## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|

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| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
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| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
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### *1. Bilingual explanation Project Risk Analysis*

| K | | | B | | |
|---|---|---|---|---|---|
| PROBABILITY / KANS OP VOORVAL | Expectable | 10 | EXPOSURE / BLOOTSTELLING | Continuous (direct access) | 10 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 |
| | Unusual but likely | 3 | | Regularly – daily | 6 |
| | Unlikely | 1 | | Occasional – weekly | 3 |
| | Possible but unlikely | 0,5 | | Incidental – monthly | 2 |
| | Highly unlikely | 0,2 | | Rarely – several times a year | 1 |
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| E | | |
|---|---|---|
| EFFECT | Catastrophic – Many casualties | Damage €1.000.000 ► 100 |
| | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 40 |
| | Very serious – One casualty | Damage €100.000 ◄ €500.000 15 |
| | Serious – Loss of arm or leg | Damage €30.000 ◄ €100.000 10 |
| | Considerable – Disability or Loss of hand or foot | Damage €2.500 ◄ €30.000 7 |
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| R | | |
|---|---|---|
| RISK / RISICO | R = < 20 | Negligable risk, controlled (No measure necessary) |
| | R = 20 < 70 | Possible risk, control measure necessary (I.e. PPE) |
| | R = 70 < 200 | Considerable risk, additional control measures necessary (I.e. PPE and a JSA on Site) |
| | R = 200 < 400 | High Risk, additionally direct supervision necessary (Supervisor + I.e. expert / other) |
| | R = 400 > | Risk too High, investigate different approach and discuss with WB Foxdrill QHSE dept. |
| | | |

***Important aspects when composing a PRA:***

***1.*** The objective should always be to reduce the risk to a **controlled level (R < 20)**.

***2.*** Collective measures are preferred over individual measures. Where possible the source should be eliminated.

***3.*** It is important to adjust the risks when aspects combined increase the danger and also to mention this.

***4.*** Hints for the work specific part: **A.** Work specific risks according to planning (obliged aspects: Lifting and hoisting, Working at height, PPE usage, Tools and equipment and Hot work), **B.** Concurrent operations, **C.** Rope Access **D.** Hazardous substances (also radiation and H2S)

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| | | | | | | ***2. I. Conditions on site*** | | | | |
| Weather conditions | Blown out of the derrick, electrocuted, slipping with all its consequences | 1 | 2 | 40 | 80 | - Stop work in case of wind force 6 or higher, torrential rains, a 60% or higher chance of a thunderstorm and a view of less than 50 meters due to fog | 0,5 | 1 | 40 | 20 |
| Greasy work area | Dangerous situations, slips trips and falls | 1 | 6 | 15 | 90 | - Maintain good housekeeping (also by site responsible company), use handrails | 0,5 | 1 | 15 | 7,5 |
| Oil base mud | Aggressive chemicals, slips trips and falls, residue's in mudlines. | 3 | 6 | 10 | 180 | - Use proper PPE when cleaning the mudtanks (special gloves, coverall, spray-hood)<br>- Read MSDS form all the additives<br>- Isolate the mud agitators (electrical isolation)<br>- Prepare PTW, TRIC card with HSE supervisor<br>- Flush complete mudsystem with water | 0,2 | 6 | 1 | 1,2 |
| Site general state | Dangerous situations, slips trips and falls | 3 | 10 | 15 | 450 | - Maintain good housekeeping (also by site responsible company)<br>- Slow driving on the location by forklift, crane, cars and trucks (max. 5km/h.) | 0,5 | 1 | 15 | 7,5 |
| High noise level (surrounding activities) | Hearing damage > 80 dB | 6 | 3 | 3 | 54 | - Use of effective/appropriate ear protectors | 0,2 | 3 | 3 | 1,8 |
| | | | | | | ***3. II. Communication and instruction*** | | | | |
| New and unexpected situations | Errors in assessing the situation | 6 | 0,5 | 40 | 120 | - Discuss before start of the particular activity. | 0,2 | 1 | 40 | 8 |
| Work carried out is not in accordance with the work instructions | Dangerous situations, accidents, harmful longer term consequences. | 1 | 6 | 40 | 240 | - Continuous supervision, a daily start-work-meeting, no specific work carried out without a work permit. | 0,2 | 1 | 40 | 8 |
| Competence of personnel | Inexperienced / untrained personnel. Incorrect execution of tasks. | 3 | 6 | 15 | 270 | - Certified and trained personnel supplied, in accordance with g and standards. | 0,5 | 0,5 | 15 | 3,8 |
| Relay information | Handover over incomplete and/ or wrong procedures | 1 | 3 | 10 | 30 | - Provide complete information, handover correct engineered information and/ or procedures | 1 | 1 | 10 | 10 |

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| Communication | Continue to lift or lower the load when this is not possible – resulting in jamming, tilting or breaking of the cable and/or load | 3 | 3 | 15 | 135 | - Use properly functioning walkie-talkies, preferably with a private channel. Always have a spare battery when working at height | 0,2 | 3 | 15 | 9 |
| | Language barrier | 6 | 6 | 15 | 540 | - One person in each crew who understands English and Arabic<br>- Check if crew understands their job by asking questions | 0,5 | 6 | 3 | 9 |
| Manual handling | Wrong posture for manual handling (backache) | 3 | 6 | 3 | 54 | - Don't handle equipment > 25 kg manual<br>- Lift with a straight back<br>- Use forklift, crane and winch if possible for lifting<br>- Follow procedure as written in HSE procedure Manual g– Saudi Arabia, procedure 4.2.n: Safety requirements in manual handling | 0,2 | 2 | 1 | 0,4 |
| | *4. III. Wellbeing, hygiene and health* | | | | | | | | | |
| Food and canteen | Food poisoning, illness | 1 | 6 | 7 | 42 | - Provide well prepared, thoroughly cooked and healthy food. Keep canteen clean. | 0,5 | 1 | 7 | 3,5 |
| Sleeping accommodation | Bad night rest > resulting in concentration problems | 1 | 6 | 7 | 42 | - Have a silence policy in place, after 11 pm, reduce noises from generators, provide dark blinds for windows and keep room properly cleaned. | 0,5 | 1 | 7 | 3,5 |
| Employee health and fitness | Reduced state of concentration, dangerous situations, reduced awareness and supervision effectiveness | 0,5 | 10 | 10 | 50 | - Sufficient rest time at night and breaks during the day taken by employees (guideline is 7 / 8 hours of sleep per night) | 0,5 | 1 | 10 | 5 |
| Employee health and fitness / continued | Reduced state of concentration, dangerous situations, reduced awareness and supervision effectiveness | 0,5 | 10 | 10 | 50 | - Provide sufficient food and drinks (quality and quantity) | 0,5 | 1 | 10 | 5 |
| Desert area | Sunburn | 3 | 6 | 15 | 270 | - Protect your skin for sunburn (clothing, long sleeves)<br>- Use anti sunburn cream | 1 | 1 | 10 | 10 |
| | Extreme heat – heat stroke | 3 | 6 | 15 | 270 | - Adjust working speed<br>- Drink enough water & minerals<br>- Take short breaks | 1 | 1 | 10 | 10 |

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| | | | | | | ***5. IV. Rig move equipment*** | | | | |
| **Mobilisation of rig move cranes** | **Faulty equipment** | **3** | **3** | **15** | **135** | - **Third party inspection takes place prior to rigmove (2 or 3 weeks before) at rigmovers yard**<br>- **Cranes shall have a valid third party inspection sticker and certificate.**<br>- **Any slight oil leakage from outriggers pistons and boom pistons to be repaired prior transportation** | **0,5** | **1** | **15** | **7,5** |
| | **Safety equipment / installations (LMB, brakes, etc.), outrigger out of order** | **1** | **2** | **40** | **80** | - **Mobilize third party inspector on site and inspect all cranes before commencing mobilisation operations/ transport**<br>- **Check cranes on site according daily/ weekly checklist cranes (HSE procedure Manual g – Saudi Arabia, procedure 4.2.a: crane procedures, Chapter V, Inspection requirements)** | **0,2** | **1** | **40** | **8** |
| **Mobilisation of forklift** | **Faulty equipment / Faulty attachments (fork. Boom)** | **3** | **3** | **15** | **135** | - **Third party inspection takes place prior to rigmove (2 or 3 weeks before) at rigmovers yard**<br>- **All attached equipment shall be OEM recommended and in good working condition**<br>- **Having a valid MOPI certificate of critical areas**<br>- **Inspect forklift on arrival and eliminate likelihood of usage of unsafe equipment (HSE procedure Manual g – Saudi Arabia, procedure 4.2.b: Safety requirements in forklift operations, Chapter III, Daily inspection of forklift trucks)** | **0,5** | **1** | **7** | **3,5** |

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| Mobilizing operators and rigger-1 | Incompetent personnel | 3 | 6 | 15 | 270 | - All operators shall obtain valid SAG and license and fit to work certificates<br>- The additional forklift and crane operators mobilized for the rig move shall have past experience in rig moves<br>- A part of the basic induction, they shall be fully introduced and trained on the rig procedures; they shall be replaced if rig senior supervisors aren't confident about their skills and capabilities<br>- Rigger-1 shall hold a valid Rigger-1 certificate and fit to work certificate (HSE procedure Manual g – Saudi Arabia, procedure 4.2.c: safety requirements in Rigging and lifting) | 0,5 | 0,5 | 15 | 3,75 |
| Mobilizing trucks | Faulty equipment | 3 | 3 | 15 | 135 | - Third party inspection takes place prior to rigmove (2 or 3 weeks before) at rigmovers yard<br>- All attached equipment shall be OEM recommended and in good working condition<br>- Having a valid MOPI certificate of critical areas<br>- Inspect trucks/trailer on arrival and eliminate likelihood of usage of unsafe equipment | 0,5 | 1 | 7 | 3,5 |
| | Drivers | 3 | | | | - A valid medical fitness certificate<br>- Valid driver's license for a truck<br>- Saudi license<br>- Aware of g Journey management and procedures HSE procedure Manual g – Saudi Arabia, procedure 7.4: Road safety compliance & procedure 4.2.l: Safety requirements in Driving) | | | | |

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| ***6. V. Transport (Rig move)*** | | | | | | | | | | |
| **Missing truck** | **Convoy break up** | **3** | **3** | **15** | **90** | - **The drivers have to keep the eyes on the vehicle in front and behind them. In case of any vehicle stopping, they will use the lights and the horn to inform the convoy leader in the lead truck.**<br>- **Mobile phones in every truck. Satellite phone is in every leader's truck.**<br>- **If alerted, the convoy will stop at the next parking area and waiting the missing vehicle**<br>- **If not alerted, the convoy has to stop every 2 driving hours, in which case the convoy leader alerts the truck pusher for that geographical area.**<br>- **Truck pusher will physically check for the missing vehicle to reconnect in his convoy**<br>- **Food and water to be provided in each truck.** | **0,2** | **1** | **3** | **0,6** |
| **Truck break down** | **Convoy break-up** | **3** | **6** | **15** | **270** | - **Tow and repair truck arrangements are available through rig move company rigmover**<br>- **One mobile workshop is available along the route it is composed by 1 mechanic, 1 electrician, and 1 tyre man. The mobile workshop is provided with satellite phone and it is called by the convoy leader.**<br>- **The mobile workshop will repair the truck, which will join the original convoy or the next one.** | **0,5** | **2** | **7** | **7** |
| **Poor communications and instructions are not followed** | **Mobile phone coverage and availability** | **1** | **6** | **40** | **240** | - **All trucks have telephones each convoy leader will have a thuraya phone in lead truck.** | **0,2** | **1** | **3** | **0,6** |
| **Distracted driver, potential collision risk** | **Use of mobile phone while driving** | **3** | **6** | **40** | **720** | - **Use of phones whilst in control of vehicles is prohibited.**<br>- **Drivers must pull over to make a call.** | **0,5** | **1** | **3** | **1,5** |

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| Adverse weather conditions. Reduced visibility | Sand storms and heavy rains | 3 | 3 | 15 | 90 | - Adverse weather guidelines require a minimum sight of 200 meter.<br>- Safe stopping areas are identified on route maps<br>- Experience and knowledge of the drivers and lead vehicle supervisors | 0,2 | 1 | 3 | 0,6 |
| Camels on road, possible collision risk – fatal accidents known | Wild animals cause obstructions | 0,5 | 3 | 10 | 15 | - Convoy rules require lead escort vehicle and drivers, to slow down and to turn on hazard lights | 0,1 | 1 | 3 | 0,3 |
| Congested roads leading to delays and potential damage of loads | Many sections of the skid road are single track | 6 | 3 | 15 | 270 | - Lead escort vehicle to notify of oncoming traffic<br>- There are potential passing places available<br>- Experience of move team – competent supervision | 1 | 1 | 7 | 7 |
| Road conditions are poor, increased travel times | Conditions poor, due to road works | 6 | 3 | 15 | 270 | - Generally, the road surface is considered to be good during pre-move assessments of the route road and condition will be discussed at each trip.<br>- Speed restrictions areas on the route are identified for the lead vehicle.<br>- Skid road use by heavy vehicles will be minimized.<br>- At least one tow vehicle to be on standby at known soft sand spots<br>- Advance move party will advise convoy of poor conditions and unexpected road works on route. | 1 | 1 | 7 | 7 |
| Mental attention of drivers, loss of control of the vehicle | Fatigue for drivers as a result of extended journeys | 3 | 3 | 40 | 360 | - Every 2 driving hours stop for 15 minutes<br>- Regular stops are planned on each day.<br>- Alternative stopping points are available and identified.<br>- The maximum distance to be travelled in one trip is 530 km.<br>- Each day's timetable allows for at least 12 hours rest time<br>- No smoking policy while driving | 0,2 | 1 | 40 | 8 |

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| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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| DF01E/3/110209 | Written: 02-07-2013 | Location: | |

## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| Road traffic, potential for accidents | Vehicle accident, injuries | 3 | 6 | 40 | 720 | - Total convoy stops: lead and tail vehicles to be in position<br>- Emergency plans for accident and notification of local emergency services include contact telephone numbers<br>- All trucks will have a first aid kit in the cabin | 1 | 1 | 3 | 3 |
| Road traffic | Traffic incident (non-involvement) | 1 | 6 | 40 | 240 | - Competent convoy leader.<br>- Follow police instructions<br>- Good communication to be maintained | 0,1 | 2 | 7 | 1,4 |
| Security, injury or loss of property | Theft, assaults, etc. | 3 | 3 | 10 | 90 | - Close liaison with the police<br>- Security posts are located on route, identified on route plans<br>- Vehicles to be keep locked when unattended | 0,2 | 1 | 10 | 2 |
| Terrorist interest, attack | | 0,2 | 0,5 | 40 | 4 | - Communications with local police and security services | 0,1 | 0,5 | 15 | 0,75 |
| Medical incidents and injuries | Occupational incidents - injuries | 3 | 3 | 40 | 360 | - First aid kits in all vehicles<br>- Emergency civil support locally.<br>- Contact numbers as part of the move plan<br>- Every run is covered by one hospital that satisfies the Saudi & g standards | 0,2 | 1 | 7 | 1,4 |
| Fire in vehicle cab | Smoking, etc. | 3 | 1 | 15 | 45 | - Fire fighting extinguishers on-board.<br>- Safety equipment checks<br>- Professional drivers<br>- Vehicles condition to be checked and verified (daily)<br>- No smoking while driving<br>- Convoy rules to stop | 0,5 | 0,5 | 7 | 1,75 |
| Dropped equipment / load | Unsafe, unstable loads | 6 | 3 | 10 | 180 | - Cargo check sheet, every day, every stop and pre-trip.<br>- Loading supervisor – to be available and g personnel. | 0,5 | 1 | 7 | 3,5 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| Low bridges, overhead telephone and power lines | Overhead snagging | 3 | 3 | 40 | 360 | - Route survey – Highest load not to exceed 5,5 meter<br>- Truck pusher vehicle will check with a measure lowest bridge is 5,5 meter | 0,2 | 1 | 7 | 1,4 |
| Overloading of structures | Overloading of bridge | 3 | 2 | 40 | 240 | - Pre-route checks have confirmed no weight limitations on crossing points | 0,2 | 1 | 3 | 0,6 |
| Vehicle stability | Soft sand | 6 | 6 | 7 | 252 | - Vehicle recovery: experienced personnel, drivers<br>- Towing equipment to be inspected up to lifting equipment criteria. Part of safety checks, colour coding system in place<br>- Capacity of lifting equipment is above the towing capacity of the truck.<br>- Condition of the skid road will be checked | 1 | 2 | 3 | 6 |
| Environmental impact | Waste disposal | 3 | 6 | 15 | 270 | - Disposal at approved stopping places | 0,2 | 2 | 15 | 6 |
| Welfare | Lack of interest | 1 | 6 | 10 | 60 | - Sanitary facilities – re-stocking of water and food is possible at all planned stopping areas.<br>- Prayer facilities are also accommodated. | 0,2 | 1 | 6 | 1,2 |
| Collision with another vehicle or building | Up to 18ft wide loads | 3 | 3 | 15 | 135 | - Lighting and marking of convoys especially wide loads.<br>- Lead escort vehicle to communicate upcoming hazards and obstacles.<br>- Move in daylight hours only. | 0,2 | 3 | 3 | 1,8 |
| Country specific requirements for heavy vehicles | Legal requirements not addressed | 3 | 3 | 15 | 135 | - Move plan requirements and pre-assessment<br>- Check if a police escort is requirement in KSA, especially for urban areas etc.<br>- All the permits will be obtained by rig move company. | 0,2 | 3 | 3 | 1,8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| *7. A. Work specific risks according to project planning* | | | | | | | | | | |
| **7.1. Mudsystem** | | | | | | | | | | |
| Lifting of mudsystem parts (general) | Injured people and/or damage of material | 3 | 6 | 15 | 270 | - Personal need to be trained in rigging and slinging<br>- Lifting with certified lifting gear<br>- Use proper PPE (gloves, helmet, boots, coverall, glasses)<br>- Toolbox Talk (TBT) with all people involved in the operation<br>- Designated Banksman – Rigger-1 | 1 | 3 | 1 | 3 |
| Assemble stairs (general) | Injured people and/or damage of material | 3 | 6 | 15 | 270 | - Personal needs to be trained in rigging and slinging<br>- Lifting with certified lifting gear<br>- Use proper Personal Protective Equipment (PPE) (gloves, helmet, boots, coverall, glasses)<br>- Careful placing fingers, hands and feet during installation<br>- Use taglines | 1 | 3 | 1 | 3 |
| (Un)load and (dis)assemble Shaker tank (weight: 20 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift shaker tank according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe- & dump lines | 6 | 3 | 3 | 54 | - Shaker tank needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed.<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

Step 1. Fill-in activity  Step 2. Assign danger/consequence  Step 3. Calculate risk (= K x B x E)  Step 4. Assign measures  Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is<br>- TBT with all people involved in the operation<br>- Barrier the area for personnel which is not involved in the oepration | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis) assemble Vacuum degasser from shaker tank (weight: 1 mT) | - Injured people and/or damage of material | | | | | - Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Use tagline | | | | |
| | Damage of equipment / construction | 3 | 3 | 7 | 63 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed | 1 | 3 | 7 | 21 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman<br>- TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is<br>- Barrier the area for personnel which is not involved in the operation | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble Shale-shaker skid on(of) top of shale shaker tank (Weight: 17 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift shale shaker skid according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Damage to shale-shakers / mud cleaner | 1 | 3 | 10 | 30 | - Check if the shale-shakers are secured before lifting | 0,5 | 3 | 3 | 4,5 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Damage of equipment / construction | 3 | 3 | 7 | 63 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the shale shaker skid | 1 | 3 | 7 | 21 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is<br>- Barrier the area for personnel which is not involved in the operation | 0,2 | 3 | 7 | 4,2 |
| | Falling of shale-shaker skid after (dis)connecting the lifting gear | 3 | 3 | 10 | 90 | - Use safety belt during disconnecting the lifting gear at height (life-saving rules)<br>- Barrier the gaps in the handrails | 1 | 2 | 10 | 20 |
| (Un)load and (dis)assemble intermediate tank (weight: 25 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift intermediate tank according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe- & dump lines | 6 | 3 | 3 | 54 | - Intermediate tank needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Un)load and (dis)assemble Suction/mix tank (Weight: 24 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift suction tank according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe- & dump lines | 6 | 3 | 3 | 54 | - Suction tank needs to be cleaned before leaving the old location (flushing)<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble reserve tank 01 (Weight: 24 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift reserve tank 01 according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe-lines | 6 | 3 | 3 | 54 | - reserve tank 01 needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
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**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble reserve tank 02 (Weight: 24 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift reserve tank 02 according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe-lines | 6 | 3 | 3 | 54 | - Reserve tank 02 needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble Mixing skid (Weight: 5 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift Mixtank according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe-lines | 6 | 3 | 3 | 54 | - mixtank needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
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| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed.<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble water tank 01 (Weight: 24 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift water tank 01 according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble water tank 02 (Weight: 24 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift water tank 02 according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the tank | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| Unload and install big bag crane | Working at height | 1 | 3 | 15 | 45 | - Use safety belt with double fall arrestor<br>- Make use of a manbasket during (dis)connecting lifting gear<br>- Wear the safety belt in a proper way<br>- TBT with all people involved in the operation | 0,5 | 3 | 7 | 10,5 |
| | Damage of equipment during lifting / installation | 1 | 3 | 10 | 30 | - Only use certified lifting equipment<br>- Only use certified / checked pad-eyes | 0,5 | 3 | 10 | 15 |
| | Personnel gets injured by dropped objects | 3 | 3 | 3 | 27 | - Barrier the area<br>- People not involved of the operation need to be out of the way | 3 | 3 | 1 | 9 |
| | Damage to equipment during installation | 1 | 3 | 10 | 30 | - Make use of guide ropes<br>- People not involved of the operation need to be out of the way<br>- Check if hoist is fixed before start lifting | 0,5 | 3 | 7 | 10,5 |
| (Un)load and (dis)assemble supercharge pump manifold (Weight: 6 mT) | Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift supercharge pump manifold according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe-lines | 6 | 3 | 3 | 54 | - Supercharge pump manifold needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the supercharge skid | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | EXPOSURE - B | | EFFECT - E | | |
|---|---|---|---|---|---|---|
| Expectable | 10 | Continuous (direct access) | 10 | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | Continuous (indirect access) | 6 | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | Regularly – daily | 6 | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | Occasional – weekly | 3 | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | Incidental – monthly | 2 | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | Rarely - several times a year | 1 | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | Very rare - once a year | 0,5 | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble Brake cooling skid (Weight: n.a. mT) | Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift brake cooling skid according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe-lines | 6 | 3 | 3 | 54 | - Cooling tower + poor-boy degasser skid needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the brake cooling skid | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble trip tank (Weight: 4 mT) | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe-lines | 6 | 3 | 3 | 54 | - Trip tank needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and well stowed<br>- Check for loose items on top of the trip tank | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | | 10 | Continuous (direct access) | | 10 | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | | 6 | Continuous (indirect access) | | 6 | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | | 3 | Regularly – daily | | 6 | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | | 1 | Occasional – weekly | | 3 | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | | 0,5 | Incidental – monthly | | 2 | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | | 0,2 | Rarely - several times a year | | 1 | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | | 0,1 | Very rare - once a year | | 0,5 | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| | | | | | | - | | | | |
| **7.2. Mudpumps** | | | | | | | | | | |
| (Un)load and position mudpumps (Weight: 37,5 mT) | Critical lift / tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift mudpump according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- Toolbox talk with all involved people | 0,2 | 1 | 40 | 8 |
| | Mud residue's in the pipe-lines | 6 | 3 | 3 | 54 | - Mud pumps needs to be cleaned before leaving the old location<br>- Use bags or blind caps to plug of the lines | 0,5 | 3 | 1 | 1,5 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected. | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (dis)assemble stairs (general) | Injured people and/or damage of material | 3 | 6 | 15 | 270 | - Personal need to be trained in rigging and slinging<br>- Lifting with certified lifting gear<br>- Use proper PPE (gloves, helmet, boots, coverall, glasses)<br>- Careful placing fingers and feed during installation<br>- Use taglines | | | | |
| | | | | | | - | | | | |
| **7.3. Substructure** | | | | | | | | | | |
| (Un)load and position front base box ODS (Weight: 38 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift front base box ODS according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers | 0,2 | 1 | 40 | 8 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is (well cellar!) | 0,2 | 3 | 7 | 4,2 |
| (dis)assemble base box spreader V-door side | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Taglines<br>- Check where you put fingers and feet during installation process<br>- Stand on a stable surface when hammering | 0,2 | 1 | 40 | 8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Un)load and position front base box DS (Weight: 38 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift front base box DS according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hydraulic hoses are disconnected. | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is (well cellar!) | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble rear base box DS (Weight: 39 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift rear base box DS according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – competent person<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (dis)assemble base box spreader DWS side | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Taglines<br>- Check where you put fingers and feet during installation process<br>- Stand on a stable surface when hammering | 0,2 | 1 | 40 | 8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Un)load and (dis)assemble rear base box ODS (Weight: 39 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift rear base box ODS according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hydraulic hoses are disconnected. | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – competent person<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (dis)assemble drill floor elevator box ODS (Weight: n.a. mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift drill floor elevator box ODS according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – competent person<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

Step 1. Fill-in activity  Step 2. Assign danger/consequence  Step 3. Calculate risk (= K x B x E)  Step 4. Assign measures  Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Un)load and (dis)assemble drill floor elevator box DS (Weight: n.a. mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift drill floor elevator box DS according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hydraulic hoses are disconnected. | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – competent person<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Dis)assemble front legs ODS & DS (inside legs) | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Taglines<br>- Check where you put fingers and feet during installation process<br>- Stand on a stable surface when hammering | 0,2 | 1 | 40 | 8 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – competent person<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Dis)assemble secondary front legs ODS & DS (outside legs) | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Taglines<br>- Check where you put fingers and feet during installation process<br>- Stand on a stable surface when hammering | 0,2 | 1 | 40 | 8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| | Expectable | 10 | | Continuous (direct access) | 10 | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| | Unusual but likely | 3 | | Regularly – daily | 6 | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| | Possible but unlikely | 1 | | Occasional – weekly | 3 | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| | Unlikely | 0,5 | | Incidental – monthly | 2 | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| | Highly unlikely | 0,2 | | Rarely - several times a year | 1 | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| | Almost impossible | 0,1 | | Very rare - once a year | 0,5 | Little – Injury (no time lost) | Damage ◄€350 | 1 |

Step 1. Fill-in activity  Step 2. Assign danger/consequence  Step 3. Calculate risk (= K x B x E)  Step 4. Assign measures  Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – competent person<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| (Un)load and (Dis)assemble rotary spreader (weight: 14 mT) | damaged of material and/ or injured people | 1 | 3 | 40 | 120 | - Designated Banksman<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Stand on a stable surface when hammering<br>- Make use of tagline<br>- Check where you put fingers and feet during installation process | 0,2 | 1 | 40 | 8 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| (Un)load and (Dis)assemble front drawworks support spreader (Weight: n.a. mT) | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| | Lifting front drawworks spreader – damaged of material and/ or injured people | 1 | 3 | 40 | 120 | - Designated Banksman - Competent person<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Stand on a stable surface when hammering<br>- Make use of tagline | 0,2 | 1 | 40 | 8 |
| (Un)load and (Dis)assemble rear drawworks spreader (Weight: n.a. mT) | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| | Lifting rear drawworks spreader – damaged of material and/ or injured people | 1 | 3 | 40 | 120 | - Designated Banksman - Competent person<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Stand on a stable surface when hammering<br>- Make use of tagline | 0,2 | 1 | 40 | 8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| | Expectable | 10 | | Continuous (direct access) | 10 | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| | Unusual but likely | 3 | | Regularly – daily | 6 | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| | Possible but unlikely | 1 | | Occasional – weekly | 3 | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| | Unlikely | 0,5 | | Incidental – monthly | 2 | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| | Highly unlikely | 0,2 | | Rarely - several times a year | 1 | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| | Almost impossible | 0,1 | | Very rare - once a year | 0,5 | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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| DF01E/3/110209 | Written: 02-07-2013 | Location: | |

## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Dis)assemble Hydraulic cathead supports | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| | damaged of material and/ or injured people | 1 | 3 | 40 | 120 | - Designated Banksman - Competent person<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Stand on a stable surface when hammering<br>- Make use of tagline | 0,2 | 1 | 40 | 8 |
| (Un)load and (Dis)assemble setback spreader (weight: 15 mT) | damaged of material and/ or injured people | 1 | 3 | 40 | 120 | - Designated Banksman<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Stand on a stable surface when hammering<br>- Make use of tagline<br>- Check where you put fingers and feet during installation process | 0,2 | 1 | 40 | 8 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| (Un)load and (Dis)assemble Drawworks Drum (weight: 40 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift drawworks drum according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if there are no transport damages (resulted in loose items on top) | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object | 0,2 | 3 | 7 | 4,2 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is, rigfloor is still not finished | 1 | 3 | 7 | 21 |
| (Un)load and (Dis)assemble Drawworks Drive (weight: 21 mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift drawworks drive according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if there are no transport damages (resulted in loose items on top) | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object | 0,2 | 3 | 7 | 4,2 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is, rigfloor is still not finished | 1 | 3 | 7 | 21 |
| (Un)load and (Dis)assemble rotary table (Weight: 16 mT) | Critical lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift rotary table according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object | 0,2 | 3 | 7 | 4,2 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Work at height – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement) | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 6 | 3 | 15 | 270 | - No unauthorised access to drill-floor during work at height | 1 | 1 | 15 | 15 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is, rigfloor is still not finished | 1 | 3 | 7 | 21 |
| Install rigfloor panels | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency and for gaps in rig floor<br>- Make use of taglines | 1 | 3 | 7 | 21 |
| | Work at height – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement) | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 6 | 3 | 15 | 270 | - No unauthorised access to drill-floor during work at height | 1 | 1 | 15 | 15 |
| Install platform with air vessels | Lift platform with air vessels – injured people and/or damaged material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Make use of taglines | 0,2 | 1 | 40 | 8 |
| | Work at height – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement) | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 6 | 3 | 15 | 270 | - No unauthorised access to drill-floor during work at height | 1 | 1 | 15 | 15 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Un)load and (Dis)assemble drillers console (weight: 1 mT) | Vulnerable lift– injured people and/or damaged material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Make use of tagline<br>- Check for loose items before lifting the drillers console<br>- Lift with great care because of vulnerable equipment | 0,2 | 1 | 40 | 8 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| (Un)load and (Dis)assemble drillers cabin | injured people and/or damaged material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Make use of tagline | 0,2 | 1 | 40 | 8 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation Don't stand in between load and fixed object<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| Unfold/fold up doghouse support | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Stand on a stable surface when hammering | 1 | 3 | 7 | 21 |
| (Un)load and (Dis)assemble doghouse (Weight: 10,3 mT) | Lift doghouse – injured people and/or damaged material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Make use of taglines<br>- Check for loose items before lifting the doghouse<br>- Lift with great care because of vulnerable equipment | 0,2 | 1 | 40 | 8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| | Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| | Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| | Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| | Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| | Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| | Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation<br>- Don't stand in between load and fixed object<br>- Don't stand underneath a suspended load<br>- Check your surroundings in case of emergency<br>- Stand on a stable surface when hammering | 1 | 3 | 7 | 21 |
| Install several stairs | Hook-up stairs, connect pin connections – work at height - falls | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Secure tools | 0,5 | 3 | 7 | 10,5 |
| Install several handrails around rigfloor | Hook-up handrails, connect pin connections – work at height - falls | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Secure tools | 0,5 | 3 | 7 | 10,5 |
| Install standpipe skid (ODS) | Hook-up skid – work at height - falls | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Don't stand in between load and fixed object<br>- Don't stand underneath a suspended load<br>- Check your surroundings in case of emergency<br>- Stand on a stable surface when hammering | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 3 | 6 | 10 | 180 | - Secure tools | 1 | 2 | 10 | 20 |
| Install BOP beams | Lift beams – tandem lift (crane + winch) | 3 | 3 | 15 | 135 | - Stand on a stable surface when hammering<br>- Lift beams according lifting plan, supervised by Rigger-1<br>- Maintain direct contact with crane & winch operators (by radio or visual contact)<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| | injured people and/or damaged material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Stand on a stable surface when hammering | 0,2 | 1 | 40 | 8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| Install BOP hoists | injured people and/or damaged material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| Visual inspection of subbase | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - Slips, trips and falls<br>- Check your surroundings in case of emergency | 1 | 3 | 7 | 21 |
| Lower / Raise subbase (rigfloor)<br>Can only be done when mast is raised! | Lower / Raise subbase (rigfloor)- Critical operation - Falling structure, falling equipment, fatalities. | 0,5 | 6 | 100 | 300 | - TBT with all people involved in the operation clear and barrier the danger zone for non-essential personnel<br>- all activities in immediate vicinity (danger zone) stopped during raising process<br>- Check hydraulic system & indicators hydraulic unit<br>- active supervision<br>- Checklist filled out and signed by senior personnel<br>- one man in charge of operation (g)<br>- monitor movement of substructure<br>- monitor moving parts from safe distance | 0,5 | 3 | 7 | 10,5 |
| | Install central support (pin connection) - Falling structure, falling equipment, fatalities. | 1 | 6 | 40 | 240 | - Discuss installation sequence substructure supports (pin connection)<br>- Stand on stable surface when hammering | 0,5 | 6 | 7 | 21 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start raising check if there are no loose items on top of rigfloor. | 1 | 3 | 3 | 9 |
| | Cranes drivers don't follow up the signals (standby in case of emergency) | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is (well cellar!) | 0,2 | 3 | 7 | 4,2 |
| **7.4. Mast** | | | | | | | | | | |
| (Dis)assemble and (Un)load mast bottom section<br>(Weight: 11,3 mT) | Install mast section - Work at height | 1 | 3 | 15 | 45 | - Use manbasket and secure twin fall arrest harness to manbasket<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Damage to connections and falling equipment | 3 | 6 | 7 | 126 | - Check if all piping and hoses connections are cleaned before commencing lift (ODS)<br>- Check if connections need a new seal (ODS) | 1 | 6 | 3 | 18 |
| | 2 crane operation - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift lower mast section according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- Dedicated banks man<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Critical lift – Man-basket operation | 1 | 3 | 15 | 45 | - PTW, TRIC-card, TBT with all people involved in the operation<br>- Make use of tagline<br>- Use man-basket and secure twin fall arrest harness to man-basket, secure tools<br>- Secure hand tools with help of lanyard<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,5 | 3 | 7 | 10,5 |
| (Dis)assemble and (Un)load hydraulic cylinder to mast bottom section | Critical lift / 2 crane operation - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift lower mast section according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- Dedicated banks man - Rigger-1<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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| | | Project : | |
| DF01E/3/110209 | Written: 02-07-2013 | Location: | |

## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Critical lift – Man-basket operation | 1 | 3 | 15 | 45 | - PTW, TRIC-card, TBT with all people involved in the operation<br>- Make use of tagline<br>- Use man-basket and secure twin fall arrest harness to man-basket<br>- Secure hand tools with help of lanyard<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,5 | 3 | 7 | 10,5 |
| | Damage to fitting (hydraulic cylinder) and falling equipment (pin) | 3 | 6 | 7 | 126 | - Check if the holes are lined up proper (visual check)<br>- Grease fitting<br>- Secondary retention pin connection | 1 | 6 | 3 | 18 |
| (Dis)assemble and (Un)load back face truss from bottom mast section | Heavy load - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Critical lift – Man-basket operation | 1 | 3 | 15 | 45 | - PTW, TRIC-card, TBT with all people involved in the operation<br>- Make use of tagline<br>- Use man-basket and secure twin fall arrest harness to man-basket<br>- Secure hand tools with help of lanyard<br>- Barrier the area for personnel which is not involved in the operation<br>- Don't step out of the manbasket<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,5 | 3 | 7 | 10,5 |
| | Install back face truss - Work at height | 1 | 3 | 15 | 45 | - Use man-basket and secure twin fall arrest harness to man-basket<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| Position and (un)load catwalk with travelling block | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points if available<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| (Dis)assemble and (Un)load lower intermediate mast section | Install mast section - Work at height | 1 | 3 | 15 | 45 | - Secure twin fall arrest harness to pre-installed steelwire (steelwire attached to yellow posts at each mast section)<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |
| | Damage to connections and falling equipment | 3 | 6 | 7 | 126 | - Check if all piping and hoses connections are cleaned before commencing lift.<br>- Check if connections need a new seal (HP standpipe) | 1 | 6 | 3 | 18 |
| | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift lower intermediate mast section<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| (Dis)assemble and (Un)load upper intermediate mast section | Install mast section - Work at height | 1 | 3 | 15 | 45 | - Use twin fall arrest harness to pre-installed steelwire (steelwire attached to yellow posts at each mast section)<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |
| | Damage to connections and falling equipment | 3 | 6 | 7 | 126 | - Check if all piping and hoses connections are cleaned before commencing lift.<br>- Check if connections need a new seal (HP standpipe) | 1 | 6 | 3 | 18 |
| | Unroll/coil-up service loop on mast section (ODS section) | | | | | - Check service-loop support<br>- Don't walk under suspended load<br>- Use synthetic sling, no steel-wire sling | | | | |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | | 10 | Continuous (direct access) | | 10 | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | | 6 | Continuous (indirect access) | | 6 | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | | 3 | Regularly – daily | | 6 | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | | 1 | Occasional – weekly | | 3 | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | | 0,5 | Incidental – monthly | | 2 | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | | 0,2 | Rarely - several times a year | | 1 | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | | 0,1 | Very rare - once a year | | 0,5 | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift upper intermediate mast section<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| (Dis)assemble and (Un)load upper mast section | Install mast section - Work at height | 1 | 3 | 15 | 45 | - Use twin fall arrest harness to pre-installed steelwire (steelwire attached to yellow posts at each mast section)<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |
| | Damage to connections and falling equipment | 3 | 6 | 7 | 126 | - Check if all piping and hoses connections are cleaned before commencing lift.<br>- Check if connections need a new seal | 1 | 6 | 3 | 18 |
| | Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift upper mast section<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| (Dis)assemble and (Un)load topsection (topsection & lower topsection) with crown skid (weight: 21,5 mT) | Install mast section - Work at height | 1 | 3 | 15 | 45 | - Use twin fall arrest harness to pre-installed steelwire (steelwire attached to yellow posts at each mast section)<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |
| | Damage to connections and falling equipment | 3 | 6 | 7 | 126 | - Check if all piping and hoses connections are cleaned before commencing lift.<br>- Check if connections need a new seal | 1 | 6 | 3 | 18 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift topsection according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- Cranes need to have big mats underneath there outriggers<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| Reeve-in/out of drill-line | Damage to equipment | 3 | 3 | 3 | 50 | - Monitor movement of drill-line<br>- Direct communication between involved and operator of drill-line spool | 1 | 3 | 3 | 9 |
| | Injuries to personnel | 3 | 3 | 15 | 135 | - Keep hands clear of dangerous areas and moving parts during process<br>- Active supervision<br>- Direct communication between involved crewmembers and operator of drill-line spool | 1 | 3 | 7 | 21 |
| (Dis)assemble several steel-wire cables | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation | 1 | 3 | 7 | 21 |
| | Work at height – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Use man-basket if possible/necessary | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 3 | 6 | 10 | 180 | - Barrier of area<br>- Only involved people present at the jobsite<br>- Secure tools with help of lanyard | 1 | 2 | 10 | 20 |
| | Damage to equipment | 3 | 3 | 7 | 63 | - Check state of snatch blocks / sheaves<br>- Check secondary retention of shackles and snatch blocks<br>- Secure dead end with additional steel cable | 1 | 3 | 7 | 21 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Dis)assemble several hoses / service loop | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation | 1 | 3 | 7 | 21 |
| | Work at height – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Use man-basket if possible/necessary | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 3 | 6 | 10 | 180 | - Barrier the area, only involved people present<br>- Secure tools with help of lanyard | 1 | 2 | 10 | 20 |
| | Damage to equipment | 3 | 3 | 7 | 63 | - Check state of supports<br>- Secure bolts of supports with lock-wire when necessary | 1 | 3 | 7 | 21 |
| (Dis)assemble and (Un)load racking board (Weight: 4 mT) | Work at height – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement) | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 3 | 6 | 10 | 180 | - Barrier the area, only involved people present<br>- Secure tools with help of lanyard | 1 | 2 | 10 | 20 |
| | Critical lift / tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Barrier the area for personnel which is not involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points<br>- TBT with all people involved in the operation | 0,2 | 1 | 40 | 8 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| | equipment jammed, sudden release | 6 | 3 | 7 | 126 | - Keep hands clear of dangerous areas and moving parts during lifting<br>- Active supervision<br>- TBT with all people involved in the operation | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| | Expectable | 10 | | Continuous (direct access) | 10 | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| | Unusual but likely | 3 | | Regularly – daily | 6 | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| | Possible but unlikely | 1 | | Occasional – weekly | 3 | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| | Unlikely | 0,5 | | Incidental – monthly | 2 | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| | Highly unlikely | 0,2 | | Rarely - several times a year | 1 | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| | Almost impossible | 0,1 | | Very rare - once a year | 0,5 | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| Visual inspection of mast | Work at height | 1 | 3 | 15 | 45 | - Use man-basket and secure twin fall arrest harness to man-basket<br>- Always one fall arrest line secured during movement<br>- Secure tools with help a lanyard | 0,5 | 3 | 7 | 10,5 |
| Lower / Raise mast | Critical operation – Falling structure, falling equipment, fatalities | 0,5 | 6 | 100 | 300 | - TBT with all people involved in the operation clear and Barrier danger zone for non-essential personnel<br>- all activities in immediate vicinity (danger zone) stopped during lowering process<br>- Check hydraulic system & indicators hydraulic unit<br>- Checklist filled out and signed by senior personnel<br>- Active supervision<br>- One person in charge of the operation<br>- monitor movement of substructure<br>- monitor moving parts from safe distance | 0,5 | 3 | 7 | 10,5 |
| | Work at height | 1 | 3 | 15 | 45 | - Use secure twin fall arrest harness<br>- Secure tools with help of lanyard<br>- Barrier the working area underneath the mast | 0,5 | 3 | 7 | 10,5 |
| | Install A-leg in mast shoe (pin connection) - Falling structure, falling equipment, fatalities. | 1 | 6 | 40 | 240 | - Discuss installation sequence A-leg (pin connection)<br>- Stand on stable surface when hammering | 0,5 | 6 | 7 | 21 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start raising check if there are no loose items in the mast construction | 1 | 3 | 3 | 9 |
| | Cranes drivers don't follow up the signals (standby in case of emergency) | 3 | 3 | 7 | 63 | - Designated Banksman<br>- Check your surroundings and make sure you know where your escape route is (well cellar!) | 0,2 | 3 | 7 | 4,2 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| | Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| | Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| | Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| | Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| | Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| | Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| **7.5. Actions after raising & before lowering mast and substructure** | | | | | | | | | | |
| (Un)load and (dis)assemble several stairs | Hook-up stairs, connect pin connections – work at height - falls | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Use man-basket if needed<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |
| (Un)load and (dis)assemble several pieces of handrail | Hook-up handrails, connect pin connections – work at height - falls | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Use man-basket if needed<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |
| (Un)load and (dis)assemble torque tube topdrive | Work at height – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement) | 0,5 | 3 | 7 | 10,5 |
| | Work at height - Falling tools & equipment | 6 | 3 | 15 | 270 | - No unauthorised access to drill-floor during work at height | 1 | 1 | 15 | 15 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation | 1 | 3 | 7 | 21 |
| (Un)load and (dis)assemble topdrive with skid (Weight: 17 mT) | Work at height (access to topdrive) – Falling personnel | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement) | 0,5 | 3 | 7 | 10,5 |
| | Work at height (connecting) - Falling tools & equipment | 6 | 3 | 15 | 270 | - No unauthorised access to drill-floor during work at height (connecting)<br>- Secure tools with help of lanyard | 1 | 1 | 15 | 15 |
| | Moving parts (travelling block) | 3 | 3 | 10 | 90 | - Drawworks switched off during operation, driller present | 0,1 | 3 | 10 | 3 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation | 1 | 3 | 7 | 21 |
| (dis)assemble HP-hose & service-loop to topdrive | Work at height (connecting) - Falling tools & equipment | 6 | 3 | 15 | 270 | - No unauthorised access to drill-floor during work at height (connecting)<br>- Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Secure tools with lanyard | 1 | 1 | 15 | 15 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

Step 1. Fill-in activity  Step 2. Assign danger/consequence  Step 3. Calculate risk (= K x B x E)  Step 4. Assign measures  Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Moving parts (topdrive / hoses) | 3 | 3 | 10 | 90 | - Drawworks / winch switched off during operation, driller present | 0,1 | 3 | 10 | 3 |
| | Getting jammed, trapped fingers, hands, limbs | 3 | 3 | 7 | 63 | - TBT with all people involved in the operation | 1 | 3 | 7 | 21 |
| (Un)load and (dis)assemble ramp V-door | Hook-up ramps, connect pin connections – work at height - falls | 1 | 3 | 15 | 45 | - Use twin fall arrest harness (always one fall arrest line secured during movement)<br>- Use man-basket if needed<br>- Secure tools with help of lanyard | 0,5 | 3 | 7 | 10,5 |
| Install derrick man escape device | Work at height | 1 | 3 | 15 | 45 | - Use twin fall arrest harness in mast<br>- Secure tools with help of lanyard<br>- Barrier rigfloor | 0,5 | 3 | 7 | 10,5 |
| Position choke manifold | Damaging equipment, injured personnel | 3 | 3 | 10 | 90 | - Use designated lifting eyes<br>- Use taglines<br>- Stand clear of manifold when lifting | 1 | 3 | 3 | 9 |
| **7.6. Power plant** | | | | | | | | | | |
| (Un)load and position generators (emergency, gen 1 till 4) (weight: 26 mT) | Environmental damage | 3 | 6 | 15 | 270 | - Check if diesel has been pumped out of generator | 0,5 | 6 | 3 | 9 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| | Critcal lift / Tandem lift - Lifting generator | 1 | 3 | 15 | 45 | - Lift generator in accordance with lifting plan<br>- Barrier lifting area<br>- Keep hands clear of dangerous areas and moving parts during lifting | 1 | 2 | 7 | 14 |
| | Injured personnel | 1 | 3 | 10 | 30 | - Use designated lifting eyes<br>- Stand clear of generator when lifting | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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| | | Project : | |
| DF01E/3/110209 | Written: 02-07-2013 | Location: | |

## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| (Un)load and position SCR container (weight: 24 mT) | Critcal lift / Tandem lift - Lifting sCR container | 1 | 3 | 15 | 45 | - Lift PCR in according Lift plan<br>- Barrier off lifting area<br>- Keep hands clear of dangerous areas and moving parts during lifting | 1 | 2 | 7 | 14 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| | Injured personnel | 1 | 3 | 10 | 30 | - Use designated lifting eyes<br>- Stand clear of generator when lifting | 1 | 3 | 3 | 9 |
| (Un)load and (dis)assemble grasshopper | Working at height – connect grasshopper to drawworks bridge before raising | 1 | 3 | 15 | 45 | - Use twin fall arrest harness<br>- Secure tools with help of lanyard<br>- Stand on stable surface when hammering | 0,5 | 3 | 7 | 10,5 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banks man – competent person<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| | Injured personnel | 1 | 3 | 10 | 30 | - Use designated lifting eyes<br>- Stand clear of generator when lifting | 1 | 3 | 3 | 9 |
| **7.7. Mini & Main camp** | | | | | | | | | | |
| Containers 20'& 40' | Damage to equipment, injured personnel | 1 | 6 | 10 | 60 | - All standard sized containers are lifted on top of the containers, corner lifting pockets or different when mentioned with stickers<br>- When using ladder, second person to hold the ladder<br>- Use taglines<br>- Barrier lifting area for non-essential crew | 0,5 | 3 | 3 | 4,5 |
| Storage container | Damage to equipment, injured personnel | 1 | 3 | 10 | 30 | - Use appropriate lifting equipment: in accordance with procedure<br>- Use taglines, stand clear of tank when lifting | 0,5 | 3 | 3 | 4,5 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| **7.8. Dieseltanks** | | | | | | | | | | |
| Unload an position diesel storage tanks (Weight: ?? mT) | Critical lift / Tandem lift - Environmental damage, damage to equipment, injured personnel | 3 | 6 | 15 | 270 | - Check level of diesel in tanks, gives indication of weight!<br>- Empty drip-trays (no traces of diesel on outside of tank)<br>- Use the dedicated lifting eyes<br>- Use appropriate lifting equipment in accordance with procedure<br>- Use taglines, stand clear of tank when lifting | 1 | 6 | 3 | 18 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| Unload an position skid with oil drums | Environmental damage, damage to equipment, injured personnel | 3 | 6 | 10 | 180 | - Check if oil drums are closed | 1 | 6 | 3 | 18 |
| | Wrong lifting material | 3 | 6 | 7 | 126 | - Use the proper lifting equipment for the skids | 1 | 6 | 3 | 18 |
| | | | | | | - | | | | |
| **7.9. Cement tanks** | | | | | | | | | | |
| Unload and place cement tank with hopper (Weight: ?? mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift cement tank according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and proper stowed. | 1 | 3 | 3 | 9 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

Step 1. Fill-in activity  Step 2. Assign danger/consequence  Step 3. Calculate risk (= K x B x E)  Step 4. Assign measures  Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| Unload and place second cement tank (Weight: ?? mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift second cement tank according lifting plan<br>- Barrier the area for personnel which is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and proper stowed. | 1 | 3 | 3 | 9 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| Unload and place third cement tank (Weight: ?? mT) | Critical lift / Tandem lift - Injured people and/or damage of material | 1 | 3 | 40 | 120 | - Lift third cement tank according lifting plan<br>- Barrier the area for personnel who is not involved in the operation<br>- TBT with all people involved in the operation<br>- Only use certified lifting equipment<br>- Only use certified/checked lifting points | 0,2 | 1 | 40 | 8 |
| | Damage of equipment / construction | 3 | 3 | 3 | 27 | - Before start lifting check if all hoses, cables and lines are disconnected and proper stowed. | 1 | 3 | 3 | 9 |
| | Crane drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| Install stairs | Hook-up stairs, connect pin connections – work at height - falls | 1 | 3 | 15 | 45 | - Secure using twin fall arrest harness (always one fall arrest line secured during movement)<br>- Secure tools | 0,5 | 3 | 7 | 10,5 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| **7.10. Unloading of drill-pipe baskets** | | | | | | | | | | |
| Unload and position drill-pipe skids (Weight: ?? mT) | Loose items – falling equipment / items | 3 | 6 | 7 | 126 | - use wooden stops<br>- use rubber in between the loads<br>- use lorry ratchet straps to secure load on the skid | 1 | 6 | 3 | 18 |
| | Wrong lifting material | 3 | 6 | 7 | 126 | - Use the proper lifting equipment for the skids<br>- TBT with all people involved in the operation | 1 | 6 | 3 | 18 |
| | Cranes drivers don't follow up the signals | 3 | 3 | 7 | 63 | - Designated Banksman – Rigger-1<br>- Don't stand in between load and fixed object<br>- Check your surroundings and make sure you know where your escape route is | 0,2 | 3 | 7 | 4,2 |
| | Critical lift / Tandem lift - Lifting drill-pipe skid | 1 | 3 | 15 | 45 | - Lift drill-pipe skid according lifting plan<br>- Barrier lifting area<br>- Keep hands clear of dangerous areas and moving parts during lifting<br>- TBT with all people involved in the operation | 1 | 2 | 7 | 14 |
| **7.11. Miscellaneous** | | | | | | | | | | |
| Containers 20'& 40' | Damage to equipment, injured personnel | 1 | 6 | 10 | 60 | - All standard sized containers are lifted on top of the containers, corner lifting pockets or different when mentioned with stickers<br>- TBT with all people involved in the operation<br>- Use taglines<br>- Barrier lifting area for non-essential crew | 0,5 | 3 | 3 | 4,5 |
| ***8. B. Concurrent operations*** | | | | | | | | | | |
| Concurrent operations (general) | Dangerous situations, damages, fatalities | 3 | 6 | 40 | 720 | - Pre-shift meetings held with all involved<br>- Permit-to-work system used and monitored (by g)<br>- Dangerous area's barrier as described in this PRA | 1 | 2 | 10 | 20 |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**

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| DF01E/3/110209 | Written: 02-07-2013 | Location: | |

## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|

**Bilingual explanation Project Risk Analysis**

| K | | | |
|---|---|---|---|
| PROBABILITY / KANS OP VOORVAL | Expectable | Te verwachten | 10 |
| | Highly likely | Zeer goed mogelijk | 6 |
| | Unusual but likely | Ongewoon maar mogelijk | 3 |
| | Unlikely | Enkel mogelijk als grensgeval | 1 |
| | Possible but unlikely | Denkbaar maar onwaarschijnlijk | 0,5 |
| | Highly unlikely | Zeer onwaarschijnlijk | 0,2 |
| | Almost impossible | Praktisch onmogelijk | 0,1 |

| B | | | |
|---|---|---|---|
| EXPOSURE / BLOOTSTELLING | Continuous (direct access) | Voortdurend (directe toegang) | 10 |
| | Continuous (indirect access) | Voortdurend (indirecte toegang) | 6 |
| | Regularly – daily | Regelmatig – dagelijks | 6 |
| | Occasional – weekly | Occasioneel – wekelijks | 3 |
| | Incidental – monthly | Ongebruikelijk – maandelijks | 2 |
| | Rarely – several times a year | Zelden – enkele keren per jaar | 1 |
| | Very rare – once a year | Zeer zelden – jaarlijks | 0,5 |

| E | | | | | |
|---|---|---|---|---|---|
| EFFECT | Catastrophic – Many casualties | Catastrofe – Vele doden | Damage €1.000.000 ► | Schade €1.000.000 ► | 100 |
| | Disastrous – Multiple casualties | Ramp – Enkele doden | Damage €500.000 ◄ €1.000.000 | Schade €500.000 ◄ €1.000.000 | 40 |
| | Very serious – One casualty | Zeer ernstig - Een dode | Damage €100.000 ◄ €500.000 | Schade €100.000 ◄ €500.000 | 15 |
| | Serious – Loss of arm or leg | Ernstig - Verlies van arm of been | Damage €30.000 ◄ €100.000 | Schade €30.000 ◄ €100.000 | 10 |
| | Considerable – Disability or Loss of hand or foot | Aanzienlijk - Verlies van hand of voet | Damage €2.500 ◄ €30.000 | Schade €2.500 ◄ €30.000 | 7 |
| | Minor – Injury (time lost) | Belangrijk – letsel met verloren tijd | Damage €350 ◄ €2.500 | Schade €350 ◄ €2.500 | 3 |
| | Little – Injury (no time lost) | Gering letsel zonder tijdsverlies | Damage ◄ €350 | Schade ◄ €350 | 1 |

| R | | | |
|---|---|---|---|
| RISK / RISICO | R = < 20 | Negligable risk, controlled (No measure necessary) | Verwaarloosbaar risico, beheerst (Geen maatregel vereist) |
| | R = 20 < 70 | Possible risk, control measure necessary (I.e. PPE) | Risico mogelijk, beheersmaatregel vereist (Bijv. PBM's) |
| | R = 70 < 200 | Considerable risk, additional control measures necessary (I.e. PPE and a JSA on Site) | Belangrijk risico, beheersmaatregel vereist (Bijv. PBM's en JSA ter plaatse) |
| | R = 200 < 400 | High Risk, additionally direct supervision necessary (Supervisor + I.e. expert / other) | Hoog risco, aanvullend directe supervisie vereist (Supervisor + bijv. expert / anders) |

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | |
|---|---|---|---|---|---|---|---|---|
| | Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| | Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| | Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
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## *PROJECT RISK ANALYSIS*

| ACTIVITY / ASPECT | DANGER / CONSEQUENCE | K | B | E | Risk | CONTROL MEASURE | K¹ | B¹ | E¹ | Risk¹ |
|---|---|---|---|---|---|---|---|---|---|---|
| | R = 400 > Risk too High, investigate different approach and discuss with WB Foxdrill QHSE dept. | | | | | | | | | |
| | R = 400 > Risico te hoog, andere aanpak onderzoeken en bespreken met WB Foxdrill QHSE afdeling | | | | | | | | | |

***Important aspects when composing a PRA:***

***1.*** The objective should always be to reduce the risk to a **controlled level (R < 20)**.

***2.*** Collective measures are preferred over individual measures. Where possible the source should be eliminated.

***3.*** It is important to adjust the risks when aspects combined increase the danger and also to mention this.

***4.*** Hints for the work specific part: **A.** Work specific risks according to planning (obliged aspects: Lifting and hoisting, Working at height, PPE usage, Tools and equipment and Hot work), **B.** Concurrent operations, **C.** Rope Access **D.** Hazardous substances (also radiation and H2S)

| PROBABILITY - K | | | EXPOSURE - B | | | EFFECT - E | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Expectable | 10 | | Continuous (direct access) | 10 | | Catastrophic – Many casualties | Damage €1.000.000 ► | 100 |
| | Highly likely | 6 | | Continuous (indirect access) | 6 | | Disastrous – Multiple casualties | Damage €500.000 ◄ €1.000.000 | 40 |
| | Unusual but likely | 3 | | Regularly – daily | 6 | | Very serious – One casualty | Damage €100.000 ◄ €500.000 | 15 |
| | Possible but unlikely | 1 | | Occasional – weekly | 3 | | Serious – Loss of arm / leg | Damage €30.000 ◄ €100.000 | 10 |
| | Unlikely | 0,5 | | Incidental – monthly | 2 | | Considerable – Disability / Loss of hand, foot | Damage €2.500 ◄ €30.000 | 7 |
| | Highly unlikely | 0,2 | | Rarely - several times a year | 1 | | Minor – Injury | Damage €350 ◄ €2.500 | 3 |
| | Almost impossible | 0,1 | | Very rare - once a year | 0,5 | | Little – Injury (no time lost) | Damage ◄€350 | 1 |

**Step 1. Fill-in activity** **Step 2. Assign danger/consequence** **Step 3. Calculate risk (= K x B x E)** **Step 4. Assign measures** **Step 5. Calculate remaining risk¹ (= K¹ x B¹ x E¹)**