Recapping 2016

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Once again, the months have flown past and I do hope that 2017 has been a good year for you so far.

For the sixth consecutive year, no stevedore fatalities occurred onboard ships in South African ports. There has also been a steady decrease in the number of serious injuries: eight injuries were reported in 2015 and five in 2016. This is a welcome improvement, which I hope is sustainable during busy periods when there is a necessity to use workers from labour brokers.

In the ship repair industry, it is with dismay that SAMSA reports a shore contractor was fatally injured onboard a vessel in Saldanha. The matter is still under review, so only minimal details can be shared in this regard – see Ship Repair Casualties. There was also a slight decrease in the number of serious injuries that occurred onboard vessels. Three serious injuries occurred in 2015, while there were only two in 2016.

I strongly urge you to ensure that only competent workers who have undergone safety induction training are used to conduct stevedore and ship repair operations onboard. Time and again, during the process of investigating accidents, SAMSA finds that workers with little or no experience working onboard vessels are injured. You are reminded that it is a legal requirement of the employer to ensure that all employees, both old and new, are made aware of the risks in the workplace, the scope of their duties, and are properly supervised.

Sibusiso Rantsoabe has done a sterling job conducting vessel inspections and audits and by now he should be a familiar face. I have focused on a couple of issues that have been identified during inspections and audits further on in the newsletter. The results of the inspections and audits vary depending on the company, with some companies having high standards of safety. However, it is frustrating to the Authority that we identify similar problems, usually involving the same companies, i.e: not wearing PPE or PPE in poor condition; unfenced walkways or openings; and daily safety inspections are not conducted. Unfortunately, SAMSA have had to get tough on these companies and several Admission of Contraventions were signed for non-adherence to the Maritime Occupational Safety Regulations.

For a long time, SAMSA has been intending to standardise the criteria for medical assessments in the stevedore and ship repair industries. Unfortunately, for the first half of 2016, due to work pressure, this project had to be put on the back burner. SAMSA has reconvened this project and should be in a position to give some feedback by the end of 2017.

It has not been a great start to 2017, with several serious injuries and a fatality being reported. Please take the utmost care going forward and perhaps the year may end on a better note!

Be safe out there!

Kirsty Goodwin
General

Man Cages

The approval of man cages has confused both the stevedore and the ship repair industry, which use man cages attached to lifting equipment to lift personnel to different parts of the vessel, e.g. in the stevedore industry – accessing a container stow or in the ship repair industry – accessing the hull of the vessel for high pressure washing or grit blasting, etc.

Both industries have assumed that man cages require certification from the Department of Labour (DoL) before they may be used. According to DoL, this is not the case. In order to obtain clarity on the matter, Tshiamo Nthebolang from DoL was invited to attend both the stevedore and ship repair safety committees in Durban to provide clarity regarding safety requirements for man cages.

DoL deems the use of a man cage to support people an abnormal activity as the equipment involved is designed and used to lift goods rather than people. This abnormal use of equipment requires an approval from DoL.

In order to obtain approval from DoL, the user must provide the following to DoL’s satisfaction:

- Reasons why it is necessary to use a man cage as opposed to equipment designed to support people working at heights, e.g. scaffolding or mobile elevated work platforms;
- A risk assessment with corresponding mitigating actions; and
- Proof that the man cage is designed by an engineer registered with the Engineering Council of South Africa and built in accordance with the engineer’s specifications.

DoL will visit the workplace where the man cage is to be used in order to approve the system of work. This includes the crane or forklift used to lift the man cage and the area in which the man cage will be used. If the man cage is moved to another site, additional approval may be required before use.

Since the MOS Regulations state in 3(1)(h) “Ensure that machinery and equipment which is brought onboard a vessel and which does not form part of that vessel’s machinery or equipment complies with the provisions of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)”, DoL considers the approval of the man cages, used onboard and attached to ships lifting appliances, the responsibility of SAMSA.
SAMSA is still concerned at the non-reporting and/or late notification of incidents. During audits, these incidents are picked up and it is problematic to investigate an incident that happened months prior as SAMSA are unable to attend the scene, equipment involved has been moved and or repaired and witnesses cannot be located or their recollection of events has faded. Therefore, for ease of reference, take note of the below:

In terms of the Merchant Shipping Act 1951, the following serious injuries and accidents occurring onboard vessels, whether the vessel is afloat or not, are to be reported to SAMSA:

### Serious Injury or Fatality

**“serious injury”** includes:

a) A fracture of the skull, spine or pelvis;
b) A fracture of any bone other than a bone in the wrist, hand, ankle or foot, or a single rib;
c) The amputation of a hand or foot;
d) The loss of sight of an eye;
e) Frostbite of any bodily extremity which may lead to permanent disfigurement; or
f) Any impairment of a person’s physical condition owing to:
   (i) The use of machinery;
   (ii) An electrical shock;
   (iii) The exposure to hazardous working conditions or hazardous substances or articles;
   (iv) The exposure to natural or artificial environmental extremes, onboard a vessel which results in that person being admitted to hospital as a patient for more than 24 consecutive hours, or would have resulted in his being so admitted had he been within reach of a hospital;

### Mechanical/Equipment Failure

**“accident”**, in relation to a vessel, includes:

a) The collapse or overturning of any lift, crane, davit, derrick, mobile-powered access platform, access equipment, staging or bosun’s chair or the failure of any load-bearing part thereof;
b) The explosion, collapse or bursting of any closed container, including a boiler or boiler tube, in which there is any gas (including air), liquid or any vapour at a pressure greater than atmospheric pressure;
c) Any electrical short circuit or overload, resulting in fire or explosion;
d) The sudden, uncontrolled release of flammable liquid or gas from any system, plant or pipeline;
e) The uncontrolled release or escape of any harmful substance;
f) Either of the following occurrences in respect of any pipeline, valve or any piping system in a vessel:
   (i) The bursting, explosion or collapse of a pipeline;
   (ii) The accidental ignition of anything in a pipeline or of anything which immediately, before it ignited, was in a pipeline;
g) Any contact of the human body with loose asbestos fibre;
h) The failure of any lashing-wire, chain or appliance;
i) Any collapse or significant movement of cargo;
j) The malfunctioning of any hatch cover, hatch cover control wire or other mechanism;
k) Any person falling overboard;
l) The parting of a tow-rope; and
m) The failure of bilge-pumping arrangements or lifesaving or fire fighting equipment to operate.

### Note

1. SAMSA must be informed of the accident or serious injury as soon as possible after it has occurred in order for the investigation process to begin.
2. The scene of an accident may not be disturbed until SAMSA has attended the vessel.
3. The following forms to be sent to the SAMSA office within 24 hours:
   a. SAMSA Casualty Accident Report
   b. Addendum to SAMSA Casualty Accident Report
4. Fatalities and serious injuries must be reported to the Commissioner for Occupational Injuries and Diseases (COID) for compensation purposes.
5. Do not report fatalities and serious injuries occurring onboard vessels to the Department of Labour Inspectorate as this falls outside of their mandate.
6. The Port Authority also has a reporting requirement for accidents and injuries.
Maritime Occupational Safety Regulation
Inspections and Audits

Common Findings in Both the Stevedore and Ship Repair Industries

Vessel Inspections

- **Daily Inspections**
  SAMSA inspections on vessels where stevedore or ship repair operations are taking place have found that daily safety inspections are not conducted or if they are, they are conducted poorly.

  The Maritime Occupational Safety Regulations 30. (1)(b) states that every employer of stevedores, shore contractors or incidental persons shall ensure that each accessible part of the vessel is inspected in respect of occupational safety affecting employees at least once a day during the period the employees are employed.

  The intention behind this requirement is a form of risk assessment. It requires the employers of stevedores or shore contractors to inspect the workplace and identify any potential hazards to workers, e.g. is access to the workplace safe? (gangways, decks, ladders, stairways, etc.) If there is a problem with access, e.g. the rungs/steps of a hatch access ladder are damaged/missing, the employer must do something to rectify this, such as informing the crew, communicating to stevedores/shore contractors at toolbox talks conducted at the commencement of shift to avoid using the access ladder until it is fixed. Ensuring that the area is demarcated as dangerous through barriers or signage is also required.

  Proper safety inspections by supervisors and communication of the findings can prevent accidents. You are encouraged to conduct and document safety inspections as failure to do so is a contravention of the Maritime Occupational Safety Regulations, 1994 and can lead to penalties being imposed by SAMSA.

- **PPE**
  SAMSA have found that wearing suitable PPE onboard is either very good or very poor, depending on the company. The Maritime Occupational Safety Regulations section 4(1) states the following:

  “Taking into account the nature of the hazard that may be encountered, every employer shall, in order to render his employees safe, provide on a vessel adequate safety equipment and facilities, including suitable eye protection, welding shields, visors, hard hats, protective helmets, gloves, gauntlets, aprons, jackets, protective overalls or any similar equipment that will prevent bodily injury…”

  Failure to ensure workers have appropriate PPE is a contravention of the Maritime Occupational Safety Regulations and also reflects a lack of supervision and discipline.

- **Unsafe Portable Ladders**
  There have been numerous accidents due to the use of defective portable ladders. Use only ladders that belong to your company where the condition of the ladder can be verified. Ladders must comply with the Occupational Health & Safety Act, General Safety Regulations Section 13A. Do not be tempted to use ladders on the vessel that do not belong to your company, as they may not be safe to use.
Company Audits

Safety Induction
With the production of the Stevedore and Ship Repair Safety Films, there can be no excuse for poor safety inductions. Make the time to show your employees the film and if you use the services of a labour broker, ensure that they have a copy of the film too. Please remember to also incorporate any specific risks that your workers may be exposed to that are not included in the films.

Medical Certificates of Fitness for Forklift/Crane Operators
As mentioned in previous newsletters, it is very important from both a safety and legal perspective that operators of moving equipment are physically fit to operate machinery. Medicals and the recertification of certificates of competence should be done at the same time.

Risk Assessments
This issue has also been mentioned in previous editions of the newsletter. A risk assessment is the foundation of a safety management system and provides direction on what risks are to be managed and what controls are required to manage them. There are various risk assessment methodologies that can be used to identify and weigh risks. Please research these methods or send employees for training on hazard and risk identification.

Emergency Procedures
Emergency procedures were covered at length in the previous edition of the newsletter. Types of emergency scenarios should be defined, planned for, communicated and practiced. Do not underestimate the panic experienced by workers during an emergency.
1. On 29/5/2016 at 01h30 at the Port of Durban, stevedores were loading containers into bay 42 using a shore crane. A stevedore hatchman was walking on a lashing bridge monitoring the loading of containers. At approximately 01h30, while talking on the radio and looking upwards at a container, he fell approximately 3.5m through an opening and landed on the lower walkway. He sustained a concussion and injury to his right knee. Ensure any openings on deck/walkways are closed or guarded to prevent similar accidents.

2. On 24/6/2016 at 21h45 at the Port of Saldanha, a stevedore attempted to unhook the chain belt from a steel coil. While he was unhooking the chain belt, the crane operator lifted the coil and the stevedore’s finger was crushed between the steel coil and chain belt. He sustained an amputation to half the middle finger on his right hand.

3. On 14/7/2016 at 00h30 at the port of Durban, stevedores were lashing one-ton bags of sugar. While tightening a lashing rope, standing at the edge of a stow, a stevedore lost his balance and fell from a four-high stow of bags onto the tank top. He sustained serious head injuries. Investigations identified the following:
   • The injured stevedore had not received any safety training; and
   • The company’s risk assessment does not consider the risks involved when lashing bulk bags.

4. On 24/10/2016 at 09h00 in the Port of Richards Bay, stevedores were loading one-ton bags of zircon into no. 4 hold. After the ship’s crane had lowered the bags into the hold, a forklift was used to stow the bags. Stevedores hooked the bags’ straps over the forks of the forklift. While performing this function, a stevedore’s right thumb was crushed between the forks and the strapping. Investigations revealed that the forklift operator had commenced operations without being signalled to do so.
5. On 22/11/2016, at the Port of Cape Town, stevedores were discharging maize from a bulk carrier. Stevedores were returning from tea break at approximately 03h05, when a stevedore slipped on deck. He sustained a fractured left wrist. Investigations revealed that:

- The stevedore had been using a route that was covered with non-slip paint; and
- Dew may have contributed to making the surface slippery.

Minor Injuries

On 29/4/2016 at 14h40 at the Port of Saldanha, a chain belt twisted while lifting a steel coil. A stevedore attempted to reposition the chain belt while the crane operator lifted the steel coil. The stevedore’s right thumb was pinched between belt and coil.

Mechanical Failure

1. On 22/8/2016 at 01h30 at the Port of Durban, stevedores were engaged with discharging steel plates from hold no.3. While the crane was slewing the cargo to the quay, the plates slid out of the lifting gear. Falling plates caused damage to the vessel before falling into the harbour. Investigations revealed that the incorrect gear had been used to discharge the plates.

2. On 2/11/2016 at 01h20 at the Port of Durban, stevedores were lowering a full skip of manganese into the hold, crane no. 2 wire parted and the skip fell into no. 3 hold. There were no injuries, or damage to the cargo/skip. The following is to be considered with regard to ships lifting appliances:

- Request to see the Gear Register and ensure that annual and thorough examinations are conducted;
- The crane operator should conduct a proper inspection of the crane prior to shift commencement. The inspection should be documented:
  - Any problems should be reported to a supervisor/crew
  - Defective cranes should not be used
- The crane operator should conduct tests with the first lift;
- No one should be underneath a suspended load or the hook of the crane;
- The crane operator should be competent and experienced with handling the cargo in question; and
- The crane operator should not shock load the crane when lifting cargo.

3. On 14/12/2016 at 11h00 at the Port of Richards Bay, stevedores were loading containers. A container jammed in the cell guide and uncoupled, resulting in the container falling on to containers below.
Statistics


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Comments
The graph below demonstrates the decrease in stevedore fatalities since 2011. Since 2013, there has been a decrease in the number of serious injuries, which is encouraging. However, I note this cautiously, as whenever the amount of tonnage handled by stevedore’s increases, and this involves high risk cargo such as containers or steel and on an increased reliance of workers from labour brokers, SAMSA sees an increase in stevedore accidents.

The cause of the majority of serious injuries is falling from a stow or through unguarded openings. The second major cause of serious injuries were pinch injuries sustained when stevedores hands were caught between lifting equipment and cargo when hooking/unhooking cargo. Pinch injuries while hooking/unhooking cargo can be avoided if there is improved communication.

Four years worth of data has been collected and the following ascertained with regard to stevedore accidents occurring onboard.

In the four-year period, workers supplied by labour brokers were twice as likely to be injured as permanent workers. In 2016, only workers supplied by labour brokers were injured. No permanent workers were injured.

The age of stevedores who were injured was considered to ascertain which age group was most at risk of being injured in the four-year period. Serious and minor injuries were assessed and age groups categorised as follows:

- 18 to 35 years
- 36 to 50 years
- 51 to 65 years

The age category 18 to 35 years experienced the most injuries followed by the 36-50-year-olds and lastly the 51 to 65-year-old category. This result may indicate that young workers entering the industry may not be receiving the proper training and supervision or that they are inclined to take chances.

In terms of times that stevedores are most likely to be injured, accidents were plotted into the three-shift system for the four-year period. Most accidents occurred on the 06h00 to 14h00 shift, closely followed by the 14h00 to 22h00 shift. The least accidents occurred on the 22h00 to 06h00 shift.

Similar to last year in terms of whether accidents occurred close to tea breaks or the end of shift, there does seem to be some indication that more accidents occur in the hour before the 10h00 to 10h30 tea break, i.e. 09h00 to 10h00.
Ship Repair

Serious Injuries

1. On 27/7/2016, a ship repair company was installing an accumulator into the portside lifeboat crane of a reefer vessel. At about 08h45, while the team were positioning the accumulator, it slipped from the chains of the chain block, severing the right hand small finger of a semi-skilled fitter, who had been holding the accumulator in position.

SAMSA’s investigation into this casualty identified the following concerns:

• The function of lifting the accumulator into position was normally done using a crane, however, the crane operator had refused to undertake the operation due to strong winds prevailing at the time.
• Subsequent to the crane operator’s refusal to assist with the operation, the team responsible for installing the accumulator made their own arrangements to install same as they were under pressure to complete the work.
• The team had no training or experience in installing accumulators into cranes.

2. On 14/9/2016 at the Port of Durban, shore contractors were conducting repairs to damaged cell guides on a container ship. At approximately 18h30, while lowering a gearbox containing cutting and welding equipment onto the deck, a shore contractor’s arm was pinned between the coaming and the suspended gearbox. He sustained a major laceration to his right arm, with nerve and ligament damage. Improved communications between the crane operator and the shore contractors on deck may have prevented this accident.

3. On 16/11/2016 at 15h30 at the Port of Saldanha, onboard a crayfish vessel, a shore contractor fell from the mast of the vessel while attempting to test a navigation light. He sustained head and neck injuries and succumbed to his injuries several days later. Investigations by SAMSA in Saldanha revealed that the following contributed to the accident:

a. Poor definition of roles and responsibilities between the principle contractor and sub-contractor; and
b. A poorly implemented safety management system.

It is vitally important that when shore contractors conduct work onboard vessels, the following is in place:

a. The scope of work and responsibilities of the various role-players are properly defined; and
b. Only workers who are experienced with work onboard vessels are used. New workers should receive safety induction training and should be closely supervised.
Statistics 2015/2016

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(Results reflect serious injuries/fatalities that occurred to shore contractors onboard only)

Most Dangerous Work in Ship Repair

After analysing 10 years of ship repair accidents that were reported to SAMSA, the following is considered to be the most dangerous work in the industry:

1. Hatch/Tank Cleaning
   The causes of injuries while conducting this type of work are mainly falling from access ladders or through unguarded openings.

2. Rigging
   The cause of injuries while conducting rigging is by falling loads because the incorrect lifting gear was used. This is followed by falling through unguarded openings while performing the rigging operation.

3. Welding/Burning
   The most common cause of injury while conducting welding or burning is falling from walkways or scaffolding.

The majority of accidents in the ship repair industry are as a result of falling. This is followed, to a lesser extent, by being struck by falling objects.
Ship Repair Safety Film

While conducting casualty investigations, there have been numerous occasions where the main contributor to the accident has been that the worker has only been employed in the ship repair industry a short while and has not been provided with sufficient safety awareness training, particularly if they are employed through a labour broker or casually.

During audits conducted by SAMSA, it was found that the quality of safety training provided to workers, depending on the company, was either very good or extremely poor or that companies relied on their clients or the port authority for safety induction training. The reliance on a client and/or the port authority for the provision of safety training is concerning as the training may not cover the specific risks involved in the work being performed.

With the above in mind, SAMSA decided to produce a ship repair safety film, similar to that produced by SAMSA for the stevedore industry.

Work on the script started in 2013 and was finally completed in 2016! Thank you to all parties that had input into the production and special thanks to Tekweni Television Productions, for their endless patience while attempting to match the schedules of SAMSA, the ship repair companies, and the work being done on the vessel with what still needed to be filmed.

SAMSA is immensely pleased with the result and by now most companies would have received a USB stick with the four translations of the film.

The film provides a basic idea of the ship repair working environment and equipment used together with the associated hazards. Anything more specific needs to be included by the ship repair company concerned, e.g. x-raying steel welds needs to be addressed separately.

Please make use of the film, particularly for the abovementioned reasons: newcomers to the industry are at high risk of being injured. If you do not have a copy of the film and you would like one, please contact either Sibusiso Rantsoabe or myself so that we can make arrangements to get one to you.

X-Raying Steel Welds

A long-standing item on the Durban Ship Repair Safety Committee minutes has been health risks posed by x-raying steel welds and exposure to radiation. In February 2016, Assistant Director at the Department of Health: Radiation Control Dixie Chetty and Inspector Shirley Ramchunder gave a very informative, if slightly frightening, presentation to the Durban Ship Repair Safety Committee on Industrial Radiation.

Important information on industrial radiation requirements can be found in two codes, namely Code of Practice for Industrial Radiography (Gamma Radiography) and Code of Practice for Industrial Radiography (X-Ray Radiography).

Should you require a copy of the abovementioned codes, either myself or Sibusiso Rantsoabe can email you a copy or if you still have further queries with regard to industrial radiation, the contact number of the Department of Health: Radiation Control in Durban is 031 307 2111.
The South African Maritime Safety Authority (SAMSA) was established on 1 April 1998 under the SAMSA Act 5 of 1998. SAMSA’s mandate is:

- To ensure safety of life and property at sea;
- To prevent and combat pollution from ships in the marine environment; and
- To promote the Republic’s maritime interests.