



IADC
NORTH SEA
CHAPTER

**International Association of Drilling Contractors
North Sea Chapter**

**GUIDANCE ON OVERSIDE
WORKING &
ALTERNATIVES TO
CLOSE STANDBY COVER**

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Revision	Amendment	Date

1. Introduction

The objective of this guidance is to present alternatives to close standby cover when carrying out overside work. Overside working on mobile rigs, and to a lesser extent fixed platforms can be delayed by waiting on weather (WOW) for “close standby cover”, due to the limits of operation of the Emergency Evacuation and Rescue Vessel (Standby Vessel), see note 1 below. On mobile rigs, there are set limits for given operations e.g. running a BOP on a semi-submersible (X), these are normally set out within the rig’s approved Operations Manual. A Standby Vessel also has operational limits for rescue and recovery of persons from the water using for example, a Fast Rescue Craft, or a Dacon Scoop (Y), see note 2 below. Experience has shown that there is often a difference between Y and X and this can be described as the WOW delta for close standby cover (Z).

As part of industry drive to be more efficient and reduce the cost of well operations the IADC North Sea Chapter (NSC) formed a work group to investigate what technical solutions are, or could be, available to reduce/eliminate down time whilst waiting on close standby cover. This work group consisted of Drilling Contractors, Operators and a Technical support organisation. The drilling contractor members of the work group engaged with several of their offshore crews who have had input to the work sheets (see section 7). Historically, there has been debate over what is, and is not, overside work, with a rough rule of thumb being work within hand rails (permanent or temporary) was not overside work, but what if that overside work was being carried out from such as a Mobile Work Platform e.g. a Cherry Picker? Extreme care must be taken when assessing overside work, for example, when working at height within the handrails there can still be a risk of falling into the water.

Before the work group could start, it was agreed to engage with the Health & Safety Executive (HSE) to discuss the objectives of the work group and seek their views and in particular discuss what is, or is not, overside work that would not require close standby cover. The HSE were unable to say that they would give the OK for all operations above water from such as a Mobile Work Platform without close standby cover. However, the HSE have said that in principal they support the aims of the work group and that it is for Duty Holders to be able to demonstrate that risks to personnel working overside were as low as reasonably practicable (ALARP) and during offshore inspections the HSE would assess operations on a case by case basis. The HSE have reviewed and given feedback to this document.

The HSE have advised that the arrangements set out in this guidance should be restricted to operations conducted within the main structure of the installation e.g. a Moonpool or similar opening and should not be used for overside work outwith the main installation structure.

Many operations that require close standby cover involve Manriding. If such operations could be eliminated by other means this would have the added benefit of a reduction, or elimination of Manriding; a long-term goal of the whole offshore industry.

Note 1: *A Standby Vessel, as defined in the Emergency Response & Rescue Vessel Response Guidelines issued by OGUK.*

Note 2: *It is recognised that (Y) cannot be an exact number and many factors will influence a Standby Vessel’s ability to be able to rescue persons from the water.*

2. Definition of Oversight Working

What is oversight working in the context of this document?

Oversight working is any work that is carried out where there is a risk of persons falling into the water where there are not permanent or temporary "arrangements" in place to prevent that from happening e.g. hand rails. These arrangements may be attached to permanent or temporary structures, such as moveable platforms, mobile work platforms and netting.

Note: The above is not a legal definition of oversight work

3. Work Sheets

The work sheets in section 7 set out a list of operations that the work group has identified which currently require close standby cover to allow the work to be undertaken. This should not be viewed as an exhaustive list as Duty Holders may carry out other operations that are not contained on the work sheets. Against each operation there is a list of hazards (that could be associated with the operation) and alternatives that could be put in place which may eliminate the requirement for close standby cover, together with any relevant comments. The appendices show examples of alternatives that are currently, or could be, put in place.

It will be for Duty Holders to decide which solution offered may be appropriate to their installations. It is recommended that a cost benefit analysis be conducted to establish "the size of the prize" and if the investment in for example, additional hardware would be a cost-effective solution. Factors that could be considered as part of the assessment are: -

- Frequency of operations undertaken
- Life of the installation
- Ease of installation/would it require "out of service" time

4. Risk Assessment

As already mentioned, where Duty Holders are considering the use of alternative means to close standby cover for oversight work, they will need to satisfy themselves that the risks are ALARP. The work sheets list a number of hazards that could be associated with each operation. Again, this is not an exhaustive list and it is for each Duty holder to identify the specific hazards and undertake an appropriate risk assessment. A robust risk assessment will be critical in being able to demonstrate that risks are ALARP and the following factors should be considered: -

- Preference for engineered solutions and, where ruled out, a justification for that decision (So Far As Is Reasonably Practicable)
- Access and egress for the various methods of access and emergency response and recovery arrangements
- Length of time that the operation may take, including consideration of contingencies
- Air gap and green water risk
- Weather trends and forecast reliability
- Failure modes of various options and additional risks associated with them
- Moored vs. DP vs. Fixed Platform/Jack-Up on location

In addition to the above, the following should also be considered/included within the risk assessment: -

- Individuals should be empowered to stop the job if conditions are unsafe no matter what the actual wave height measured/estimated
- Leaning out of fixed temporary barriers to reach equipment
- A requirement for design and operational HAZOPS for the selected solution
- Any effectiveness of additional safeguards should be measurable and verifiable
- Appropriate involvement of Safety Representatives in the selection and implementation of solutions
- If safety netting is to be used, there should be clear demonstration of what it can be used for, its performance and how it should be rigged up; this is particularly important if it is to be used in a moonpool with the riser in place

On completion of the risk assessment if it is concluded that the possibility of someone falling over the side is reasonably foreseeable, arrangements must be in place to recover them from the water (in accordance with PFEER Reg 17(b)).

Where such as a Mobile Work Platform (MWP) is being considered the assessment should also consider the risks from any mechanical failure of the MWP.

Note: as part of the design of a MWP it should have a secondary means of recovery, power source and have a “fail safe” position that would allow safe access and egress from that position.

The HSE have issued guidance on the use of MWP and Working at Height, below are links to some useful information:

<http://www.hse.gov.uk/construction/safetytopics/mewp.htm>

<http://www.hse.gov.uk/pubns/geis6.htm>

<http://www.hse.gov.uk/pubns/indg401.pdf>

<http://www.hse.gov.uk/construction/safetytopics/workingatheight.htm>

5. Acknowledgements

The IADC North Sea Chapter would like to thank the following who participated in the work group:

- Awilco Drilling
- Transocean
- Shell
- Apache
- BP
- Houlder Engineering
- WilPhoenix offshore crew
- Paul B Loyd Jnr offshore crew
- Ocean Patriot offshore crew

The IADC North Sea Chapter would also like to thank the HSE for their help and input.

6. Glossary

ALARP	As Low as Reasonably Practicable
BOP	Blow Out Preventer
DP	Dynamic Positioning
EDP	Emergency Disconnect Package
EOW	End of Well
HAZOP	Hazard and Operability Study
HSE	Health & Safety Executive
KT (ring)	Combines the functionality of a tension ring and the termination joint
LMRP	Lower Marine Riser Package
MRT	Marine Riser Tensioner
MWP	Mobile Work Platform
PFEER	Prevention of Fire and Explosion, Emergency Response Regulations
ROV	Remote Operating Vehicle
SJ	Slip Joint
WOS	West of Shetland
WOW	Waiting on Weather

7. Work Sheets
Moonpool Operations

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
1. Slip & Cut Marine Riser Tensioner (MRT) wire	<ul style="list-style-type: none"> - Manriding - Overside - Working at Height - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between 	X			Engineered solution such as Hydraulic MRT	This operation should be carried out as/when weather/operations permit. It could be done EOW, but this could create a logjam with other EOW lists.
2. Removal/changing moon pool drape hoses	<ul style="list-style-type: none"> - Manriding - Overside - Working at Height - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between 	X			Engineered solution would be preferable such as an under-deck platform for the Choke side, but likely to be costly	Bespoke type hydraulically operated Goose Neck Hoses on hydraulic arms
3. Pulling Pods	<ul style="list-style-type: none"> - Excess load on guide lines - Handling unwieldy loads - Manoeuvring Pod past Moonpool drape hoses 		X			Hydraulic sheave retract could be a better option

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
4.Connect/Disconnect Marine Tensioner Wires	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave 	X			Engineered solution such as remote release shackle	A "KT" Ring
5. Hoses tangled and/or caught after adverse weather affects	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave 	X				Depending on the situation it is likely manriding would be required, but improved hose management should be considered
6. Lock Slip Joint closed	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between - SJ barrel inadvertently opening with rig heave 				Hydraulic Slip Joint	

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
7. Unlock Slip Joint	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between - SJ barrel inadvertently opening with rig heave 				Hydraulic Slip Joint	
8. Change out Slip Joint Packer	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave 				X	Use of bespoke type packers or triple packer to delay change-out until BOP is pulled
9. Attach/remove Slip Joint hoses	<ul style="list-style-type: none"> - Manriding - Overside working - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between. 	X				Once Slip Joint is locked

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
10. Stack up Blow Out Preventer (BOP)	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped Objects - Rig motion/Heave - Inadequate rigging leading to equipment failure 		X	X	<ul style="list-style-type: none"> - Casing Cart with Handrails - Moonpool Doors - Complete off-line setback 	
11. Split BOP/Lower Marine Riser Package (LMRP)	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave - Inadequate rigging leading to equipment failure 				<ul style="list-style-type: none"> - Hydraulic Slip Joint - Drop in platform on a Nomar Carrier 	
12. Run/pull big Bottom Hole Assemblies (BHA's)	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped objects - Rig motion/Heave - Possible need to pull master bushings over open water 				<ul style="list-style-type: none"> - Gated "Sheep Pen" - Drop in platform on a Nomar Carrier 	Possible handling tool for Master Bushings
13. Run/pull Diverter	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped objects - Rig motion/Heave - Heavy unsteady lift 				Gated "Sheep Pen"	

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
14. Attaching Mux/ Hydraulic Hoses to Riser	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped objects - Rig motion/Heave 	X	X		Engineered solution	
15. Run/pull Master Bushings	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped objects - Rig motion/Heave 				Gated "Sheep Pen"	Special Handling Tool
16. Any handling of Guide Bases, Trees etc.	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped objects - Rig motion/Heave - Inadequate rigging leading to equipment failure 	X	X	X	Engineered guidance systems attached to subsea equipment when running	This is probably an operation where a Cherry Picker could be useful
17. Installing deployment frame onto guidelines for Remote Operated Vehicle (ROV) intervention hose	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between 		X	X	Engineered solution such as "Flying Lead"	A drop-in platform on a Nomar Carrier eliminates Manriding

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
18. Transfer BOP from deck to carrier	<ul style="list-style-type: none"> - Overside working - Working at Height - Struck by - Dropped Object. - Rig motion/Heave 				Engineered solution such as "Hydraulic Angel Wings"	<ul style="list-style-type: none"> - A second set of hand rails could also be used - Skidding/Capture system
19. Running Double Bore Riser/Conductor & Surface Casing	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between 		X		<ul style="list-style-type: none"> - Gated "Sheep Pen" - Handling system 	A drop-in platform on a Nomar Carrier
20. Running Work Over Control System (WOCS) Basket etc.	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between 		X			A drop-in platform on a Nomar Carrier
21. Deploy Subsea Close Circuit TV camera	N/A		X			Use of ROV is considered a better option
22. Install Pod Clamps	<ul style="list-style-type: none"> - Struck by - Dropped Objects - Rig motion/Heave 		X			
23. Run SAM hotline	N/A		X			

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
24. Install BOP test tool while stack is on carrier	<ul style="list-style-type: none"> - Struck by - Dropped Objects - Rig motion/Heave 			X		
25. Extend Slip Joint and connect droop hoses	<ul style="list-style-type: none"> - Manriding - Overside working - Working at Height - Struck by - Dropped Objects - Rig motion/Heave - Pinch points & caught between 	X			Bespoke engineered solution	
26. Conductor/BOP Tensioner	<ul style="list-style-type: none"> - Manriding - Overside - Working at Height - Struck by - Dropped objects - Rig motion/Heave 	X				

Non Moonpool Operation

Operation	Hazards that require to be risk assessed	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Alternative to Manriding	Comments
		1. Cherry Picker	2. Access Platforms	3. Netting	4. Other	
1. Deploy Flare Booms rig-up	<ul style="list-style-type: none"> - Overside working - Struck by - Dropped objects - Rig motion/Heave 		X		Bespoke engineered solution	

8. Case Study

Running BOP West of Shetland without Overside Standby Cover

Event

- BOP pulled and ran without requirement for over-side standby cover
- Potential multi-million GBP cost saving in reduced WOW risk

Actions

- Platforms, handrails and rigging arrangements installed to allow work on riser and BOP without over-side work

Results

- BOP pulled and ran without requirement for
- Saved 2-3 days on current operation
- Potentially saving weeks of WOW during winter season at GBP300,000 per/day

Keys to Delivery

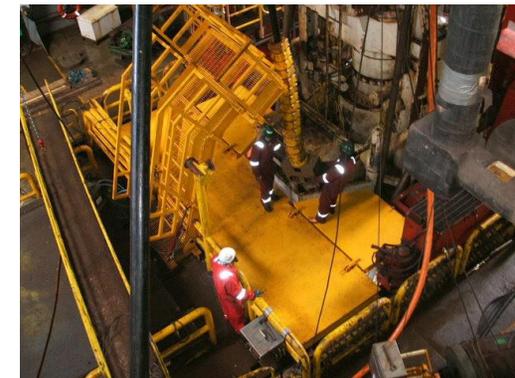
- Use of WOS Lessons Learned and experience
- Innovative planning and engineering to optimise weather window for WOS operation
- Early planning and execution as part of rig start up work scope
- Good joint planning and execution from BP/Rig teams
- Effective offshore team effort for installation and optimisation of operations



Above: Running riser with safe access to umbilical clamps hoses etc.



Above: BOP on carrier without insert platform installed



Above: BOP on carrier with insert platform installed. Full access to bop frame and pod.

Tree Running without standby cover

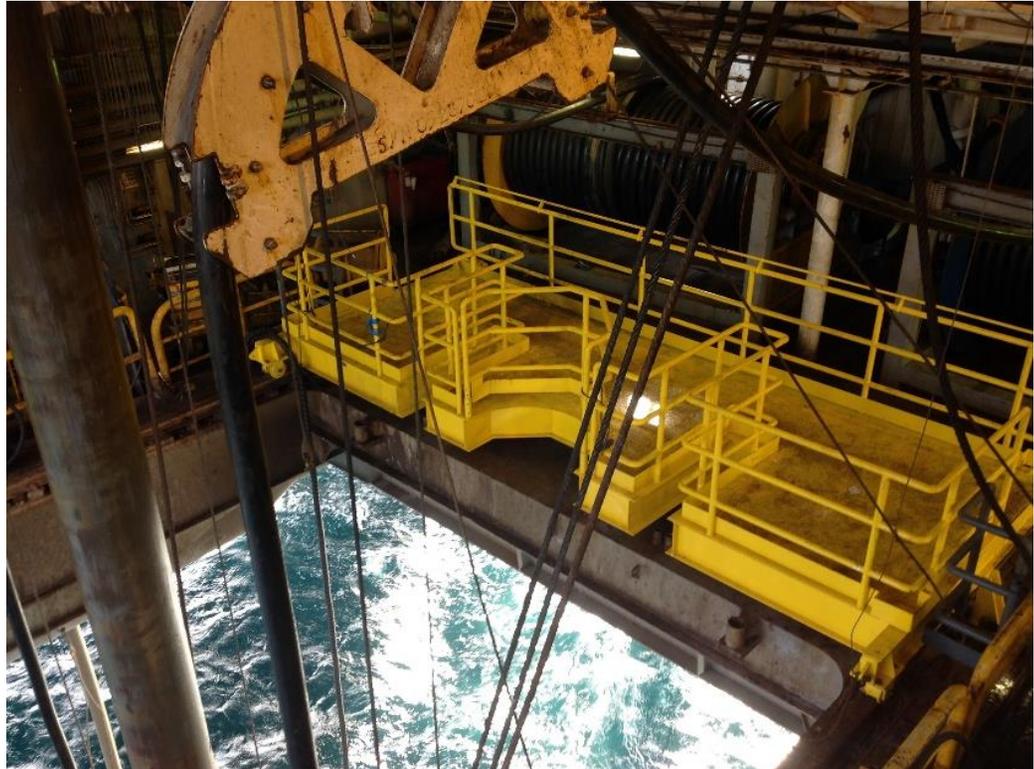
The rig has also run two Sub Sea Trees on W11 and W16 without standby cover. The rig's moonpool hatch allows work on the trees without having to work over open water.

Appendices - Examples of Alternatives to Manriding

A - Extendable Work Platform



B - Moveable Moonpool Platforms



C – Work Platforms for use with such as a Nomar Carrier



D - Moonpool - Mobile Work Platform (Cherry Picker)



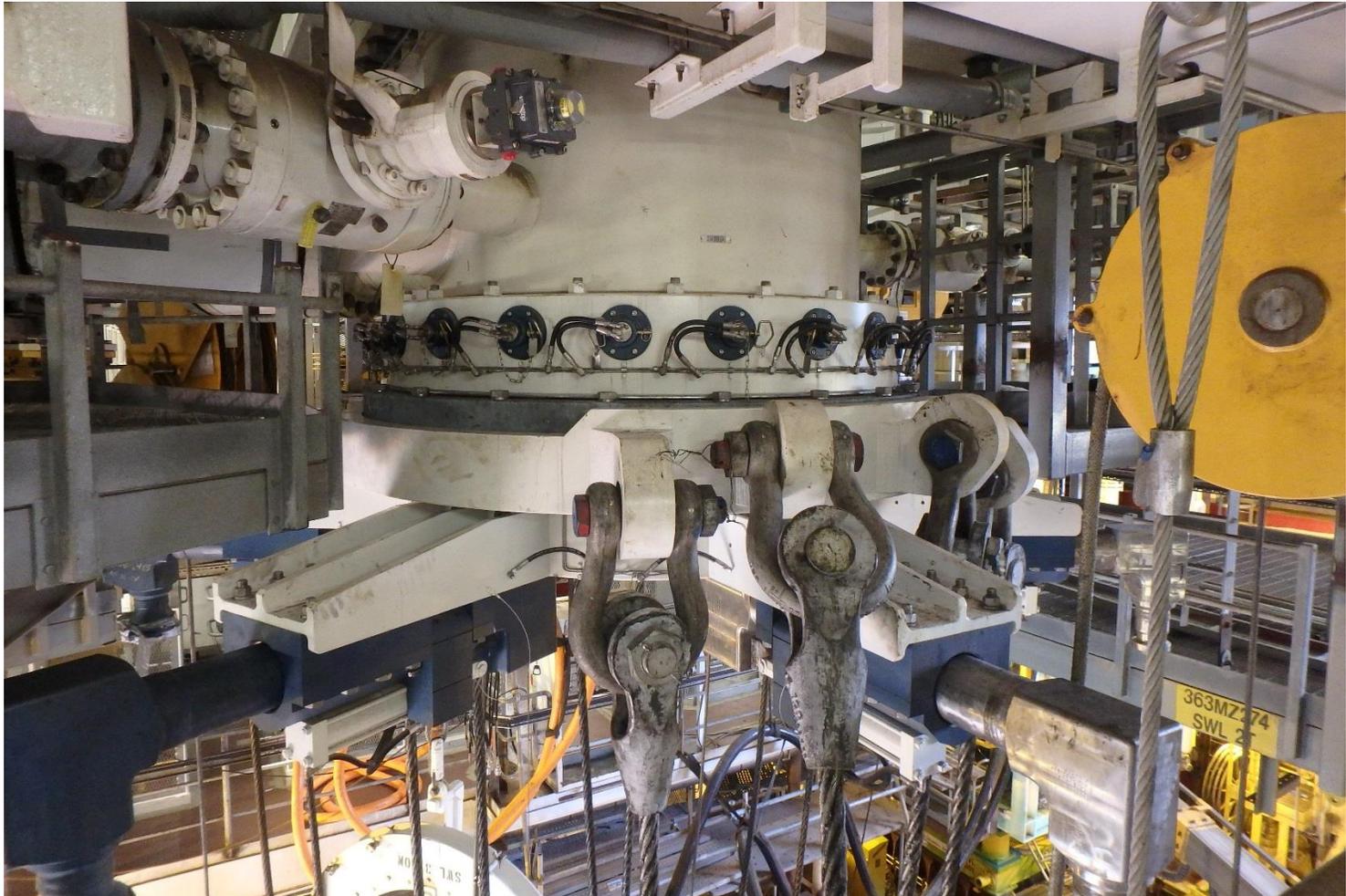
E - Hands Free Gooseneck Systems



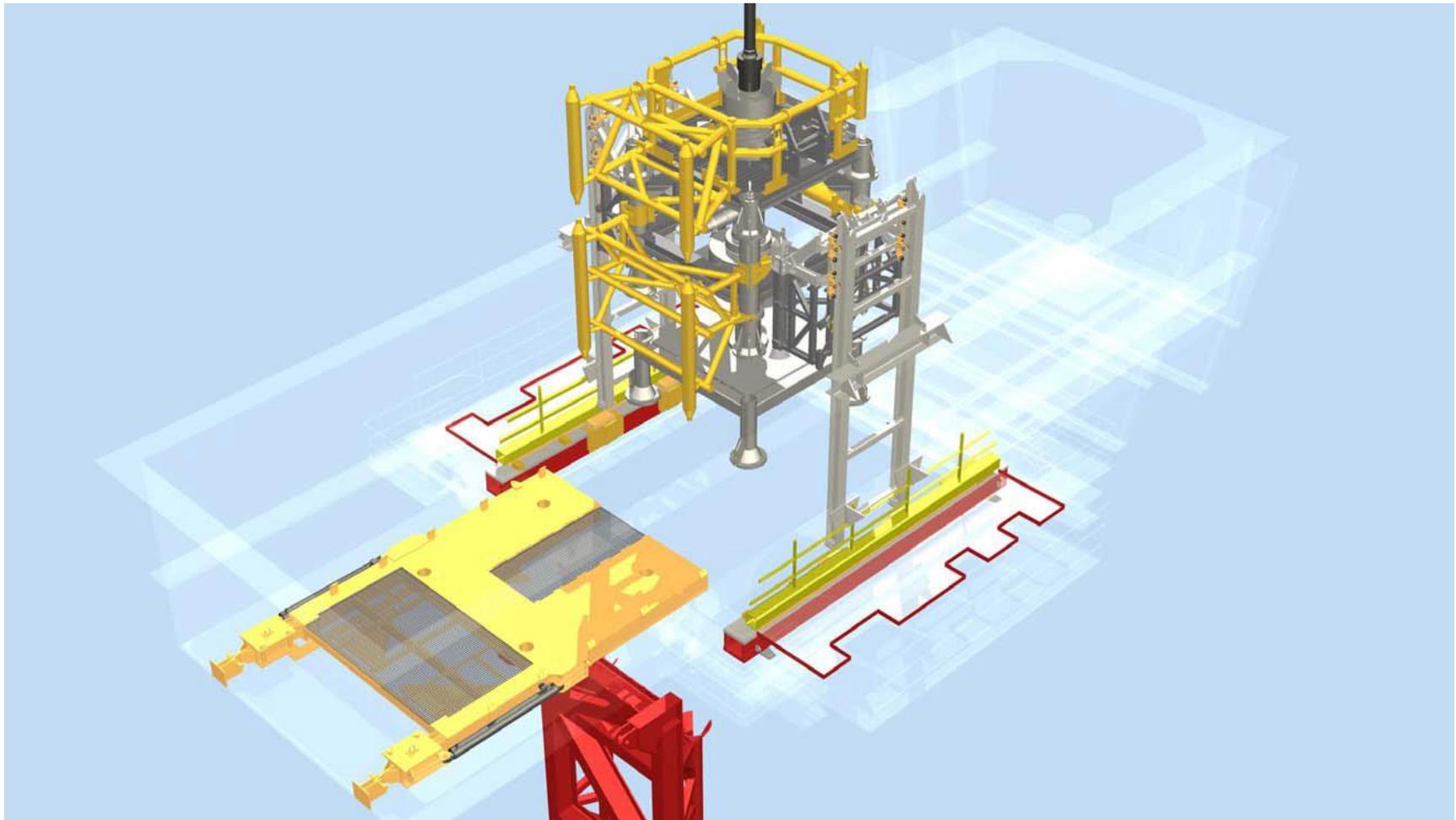
E Hands Free Gooseneck Systems contd - ROPS System for Goosenecks



F - KT Ring



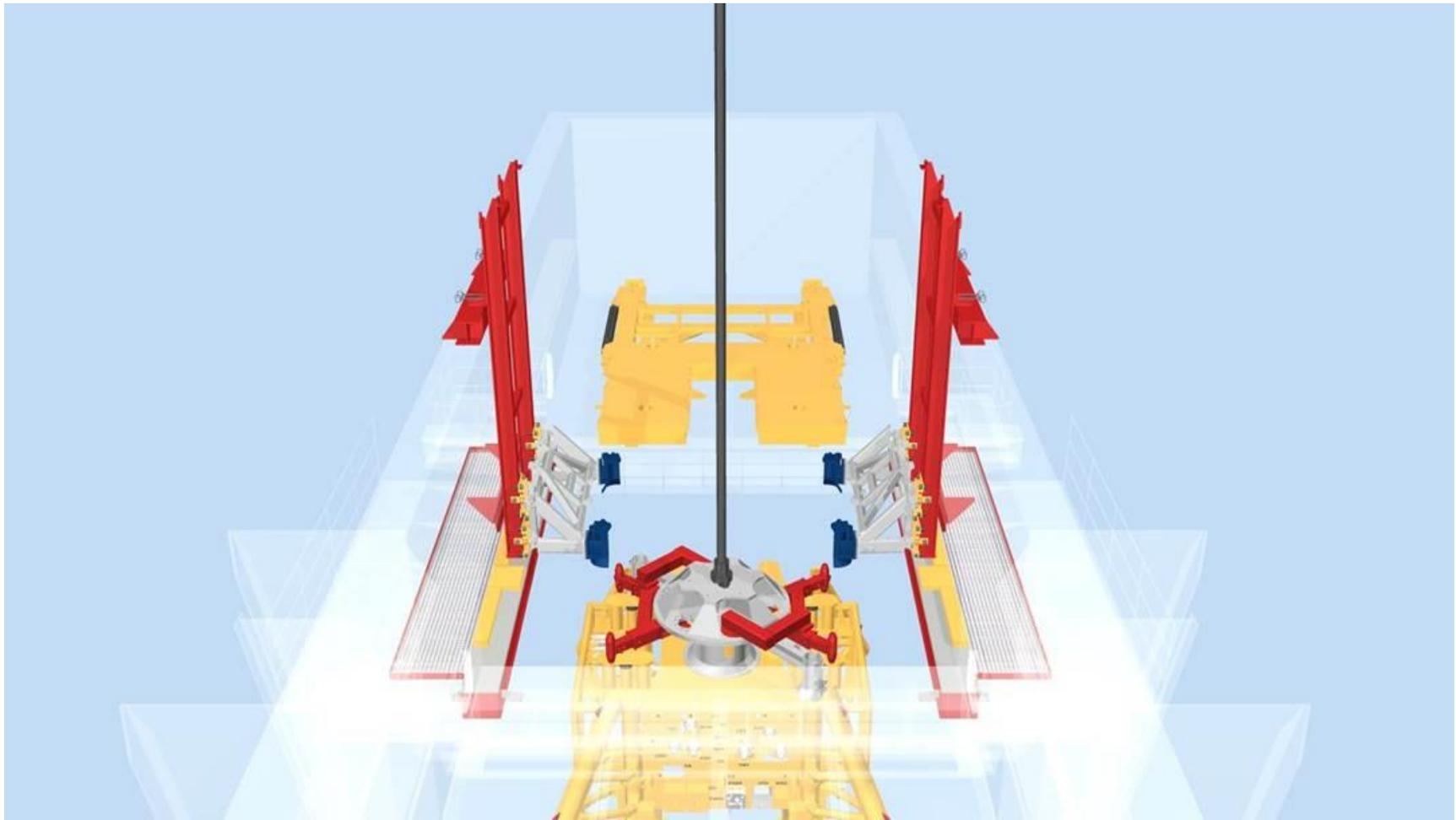
G - Tree Recovery Systems (EDP & LMRP)



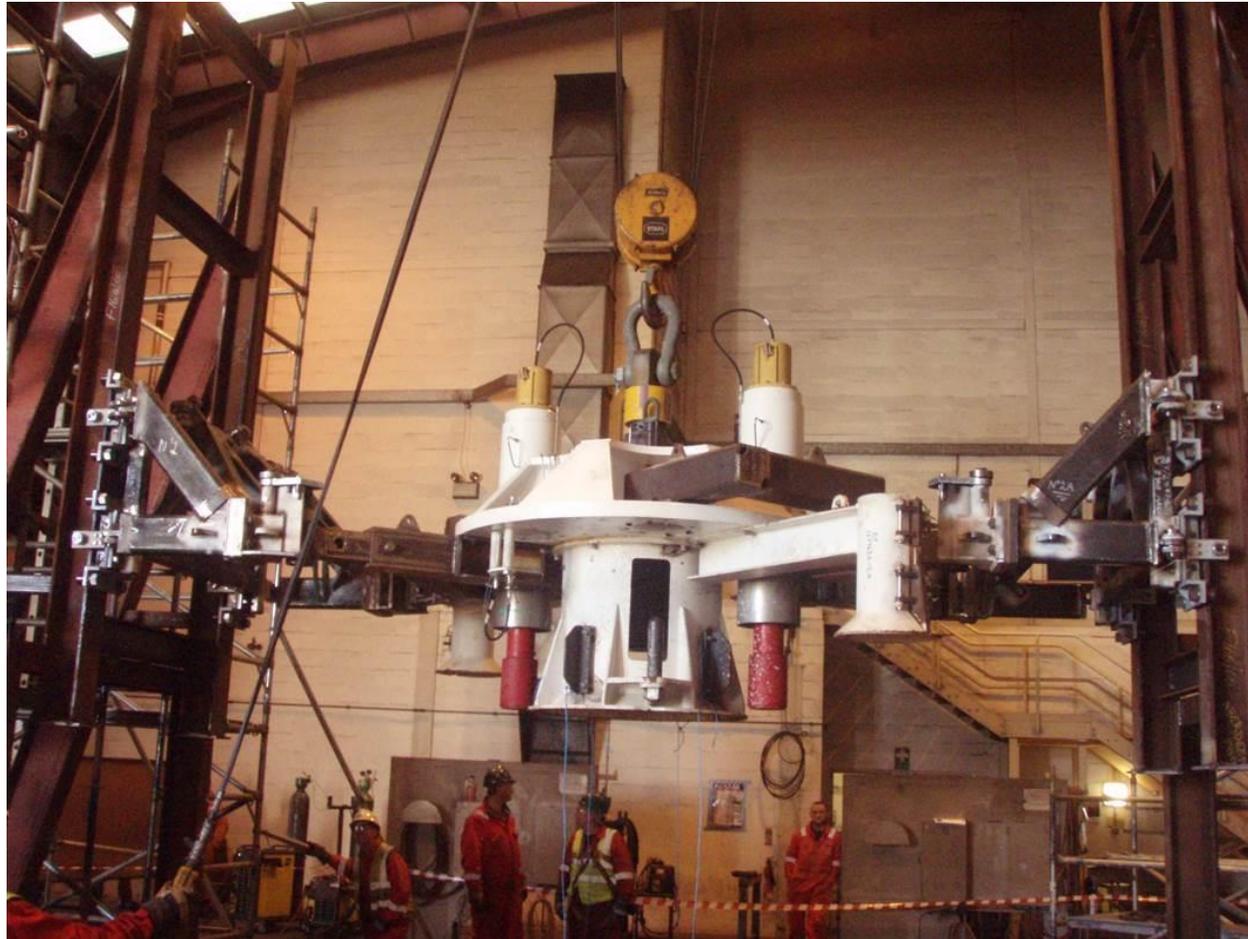
G Tree Recovery Systems (EDP & LMRP) contd.



G Tree Recovery Systems (EDP & LMRP) contd.



G. Tree Recovery Systems (EDP & LMRP) contd.



H - Access Netting

