidents, providing secure traction, in wet environments.

Equally essential are the handrails and guardrails. Not only to afford stability but also to act as a preventive barriers in areas where falling is potentially high risk. The pervasive deployment of these aids considerably attenuates accident probabilities, bolstering a secure work ambience.



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Further, the integration of an emergency release mechanism stands paramount. This system warrants swift detachment from the offshore structure (you name it - oil rig, wind turbine or another vessel) during exigencies, making boarding and debarking of the vessel safe for the personnel, thereby reducing vulnerability to potential hazards.

Complementing these measures is the adoption of redundant grip systems. Characterized by their dual-locking features, they obviate inadvertent releases. Such systems accentuate operational confidence, alleviating concerns over unplanned disengagements.

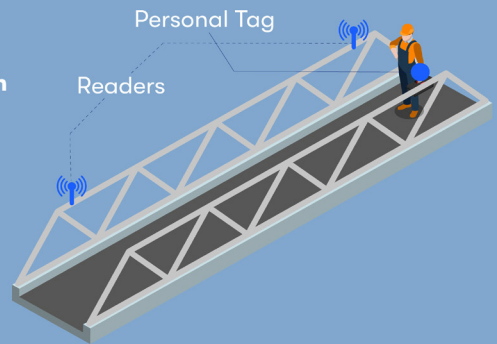
## W2W – ADVANCED TECHNOLOGIES

Enhancing the safety measures is the Real Time Location Systems feature of staff through the W2W gangway. Registering all the movements through the gangway to and from Oil Rigs or Wind Turbines provides in-depth data on their entry and exit times and elevates awareness of the situation but also assists in detailed staff oversight. The auto-refresh of the Personnel On Board (POB) list guarantees that you're consistently updated about individuals entering or departing via the gangway, promoting informed decision-making.

### RTLS ON WALK-TO-WORK GANGWAYS



- Know who is boarding/deboarding the vessel via W2W Gangway
- With exact time and vessel position recorded, know in which turbine workers are



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The next one - the Sensor Integration system - employs advanced AI algorithms that analyze data from any kind of devices: gyroscopes, accelerometers, and load cells to provide real-time monitoring of gangway conditions. By constantly scanning for potential hazards, it ensures the safety of individuals and equipment whether it's detecting an unstable platform or identifying an object obstructing the gangway, the system's high accuracy and precision enable to take proactive measures to prevent accidents before they happen. Consistent oversight of the gangway's stability and weight balance safeguards operations, facilitating rapid adaptive responses when needed.

Another solution, a breakthrough in gangway advancements, is the integration of Augmented Reality features. Through AR-enabled devices, like specialized glasses, operators can access a blend of real-world views with virtual insights, spanning from operation steps to safety protocols.

Using these new technologies, today's gangway systems are safer and work better. Thanks to Sensor Integration, remote control, and AR tools, these systems are top-notch for places using these gangways. As tech keeps improving, we can expect even better safety and ways of working with Walk-to-work gangway systems in the future.

## ALTERNATIVES

Since offshore operations are getting bigger and more complex, it's important to have multiple ways to safely move people and things. Apart from the usual W2W gangway systems, helicopters and baskets are considered and used as additional options.

Helicopters, often used for moving crews, are especially helpful in far-off places where boat transfers take too long or are too dangerous due to rough seas. The main benefit of using helicopters is their speed; they can quickly go long distances, which is perfect for last-minute trips. Plus, helicopters can usually handle conditions that might be too tough for boats, especially when the sea is very choppy. But there are some downsides. Weather can sometimes stop helicopters from flying, causing delays. They also can't carry as many workers and as much cargo as boats can. Looking closer into profitability, helicopters can be more expensive to run and maintain.



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For safety, anyone travelling by helicopter over the sea must take special training, called HUET - Helicopter Underwater Escape Training, to know what to do if the helicopter has to make an emergency landing in the water.

Another method brings us back to vessels. But not with the gangway, but - basket. Those transfers involve using a large basket to transport personnel between a vessel and a platform. Personnel stand inside the basket, which is then lifted by a crane. Basket transfers offer several advantages, including quick transfers, especially when only a small number of personnel need to be transported. In such cases, it can be faster than using a gangway. Additionally, baskets can be utilized in varied sea conditions, where the vessel might be unable to dock closely for a gangway transfer. However, basket transfers have their disadvantages. Personnel are exposed to open sea conditions during transfers, which can be harsh and potentially risky. They have also limited capacity, typically allowing only a few people to be transferred at once, making it less efficient for larger crews.

To ensure the safety of personnel during basket transfers, specific safety measures are implemented. All personnel in the basket should wear safety harnesses that can be attached to the basket, preventing falls and ensuring their security. Additionally, personnel should be adequately trained in the proper procedure to enter, stand, and exit the basket, ensuring smooth and safe transfers.

When considering the three methods - W2W gangways, helicopter transfers, and basket transfers - it is crucial to evaluate various factors before choosing the most suitable method. These factors include the distance from the mainland or another platform, the urgency of the transfer, sea and weather conditions, and the number of personnel or the size/weight of equipment being transferred. Every method has its own pros and cons, but keeping people and cargo safe is the top concern. As things change and get better in offshore jobs, we can look forward to new and improved ways to move things around safely and quickly.



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## WHAT ELSE TO CONSIDER?

In addition to the key safety considerations mentioned earlier, there are several other crucial factors to keep in mind when deploying and utilizing gangways in the offshore environment. One of the primary concerns is regular inspection and maintenance like ensuring the ongoing structural integrity of the W2W gangways. Keeping W2W gangways in top shape is crucial. This means doing regular checks to spot any problems like damage or rust that might make them less stable and safe.

Making sure the gangways are properly attached to other offshore structures involves utilizing robust and reliable fastening systems that can withstand the dynamic forces exerted by the movement of the gangways and the fluctuations of the offshore environment.

It's very important to provide training and clear communication with personnel involved in using and maintaining gangways. This means understanding dangers, how to use equipment right, and what to do in emergencies - knowing and following the rules, makes the workplace safer.

## OFFSHORE WIND: INCIDENT PREPAREDNESS

### REAL TIME DATA IS CRUCIAL



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Clear emergency plans should tell workers what to do if there's bad weather, equipment problems, or someone gets hurt. Regular drills and rehearsals should be conducted to ensure that all personnel are familiar with the emergency procedures and can respond effectively in high-pressure situations.

Paying attention to load restrictions is important to prevent overloading of the gangways, which could lead to structural failure or instability. These load restrictions should be clearly communicated and enforced to ensure that the gangways are not subjected to excessive weight or stress beyond their design capabilities.

## CREW MONITORING

Automated crew monitoring involves using modern technology (personal tags, readers and software) to keep a close watch on crew members in challenging settings, like offshore platforms. If an emergency arises, being able to pinpoint the exact whereabouts of all crew members can speed up rescue efforts and might even be a deciding factor in saving lives. With real-time updates on crew members' whereabouts, supervisors and emergency response teams can act swiftly and efficiently.

With ongoing data collection, a real-time location system helps managers, operators, and supervisors - you name it - to spot trends and areas that need improvement. Systems' software is the main point for collecting, handling, and showing data from wearable items, like tags or wristbands. It provides an overview of the crew's positions, allowing supervisors to monitor, plan and manage crew members' activities more effectively.

An integral part of automated crew monitoring systems is the emergency alert system. In the event of an anomaly or emergency, the system can automatically notify the relevant supervisors, ensuring prompt action and response and helping with eMustering to reduce time significantly.



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## TAKEAWAY

From the traditional methods of crew transfers to the present-day tech-driven solutions, offshore operations have witnessed a paradigm shift. The risks have not diminished, but our capacity to mitigate and manage them has significantly increased, courtesy of technological interventions.

While we heavily depend on technology, the human element remains irreplaceable. Training crew members, instilling a strong safety culture, and ensuring that everyone understands the importance of the protocols in place are as crucial as the tech tools themselves.

## Sources - Pictures

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Our solutions help to  
make your  
workplace safer and  
more productive

## GO THE NEXT STEP

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Call us now on +(43) 5577 87387-0 or visit [identecsolutions.com](https://www.identecsolutions.com) and look for Crew Companion.



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