

## MSF AIDE MEMOIRE TO STAGE ONE RISK ASSESSMENT FOR PLANNING MOU MOVES

The process that is usually followed when planning a MOU relocation is as follows;

- 1 Identify surface location and surrounding infrastructure
- 2 Identify Rig
- 3 Develop basic principles and a step by step method statement of how the MOU relocation will be carried out.
- 4 Hold a high level Risk Assessment and Hazard Identification meeting (Stage 1)
- 6 Publish and close-out actions arising from above
- 7 Develop formal MOU-Relocation procedures based on output of Stage 1 Risk Assessment
- 8 Publish and circulate MOU-Relocation procedures for review to all stake-holders
- 9 Hold pre-MOU-Relocation-meeting as a final Risk Assessment and document check
- 10 Amend and agree final procedures and issue for operations
- 11 Hold Stage 2 Risk Assessment offshore to review the procedures and Stage 1 Risk Assessment and apply local MOU and/or situation specific peculiarities
- 12 Hold documented Job Safe Analyses (JSA) and Toolbox Talks (Stage 3 Risk Assessment) onboard individual vessels and installations offshore

Each Operator/Duty Holder during the process of planning MOU-Relocations is required to assess key risks associated with the activity and apply appropriate mitigations to reduce risk to "as low as reasonably practicable".

**Stage 1 of this document is intended to be a worked example of a risk assessment to act as a prompt for individual Operators/Duty Holders to hold their own internal risk assessments/hazard identification.**

**It is recommended that stage 1 of this document is used in the planning stage prior to development of formal procedures for the activity.**

**Stage 2 of this document is intended to be a prompt list to carrying out risk assessments offshore prior to the MOU move commencing and ideally should involve the operator/duty holder, MOU owner, towmasters and vessel masters as a minimum. The basis of the stage 2 risk assessment is to review the approved MOU move procedures and stage 1 risk assessment and apply local variations where applicable.**

# Marine Safety Forum -Stage 1 Risk Assessment Example - Mobile Offshore Unit (MOU) Relocation Operations



## Example Risk Assessment – Stage 1

### Summary of Activities Covered by this Worked Risk Assessment

This example of High Level Risk Assessment applies to the planning and execution of rig move operations.

### Existing Control Measures

Guideline for Offshore Marine Operations and National Addendum as appropriate (Replaced NWEA 2014)  
 Current Common Marine Inspection Document or Offshore Vessel Inspection Document with all actions addressed  
 MSF Template of Data  
 Vessel Specific Anchor Handling Manual based on MSF Template  
 MSF MOU Move Procedure - Content Guidance  
 MSF AHTS Checklist  
 MOU Move Specific Procedures

Originated:  
 First Annual Revision  
 Second Annual Revision:  
**Third Review**

Apr-08  
 Sep-09  
 Feb-11  
**Jul-15**

National Statutory Requirements  
 MOU Owner Safety Management System  
 Marine Operations Manuals – all parties  
 Lessons Learned from previous operations  
 Anchor Manufacturers Handling Instruction  
 International Shipboard Management Code

#	Activity	Hazards	Consequences	Initial Risk			Control Measures	Action By	Residual Risk			Actions
				S	L	RR			S	L	RR	

**Step 1 – Confirmed Location and Rig Identification.**

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#	Activity	Hazards	Consequences	Initial Risk			Control Measures	Action By	Residual Risk			Actions
				S	L	RR			S	L	RR	
<b>Step 2 - Planning</b>												
<b>Identifying Specific Requirements</b>												
	Assessing the location	Weather Water depth Seabed conditions Currents Tides Subsea infrastructure Mooring assemblies Other assets Traffic density Dynamic loadings	Inability to achieve location Inadequate procedures  Inadequate vessel and equipment specification  Damage to seabed assets and/or towing and mooring assemblies     	VH	VL	H	Define limits of weather Site survey Mooring analysis & deployment / recovery load analysis Traffic Survey  Field drawings Hind Casting & Weather Forecasting Heights determined for seabed clearances for anchor handling and towing  Location approval Catenary Calculations Location historical data (where applicable)  Previous experience of location Tidal & Current Data		VH	U	M	
	People	Lack of competence/ Lack of time/ resource constraints  Experience e.g. Naval Architects Approval authorities Warranty Assurance Survey	Incorrect data  Inability to achieve required location Inadequate procedures Inadequate vessel and equipment specification	VH	VL	H	Approved vendors  Contractor audits Industry accreditation Proven history		VH	U	M	

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				S	L	RR			S	L	RR	
<b>Step 3 - Planning</b>												
<b>Develop Procedures</b>												
	Input data	Lack-of or wrong input data	Schedule delay Inadequate selection of vessels, personnel, equip Incorrect mooring plan Incorrect location	VH	VL	H	Site survey data Mooring analysis and recovery / deployment load analysis Location HAZOP / HAZID Accurate field survey data Survey procedures Verification of data Lessons learned including use of previous procedures		VH	U	M	
	Competence of author	Lack of knowledge	Schedule delay	VH	VL	H	Review and approval process which should define reviewers Approved Vendors		VH	U	M	
			Inadequate specification / selection of vessels, personnel, equipment Incorrect mooring plan Damage to property and equipment Harm to personnel Unrealistic scheduling				Contractor audits Proven history Realistic schedule to be identified					
		Lack of understanding of required content	Schedule delay Inadequate specification / selection of vessels, personnel, equip Incorrect mooring plan Damage to property and equipment Harm to personnel Critical items / issues not identified	VH	VL	H	Existing control measures No additional controls identified		VH	VU	L	

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				S	L	RR			S	L	RR	
	Preparation, Review, Approval and distribution of Procedures and Onshore pre-move meeting	Pressure of time	Inadequate time to prepare, develop and review procedures	VH	L	H	Sufficient time and resources allowed for preparation and developing procedures  Procedures issued in sufficient time to allow adequate review		VH	U	M	
		Competency of review team.	Inadequate review	VH	L	H	Procedures to be reviewed by competent personnel and as a minimum to include: (i) Operator (ii) MOU Owner (iii) Survey Reps (iv) Procedure Author (v) Marine competent MOU mover		VH	U	M	
		Distribution	Correct procedures are not distributed to the relevant parties. Relevant parties not prepared  Potential delays	VH	L	H	Define distribution list  Final revision of procedures to be signed off by accountable personnel		VH	U	M	

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#	Activity	Hazards	Consequences	Initial Risk			Control Measures	Action By	Residual Risk			Actions
				S	L	RR			S	L	RR	
<b>Step 4 - Planning</b>												
<b>In-Field Operations</b>												
	Timing	Inadequate preparation period SIMOPS	Shortcuts Time pressure Delay in operation Equipment, vessel and personnel lead times / availability Damage to Equipment	VH	VL	H	Planning Adequate notification period for moves to be defined. Resources Integrated communication between relevant parties		VH	U	M	
	People	Lack of competent and experienced people Inadequate manning Changes to personnel Poor or lack of meaningful communication Unsafe practices Lack of understanding of equipment, operation and procedures Inexperience of proposed operations Fatigue Loss of focus	Harm to personnel Damage to equipment Delay to schedule Lack of continuity Dilution of experience	VH	VL	H	Existing control measures Approved vendors with competency assurance systems in place Demonstrable work experience available (CV, work history) Shift change not to be undertaken during critical operations Realistic schedule that includes allowance for familiarisation, delays and rest periods Personnel competent for proposed operation Clear roles and responsibilities Adequate shift change handover to take place Staggered shift change where possible New crews to be adequately briefed in the operation Crew changes during MOU move operations to be adequately assessed using Management of Change process		H	U	M	

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#	Activity	Hazards	Consequences	Initial Risk			Control Measures	Action By	Residual Risk			Actions
				S	L	RR			S	L	RR	
	Chartering Vessels	AHTS not fit for purpose	Damage to, or loss of vessels, property / assets	VH	VL	H	Existing Control Measures		H	U	M	
			Inadequate selection of vessels and crew Injury to personnel Schedule delay				Duty Holders to satisfy themselves that a vessel assurance process is in place and is verified. Person chartering vessel has to be familiar with the operation and the vessels intended activity Vessel requirements clearly defined Vessel meets defined specification in procedures					
	Mobilisation demobilisation of Equipment	Equipment and/or mobilisation location not fit for purpose	Delay to schedule	H	P	M	Existing control measures		M	U	L	
		Incorrect vessel preparation Competence of people	Damage to equipment / property / assets Harm to people				Correct Load out plan with defined load list supplied to vessels Approved vendors responsible for supplying equipment as per operators / rig owners standards Confirmation of equipment at mobilisation meets procedural requirements Certified equipment Level 2 Risk Assessment to be undertaken specific to the equipment being mobilised Substitute equipment to be confirmed with operator / MOU owner prior to mob Adequate time given to vessel configuration					

# Marine Safety Forum -Stage 1 Risk Assessment Example - Mobile Offshore Unit (MOU) Relocation Operations



#	Activity	Hazards	Consequences	Initial Risk			Control Measures	Action By	Residual Risk			Actions
				S	L	RR			S	L	RR	
	Vessel Procedural Review and Detailed Operational Briefing and final assurance and mobilisation	Insufficient time to mobilise personnel, undertake MOU induction and familiarisation	Delay in operation	VH	VL	H	Existing control measures		VH	U	M	
		Insufficient time to review procedures	Damage to, or loss of vessels, property / assets				Adequate time given to vessel to review and discuss the procedures, understand the operation and the vessels role					
		Lack of understanding of procedures	Harm to people				Competent and experienced personnel familiar with the operation to conduct the vessel briefings and final assurance					
		Inadequate briefing	Lack of understanding of operation									
		Insufficient rest time	Fatigue									
	Mobilisation, Procedural Review and Detailed Operational Briefing of assigned MOU move personnel e.g. Tow Master, Marine Rep, Survey rep, etc.	Insufficient time to mobilise personnel, undertake MOU induction and familiarisation	Delay in operation	VH	VL	H	Existing control measures		VH	U	M	
		Insufficient time to review procedures	Damage to, or loss of vessels, property / assets				Competent and experienced personnel familiar with the operation					
		Lack of understanding of procedures	Harm to people				Adequate time given to review and discuss the procedures, understand the operation and their role					
		Inadequate briefing	Lack of uunderstanding of operation				Sufficient time in process to ensure MOU induction and familiarisation is undertaken					
		Insufficient rest time	Fatigue				Sufficient rest time to be given prior to commencement of operations					



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				S	L	RR			S	L	RR	
	Pre-Operational Commencement Meeting (offshore)	Vessels do not understand the MOU requirements	Delay in operation	VH	P	H	Existing control measures		M	U	L	
		MOU does not understand the vessels capabilities and limitations	Damage to, or loss of vessels, property / assets				Discussion between the MOU and the vessels to ensure accurate sharing of information and vessel equipment availability					
		Failure to manage any changes	Harm to people				MOU to fully understand the vessels capabilities and limitations					
		MOU and vessel crew are not familiar with their roles in the operation.					Confirmation and agreement from vessels that they understand their roles in the operation					
		Clear lines of communication and accountability are not defined.					Operational status of vessels and MOU to be confirmed					
		Lack of co-ordination of operation					Define communication lines and accountability					
	Failure to identify specific risks associated with the operation					Continual review of all factors to be undertaken and communicated until such times as a start time has been identified and agreed between all parties						
						Confirmation that Level 2 Risk Assessments have been undertaken and any issues shared with all parties involved in the operation						
						Management of change assessment						

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#	Activity	Hazards	Consequences	Initial Risk			Control Measures	Action By	Residual Risk			Actions
				S	L	RR			S	L	RR	
	Establishing and assessing environmental Conditions	Information on environmental conditions and forecast not available or incorrect	Damage to, or loss of vessels, property / assets	VH	VL	H	Operational status of vessels and MOU to be confirmed within operating limits and continual reviews to be undertaken		M	U	L	
		Insufficient environmental working window	Harm to people				Suitable weather window identified and agreed for each phase of the operation to commence or be suspended					
		Inadequate monitoring and appraisal of environmental conditions	Damage to the environment				Suitable monitoring equipment to be available onsite and utilised					
			Operating out with the safe working limits of the vessels and/or and MOU				Accurate and up-to-date Environmental information and forecasting to be provided and verified					
							Open lines of communication between MOU and vessels and vice-versa to advise of any change in status					

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#	Activity	Hazards	Consequences	Initial Risk			Control Measures	Action By	Residual Risk			Actions
				S	L	RR			S	L	RR	
<b>Step 5 - Vessel Demobilisation</b>												
	Release of vessels	Premature release of vessels	Reduced redundancy and/or capability of remaining vessels	VH	P	H	Planning - adequate notification period for moves to be defined. Resources Integrated communication between relevant parties		VH	U	M	