



Exploration & Production

GENERAL SPECIFICATION

LOGISTICS AND OPERATIONAL SUPPORT

GS EP LSO 202

**Personnel transfer between watercrafts
and between watercrafts and offshore structures**

01	01/2011	Complete revision
00	04/2005	First issue
Rev.	Date	Notes

Owner: EP/TDO/LSO

Managing entity: EP/TDO/LSO



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1. Scope

This General Specification defines the conditions and methods required by Company for the transfer of personnel between watercrafts and/or fixed offshore structures.

This General Specification defines the conditions and methods required by the Company for transfer personnel at sea. This document defines the minimum requirements for the watercrafts access. It covers the design, preparation, performance, limit and procedure of the transfer system during marine operations.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
Not applicable	

Professional Documents

Reference	Title
Not applicable	

Regulations

Reference	Title
IMO - SOLAS	International Convention for the Safety of Life at Sea (SOLAS).

Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
Not applicable	



Total General Specifications

Reference	Title
GS EP STR 901	Design rules and construction standards for ancillary structures of offshore installations.
GS EP STR 105	Boat landings and bumpers

3. Personnel transfer

For the transfer of personnel to offshore installation usage is made of:

- Helicopters
- Watercraft.

Direct transfers between watercraft and/or installations are not allowed, except where DGEP-approved transfer supports are provided (Personnel baskets, boat landings, pilot ladders or swing ropes).

For personnel transfer between watercraft and / or installations different supports are used:

- swing rope
- gangway
- boat landing
- personnel baskets (Billy Pugh or FROG type).

If there is any doubt about the safety of the transfer procedure the transfer shall not go ahead.

3.1 Transfer by swing rope

In some offshore operation, a swing rope is used to transfer personnel to and from a watercraft and an installation. In favorable calm sea conditions, as the watercraft can hold station near the installation landing stage, this is a routine activity. The watercraft provides a stable platform allowing the easy and safe transfer of the personnel

However, if the watercraft cannot be maneuvered safely into the position then transfer by swing rope shall not be attempted.

A swing rope shall only to be used after permission of the Site Manager (RSES) or the Marine representative on board of the installation as might be the case.

Both the Master of the vessel and the personnel to be transferred shall mutually agree to a swing rope transfer before any action takes place.

When a transfer is imminent, the Master shall ensure that the following is adhered to:

- Crew member, fully equipped with appropriate and properly donned PPE, shall be on the watercraft landing stage to assist the personnel during transfer
- Crew member shall confirm the rope is in good apparent condition and not coated with oil, mud, chemicals or dirt. If a deficiency is observed the rope shall not be used and a hazard observation report should be submitted to relevant marine controller

- For transfer, the personnel to be transferred shall wear a fully donned work vest or life jacket of an approved type
- Personnel must use both hands to grasp the rope
- Light weight hand carries may be passed across from the watercraft personnel landing stage to the platform, but where there are numerous or heavy items need to be transferred a small basket shall be used
- Personnel to be transferred shall not wear back packs nor any tools attached to waist belts
- Personnel to be transferred shall not stand on the top of the watercraft tire fenders
- Life ring(s) shall be positioned, readily available for use, near the watercraft's personnel landing stage.

3.2 Transfer by gangway

3.2.1 Types of gangways

Different types of gangways are available in the market for the transfer between a watercraft and an offshore installation such as but not limited to:

- Fixed light weight gangways
- Telescopic gangways
- Active heave compensated gangways
- Offshore transfer Systems (OTS)
- Offshore Access Systems for heavy seas (OAS)

All personnel who intend to use the gangway facility shall have a full understanding of the transfer control system in use and its importance prior to transferring across the gangway. They should also have a full understanding of the procedures to be followed in an emergency situation.

Where gangways are used for the personnel transfer between installations life buoys with self-igniting lights shall be placed at both ends.

3.2.2 P.O.B. control at gangways

Each installation or watercraft connected by a gangway shall develop and implement a procedure to control People on Board (POB) on board. At all times both the installation and the watercraft shall be able to produce an up-dated POB list.

3.2.3 Weather Limit Guidelines

The weather limits for gangway operations shall be determined by the design of the gangway and the type of the installations that it connects. The Offshore Installation Manager(s) (OIM/RSES), watercraft master, or delegates, shall be responsible for ensuring that the limitations are respected.



3.3 Transfer by boat landing

3.3.1 General

Where personnel has to be transferred between watercrafts or between a watercraft and an installation/floating unit fitted with a boat landing, only crew boats with purpose fitted boat landing facilities shall be used.

Personnel shall be briefed prior to the transfer and the crew shall be standing by to assist with the transfer on both watercraft/installation.

Boat landings and it's equipment shall be designed and certified in accordance with rule **GS EP STR 105** and **GS EP STR 901**

Analysis of accidents/events occurred during boarding/landing/transferring of personnel at boat landings shows that the key factors contributing to the incidents are weather conditions, actual condition of the boat landing , fast crew boats conditions and personnel behavior.

It recommended that a graduated painted marking is applied to the side of the boat landing; this graduated marling will assist to estimate the significant height of the swell/waves.

3.3.2 Boat landing Officer

All manned installations/floating unit or watercraft, carrying out personnel transfers by crew boat via a boat landing shall designate a boat landing officer.

The Boat Landing Officer (BLO) is the designated person on the installation/floating unit or watercraft supervising personnel transfer via crew boats. He will ensure that all conditions are fulfilled to allow a safe transfer from and to the crew boat.

The BLO will give brief instruction to the personnel to be transferred and the crew boat about the prevalent weather conditions the boat landing condition and on the Fast crew boat..He supervises in close collaboration and coordination with the crew boat crew the transfer of personnel and their luggage..With the help of the painted graduations on the boat landing side, the BLO estimates the significant height of the swell/waves and determines the limit to allow access on the boat landing Ladder .The BLO shall be in radio contact with the crew boat and agree with the crew boat captain about the procedure to be followed during the personnel transfer.

In case no radio contact can be established with the crew boat a sign/flag shall be posted by the BLO at boat landing to inform the crew boat Captain about the accessibility of the boat landing. A green flag or sign shall be used to indicate that all conditions are fulfilled for a safe personnel transfer. A red flag/sign shall be used to indicate that the conditions are such that a safe transfer cannot be done and the transfer needs to be postponed until all conditions are fulfilled to allow a safe transfer of personnel.

3.3.3 Decisional matrix for Personnel Transfer

In order to facilitate the decision making a "decision Making Matrix" should be prepared and implemented.

The "Decisional Matrix" is to guide, help and assist the crew boat Captain decisions. It's not intended to be a 'stand-alone' direction. The Captain has the over-riding authority and responsibility to make all decisions as seen fit related to the safety of personnel, assets and the environment.

The matrix takes two majors factors into account to determine the risk during the personnel transfer:

- Environmental conditions, i.e.; sea conditions, current, wind and visibility.
- Human factors and equipment, i.e.; personnel, boat-landing assistants, condition of the boat-landing and fast crew boat.

The level should be established by site RSES, confirmed by the crew boat Captains and the Boat Landing Officer.

The Boat Landing Officer should provide the crew boat captain a brief overview of prevailing conditions (weather, boat landing, crew boat) in order to allow the captain to verify his decisional matrix

A detailed example is available on Appendix 1.

3.4 Transfer by personnel basket

Two types of personnel baskets are currently in use in the offshore industry:

- Billy Pugh type personnel basket
- FROG type personnel basket

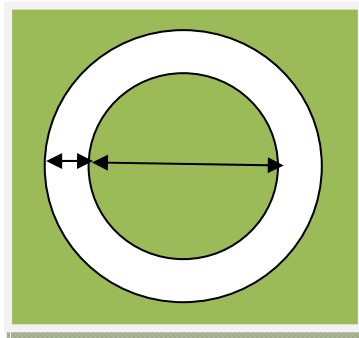
The use of the FROG type personnel basket is recommended, the Billy Pugh type of personnel basket should be avoided as far as practically possible.

Personnel baskets should only be used in emergency, exceptional or other circumstance where the use of alternative means of transferring personnel is either impracticable or unsafe.

Personnel are to be briefed prior to the transfer and personnel are to be standing by to assist with the transfer on both the installation/floating unit or watercraft and the watercraft to/from which the personnel will be transferred.

3.4.1 Watercraft Suitability

In order to allow a personnel transfer by personnel basket a free deck space area with a diameter of six (6) meters is required for the safe landing of the basket on the deck plus a area around the landing circle of minimum two (2) meters in order to allow a safe transfer. There shall be no obstructions within these areas such as masts, aerals, superstructures, funnels, cranes or any other obstruction.





3.4.2 Means of Rescue

At all times during a transfer by personnel basket means of rescue from the water shall be provided and ready to be used. This could be in the form of rapidly deployable buoyancy aids and/or a fast rescue craft.

3.4.3 Conditions for Personnel Transfer

Before authorizing a personnel transfer, the following conditions shall be considered by the OIM/RSES and Watercraft Master:

- Cranes used shall be certified for man riding
- Transfer to take place in daylight hours
- Wind force/sea state shall be within operating limits
- Unrestricted visibility between crane and landing area's
- Movement of the watercraft
- Familiarity of personnel with the transfer procedure
- No obstructions on the landing areas
- Availability of a rapid deployment buoyancy aids and/or fast rescue craft
- Crane Operator, Rigger/ Banksman (3 people minimum) shall be present during a transfer.

3.4.4 Authorization

The transfer operation shall be approved by the Master of the watercraft and OIM/RSES of the offshore watercraft or installation both have to agree that the transfer can be safely executed. Each person shall voluntarily agree to the basket transfer.

3.4.5 Responsibilities of the Watercraft Master Involved in a basket transfer

The Master is responsible for the transfer, and shall confirm to the OIM/RSES, or Unit Master that:

- He accepts the transfer and understands the procedure.
- The watercraft has a satisfactory station keeping capability.
- There is a safe unobstructed landing area of 6 + 2 diameter on the watercraft.
- Communications have been established with the watercraft and crane operator on the installation/floating unit or watercraft.
- The deck crew on the watercraft has been fully briefed on the basket personnel transfer operation.

The persons to be transferred from/to the watercraft have been briefed about the transfer procedures and are fit to be transferred They have accepted their transfer by basket.

3.4.6 Procedures for Transfer of personnel by personnel basket

Proper procedures for the transfer of personnel by basket shall be available and complied with.



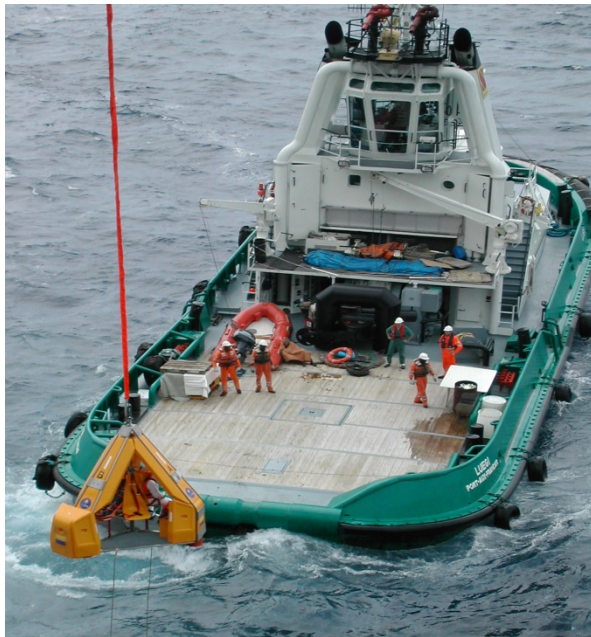
Such procedures shall describe the duties of all involved in the transfer operation and shall cover as a minimum the following points:

- Evaluation of the necessity for the transfer by basket
- The RSES or OIM will approve the transfer of personnel by personnel basket
- Evaluation of the weather conditions acceptable for a personnel transfer by basket (wind, sea, current and visibility), Transfers by personnel should only be done in calm or moderate weather conditions except in case of emergency or MEDEVAC
- Identification of the personnel involved in the basket personnel transfer
- Banksman shall be clearly identified and wear a clearly visible identification jacket
- The personnel basket shall be of an approved type and shall be certified by an independent certification company
- Instructions and maximum SWL and number of persons shall be clearly indicated
- A visual inspection of the personnel basket and its components shall be done prior utilization
- The crane shall be certified for man riding
- The crane driver shall be fully certified for the operations to be done
- Wind limitation as per crane manufacturer or company regulations whichever is the most stringent shall be observed
- The personnel to be transferred agreed on transfer by basket and understand procedures
- Proper communications have been established between the watercraft captain, the crane operator and the supervisor in charge on the installation/floating unit or watercraft and the banks man.
- The crane operator, supervisor and banks man on the installation/floating unit or watercraft have a unrestricted view on the landing area on board of the watercraft
- The watercraft to/from which the personnel transfer will be done shall have good station keeping capabilities
- Personnel to be transferred shall:
 - Wear appropriate PPE including a life jacket and survival suite as might be the case Life jackets shall be fitted with a self igniting light and wistle
 - The ERRV (emergency response and rescue vessel/stand by vessel) shall be in close vicinity of the installation/floating unit or watercraft
 - A FRC (fast rescue craft) shall be ready to be launched
 - Observe all instructions of the operation.

3.4.7 Utilization of a FROG type personnel basket:

Utilization of a FROG type personnel basket shall cover as a minimum the following points:

- The seat belt/harness shall be checked by the deck crew prior personnel entering the FROG capsule.
- All persons shall be seated in the personnel capsule and shall secure their seat belts/harnesses.
- No more than the design maximum permissible number of persons is allowed to ride the FROG type personnel basket at one time.
- If a stretcher is being carried inside the capsule only one additional person is authorized to take place inside the FROG capsule.
- Except in an emergency or MEDEVAC situation, no person who suffers from vertigo is allowed to use FROG type personnel basket.
- An experienced person shall join each transfer when person(s) unfamiliar with the operation are to be transferred.
- When personal luggage is carried it must be stowed in the luggage compartment only. Luggage should remain within the permitted load limits. No items are to be stowed under the seats during a transfer.



Personnel transfer by FROG personnel Basket



Personnel transfer by BILLY PUGH personnel basket

4. Pilot transfer by pilot ladder or combination ladder

For the transfer of a pilot from the pilot vessel or crew boat to/from a tanker arriving or departing from a coastal or offshore terminal a pilot ladder or a combination ladder (combination of an accommodation ladder + pilot ladder) is used. The pilot ladder or the combination ladder remains the safest way of transfer for a pilot to/from a tanker.

In general there is no alternative for the pilot ladder except in the cases where a helicopter is used for transferring the pilot to/from the tanker.

Occasionally a mechanical pilot hoist is used.

The Master of the tanker shall be responsible for:

- Using pilot ladders in compliance with **IMO - SOLAS** regulations
- Carrying out regular inspections of the pilot ladders;
- Having inspection records for the pilot ladders available
- Having replacement ladders quickly and readily available
- The training of seamen involved in the rigging of the pilot ladder so that they have a full understanding of the equipment.
- Supervising the rigging of pilot ladders in accordance with **IMO - SOLAS** regulations and IMPA recommendations
- Reduce the speed of his vessel in such a way that safe boarding from/to the pilot boat is possible
- Position the tanker in such a way that a clear lee way is given to the pilot boat
- Maintain a lee until the pilot boat is well clear.

4.1 TOTAL/TDO/LSO requirements and recommendations:

- The rigging of the pilot ladders and the pilot transfer shall be supervised by a responsible deck officer of the tanker.

- All pilot ladders shall be secured in a position clear of any possible discharges from the tanker.
- The pilot ladder shall be secured in a position where the pilot can access to the tanker after climbing not less than 1.5 meters and not more than 9 meters.
- If the distance from the water to the watercraft access point exceeds 9 meters, a combination ladder (accommodation ladder + pilot ladder) shall be installed
- Owners, Charterers and Masters of tankers should be aware that “Merchant Shipping Notice MSN 1716” specifies the conditions under which a accommodation ladders can be used in combination with a pilot ladder. Any tanker unable to comply with the above requirement should contact their agent prior arrival in order to arrange a alternative for the pilot transfer to the tanker.
- At night the pilot boarding area shall be adequately illuminated. .
- the following points of guidance should be noted:
 - (a) All tankers being serviced should be at the pilot station at the agreed time.
 - (b) All tankers should be ready to respond to all requests from the pilot boat to ensure a safe transfer.
 - (c) All tankers serviced shall inform the pilot boat when they change their heading and when that change of heading has been completed.
- Tankers with freeboard in excess of 18 meters shall confirm that the gangway can be secured to the tanker's side by a cleat or sucker pad to prevent excessive movement. If this cannot be done then boarding of the pilot may have to be carried out by helicopter.



Boarding a tanker by a combination ladder

4.2 IMO SOLAS regulations and procedures about safety boarding of Pilot/Mooring master

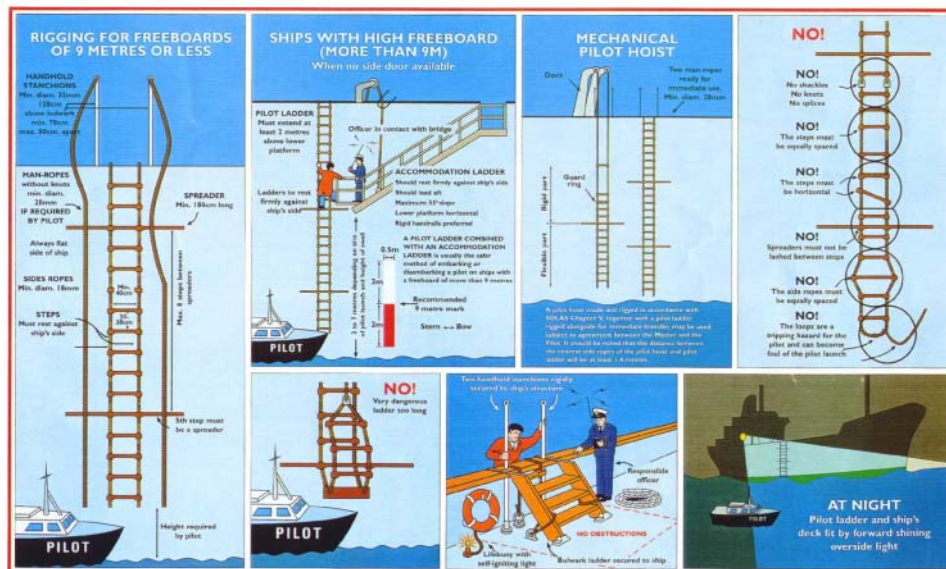
Boarding and disembarking of pilot/mooring master, authorities, cargo inspector are under the responsibility of the Captain of the tanker.

As per **IMO - SOLAS** res A.263 chap. VIII and amendments to **IMO - SOLAS** res A.426 chap. V (2004), the following texts are applicable:

- **IMO - SOLAS** res A.426 chap. V, boarding/disembarking of Pilots onboard very large tankers.
- **IMO - SOLAS** MSC/Circ 568, boarding disposal for Pilots.

REQUIRED BOARDING ARRANGEMENTS FOR PILOT

In accordance with I.M.O. requirements and I.P.F.A. recommendations



5. M.O.B and Rescue boat

5.1 Transfer by M.O.B Boat / Fast Rescue Craft

Transfer by M.O.B (Man Over Board) or Rescue boat should only be used in emergency, exceptional or other circumstance where the use of the other alternative of transferring personnel are either impracticable or unsafe.

The master of the watercraft providing the M.O.B or Fast Rescue Craft is responsible for the transfer operation. He ensures that the crew and personnel of the boat have been briefed properly before starting the transfer. Considerations should be given to the impact of weather conditions, limitations of watercraft and boats which affect the safe transfer of personnel.

- The M.O.B or Rescue boat should be crewed by at least two experienced/certified crewmembers both of which should be experienced in handling the boat.
- Appropriate PPE, immersion suits if applicable should be worn by the crew and personnel being transferred.

- The freeboard of the watercraft should be reduced to a minimum and the Masters should maneuver their watercraft to achieve maximum lee.
- When lowering the boat into the water, before the boat enters the water, the boats engine should be running.
- During lowering and recovery and while the boat is close to the watercraft, the Master should take steps to ensure that the watercraft's propeller/s is not turning.
- The vessels should establish communications prior to the transfer and should be able to maintain both visual and contact radio.
- Transfer should be carried out under the direction of the coxswain. A properly rigged watercraft's ladder should be utilized in conjunction with a safety rope.
- Crew standing by on deck should ensure that a life buoy with line and light are standing ready for an emergency use.

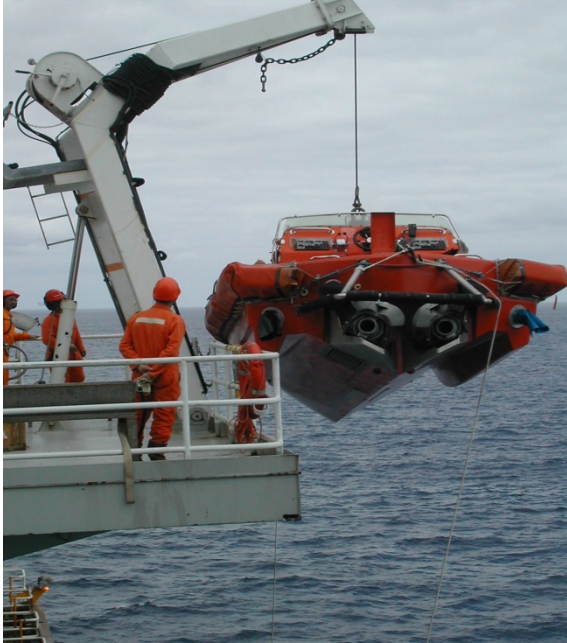
An example of check list for transfer personnel by Mob Boat or Fast Rescue Craft is available on Appendix 2.

5.2 The ten Emergency Actions in Case of Man Overboard

In case of man over board the following Emergency Action should be put in place and the use of MOB or Rescue boat should be necessary to recover personnel in water.

- Raise the alarm, deploy lifebuoys etc, keep watching the person in the water.
- Assemble emergency response teams.
- Designate a sole coordinator.
- Get witness statements.
- Plot the search zone on a chart.
- Brief the Captains of the search boats.
- Continuously update plots on the chart.
- Prepare for aeronautical search (helicopter / plane).
- Prepare and issue Emergency Notice to Mariners (AVURNAV or NAVAREA).
- Prepare a plan for demobilizing marine assets, personnel and passing information.

A Jason Cradle can be used if available on board.



FRC and Davit



Jason Cradle



Appendix 1 Example of decisional matrix for personnel's transfers

Significant Swell Height	0 to 1.5 Meters	1.5 to 2.5 Meters	3	More than 2.5 Meters	4	
Swell Frequency (seconds)	More than 15 seconds	10 to 15 seconds	3	Less than 10 seconds	4	
Wind Speed (knots)	Less than 20 knots	20 to 28 knots	3	28 to 35 knots	4	
Current Speed (knots)	0 to 1 knot	1 to 2 knots		More than 2 knots	4	
Visibility	Good	Moderate		Poor	3	
Various						
Personnel Safety Briefing	Completed			Not Completed	3	
Boat Landing Assistance (Safety Officer)	Security Agent			No Boat-Landing Assistant	3	
Condition of Boat Landing	Good	Average	3	Hazardous or Dangerous	4	
Condition of the Fast crew boat	Good			One Engine running	4	
Operations shall be stopped if a total score of 12 or more is reached:						Total:

Significant Swell Height designates the height of swell measured at the boat landing. Crew boat captains and boat landing officer can estimate significant swell height by observing graduation marks painted on the side of the boat landing, one mark each 60 cm (or 2 foot).

Swell Frequency should be evaluated and approved by all parties involved in the operation.

Wind speed is given by the BLO.

Current Speed and Direction should be given by the installation, but usually assessed by the crew boat Captain on arrival.



Visibility is assessed by the crew boat captain.

Safety briefing means the briefing given to personnel on board of the crew boat or at the departure waiting room as might be the case up on or prior departure by showing a safety instruction video. These safety briefing videos shall give proper instructions to the personnel about embarking and disembarking onto and from the crew boat to an installation/floating unit or watercraft by means of a boat landing, the life saving appliances on board of the crew boat, and the behavior during the voyage.

As far as practically possible, the safety briefing video should be shown prior the embarkation or at regular intervals during safety meetings in order to ensure that all potential users have been informed. In any case the safety briefing video shall be shown on board of the crew boat upon departure from the installation/floating unit or watercraft.

The Boat Landing Officer (BLO) is the designated person as decryped in paragraph 3.3.2.

Condition of crew boat should be evaluated based on assessment of the following points:

- State of bow fenders.
- State of handrails on the crew boat's bow stairwell.

Any steering or engine defect that might hinder station-keeping in the boat-landing.

Appendix 2 Example of check list for transfer personnel by Mob Boat or Fast Rescue

- CHECKLIST FOR SHIP-TO-SHIP TRANSFER OF PERSONNEL

	ACTION	CONFIRMED
1	Has transfer been approved by the contract-holding Department(s) responsible for the vessels concerned?	
2	Is the craft performing the transfer an MCA approved FRC or a rescue craft meeting IMO 1974 SOLAS Convention, Reg 47?	
3	Is a competent 3-man crew available to man the craft performing the transfer?	
4	Are the persons being transferred fit and agile enough to undertake the transfer in safety?	
5	Are all personnel (crew and passengers) engaged in the transfer operation suitably dressed in survival suits or similar and wearing lifejackets?	
6	Have contingency plans been made in case of personnel entering the water or breakdown of the craft performing the transfer?	
7	If necessary, have aids to embarkation and disembarkation been rigged?	
8	Have all persons concerned in the operation been briefed by the vessel Masters and confirmed their understanding of the process?	
9	Have radio communications between both vessels and the craft performing the transfer been tested prior to commencement of the operation and will these be maintained throughout?	
10	Are both vessels in visual contact with each other?	
11	Are the Masters of both vessels concerned, the crew of the craft performing the transfer, the passengers and Marine Control, in agreement that safe conditions exist for the transfer? (If the transfer is being undertaken within a 500m Safety Zone or between standby vessels on location, the permission of the OIM must also be sought).	
12	Are the weather conditions within limits for the transfer operation?	

Until all the answers to the above are Yes, the operation may not proceed.