

Offshore Personnel Transfer

The Billy Pugh Co. X-904

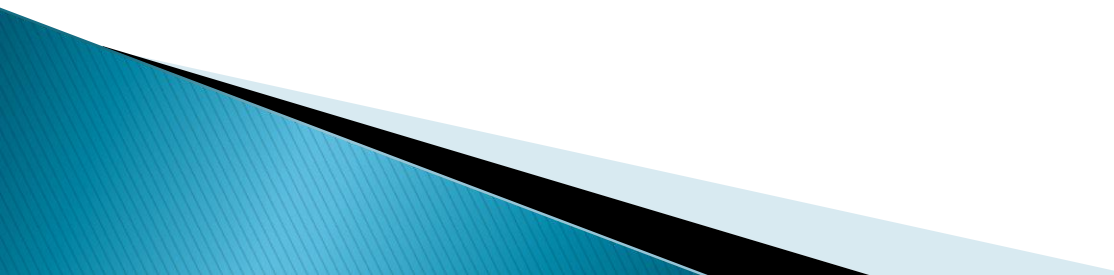


Offshore Personnel Transfer

The industry is changing.....



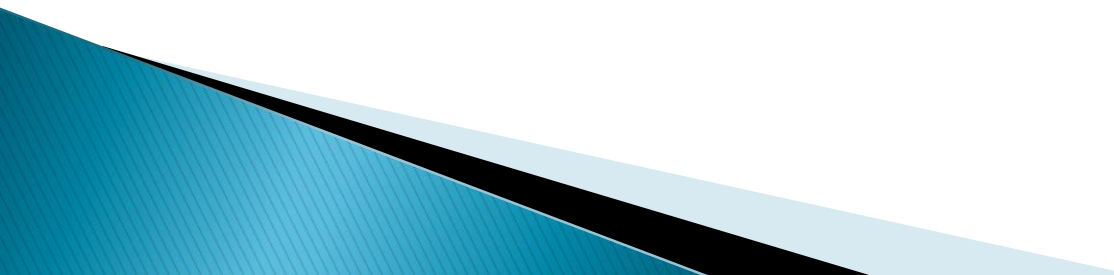
Solutions for safer transfers

- ▶ Treat “crane assisted” personnel transfers safety as high level priority.
 - ▶ Plan personnel transfers (JSA)
 - ▶ Training for operators and riders
 - ▶ Require clear deck area for landing transfer devices
 - ▶ Investigate new products available
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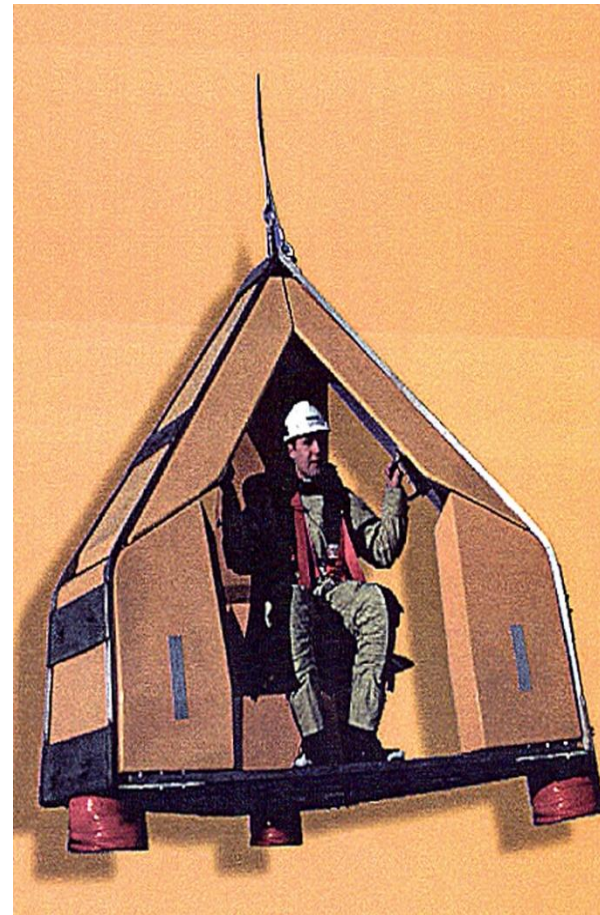
Personnel net: The Standard...



Personnel Net advantages

- ▶ **Mobility**—get on and off quickly and safely
 - ▶ **Ease of Storage**—net collapses to store easily
 - ▶ **Comfort Level of Rig Hands**—this type of transfer system is what they are used to
 - ▶ **Economy**—Inexpensive to operate
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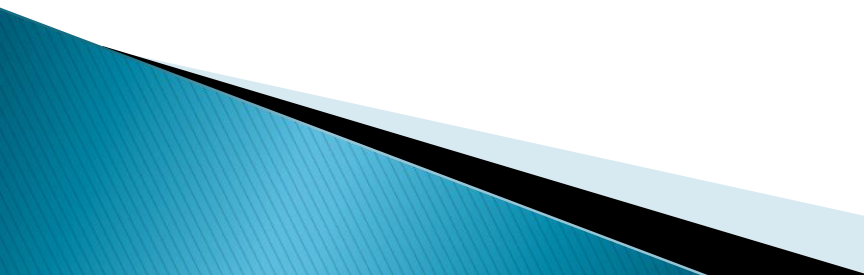
Recent Industry Products



New Product Benefits

- ▶ Outer Protection
- ▶ Fall Protection/Restraint/Man Positioning
- ▶ Stretcher Transfers

Drawbacks

- ▶ **Non Collapsible** (Storage issues)
 - ▶ **Strapped in** (“too much restraint”)
 - ▶ **Lack of Ease/Quickness of egress**—riders don’t like being “strapped in”
 - ▶ **Lack of Mobility** —Inability to efficiently move away from device on landing
 - ▶ **Crew reluctance to ride**
 - ▶ **Hard landings with “light loads**—the spring system operates differently with different loads (i.e. number of people and weight)
 - ▶ **High Cost of product and maintenance cost**
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X-904 Personnel Transfer Device

X-904

- ▣ Provides Outer Protection
- ▣ Man Positioning attachment
- ▣ Quick egress
- ▣ Personnel have “*sea legs” under them (*not having to go from a sitting to standing position while being transferred)
- ▣ Overhead Protection
- ▣ Passengers face “inward”–what they are used to and comfortable doing during transfers
- ▣ Bottom Cushions for landing
- ▣ Collapsible for Storage
- ▣ Models for 4,6,8,10 and 12 passengers
- ▣ Can be re-built and re-certified
- ▣ ABS type Approved



Partial list of X-904 Users

- ▶ BP
- ▶ Diamond Offshore
- ▶ Chevron
- ▶ BHP Billiton
- ▶ Exxon
- ▶ Modec
- ▶ Premium Drilling
- ▶ Noble Drilling
- ▶ Ensco Offshore Drilling
- ▶ Frontier Drilling
- ▶ Nabors Drilling
- ▶ Noble Energy
- ▶ Bp pipeline
- ▶ Oceaneering Intl.
- ▶ SeaDrill Offshore
- ▶ Japan Drilling Co.
- ▶ Total
- ▶ TransOcean Drilling
- Atwood Oceanics
- Helix ESG
- Frontier Drilling
- OSG Lightering
- McDermott
- Shell
- Many more

Success Article from bp company magazine—over 281,000 safe transfers on one platform! ZERO incidents

THEME OF THE MONTH: INTEGRITY MANAGEMENT

COMMON PROCESSES
people marketplace
technology

Thunder Horse uses New Type of Personnel Basket to Safely Transfer 281,000⁺ People



Over a span of 16 months Thunder Horse safely transferred by personnel basket 281,000⁺ personnel between the PDQ facility and adjacent flotels (ships serving as hotels). This safety performance was achieved through the combined efforts of BP, Pride, and the Billy Pugh Company.

After the July 2005 listing incident, up to 750 people worked offshore at one time to reinstate the PDQ. USCG regulations limit the number of personnel allowed on the platform at one time so most of the crew slept on flotels, which allowed the maximum number of workers on the PDQ platform. From August 2005 to December 2006 having off-site quarters meant that approximately 500 people were transferred twice daily via basket by the Pride crane operators.

The team developed special procedures, training, and equipment to ensure the safety of the passengers. BP's HSE team and Pride's HSE team jointly developed rigorous inspection and handling procedures as well as a personnel training program. This training was for the PDQ crane operators and deck crews on the PDQ and the flotels as well as the passengers. A purpose-built training video was prepared and was particularly beneficial for inexperienced riders.

Early on, we recognized that the conventional eight-man flexible basket was not ideal, especially given the number of lifts per day and lack of offshore experience with most of the trade workers. The conventional transfer baskets originally on the PDQ were non-rigid, which made it more difficult for riders to hold on as they embarked and disembarked on the heaving flotels. (Please reference Photographs 1 and 2.)

Recognizing the shortcomings of the conventional personnel basket, BP commis-

sioned the Billy Pugh Company to design and build the 12-man, X-904 basket (Photograph 3). BP already had some trial experience with the X-904 design. This design has the advantages of:

- A rigid frame which provides better stability while riders get on and off from a heaving vessel deck.
- Better protection from side and overhead impact.
- No standing required on the edge of the basket, but rather more "inside" of the basket ring.
- Restraint lanyards which offered the option of being secured to the basket.



Photograph 3: The world's first 12-man X-904 personnel basket—a safer design than a conventional flexible basket.

Additionally, the large-capacity basket reduced risk by lowering the number of crane transfers and improved transfer times, especially valuable when managing the logistics of three supporting flotels. Another key advantage of the X-904 basket was the ability to make transfers in rougher seas, which significantly expanded the operating window. Some of the flotels heaved as much as 15 feet in waves of only 6 feet, and transferring riders, especially inexperienced ones, on the old-style personnel basket was not possible.

Personnel transfers at this scale may not be required again; however, the offshore industry and BP will continue to benefit and learn from the successful use of the X-904 on Thunder Horse. The X-904 basket is now the standard for BP's Gulf of Mexico offshore operations, and we are encouraging our drilling contractors to implement the X-904 within their operations as well.



Photograph 1: Riders had a difficult time holding on to the slack netting and were uncomfortable standing on the edge of the conventional basket as it was lifted 100 feet in the air.



Photograph 2: Conventional baskets require the riders to perch on the outer ring.

Gary Wall is the PDQ Rig Team Leader for Thunder Horse. He joined BP in 2000 after working for Exxon International for 17 years and ARCO British for 3 years. He has held a variety of leadership assignments on Thunder Horse.

Dave Castro is the Thunder Horse Wells HSE Advisor. He joined BP in 2001 after working for ARCO and Vastar Resources for 7 years. He has held a variety of assignments offshore and onshore supporting Drilling and Production Operations.

Clint Honeycutt is the Wells HSE Advisor for Holstein, Mad Dog, and DWP Well Intervention. He joined BP in 2006 after working 3 years as a contractor for BP on the PDQ Rig Team.

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Compare

- ▶ Chevron (GOM), bp (GOM), Shell (GOM) and Diamond offshore as well as many other contractors all did “product to product” comparisons on their offshore facilities. In all these cases, the X-904 was chosen over any other product available.

*GOM–Gulf of Mexico



Sample of Survey Form



Billy Pugh X-904 Personnel Transfer Basket Survey - Riders

We'd like to have your opinion of this prototype model and would appreciate it if you would take a few minutes to complete the short survey below. The rating scale runs from 1 (Poor) to 5 (Excellent). Since this is a prototype – your input will be valuable in creating the finished product.

1. How is the comfort level riding the X-904?

1 2 3 4 5

2. How easy is it to get on the X-904?

1 2 3 4 5

3. How easy is it to get off the X-904?

1 2 3 4 5

4. What was your anxiety level while riding the X-904? (1= very nervous, 5= not at all nervous)

1 2 3 4 5

5. Did you feel as if the safety level is better on the X-904 than other personnel carriers?

1 2 3 4 5

6. Do you think new riders will find it easier to use the X-904 than other personnel carriers?

1 2 3 4 5

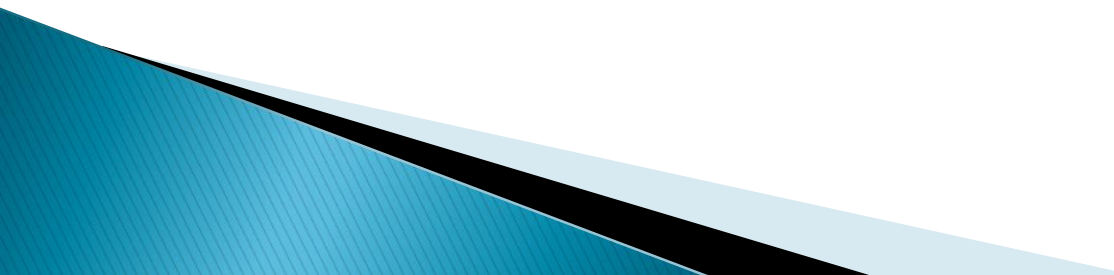
7. Would the X-904 be preferable to the current personnel carrier?

1 2 3 4 5

Comments:

What was your general impression of the X-904?

What you like to see improved/changed on the X-904?

- ▶ Over 90% of first time riders of the X-904 rate it at a 4 or 5 (of a possible 5 highest rating).
 - ▶ Diamond Offshore Ocean Confidence surveyed and no one on the rig rated the X-904 less than a 4 of 5 rating.
 - ▶ We only ask that our customers try the X-904, once it is in the field (and the rig hands are surveyed) that is all of the selling we need to do!
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Thank you



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