
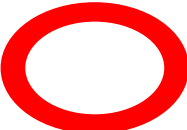


Rig- Aban VI
Auditor- Dr Omar Thakur – Regional QHSE Manager

Purpose-

The purpose of the audit was to highlight general safety related issues, deficiencies and requirements as an assessment of the rigs compliance with Aban’s Management System and general safety standards. An attempt has been made to suggest changes along with the appropriate ordering information for each finding, so that it is easy for each department to order the equipment needed. Some of the suggestions are as per general safety standards upheld by most major oil companies worldwide. It is my strong recommendation that as a company we should strive to achieve a higher safety standard by going above and beyond just the minimum standards required especially when it comes to QHS & E issues relating to our daily activities.

The Aban VI is the oldest working Aban rig in this division and has been Aban’s first rig in the Persian Gulf. The specific and general findings from the audit are as follows.

Pictures identified as Conforming =  Non Conforming = 

Induction

- 1- On arrival I was asked to sign a log book in the radio room. The Aban management system has an Arrival log (SAF-006) and a Departure Log (SAF-007). These log sheets must be used by all rigs for logging incoming and out-going crew. The SMO was advised to implement the use of these documents.
- 2- The rig SMO, Dr. Satyaraj, gave a short verbal Induction. The rig does not have a means for giving a rig induction. There is no induction room available with resources to use as an induction / training room. The SMO desktop is very slow in operation and there is no projector / projector screen available to the rig for any kind of crew demonstration, presentation or in-house training.

It is suggested that a room be made available for crew induction / training as these are very important aspects of the operation.

Training aids such as a large screen TV/ projector with Laptop and speakers to be provided to the SMO, for his induction and presentations. These should also be used for weekly safety meetings and in house trainings.

The rig has a very low capacity internet connection due to which access to the intranet is also very slow. This internet package should be increased to on-par with other rigs in the field so that the crew can access the intranet easily. The bandwidth of the intranet is so low that even small attachments are unable to be sent to/ from the rig. Skype is one means of communication but even that is generally not possible because of poor internet connection.

The rigs SMO’s desktop to be upgraded to a faster operating laptop. Laptop is preferred as it can be used with projector in any other area of the rig.

The rig also does not have a regular phone connection. This limits communication and can be an issue in an emergency situation. A phone connection is also needed to provide crew with communications for the purpose of routine operations and a means of communication with their families. Currently communications, both office and personal is being carried out via Thuraya / Inmarsat.

Derrick and Rig-Floor areas

- 1- A general DROPS survey should be carried out by third party in the derrick and substructure to identify all overhead items and report deficiencies and recommendations. This document can then be used for a routine DROPS inspection to be done by the rig crew. Currently the rig does not have a systematic recorded derrick inspection system. The rig to review Policy SAF 500.00 which states

Quote;-

5.5a All derrick zones shall be inspected by drill crew personnel at a minimum of once per month with inspection results recorded in the PM system along with names of the inspectors.

5.5b Rig management should consider having an annual derrick inspection conducted by a third-party company. A record of the third-party inspection should always be kept at the rig site until superseded by the next annual inspection.

The rig should also review GOP 205.00 Derrick-mans Procedures

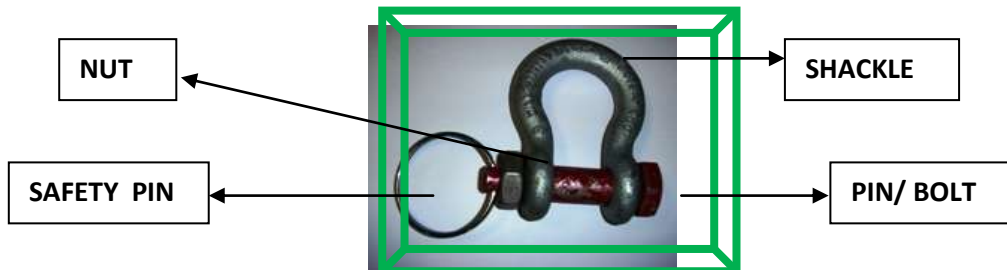
A log book should be maintained for logging all equipment/ tools before going into the derrick. This log was not available to the auditor before going up the derrick. Rig should strictly look into maintaining this log as per section 5.6a of policy SAF 500.00.

Drillers and assistant drillers to ensure this is done at all times and tool pushers to frequently monitor and audit this requirement.

- 2- ALL rig floor utility winches should have fiberglass spring loaded cable wind devices to spool the cable properly on the drum. This prevents the operators from attempting to guide the cable on the spool with their hands and they can concentrate on the banks-man and the man in the belt. The winches should also have a clearly marked (RED) emergency stop.



Currently there is one man riding winch available on the rig floor but no man-riding winch available for operations below the rig floor. There is also no designated equipment in use for the man riding operations. The rig is using a two part shackle for man-riding operations. The following is suggested to the rig. Man riding winches to be color coded (LG inspection), identified as “For man Riding Only” and marked with SWL i.e 330lbs / 150kg. All equipment relating to man-riding operations must be used and stored separately. Utility winches are not to be used for man-riding



The four part shackle is to be used with ALL FOUR components.

Crew to review Policy SAF 340.00 on man-riding

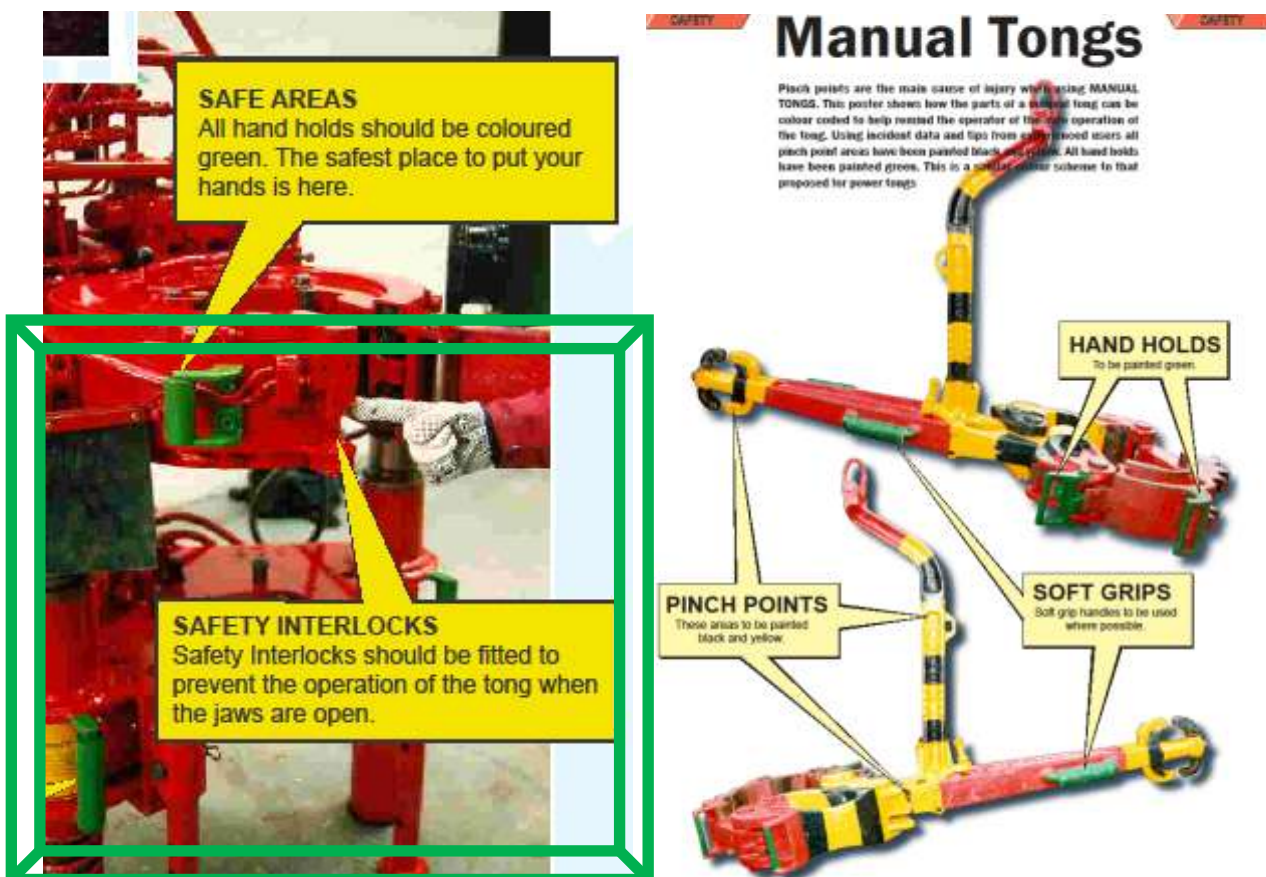
The **3/4” (4.75t) Crosby G-2130 bolt-type shackle** along with the retaining **key ring i.e. McMaster Carr part number 90177A225**. The key ring is easy to use, cost effective and does not easily get knocked out of the slot. It can be easily changed out when needed.

This is the recommended combination for man-riding to be used when using the man-riding winch. This shackle and other man-riding equipment should be used only for man-riding and stored separately. The drilling supervisors should ensure that this equipment is ordered in adequate quantity.

Review Policy SAF 340.00 for guidelines of Man-riding operations.

Material Type	Steel
Finish	Zinc-Plated
Pin Type	Cotter Pins and Rings
Cotter Pin and Retaining Ring Type	Split Ring (Key Ring)
System of Measurement	Inch
Outside Diameter (OD)	2.24"
Inside Diameter (ID)	2.016"
Split Ring Thickness	.18"
Specifications Met	Not Rated

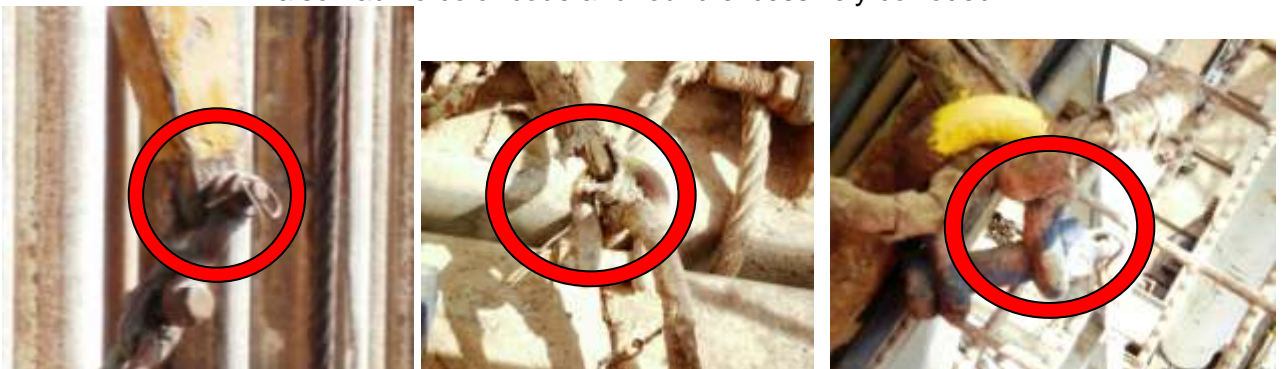
3- The manual tongs to have their hand placement areas painted in green and hazardous areas to be identified in yellow and black stripes. Not all parts of the tongs are clearly identified. This is a piece of equipment very commonly involved with hand injuries and the safe and unsafe areas should be prominently marked and crews trained accordingly..



4- Many TWO-Part shackles were evidenced in use on the rig floor and some areas of the derrick. It has become a standard practice for most companies now to do away with all 2-part (screw-pin) shackles in the derrick and overhead areas. These are unsafe to use in permanent overhead applications as they have a tendency for the pin to back out due to vibration and other stresses on the shackle and pin. The rig needs to ensure that all the shackles on the rig floor and in the derrick are changed over to 4 - part safety shackles. The 4-part shackles should be used with a safety pin



Safety pins to be used for ALL 4-part shackles. Wire / welding rods are not to be used as retaining safety pins. Lifting gear seen here has more than one color code. Some lifting gear in the derrick also had no color code and found excessively corroded.





5- The four part shackles in use should have current color code and proper retaining pins and not welding rods or other wires. Many such 4-part shackles were seen with welding rods / wires used as securing pins.

Cotter pins (properly bent), Air king pins or the above mentioned Mc-master key rings should be used as retaining pins on shackles.

Standard Safety Clip



• Same size for all coupling sizes

Wire Diameter	Part #	Price/E
.080	AC1	\$.20

Sold only in bags of 25

Air King Safety Pins



• Heavy duty
• Oversized

Wire Diameter	Part #	Price/E
.058	AKSP1	\$.95
.091	AKSP25	1.10

“R” clips are not to be used for shackles as they can be easily knocked out

The Air King safety pin can be used for general applications like shackle , hose connections etc, but is not to be used for man-riding operations.

6- The rig should look into changing out old sheaves in the derrick. Certificates and Lifting gear records for this equipment should be maintained along with all other lifting gear.



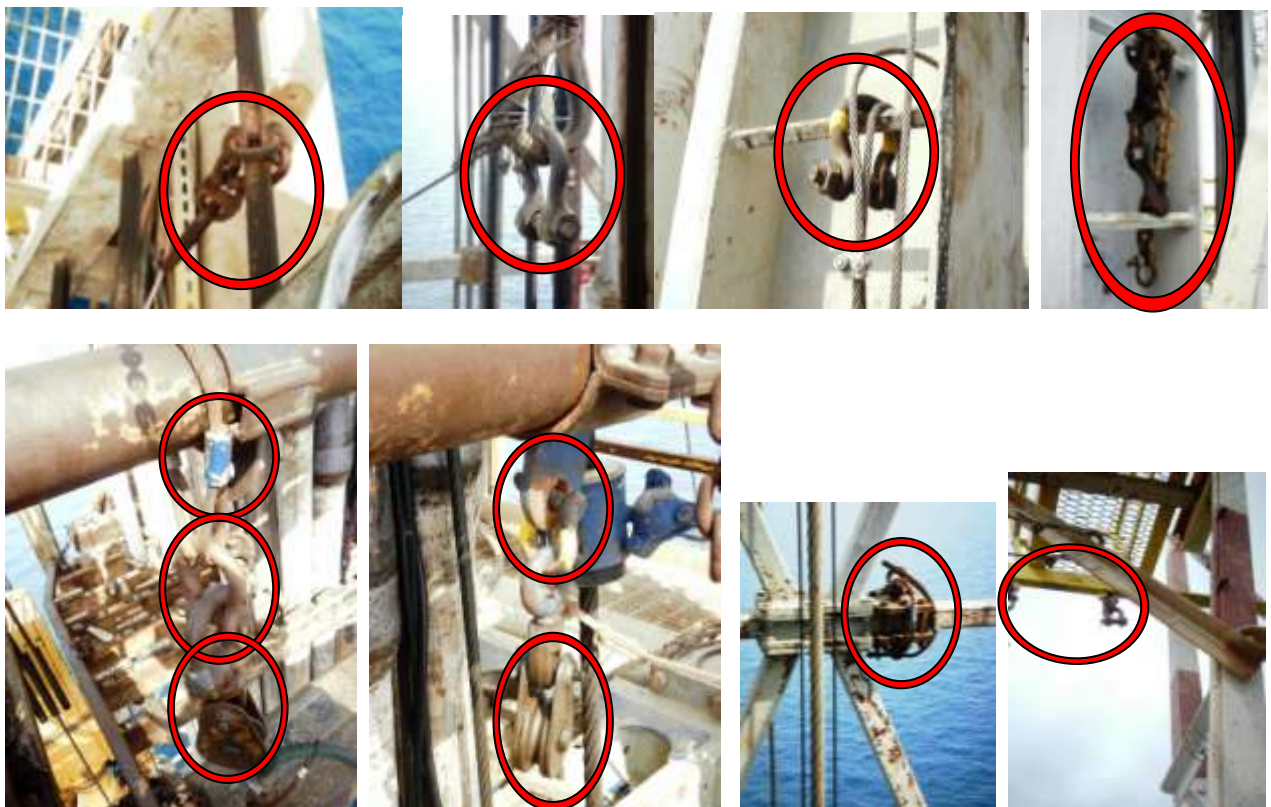


Safety slings attached to the sheaves are seen rubbing against the slings passing through the sheaves. These should be diverted to avoid damage to either sling.



7- A carabiner was in use at the monkey board as part of lifting gear attachment. This should be removed and only the properly rated shackles should be in use as connectors. Seen above is also derrick-mans SALA with no color coding of block, sling or shackle.

8- Some unused items were found in the derrick and these items were not secured. ALL unused items are a potential dropped object and should be taken down to rig floor if not in use.



9- There is no standard color coding of lifting gear in the derrick. As seen in above pictures, some gear is showing BLUE and some showing YELLOW and a few pieces of LG do not have any color code. Rig to quarantine all non conforming lifting gear until next LG inspection. A lifting gear inspection is to be done as per **Policy SAF 358.00**.

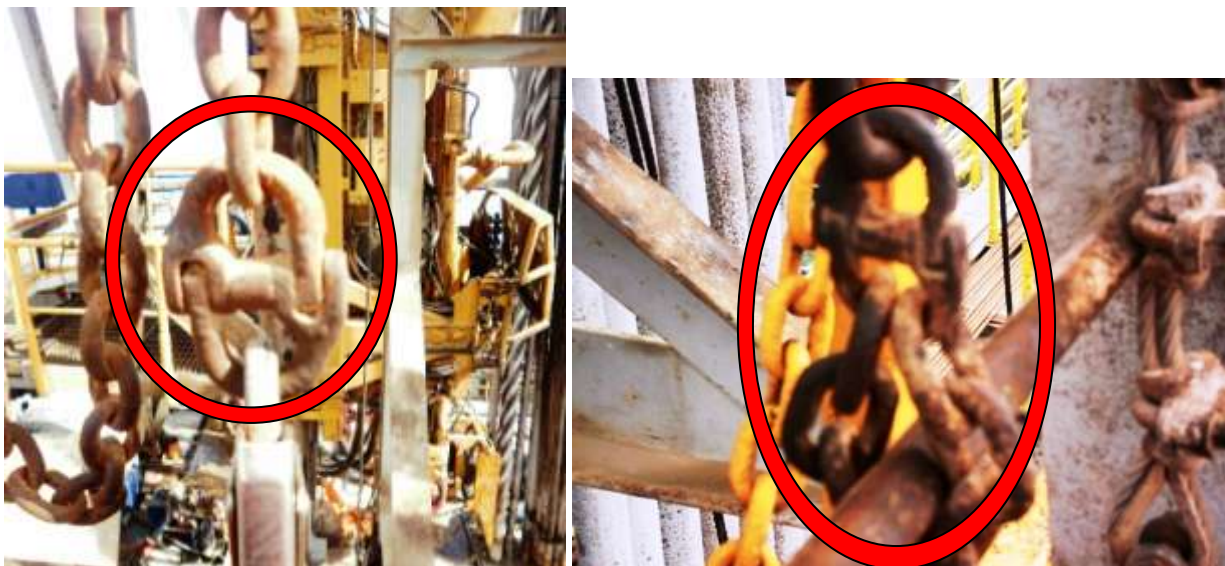
10- Fall protection equipment on Lad-safe device on derrick ladder cable was found heavily rusted and unusable indicating that the lad safe device was not in use. On further questioning it was clear that only the climb assist was in use.

The climb assist is not a fall protection device and hence the climb assist should be used along with the Lad-safe device which will protect the user from a fall if the climb assist fails/ parts.



The carabiner shown above on the derrick ladder was heavily rusted and the fall protection device could not be used due to this. An alternate arrangement had to be made to proceed up the derrick using another fall protection device.

The rig should order the approved Lad safe device for use as shown in the Safety Catalogue. The equipment should be serviced and maintained on a regular basis.



The link and chain securing the climb assist to the ladder rung is also old and showing excessive rust. This needs to be changed out immediately.

11- Fall protection devices like Self retracting lines do not have any color coding and the cables were found pulled out. The hooks and carabiner were found excessively rusted and need to be changed out.



12- Personal safety belts are left in the open exposed to the elements. These should be stored in protected areas/ boxes.

Derrick-Man to review Procedure GOP 205.00 and DROPS policy SAF 500.00



13- Two Self Retracting Lifelines are available for this purpose below the rig floor. Drilling crew to assess the condition of these SRL's as there is excessive rust on the hooks. The rig to have additional Pad-eyes installed if needed for same. Provision is to be made for 4 pad eyes for installation of four SRL's for working below the rig floor. These are to be the approved SRL's from the safety catalogue and should be serviced annually



Crew should be trained on the correct use of SALA blocks. The cable should be retracted into the protective housing after each use and should not be left extracted as this damages the spooling mechanism and also exposes the cable to the elements and potential damage.

- 14- All existing platforms at different levels do not have any self closing gates. All Platforms at the top of each ladder and other areas around the rig floor and accommodation area also need to have Self Closing gates installed. The drilling supervisors to do a survey of all the openings in handrails and platforms at height that will require these self closing gates and order them accordingly as per required sizes. Chains are not acceptable.



Self closing gates are to be installed at each end of these openings and openings in hand rails.

Rig crew to review Policy SAF 350.00 on Fall Protection

Ordering information for Self Closing gates is available on Pg 49 of Safety catalogue

- 15- All overhead fixtures should be secured with a safety sling. Light fixtures, sheaves, Speakers, electrical junction boxes etc should all have appropriate secondary fall protection. Rope is not to be used as a securing device as it deteriorates over time.



- 16- The Derrick safety belt and the derrick-mans belly buster belt was also found left out in the open exposed to the elements. This is life saving equipment and should be kept in a secure area.



17- Oil/ diesel is not to be used on the rig floor as a cleaning agent in open containers. The rig floor is a zone-1 / hazardous area and any such flammable items should be controlled and kept in sealed containers.



18- Additional anti skid mats are needed around the rotary table as the current surrounding surface is metal and gets very slippery. Coco/ jute mats may be used until the approved matting is ordered and received as per the safety catalogue.



19- The 'T' card station at the access to the platform consists of crew positions. This should be changed to individual crew names as it would be easier to identify in case of actual emergency events.



General Rigging and Lifting

20- All lifts should have TWO tangle free tag lines attached. Rope is not to be used as a tag line. Information on the tangle free tag line is available in the safety catalogue.



Review document TRM 105.24 for details of transferring loads with cranes.

21- All trolley beams, pad-eyes etc to be color coded and SWL marked. Flame cut pad eyes are not to be used. Only plasma cut pad-eyes to be used.



22- The use of Nylon straps to be controlled under a PTW system. Indiscriminate use of nylon straps to be avoided.



23- Lifting gear color code below deck showed BROWN and BLUE whereas on main deck it showed YELLOW and BLUE. This needs to be standard to avoid any confusion.



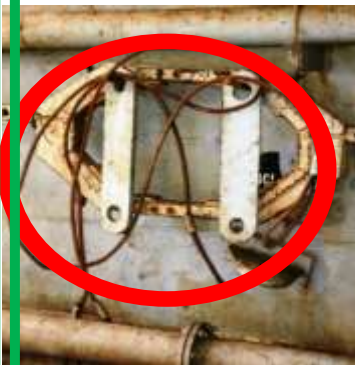
Please review Policy SAF 358.00 for lifting Gear and Policy SAF 360.00 for synthetic slings

Piping color code also to be standardized for all rigs in the fleet. Currently ASPL and AOL rigs follow a different color code for the bulk lines.

24- Work baskets used to be of approved type as shown in the Safety catalogue. All baskets / containers to have inspection color code and SWL displayed on them. Work basket gate to open on the inside.



25- Only Color coded and certified lifting gear to be used. All other suspect LG should be quarantined until the next lifting gear inspection.

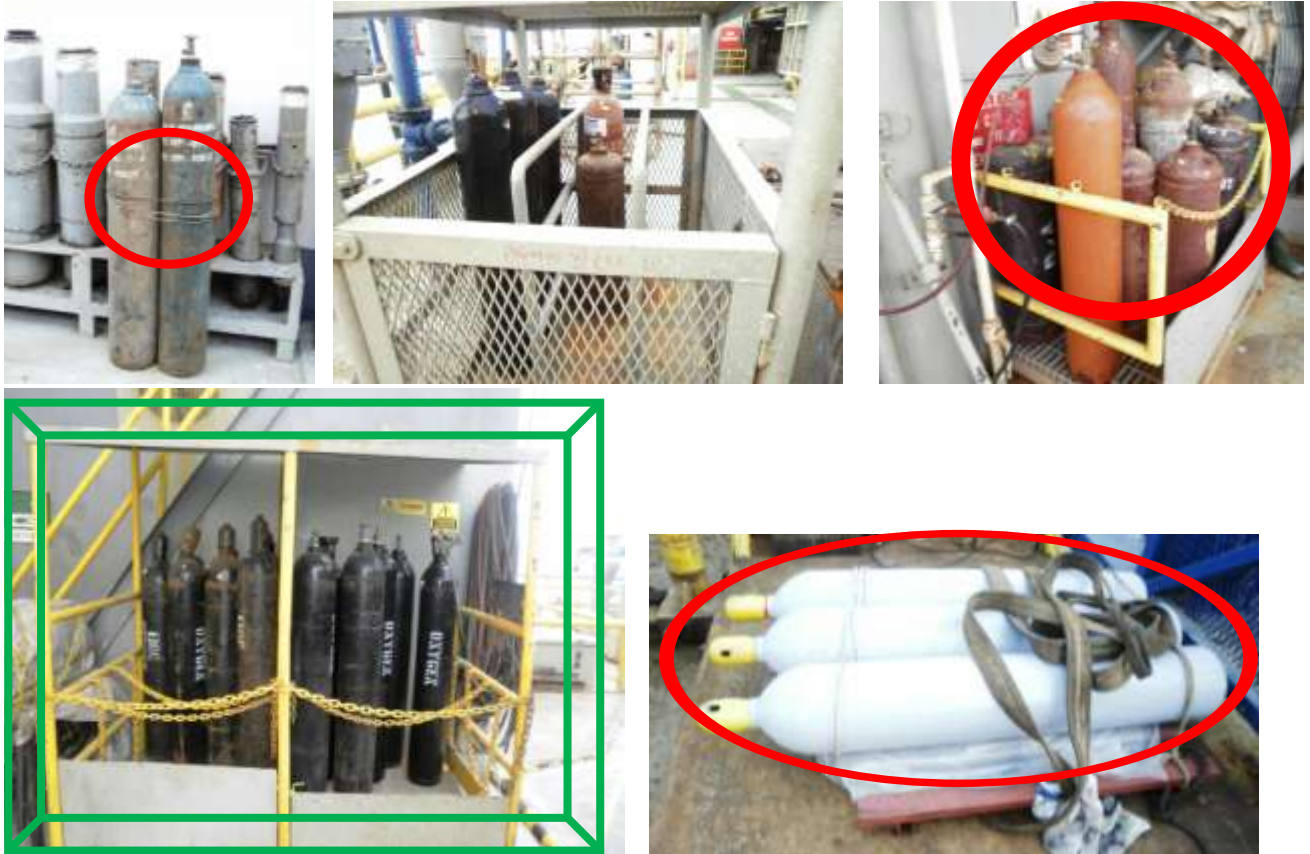


Review Policy SAF 358.00 on maintaining and color coding lifting gear.

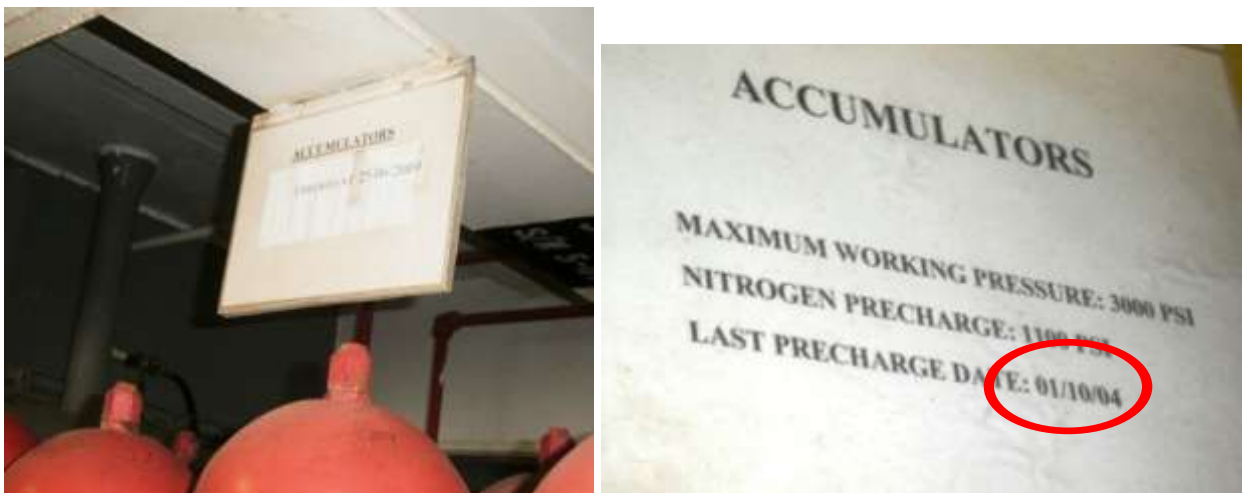
Compressed gas cylinders

26- Compressed gas cylinders to be transported in proper purpose built racks. They are not to be transported on pallets and other boxes/ containers not designed for safe transportation of compressed gas cylinders.

All compressed gas cylinders to have the contents stenciled on the cylinder. Rope is not to be used as a securing device for cylinders.



27- Accumulator bottles at the Koomey unit showed an inspection date of 2009 and 2004. Rig was asked to ensure these bottles are inspected / hydro-tested as required.



Refer Policy SAF 361 on Pressured Systems, vessels and Piping

Cranes

28- The crane cabs of both starboard and port crane are excessively cracked and worn out and the rig needs to look at replacing these entire cabs. Water leakage is very evident inside the cabs and loose wiring with insulation and cracked cables is evident. These should be replaced a.s.a.p.



29- Air conditioners of both cabs are highly corroded and to be replaced and so also engine housing cabins which is again cracked in various places with door handles missing. Electrical boxes used outside should be designed for such use.



30- There is excessive accumulation of oil inside the crane pedestals and also from drains coming from the crane cab itself. One hose is run down and left into an open drain to the sea. These leaks should be fixed.



31- The crane hook is a simple latch hook. This is to be replaced by the double locking hook as approved in the Safety catalogue.



32- Tool box with broken lid was found outside the crane cab. This is equipment overhead and must be secured at all times. Water bottles/ food containers not to be used for storage of oils, thinners etc. Refer Environment policy 310.00 and DD8 Garbage Management Plan on intranet as a guideline

Electrical

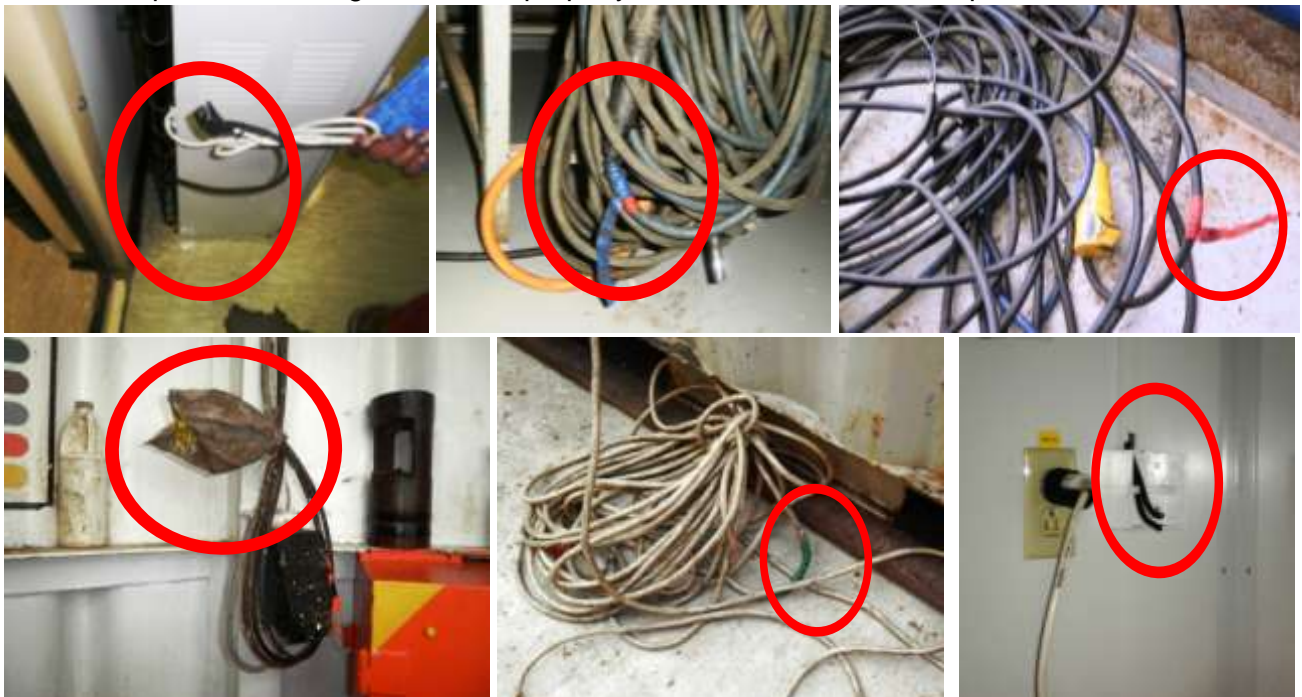
33- Being an old operating rig, many of the electrical cables have cracked insulation and these need to be replaced a.s.a.p. A survey to be done to identify these cables and all to be replaced.



One heavy duty cable running along the starboard side main deck was seen with insulation tape in two places. These damaged/ worn out cables have a serious potential for a hazard as it could lead to electrocution either by contact/ using a pressure washer on deck.

34- Poor standards of electrical safety were evidenced both inside and outside the accommodation. It is not safe to use insulation tape on damaged cables. These cables are to be either replaced or the wires cut at these points and a proper male-female plug-socket attached. This applies to third party equipment also and should be identified in the 3rd party equipment checklist.

Wires, irrespective of voltage should be properly terminated and not left exposed.



Electricians should have a schedule to check all electrical cables on hand tools and remove from service any found damaged. End users should also be educated to inspect their equipment every time before each use. Area inspections to be done to identify exposed / damaged cables.

Refer SAF 460.00 on Electrical Safety

Refer SAF 520.00 for inspecting 3rd Party & subcontractor equipment

General Overhead fixtures

35- All overhead fixtures outside the accommodation should be secured by appropriate safety cables. A survey to be done for this overhead equipment and safety slings of the appropriate sizes to be ordered and installed.



The size of the safety cable is to be appropriate to securing item. The condition of the safety cable is also to be assessed during routine inspections. Rusted cables should be replaced by new ones.

36- All electrical junction boxes to be labeled with source and supply to which equipment, voltage and a DANGER- HIGH VOLTAGE sign to be displayed on relevant boxes.



All electrical / hydraulic control boxes to me labeled / marked as such.

Lock-out-Tag-out procedures were not evidenced as being practiced as per policy. Isolations were in place without proper LOTO permits/procedures. The rig needs a dedicated LOTO station with a log book.



Area inside the electrical SCR room should be kept clean and dry. As seen above the area below the matting was wet and muddy.



As seen above locks and tags are stored on cables.

Rig crew to review Policy **SAF 300.00 PTW**, **SAF 320.00 Isolation** and **SAF 460.00 Electrical Safety**

Permit To Work

37- The PTW system was not evidenced in force as per policy. There were permits posted in two places i.e. BE office and radio room. The OIM/ TP is the authorizing signatory of the PTW system. It is suggested that a PTW board be ordered and posted near the OIM's office as the OIM is the controlling authority on the PTW system. This will also help in an emergency situation where he has easy access to the PTW board to find out activities and crew location on the rig at the time. Crew to review the PTW policy SAF 300.00



38- Job Planning Outline and Job risk assessment forms were also not used with all permits
Crew to review policy **SAF 300.00 PTW**

39- Lights at the boat stations were found not working. These are critical for night evacuations and or night personnel transfers if any and should be in working condition with sufficient spares at all times.

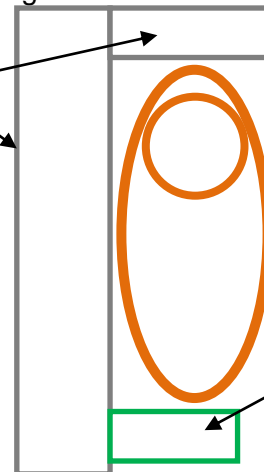


Life Saving appliances

39- Lifeboat platforms will need some modification as the bow end of the LB safety sling is not accessible from the existing platform and the crew has to enter the lifeboat from the aft hatch to secure the bow safety cable. This is unsafe and the management should look into extending the bow end of the platform for easy access to the safety sling where crew can secure the sling first and then enter the LB.



EXISTING PLATFORM



RECOMMENDED PLATFORM ADDITION

This extension to be done via a management of Change process. Refer ISM 900.00



40- The smoke and light buoy at the bridge to be fitted with a quick release mechanism

41- The monkey rope at the life boats and life rafts to be replaced with a proper Jacob's ladders and tarps to be provided to protect them from the elements.

42- The inside of the life boats is well maintained. Inspection logs of equipment inside the LB's to be maintained and life boats to be lowered and raised frequently to ensure working of the winch and prevent ceasing of the brakes.

43- Life jackets/ life vests to be stenciled with vessel name. All life jackets to be stenciled with ID numbers for easy inspection.



Please refer TRM 105.18 on life saving appliances

44- Fire Fighting equipment and lockers are poorly stocked. The rig needs to review list of equipment available inside these emergency boxes and order the requisite equipment.



45- The rig does not have adequate BA packs/boxes and also needs to order a BA compressor and air quality test kit to maintain the BA's on board.

A log to be maintained of locations of BA packs and frequent inspections done and logged on same.

46- A tarpaulin cover to be ordered for the FRC to protect it from the elements



47- The International shore connection showing excessive rust, this to be serviced.

48- Whip checks and safety pins are not in use for hose connections. Crews to be educated on the proper use of whip checks and safety pins.



Standard Safety Clip



- Same size for all coupling sizes

Wire Diameter	Part #	Price/E
.080	AC1	\$.20

Sold only in bags of 25

Air King Safety Pins



- Heavy duty
- Oversized

Wire Diameter	Part #	Price/E
.058	AKSP1	\$.95
.091	AKSP25	1.10



49- Worm clamps are not safe to use and a cause of many incidents and injuries. The rig should use approved “Air king Clamps” with whip checks and safety pins.

Air King Clamps



Size	Hose O.D.		Torque ¹	Plated Iron		Pkg Qty
	From:	To:		Part #	Price/E	
3/8"	44/64"	56/64"	6	CD ²	\$5.95	100
1/2"	1"	1-12/64"	6	A4	5.50	50
3/4"	1-8/64"	1-20/64"	12	A9	5.55	50
1"	1-20/64"	1-32/64"	12	A10 ^{2,3}	9.60	50
1"	1-32/64"	1-52/64"	21	A14	11.90	50

¹ Recommended torque rating in ft. lbs

² Can be used with AM6 and AM11

³ Investment cast carbon steel

Note: Torque values for clamps are based on dry bolts.

The use of lubricant on bolts will adversely effect clamp performance.

Optional Pkg./Box Quantity Shown

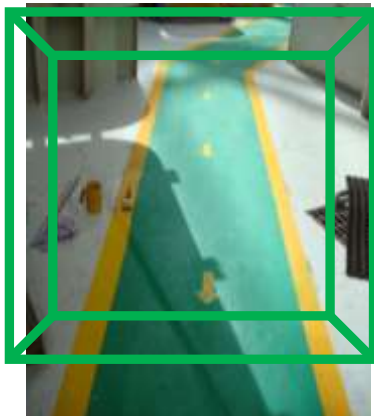
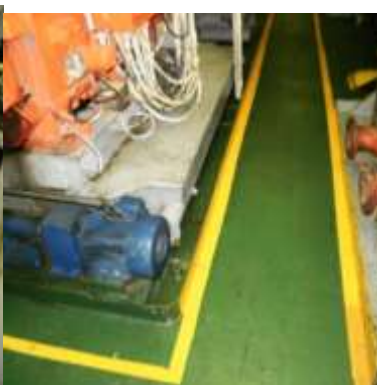
50- All connections on chiksans to have safety lines secured. These are high pressure lines and 3rd party should have inspection certification for this equipment.



51- General overhead areas to be kept clear of equipment as this can be a potential dropped object. Locker tops to be kept clear of items at all times.



52- General areas of the rig are well maintained. The green mile should be extended to the muster station/ lifeboats showing arrow indications leading to the life boats. Upper decks and machinery spaces should also have the green mile demarcated on deck with arrow indicators..



←---- This picture is from the Aban VIII, post audit



Platforms inside the leg wells have excessive debris on them and should either be cleaned up or the complete platform removed if unused.

53-



Confined Space entry was in progress and PTW was posted outside the space but there was no JPO/ JRA for the job and no rescue equipment available at the site. There is no secure tank entry equipment in the pit room. A tripod with winch to be provided for same.
Crew to review Policy SAF 310.00



54-



55-

Rig has a small 5 gallon caustic mixer. The rig should order a larger 55 gallon mixer which is easier and safer to use. Crew at the site did not have apron, mask etc for use and no PPE box to store this equipment.

Crew to be provided with PPE boxes at all work locations.

Review TRM 105.19 on PPE