MSF Newsletter

Issue 1

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Page 1: North Star Health and Safety Achievements

Page 1: Integra DeckOps Safety Program for Shell

Page 1 & 2: A Look At Suspension Trauma

Page 2: Poor Communications

Page 3: Dropped Objects

Page 3: Recent Research

Page 4: Article for the Offshore Safety Journal

Recent Safety Alerts

22/10 - 07-27
Gas Cartridge Fire Extinguisher

19/10 - 07-26
3 Crew Die on Offshore Support Vessel

08/10 - 07-25
Shore Worker dies in onboard 'Base Oil' Fire

05/09 - 07-24
OSV in Contact with Offshore Installation

05/09 - 07-23
Overflow and Spill

05/09 - 07-22
Wrong connection of Mud Hose

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NORTH STAR SHIPPING

RECOGNITION OF HEALTH AND SAFETY ACHIEVEMENTS

Receiving International Safety Award

For the sixth consecutive year North Star Shipping has been awarded an 'International Safety Award' from the British Safety Council. This accolade recognises the company's commitment to safety and the extra effort expended by the vessels' crews. Winners must have lower than average accident rates, good safety policies and show a commitment to the safety culture at all levels from lower deck to boardroom.

Operating thirty Vessels with eight hundred and fifty seagoing staff, North Star now has eighteen vessels with over 1000 days without an LTI with two others (hopefully) about to reach this milestone before the end of August. Indeed fourteen of the fleet have surpassed 2000 days without an LTI whilst the Grampian Venture has achieved 3471 days LTI free. These figures are despite an increase in monitoring of incidents to ensure accurate and honest reporting.

Finally North Star has been recognised for its continuous improvement of health, safety and environmental performance, according to a key industry measuring process. For the first time North Star has participated in the FPAL Verification process which involved independent, comprehensive assessments carried out by FPAL appointed auditors. This resulted in the award of very high scores in the fields of 'Health and Safety' and 'Environment' (9.1 and 8.6 respectively) and means that a 'FPAL Verified' Logo can be displayed until July of 2009.

Receiving FPAL Verification

Sparrows and Sigma³ - Integra DeckOps Safety Program for Shell

Sparrows Offshore Services manage crane services on all Shell's Northern and ONE gas offshore installations and Sigma³ Shell's ISC contractor partnered and developed a new safety program to review all deck crane operations on Shell's Northern installations in the UK North Sea.

The program called Integra has dedicated safety coaches delivering a specially-developed coaching and appraisal assessment package on board the installations. The program is designed to renew focus on basic safety practices with an emphasis on the team working skills between the crane operator, slinger and banksman who work together on every lift.

"The objective is to focus on behaviours and attitudes and by instilling the necessary level of ownership with the aim of assuring Safe Operations" is met.

In order to ensure that the coaching had the necessary integrity the Sparrows safety coaches, George Stewart and Ernie Davidson, were selected from the Shell core crew personnel and the Sigma3 coaches, Sam Dixon and Ian McIntosh, were selected from their parent companies for their industry knowledge, bringing the necessary level of experience in deck and lifting operations.

The Integra Deck Ops Safety Program team developed the coaching and assessment material supporting the course themselves, prior to the offshore delivery which commenced in 2007.

To date the team has completed their first phase visits to all of Shell's Northern Installations and have prepared an actions register to ensure that all corrective findings are tracked and closed out.

Dave Cooper

JUST HANGING AROUND - A LOOK AT SUSPENSION TRAUMA

I would like to talk to you about a hazard that is perhaps not well known and should be considered whenever any work at height is carried out. It is called orthostatic intolerance or more commonly known as Suspension Trauma. It's a natural human reaction to being upright and immobile for prolonged periods. For example, if you were hanging in a safety harness, in a confined space where you cannot move or when secured to a vertical stretcher. Basically our blood supply and heart doesn't cope very well with standing up. The main reason is gravity tends to pull blood into the tissues of our leg and the heart cannot suck it back. Eventually, if enough blood pools in the legs, we will faint. This is fine, so long as we fall over and the blood all rushes back, but if we can't fall over, then there is a possibility we will die.

Firstly, to understand what causes this phenomenon it is important for us to understand how the blood in the legs is returned to the heart. Basically our veins have lots of valves in them and the very act of moving the legs forces the veins to be squeezed by the muscles pushing the blood up and these valves stop it from falling back down. Essentially your legs become a pump. It is a very efficient system but it does have an Achilles heel.

Continued on Page 2

Continued from Page 1: If you don't use these muscles by being suspended from a harness for example, the pumping effect stops. When this happens your brain which is at the top of the pile so to speak; runs dangerously low on oxygen and you start to go into shock. Your body doesn't know what is happening but as you have a shortness of blood to the brain it naturally thinks you must be bleeding. So, it increases your pulse and breathing rates and you feel a little sick, shivery, cold, sweaty and anxious. Typical signs of shock. That higher pulse rate shunts blood up to the brain and away from the skin, which helps for a few minutes but of course it's still pumping blood down into those legs as well. All too late the brain realizes it has made a mistake and tries to go for plan 'B'. That is, it goes for the old and faithful Central Ischemic Response. Put simply, you faint. Why? Because of course if you faint, you must fall over. The brain has learnt this little fact over millions of years of evolution but unfortunately if you are held up or suspended upright, you cannot do this and the brain can be in serious trouble. Remember, the brain has turned off its own blood supply to get you to faint, but it still very much needs the blood in your legs. So, it waits. You're unconscious of course, so you are not aware of all this, but still you wait. You carry on waiting until the inevitable happens.

So, how can we stop all this from happening? Well, considering what causes it, it is obvious that preventing suspension trauma can take one of two approaches. Either we stop the blood pooling in the first place, or we make sure it's pumped back out. Which you choose depends on what you're doing, and it is very important indeed that you pick the right method.

For a conscious person it is relatively easy to prevent this by simply moving the feet and legs very gently. Do not exercise the legs vigorously as the more you use them the more blood they require. You should sit with your thighs slightly elevated or horizontal as you would if you were sitting in a chair. Above all relax. The more anxious you are the quicker your heart rate will be, and the quicker the heart rate, the more blood is pumped, and the more blood that is pumped, the quicker suspension trauma will take effect.

The real hazard of suspension trauma is to an injured or unconscious casualty. The longer the casualty is suspended without moving, the greater the chances are of suspension trauma developing and the more serious it is likely to be. Therefore, an injured person hanging in a harness awaiting rescue should be removed from upright suspension as quickly as possible. The aim should be to do this within 10 minutes. This is particularly important for a casualty who is motionless. If possible you should try and loop a rope under their knees and pull on it to bring their knees to the horizontal. This will help reduce the effects of suspension trauma and possibly slow down the onset. Also you should remember that an unconscious casualty cannot protect their own airway so speed is of the essence.

It is for these reasons that whenever you are carrying out work at height, your Risk Assessment / Job Safety Analysis must include a rescue plan. I cannot stress this enough. You have very limited time and rescuing a suspended casualty is a very difficult proposition at the best of times and this should not be underrated.

Specific rescue equipment should always be present at the workplace. This equipment should be sufficient to carry out a rescue of an individual from any situation on the site. It is important to make sure that all persons involved in the operation are aware of how to use this equipment and are comfortable in its use. This equipment will vary from ship to ship so it is important that you make sure that everyone is aware of the correct procedures for that particular vessel and you do not assume that they know. A toolbox talk must be given and any doubts or concerns should be dealt with prior to the task taking place. Remember, working at height is one of the most dangerous tasks you do as the consequence of something going wrong can result in a serious injury or even death; and as such must be taken very seriously.

Once you have recovered a casualty there is some very important first aid measures that must be understood and followed. After rescue, position the casualty in an upright sitting position, with knees bent; DO NOT allow them to lie flat. Only move the casualty to a fully horizontal position on the advice of qualified medical personnel. If suspension trauma is a possibility, alert medical agencies immediately and advise them of the issues, the casualty might need dialysis to protect the kidneys. There is the same danger when someone has been suspended for a prolonged period as there is with crush injuries, and that is what is known as 'Reflow Syndrome'. This is where the blood that has pooled in the legs becomes toxic and if these toxins are released into the body quickly, they can damage the kidneys or cause cardiac arrest killing the casualty. If you have oxygen available then this should be administered at as high a percentage as your equipment will allow.

There are many different times quoted as to how long you need to be suspended before suspension syndrome starts to kick in. This is because it depends on many factors such as the individual, whether they are conscious or not and the type of harness being used. Some people could last 20 minutes or more, where others may last far less. Always make sure they are down as quickly as possible.

There is an awful lot of information out there concerning suspension trauma and I have not covered it all here. If you would like more information please contact your relevant safety departments.

Paul Gostick   Company Safety Officer, Seacor Marine (International) Ltd

Drop your trousers here for best results!

I don't think this Taiwanese laundry fully understood the meaning of the sign on the outside of their shop, or did they? Communication is difficult but massively important. How often does "poor communication" get cited in incident investigation reports? Too often.

One of the difficulties about communication is that it is down to individuals and there is usually an element of interpretation both on the part of the person giving the message (whether written or verbal) and the person(s) receiving the message. Communication is a two-way operation, this is often forgotten. It is about listening to or reading a message and reacting to that message.

Often it is what is NOT said or written that can be important. Did I really understand that toolbox talk? Am I happy with what was said in that toolbox talk?

Communication tips:

- Pitch the level of the memo or talk at the right level for the audience. For example consider the age, experience, first language of the recipients.
- Listen and react – this goes to both the person instigating and others participating in the communication.
- Speak up if you are not sure about something. You don't want to think "if only I had said" at a later date.

Remember good communication is key to teams working well.

Dropped Objects *by Alistair MacDonald*

We regularly receive reports of **Potential Dropped Objects** from Gulf ships in the North Sea and Egypt, and in addition, I attend Drops Forum Meetings where the problems are highlighted by demonstrations of many similar occurrences on rigs, jack-ups and platforms. I represent the Marine Safety Forum at these Meetings and regularly remind members to think about the ship far below and what the effect of a dropped spanner would have if it hit a person on the back deck of a PSV.

The dangers are very real and all Crews are requested to think about the possibility of an unexpected item falling 100 feet from the ledge of a tank or from the underside of a container on the way down from the rig deck. Keep well clear or be in a Safe Haven until such time as the lift touches the deck. Remind new or recent joiners of these dangers.

Please check the following pictures of everyday items that can cause much grief if they fall from great heights! – all have happened in the past quarter:

Three foot flat bar weighing approximately 4 kg found on top of 20' half height whilst it was back loaded to the vessel.

30 mm Ring Spanner left on a tank that was being back loaded to the vessel.

Two nylon webbing strops and a small knife fell from a cargo unit as it struck the crash barrier whilst being back loaded to the vessel.

Aerosol left on horizontal beam of a tank back loaded to the vessel, as it landed on deck the can fell off.

Recent Research

The Offshore Division (OSD) of the Health & Safety Executive has recently published a number of research reports that may be of interest to the mariner. Although OSD is primarily concerned with installations, there are activities and topics of a marine nature where OSD has an involvement. The following are some of the recently published research reports that deal with marine related issues; the reports can be downloaded free of charge from the following URL : http://www.hse.gov.uk/research/ - selecting the link 'Research Reports' on the left hand side of the screen. For older research reports, select the link 'Offshore Safety Reports'.

Use and operation of daughter craft in the UKCS: RR307

Daughter craft (DC) operate from emergency response and rescue vessels (ERRV) on the UKCS. Since their introduction in the 1990s the craft have seen progressive incremental development in terms of their design and operation. In parallel with this, the regulatory framework under which they operate has also been adapted. Using a datum point of October 2002, the technical specifications, similarities and differences between DC are discussed in detail and inferences drawn from the analyses. The development of DC based on their changing role is also discussed.

Axial fatigue tests on wire rope slings used for offshore containers: RR434

The offshore industry uses a wide variety of containers for the transportation of equipment. These containers are permanently fitted with their own lifting sets. Different offshore sectors use different types of lifting sets. In the UK sector, 5 legged wire rope sling sets are used. However, elsewhere chain lifting sets are prevalent. These lifting sets are subject to repeated dynamic loading in a hostile corrosive environment. At present, the selection and use of wire rope lifting sets is covered by BS EN 13414 "Steel wire rope slings - Safety - Part 1: slings for general lifting service" (2003). This superseded BS1290 "Specification for wire rope slings and sling legs for general lifting purposes" (1983), which was the current specification during this programme of work. Following a proposal to increase the safety factors for these lifting sets. Field Engineering Section of the Health and Safety Laboratory (HSL), measured the dynamic loads resulting from various lifting operations between a semi-submersible installation and a supply vessel. Measurements were deliberately taken in heavy seas to identify the worst loading conditions which could occur.

Improving the Performance in Stand-by Vessels (SBV) & other Rescue Craft use for Rescue and Recovery in support of the Oil and Gas Industry: RR371

This report looks at the current situation in regard to the operation of the FRCs carried on standby vessels used in the British sector of the North Sea offshore oil operations and recommends ways in which these operations can be made more effective and safe. It covers the launch and recovery systems used for the FRCs as well as the FRCs themselves. In addition to studying the current operations in the British sector, the operations in both the Dutch, Danish and Norwegian sectors were studied. The report also looks at the training and other aspects of operating FRCs and it produces a series of recommendations to improve not only the conditions in which the FRCs can operate but also how to make these operations safer for the crews involved.

The Properties of Extreme Waves: RR 401

In the safety assessment of both fixed and floating offshore structures it is necessary to ensure that the structure has sufficient strength to withstand the most extreme combination of environmental loads likely to be experienced during the design life. However significant uncertainties remain concerning the characteristics of real, extreme, three-dimensional waves. The research described in this report focuses upon: Wave crest heights and the potential loss of air gap for fixed structures by examining the distribution of wave crest elevations in storms and, Directional spreading of wave energy and the effect upon particle kinematic field by examining the wave spreading factor, (also known as wave kinematics factor) for translating between 2-D and 3-D seas.

Overview of Collision Detection in the UKCS: RR514

For many years the primary resource for monitoring and appraisal of the collision risks to UKCS offshore oil and gas installations posed by approaching vessels was the attendant ERRV and for the many units this is still the case. However, collision threat detection via radar watch keeping is just one of a number of duties that the ERRV crew needs to conduct. Notwithstanding the foregoing, it is known that the tools they had to work with for collision threat detection were subject to a number of limitations. More recently there have been technological advancements leading to the relatively limited deployment of automated radar detection and tracking systems, the so called 'hybrid' radar, to supplement the work of the ERRV crews and assist in the overall collision risk management strategy. These factors were investigated in detail during the course of the study and the results are discussed both for how they affect current operations and may be adopted in the future to enhance offshore safety.

Manual handling incidents database - A compilation and analysis of offshore industry reports: RR500

Information from offshore manual handling incident reports have been analysed to establish the underlying factors and trends as well as the more obvious 'end point' causes. The objective was to identify case study material aimed at preventing manual handling injuries. Forty case studies are presented that show the root causes of manual handling incidents offshore. Identifying the root cause provides the basis for finding solutions that will minimise the likelihood of the incident happening again.

Article for the Offshore Safety Journal

By David Blencowe

Since the tragic loss of the anchor handling vessel Bourbon Dolphin in April this year, the Norwegian Maritime Directorate (NMD) has issued two safety notices, one in May and a more detailed letter to ship owners in June. Both these are available on the MSF website as safety flashes 07/10 and 07/17.
The first, called 'Taking Immediate Measures', outlines the 4 most important issues which the NMD had identified in the immediate aftermath of the disaster. These were:

1. The preparation of calculations showing the effect on stability of heeling during anchor handling operations, with simple drawings being available to ships' bridge crews showing the angle of heel the ship can tolerate;
2. Understanding what the actual resultant operational bollard pull is after taking into account the power used during anchor handling to run thrusters and winches and other consumers;
3. That crews on each anchor handling vessel should know how the emergency release systems on anchor handling and towing winches work and have available instructions for when and how the release system should be used and 4) making a procedure for anchor handling in general and in particular for tandem vessel operations.

In the June letter to ship owners the NMD was more detailed and gave considerable background information to the required immediate actions. Some important issues were highlighted.

1. A high level of tension in the chain or wire of the rig anchor system can cause a large heeling moment and a high astern or transverse speed of motion for the anchor handling vessel. A simultaneous loss of propeller force and or a fatal rudder position may result in rotation leading to considerable increase in transverse forces. Environmental conditions will further influence the situation. A high astern or transverse speed may be as a result of the high hauling speed of the anchor winch or a loss of the ship's bollard pull.
2. Use of winches on anchor handling vessels means there is no emergency release mechanism as enjoyed by other towing vessels such as tugs which use towing hooks, meaning an anchor handler cannot quickly relieve herself of any malign force.
3. Current stability rules allow for the maximum righting arm (GZ-max) to be less than 20 degrees of heel (although not less than 15 degrees) meaning that a quite small angle of heel can be critical. The NMD further noted that water can flood the aft deck before the maximum righting arm (GZ-max) is reached and the situation can be exacerbated if the vessel has stern trim.

The measures provided for in the letter restated the immediate measures of May but in more detail. For stability, calculations are required for the maximum acceptable tension of the chain or wire, including transverse tension, which would result in the maximum heeling angle to be limited to whichever occurs first of the following:

1. Angle of heel equivalent to a GZ-value equal to 50% of GZ-max;
2. The angle when water comes on deck or;
3. 15 degrees.

The letter called for other specific measures to be taken. Preparation of a specific curve showing the maximum available continuous bollard pull after the power capacity to run winches, side and azimuth thrusters had been taken into account.

Procedures for emergency release systems for winches describing the method of release, time delays and release speeds and how this information should be communicated to the ship's crew.
Planning of anchor handling operations showing loads expected using information, if necessary, from the rig owner or Charterer at each phase of the operation ensuring these calculated forces are within the capacity of the vessel. Plans should be in place for emergency release if greater loads than anticipated are actually encountered.

In tandem operations, where the load of the rig anchoring system is shared between two vessels, the system must not be connected directly to the winch unless the ship can handle the whole load alone. Again plans in case the full load should come on one ship are required to be made.

Much of the NMD actions centre on the provision of more critical information to ships crews so that they are better informed about the operation in question and the capabilities of their vessels in relation to the operation. With the publication of these two notices, the Marine Safety Forum met at the end of August to discuss these measures and to consider what further the industry could do recognising that the full investigation report would not be issued with its findings until February 2008. Six workgroups were set up.

These are:

1. To review and update the sections of the NWEA Guidelines for the Safe Management of Offshore Supply and Anchor Handling Operations using the lessons from the enquiry when published and the outcome of the other workgroups. The current sections for anchor handling are based on the Norwegian OLF61A guidelines. It was felt these could be expanded to include more operational guidance such as that provided by Statoil's Best Practice for anchor handling and towing, so responding to the NMD's requirement for anchor handling procedures and in particular tandem vessel operations.
2. To provide guidance for compiling a Ship's Crew Manual which would contain information readily available to crews such as that detailed by NMD. This could include stability and heeling angle limitations, operational bollard pull, emergency release systems and procedures for use, examples of calculations for load during different phases of a rig move.
3. To provide a common format for rig move specific procedures so that ship crews can easily find the important information at each stage of the move. These procedures describe the actual rig move in question and give details of the role of each vessel and equipment to be used plus provide a wealth of other information and regulations. These procedures, which are generally written by marine consultant companies, tend to be different depending which company has been charged with writing them.
4. To produce a generic rig move risk assessment or HIRA (Hazard Identification and Risk Assessment) which can be used by all parties during the rig move planning stage.
5. A data template has been suggested by a group of operators which would provide information to operators during the bidding process for spot hires. Information would concern areas of technical information of the vessel, crew compositions and experience, and recent safety statistical data of the ship and ship owner.
6. A standard anchor handling vessel check list which can be used during the on hire inspection.

This tragic accident and the previous loss of life from the Stevns Power off West Africa in 2003 show the industry must work together to protect the lives of those who work to move rigs and barges for the offshore oil and gas industry.