Billy Pugh Co., Inc.

Recommended Practice for
Crane Suspended Offshore Personnel Transfers

Purpose

This recommended practice is intended to assist all offshore employers in the development of safe work practices relative to the task of transferring personnel to-and-from offshore facilities utilizing a Billy Pugh Co. personnel transfer net. This recommended practice addresses the minimum requirements promulgated by both regulation and industry "best practices". Each offshore employer is encouraged to follow these recommendations, and to proactively modify or supplement them with additional beneficial practices or procedures, which may be more appropriate for the employer's equipment, or environmental conditions.

Scope

This recommended practice is intended for application by offshore employers working in a marine offshore environment who transfer, move, or transport their workforce by Billy Pugh personnel carrier. The elements of this recommended practice should be applied as appropriate with due consideration made for any additional special hazards identified by the employer as a result of a thorough Job Hazard Analysis (JHA).

Responsibilities

It is the responsibility of the offshore employer to ensure this recommended practice is applied appropriately within their organizations. Management of offshore personnel transfer safety should be an integral component of the employers existing Safety and Environmental Management Plan. (SEMP)

A systematic management process used to identify and control safety and environmental hazards in design, construction, start-up, operation, inspection, and maintenance as promulgated in API RP-75. Billy Pugh Personnel transfer net A personnel transport device composed of a solid cylindrical platform, flexible 2 sidewall rigging, upper aluminum ring, and lifting loadline system designed for the aerial transport of personnel by an offshore crane.

Rigging

- The loadlines, master links, safety slings, and hardware that attach the personnel carrier to the crane hook or block device.

Qualified Person

- A person designated by the employer who has the experience and formalized training to safely operate the crane, rigging, and associated lifting devices assigned at the work location.

Qualified Inspector

- A person so designated by the employer who by reason of appropriate experience and training, in addition to meeting the requirements of a qualified person, has attended formal training in inspection, maintenance, and troubleshooting of cranes, rigging, and lifting devices.

Case for Action

Analysis of available accident/injury data reveals that offshore personnel transfers are not involved in high rates of accidents relative to the number of transfers carried out worldwide. But due to the sheer number of personnel basket transfers, the potential does exist for incidents to occur. Safe and consistent methods need to be incorporated into the procedures of those utilizing "crane assisted" transfer devices. A safety system, which addresses the specific areas of effective management relative to offshore personnel transfers, will be required so that industry can sustain and maximize overall safety performance while showing a process of continuous improvement.

Safety System Elements

The following are considered to be key elements of an effective safety system for management of crane suspended offshore personnel transfers.

ELEMENT 1: Minimum Training Requirements

An on-site competency based orientation & JSA on the safe use of personnel carrier devices should be administered by a qualified person before employees or visitors unfamiliar with the device are loaded or lifted. At a minimum the following elements should be included in this orientation curriculum:

- Safe loading & unloading procedures.
- Crane actions, movements, and signals.
- Body positions, pinch points, and personal stability.
- Personnel baggage loading procedures.
- Personnel protective equipment requirements.
- Exceptions or anomalies to any of the above.

In addition to the above training elements, the qualified person should ascertain whether any persons are feeling ill, suffering from vertigo, or have any anxiety regarding the transfer. These individuals should be discouraged from using this form of personnel transfer.

ELEMENT 2: Personnel Carrier Rigging Configuration (See Figure 1.0)

The following rigging configurations are recommended for all crane assisted personnel carrier devices:

- **Double Safety Loadline**
  All personnel carriers can be equipped with a double safety loadline assembly composed of a main support line constructed of a galvanized steel wire rope sling, it has a minimum breaking strength of 34,000 lbs. (15422 kgs) and a secondary shock absorbing safety line rated at a minimum breaking strength of 27,700 lbs. The designation for a double safety load line on a Billy Pugh Co. personnel net is "DC". Example: X-871 D/C
  *Billy Pugh personnel nets also have a back-up fiber rope safety line contained within the stabilizer unit.

- **Snag Resistant Tag Line**
  We recommend that the BPC semi-rigid, snag resistant tag line should be affixed to all of our personnel transfer devices. Tag lines should have a minimum length of 10 '(3.05m). Tag line should be attached to either the center deck lashing pint, or the outside bottom platform ring in such a manner that minimizes tag line damage when carrier is resting on a surface and attach with a minimum 5/8" {190 mm) bolt type anchor shackle. Personnel transfer device tag lines should be identified by a high visibility color. These tag lines can be obtained by specifying "Billy Pugh Tag Line" followed by

the length. A normal length for these units is 15 ft. This recommendation is consistent with API-RP 2D (Annex C). Our tag lines (PTL and STL product codes) both conform to this API specification and work well with all slung loads as well as personnel transfer devices.

- **Safety Sling or Lanyard**
  A safety sling or lanyard designed to provide emergency fall containment, should be affixed between the crane hoisting line and the carrier upper master link. This will add a measure of safety in the event the personnel net upper lifting ring becomes detached from the crane hook. The safety lanyard should be composed of a galvanized steel wire rope sling, with a minimum breaking strength of 34,000 lbs. (15422 kgs).

ELEMENT 3: Inspection Procedures

All inspections should be performed by a qualified person and should always incorporate an operator's pre-use inspection which should include the following minimum components:

- Visually inspect safety load line when attaching to crane. Inspect crane hook positive locking device for function and physical condition.
- Check sidewall rigging, top & bottom platforms, and cushion ring for wear or damage.
- Ensure snag resistant tag line is properly affixed.

The following quarterly inspection procedures are recommended for all offshore personnel carriers.

- Inspect top and bottom lifting ring for excessive wear, cracks, or corrosion following manufacturer's recommendation and relevant API spec.
- Visually inspect safety load line when attaching to crane. Inspect crane hook positive locking device for function and physical condition.
- Check sidewall rigging line splices (top & bottom) for wear, UV degradation (blistering, discoloration, or cracking), and unraveling. All synthetic rope splices should have a 3 tuck minimum.
- Visually inspect stabilizer and safety load line unit for visual damage including external protective cover. Damage of external cover may require additional internal examination by a qualified inspector.
- Inspect bottom platform ring for deterioration, cracks, or angular distortion.
- Check cover on bottom platform ring for tears or cuts. Damage of bottom platform cover may require additional examination by a qualified inspector.
- Check top and bottom flotation batts for deterioration or damaged closed cell foam. Damage of flotation may require additional examination by a qualified inspector.
- Visually inspect bottom and top pneumatic cushion hoses (if so equipped) for deterioration or damage.
- Inspect for modifications or non-OEM sup-

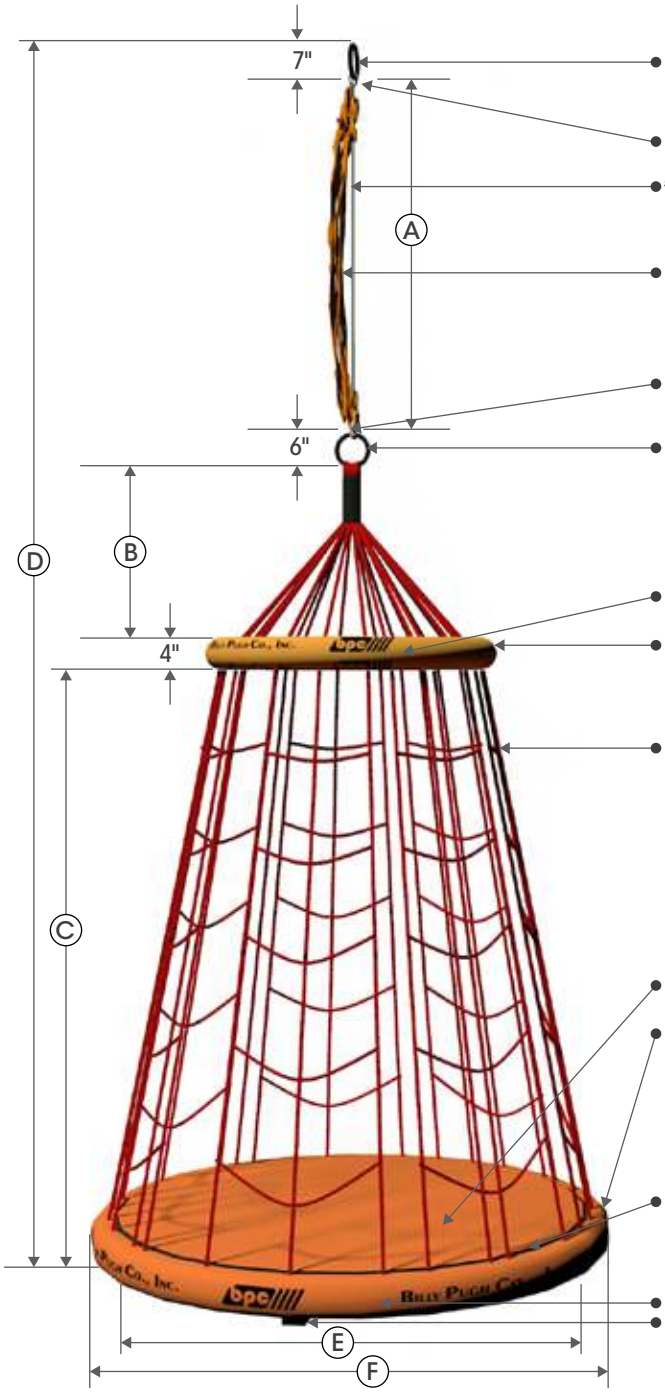
plied components. Non OEM components or modifications should be removed.

- As a general rule, we recommend that all Billy Pugh Co. personnel nets be replaced annually when used on a daily basis (such as a jack-up drilling rig). On production platforms and other applications where the personnel net is used less frequently, we recommend that it be changed out every other year. This is a guide-line only and will vary depending on how the net is cared for and stored.

ELEMENT 4: Operational/Administrative Practices

The following minimum lifting practices are recommended for all crane assisted personnel transfer net devices:

- Any offshore facility making personnel transfers with a personnel carrier should have a written procedure for this task.
- A pre-use inspection should be conducted prior to any personnel carrier transfer.
- Cranes assigned to personnel lifting duties should be suitable for this purpose per relevant API spec.
- Crane operators assigned to personnel lifting duties should be certified and competent to perform this task per 46 CFR 109.527.
- A snag resistant tag line should be affixed to all personnel carriers.
- Crane hooks used for personnel transfers must have a positive locking latch.
- Only approved personnel carriers should be used for lifting personnel per
- API RP spec. Personnel carriers should not be used as a workbasket or cargo net.
- Personnel carriers should be legibly marked with the maximum number of Passengers.
- We do not recommend that luggage be transferred in the center of the personnel net. This practice can cause the debarkation process to be slowed and the rider be delayed in getting to a safe area. Another issue is the potential for back injury due to the awkwardness of leaning over to get bags. These reasons become especially true in rougher seas.
- Personnel carriers should not be utilized in weather, wind, or sea conditions that the qualified person considers to be unsafe.
- Before any attempt is made to lift personnel with a carrier, clear instructions should be given to all persons involved.
- No person suffering from acute seasickness or vertigo shall be transported by personnel carrier.
- Any individual has the right to refuse transfer by a personnel basket.
- All personnel riding on a personnel carrier should wear an approved life vest or life preserver. An approved Type I illuminated PFD should be required for all transfers conducted at night.
- All personnel riding on a personnel carrier should stand on the outer rim, evenly spaced, and adjacent to a sidewall opening in the netting, facing inward. Passenger forearms should be interlocked on inside of sidewall netting and knees should stay bent throughout the transfer including (and especially on) landing.
- If crane operator's view of the primary signalman is obstructed, the personnel carrier should not be moved until alternative communication or signal devices are placed in service.
- A designated primary landing zone should be marked in a safe area as determined by a Job Hazard Analysis (JHA).
- When transferring personnel, the personnel carrier should be lifted only high enough to clear obstructions. It should then be gently lowered to the deck.
- A loaded personnel carrier should not be raised or lowered directly over a vessel.
- The crane operator may refuse to lift any person who does not comply with the operator's instructions.
- An experienced escort should be provided for persons who are not confident performing a personnel carrier transfer.
- Injured, ill, or unconfident persons may ride in a sitting position, on the inside of the personnel carrier, with a qualified person as an escort.



- 7/8" X 5½" CROSBY RING / WORKING LOAD LIMIT: 5,600 LBS.
- SAFETY SHACKLE ½" GALV.
- 5/8" DIA. GALV. CABLE / TYPE 115-HT-HT / SWL 2.8 TON @ 90 DEGREES
  6 X 37 - EIP IWRC RR
- STABILIZER EXTENDED WITH SAFETY LOAD LINE
- SAFETY SHACKLE ½" GALV.
- 7/8" X 4" CROSBY RING / WORKING LOAD LIMIT: 7,200 LBS.
- 1½' X 26 O.D. ALUM. RING / TYPE 6063T6
- 4" FOAM PADDING WITH 10OZ. YELLOW VINYL COVER
- ¾" DIA. PREMIUM POLYPROPYLENE BLEND ROPE: 9,950LBS. MINIMUM STRENGTH
- 18OZ. ORANGE VINYL DECK "COVER"
- 6" FOAM PADDING WITH 18OZ. ORANGE VINYL COVER
- ¾" DIA. ULTRABLU DECK NETTING
- 1½" C/S PIPE - SCH - 40 BOTTOM RING
  PAINTED WITH PROTAKTO PIPE COATING
- 4" X 3½" RUBBER FEET

Figure 1.0

MODEL-800 SERIES DIMENSIONS

	X-871	X-870	X-816	X-840
A	22'	18'	12'	18'
B	2'6"	2'6"	2'6"	2'6"
C	9'	9'	9'	9'
D	34'5"	30'5"	24'	30'5"
E	60"	60"	60"	48"
F	72"	72"	72"	60"
G	11'	9'	8'	9'

	X-871-6	X-871-8
A	22'	22'
B	3'	3'
C	9'	9'
D	35'2"	35'2"
E	84"	94"
F	96"	106"
G	11'	11'